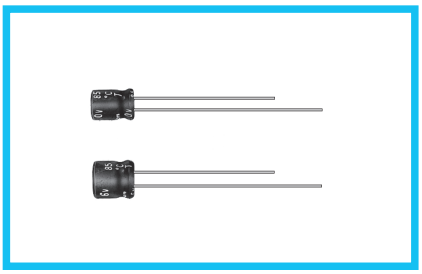
nichicon

UMA

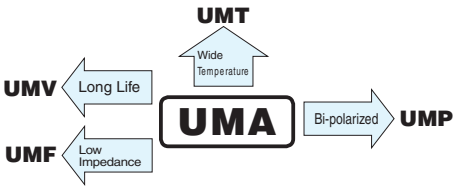
5mmL, Standard, For General Purposes

Anti-Solvent Feature



- Standard series with 5mm height.
- Compliant to the RoHS directive (2011/65/EU).

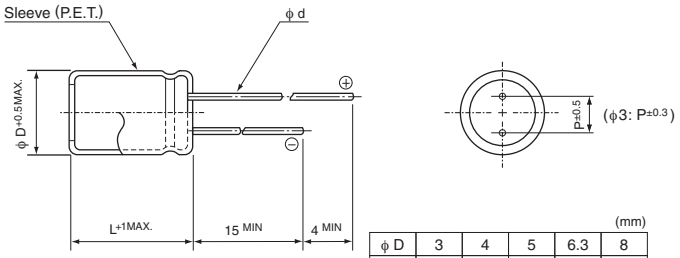
Values marked with an ※ in the dimension table are scheduled to be discontinued and are not recommended for new designs.



■Specifications

Item	Performance Characteristics
Category Temperature Range	−40 to +85°C
Rated Voltage Range	4 to 50V
Rated Capacitance Range	0.1 to 470μF
Rated Capacitance Tolerance	±20% at 120Hz, 20°C
Leakage Current	After 2 minutes' application of rated voltage at 20°C, leakage current is not more than 0.01CV or 3(μA), whichever is greater.
Tangent of loss angle (tan δ)	Measurement frequency : 120Hz at 20°C Rated voltage (V): 4 / 6.3 / 10 / 16 / 25 / 35 / 50 tan δ (MAX.): 0.35 / 0.24 (0.30) / 0.20 (0.24) / 0.16 (0.20) / 0.14 (0.18) / 0.12 (0.16) / 0.10 (0.13) Figures in ( ) are for UMR.
Stability at Low Temperature	Measurement frequency : 120Hz Rated voltage (V): 4 / 6.3 / 10 / 16 / 25 / 35 / 50 Impedance ratio ZT / Z20 (MAX.) Z−25°C / Z+20°C: 7 / 4 / 3 / 2 / 2 / 2 / 2 Z−40°C / Z+20°C: 15 / 8 / 6 / 4 / 4 / 3 / 3
Endurance	The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 2000 hours at 85°C. Capacitance change: Within ±20% of the initial capacitance value (UMR & φ3 product : Within ±25%) tan δ: 200% or less than the initial specified value Leakage current: Less than or equal to the initial specified value
Shelf Life	After storing the capacitors under no load at 85°C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.
Marking	Printed with white color letter on black sleeve.

■Radial Lead Type



(mm)

φ D	3	4	5	6.3	8
P	1.0	1.5	2.0	2.5	2.5
φ d	0.4	0.45	0.45	0.45	0.45

• Please refer to page 20 about the end seal configuration.

Type numbering system (Example : 25V 10μF)

1	2	3	4	5	6	7	8	9	10	11	12
U	M	A	1	E	1	0	0	M	D	D	

※2 Size code

φ D	Code
3	2
4 to 8	——

Configuration ※1
Capacitance tolerance (±20%)
Rated capacitance (10μF)
Rated voltage (25V)
Series name
Type

※1 Configuration

φ D	Pb-free leadwire Pb-free PET sleeve
3	CD
4 to 8	DD

※ 2 In case at φ 3 units, put 2 as size code.

■Dimensions

Cap.(μF) \ V	4		6.3		10		16		25		35		50	
Code	0G		0J		1A		1C		1E		1V		1H	
0.1	0R1												※4×5(3×5)	1.0(1.0)
0.22	R22												※4×5(3×5)	2.0(2.0)
0.33	R33												※4×5(3×5)	2.8(2.8)
0.47	R47												※4×5(3×5)	4.0(4.0)
1	010												4×5(3×5)	8.4(8.0)
2.2	2R2										3×5	8.4	• 4×5	13(10)
3.3	3R3								3×5	10	• 4×5	15(10)	4×5	17
4.7	4R7						3×5	10	• 4×5	16(12)	4×5	18	5×5	20
10	100			3×5	15		• 4×5	23(18)	5×5	27	5×5	29	6.3×5	33
22	220	3×5	19	• 4×5	28(21)	5×5	33	5×5	37	6.3×5	42	6.3×5	46	□ 8×5	52(48)
33	330	4×5	28	5×5	37	5×5	41	○ 6.3×5	49(43)	6.3×5	52	□ 8×5	62(52)	8×5	71
47	470	4×5	33	5×5	45	○ 6.3×5	52(43)	6.3×5	58	□ 8×5	70(62)	8×5	80		
100	101	5×5	56	○ 6.3×5	70(68)	□ 8×5	80(76)	□ 8×5	92(86)	8×5	110				
220	221	6.3×5	96	□ 8×5	110(90)	8×5	135								
330	331	8×5	145	8×5	170								Case size φD×L (mm)	Rated ripple
470	471	8×5	185											

Size φ3 × 5 is available for capacitors marked. "●"/ Size φ5 × 5 is available for capacitors marked. "○"
Size φ6.3 × 5 is available for capacitors marked. "□" In such a case, M R will be put at 2nd and 3rd digit of type numbering system.

Rated ripple current (mArms) at 85°C 120Hz
( ) = φ3 units and UMR.

●Frequency coefficient of rated ripple current

Frequency	50 Hz	120 Hz	300 Hz	1 kHz	10kHz or more
Coefficient	0.70	1.00	1.17	1.36	1.50

Please refer to page 20, 21, 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.

nichicon

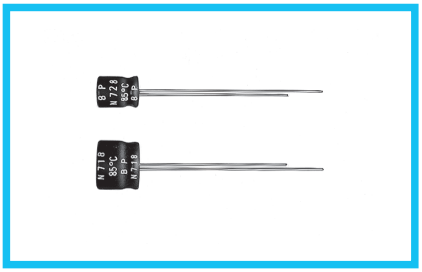
UMP

5mmL, Bi-Polarized

BP Bi-polarized

Anti-Solvent Feature

- Bi-polarized series with 5mm height.
- Compliant to the RoHS directive (2011/65/EU).



UMP ← Bi-polarized UMA

■Specifications

Item	Performance Characteristics
Category Temperature Range	−40 to +85°C
Rated Voltage Range	6.3 to 50V
Rated Capacitance Range	0.1 to 47μF
Rated Capacitance Tolerance	±20% at 120Hz, 20°C
Leakage Current	After 2 minutes' application of rated voltage at 20°C, leakage current is not more than 0.05CV or 10 (μA), whichever is greater.
Tangent of loss angle (tan δ)	Measurement frequency : 120Hz at 20°C

Rated voltage (V)	6.3	10	16	25	35	50
tan δ (MAX.)	0.24	0.20	0.17	0.17	0.15	0.15

Stability at Low Temperature		Measurement frequency : 120Hz					
Rated voltage (V)		6.3	10	16	25	35	50
Impedance ratio ZT / Z20 (MAX.)	Z−25°C / Z+20°C	4	3	2	2	2	2
	Z−40°C / Z+20°C	8	6	4	4	3	3

Endurance

The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 2000 hours at 85°C with the polarity inverted every 250 hours.

Capacitance change	Within ±20% of the initial capacitance value
tan δ	200% or less than the initial specified value
Leakage current	Less than or equal to the initial specified value

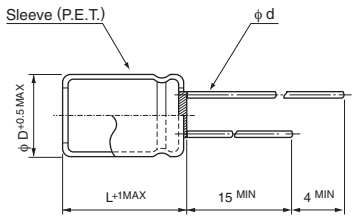
Shelf Life

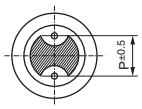
After storing the capacitors under no load at 85°C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.

Marking

Printed with white color letter on black sleeve.

■Radial Lead Type





(mm)

φ D	4	5	6.3
P	1.5	2.0	2.5
φ d	0.45	0.45	0.45

Type numbering system (Example : 10V 33μF)

1	2	3	4	5	6	7	8	9	10	11
U	M	P	1	A	3	3	0	M	D	D

- 11: Configuration ※
- 9: Capacitance tolerance (±20%)
- 6 7 8: Rated capacitance (33μF)
- 4 5: Rated voltage (10V)
- 3: Series name
- 1 2: Type

※Configuration

φ D	Pb-free leadwire Pb-free PET sleeve
4 to 6.3	DD

■Dimensions

Cap.(μF) \ V	6.3		10		16		25		35		50	
Code	0J		1A		1C		1E		1V		1H	
0.1	0R1										4×5	1.0
0.22	R22										4×5	2.0
0.33	R33										4×5	2.8
0.47	R47										4×5	4.0
1	010										4×5	8.4
2.2	2R2								4×5	8.4	5×5	13
3.3	3R3						5×5	12	5×5	16	5×5	17
4.7	4R7				4×5	12	5×5	16	5×5	18	6.3×5	20
10	100		4×5	17	5×5	23	6.3×5	27	6.3×5	29		
22	220	5×5	6.3×5	33	6.3×5	37						
33	330	6.3×5	6.3×5	41	6.3×5	49					Case size φD×L (mm)	Rated ripple
47	470	6.3×5										

Rated ripple current (mArms) at 85°C 120Hz

● Frequency coefficient of rated ripple current

Frequency	50 Hz	120 Hz	300 Hz	1 kHz	10 kHz or more
Coefficient	0.70	1.00	1.17	1.36	1.50

Please refer to page 20, 21, 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.

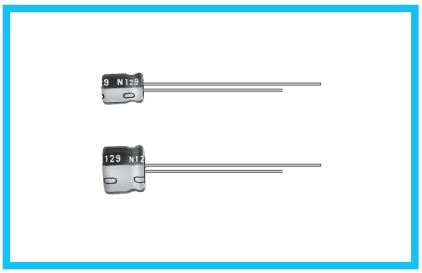
nichicon

UMT

5mmL, Wide Temperature Range

Anti-Solvent Feature

- Wide temperature range of −55 to +105°C, with 5mm height.
- Compliant to the RoHS directive (2011/65/EU).



Values marked with an ※ in the dimension table are scheduled to be discontinued and are not recommended for new designs.

UMV Long life **UMT** High Temperature **UMA**

■Specifications

Item	Performance Characteristics
Category Temperature Range	−55 to +105°C
Voltage Range	4 to 50V
Rated Capacitance Range	0.1 to 100μF
Rated Capacitance Tolerance	±20% at 120Hz, 20°C
Leakage Current	After 2 minutes' application of rated voltage at 20°C, leakage current is not more than 0.01CV or 3 (μA), whichever is greater.
Tangent of loss angle (tan δ)	Measurement frequency : 120Hz at 20°C

Rated voltage (V)	4	6.3	10	16	25	35	50
tan δ (MAX.)	0.37	0.28	0.24	0.20	0.16	0.13 (0.14)	0.12 (0.14)

Figures in ( ) are for φ 3 product.

Stability at Low Temperature — Measurement frequency : 120Hz

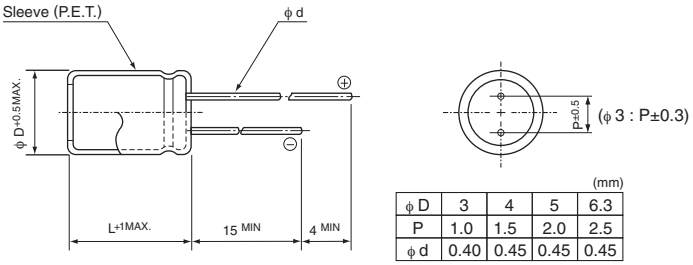
Rated voltage (V)		4	6.3	10	16	25	35	50
Impedance ratio ZT / Z20 (MAX.)	Z−25°C / Z+20°C	6	3	3	2	2	2	2
	Z−40°C / Z+20°C	12	8	5	4	3	3	3

Endurance — The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 1000 hours at 105°C.

Capacitance change	Within ±25% of the initial capacitance value (φ 3mm unit,and ≦ 16V) Within ±20% of the initial capacitance value (≧ 25V)
tan δ	200% or less than the initial specified value
Leakage current	Less than or equal to the initial specified value

Shelf Life	After storing the capacitors under no load at 105°C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.
Marking	Printed with white color letter on black sleeve.

■Radial Lead Type



(mm)

φ D	3	4	5	6.3
P	1.0	1.5	2.0	2.5
φ d	0.40	0.45	0.45	0.45

• Please refer to page 20 about the end seal configuration.

Type numbering system (Example : 25V 10μF)

1	2	3	4	5	6	7	8	9	10	11	12
U	M	T	1	E	1	0	0	M	D	D	

※2 Size code

φ D	Code
3	2
4 to 6.3	—

Configuration ※1
Capacitance tolerance (±20%)
Rated capacitance (10μF)
Rated voltage (25V)
Series name
Type

※1 Configuration

φ D	Pb-free leadwire Pb-free PET sleeve
3	CD
4 to 6.3	DD

※2 For φ 3mm unit, place size code of 2 to 12th digit.

■Dimensions

Cap.(μF) \ V		4		6.3		10		16		25		35		50	
	Code	0G		0J		1A		1C		1E		1V		1H	
0.1	0R1													※ • 4×5	1.0(1.0)
0.22	R22													※ • 4×5	2.6(2.6)
0.33	R33													※ • 4×5	3.2(3.2)
0.47	R47													※ • 4×5	3.8(3.8)
1	010													• 4×5	6.2(5.9)
2.2	2R2											3×5	7.5	• 4×5	11 (9)
3.3	3R3											• 4×5	11 (9)	4×5	14
4.7	4R7									• 4×5	13 (10)	4×5	15	5×5	19
10	100							• 4×5	18 (14)	5×5	23	5×5	25	6.3×5	30
22	220	4×5	22	4×5	22	5×5	27	5×5	30	6.3×5	38	6.3×5	48		
33	330	5×5	30	5×5	30	5×5	35	6.3×5	40	6.3×5	48				
47	470	5×5	36	5×5	36	6.3×5	46	6.3×5	50					Case size φD×L (mm)	Rated ripple
100	101	6.3×5	60	6.3×5	60										

Size φ3 × 5 is available for capacitors marked " ● "
Figures in ( ) are for φ 3 product.

Rated ripple current (mArms) at 105°C 120Hz

●Frequency coefficient of rated ripple current

Frequency	50 Hz	120 Hz	300 Hz	1 kHz	10 kHz or more
Coefficient	0.70	1.00	1.17	1.36	1.50

Please refer to page 20, 21, 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.

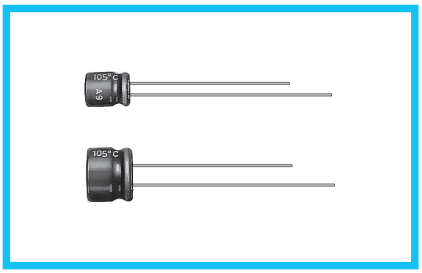
nichicon

UMF

5mmL, Low Impedance

Low Impedance Anti-Solvent Feature

- Low impedance over wide temperature range of −55 to +105°C, with 5mm height.
- Suited for DC-DC converters where smaller case size and lower impedance are required.
- Compliant to the RoHS directive (2011/65/EU).



UMF ← Low Impedance → UMT

■Specifications

Item	Performance Characteristics
Category Temperature Range	−55 to +105°C
Rated Voltage Range	6.3 to 35V
Rated Capacitance Range	1 to 100μF
Rated Capacitance Tolerance	±20% at 120Hz, 20°C
Leakage Current	After 2 minutes' application of rated voltage at 20°C, leakage current is not more than 0.01CV or 3 (μA), whichever is greater.
Tangent of loss angle (tan δ)	Measurement frequency : 120Hz at 20°C

Rated voltage (V)	6.3	10	16	25	35
tan δ (MAX.)	0.22	0.20	0.18	0.14	0.12

Stability at Low Temperature — Measurement frequency : 120Hz

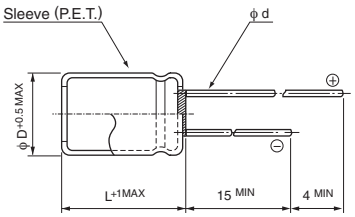
Rated voltage (V)		6.3	10	16	25	35
Impedance ratio ZT / Z20 (MAX.)	Z−25°C / Z+20°C	2	2	2	2	2
	Z−55°C /Z+20°C	4	4	3	3	3

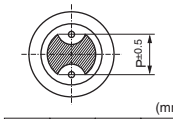
Endurance — The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 1000 hours at 105°C.

Capacitance change	Within ±20% of the initial capacitance value
tan δ	200% or less than the initial specified value
Leakage current	Less than or equal to the initial specified value

Shelf Life	After storig the capacitors under no load at 105°C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.
Marking	Printed with white color letter on dark brown sleeve.

■Radial Lead Type





(mm)

φD	4	5	6.3
P	1.5	2.0	2.5
φd	0.45	0.45	0.45

Type numbering system (Example : 25V 10μF)

1	2	3	4	5	6	7	8	9	10	11
U	M	F	1	E	1	0	0	M	D	D

- 11: Configuration ※
- 9–10: Capacitance tolerance (±20%)
- 6–8: Rated capacitance (10μF)
- 4–5: Rated voltage (25V)
- 3: Series name
- 1–2: Type

※Configuration

φD	Pb-free leadwire Pb-free PET sleeve
4 to 6.3	DD

■Dimensions

Cap.(μF) \ V	6.3			10			16			25			35		
Code	0J			1A			1C			1E			1V		
1	010												4×5	5.0	50
1.5	1R5												4×5	5.0	50
2.2	2R2												4×5	5.0	50
3.3	3R3												4×5	5.0	50
4.7	4R7									4×5	5.0	50	4×5	5.0	50
6.8	6R8									4×5	5.0	50	5×5	2.6	80
10	100						4×5	5.0	50	5×5	2.6	80	5×5	2.6	80
15	150						5×5	2.6	80	6.3×5	1.3	115	6.3×5	1.3	115
22	220	4×5	5.0	50	5×5	2.6	80	5×5	2.6	80	6.3×5	1.3	115	6.3×5	1.3	115
33	330	5×5	2.6	80	5×5	2.6	80	6.3×5	1.3	115	6.3×5	1.3	115			
47	470	5×5	2.6	80	6.3×5	1.3	115	6.3×5	1.3	115						
68	680	6.3×5	1.3	115												
100	101	6.3×5	1.3	115												

Case size φD×L (mm) | Impedance | Rated ripple

Max. Impedance (Ω) at 20°C 100kHz
Rated ripple current (mArms) at 105°C 100kHz

●Frequency coefficient of rated ripple current

Frequency	50 Hz	120 Hz	300 Hz	1 kHz	10 kHz or more
Coefficient	0.35	0.50	0.64	0.83	1.00

Please refer to page 20, 21, 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.

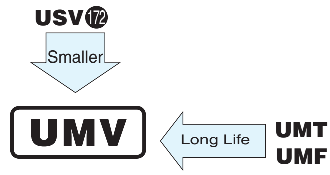
UMV

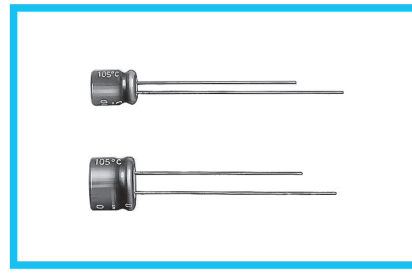
5mmL, Long Life Assurance

Long Life

- Extended load life of 5000 hours at +105°C, with 5mm height.
- Compliant to the RoHS directive (2011/65/EU).

Values marked with an ※ in the dimension table are scheduled to be discontinued and are not recommended for new designs.





■Specifications

Item	Performance Characteristics
Category Temperature Range	–40 to +105°C
Rated Voltage Range	4 to 50V
Rated Capacitance Range	0.1 to 100µF
Capacitance Tolerance	±20% at 120Hz, 20°C
Leakage Current	After 2 minutes' application of rated voltage at 20°C, leakage current is not more than 0.01CV or 3 (µA), whichever is greater.
Tangent of loss angle (tan δ)	Measurement frequency : 120Hz at 20°C (see table below)
Stability at Low Temperature	Measurement frequency : 120Hz (see table below)
Endurance	The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 5000 hours at 105°C. (see table below)
Shelf Life	After storing the capacitors under no load at 105°C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.
Marking	Printed with silver color letter on dark brown sleeve.

Tangent of loss angle (tan δ) — Measurement frequency : 120Hz at 20°C

Rated voltage (V)	4	6.3	10	16	25	35	50
tan δ (MAX.)	0.37	0.28	0.24	0.20	0.16	0.13	0.12

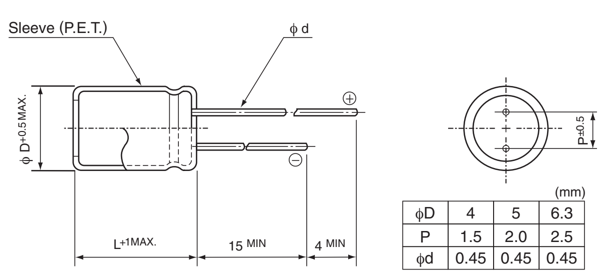
Stability at Low Temperature — Measurement frequency : 120Hz

Rated voltage (V)		4	6.3	10	16	25	35	50
Impedance ratio ZT / Z20 (MAX.)	Z–25°C / Z+20°C	8	4	3	2	2	2	2
	Z–40°C / Z+20°C	14	10	7	5	3	3	3

Endurance

Capacitance change	Within ±30% of the initial capacitance value
tan δ	300% or less than the initial specified value
Leakage current	Less than or equal to the initial specified value

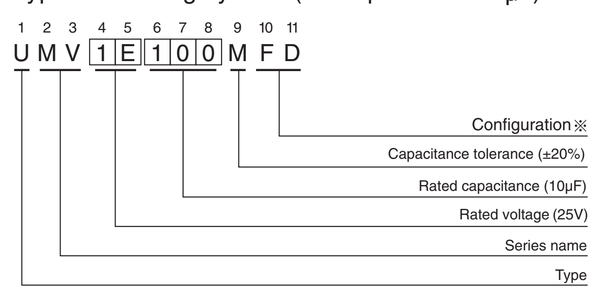
■Radial Lead Type



(mm)

ϕD	4	5	6.3
P	1.5	2.0	2.5
ϕd	0.45	0.45	0.45

Type numbering system (Example : 25V 10µF)



※ Configuration

ϕD	Pb-free leadwire Pb-free PET sleeve
4 to 6.3	FD

■Dimensions

Cap.(µF) \ V	Code	4 (0G)		6.3 (0J)		10 (1A)		16 (1C)		25 (1E)		35 (1V)		50 (1H)	
0.1	0R1													※4×5	1.0
0.22	R22													※4×5	2.6
0.33	R33													※4×5	3.2
0.47	R47													※4×5	3.8
1	010													4×5	6.2
2.2	2R2													4×5	11
3.3	3R3													4×5	14
4.7	4R7									4×5	13	4×5	15	5×5	19
10	100							4×5	18	5×5	23	5×5	25	6.3×5	30
22	220	4×5	22	4×5	22	5×5	27	5×5	30	6.3×5	38	6.3×5	42		
33	330	5×5	30	5×5	30	5×5	35	6.3×5	40	6.3×5	48				
47	470	5×5	36	5×5	36	6.3×5	46	6.3×5	50					Case size ϕD×L (mm)	Rated ripple
100	101	6.3×5	60	6.3×5	60										

Rated ripple current (mArms) at 105°C 120Hz

● Frequency coefficient of rated ripple current

Frequency	50 Hz	120 Hz	300 Hz	1 kHz	10 kHz or more
Coefficient	0.70	1.00	1.17	1.36	1.50

Please refer to page 20, 21, 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.

nichicon

USA 7mmL, For General Purposes

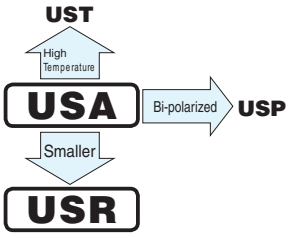
USR 7mmL, High CV

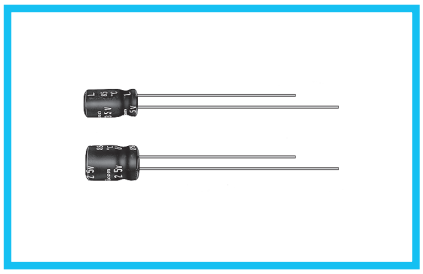
Smaller (USR) | Anti-Solvent Feature

- Standard miniature series with 7mm height.
- Compliant to the RoHS directive (2011/65/EU).

- Higher CV series with 7mm height.

Values marked with an ※ in the dimension table are scheduled to be discontinued and are not recommended for new designs.





■Specifications

Item	USA	USR
Category Temperature Range	– 40 to +85˚C	–40 to +85˚C
Rated Voltage Range	6.3 to 50V	4 to 50V
Rated Capacitance Range	0.1 to 220μF	0.1 to 470μF
Capacitance Tolerance	±20% at 120Hz, 20˚C	
Leakage Current	After 2 minutes' application of rated voltage at 20°C, leakage current is not more than 0.01CV or 3 (μA), whichever is greater.	

Tangent of loss angle (tan δ) — Measurement frequency : 120Hz at 20˚C

Rated voltage (V)	4	6.3	10	16	25	35	50
tan δ (MAX.)	0.35	0.24	0.20	0.16	0.14	0.12	0.10

Stability at Low Temperature — Measurement frequency : 120Hz

Rated voltage (V)		4	6.3	10	16	25	35	50
Impedance ratio	Z–25˚C / Z+20˚C	6	4	3	2	2	2	2
ZT / Z20 (MAX.)	Z–40˚C / Z+20˚C	12	8	6	4	4	3	3

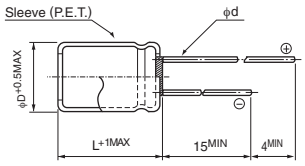
Endurance — The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 2000 hours at 85°C.

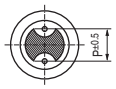
Capacitance change	Within ±20% of the initial capacitance value
tan δ	200% or less than the initial specified value
Leakage current	Less than or equal to the initial specified value

Shelf Life — After storing the capacitors under no load at 85˚C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.

Marking — Printed with white color letter on black sleeve.

■Radial Lead Type





(mm)

φD	4	5	6.3	8
P	1.5	2.0	2.5	3.5
φd	0.45	0.45	0.45	0.5

Type numbering system (Example : USA : 10V 33μF)

1	2	3	4	5	6	7	8	9	10	11
U	S	A	1	A	3	3	0	M	D	D

Configuration※
Capacitance tolerance (±20%)
Rated capacitance (33 μF)
Rated voltage (10V)
Series name
Type

※Configuration

φ D	Pb-free leadwire Pb-free PET sleeve
4 to 8	DD

■Dimensions

Cap.(μF) \ V(Code) / Type・Series / Code		4 (0G)	6.3 (0J)		10 (1A)		16 (1C)		25 (1E)		35 (1V)		50 (1H)	
		USR	USA	USR	USA	USR	USA	USR	USA	USR	USA	USR	USA	USR
0.1	0R1												※ 4 × 7 1.0	※ 4 × 7 1.0
0.22	R22												※ 4 × 7 2.3	※ 4 × 7 2.3
0.33	R33												※ 4 × 7 3.5	※ 4 × 7 3.5
0.47	R47												※ 4 × 7 5.0	※ 4 × 7 5.0
1	010												4 × 7 10	4 × 7 10
2.2	2R2												4 × 7 19	4 × 7 19
3.3	3R3												4 × 7 24	4 × 7 24
4.7	4R7										4 × 7 24	4 × 7 24	5 × 7 29	4 × 7 28
10	100						4 × 7 28	4 × 7 28	5 × 7 33	4 × 7 28	5 × 7 36	4 × 7 31	6.3 × 7 44	5 × 7 38
22	220		4 × 7 34	4 × 7 34	5 × 7 38	4 × 7 35	5 × 7 44	4 × 7 39	6.3 × 7 51	5 × 7 48	6.3 × 7 57	5 × 7 52	8 × 7 65	6.3 × 7 58
33	330	4 × 7 33	5 × 7 42	4 × 7 40	5 × 7 47	4 × 7 43	6.3 × 7 57	5 × 7 55	6.3 × 7 63	5 × 7 58	8 × 7 72	6.3 × 7 65		8 × 7 75
47	470	4 × 7 39	5 × 7 50	4 × 7 48	6.3 × 7 59	5 × 7 59	6.3 × 7 68	5 × 7 65	8 × 7 78	6.3 × 7 71		8 × 7 85		
100	101	5 × 7 65	6.3 × 7 77	5 × 7 78	8 × 7 96	6.3 × 7 87	8 × 7 107	6.3 × 7 98		8 × 7 115				
220	221	6.3 × 7 110	8 × 7 130	6.3 × 7 120		8 × 7 145		8 × 7 150						
330	331	8 × 7 165		8 × 7 180										
470	471	8 × 7 240											Case size φD × L (mm) Rated ripple	

Rated ripple current (mArms) at 85˚C 120Hz

● Frequency coefficient of rated ripple current

Frequency	50 Hz	120 Hz	300 Hz	1 kHz	10 kHz or more
Coefficient	0.70	1.00	1.17	1.36	1.50

Please refer to page 20, 21, 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.

nichicon

USP

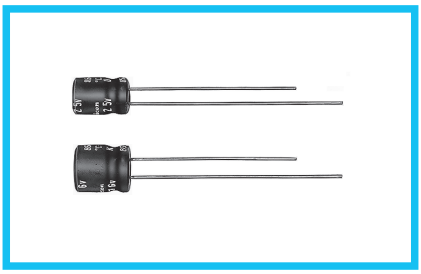
7mmL, Bi-Polarized

BP Bi-polarized

Anti-Solvent Feature

- Bi-polarized series with 7mm height.
- Extended capacitance range by an addition of φ8 product.
- Compliant to the RoHS directive (2011/65/EU).

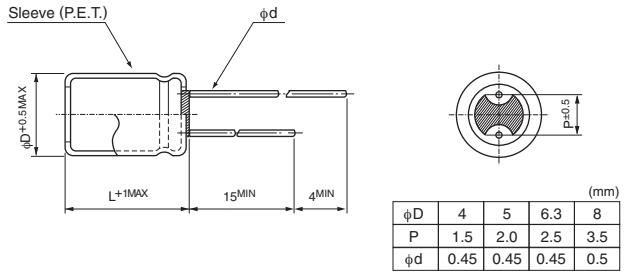
USP Bi-polarized USA



■Specifications

Item	Performance Characteristics
Category Temperature Range	−40 to +85˚C
Rated Voltage Range	6.3 to 50V
Rated Capacitance Range	0.1 to 220μF
Capacitance Tolerance	±20% at 120Hz, 20˚C
Leakage Current	After 2 minutes' application of rated voltage at 20°C, leakage current is not more than 0.05CV or 10 (μA), whichever is greater.
Tangent of loss angle (tan δ)	Measurement frequency : 120Hz at 20˚C Rated voltage (V) 6.3 / 10 / 16 / 25 / 35 / 50 tan δ (MAX.) 0.24 / 0.20 / 0.16 / 0.16 / 0.14 / 0.12
Stability at Low Temperature	Measurement frequency : 120 Hz Rated voltage (V) 6.3 / 10 / 16 / 25 / 35 / 50 Impedance ratio Z−25˚C / Z+20˚C: 4 / 3 / 2 / 2 / 2 / 2 ZT / Z20 (MAX.) Z−40˚C / Z+20˚C: 8 / 6 / 4 / 4 / 3 / 3
Endurance	The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 2000 hours at 85°C with the polarity inverted every 250 hours. Capacitance change: Within ±20% of the initial capacitance value tan δ: 200% or less than the initial specified value Leakage current: Less than or equal to the initial specified value
Shelf Life	After storing the capacitors under no load at 85˚C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.
Marking	Printed with white color letter on black sleeve.

■Radial Lead Type



(mm)

φD	4	5	6.3	8
P	1.5	2.0	2.5	3.5
φd	0.45	0.45	0.45	0.5

Type numbering system (Example : 10V 33μF)

1	2	3	4	5	6	7	8	9	10	11
U	S	P	1	A	3	3	0	M	D	D

Configuration※
Capacitance tolerance (±20%)
Rated capacitance (33μF)
Rated voltage (10V)
Series name
Type

※Configuration

φD	Pb-free leadwire Pb-free PET sleeve
4 to 8	DD

■Dimensions

Cap.(μF) \ V	6.3		10		16		25		35		50	
Code	0J		1A		1C		1E		1V		1H	
0.1	0R1										4 × 7	1.0
0.22	R22										4 × 7	2.3
0.33	R33										4 × 7	3.5
0.47	R47										4 × 7	5.0
1	010										4 × 7	10
2.2	2R2										4 × 7	14
3.3	3R3								4 × 7	16	5 × 7	20
4.7	4R7				4 × 7	18	5 × 7	21	5 × 7	22	6.3 × 7	27
10	100		4 × 7	24	5 × 7	30	6.3 × 7	35	6.3 × 7	37	8 × 7	44
22	220		5 × 7	40	6.3 × 7	51	6.3 × 7	53	8 × 7	62	8 × 7	65
33	330	5 × 7	42	6.3 × 7	56	6.3 × 7	63	8 × 7	73	8 × 7	76	
47	470	6.3 × 7	58	6.3 × 7	67	6.3 × 7	75	8 × 7	87			
100	101	8 × 7	95	8 × 7	110	8 × 7	125				Case size φD × L (mm)	Rated ripple
220	221	8 × 7	140									

Rated ripple current (mArms) at 85˚C 120Hz

● Frequency coefficient of rated ripple current

Frequency	50 Hz	120 Hz	300 Hz	1 kHz	10 kHz or more
Coefficient	0.70	1.00	1.17	1.36	1.50

Please refer to page 20, 21, 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.

nichicon

UST

7mmL, Wide Temperature Range

Anti-Solvent Feature

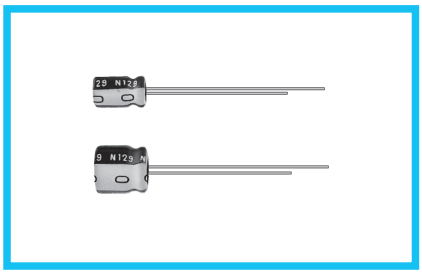
- Wide temperature range of −55 to +105˚C, with 7mm height.
- Compliant to the RoHS directive (2011/65/EU).

Values marked with an ※ in the dimension table are scheduled to be discontinued and are not recommended for new designs.

UST

High Temperature

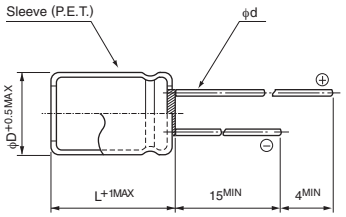
USA

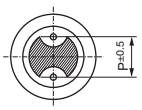


■Specifications

Item	Performance Characteristics
Category Temperature Range	−55 to +105˚C
Rated Voltage Range	6.3 to 50V
Rated Capacitance Range	0.1 to 220μF
Capacitance Tolerance	±20% at 120Hz, 20˚C
Leakage Current	After 2 minutes' application of rated voltage at 20°C, leakage current is not more than 0.01CV or 3 (μA), whichever is greater.
Tangent of loss angle (tan δ)	Measurement frequency : 120Hz at 20˚C Rated voltage (V) 6.3 / 10 / 16 / 25 / 35 / 50 tan δ (MAX.) 0.24 / 0.21 / 0.18 / 0.15 / 0.13 / 0.12
Stability at Low Temperature	Measurement frequency : 120 Hz Rated voltage (V) 6.3 / 10 / 16 / 25 / 35 / 50 Impedance ratio Z−25˚C / Z+20˚C 3 / 2 / 2 / 2 / 2 / 2 ZT / Z20 (MAX.) Z−40˚C / Z+20˚C 6 / 5 / 4 / 3 / 3 / 3
Endurance	The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 1000 hours at 105°C. Capacitance change: Within ±25% of the initial capacitance value (16Vor less) Within ±20% of the initial capacitance value (25Vor more) tan δ: 200% or less than the initial specified value Leakage current: Less than or equal to the initial specified value
Shelf Life	After storing the capacitors under no load at 105˚C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.
Marking	Printed with white color letter on black sleeve.

■Radial Lead Type





(mm)

φD	4	5	6.3	8
P	1.5	2.0	2.5	3.5
φd	0.45	0.45	0.45	0.5

Type numbering system (Example : 10V 33μF)

1	2	3	4	5	6	7	8	9	10	11
U	S	T	1	A	3	3	0	M	D	D

- 11: Configuration※
- 9: Capacitance tolerance (±20%)
- 6 7 8: Rated capacitance (33μF)
- 4 5: Rated voltage (10V)
- 1 2 3: Series name
- U: Type

※Configuration

φ D	Pb-free leadwire Pb-free PET sleeve
4 to 8	DD

■Dimensions

Cap.(μF) \ V	Code	6.3		10		16		25		35		50	
		0J		1A		1C		1E		1V		1H	
0.1	0R1											※ 4 × 7	1.0
0.22	R22											※ 4 × 7	2.3
0.33	R33											※ 4 × 7	3.5
0.47	R47											※ 4 × 7	5.0
1	010											4 × 7	10
2.2	2R2											4 × 7	19
3.3	3R3											4 × 7	24
4.7	4R7									4 × 7	24	5 × 7	29
10	100					4 × 7	29	5 × 7	33	5 × 7	36	6.3 × 7	44
22	220	4 × 7	34	5 × 7	38	5 × 7	44	6.3 × 7	51	6.3 × 7	57	8 × 7	65
33	330	5 × 7	42	5 × 7	47	6.3 × 7	57	6.3 × 7	63	8 × 7	72		
47	470	5 × 7	50	6.3 × 7	59	6.3 × 7	68	8 × 7	78				
100	101	6.3 × 7	77	8 × 7	96	8 × 7	107					Case size φD×L (mm)	Rated ripple
220	221	8 × 7	130	8 × 7	140								

Rated ripple current (mArms) at 105˚C 120Hz

● Frequency coefficient of rated ripple current

Frequency	50 Hz	120 Hz	300 Hz	1 kHz	10 kHz or more
Coefficient	0.70	1.00	1.17	1.36	1.50

Please refer to page 20, 21, 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.

nichicon

USV

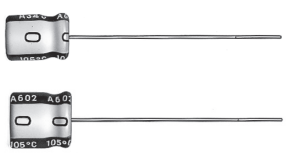
7mmL, Long Life Assurance

Long Life

- Extended load life of 5000 hours at +105˚C, with 7mm height.
- Compliant to the RoHS directive (2011/65/EU).

Values marked with an ※ in the dimension table are scheduled to be discontinued and are not recommended for new designs.

UST → Long Life → USV



■Specifications

Item	Performance Characteristics
Category Temperature Range	−40 to +105˚C
Rated Voltage Range	6.3 to 50V
Rated Capacitance Range	0.1 to 220μF
Capacitance Tolerance	±20% at 120Hz, 20˚C
Leakage Current	After 2 minutes' application of rated voltage at 20°C, leakage current is not more than 0.01CV or 3(μA), whichever is greater.
Tangent of loss angle (tan δ)	Measurement frequency : 120Hz, Temperature : 20˚C

Rated voltage (V)	6.3	10	16	25	35	50
tan δ (MAX.)	0.24	0.21	0.18	0.15	0.13	0.12

Stability at Low Temperature — Measurement frequency : 120Hz

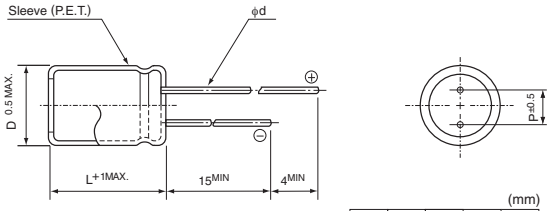
Rated voltage (V)		6.3	10	16	25	35	50
Impedance ratio	Z−25˚C / Z+20˚C	4	3	2	2	2	2
ZT / Z20 (MAX.)	Z−40˚C / Z+20˚C	8	6	4	3	3	3

Endurance — The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 5000 hours at 105°C.

Capacitance change	Within ±30% of the initial capacitance value
tan δ	300% or less than the initial specified value
Leakage current	Less than or equal to the initial specified value

Shelf Life	After storing the capacitors under no load at 105˚C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.
Marking	Printed with silver color letter on dark brown sleeve.

■Radial Lead Type



(mm)

φD	4	5	6.3	8
P	1.5	2.0	2.5	3.5
φd	0.45	0.45	0.45	0.5

Type numbering system (Example: 10V 33μF)

1	2	3	4	5	6	7	8	9	10	11
U	S	V	1	A	3	3	0	M	F	D

- 11: Configuration ※
- 9–10: Capacitance tolerance (±20%)
- 6–8: Rated capacitance (33μF)
- 4–5: Rated voltage (10V)
- 3: Series name
- 1–2: Type

※ Configuration

φ D	Pb-free leadwire Pb-free PET sleeve
4 to 8	FD

■Dimensions

Cap.(μF) \ V	Code	6.3		10		16		25		35		50	
		0J		1A		1C		1E		1V		1H	
0.1	0R1											※ 4 × 7	1.0
0.22	R22											※ 4 × 7	2.3
0.33	R33											※ 4 × 7	3.5
0.47	R47											※ 4 × 7	5.0
1	010											4 × 7	10
2.2	2R2											4 × 7	19
3.3	3R3											4 × 7	24
4.7	4R7									4 × 7	24	5 × 7	29
10	100					4 × 7	29	5 × 7	33	5 × 7	36	6.3 × 7	44
22	220	4 × 7	34	5 × 7	38	5 × 7	44	6.3 × 7	51	6.3 × 7	57	8 × 7	65
33	330	5 × 7	42	5 × 7	47	6.3 × 7	57	6.3 × 7	63	8 × 7	72		
47	470	5 × 7	50	6.3 × 7	59	6.3 × 7	68	8 × 7	78				
100	101	6.3 × 7	77	8 × 7	96	8 × 7	107					Case size φD × L (mm)	Rated ripple
220	221	8 × 7	130										

Rated ripple current (mArms) at 105˚C 120Hz

● Frequency coefficient of rated ripple current

Frequency	50 Hz	120 Hz	300 Hz	1 kHz	10 kHz or more
Coefficient	0.70	1.00	1.17	1.36	1.50

Please refer to page 20, 21, 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.

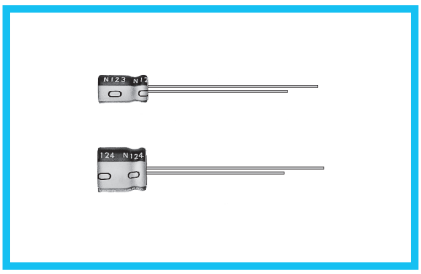
nichicon

USF

7mmL, Low Impedance

Low Impedance Anti-Solvent Feature

- Low impedance over wide temperature range of −55 to +105˚C, with 7mm height.
- Compliant to the RoHS directive (2011/65/EU).



USF ← Low Impedance → UST

■Specifications

Item	Performance Characteristics
Category Temperature Range	−55 to +105˚C
Rated Voltage Range	6.3 to 35V
Rated Capacitance Range	6.8 to 220μF
Capacitance Tolerance	±20% at 120Hz, 20˚C
Leakage Current	After 2 minutes' application of rated voltage at 20°C, leakage current is not more than 0.01CV or 3(μA), whichever is greater.
Tangent of loss angle (tan δ)	Measurement frequency : 120Hz, Temperature : 20˚C

Rated voltage (V)	6.3	10	16	25	35
tan δ (MAX.)	0.18	0.16	0.14	0.12	0.12

Stability at Low Temperature — Measurement frequency : 120Hz

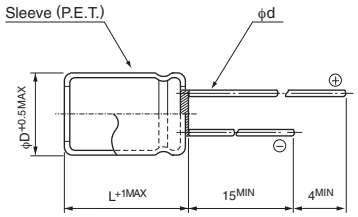
Rated voltage (V)		6.3	10	16	25	35
Impedance ratio	Z−25˚C / Z+20˚C	2	2	2	2	2
ZT / Z20 (MAX.)	Z−55˚C / Z+20˚C	3	3	3	3	3

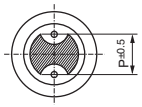
Endurance — The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 1000 hours at 105°C.

Capacitance change	Within ±20% of the initial capacitance value
tan δ	200% or less than the initial specified value
Leakage current	Less than or equal to the initial specified value

Shelf Life	After storing the capacitors under no load at 105˚C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.
Marking	Printed with white color letter on dark brown sleeve.

■Radial Lead Type





(mm)

φD	4	5	6.3	8
P	1.5	2.0	2.5	3.5
φd	0.45	0.45	0.45	0.5

Type numbering system (Example : 10V 33μF)

1	2	3	4	5	6	7	8	9	10	11
U	S	F	1	A	3	3	0	M	D	D

- 11: Configuration ※
- 9: Capacitance tolerance (±20%)
- 6–8: Rated capacitance (33 μF)
- 4–5: Rated voltage (10V)
- 2–3: Series name
- 1: Type

※ Configuration

φ D	Pb-free leadwire Pb-free PET sleeve
4 to 8	DD

■Dimensions

Cap.(μF) \ V	Code	6.3			10			16			25			35		
		0J			1A			1C			1E			1V		
6.8	6R8													4 × 7	3.3	70
10	100										4 × 7	3.3	70	5 × 7	1.7	110
15	150							4 × 7	3.3	70	5 × 7	1.7	110	6.3 × 7	0.8	160
22	220				4 × 7	3.3	70	5 × 7	1.7	110	5 × 7	1.7	110	6.3 × 7	0.8	160
33	330	5 × 7	1.7	110	5 × 7	1.7	110	6.3 × 7	0.8	160	6.3 × 7	0.8	160	8 × 7	0.5	200
47	470	5 × 7	1.7	110	6.3 × 7	0.8	160	6.3 × 7	0.8	160	8 × 7	0.5	200			
68	680	6.3 × 7	0.8	160	6.3 × 7	0.8	160	8 × 7	0.5	200	8 × 7	0.5	200			
100	101	6.3 × 7	0.8	160	8 × 7	0.5	200	8 × 7	0.5	200						
150	151	8 × 7	0.5	200	8 × 7	0.5	200							Case size φD × L (mm)	Impe-dance	Rated ripple
220	221	8 × 7	0.5	200												

Max. Impedance (Ω) at 20˚C 100kHz
Rated ripple current (mArms) at 105˚C 100kHz

● Frequency coefficient of rated ripple current

Frequency	50 Hz	120 Hz	300 Hz	1 kHz	10 kHz or more
Coefficient	0.35	0.50	0.64	0.83	1.00

Please refer to page 20, 21, 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.

nichicon

UVK

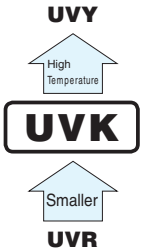
Miniature Sized

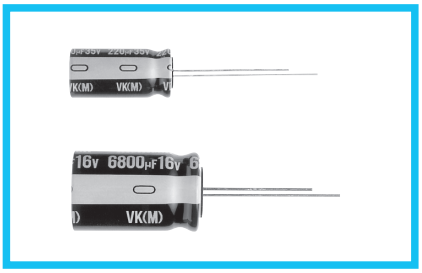
Smaller

Anti-Solvent Feature (Through 100V only)

- One rank smaller case sizes than UVR.
- Compliant to the RoHS directive (2011/65/EU).

Values marked with an ※ in the dimension table are scheduled to be discontinued and are not recommended for new designs.





■Specifications

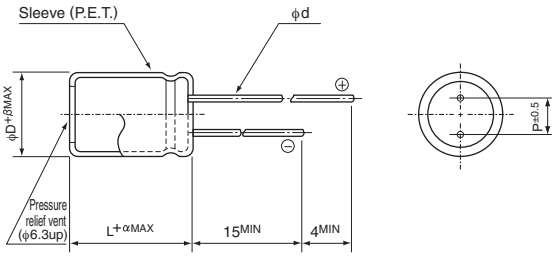
Item	Performance Characteristics
Category Temperature Range	−40 to +85˚C (6.3V to 400V), −25˚C to +85˚C (450V)
Rated Voltage Range	6.3 to 450V
Rated Capacitance Range	0.1 to 68000μF
Capacitance Tolerance	±20% at 120Hz, 20˚C
Leakage Current	Rated voltage (V) | 6.3 to 100V: After 1 minute's application of rated voltage at 20°C, leakage current is not more than 0.03CV or 4 (μA), whichever is greater. After 2 minutes' application of rated voltage at 20°C, leakage current is not more than 0.01CV or 3 (μA), whichever is greater. | 160 to 450V: After 1 minute's application of rated voltage at 20°C, CV ≦ 1000 I = 0.1CV+40μA or less. After 1 minute's application of rated voltage at 20°C, CV>1000 : I = 0.04CV+100 (μA) or less
Tangent of loss angle (tan δ)	For capacitance of more than 1000μF, add 0.02 for every increase of 1000μF. Measurement frequency : 120Hz at 20˚C
Stability at Low Temperature	Measurement frequency : 120Hz
Endurance	The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 2000 hours at 85°C.
Shelf Life	After storing the capacitors under no load at 85˚C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.
Marking	Printed with white color letter on black sleeve.

Rated voltage (V)	6.3	10	16	25	35	50	63	100	160 to 250	350 to 450
tan δ (MAX.)	0.28	0.24	0.20	0.16	0.14	0.12	0.10	0.08	0.20	0.25

Rated voltage (V)		6.3	10	16	25	35	50 to 100	160 to 200	250 to 350	400	450
Impedance ratio	Z−25˚C / Z+20˚C	5	4	3	2	2	2	3	4	6	15
ZT / Z20 (MAX.)	Z−40˚C / Z+20˚C	12	10	8	5	4	3	4	8	10	—

Capacitance change	Within ±20% of the initial capacitance value
tan δ	200% or less than the initial specified value
Leakage current	Less than or equal to the initial specified value

■Radial Lead Type



(mm)

φD	5	6.3	8	10	12.5	16	18	20	22	25
P	2.0	2.5	3.5	5.0	5.0	7.5	7.5	10.0	10.0	12.5
φd	0.5	0.5	0.6	0.6	0.6	0.8	0.8	1.0	1.0	1.0
β	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.0	1.0

α	
	(L<20) 1.5
	(L≧20) 2.0

• Please refer to page 20 about the end seal configuration.

Type numbering system (Example : 10V 330μF)

1	2	3	4	5	6	7	8	9	10	11
U	V	K	1	A	3	3	1	M	E	D

Configuration※
Capacitance tolerance (±20%)
Rated capacitance (330μF)
Rated voltage (10V)
Series name
Type

※ Configuration

φ D	Pb-free leadwire Pb-free PET sleeve
5	DD
6.3	ED
8 · 10	PD
12.5 to 18	HD
20 to 25	RD

Please refer to page 20, 21, 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.

●Dimension table in next page.

UVK

■Dimensions

Cap.(μF) \ V / Code	6.3		10		16		25		35		50		63	
	0J		1A		1C		1E		1V		1H		1J	
0.1	0R1										※5 × 11	1.3		
0.22	R22										※5 × 11	2.9		
0.33	R33										※5 × 11	4.3		
0.47	R47										※5 × 11	6.2		
1	010										※5 × 11	17		
2.2	2R2										5 × 11	28		
3.3	3R3										5 × 11	35		
4.7	4R7										5 × 11	40		
10	100										5 × 11	60		
22	220										5 × 11	95	5 × 11	100
33	330										5 × 11	125	6.3 × 11	140
47	470								5 × 11	130	6.3 × 11	155	6.3 × 11	170
68	680								6.3 × 11	160	6.3 × 11	210	8 × 11.5	220
100	101							5 × 11	180	6.3 × 11	210	8 × 11.5	260	8 × 11.5	280
220	221			5 × 11	220	6.3 × 11	260	6.3 × 11	280	8 × 11.5	350	10 × 12.5	430	10 × 16	490
330	331			6.3 × 11	290	6.3 × 11	320	8 × 11.5	390	10 × 12.5	490	10 × 16	590	10 × 20	710
470	471			6.3 × 11	350	8 × 11.5	440	10 × 12.5	550	10 × 16	650	10 × 20	760	12.5 × 20	900
1000	102	8 × 11.5	540	10 × 12.5	650	10 × 12.5	700	10 × 16	860	12.5 × 20	1150	12.5 × 25	1350	16 × 25	1300
2200	222	10 × 16	890	10 × 16	990	10 × 20	1000	12.5 × 25	1550	16 × 25	1800	16 × 31.5	1980	18 × 35.5	2300
3300	332	10 × 20	1190	12.5 × 20	1450	12.5 × 25	1700	16 × 25	1980	16 × 31.5	2100	18 × 35.5	2500	20 × 40	2700
4700	472	12.5 × 20	1550	12.5 × 25	1800	16 × 25	2100	16 × 25	2200	16 × 35.5	2500	20 × 40	2900	22 × 50	3400
6800	682	12.5 × 25	1920	16 × 25	2250	16 × 25	2250	16 × 35.5	2600	18 × 40	2800	22 × 50	3500	25 × 50	3900
10000	103	16 × 25	2350	16 × 31.5	2550	16 × 35.5	2710	18 × 40	2800	22 × 50	3700	25 × 50	4000		
15000	153	16 × 31.5	2550	16 × 35.5	2880	18 × 40	3100	22 × 50	3800	25 × 50	4300				
22000	223	18 × 35.5	3200	18 × 40	3400	22 × 40	3800	25 × 50	4500						
33000	333	20 × 40	3500	22 × 50	4500	25 × 50	4800								
47000	473	22 × 50	3900	25 × 50	5000									Case size φD×L (mm)	Rated ripple
68000	683	25 × 50	4300												

Cap.(μF) \ V / Code	100		160		200		250		350		400		450	
	2A		2C		2D		2E		2V		2G		2W	
0.1	0R1	※5 × 11	2.1			※6.3 × 11	2.1							
0.22	R22	※5 × 11	4.7			※6.3 × 11	4.7							
0.33	R33	※5 × 11	7			※6.3 × 11	7							
0.47	R47	※5 × 11	10			6.3 × 11	15					6.3 × 11	12		
1	010	※5 × 11	21			6.3 × 11	22					6.3 × 11	20		
2.2	2R2	5 × 11	30			6.3 × 11	33			6.3 × 11	30	8 × 11.5	38	8 × 11.5	28
3.3	3R3	5 × 11	40			6.3 × 11	40	6.3 × 11	40	8 × 11.5	43	8 × 11.5	48	10 × 12.5	40
4.7	4R7	5 × 11	45			6.3 × 11	50	6.3 × 11	50	8 × 11.5	55	10 × 12.5	60	10 × 12.5	46
10	100	5 × 11	70	8 × 11.5	80	8 × 11.5	80	10 × 12.5	100	10 × 12.5	90	10 × 16	90	10 × 20	80
22	220	6.3 × 11	130	10 × 12.5	130	10 × 16	150	10 × 20	150	12.5 × 20	150	12.5 × 25	200	12.5 × 25	140
33	330	8 × 11.5	180	10 × 16	180	10 × 20	200	10 × 20	200	12.5 × 25	240	16 × 25	240	16 × 25	180
47	470	8 × 11.5	200	10 × 20	210	12.5 × 20	270	12.5 × 20	270	16 × 25	300	16 × 25	280	16 × 31.5	220
68	680	10 × 12.5	270	12.5 × 20	350	12.5 × 25	350	16 × 25	380	16 × 25	400	16 × 31.5	340	18 × 35.5	260
100	101	10 × 16	340	12.5 × 25	430	16 × 25	450	16 × 25	440	18 × 35.5	520	18 × 35.5	440	18 × 40	280
220	221	12.5 × 20	550	16 × 31.5	580	16 × 35.5	700	18 × 35.5	680	22 × 50	760	22 × 50	650	25 × 50	350
330	331	12.5 × 25	760	18 × 35.5	800	18 × 40	950	20 × 40	1000	25 × 50	1000				
470	471	16 × 25	1000	18 × 40	1200	22 × 40	1300	22 × 50	1400						
1000	102	18 × 35.5	1350	25 × 50	1900										
2200	222	22 × 50	2400											Case size φD×L (mm)	Rated ripple
3300	332	25 × 50	2900												

Rated ripple current (mArms) at 85˚C 120Hz

● Frequency coefficient of rated ripple current

V	Cap.(μF) \ Frequency	50Hz	120Hz	300Hz	1 kHz	10kHz or more
6.3 to 100	0.1 to 68	0.75	1.00	1.35	1.57	2.00
	100 to 470	0.80	1.00	1.23	1.34	1.50
	1000 to 68000	0.85	1.00	1.10	1.13	1.15
160 to 450	0.1 to 220	0.80	1.00	1.25	1.40	1.60
	330 to 1000	0.90	1.00	1.10	1.13	1.15

nichicon

UVR

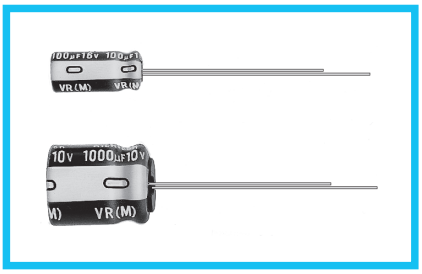
Miniature Sized

Anti-Solvent Feature (Through 100V only)

- One rank smaller case sizes than UVX.
- Compliant to the RoHS directive (2011/65/EU).

Values marked with an ※ in the dimension table are scheduled to be discontinued and are not recommended for new designs.

UVZ
↑ High Temperature
UVR
↓ Smaller
UVK



■Specifications

Item	Performance Characteristics
Category Temperature Range	−40 to +85˚C (6.3V to 400V), −25 to +85˚C (450V)
Rated Voltage Range	6.3 to 450V
Rated Capacitance Range	0.1 to 33000μF
Capacitance Tolerance	±20% at 120Hz, 20˚C
Leakage Current	Rated voltage (V) | 6.3 to 100V: After 1 minute's application of rated voltage at 20°C, leakage current is not more than 0.03CV or 4 (μA), whichever is greater. After 2 minutes' application of rated voltage at 20°C, leakage current is not more than 0.01CV or 3 (μA), whichever is greater. | 160 to 450V: After 1 minute's application of rated voltage at 20°C, CV ≦ 1000 : I = 0.1CV+40μA or less; After 1 minute's application of rated voltage at 20°C, CV > 1000 : I = 0.04CV+100 (μA) or less
Tangent of loss angle (tan δ)	For capacitance of more than 1000μF, add 0.02 for every increase of 1000μF. Measurement frequency : 120Hz at 20˚C

Rated voltage (V)	6.3	10	16	25	35	50	63	100	160 to 315	350 to 450
tan δ (MAX.)	0.28	0.24	0.20	0.16	0.14	0.12	0.10	0.08	0.20	0.25

Stability at Low Temperature — Measurement frequency : 120Hz

Rated voltage (V)		6.3	10	16	25	35	50	63	100	160 to 200	250 to 350	400	450
Impedance ratio	Z−25˚C / Z+20˚C	5	4	3	2	2	2	2	2	3	4	6	15
ZT / Z20 (MAX.)	Z−40˚C / Z+20˚C	12	10	8	5	4	3	3	3	4	8	10	—

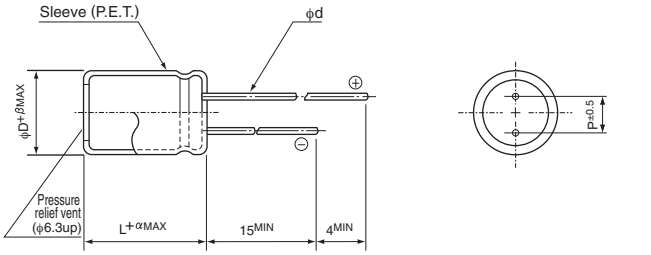
Endurance — The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 2000 hours at 85°C.

Capacitance change	Within ±20% of the initial capacitance value
tan δ	200% or less than the initial specified value
Leakage current	Less than or equal to the initial specified value

Shelf Life — After storing the capacitors under no load at 85˚C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.

Marking — Printed with white color letter on black sleeve.

■Radial Lead Type



(mm)

φD	4	5	6.3	8	10	12.5	16	18	20	22	25
P	1.5	2.0	2.5	3.5	5.0	5.0	7.5	7.5	10.0	10.0	12.5
φd	0.45	0.5	0.5	0.6	0.6	0.6	0.8	0.8	1.0	1.0	1.0
β	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.0	1.0

α	
	(L<20) 1.5
	(L≧20) 2.0

• Please refer to page 20 about the end seal configuration.

Type numbering system (Example : 10V 330μF)

1	2	3	4	5	6	7	8	9	10	11	12
U	V	R	1	A	3	3	1	M	E	D	

- 12: Size code
- 10–11: Configuration※
- 9: Capacitance tolerance (±20%)
- 6–8: Rated capacitance (330μF)
- 4–5: Rated voltage (10V)
- 3: Series name
- 1–2: Type

※ Configuration

φ D	Pb-free leadwire Pb-free PET sleeve
4	DD6
5	DD
6.3	ED
8 · 10	PD
12.5 to 18	HD
20 to 25	RD

Please refer to page 20, 21, 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.

●Dimension table in next page.

UVR

■Dimensions

Cap.(μF) \ V / Code	6.3		10		16		25		35		50		63		100	
	0J		1A		1C		1E		1V		1H		1J		2A	
0.1	0R1										※●5 × 11	1.3			※5 × 11	2.1
0.22	R22										※●5 × 11	2.9			※5 × 11	4.7
0.33	R33										※●5 × 11	4.3			※5 × 11	7
0.47	R47										※●5 × 11	6.2			※5 × 11	10
1	010										※●5 × 11	17			※5 × 11	21
2.2	2R2										● 5 × 11	28			5 × 11	30
3.3	3R3										● 5 × 11	35			5 × 11	40
4.7	4R7						● 5 × 11	35	● 5 × 11	40	● 5 × 11	40			5 × 11	45
10	100				● 5 × 11	50	● 5 × 11	55	● 5 × 11	60	● 5 × 11	60	5 × 11	65	6.3 × 11	75
22	220	● 5 × 11	65	● 5 × 11	65	● 5 × 11	75	● 5 × 11	80	● 5 × 11	90	5 × 11	95	5 × 11	100	6.3 × 11	130
33	330	● 5 × 11	80	● 5 × 11	85	● 5 × 11	90	● 5 × 11	95	5 × 11	105	5 × 11	125	6.3 × 11	140	8 × 11.5	180
47	470	● 5 × 11	95	● 5 × 11	100	● 5 × 11	110	● 5 × 11	115	5 × 11	130	6.3 × 11	155	6.3 × 11	170	10 × 12.5	230
100	101	● 5 × 11	135	● 5 × 11	145	5 × 11	160	6.3 × 11	190	6.3 × 11	210	8 × 11.5	260	10 × 12.5	300	10 × 20	370
220	221	5 × 11	200	6.3 × 11	240	6.3 × 11	260	8 × 11.5	330	10 × 12.5	385	10 × 12.5	430	10 × 16	490	12.5 × 25	620
330	331	6.3 × 11	270	6.3 × 11	290	8 × 11.5	370	10 × 12.5	440	10 × 12.5	490	10 × 16	590	10 × 20	710	12.5 × 25	760
470	471	6.3 × 11	320	6.3 × 11	350	8 × 11.5	440	10 × 12.5	550	10 × 16	650	12.5 × 20	760	12.5 × 20	900	16 × 25	1000
1000	102	8 × 11.5	540	10 × 12.5	650	10 × 16	790	10 × 20	960	12.5 × 20	1150	12.5 × 25	1350	16 × 25	1300	18 × 40	1380
2200	222	10 × 20	1000	10 × 20	1100	12.5 × 20	1300	12.5 × 25	1550	16 × 25	1800	16 × 35.5	2100	18 × 35.5	2300	22 × 50	2400
																▲25 × 40	2400
3300	332	10 × 20	1190	12.5 × 20	1450	12.5 × 25	1700	16 × 25	1980	16 × 35.5	2280	18 × 35.5	2500	20 × 40	2700	25 × 50	2900
												▲22 × 30	2450	▲25 × 30	2600		
4700	472	12.5 × 20	1550	12.5 × 25	1800	16 × 25	2100	16 × 31.5	2450	18 × 35.5	2700	20 × 40	2900	22 × 50	3400		
										▲20 × 31		▲25 × 30	2900	▲25 × 40	3200		
6800	682	12.5 × 25	1920	16 × 25	2250	16 × 35.5	2650	18 × 35.5	2900	20 × 40	3000	22 × 50	3500	25 × 50	3900		
								▲20 × 31	2700	▲25 × 30	2900	▲25 × 40	3300				
10000	103	16 × 25	2350	16 × 35.5	2700	18 × 35.5	2950	20 × 40	3000	22 × 50	3700	25 × 50	4000				
						▲20 × 31	3000	▲25 × 30	2900	▲25 × 40	3600						
15000	153	16 × 35.5	2850	18 × 35.5	3100	20 × 40	3400	22 × 50	3800	25 × 50	4300						
						▲25 × 30	3300	▲25 × 40	3600								
22000	223	18 × 40	3350	20 × 40	3700	22 × 50	4200	25 × 50	4500								
		▲22 × 30	3200	▲25 × 30	3300	▲25 × 40	4000										
33000	333	22 × 50	3900	22 × 50	4500	25 × 50	4800									Case size ϕD × L (mm)	Rated ripple
		▲25 × 40	3800	▲25 × 40	4800												

Cap.(μF) \ V / Code	160		200		250		315		350		400		450	
	2C		2D		2E		2F		2V		2G		2W	
0.47	R47	6.3 × 11	15	6.3 × 11	15	6.3 × 11	15							
1	010	6.3 × 11	22	6.3 × 11	22	6.3 × 11	22	6.3 × 11	22	6.3 × 11	22	8 × 11.5	25	8 × 11.5	23
2.2	2R2	6.3 × 11	33	6.3 × 11	33	6.3 × 11	33	8 × 11.5	33	8 × 11.5	38	10 × 12.5	45	10 × 12.5	35
3.3	3R3	6.3 × 11	40	6.3 × 11	40	8 × 11.5	46	10 × 12.5	55	10 × 12.5	55	10 × 12.5	55	10 × 16	45
4.7	4R7	6.3 × 11	50	8 × 11.5	55	8 × 11.5	55	10 × 12.5	65	10 × 12.5	65	10 × 16	70	10 × 20	55
10	100	8 × 11.5	80	10 × 12.5	95	10 × 16	105	10 × 20	115	10 × 20	115	12.5 × 20	130	12.5 × 20	90
22	220	10 × 16	155	10 × 20	170	12.5 × 20	190	12.5 × 20	190	12.5 × 25	200	16 × 25	240	16 × 25	165
33	330	10 × 20	205	12.5 × 20	230	12.5 × 20	230	16 × 25	275	16 × 25	275	16 × 31.5	300	16 × 35.5	230
47	470	12.5 × 20	270	12.5 × 20	270	12.5 × 25	300	16 × 25	340	16 × 35.5	380	16 × 35.5	370	18 × 40	300
														▲22 × 30	290
100	101	12.5 × 25	430	16 × 31.5	530	16 × 31.5	520	18 × 35.5	560	18 × 40	590	20 × 40	550	22 × 40	350
										▲22 × 30	570	▲25 × 30	530		
220	221	16 × 35.5	800	18 × 35.5	810	20 × 40	740	22 × 50	850	22 × 50	850	25 × 50	750		
						▲22 × 30	820	▲25 × 30	770	▲25 × 40	890				
330	331	18 × 40	940	20 × 40	1130	22 × 50	1170	25 × 50	1250						
		▲22 × 30	900	▲25 × 30	1090	▲25 × 30	970								
470	471	22 × 40	1410	22 × 50	1490	25 × 50	1600							Case size ϕD × L (mm)	Rated ripple
		▲25 × 30	1290	▲25 × 40	1550										
1000	102	25 × 50	1900												

Size 4×11 is available for capacitors marked "●"
In this case, 6 will be put at 12th digit of type numbering system "▲"

Rated ripple current (mArms) at 85°C 120Hz

● Frequency coefficient of rated ripple current

V	Cap.(μF) \ Frequency	50Hz	120Hz	300Hz	1 kHz	10kHz or more
6.3 to 100	0.1 to 47	0.75	1.00	1.35	1.57	2.00
	100 to 470	0.80	1.00	1.23	1.34	1.50
	1000 to 33000	0.85	1.00	1.10	1.13	1.15
160 to 450	0.47 to 220	0.80	1.00	1.25	1.40	1.60
	330 to 1000	0.90	1.00	1.10	1.13	1.15

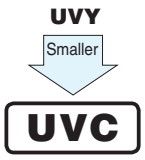
nichicon

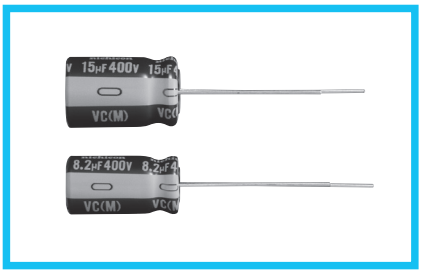
UVC

Ultra-Miniature-Sized for adapters.

Smaller

- One rank smaller case sizes than UVY.
- Swited for adapter circuit.
- Compliant to the RoHS directive (2011/65/EU).

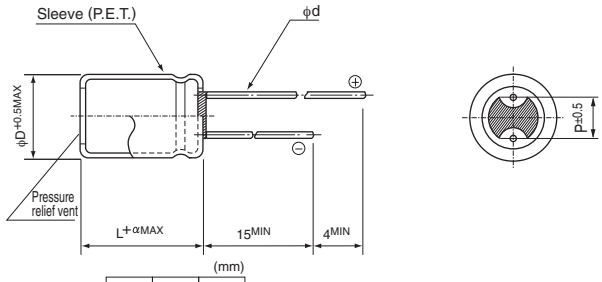




■Specifications

Item	Performance Characteristics
Category Temperature Range	−40 to +105˚C
Rated Voltage Range	400V
Rated Capacitance Range	4.7 to 18μF
Capacitance Tolerance	±20% at 120Hz, 20˚C
Leakage Current	I = 0.04CV+100 (μA) or less
Tangent of loss angle (tan δ)	Rated voltage (V): 400; tan δ (MAX.): 0.25. Measurement frequency : 120Hz, at 20˚C
Stability at Low Temperature	Rated voltage (V): 400; Impedance ratio Z−25˚C / Z+20˚C: 6; ZT / Z20 (MAX.) Z−40˚C / Z+20˚C: 10. Measurement frequency : 120Hz
Endurance	The specifications listed at right shall be met when the capacitors are restored to 20°C after D.C. bias plus rated ripple current is applied for 2000 hours at 105°C, the peak voltage shall not exceed the rated voltage. Capacitance change: Within ±25% of the initial capacitance value; tan δ: 200% or less than the initial specified value; Leakage current: Less than or equal to the initial specified value
Shelf Life	After storing the capacitors under no load at 105˚C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.
Marking	Printed with white color letter on dark brown sleeve.

■Radial Lead Type



(mm)

φD	8	10
P	3.5	5.0
φd	0.6	0.6

α	(L =11.5) 1.5
	(L≧12.5) 2.0

•Please refer to page 20 about the end seal configuration.

Type numbering system (Example : 400V 15μF)

1	2	3	4	5	6	7	8	9	10	11
U	V	C	2	G	1	5	0	M	P	D

Configuration※
Capacitance tolerance (±20%)
Rated capacitance (15μF)
Rated voltage (400V)
Series name
Type

※ Configuration

φD	Pb-free leadwire Pb-free PET sleeve
8 · 10	PD

■Dimensions

Cap.(μF) \ V	Code	400 (2G)	
4.7	4R7	8 × 11.5	70
5.6	5R6	8 × 11.5	70
8.2	8R2	8 × 16	85
10	100	10 × 12.5	100
12	120	8 × 20	120
15	150	10 × 16	150
18	180	10 × 20	200
		Case size φD × L (mm)	Rated ripple

Rated ripple current (mArms) at 105˚C 120Hz

● Frequency coefficient of rated ripple current

Cap.(μF) \ Frequency	50Hz	120Hz	500Hz	1 kHz	10kHz or more
4.7 to 8.2	0.65	1.00	1.20	1.30	1.50
10 to 18	0.80	1.00	1.20	1.30	1.50

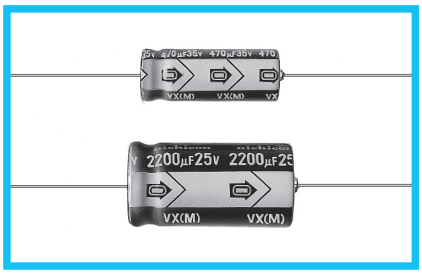
Please refer to page 20, 21, 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.

TVX

Standard, For General Purposes - Axial Lead Type

(02 type)

Anti-Solvent Feature
(Through 100V only)



- Axial lead type of standard series for general purposes.
- Compliant to the RoHS directive (2011/65/EU).

■Specifications

Item	Performance Characteristics
Category Temperature Range	−40 to +85°C (6.3 to 250V), −25 to +85°C (315 to 450V)
Rated Voltage Range	6.3 to 450V
Rated Capacitance Range	0.47 to 10000μF
Capacitance Tolerance	±20% at 120Hz, 20°C
Leakage Current	Rated voltage (V): 6.3 to 100 — Leakage current: After 1 minute's application of rated voltage at 20°C, not more than 0.03CV or 4 (μA), whichever is greater. After 2 minutes' application of rated voltage at 20°C, not more than 0.01CV or 3 (μA), whichever is greater. / 160 to 450 — In case of CV ≦ 1000: After 1 minute's application of rated voltage at 20°C, not more than 0.1CV+40 (μA). In case of CV > 1000: After 1 minute's application of rated voltage at 20°C, not more than 0.04CV+100 (μA).
Tangent of loss angle (tan δ)	Measurement frequency : 120Hz at 20°C

Rated voltage (V)	6.3	10	16	25	35	50	63 to 100	160 to 315	350 to 450
tan δ (MAX.)	0.24	0.20	0.16	0.14	0.12	0.10	0.08	0.20	0.25

For capacitance of more than 1000μF, add 0.02 for every increase of 1000μF.

Stability at Low Temperature — Measurement frequency : 120Hz

Rated voltage (V)		6.3	10	16	25	35 to 100	160 to 250	315 · 350	400 · 450
Impedance ratio ZT / Z20 (MAX.)	Z−25°C / Z+20°C	4	3	2	2	2	4	6	15
	Z−40°C / Z+20°C	10	8	6	4	3	12	—	—

Endurance — The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 2000 hours at 85°C.

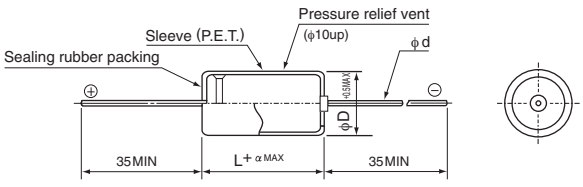
Capacitance change	Within ±20% of the initial capacitance value
tan δ	200% or less than the initial specified value
Leakage current	Less than or equal to the initial specified value

Shelf Life — After storing the capacitors under no load at 85°C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the characteristic requirements at right.

Capacitance change	Within ±20% of the initial capacitance value
tan δ	200% or less than the initial specified value
Leakage current	Less than or equal to the initial specified value

Marking — Printed with white color letter on purple blue sleeve.

■Axial Lead Type



α	
(φD < 10)	1
(φD ≧ 10)	2

(mm)

φD	5 to 13	16 to 18
φd	0.6	0.8

Type numbering system (Example : 10V 330μF)

1	2	3	4	5	6	7	8	9	10	11
T	V	X	1	A	3	3	1	M	A	D

- 10 Configuration ※
- 9 Capacitance tolerance (±20%)
- 6 7 8 Rated capacitance (330μF)
- 4 5 Rated voltage (10V)
- 1 2 3 Series name
- Type

※Configuration

φD	Pb-free leadwire Pb-free PET sleeve
5 to 8	AD
10 to 18	CD

Please refer to page 22 about the taped product spec.
Please refer to page 4 for the minimum order quantity.

●Dimension table in next page.

TVX (02 type)

■Dimensions

Cap.(μF) \ V	Code	6.3		10		16		25		35		50		63		100	
		0J		1A		1C		1E		1V		1H		1J		2A	
0.47	R47											5 × 12	5			5 × 12	10
1	010											5 × 12	10			5 × 12	18
2.2	2R2											5 × 12	23			5 × 12	28
3.3	3R3											5 × 12	28			5 × 12	34
4.7	4R7											5 × 12	34			5 × 12	40
10	100											5 × 12	50	5 × 12	55	6.3 × 12	60
22	220									5 × 12	70	6.3 × 12	85	6.3 × 12	90	8 × 16	120
33	330							5 × 12	80	6.3 × 12	90	6.3 × 16	110	6.3 × 16	120	8 × 16	150
47	470					5 × 12	85	6.3 × 12	100	6.3 × 16	120	6.3 × 16	130	8 × 16	160	8 × 20	190
100	101	5 × 12	110	6.3 × 12	130	6.3 × 16	160	6.3 × 16	170	8 × 16	210	8 × 16	220	8 × 20	260	10 × 26	340
220	221	6.3 × 16	200	6.3 × 16	210	8 × 16	260	8 × 16	280	8 × 20	340	10 × 21	410	10 × 26	480	13 × 26	560
330	331	6.3 × 16	250	8 × 16	300	8 × 16	320	8 × 20	380	10 × 21	460	10 × 26	560	13 × 26	650	13 × 31.5	750
470	471	8 × 16	330	8 × 16	350	8 × 20	430	10 × 26	510	10 × 26	610	13 × 26	730	13 × 31.5	840	16 × 31.5	970
1000	102	10 × 21	600	10 × 21	640	10 × 26	770	13 × 26	900	13 × 31.5	1060	16 × 31.5	1260	16 × 31.5	1330		
2200	222	13 × 26	1020	13 × 26	1090	13 × 31.5	1180	16 × 31.5	1480	16 × 31.5	1580	18 × 41	1920				
3300	332	13 × 26	1200	13 × 31.5	1390	16 × 31.5	1620	16 × 41.5	1710	16 × 41.5	2050						
4700	472	16 × 31.5	1500	16 × 31.5	1730	16 × 41.5	1840	18 × 41	2170								
6800	682	16 × 31.5	1840	16 × 41.5	1930	18 × 41	2310										
10000	103	16 × 41.5	2260	18 × 41	2350												

Cap.(μF) \ V	Code	160		200		250		315		350		400		450	
		2C		2D		2E		2F		2V		2G		2W	
1	010	6.3 × 12	13	6.3 × 12	13	6.3 × 16	14	6.3 × 16	14	6.3 × 16	12	8 × 16	14	8 × 16	14
2.2	2R2	6.3 × 16	23	6.3 × 16	23	8 × 16	27	8 × 16	27	8 × 16	24	8 × 20	28	10 × 21	31
3.3	3R3	8 × 16	33	8 × 16	33	8 × 16	33	8 × 20	36	8 × 20	32	10 × 21	38	10 × 21	38
4.7	4R7	8 × 16	39	8 × 16	39	8 × 20	45	8 × 20	45	10 × 21	46	10 × 21	46	10 × 26	50
10	100	8 × 20	60	10 × 21	70	10 × 21	70	10 × 26	80	13 × 26	85	13 × 26	85	13 × 26	85
22	220	10 × 26	120	13 × 26	140	13 × 26	140	13 × 31.5	150	13 × 31.5	140	16 × 31.5	150	16 × 31.5	150
33	330	13 × 26	170	13 × 26	170	13 × 31.5	190	16 × 31.5	210	16 × 31.5	190	16 × 41.5	210	18 × 41	230
47	470	13 × 31.5	230	13 × 31.5	230	16 × 31.5	260	16 × 31.5	260	16 × 41.5	260	18 × 41	290	Case size φD × L (mm)	Rated ripple
100	101	16 × 41.5	430	16 × 41.5	430	16 × 41.5	430								

Rated ripple current (mArms) at 85°C 120Hz

●Frequency coefficient of rated ripple current

V	Cap.(μF) \ Frequency	120 Hz	300 Hz	1kHz	10kHz or more
6.3 to 100	0.47 to 47	1.00	1.35	1.57	2.00
	100 to 470	1.00	1.23	1.34	1.50
	1000 to 10000	1.00	1.10	1.13	1.15
160 to 450	1 to 100	1.00	1.25	1.40	1.60

UVY

Wide Temperature Range

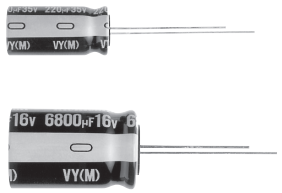
Smaller

Anti-Solvent Feature (Through 100V only)

- One rank smaller case sizes than UVZ.
- Compliant to the RoHS directive (2011/65/EU).

Values marked with an ※ in the dimension table are scheduled to be discontinued and are not recommended for new designs.

UVZ
Smaller
UVY
High Temperature
UVK



■Specifications

Item	Performance Characteristics
Category Temperature Range	−55 to +105˚C (6.3 to 100V), −40 to +105˚C (160 to 400V), −25 to +105˚C (450V)
Rated Voltage Range	6.3 to 450V
Rated Capacitance Range	0.1 to 68000μF
Capacitance Tolerance	±20% at 120Hz, 20˚C
Leakage Current	Rated voltage (V) — 6.3 to 100: After 1 minute's application of rated voltage at 20°C, leakage current is not more than 0.03CV or 4 (μA), whichever is greater. After 2 minutes' application of rated voltage at 20°C, leakage current is not more than 0.01CV or 3 (μA), whichever is greater. 160 to 450: After 1 minute's application of rated voltage at 20°C, CV ≦ 1000 : I =0.1CV+40 (μA) or less; After 1 minute's application of rated voltage at 20°C, CV > 1000 : I =0.04CV+100 (μA) or less
Tangent of loss angle (tan δ)	For capacitance of more than 1000μF, add 0.02 for every increase of 1000μF. Measurement frequency : 120Hz at 20˚C

Rated voltage (V)	6.3	10	16	25	35	50	63	100	160 to 250	350 to 450
tan δ (MAX.)	0.28	0.24	0.20	0.16	0.14	0.12	0.10	0.08	0.20	0.25

Stability at Low Temperature — Measurement frequency : 120Hz

Rated voltage (V)		6.3	10	16	25	35 to 50	63 to 100	160 to 200	250 to 350	400	450
Impedance ratio	Z−25˚C / Z+20˚C	5	4	3	2	2	2	3	4	6	15
ZT / Z20 (MAX.)	Z−40˚C / Z+20˚C	10	8	6	4	3	3	4	8	10	—

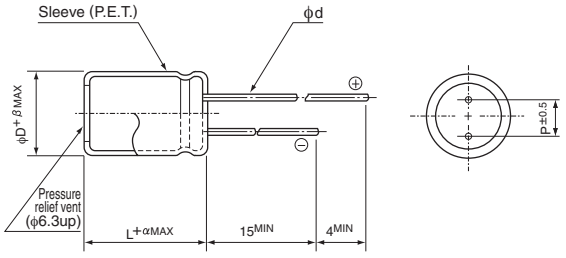
Endurance — The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 1000 hours at 105°C.

Capacitance change	Within ±20% of the initial capacitance value
tan δ	200% or less than the initial specified value
Leakage current	Less than or equal to the initial specified value

Shelf Life — After storing the capacitors under no load at 105˚C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.

Marking — Printed with white color letter on black sleeve.

■Radial Lead Type



(mm)

φD	5	6.3	8	10	12.5	16	18	20	22	25
P	2.0	2.5	3.5	5.0	5.0	7.5	7.5	10.0	10.0	12.5
φd	0.5	0.5	0.6	0.6	0.6	0.8	0.8	1.0	1.0	1.0
β	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.0	1.0

α	(L < 20) 1.5
	(L ≧ 20) 2.0

• Please refer to page 20 about the end seal configuration.

Type numbering system (Example : 10V 330μF)

1	2	3	4	5	6	7	8	9	10	11
U	V	Y	1	A	3	3	1	M	E	D

Configuration ※
Capacitance tolerance (±20%)
Rated capacitance (330μF)
Rated voltage (10V)
Series name
Type

※ Configuration

φ D	Pb-free leadwire Pb-free PET sleeve
5	DD
6.3	ED
8 · 10	PD
12.5 to 18	HD
20 to 25	RD

Please refer to page 20, 21, 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.

●Dimension table in next page.

UVY

■Dimensions

Cap.(μF) \ V	6.3		10		16		25		35		50		63	
Code	0J		1A		1C		1E		1V		1H		1J	
0.1	0R1										※5 × 11	1.3		
0.22	R22										※5 × 11	2.9		
0.33	R33										※5 × 11	4.3		
0.47	R47										※5 × 11	7		
1	010										※5 × 11	13		
2.2	2R2										5 × 11	20		
3.3	3R3										5 × 11	25		
4.7	4R7										5 × 11	30		
10	100										5 × 11	46		
22	220										5 × 11	68	5 × 11	71
33	330										5 × 11	90	6.3 × 11	100
47	470								5 × 11	93	6.3 × 11	115	6.3 × 11	120
68	680								6.3 × 11	110	6.3 × 11	150	8 × 11.5	155
100	101							5 × 11	125	6.3 × 11	150	8 × 11.5	190	8 × 11.5	200
220	221			5 × 11	155	6.3 × 11	190	6.3 × 11	200	8 × 11.5	250	10 × 12.5	300	10 × 16	335
330	331			6.3 × 11	210	6.3 × 11	225	8 × 11.5	275	10 × 12.5	350	10 × 16	410	10 × 20	510
470	471			6.3 × 11	250	8 × 11.5	315	10 × 12.5	380	10 × 16	460	10 × 20	540	12.5 × 20	640
1000	102	8 × 11.5	390	10 × 12.5	460	10 × 12.5	500	10 × 16	610	12.5 × 20	810	12.5 × 25	950	16 × 25	930
2200	222	10 × 16	635	10 × 16	705	10 × 20	710	12.5 × 25	1090	16 × 25	1260	16 × 31.5	1410	18 × 35.5	1650
3300	332	10 × 20	840	12.5 × 20	1000	12.5 × 25	1170	16 × 25	1400	16 × 31.5	1500	18 × 35.5	1770	20 × 40	1950
4700	472	12.5 × 20	1090	12.5 × 25	1260	16 × 25	1500	16 × 25	1570	16 × 35.5	1780	20 × 40	2100	22 × 50	2450
6800	682	12.5 × 25	1350	16 × 25	1570	16 × 25	1600	16 × 35.5	1850	18 × 40	2000	22 × 50	2500	25 × 50	2800
10000	103	16 × 25	1650	16 × 31.5	1820	16 × 35.5	1930	18 × 40	2000	22 × 50	2650	25 × 50	2850		
15000	153	16 × 31.5	1820	16 × 35.5	2050	18 × 40	2210	22 × 50	2750	25 × 50	3100				
22000	223	18 × 35.5	2280	18 × 40	2420	22 × 40	2710	25 × 50	3250						
33000	333	20 × 40	2500	22 × 50	3210	25 × 50	3450								
47000	473	22 × 50	2780	25 × 50	3570									Case size φD × L (mm)	Rated ripple
68000	683	25 × 50	3070												

Cap.(μF) \ V	100		160		200		250		350		400		450	
Code	2A		2C		2D		2E		2V		2G		2W	
0.1	0R1	※5 × 11	1.5			※6.3 × 11	1.5							
0.22	R22	※5 × 11	3.4			※6.3 × 11	3.3							
0.33	R33	※5 × 11	5.0			※6.3 × 11	5							
0.47	R47	※5 × 11	7.1			6.3 × 11	11				6.3 × 11	8.5		
1	010	※5 × 11	15			6.3 × 11	16				6.3 × 11	14		
2.2	2R2	5 × 11	21			6.3 × 11	25		6.3 × 11	21	8 × 11.5	27	8 × 11.5	20
3.3	3R3	5 × 11	29			6.3 × 11	30	6.3 × 11	28	8 × 11.5	30	8 × 11.5	34	10 × 12.5	28
4.7	4R7	5 × 11	32			6.3 × 11	35	6.3 × 11	35	8 × 11.5	39	10 × 12.5	42	10 × 12.5	32
10	100	5 × 11	50	8 × 11.5	41	8 × 11.5	57	10 × 12.5	71	10 × 12.5	64	10 × 16	64	10 × 20	56
22	220	6.3 × 11	93	10 × 12.5	92	10 × 16	105	10 × 20	105	12.5 × 20	105	12.5 × 25	140	12.5 × 25	100
33	330	8 × 11.5	130	10 × 16	125	10 × 20	140	10 × 20	140	12.5 × 25	170	16 × 25	170	16 × 25	125
47	470	8 × 11.5	140	10 × 20	150	12.5 × 20	195	12.5 × 20	190	16 × 25	210	16 × 25	200	16 × 31.5	155
68	680	10 × 12.5	190	12.5 × 20	250	12.5 × 25	250	16 × 25	270	16 × 25	285	16 × 31.5	240	18 × 35.5	185
100	101	10 × 16	240	12.5 × 25	310	16 × 25	320	16 × 25	310	18 × 35.5	370	18 × 35.5	310	18 × 40	200
220	221	12.5 × 20	390	16 × 31.5	410	16 × 35.5	500	18 × 35.5	485	22 × 50	540	22 × 50	460	25 × 50	250
330	331	12.5 × 25	540	18 × 35.5	570	18 × 40	675	20 × 40	710	25 × 50	710				
470	471	16 × 25	715	18 × 40	855	22 × 40	925	22 × 50	1000						
1000	102	18 × 35.5	960	25 × 50	1350										
2200	222	22 × 50	1750											Case size φD × L (mm)	Rated ripple
3300	332	25 × 50	2070												

Rated ripple current (mArms) at 105˚C 120Hz

● Frequency coefficient of rated ripple current

V	Cap.(μF) \ Frequency	50Hz	120Hz	300Hz	1 kHz	10 kHz or more
6.3 to 100	0.1 to 68	0.75	1.00	1.35	1.57	2.00
	100 to 470	0.80	1.00	1.23	1.34	1.50
	1000 to 68000	0.85	1.00	1.10	1.13	1.15
160 to 450	0.1 to 220	0.80	1.00	1.25	1.40	1.60
	330 to 1000	0.90	1.00	1.10	1.13	1.15

nichicon

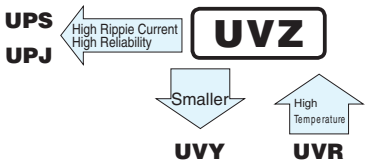
UVZ

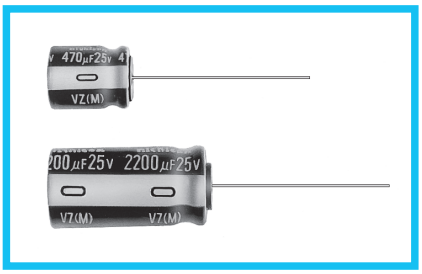
Wide Temperature Range

Anti-Solvent Feature
(Through 100V only)

- Small case sizes as same as UVR, but operating over wide temperature range of −55 to +105˚C.
- Compliant to the RoHS directive (2011/65/EU).

Values marked with an ※ in the dimension table are scheduled to be discontinued and are not recommended for new designs.





■Specifications

Item	Performance Characteristics
Category Temperature Range	−55 to +105˚C (6.3 to 100V) , −40 to +105˚C (160 to 400V), −25 to +105˚C (450V)
Rated Voltage Range	6.3 to 450V
Rated Capacitance Range	0.1 to 33000μF
Capacitance Tolerance	±20% at 120Hz, 20˚C
Leakage Current	Rated voltage (V) / 6.3 to 100: After 1 minute's application of rated voltage at 20°C, leakage current is not more than 0.03CV or 4 (μA), whichever is greater. After 2 minutes' application of rated voltage at 20°C, leakage current is not more than 0.01CV or 3 (μA), whichever is greater. / 160 to 450: After 1 minute's application of rated voltage at 20°C, CV ≦ 1000 : I = 0.1CV+40 (μA) or less. After 1 minute's application of rated voltage at 20°C, CV > 1000 : I = 0.04CV+100 (μA) or less
Tangent of loss angle (tan δ)	For capacitance of more than 1000μF, add 0.02 for every increase of 1000μF. Measurement frequency : 120Hz at 20˚C

Rated voltage (V)	6.3	10	16	25	35	50	63	100	160 to 315	350 to 450
tan δ (MAX.)	0.28	0.24	0.20	0.16	0.14	0.12	0.10	0.08	0.20	0.25

Stability at Low Temperature — Measurement frequency : 120Hz

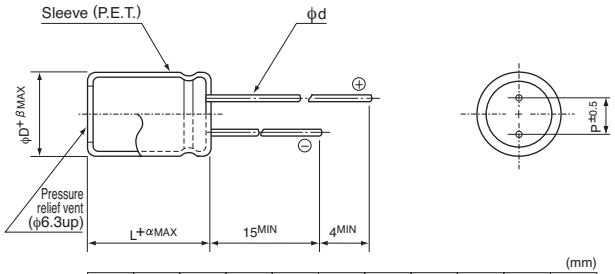
Rated voltage (V)		6.3	10	16	25	35	50	63	100	160 to 200	250 to 350	400	450
Impedance ratio ZT / Z20 (MAX.)	Z−25˚C / Z+20˚C	5	4	3	2	2	2	2	2	3	4	6	15
	Z−40˚C / Z+20˚C	10	8	6	4	3	3	3	3	4	8	10	—

Endurance — The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 1000 hours at 105°C.

Capacitance change	Within ±20% of the initial capacitance value
tan δ	200% or less than the initial specified value
Leakage current	Less than or equal to the initial specified value

Shelf Life	After storing the capacitors under no load at 105˚C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.
Marking	Printed with white color letter on black sleeve.

■Radial Lead Type



(mm)

φD	5	6.3	8	10	12.5	16	18	20	22	25
P	2.0	2.5	3.5	5.0	5.0	7.5	7.5	10.0	10.0	12.5
φd	0.5	0.5	0.6	0.6	0.6	0.8	0.8	1.0	1.0	1.0
β	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.0	1.0

α	(L<20) 1.5
	(L≧20) 2.0

• Please refer to page 20 about the end seal configuration.

Type numbering system (Example : 10V 330μF)

1	2	3	4	5	6	7	8	9	10	11
U	V	Z	1	A	3	3	1	M	E	D

Configuration ※
Capacitance tolerance (±20%)
Rated capacitance (330μF)
Rated voltage (10V)
Series name
Type

※ Configuration

φ D	Pb-free leadwire Pb-free PET sleeve
5	DD
6.3	ED
8 · 10	PD
12.5 to 18	HD
20 to 25	RD

Please refer to page 20, 21, 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.

●Dimension table in next page.

nichicon

URS

Compact & Low-profile Sized

Smaller

Anti-Solvent Feature (Through 100V only)

URZ

High Temperature

URS

- Compact & low profile case size.
- Compliant to the RoHS directive (2011/65/EU).

Values marked with an ※ in the dimension table are scheduled to be discontinued and are not recommended for new designs.

■Specifications

Item	Performance Characteristics
Category Temperature Range	−40 to +85˚C
Rated Voltage Range	6.3 to 400V
Rated Capacitance Range	0.1 to 10000μF
Capacitance Tolerance	±20% at 120Hz, 20˚C
Leakage Current	Rated voltage (V) | 6.3 to 100: After 1 minute's application of rated voltage at 20°C, leakage current is not more than 0.03CV or 4 (μA), whichever is greater. After 2 minutes' application of rated voltage at 20°C, leakage current is not more than 0.01CV or 3 (μA), whichever is greater. | 160 to 400: After 1 minute's application of rated voltage at 20°C, I = 0.04CV+100 (μA) or less
Tangent of loss angle (tan δ)	For capacitance of more than 1000μF, add 0.02 for every increase of 1000μF. Measurement frequency : 120Hz at 20˚C

Rated voltage (V)	6.3	10	16	25	35	50	63	100	160	200	250	400
tan δ (MAX.)	0.28	0.24	0.20	0.16	0.14	0.12	0.10	0.08	0.20	0.20	0.20	0.25

Stability at Low Temperature — Measurement frequency : 120Hz

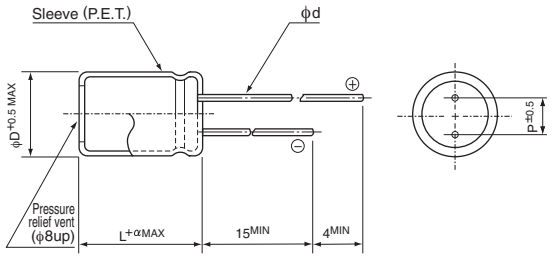
Rated voltage (V)		6.3	10	16	25	35	50	63	100	160	200	250	400
Impedance ratio ZT / Z20 (MAX.)	Z−25˚C / Z+20˚C	5	4	3	2	2	2	2	2	3	3	3	6
	Z−40˚C / Z+20˚C	12	10	8	5	4	3	3	3	4	4	6	10

Endurance — The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 2000 hours at 85°C.

Capacitance change	Within ±20% of the initial capacitance value
tan δ	200% or less than the initial specified value
Leakage current	Less than or equal to the initial specified value

Shelf Life	After storing the capacitors under no load at 85˚C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.
Marking	Printed with white color letter on black sleeve.

■Radial Lead Type



(mm)

φD	5	6.3	8	10	12.5	16	18	20
P	2.0	2.5	3.5	5.0	5.0	7.5	7.5	10.0
φd	0.5	0.5	0.6	0.6	0.6	0.8	0.8	1.0

α	(φD<20) 1.5
	(φD≧20) 2.0

• Please refer to page 20 about the end seal configuration.

Type numbering system (Example : 10V 330μF)

1	2	3	4	5	6	7	8	9	10	11	12
U	R	S	1	A	3	3	1	M	P	D	

Size code
Configuration ※
Capacitance tolerance (±20%)
Rated capacitance (330μF)
Rated voltage (10V)
Series name
Type

※ Configuration

φ D	Pb-free leadwire Pb-free PET sleeve
5 · 6.3	DD
8 · 10	PD
12.5 to 18	HD
20	RD

Please refer to page 20, 21, 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.

●Dimension table in next page.

URS

■Dimensions

V	6.3		10		16		25		35		50	
Cap.(μF) / Code	0J		1A		1C		1E		1V		1H	
0.1 / 0R1											※5×9	1.1
0.22 / R22											※5×9	2.3
0.33 / R33											※5×9	3.5
0.47 / R47											※5×9	5
1 / 010											※5×9	13
2.2 / 2R2											5×9	26
3.3 / 3R3											5×9	35
4.7 / 4R7							5×9	30	5×9	35	5×9	40
10 / 100					5×9	40	5×9	50	5×9	55	5×9	65
22 / 220	5×9	35	5×9	55	5×9	70	5×9	75	5×9	95	5×9	90
33 / 330	5×9	55	5×9	75	5×9	85	5×9	95	5×9	100	6.3×9	120
47 / 470	5×9	75	5×9	90	5×9	100	5×9	110	6.3×9	130	6.3×9	140
100 / 101	5×9	125	5×9	135	6.3×9	160	6.3×9	180	8×9	220	10×9	240
220 / 221	6.3×9	200	6.3×9	220	8×9	290	10×9	310	10×9	340	10×12.5	420
330 / 331	6.3×9	250	8×9	300	10×9	360	10×9	380	10×12.5	480	12.5×12.5	530
470 / 471	8×9	330	8×9	360	10×9	410	10×12.5	530	12.5×12.5	590	16×15	750
1000 / 102	10×9	510	10×12.5	620	12.5×12.5	720	12.5×15	830	16×15	1010	18×20	1160
2200 / 222	12.5×15	890	12.5×15	960	16×15	1160	18×15	1360	18×20	1560	20×25	1750
3300 / 332	16×15	1200	16×15	1300	18×15	1460	18×20	1720	20×25	2000		
4700 / 472	16×15	1410	18×15	1550	18×20	1770	18×25	2050				
6800 / 682	18×15	1660	18×20	1850	18×25	2170					Case size φD×L (mm)	Rated ripple
10000 / 103	18×20	2020	18×25	2350								

V	63		100		160		200		250		400	
Cap.(μF) / Code	1J		2A		2C		2D		2E		2G	
0.1 / 0R1			※5×9	1.9								
0.22 / R22			※5×9	4.5								
0.33 / R33			※5×9	6.5								
0.47 / R47			※5×9	8								
1 / 010			5×9	17								
2.2 / 2R2			5×9	26								
3.3 / 3R3			5×9	35								
4.7 / 4R7			6.3×9	45								
10 / 100	5×9	60	6.3×9	70							16×15	140
22 / 220	6.3×9	100	8×9	130					16×15	280	●18×15	280
33 / 330	8×9	140	10×9	180			16×15	350	●18×15	350	18×20	350
47 / 470	8×9	170	10×12.5	230	16×15	420	●18×15	420	Δ18×20	420	★18×25	420
68 / 680					●18×15	490	Δ18×20	490	18×20	490	20×25	490
100 / 101	10×9	250	12.5×15	370	Δ18×20	590	★18×25	590	18×25	590		
150 / 151					★18×25	710	18×25	710				
220 / 221	12.5×12.5	490	16×15	620	20×25	770						
330 / 331	12.5×15	710	18×15	760							Case size φD×L (mm)	Rated ripple
470 / 471	16×15	900										

Rated ripple current (mArms) at 85°C 120Hz

Size φ16 × 20 is available for capacitors marked "●"
Size φ20 × 15 is available for capacitors marked "Δ"
Size φ20 × 20 is available for capacitors marked "★"

In this case, 6 will be put at 12th digit of type numbering system.

● Frequency coefficient of rated ripple current

V	Frequency / Cap.(μF)	50Hz	120Hz	300Hz	1 kHz	10 kHz or more
6.3 to 100	0.1 to 47	0.75	1.00	1.35	1.57	2.00
	100 to 470	0.80	1.00	1.23	1.34	1.50
	1000 to 10000	0.85	1.00	1.10	1.13	1.15
160 to 400	10 to 220	0.80	1.00	1.25	1.40	1.60

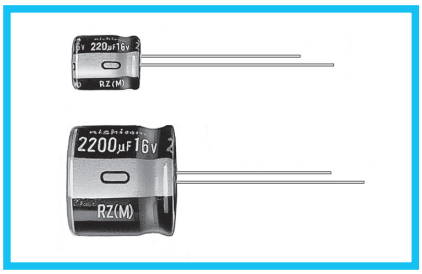
nichicon

URZ

Compact & Low-Profile Sized,
Wide Temperature Range

Smaller

Anti-Solvent Feature (Through 100V only)



- Very small case sizes same as URS, but operating over wide temperature range of −55 (−40) to +105˚C.
- Compliant to the RoHS directive (2011/65/EU).

Values marked with an ※ in the dimension table are scheduled to be discontinued and are not recommended for new designs.

URZ

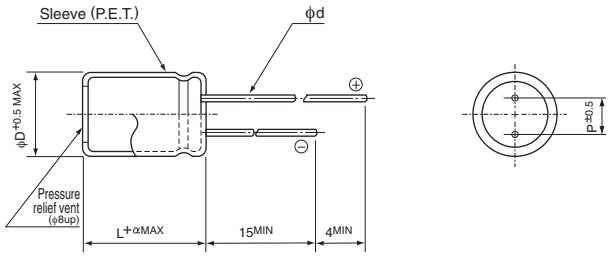
High Temperature

URS

■Specifications

Item	Performance Characteristics
Category Temperature Range	−55 to +105˚C (6.3 to 100V) , −40 to +105˚C (160 to 400V)
Rated Voltage Range	6.3 to 400V
Rated Capacitance Range	0.1 to 10000μF
Capacitance Tolerance	±20% at 120Hz, 20˚C
Leakage Current	Rated voltage (V) | 6.3 to 100 | 160 to 400 ——— | After 1 minute's application of rated voltage at 20°C, leakage current is not more than 0.03CV or 4 (μA), whichever is greater. After 2 minutes' application of rated voltage at 20°C, leakage current is not more than 0.01CV or 3 (μA), whichever is greater. | After 1 minute's application of rated voltage at 20°C, I = 0.04CV+100 (μA) or less
Tangent of loss angle (tan δ)	For capacitance of more than 1000μF, add 0.02 for every increase of 1000μF. Measurement frequency : 120Hz at 20˚C Rated voltage (V): 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 | 160 | 200 | 250 | 400 tan δ (MAX.): 0.28 | 0.24 | 0.20 | 0.16 | 0.14 | 0.12 | 0.10 | 0.08 | 0.20 | 0.20 | 0.20 | 0.25
Stability at Low Temperature	Measurement frequency : 120Hz Rated voltage (V): 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 | 160 | 200 | 250 | 400 Impedance ratio ZT / Z20 (MAX.) Z−25˚C / Z+20˚C: 5 | 4 | 3 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 6 Z−40˚C / Z+20˚C: 10 | 8 | 6 | 4 | 3 | 3 | 3 | 3 | 4 | 4 | 6 | 10
Endurance	The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 1000 hours at 105°C. Capacitance change: Within ±20% of the initial capacitance value tan δ: 200% or less than the initial specified value Leakage current: Less than or equal to the initial specified value
Shelf Life	After storing the capacitors under no load at 105˚C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.
Marking	Printed with white color letter on black sleeve.

■Radial Lead Type



α	
	(ϕD < 20) 1.5
	(ϕD ≧ 20) 2.0

(mm)

ϕD	5	6.3	8	10	12.5	16	18	20
P	2.0	2.5	3.5	5.0	5.0	7.5	7.5	10.0
ϕd	0.5	0.5	0.6	0.6	0.6	0.8	0.8	1.0

• Please refer to page 20 about the end seal configuration.

Type numbering system (Example : 10V 330μF)

1	2	3	4	5	6	7	8	9	10	11	12
U	R	Z	1	A	3	3	1	M	P	D	

Size code
Configuration ※
Capacitance tolerance (±20%)
Rated capacitance (330μF)
Rated voltage (10V)
Series name
Type

※ Configuration

ϕ D	Pb-free leadwire Pb-free PET sleeve
5 · 6.3	DD
8 · 10	PD
12.5 to 18	HD
20	RD

Please refer to page 20, 21, 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.

●Dimension table in next page.

UVZ

■Dimensions

Cap.(μF) \ V	Code	6.3		10		16		25		35		50	
		0J		1A		1C		1E		1V		1H	
0.1	0R1											※5 × 11	1.3
0.22	R22											※5 × 11	2.9
0.33	R33											※5 × 11	4.3
0.47	R47											※5 × 11	7
1	010											※5 × 11	13
2.2	2R2											5 × 11	20
3.3	3R3											5 × 11	25
4.7	4R7							5 × 11	25	5 × 11	28	5 × 11	30
10	100					5 × 11	35	5 × 11	36	5 × 11	41	5 × 11	46
22	220	5 × 11	45	5 × 11	45	5 × 11	54	5 × 11	58	5 × 11	61	5 × 11	68
33	330	5 × 11	55	5 × 11	58	5 × 11	65	5 × 11	68	5 × 11	75	5 × 11	90
47	470	5 × 11	65	5 × 11	68	5 × 11	79	5 × 11	83	5 × 11	93	6.3 × 11	115
100	101	5 × 11	95	5 × 11	105	5 × 11	115	6.3 × 11	140	6.3 × 11	150	8 × 11.5	190
220	221	5 × 11	145	6.3 × 11	175	6.3 × 11	190	8 × 11.5	240	10 × 12.5	275	10 × 12.5	300
330	331	6.3 × 11	195	6.3 × 11	210	8 × 11.5	265	10 × 12.5	315	10 × 12.5	350	10 × 16	410
470	471	6.3 × 11	230	6.3 × 11	250	8 × 11.5	315	10 × 12.5	380	10 × 16	460	12.5 × 20	530
1000	102	8 × 11.5	390	10 × 12.5	460	10 × 16	560	10 × 20	680	12.5 × 20	810	12.5 × 25	950
2200	222	10 × 20	710	10 × 20	760	12.5 × 20	920	12.5 × 25	1090	16 × 25	1260	16 × 35.5	1470
3300	332	10 × 20	840	12.5 × 20	1000	12.5 × 25	1170	16 × 25	1400	16 × 35.5	1610	18 × 35.5	1770
4700	472	12.5 × 20	1090	12.5 × 25	1260	16 × 25	1480	16 × 31.5	1710	18 × 35.5	1910	20 × 40	2100
6800	682	12.5 × 25	1350	16 × 25	1570	16 × 35.5	1780	18 × 35.5	2040	20 × 40	2150	22 × 50	2500
10000	103	16 × 25	1650	16 × 35.5	1890	18 × 35.5	2060	20 × 40	2150	22 × 50	2650	25 × 50	2850
15000	153	16 × 35.5	2010	18 × 35.5	2180	20 × 40	2430	22 × 50	2750	25 × 50	3100		
22000	223	18 × 40	2350	20 × 40	2650	22 × 50	3000	25 × 50	3250			Case size φD × L (mm)	Rated ripple
33000	333	22 × 50	2800	22 × 50	3250	25 × 50	3450						

Cap.(μF) \ V	Code	63		100		160		200		250		315		350		400		450	
		1J		2A		2C		2D		2E		2F		2V		2G		2W	
0.1	0R1			※5 × 11	1.5														
0.22	R22			※5 × 11	3.4														
0.33	R33			※5 × 11	5.0														
0.47	R47			※5 × 11	7.1	6.3 × 11	11	6.3 × 11	11	6.3 × 11	10								
1	010			※5 × 11	15	6.3 × 11	16	6.3 × 11	16	6.3 × 11	15	6.3 × 11	15	6.3 × 11	15	8 × 11.5	17	8 × 11.5	13
2.2	2R2			5 × 11	21	6.3 × 11	25	6.3 × 11	25	6.3 × 11	23	8 × 11.5	26	8 × 11.5	26	10 × 12.5	30	10 × 12.5	23
3.3	3R3			5 × 11	29	6.3 × 11	30	6.3 × 11	30	8 × 11.5	32	10 × 12.5	38	10 × 12.5	38	10 × 12.5	38	10 × 16	31
4.7	4R7			5 × 11	32	6.3 × 11	34	8 × 11.5	39	8 × 11.5	39	10 × 12.5	45	10 × 12.5	45	10 × 16	50	10 × 20	40
10	100	5 × 11	46	6.3 × 11	54	8 × 11.5	41	10 × 12.5	65	10 × 16	74	10 × 20	80	10 × 20	80	12.5 × 20	90	12.5 × 20	65
22	220	5 × 11	71	6.3 × 11	93	10 × 16	100	10 × 20	120	12.5 × 20	130	12.5 × 20	115	12.5 × 25	115	16 × 25	165	16 × 25	115
33	330	6.3 × 11	100	8 × 11.5	130	10 × 20	145	12.5 × 20	160	12.5 × 20	160	16 × 25	195	16 × 25	195	16 × 31.5	215	16 × 35.5	165
47	470	6.3 × 11	120	10 × 12.5	165	12.5 × 20	195	12.5 × 20	195	12.5 × 25	210	16 × 25	230	16 × 35.5	270	16 × 35.5	270	18 × 40	185
100	101	10 × 12.5	215	10 × 20	265	12.5 × 25	215	16 × 31.5	375	16 × 31.5	365	18 × 35.5	395	18 × 40	420	20 × 40	450	22 × 40	270
220	221	10 × 16	335	12.5 × 25	440	16 × 35.5	570	18 × 35.5	575	20 × 40	600	22 × 50	620	22 × 50	620	25 × 50	660		
330	331	10 × 20	510	12.5 × 25	540	18 × 40	750	20 × 40	705	22 × 50	730	25 × 50	760						
470	471	12.5 × 20	640	16 × 25	715	22 × 40	900	22 × 50	840	25 × 50	870								
1000	102	16 × 25	930	18 × 40	985	25 × 50	1310												
2200	222	18 × 35.5	1650	22 × 50	1750														
3300	332	20 × 40	1950	25 × 50	2070														
4700	472	22 × 50	2450															Case size φD × L (mm)	Rated ripple
6800	682	25 × 50	2800																

Rated ripple current (mArms) at 105˚C 120Hz

● Frequency coefficient of rated ripple current

V	Cap. (μF) \ Frequency	50Hz	120Hz	300Hz	1 kHz	10 kHz or more
6.3 to 100	0.1 to 47	0.75	1.00	1.35	1.57	2.00
	100 to 470	0.80	1.00	1.23	1.34	1.50
	1000 to 33000	0.85	1.00	1.10	1.13	1.15
160 to 450	0.47 to 220	0.80	1.00	1.25	1.40	1.60
	330 to 1000	0.90	1.00	1.10	1.13	1.15

nichicon

URZ

■Dimensions

Cap.(μF) \ V	Code	6.3		10		16		25		35		50	
		0J		1A		1C		1E		1V		1H	
0.1	0R1											※5×9	1.1
0.22	R22											※5×9	2.3
0.33	R33											※5×9	3.5
0.47	R47											※5×9	5
1	010											※5×9	12
2.2	2R2											5×9	18
3.3	3R3											5×9	25
4.7	4R7							5×9	20	5×9	25	5×9	30
10	100					5×9	30	5×9	35	5×9	40	5×9	46
22	220	5×9	25	5×9	40	5×9	50	5×9	55	5×9	60	5×9	65
33	330	5×9	40	5×9	55	5×9	60	5×9	70	5×9	75	6.3×9	85
47	470	5×9	55	5×9	65	5×9	70	5×9	80	6.3×9	95	6.3×9	100
100	101	5×9	90	5×9	95	6.3×9	115	6.3×9	130	8×9	155	10×9	170
220	221	6.3×9	145	6.3×9	155	8×9	205	10×9	220	10×9	235	10×12.5	290
330	331	6.3×9	180	8×9	210	10×9	240	10×9	270	10×12.5	340	12.5×12.5	370
470	471	8×9	235	8×9	275	10×9	290	10×12.5	370	12.5×12.5	420	16×15	540
1000	102	10×9	370	10×12.5	450	12.5×12.5	520	12.5×15	590	16×15	720	18×20	830
2200	222	12.5×15	635	12.5×15	690	16×15	830	18×15	970	18×20	1110	20×25	1250
3300	332	16×15	860	16×15	940	18×15	1050	18×20	1220	20×25	1430		
4700	472	16×15	1010	18×15	1120	18×20	1260	18×25	1470				
6800	682	18×15	1200	18×20	1330	18×25	1560					Case size φD×L (mm)	Rated ripple
10000	103	18×20	1450	18×25	1700								

Cap.(μF) \ V	Code	63		100		160		200		250		400	
		1J		2A		2C		2D		2E		2G	
0.1	0R1			※5×9	1.2								
0.22	R22			※5×9	3								
0.33	R33			※5×9	4.5								
0.47	R47			※5×9	6.5								
1	010			5×9	12								
2.2	2R2			5×9	17								
3.3	3R3			5×9	25								
4.7	4R7			6.3×9	32								
10	100	5×9	42	6.3×9	50							16×15	100
22	220	6.3×9	71	8×9	93					16×15	200	●18×15	200
33	330	8×9	100	10×9	130			16×15	250	●18×15	250	18×20	250
47	470	8×9	120	10×12.5	165	16×15	300	●18×15	300	Δ18×20	300	★18×25	300
68	680					●18×15	350	Δ18×20	350	18×20	350	20×25	350
100	101	10×9	215	12.5×15	265	Δ 18×20	420	★18×25	420	18×25	420		
150	151					★18×25	510	18×25	510				
220	221	12.5×12.5	335	16×15	440	20×25	550						
330	331	12.5×15	510	18×15	540							Case size φD×L (mm)	Rated ripple
470	471	16×15	640										

Rated ripple current (mArms) at 105˚C 120Hz

Size φ16 × 20 is available for capacitors marked "●"
Size φ20 × 15 is available for capacitors marked "Δ"
Size φ20 × 20 is available for capacitors marked "★"

In this case, [6] will be put at 12th digit of type numbering system.

● Frequency coefficient of rated ripple current

V	Cap.(μF) \ Frequency	50Hz	120Hz	300Hz	1 kHz	10kHz or more
6.3 to 100	0.1 to 47	0.75	1.00	1.35	1.57	2.00
	100 to 470	0.80	1.00	1.23	1.34	1.50
	1000 to 10000	0.85	1.00	1.10	1.13	1.15
160 to 400	10 to 220	0.80	1.00	1.25	1.40	1.60

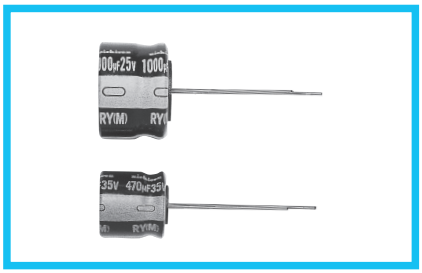
nichicon

URY

12.5mmL Wide Temperature Range

Smaller

Anti-Solvent Feature (Through 100V only)



- 12.5mmL height.
- Compliant to the RoHS directive (2011/65/EU).

■Specifications

Item	Performance Characteristics
Category Temperature Range	−55 to +105°C (6.3 to 100V), −40 to +105°C (160 to 400V), −25 to +105°C (450V)
Rated Voltage Range	6.3 to 450V
Rated Capacitance Range	6.8 to 4700μF
Capacitance Tolerance	±20% at 120Hz, 20°C
Leakage Current	Rated voltage (V) | 6.3 to 100: After 1 minute's application of rated voltage at 20°C, leakage current is not more than 0.03CV or4 (μA), whichever is greater. After 2 minutes' application of rated voltage at 20°C, leakage current is not more than 0.01CV or 3 (μA), whichever is greater. | 160 to 450: After 1 minute's application of rated voltage at 20°C, I = 0.04CV+100 (μA) or less
Tangent of loss angle (tan δ)	For capacitance of more than 1000μF, add 0.02 for every increase of 1000μF. Measurement frequency : 120Hz at 20°C

Rated voltage (V)	6.3	10	16	25	35	50	63	100	160 to 350	400 to 450
tan δ (MAX.)	0.28	0.24	0.20	0.16	0.14	0.12	0.10	0.08	0.20	0.25

Stability at Low Temperature — Measurement frequency : 120Hz

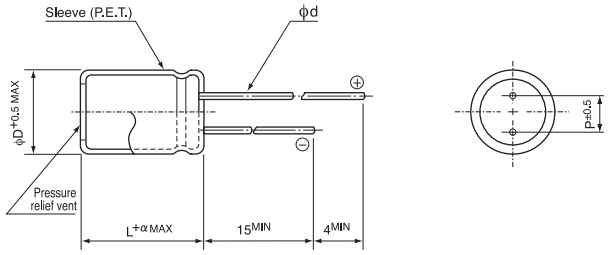
Rated voltage (V)		6.3	10	16	25	35 to 50	63 to 100	160 to 200	250 to 350	400	450
Impedance ratio	Z−25°C / Z+20°C	5	4	3	2	2	2	3	4	6	15
ZT / Z20 (MAX.)	Z−40°C / Z+20°C	10	8	6	4	3	3	4	8	10	—

Endurance — The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 2000 hours at 105°C.

Capacitance change	Within ±20% of the initial capacitance value
tan δ	200% or less than the initial specified value
Leakage current	Less than or equal to the initial specified value

Shelf Life	After storing the capacitors under no load at 105°C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.
Marking	Printed with white color letter on black sleeve.

■Radial Lead Type



α	
(φD < 20)	1.5
(φD ≧ 20)	2.0

(mm)

φD	12.5	16	18	20	22	25
P	5.0	7.5	7.5	10.0	10.0	12.5
φd	0.6	0.8	0.8	1.0	1.0	1.0

Type numbering system (Example : 10V 2200μF)

1	2	3	4	5	6	7	8	9	10	11
U	R	Y	1	A	2	2	2	M	H	D

Configuration ※
Capacitance tolerance (±20%)
Rated capacitance (2200μF)
Rated voltage (10V)
Series name
Type

※ Configuration

φ D	Pb-free leadwire Pb-free PET sleeve
12.5 to 18	HD
20 to 25	RD

• Please refer to page 20 about the end seal configuration.

Please refer to page 20, 21, 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.

●Dimension table in next page.

URY

■Dimensions

Cap.(μF) \ V	6.3		10		16		25		35		50	
Code	0J		1A		1C		1E		1V		1H	
330	331										12.5×12.5	450
470	471								12.5×12.5	420	20×12.5	540
680	681						12.5×12.5	500	18×12.5	610	25×12.5	700
1000	102				12.5×12.5	520	18×12.5	770	22×12.5	810		
2200	222	12.5×12.5	580	18×12.5	820	25×12.5	1000	25×12.5	1170			
3300	332	18×12.5	730	22×12.5	1030						Case size φD×L (mm)	Rated ripple
4700	472	25×12.5	1200									

Cap.(μF) \ V	63		100		160		200		250		315	
Code	1J		2A		2C		2D		2E		2F	
10	100										12.5×12.5	70
22	220						12.5×12.5	110	16×12.5	130	16×12.5	85
33	330				12.5×12.5	130	16×12.5	170	18×12.5	170	20×12.5	120
47	470				16×12.5	210	18×12.5	230	22×12.5	190	25×12.5	160
68	680				20×12.5	280	25×12.5	310				
100	101		12.5×12.5	230	25×12.5	360						
220	221	12.5×12.5	400	22×12.5	400							
330	331	18×12.5	550									
470	471	22×12.5	610									

Cap.(μF) \ V	350		400		450	
Code	2V		2G		2W	
6.8	6R8				12.5×12.5	38
10	100	16×12.5	75	16×12.5	65	16×12.5	47
22	220	18×12.5	90	20×12.5	150	25×12.5	85
33	330	25×12.5	140	25×12.5	200		

Rated ripple current (mArms) at 105°C 120Hz

● Frequency coefficient of rated ripple current

V	Cap.(μF) \ Frequency	50Hz	120Hz	300Hz	1 kHz	10 kHz or more
6.3 to 100	100 to 680	0.80	1.00	1.23	1.34	1.50
	1000 to 4700	0.85	1.00	1.10	1.13	1.15
160 to 450	6.8 to 100	0.80	1.00	1.25	1.40	1.60

nichicon

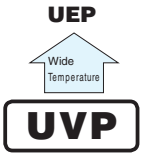
UVP

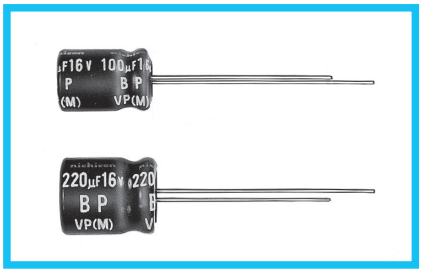
Bi-Polarized

Bi-polarized Anti-Solvent Feature

- Standard bi-polarized series for entertainment electronics.
- Compliant to the RoHS directive (2011/65/EU).

Values marked with an ※ in the dimension table are scheduled to be discontinued and are not recommended for new designs.





■Specifications

Item	Performance Characteristics
Category Temperature Range	−40 to +85°C
Rated Voltage Range	6.3 to 100V
Rated Capacitance Range	0.47 to 6800μF
Capacitance Tolerance	±20% at 120Hz, 20°C
Leakage Current	After 5 minutes' application of rated voltage at 20°C, leakage current is not more than 0.03CV or 3 (μA), whichever is greater.
Tangent of loss angle (tan δ)	For capacitance of more than 1000μF, add 0.02 for every increase of 1000μF. Measurement frequency : 120Hz at 20°C

Rated voltage (V)	6.3	10	16	25	35	50	63	100
tan δ (MAX.)	0.26	0.24	0.22	0.20	0.16	0.14	0.12	0.10

Stability at Low Temperature — Measurement frequency : 120Hz

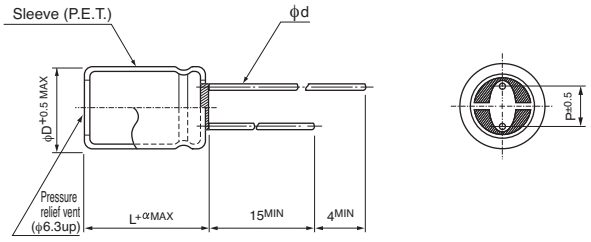
Rated voltage (V)		6.3	10	16	25	35	50	63	100
Impedance ratio ZT / Z20 (MAX.)	Z−25°C / Z+20°C	4	3	2	2	2	2	2	2
	Z−40°C / Z+20°C	10	8	6	5	4	4	3	3

Endurance — The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 2000 hours at 85°C with the polarity inverted every 250 hours.

Capacitance change	Within ±20% of the initial capacitance value
tan δ	200% or less than the initial specified value
Leakage current	Less than or equal to the initial specified value

Shelf Life	After storing the capacitors under no load at 85°C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.
Marking	Printed with white color letter on black sleeve.

■Radial Lead Type



α	(L < 20) 1.5
	(L ≧ 20) 2.0

(mm)

φD	5	6.3	8	10	12.5	16	18
P	2.0	2.5	3.5	5.0	5.0	7.5	7.5
φd	0.5	0.5	0.6	0.6	0.6	0.8	0.8

• Please refer to page 20 about the end seal configuration.

Type numbering system (Example : 10V 47μF)

1	2	3	4	5	6	7	8	9	10	11
U	V	P	1	A	4	7	0	M	D	D

- 10 → Configuration ※
- M → Capacitance tolerance (±20%)
- 470 → Rated capacitance (47μF)
- 1A → Rated voltage (10V)
- UVP → Series name
- U → Type

※ Configuration

φ D	Pb-free leadwire Pb-free PET sleeve
5	DD
6.3	ED
8 · 10	PD
12.5 to 18	HD

Please refer to page 20, 21, 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.

●Dimension table in next page.

UVP

■Dimensions

Cap. (μF) \ V	6.3		10		16		25		35		50		63		100	
Code	0J		1A		1C		1E		1V		1H		1J		2A	
0.47	R47										※5×11	11			※5×11	14
1	010										5×11	17			5×11	21
2.2	2R2										5×11	25			6.3×11	34
3.3	3R3										5×11	27	5×11	28	6.3×11	39
4.7	4R7								5×11	34	5×11	34	6.3×11	34	6.3×11	47
10	100					5×11	42	5×11	42	5×11	43	6.3×11	52	6.3×11	57	8×11.5	71
22	220			5×11	57	5×11	57	6.3×11	65	6.3×11	73	8×11.5	89	8×11.5	95	10×16	135
33	330	5×11	64	5×11	64	5×11	70	6.3×11	80	8×11.5	100	8×11.5	105	10×12.5	135	12.5×20	220
47	470	5×11	76	5×11	76	6.3×11	95	6.3×11	95	8×11.5	120	10×12.5	150	10×16	180	12.5×20	240
100	101	6.3×11	125	6.3×11	125	8×11.5	160	8×11.5	160	10×16	230	10×20	265	12.5×20	320	16×25	425
220	221	8×11.5	215	8×11.5	215	10×12.5	275	10×16	305	12.5×20	410	12.5×25	480	16×25	575	18×35.5	720
330	331	8×11.5	265	10×16	345	10×16	375	12.5×20	450	12.5×20	505	16×25	650	16×31.5	655		
470	471	10×12.5	370	10×16	410	10×20	485	12.5×20	540	12.5×25	655	16×31.5	835	18×35.5	965		
1000	102	10×20	650	12.5×20	720	12.5×25	855	16×25	950	16×31.5	1140						
2200	222	12.5×25	1160	16×25	1280	16×31.5	1510	18×35.5	1620								
3300	332	16×25	1570	16×31.5	1690	18×35.5	1980										
4700	472	16×31.5	2020	18×35.5	2160											Case size φD×L (mm)	Rated ripple
6800	682	18×35.5	2600														

Rated ripple current (mArms) at 85°C 120Hz

● Frequency coefficient of rated ripple current

Cap.(μF) \ Frequency	50 Hz	120 Hz	300 Hz	1 kHz	10 kHz or more
0.47 to 47	0.75	1.00	1.35	1.57	2.00
100 to 470	0.80	1.00	1.23	1.34	1.50
1000 to 6800	0.85	1.00	1.10	1.13	1.15

nichicon

UEP

Bi-Polarized, Wide Temperature Range

BP Bi-polarized

Anti-Solvent Feature

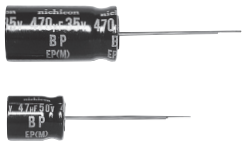
- Bi-polarized series for operations over wide temperature range of −55°C to +105°C.
- Compliant to the RoHS directive (2011/65/EU).

Values marked with an ※ in the dimension table are scheduled to be discontinued and are not recommended for new designs.

UEP

Wide Temperature

UVP



■Specifications

Item	Performance Characteristics
Category Temperature Range	−55 to +105°C
Rated Voltage Range	6.3 to 100V
Rated Capacitance Range	0.47 to 6800μF
Capacitance Tolerance	±20% at 120Hz, 20°C
Leakage Current	After 5 minutes' application of rated voltage at 20°C, leakage current is not more than 0.03CV or 3 (μA), whichever is greater.

Tangent of loss angle (tan δ)

Measurement frequency : 120Hz, Temperature : 20°C

Rated voltage (V)	6.3	10	16	25	35	50	63	100
tan δ (MAX.)	0.24	0.24	0.20	0.20	0.16	0.14	0.12	0.10

Stability at Low Temperature

Measurement frequency : 120Hz

Rated voltage (V)		6.3	10	16	25	35	50	63	100
Impedance ratio ZT / Z20 (MAX.)	Z−25°C / Z+20°C	4	3	2	2	2	2	2	2
	Z−40°C / Z+20°C	10	8	6	4	3	3	3	3

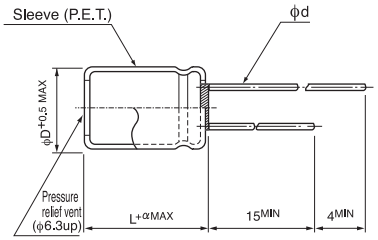
Endurance

The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 1000 hours at 105°C with the polarity inverted every 250 hours.

Capacitance change	Within ±25% of the initial capacitance value (6.3to16V) Within ±20% of the initial capacitance value (25to100V)
tan δ	150% or less than the initial specified value
Leakage current	Less than or equal to the initial specified value

Item	Performance Characteristics
Shelf Life	After storing the capacitors under no load at 105°C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.
Marking	Printed with white color letter on black sleeve.

■Radial Lead Type



α	
	(L < 20) 1.5
	(L ≥ 20) 2.0

(mm)

φD	5	6.3	8	10	12.5	16	18
P	2.0	2.5	3.5	5.0	5.0	7.5	7.5
φd	0.5	0.5	0.6	0.6	0.6	0.8	0.8

• Please refer to page 20 about the end seal configuration.

Type numbering system (Example : 10V 47μF)

1	2	3	4	5	6	7	8	9	10	11
U	E	P	1	A	4	7	0	M	D	D

Configuration ※
Capacitance tolerance (±20%)
Rated capacitance (47μF)
Rated voltage (10V)
Series name
Type

※ Configuration

φ D	Pb-free leadwire Pb-free PET sleeve
5	DD
6.3	ED
8 · 10	PD
12.5 to 18	HD

■Dimensions

Cap. (μF) \ V	6.3		10		16		25		35		50		63		100	
Code	0J		1A		1C		1E		1V		1H		1J		2A	
0.47	R47										※5 × 11	8			※5 × 11	10
1	010										5 × 11	12			5 × 11	15
2.2	2R2										5 × 11	18			6.3 × 11	20
3.3	3R3										5 × 11	22	5 × 11	20	6.3 × 11	25
4.7	4R7								5 × 11	25	5 × 11	22	6.3 × 11	31	6.3 × 11	30
10	100				5 × 11	30	5 × 11	34	5 × 11	30	6.3 × 11	37	6.3 × 11	40	8 × 11.5	50
22	220		5 × 11	42	5 × 11	40	6.3 × 11	55	6.3 × 11	51	8 × 11.5	63	8 × 11.5	68	10 × 16	97
33	330	5 × 11	5 × 11	45	5 × 11	49	6.3 × 11	56	8 × 11.5	72	8 × 11.5	77	10 × 12.5	98	12.5 × 20	140
47	470	5 × 11	5 × 11	54	6.3 × 11	67	6.3 × 11	67	8 × 11.5	86	10 × 12.5	105	10 × 16	130	12.5 × 20	170
100	101	6.3 × 11	6.3 × 11	90	8 × 11.5	110	8 × 11.5	110	10 × 16	160	10 × 20	190	12.5 × 20	225	16 × 25	300
220	221	8 × 11.5	8 × 11.5	150	10 × 12.5	195	10 × 16	215	12.5 × 20	290	12.5 × 25	340	16 × 25	405	18 × 35.5	510
330	331	8 × 11.5	10 × 16	240	10 × 16	265	12.5 × 20	320	12.5 × 20	350	16 × 25	460	16 × 31.5	535		
470	471	10 × 12.5	10 × 16	290	10 × 20	345	12.5 × 20	380	12.5 × 25	465	16 × 31.5	590	18 × 35.5	680		
1000	102	10 × 20	12.5 × 20	510	12.5 × 25	605	16 × 25	670	16 × 31.5	805						
2200	222	12.5 × 25	16 × 25	910	16 × 31.5	1070	18 × 35.5	1140								
3300	332	16 × 25	16 × 31.5	1200	18 × 35.5	1400										
4700	472	16 × 31.5	18 × 35.5	1520											Case size φD × L (mm)	Rated ripple
6800	682	18 × 35.5	1830													

Rated ripple current (mArms) at 105°C 120Hz

● Frequency coefficient of rated ripple current

Cap.(μF) \ Frequency	50 Hz	120Hz	300 Hz	1 kHz	10 kHz or more
0.47 to 47	0.75	1.00	1.35	1.57	2.00
100 to 470	0.80	1.00	1.23	1.34	1.50
1000 to 6800	0.85	1.00	1.10	1.13	1.15

Please refer to page 20, 21, 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.

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Low Impedance, High Reliability

Low Impedance | Long Life | Anti-Solvent Feature (Through 100V only)

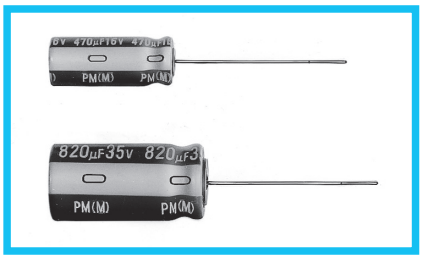
- High reliability withstanding 5000 hour load life at +105°C (3000/2000 hours for smaller case sizes as specified below).
- Capacitance ranges available based on the numerical values in E12 series under JIS.
- Compliant to the RoHS directive (2011/65/EU).

Values marked with an ※ in the dimension table are scheduled to be discontinued and are not recommended for new designs.

UPM

Smaller

UPW



Specifications

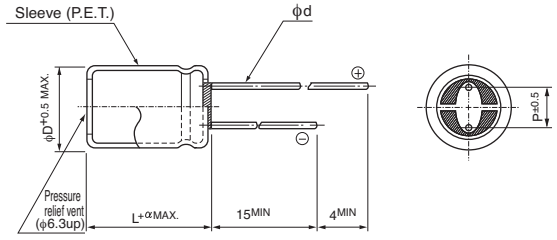
Item	Performance Characteristics
Category Temperature Range	−55 to +105°C (6.3 to 100V), −40 to +105°C (160 to 400V), −25 to +105°C (450V)
Rated Voltage Range	6.3 to 450V
Rated Capacitance Range	0.47 to 15000µF
Capacitance Tolerance	±20% at 120Hz, 20°C
Leakage Current	Rated Voltage (V): 6.3 to 100 / 160 to 450 Leakage current: After 1 minute's application of rated voltage at 20°C, leakage current is not more than 0.03CV or 4 (µA), whichever is greater. / CV ≦ 1000 : I = 0.1CV+40 (µA) max. / CV > 1000 : I = 0.04CV+100 (µA) max.
Tangent of loss angle (tan δ)	For capacitance of more than 1000µF, add 0.02 for every increase of 1000µF. Measurement frequency : 120Hz at 20°C

Rated Voltage (V)	6.3	10	16	25	35	50	63 to 100	160 to 350	400 · 450
tan δ (MAX.)	0.22	0.19	0.16	0.14	0.12	0.10	0.08	0.20	0.25

Stability at Low Temperature	Rated voltage (V)	6.3 · 10	16	25 · 35	50 to 100	160 · 200	250	315 · 350	400	450	120Hz
Impedance ratio (MAX.)	Z−25°C / Z+20°C	—	—	—	—	—	—	—	—	15	
	Z−40°C / Z+20°C	—	—	—	—	4	6	8	10	—	
	Z−55°C / Z+20°C	4	3	3	2	—	—	—	—	—	

Endurance	The specifications listed at right shall be met when the capacitors are restored to 20°C after D.C. bias plus rated ripple current is applied for 5000 hours (2000 hours for φD=5 and 6.3, 3000 hours for φD=8) at 105°C, the peak voltage shall not exceed the rated voltage.	Capacitance change: Within ±20% of the initial capacitance value tan δ: 200% or less than the initial specified value Leakage current: Less than or equal to the initial specified value
Shelf Life	After storing the capacitors under no load at 105°C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the characteristic requirements listed at right.	Capacitance change: Within ±20% of the initial capacitance value tan δ: 150% or less than the initial specified value Leakage current: Less than or equal to the initial specified value
Marking	Printed with white color letter on dark brown sleeve.	

Radial Lead Type



α	(φD < 10) 1.5
	(φD ≧ 10) 2.0

(mm)

φD	5	6.3	8	10	12.5	16	18
P	2.0	2.5	3.5	5.0	5.0	7.5	7.5
φd	0.5	0.5	0.6	0.6	0.6※	0.8	0.8

※In case L > 25 for the φ12.5 dia. unit, lead dia. φ d = 0.8mm.

• Please refer to page 20 about the end seal configuration.

Type numbering system (Example : 25V 470µF)

1	2	3	4	5	6	7	8	9	10	11	12
U	P	M	1	E	4	7	1	M	P	D	

Size code

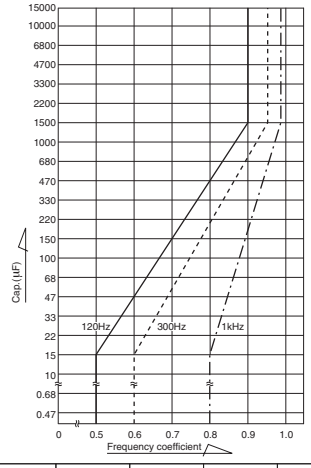
Type	Code
Small Dia	—
Low Profile	6

Configuration ※
Capacitance tolerance (±20%)
Rated capacitance (470µF)
Rated voltage (25V)
Series name
Type

※Configuration

φ D	Pb-free leadwire Pb-free PET sleeve
5	DD
6.3	ED
8 · 10	PD
12.5 to 18	HD

● Frequency coefficient of rated ripple current

Rated voltage	Frequency coefficient
6.3 to 100V (10kHz to 200kHz=1)	

160 to 450V	50Hz	120Hz	300Hz	1kHz	10kHz or more
	0.80	1.00	1.25	1.40	1.60

Please refer to page 20, 21, 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.

● Dimension table in next page.

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■Dimensions

φD×L (mm)

Cap.(μF) \ V(Code) / Size code / Code	6.3 (0J)		10 (1A)		16 (1C)		25 (1E)		35 (1V)	
	—	6	—	6	—	6	—	6	—	6
22 220									5 × 11	
27 270									5 × 11	
33 330							5 × 11		6.3 × 11	
39 390							5 × 11		6.3 × 11	
47 470					5 × 11		6.3 × 11		6.3 × 11	
56 560					5 × 11		6.3 × 11		6.3 × 11	
68 680			5 × 11		6.3 × 11		6.3 × 11		6.3 × 15	
82 820			5 × 11		6.3 × 11		6.3 × 11		6.3 × 15	
100 101	5 × 11		6.3 × 11		6.3 × 11		6.3 × 15		8 × 11.5	
120 121	5 × 11		6.3 × 11		6.3 × 11		6.3 × 15		8 × 15	10 × 12.5
150 151	6.3 × 11		6.3 × 11		6.3 × 15		8 × 11.5		8 × 15	10 × 12.5
180 181	6.3 × 11		6.3 × 11		6.3 × 15		8 × 15	10 × 12.5	8 × 20	10 × 15
220 221	6.3 × 11		6.3 × 15		8 × 11.5		8 × 15	10 × 12.5	8 × 20	10 × 15
270 271	6.3 × 15		6.3 × 15		8 × 15	10 × 12.5	8 × 20	10 × 15	10 × 20	12.5 × 15
330 331	6.3 × 15		8 × 11.5		8 × 15	10 × 12.5	8 × 20	10 × 15	10 × 20	12.5 × 15
390 391	8 × 11.5		8 × 15	10 × 12.5	8 × 20	10 × 15	10 × 20	12.5 × 15	10 × 25	12.5 × 15
470 471	8 × 15	10 × 12.5	8 × 15	10 × 12.5	8 × 20	10 × 15	10 × 20	12.5 × 15	10 × 31.5	16 × 15
560 561	8 × 15	10 × 12.5	8 × 20	10 × 15	10 × 20	12.5 × 15	10 × 25	12.5 × 15	12.5 × 20	16 × 15
680 681	8 × 20	10 × 15	8 × 20	10 × 15	10 × 20	12.5 × 15	10 × 31.5	16 × 15	12.5 × 25	18 × 15
820 821	8 × 20	10 × 15	10 × 20	12.5 × 15	10 × 25	12.5 × 15	12.5 × 20	16 × 15	12.5 × 25	18 × 15
1000 102	10 × 20	12.5 × 15	10 × 20	12.5 × 15	10 × 31.5	16 × 15	12.5 × 25	18 × 15	12.5 × 31.5	16 × 20
1200 122	10 × 20	12.5 × 15	10 × 25	12.5 × 15	12.5 × 20	16 × 15	12.5 × 25	18 × 15	12.5 × 35.5	16 × 25
1500 152	10 × 25	12.5 × 15	10 × 31.5	16 × 15	12.5 × 25	18 × 15	12.5 × 31.5	16 × 20	12.5 × 40	18 × 20
1800 182	10 × 31.5	16 × 15	12.5 × 20	16 × 15	12.5 × 31.5	16 × 20	12.5 × 35.5	16 × 25	16 × 31.5	18 × 25
2200 222	10 × 31.5	16 × 15	12.5 × 25	18 × 15	12.5 × 31.5	16 × 20	12.5 × 40	18 × 20	16 × 35.5	18 × 31.5
2700 272	12.5 × 25	18 × 15	12.5 × 31.5	16 × 20	12.5 × 35.5	16 × 25	16 × 31.5	18 × 25	16 × 40	18 × 35.5
3300 332	12.5 × 25	18 × 15	12.5 × 35.5	16 × 20	12.5 × 40	18 × 20	16 × 35.5	18 × 31.5	18 × 40	
3900 392	12.5 × 31.5	16 × 20	12.5 × 40	18 × 20	16 × 31.5	18 × 25	16 × 40	18 × 35.5		
4700 472	12.5 × 35.5	18 × 20	16 × 31.5	18 × 25	16 × 35.5	18 × 31.5	18 × 40			
5600 562	12.5 × 40	18 × 20	16 × 35.5	18 × 25	16 × 40	18 × 35.5				
6800 682	16 × 31.5	18 × 25	16 × 35.5	18 × 31.5	18 × 35.5					
8200 822	16 × 35.5	18 × 31.5	16 × 40	18 × 35.5	18 × 40					
10000 103	16 × 40	18 × 31.5	18 × 40							
12000 123	18 × 35.5									
15000 153	18 × 40									

Cap.(μF) \ V(Code) / Size code / Code	50 (1H)		63 (1J)		80 (1K)		100 (2A)	
	—	6	—	6	—	6	—	6
0.47 R47	※5 × 11						※5 × 11	
0.68 R68	※5 × 11						※5 × 11	
1 010	※5 × 11						※5 × 11	
1.5 1R5	※5 × 11						※5 × 11	
2.2 2R2	5 × 11						5 × 11	
3.3 3R3	5 × 11						5 × 11	
4.7 4R7	5 × 11				5 × 11		6.3 × 11	
6.8 6R8	5 × 11				5 × 11		6.3 × 11	
10 100	5 × 11		5 × 11		6.3 × 11		6.3 × 11	
12 120	5 × 11		5 × 11		6.3 × 11		6.3 × 11	
15 150	5 × 11		6.3 × 11		6.3 × 11		6.3 × 15	
18 180	5 × 11		6.3 × 11		6.3 × 11		6.3 × 15	
22 220	6.3 × 11		6.3 × 11		6.3 × 15		8 × 11.5	
27 270	6.3 × 11		6.3 × 11		6.3 × 15		8 × 15	10 × 12.5
33 330	6.3 × 11		6.3 × 15		8 × 11.5		8 × 15	10 × 12.5
39 390	6.3 × 11		6.3 × 15		8 × 15	10 × 12.5	8 × 20	10 × 15
47 470	6.3 × 15		8 × 11.5		8 × 15	10 × 12.5	10 × 20	12.5 × 15
56 560	6.3 × 15		8 × 15	10 × 12.5	8 × 20	10 × 15	10 × 20	12.5 × 15
68 680	8 × 11.5		8 × 15	10 × 12.5	10 × 20	12.5 × 15	10 × 25	12.5 × 15
82 820	8 × 15	10 × 12.5	8 × 20	10 × 15	10 × 20	12.5 × 15	10 × 31.5	16 × 15
100 101	8 × 20	10 × 15	10 × 20	12.5 × 15	10 × 25	12.5 × 15	10 × 31.5	16 × 15
120 121	8 × 20	10 × 15	10 × 20	12.5 × 15	10 × 31.5	16 × 15	12.5 × 25	16 × 15
150 151	10 × 20	12.5 × 15	10 × 25	12.5 × 15	10 × 31.5	16 × 15	12.5 × 25	18 × 15
180 181	10 × 20	12.5 × 15	10 × 31.5	16 × 15	12.5 × 25	16 × 15	12.5 × 31.5	16 × 20
220 221	10 × 25	12.5 × 15	12.5 × 20	16 × 15	12.5 × 31.5	18 × 15	12.5 × 35.5	16 × 25
270 271	10 × 31.5	16 × 15	12.5 × 25	18 × 15	12.5 × 31.5	16 × 20	12.5 × 40	18 × 20
330 331	10 × 31.5	16 × 15	12.5 × 25	18 × 15	12.5 × 35.5	16 × 25	16 × 31.5	18 × 25
390 391	12.5 × 25	16 × 15	12.5 × 31.5	16 × 20	12.5 × 40	18 × 20	16 × 35.5	18 × 31.5
470 471	12.5 × 25	18 × 15	12.5 × 35.5	16 × 25	16 × 31.5	18 × 25	16 × 40	18 × 35.5
560 561	12.5 × 31.5	16 × 20	12.5 × 40	18 × 20	16 × 35.5	18 × 31.5	18 × 35.5	
680 681	12.5 × 35.5	16 × 20	16 × 31.5	18 × 25	16 × 40	18 × 31.5	18 × 40	
820 821	12.5 × 40	18 × 20	16 × 35.5	18 × 31.5	18 × 35.5			
1000 102	16 × 31.5	18 × 25	16 × 40	18 × 35.5	18 × 40			
1200 122	16 × 35.5	18 × 31.5	18 × 40					
1500 152	16 × 40	18 × 31.5						
1800 182	18 × 35.5							
2200 222	18 × 40							

In case of low profile type, 6 will be put at 12th digit of type numbering system.

Dimension table for 160 to 450V products are shown in 200 page.

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■Standard Ratings

V(Code) / Size code / Item / Code / Cap.(μF)		6.3 (0J)									
		—					6				
		Case size φD × L (mm)	Impedance (Ω) MAX.		Rated ripple (mArms)		Case size φD × L (mm)	Impedance (Ω) MAX.		Rated ripple (mArms)	
			20°C / 100kHz	−10°C / 100kHz	105°C / 10kHz to 200kHz	105°C / 120Hz		20°C / 100kHz	−10°C / 100kHz	105°C / 10kHz to 200kHz	105°C / 120Hz
100	101	5 × 11	0.85	1.70	150	99					
120	121	5 × 11	0.65	1.30	175	115					
150	151	6.3 × 11	0.49	0.98	225	155					
180	181	6.3 × 11	0.39	0.78	250	175					
220	221	6.3 × 11	0.30	0.60	285	205					
270	271	6.3 × 15	0.24	0.48	370	275					
330	331	6.3 × 15	0.20	0.40	405	310					
390	391	8 × 11.5	0.17	0.34	445	345					
470	471	8 × 15	0.14	0.28	550	440	10 × 12.5	0.14	0.28	635	505
560	561	8 × 15	0.12	0.24	595	485	10 × 12.5	0.13	0.26	670	545
680	681	8 × 20	0.10	0.20	730	605	10 × 15	0.11	0.22	825	685
820	821	8 × 20	0.085	0.17	795	675	10 × 15	0.095	0.19	840	715
1000	102	10 × 20	0.075	0.15	950	820	12.5 × 15	0.085	0.17	890	770
1200	122	10 × 20	0.065	0.13	1060	930	12.5 × 15	0.075	0.15	950	835
1500	152	10 × 25	0.055	0.11	1260	1130	12.5 × 15	0.065	0.13	1020	915
1800	182	10 × 31.5	0.050	0.10	1370	1230	16 × 15	0.055	0.11	1270	1140
2200	222	10 × 31.5	0.043	0.086	1470	1320	16 × 15	0.049	0.098	1340	1200
2700	272	12.5 × 25	0.038	0.076	1700	1530	18 × 15	0.044	0.088	1500	1350
3300	332	12.5 × 25	0.034	0.068	1710	1530	18 × 15	0.039	0.078	1600	1440
3900	392	12.5 × 31.5	0.031	0.062	1980	1780	16 × 20	0.036	0.072	1770	1590
4700	472	12.5 × 35.5	0.028	0.056	2230	2000	18 × 20	0.032	0.064	1920	1720
5600	562	12.5 × 40	0.026	0.052	2460	2210	18 × 20	0.030	0.060	1980	1780
6800	682	16 × 31.5	0.024	0.048	2510	2250	18 × 25	0.027	0.054	2350	2110
8200	822	16 × 35.5	0.022	0.044	2770	2490	18 × 31.5	0.025	0.050	2600	2340
10000	103	16 × 40	0.020	0.040	3110	2790	18 × 31.5	0.023	0.046	2720	2440
12000	123	18 × 35.5	0.019	0.038	3050	2740					
15000	153	18 × 40	0.018	0.036	3300	2970					

V(Code) / Size code / Item / Code / Cap.(μF)		10 (1A)									
		—					6				
		Case size φD × L (mm)	Impedance (Ω)MAX.		Rated ripple (mArms)		Case size φD × L (mm)	Impedance (Ω) MAX.		Rated ripple (mArms)	
			20°C / 100kHz	−10°C / 100kHz	105°C / 10kHz to 200kHz	105°C / 120Hz		20°C / 100kHz	−10°C / 100kHz	105°C / 10kHz to 200kHz	105°C / 120Hz
68	680	5 × 11	0.80	1.60	155	97					
82	820	5 × 11	0.65	1.30	175	110					
100	101	6.3 × 11	0.55	1.10	210	135					
120	121	6.3 × 11	0.44	0.88	235	160					
150	151	6.3 × 11	0.35	0.70	265	185					
180	181	6.3 × 11	0.29	0.58	290	205					
220	221	6.3 × 15	0.24	0.48	370	270					
270	271	6.3 × 15	0.20	0.40	405	300					
330	331	8 × 11.5	0.16	0.32	460	350					
390	391	8 × 15	0.14	0.28	550	430	10 × 12.5	0.15	0.30	635	490
470	471	8 × 15	0.12	0.24	595	475	10 × 12.5	0.13	0.26	670	535
560	561	8 × 20	0.10	0.20	730	595	10 × 15	0.11	0.22	700	570
680	681	8 × 20	0.085	0.17	795	660	10 × 15	0.090	0.18	825	685
820	821	10 × 20	0.070	0.14	985	835	12.5 × 15	0.080	0.16	920	780
1000	102	10 × 20	0.060	0.12	1060	915	12.5 × 15	0.065	0.13	1040	900
1200	122	10 × 25	0.050	0.10	1260	1120	12.5 × 15	0.060	0.12	1060	930
1500	152	10 × 31.5	0.045	0.090	1450	1300	16 × 15	0.050	0.10	1330	1190
1800	182	12.5 × 20	0.039	0.078	1470	1320	16 × 15	0.044	0.088	1420	1270
2200	222	12.5 × 25	0.034	0.068	1710	1530	18 × 15	0.039	0.078	1600	1440
2700	272	12.5 × 31.5	0.030	0.060	1980	1780	16 × 20	0.035	0.070	1740	1560
3300	332	12.5 × 35.5	0.026	0.052	2230	2000	16 × 20	0.031	0.062	1850	1660
3900	392	12.5 × 40	0.024	0.048	2460	2210	18 × 20	0.028	0.056	2050	1840
4700	472	16 × 31.5	0.023	0.046	2420	2170	18 × 25	0.026	0.052	2350	2110
5600	562	16 × 35.5	0.021	0.042	2610	2340	18 × 25	0.024	0.048	2440	2190
6800	682	16 × 35.5	0.020	0.040	2770	2490	18 × 31.5	0.022	0.044	2720	2440
8200	822	16 × 40	0.019	0.038	3110	2790	18 × 35.5	0.021	0.042	3050	2740
10000	103	18 × 40	0.017	0.034	3300	2970					

In case of low profile type, 6 will be put at 12th digit of type numbering system.

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■Standard Ratings

V(Code) / Size Code / Item / Cap.(μF) Code		16 (1C)									
		—					6				
		Case size φD × L (mm)	Impedance (Ω) MAX.		Rated ripple (mArms)		Case size φD × L (mm)	Impedance (Ω) MAX.		Rated ripple (mArms)	
			20°C / 100kHz	−10°C / 100kHz	105°C / 10kHz to 200kHz	105°C / 120Hz		20°C / 100kHz	−10°C / 100kHz	105°C / 10kHz to 200kHz	105°C / 120Hz
47	470	5 × 11	0.80	1.60	155	92					
56	560	5 × 11	0.65	1.30	175	105					
68	680	6.3 × 11	0.50	1.00	220	135					
82	820	6.3 × 11	0.42	0.84	240	155					
100	101	6.3 × 11	0.35	0.70	265	175					
120	121	6.3 × 11	0.29	0.58	290	195					
150	151	6.3 × 15	0.23	0.46	375	260					
180	181	6.3 × 15	0.20	0.40	405	285					
220	221	8 × 11.5	0.16	0.32	460	335					
270	271	8 × 15	0.14	0.28	550	410	10 × 12.5	0.14	0.28	635	470
330	331	8 × 15	0.12	0.24	595	455	10 × 12.5	0.12	0.24	670	510
390	391	8 × 20	0.10	0.20	730	570	10 × 15	0.10	0.20	730	570
470	471	8 × 20	0.090	0.18	770	615	10 × 15	0.090	0.18	825	660
560	561	10 × 20	0.075	0.15	950	775	12.5 × 15	0.080	0.16	920	750
680	681	10 × 20	0.065	0.13	1060	880	12.5 × 15	0.070	0.14	985	820
820	821	10 × 25	0.055	0.11	1260	1070	12.5 × 15	0.060	0.12	1060	900
1000	102	10 × 31.5	0.047	0.094	1410	1220	16 × 15	0.055	0.11	1270	1100
1200	122	12.5 × 20	0.041	0.082	1430	1250	16 × 15	0.046	0.092	1390	1220
1500	152	12.5 × 25	0.036	0.072	1700	1530	18 × 15	0.041	0.082	1560	1400
1800	182	12.5 × 31.5	0.032	0.064	1880	1690	16 × 20	0.037	0.074	1700	1530
2200	222	12.5 × 31.5	0.028	0.056	2010	1800	16 × 20	0.033	0.066	1800	1620
2700	272	12.5 × 35.5	0.025	0.050	2230	2000	16 × 25	0.030	0.060	2190	1970
3300	332	12.5 × 40	0.023	0.046	2460	2210	18 × 20	0.027	0.054	2090	1880
3900	392	16 × 31.5	0.022	0.044	2510	2250	18 × 25	0.025	0.050	2350	2110
4700	472	16 × 35.5	0.020	0.040	2770	2490	18 × 31.5	0.023	0.046	2720	2440
5600	562	16 × 40	0.019	0.038	3110	2790	18 × 35.5	0.022	0.044	2620	2350
6800	682	18 × 35.5	0.018	0.036	3050	2740					
8200	822	18 × 40	0.017	0.034	3300	2970					

V(Code) / Size Code / Item / Cap.(μF) Code		25 (1E)									
		—					6				
		Case size φD × L (mm)	Impedance (Ω) MAX.		Rated ripple (mArms)		Case size φD × L (mm)	Impedance (Ω) MAX.		Rated ripple (mArms)	
			20°C / 100kHz	−10°C / 100kHz	105°C / 10kHz to 200kHz	105°C / 120Hz		20°C / 100kHz	−10°C / 100kHz	105°C / 10kHz to 200kHz	105°C / 120Hz
33	330	5 × 11	0.80	1.60	155	88					
39	390	5 × 11	0.65	1.30	175	100					
47	470	6.3 × 11	0.55	1.10	210	125					
56	560	6.3 × 11	0.44	0.88	235	140					
68	680	6.3 × 11	0.36	0.72	260	160					
82	820	6.3 × 11	0.30	0.60	285	180					
100	101	6.3 × 15	0.24	0.48	370	245					
120	121	6.3 × 15	0.20	0.40	405	275					
150	151	8 × 11.5	0.16	0.32	460	320					
180	181	8 × 15	0.14	0.28	550	390	10 × 12.5	0.15	0.30	635	450
220	221	8 × 15	0.11	0.22	625	455	10 × 12.5	0.13	0.26	670	485
270	271	8 × 20	0.095	0.19	750	560	10 × 15	0.11	0.22	700	525
330	331	8 × 20	0.085	0.17	795	610	10 × 15	0.095	0.19	825	630
390	391	10 × 20	0.070	0.14	985	770	12.5 × 15	0.080	0.16	920	720
470	471	10 × 20	0.065	0.13	1060	845	12.5 × 15	0.070	0.14	985	785
560	561	10 × 25	0.055	0.11	1260	1030	12.5 × 15	0.060	0.12	1060	860
680	681	10 × 31.5	0.046	0.092	1420	1180	16 × 15	0.055	0.11	1270	1050
820	821	12.5 × 20	0.041	0.082	1440	1220	16 × 15	0.049	0.098	1340	1140
1000	102	12.5 × 25	0.036	0.072	1700	1470	18 × 15	0.043	0.086	1520	1310
1200	122	12.5 × 25	0.032	0.064	1760	1550	18 × 15	0.039	0.078	1600	1400
1500	152	12.5 × 31.5	0.029	0.058	1980	1780	16 × 20	0.034	0.068	1770	1590
1800	182	12.5 × 35.5	0.026	0.052	2230	2000	16 × 25	0.031	0.062	2190	1970
2200	222	12.5 × 40	0.024	0.048	2460	2210	18 × 20	0.028	0.056	2050	1840
2700	272	16 × 31.5	0.022	0.044	2510	2250	18 × 25	0.025	0.050	2350	2110
3300	332	16 × 35.5	0.020	0.040	2770	2490	18 × 31.5	0.023	0.046	2720	2440
3900	392	16 × 40	0.019	0.038	3110	2790	18 × 35.5	0.021	0.042	3050	2740
4700	472	18 × 40	0.018	0.036	3300	2970					

In case of low profile type, [6] will be put at 12th digit of type numbering system.

UPM

■Standard Ratings

Cap.(μF)	Code	V(Code) / Size code / Item	35 (1V) — Case size φD × L (mm)	Impedance (Ω) MAX. 20°C / 100kHz	Impedance (Ω) MAX. −10°C / 100kHz	Rated ripple (mArms) 105°C / 10kHz to 200kHz	Rated ripple (mArms) 105°C / 120Hz	35 (1V) 6 — Case size φD × L (mm)	Impedance (Ω) MAX. 20°C / 100kHz	Impedance (Ω) MAX. −10°C / 100kHz	Rated ripple (mArms) 105°C / 10kHz to 200kHz	Rated ripple (mArms) 105°C / 120Hz
22	220		5 × 11	0.75	1.50	160	85					
27	270		5 × 11	0.60	1.20	180	99					
33	330		6.3 × 11	0.49	0.98	225	125					
39	390		6.3 × 11	0.41	0.82	245	140					
47	470		6.3 × 11	0.34	0.68	270	160					
56	560		6.3 × 11	0.28	0.56	295	180					
68	680		6.3 × 15	0.24	0.48	370	230					
82	820		6.3 × 15	0.19	0.38	415	265					
100	101		8 × 11.5	0.16	0.32	460	305					
120	121		8 × 15	0.14	0.28	550	370	10 × 12.5	0.15	0.30	635	425
150	151		8 × 15	0.12	0.24	595	415	10 × 12.5	0.12	0.24	680	475
180	181		8 × 20	0.10	0.20	730	520	10 × 15	0.11	0.22	700	500
220	221		8 × 20	0.085	0.17	795	580	10 × 15	0.090	0.18	825	600
270	271		10 × 20	0.070	0.14	985	735	12.5 × 15	0.080	0.16	920	690
330	331		10 × 20	0.060	0.12	1060	810	12.5 × 15	0.065	0.13	1020	780
390	391		10 × 25	0.055	0.11	1260	980	12.5 × 15	0.060	0.12	1060	825
470	471		10 × 31.5	0.046	0.092	1450	1160	16 × 15	0.055	0.11	1270	1010
560	561		12.5 × 20	0.041	0.082	1430	1170	16 × 15	0.048	0.096	1360	1110
680	681		12.5 × 25	0.036	0.072	1700	1410	18 × 15	0.042	0.084	1540	1280
820	821		12.5 × 25	0.032	0.064	1760	1490	18 × 15	0.038	0.076	1620	1380
1000	102		12.5 × 31.5	0.029	0.058	1980	1710	16 × 20	0.034	0.068	1770	1530
1200	122		12.5 × 35.5	0.026	0.052	2230	1960	16 × 25	0.031	0.062	2190	1920
1500	152		12.5 × 40	0.024	0.048	2460	2210	18 × 20	0.028	0.056	2050	1840
1800	182		16 × 31.5	0.022	0.044	2510	2250	18 × 25	0.025	0.050	2350	2110
2200	222		16 × 35.5	0.020	0.040	2770	2490	18 × 31.5	0.023	0.046	2720	2440
2700	272		16 × 40	0.018	0.036	3110	2790	18 × 35.5	0.021	0.042	3050	2740
3300	332		18 × 40	0.017	0.034	3300	2970					

Cap.(μF)	Code	V(Code) / Size code / Item	50 (1H) — Case size φD × L (mm)	Impedance (Ω) MAX. 20°C / 100kHz	Impedance (Ω) MAX. −10°C / 100kHz	Rated ripple (mArms) 105°C / 10kHz to 200kHz	Rated ripple (mArms) 105°C / 120Hz	50 (1H) 6 — Case size φD × L (mm)	Impedance (Ω) MAX. 20°C / 100kHz	Impedance (Ω) MAX. −10°C / 100kHz	Rated ripple (mArms) 105°C / 10kHz to 200kHz	Rated ripple (mArms) 105°C / 120Hz
0.47	R47		※5 × 11	23.0	46.0	22	11					
0.68	R68		※5 × 11	16.0	32.0	28	14					
1	010		※5 × 11	11.0	22.0	36	18					
1.5	1R5		※5 × 11	7.50	15.0	45	22					
2.2	2R2		5 × 11	5.00	10.0	54	27					
3.3	3R3		5 × 11	3.30	6.60	66	33					
4.7	4R7		5 × 11	2.20	4.40	81	40					
6.8	6R8		5 × 11	1.80	3.60	91	45					
10	100		5 × 11	1.40	2.80	115	57					
12	120		5 × 11	1.20	2.40	125	62					
15	150		5 × 11	0.93	1.86	145	72					
18	180		5 × 11	0.80	1.60	165	79					
22	220		6.3 × 11	0.65	1.30	195	100					
27	270		6.3 × 11	0.53	1.06	215	115					
33	330		6.3 × 11	0.43	0.86	240	135					
39	390		6.3 × 11	0.36	0.72	260	150					
47	470		6.3 × 15	0.30	0.60	330	195					
56	560		6.3 × 15	0.25	0.50	360	220					
68	680		8 × 11.5	0.20	0.40	415	260					
82	820		8 × 15	0.17	0.34	505	320	10 × 12.5	0.18	0.36	530	340
100	101		8 × 20	0.14	0.28	620	410	10 × 15	0.16	0.32	580	385
120	121		8 × 20	0.12	0.24	755	510	10 × 15	0.13	0.26	755	510
150	151		10 × 20	0.10	0.20	820	570	12.5 × 15	0.11	0.22	785	545
180	181		10 × 20	0.085	0.17	945	670	12.5 × 15	0.095	0.19	845	605
220	221		10 × 25	0.075	0.15	1150	840	12.5 × 15	0.080	0.16	920	670
270	271		10 × 31.5	0.065	0.13	1200	900	16 × 15	0.070	0.14	1120	840
330	331		10 × 31.5	0.055	0.11	1300	995	16 × 15	0.060	0.12	1210	925
390	391		12.5 × 25	0.048	0.096	1440	1120	16 × 15	0.055	0.11	1270	990
470	471		12.5 × 25	0.044	0.088	1500	1200	18 × 15	0.046	0.092	1470	1170
560	561		12.5 × 31.5	0.040	0.080	1720	1410	16 × 20	0.044	0.088	1550	1270
680	681		12.5 × 35.5	0.036	0.072	1900	1580	16 × 20	0.040	0.080	1630	1350
820	821		12.5 × 40	0.033	0.066	2120	1800	18 × 20	0.036	0.072	1810	1540
1000	102		16 × 31.5	0.030	0.060	2150	1860	18 × 25	0.033	0.066	2020	1750
1200	122		16 × 35.5	0.028	0.056	2320	2040	18 × 31.5	0.031	0.062	2140	1880
1500	152		16 × 40	0.026	0.052	2650	2380	18 × 31.5	0.029	0.058	2340	2100
1800	182		18 × 35.5	0.025	0.050	2620	2350					
2200	222		18 × 40	0.024	0.048	2790	2510					

In case of low profile type, 6 will be put at 12th digit of type numbering system.

UPM

■Standard Ratings

Cap.(μF)	Code	63 (1J) — Case size φD × L (mm)	Impedance (Ω) MAX. 20°C / 100kHz	Impedance (Ω) MAX. −10°C / 100kHz	Rated ripple (mArms) 105°C / 10kHz to 200kHz	Rated ripple (mArms) 105°C / 120Hz	63 (1J) 6 — Case size φD × L (mm)	Impedance (Ω) MAX. 20°C / 100kHz	Impedance (Ω) MAX. −10°C / 100kHz	Rated ripple (mArms) 105°C / 10kHz to 200kHz	Rated ripple (mArms) 105°C / 120Hz
10	100	5 × 11	1.06	2.12	135	67					
12	120	5 × 11	0.93	1.86	145	72					
15	150	6.3 × 11	0.73	1.46	185	92					
18	180	6.3 × 11	0.63	1.26	195	100					
22	220	6.3 × 11	0.52	1.04	215	110					
27	270	6.3 × 11	0.43	0.86	240	130					
33	330	6.3 × 15	0.35	0.70	305	170					
39	390	6.3 × 15	0.30	0.60	330	190					
47	470	8 × 11.5	0.25	0.50	365	215					
56	560	8 × 15	0.21	0.42	450	275	10 × 12.5	0.23	0.46	450	275
68	680	8 × 15	0.17	0.34	500	315	10 × 12.5	0.19	0.38	495	310
82	820	8 × 20	0.15	0.30	600	385	10 × 15	0.16	0.32	580	375
100	101	10 × 20	0.12	0.24	750	495	12.5 × 15	0.14	0.28	695	460
120	121	10 × 20	0.10	0.20	820	555	12.5 × 15	0.12	0.24	750	510
150	151	10 × 25	0.090	0.18	950	665	12.5 × 15	0.095	0.19	845	590
180	181	10 × 31.5	0.075	0.15	1110	790	16 × 15	0.080	0.16	1050	750
220	221	12.5 × 20	0.065	0.13	1140	835	16 × 15	0.070	0.14	1120	820
270	271	12.5 × 25	0.055	0.11	1340	1000	18 × 15	0.060	0.12	1290	965
330	331	12.5 × 25	0.049	0.098	1420	1090	18 × 15	0.050	0.10	1410	1080
390	391	12.5 × 31.5	0.043	0.086	1620	1260	16 × 20	0.047	0.094	1500	1170
470	471	12.5 × 35.5	0.039	0.078	1780	1420	16 × 25	0.042	0.084	1700	1360
560	561	12.5 × 40	0.035	0.070	1950	1590	18 × 20	0.039	0.78	1730	1410
680	681	16 × 31.5	0.032	0.064	2050	1700	18 × 25	0.035	0.070	1940	1610
820	821	16 × 35.5	0.029	0.058	2220	1890	18 × 31.5	0.032	0.064	2110	1790
1000	102	16 × 40	0.027	0.054	2370	2050	18 × 35.5	0.029	0.058	2280	1970
1200	122	18 × 40	0.025	0.050	2510	2210					

Cap.(μF)	Code	80 (1K) — Case size φD × L (mm)	Impedance (Ω) MAX. 20°C / 100kHz	Impedance (Ω) MAX. −10°C / 100kHz	Rated ripple (mArms) 105°C / 10kHz to 200kHz	Rated ripple (mArms) 105°C / 120Hz	80 (1K) 6 — Case size φD × L (mm)	Impedance (Ω) MAX. 20°C / 100kHz	Impedance (Ω) MAX. −10°C / 100kHz	Rated ripple (mArms) 105°C / 10kHz to 200kHz	Rated ripple (mArms) 105°C / 120Hz
4.7	4R7	5 × 11	4.20	11.00	53	26					
6.8	6R8	5 × 11	2.60	7.00	68	34					
10	100	6.3 × 11	1.70	4.60	87	43					
12	120	6.3 × 11	1.40	3.80	96	48					
15	150	6.3 × 11	1.20	3.20	104	52					
18	180	6.3 × 11	1.00	2.70	150	78					
22	220	6.3 × 15	0.77	2.10	180	95					
27	270	6.3 × 15	0.63	1.70	220	115					
33	330	8 × 11.5	0.53	1.40	275	150					
39	390	8 × 15	0.46	1.20	300	170	10 × 12.5	0.49	1.30	380	215
47	470	8 × 15	0.39	1.10	360	215	10 × 12.5	0.42	1.10	410	245
56	560	8 × 20	0.34	0.92	490	295	10 × 15	0.36	0.97	500	305
68	680	10 × 20	0.28	0.76	570	355	12.5 × 15	0.31	0.84	520	325
82	820	10 × 20	0.25	0.68	620	395	12.5 × 15	0.27	0.73	560	355
100	101	10 × 25	0.21	0.57	795	525	12.5 × 15	0.23	0.62	605	400
120	121	10 × 31.5	0.18	0.49	870	585	16 × 15	0.20	0.54	663	445
150	151	10 × 31.5	0.15	0.41	955	665	16 × 15	0.18	0.47	699	470
180	181	12.5 × 25	0.13	0.35	1040	735	16 × 15	0.15	0.41	766	545
220	221	12.5 × 31.5	0.12	0.32	1160	845	18 × 15	0.13	0.35	881	645
270	271	12.5 × 31.5	0.10	0.27	1270	945	16 × 20	0.11	0.30	1240	920
330	331	12.5 × 35.5	0.088	0.24	1450	1100	16 × 25	0.099	0.27	1440	1100
390	391	12.5 × 40	0.078	0.21	1610	1250	18 × 20	0.089	0.24	1450	1120
470	471	16 × 31.5	0.069	0.19	1790	1430	18 × 25	0.080	0.22	1650	1320
560	561	16 × 35.5	0.062	0.17	2000	1640	18 × 31.5	0.072	0.19	1750	1430
680	681	16 × 40	0.055	0.15	2200	1830	18 × 31.5	0.065	0.18	1850	1540
820	821	18 × 35.5	0.049	0.13	2250	1910					
1000	102	18 × 40	0.044	0.12	2370	2050					

In case of low profile type, 6 will be put at 12th digit of type numbering system.

UPM

■Standard Ratings

Cap.(μF)	Code	V(Code)	100 (2A)									
		Size code	—				6					
		Item	Case size φD × L (mm)	Impedance (Ω) MAX.		Rated ripple (mArms)		Case size φD × L (mm)	Impedance (Ω) MAX.		Rated ripple (mArms)	
				20°C / 100kHz	−10°C / 100kHz	105°C / 10kHz to 200kHz	105°C / 120Hz		20°C / 100kHz	−10°C / 100kHz	105°C / 10kHz to 200kHz	105°C / 120Hz
0.47	R47		※5 × 11	43.0	116.0	17	8					
0.68	R68		※5 × 11	23.0	62.0	23	11					
1	010		※5 × 11	17.0	46.0	27	13					
1.5	1R5		※5 × 11	10.0	27.0	35	17					
2.2	2R2		5 × 11	6.60	18.0	43	21					
3.3	3R3		5 × 11	4.10	11.0	54	27					
4.7	4R7		6.3 × 11	2.80	7.60	68	34					
6.8	6R8		6.3 × 11	1.90	5.10	83	41					
10	100		6.3 × 11	1.20	3.20	104	52					
12	120		6.3 × 11	1.00	2.70	150	75					
15	150		6.3 × 15	0.81	2.20	180	90					
18	180		6.3 × 15	0.67	1.80	220	110					
22	220		8 × 11.5	0.55	1.50	275	145					
27	270		8 × 15	0.47	1.30	300	160	10 × 12.5	0.50	1.40	380	205
33	330		8 × 15	0.38	1.00	360	200	10 × 12.5	0.42	1.10	410	230
39	390		8 × 20	0.33	0.89	490	280	10 × 15	0.36	0.97	500	285
47	470		10 × 20	0.28	0.76	570	340	12.5 × 15	0.31	0.84	520	310
56	560		10 × 20	0.24	0.65	620	375	12.5 × 15	0.27	0.73	560	340
68	680		10 × 25	0.21	0.57	795	500	12.5 × 15	0.23	0.62	605	380
82	820		10 × 31.5	0.18	0.49	870	555	16 × 15	0.19	0.51	681	435
100	101		10 × 31.5	0.15	0.41	955	635	16 × 15	0.17	0.46	719	475
120	121		12.5 × 25	0.13	0.35	1040	700	16 × 15	0.14	0.38	793	535
150	151		12.5 × 25	0.11	0.30	1120	780	18 × 15	0.12	0.32	917	640
180	181		12.5 × 31.5	0.098	0.26	1270	900	16 × 20	0.11	0.30	1240	880
220	221		12.5 × 35.5	0.087	0.23	1450	1050	16 × 25	0.093	0.25	1440	1050
270	271		12.5 × 40	0.072	0.19	1610	1200	18 × 20	0.080	0.22	1450	1080
330	331		16 × 31.5	0.062	0.17	1790	1370	18 × 25	0.070	0.19	1650	1260
390	391		16 × 35.5	0.053	0.14	2000	1550	18 × 31.5	0.062	0.17	1850	1430
470	471		16 × 40	0.047	0.13	2200	1760	18 × 35.5	0.056	0.15	1970	1570
560	561		18 × 35.5	0.041	0.11	2250	1840					
680	681		18 × 40	0.036	0.097	2300	1910					

In case of low profile type, 6 will be put at 12th digit of type numbering system.

Cap.(μF)	Code	V(Code)	160		200		250		315		350		400		450	
			2C		2D		2E		2F		2V		2G		2W	
1	010		8 × 11.5	19	8 × 11.5	19	8 × 11.5	19	8 × 11.5	19	10 × 12.5	21	10 × 12.5	17	10 × 15	17
2.2	2R2		8 × 11.5	30	8 × 11.5	30	10 × 12.5	32	10 × 12.5	32	10 × 15	34	10 × 15	28	10 × 20	28
3.3	3R3		10 × 12.5	50	10 × 12.5	50	10 × 15	52	10 × 15	52	10 × 20	54	10 × 20	47	12.5 × 20	48
4.7	4R7		10 × 12.5	57	10 × 15	60	10 × 15	60	10 × 20	65	10 × 20	65	12.5 × 20	55	12.5 × 25	55
10	100		10 × 15	90	10 × 20	95	12.5 × 20	98	12.5 × 20	98	12.5 × 25	100	12.5 × 25	85	16 × 25	90
22	220		12.5 × 20	140	12.5 × 25	145	16 × 25	150	16 × 25	150	16 × 25	150	16 × 31.5	130	16 × 35.5	135
33	330		12.5 × 25	175	16 × 25	180	16 × 25	180	16 × 31.5	185	16 × 35.5	190	18 × 35.5	170	18 × 40	170
47	470		16 × 25	220	16 × 25	220	16 × 31.5	225	18 × 35.5	235	18 × 40	240			Case size φD × L (mm)	※1
100	101		16 × 35.5	330	18 × 40	345	18 × 40	345								

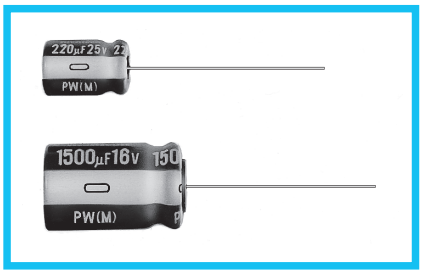
※1 Rated ripple current (mArms) at 105°C 120Hz

nichicon

UPW

Miniature Sized, Low Impedance, High Reliability For Switching Power Supplies

Smaller | Low Impedance | Long Life | Anti-Solvent Feature (Through 100V only)



- Smaller case size and lower impedance than UPM.
- Low impedance and high reliability withstanding 2000 hours to 8000 hours.
- Capacitance ranges available based on the numerical values in E12 series under JIS.
- Compliant to the RoHS directive (2011/65/EU).

Values marked with an ∗in the dimension table are scheduled to be discontinued and are not recommended for new designs.

UPM (Smaller) — UPA (Low Impedance) — **UPW** — UTT (Long Life)

■Specifications

Item	Performance Characteristics
Category Temperature Range	−55 to +105˚C (6.3 to 100V), −40 to + 105˚C (160 to 400V), −25 to +105˚C (450V)
Rated Voltage Range	6.3 to 450V
Rated Capacitance Range	0.47 to 15000µF
Capacitance Tolerance	±20% at 120Hz, 20˚C
Leakage Current	Rated voltage (V): 6.3 to 100 / 160 to 450 Leakage current: After 1 minute's application of rated voltage at 20°C, leakage current is not more than 0.03CV or 4 (µA), whichever is greater. / CV ≦ 1000 : I = 0.1CV+40 (µA) max. CV > 1000 : I = 0.04CV+100 (µA) max.
Tangent of loss angle (tan δ)	For capacitance of more than 1000µF, add 0.02 for every increase of 1000µF. Measurement frequency : 120Hz at 20˚C

Rated voltage (V)	6.3	10	16	25	35	50	63	100	160 to 250	315 · 350	400 · 450
tan δ (MAX.)	0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.08	0.15	0.20	0.25

Stability at Low Temperature — 120Hz

Rated voltage (V)		6.3 · 10	16 · 25	35 · 50	63 · 100	160 · 200	250	315 · 350	400	450
Impedance ratio (MAX.)	Z−25˚C / Z+20˚C	—	—	—	—	3	3	4	6	15
	Z−40˚C / Z+20˚C	—	—	—	—	4	6	8	10	—
	Z−55˚C / Z+20˚C	3	3	3	3	—	—	—	—	—

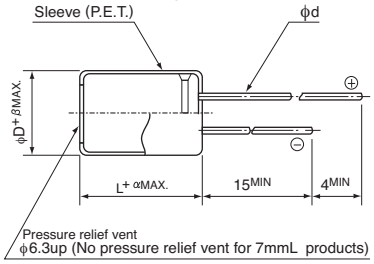
Endurance — The specifications listed at right shall be met when the capacitors are restored to 20˚C after D.C. bias plus rated ripple current is applied for 8000 hours (2000 hours for φD=4, 5 and 6.3, 3000 hours for φD=8, 5000 hours for φD=10, 7000 hours for φD=12.5) at 105˚C, the peak voltage shall not exceed the rated voltage.

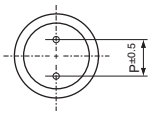
Capacitance change	Within ±20% of the initial capacitance value
tan δ	200% or less than the initial specified value
Leakage current	Less than or equal to the initial specified value

Shelf Life — After storing the capacitors under no load at 105˚C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.

Marking — Printed with white color letter on dark brown sleeve.

■Radial Lead Type





α	
	(L = 7) 1.0
	(L < 20) 1.5
	(L ≧ 20) 2.0

(mm)

φD	4	5	6.3	8	10	12.5	16	18	20	22	25
P	1.5	2.0	2.5	3.5	5.0	5.0	7.5	7.5	10.0	10.0	12.5
φd	0.45	0.5 (0.45)	0.5 (0.45)	0.6	0.6	0.6 ※0.8	0.8	0.8	1.0	1.0	1.0
β	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.0	1.0

※: Applied to L>25 products
( ): Applied to 7mmL products

• Please refer to page 20 about the end seal configuration.

Type numbering system (Example : 10V 680µF)

1	2	3	4	5	6	7	8	9	10	11	12
U	P	W	1	A	6	8	1	M	P	D	

- 12: Size code
- 10, 11: Configuration ※
- 9: Capacitance tolerance (±20%)
- 6, 7, 8: Rated capacitance (680µF)
- 4, 5: Rated voltage (10V)
- 3: Series name
- 1, 2: Type

※ Configuration

φ D	Pb-free leadwire Pb-free PET sleeve
4 · 5	DD
6.3	ED (7mm L : DD)
8 · 10	PD
12.5 to 18	HD
20 to 25	RD

● Frequency coefficient of rated ripple current

V	Cap. (µF) \ Frequency	50Hz	120Hz	300Hz	1kHz	10kHz or more
6.3 to 100	0.47 to 56	0.20	0.30	0.50	0.80	1.00
	68 to 330	0.55	0.65	0.75	0.85	1.00
	390 to 1000	0.70	0.75	0.80	0.90	1.00
	1200 to 15000	0.80	0.85	0.90	0.95	1.00
160 to 450	0.47 to 220	0.80	1.00	1.25	1.40	1.60
	330 to 470	0.90	1.00	1.10	1.13	1.15

Please refer to page 20, 21, 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.
●Dimension table in next page.

UPW

■Standard Ratings

Cap.(μF)	Code	6.3 (0J) Case size φD × L (mm)	6.3 (0J) Impedance (Ω) MAX. 20˚C / 100kHz	6.3 (0J) Impedance (Ω) MAX. −10˚C / 100kHz	6.3 (0J) Rated ripple (mArms) 105˚C / 100kHz	10 (1A) Case size φD × L (mm)	10 (1A) Impedance (Ω) MAX. 20˚C / 100kHz	10 (1A) Impedance (Ω) MAX. −10˚C / 100kHz	10 (1A) Rated ripple (mArms) 105˚C / 100kHz
22	220	5 × 11	0.60	1.20	180	5 × 11	0.60	1.20	180
						▲4 × 7	2.00	5.00	65
27	270	4 × 7	2.00	5.00	65				
33	330	5 × 11	0.60	1.20	180	5 × 11	0.60	1.20	180
		▲5 × 7	0.95	2.40	120	▲5 × 7	0.95	2.40	120
39	390					5 × 7	0.95	2.40	120
47	470	5 × 11	0.60	1.20	180	5 × 11	0.60	1.20	180
		▲5 × 7	0.95	2.40	120	▲4 × 11	1.30	2.60	120
56	560	5 × 7	0.95	2.40	120				
68	680	4 × 11	1.30	2.60	120				
82	820					5 × 11	0.60	1.20	180
						▲6.3 × 7	0.45	1.20	200
100	101	5 × 11	0.60	1.20	180	5 × 11	0.60	1.20	180
						▲5 × 15	0.50	1.00	235
120	121	6.3 × 7	0.45	1.20	200				
150	151	6.3 × 11	0.25	0.50	290	6.3 × 11	0.25	0.50	290
		▲5 × 15	0.50	1.00	235				
180	181					6.3 × 11	0.25	0.50	290
220	221	6.3 × 11	0.25	0.50	290	6.3 × 11	0.25	0.50	290
						▲6.3 × 15	0.23	0.46	430
330	331	6.3 × 11	0.25	0.50	290	8 × 11.5	0.117	0.234	555
		▲6.3 × 15	0.23	0.46	430				
470	471	8 × 11.5	0.117	0.234	555	8 × 11.5	0.117	0.234	555
560	561	8 × 11.5	0.117	0.234	555				
680	681	10 × 12.5	0.090	0.180	755	10 ×12.5	0.090	0.180	760
						▲8 × 15	0.085	0.170	730
820	821	8 × 15	0.085	0.170	730				
		▲10 × 12.5	0.090	0.180	755				
1000	102	10 × 12.5	0.090	0.180	755	10 × 16	0.068	0.136	1050
						▲8 × 20	0.065	0.130	995
1200	122	8 × 20	0.065	0.130	995	10 × 20	0.052	0.104	1220
		▲10 × 16	0.068	0.136	1050				
1500	152	10 × 20	0.052	0.104	1220	10 × 20	0.052	0.104	1220
						▲10 × 25	0.045	0.090	1440
2200	222	12.5 × 20	0.038	0.076	1655	12.5 × 20	0.038	0.076	1655
		▲10 × 25	0.045	0.090	1440	▲10 × 31.5	0.035	0.070	1815
2700	272	10 × 31.5	0.035	0.070	1815	12.5 × 25	0.030	0.060	1945
3300	332	12.5 × 20	0.038	0.076	1655	12.5 × 25	0.030	0.060	1950
						▲12.5 × 31.5	0.025	0.050	2310
3900	392	12.5 × 25	0.030	0.060	1945	12.5 × 35.5	0.022	0.044	2510
						▲16 × 20	0.029	0.058	2210
4700	472	16 × 25	0.022	0.044	2555	16 × 25	0.022	0.044	2555
		▲12.5 × 31.5	0.025	0.050	2310				
5600	562	12.5 × 35.5	0.022	0.044	2510	16 × 25	0.022	0.044	2560
		▲16 × 20	0.029	0.058	2210	▲18 × 20	0.028	0.056	2490
6800	682	16 × 25	0.022	0.044	2560	16 × 31.5	0.018	0.036	3010
		▲18 × 20	0.028	0.056	2490	▲18 × 25	0.020	0.040	2740
8200	822	16 × 31.5	0.018	0.036	3010	16 × 35.5	0.016	0.032	3150
						▲18 × 31.5	0.016	0.032	3635
10000	103	16 × 31.5	0.016	0.032	3150	18 × 35.5	0.015	0.030	3680
		▲18 × 25	0.020	0.040	2740				
12000	123	18 × 31.5	0.016	0.032	3635				
15000	153	18 × 35.5	0.015	0.030	3680	18 × 40	0.014	0.028	3800

▲ : In this case, 6 will be put at 12th digit of type numbering system.

UPW

■Standard Ratings

Cap. (μF)	Code	16 (1C) Case size φD × L (mm)	16 (1C) Impedance (Ω) MAX. 20˚C / 100kHz	16 (1C) Impedance (Ω) MAX. −10˚C / 100kHz	16 (1C) Rated ripple (mArms) 105˚C / 100kHz	25 (1E) Case size φD × L (mm)	25 (1E) Impedance (Ω) MAX. 20˚C / 100kHz	25 (1E) Impedance (Ω) MAX. −10˚C / 100kHz	25 (1E) Rated ripple (mArms) 105˚C / 100kHz
4.7	4R7					5 × 11	0.60	1.20	180
10	100	5 × 11	0.60	1.20	180	5 × 11	0.60	1.20	180
						▲4 × 7	2.00	5.00	65
15	150	4 × 7	2.00	5.00	65				
22	220	5 × 11	0.60	1.20	180	5 × 11	0.60	1.20	180
		▲5 × 7	0.95	2.40	120	▲5 × 7	0.95	2.40	120
27	270	5 × 7	0.95	2.40	120	4 × 11	1.30	2.60	120
33	330	5 × 11	0.60	1.20	180	5 × 11	0.60	1.20	180
		▲6.3 × 7	0.45	1.20	200				
39	390	4 × 11	1.30	2.60	120	5 × 11	0.60	1.20	180
						▲6.3 × 7	0.45	1.20	200
47	470	5 × 11	0.60	1.20	180	5 × 11	0.60	1.20	180
56	560	5 × 11	0.60	1.20	180	5 × 15	0.50	1.00	235
		▲6.3 × 7	0.45	1.20	200				
82	820	5 × 15	0.50	1.00	235	6.3 × 11	0.25	0.50	290
100	101	6.3 × 11	0.25	0.50	290	6.3 × 11	0.25	0.50	290
120	121	6.3 × 11	0.25	0.50	290	6.3 × 15	0.23	0.46	430
150	151	6.3 × 11	0.25	0.50	290	8 × 11.5	0.117	0.234	555
180	181	6.3 × 15	0.23	0.46	430				
220	221	8 × 11.5	0.117	0.234	555	8 × 11.5	0.117	0.234	555
330	331	8 × 11.5	0.117	0.234	555	10 × 12.5	0.090	0.180	760
						▲8 × 15	0.085	0.170	730
470	471	10 × 12.5	0.090	0.180	760	10 × 16	0.068	0.136	1050
		▲8 × 15	0.085	0.170	730	▲8 × 20	0.065	0.130	995
560	561					10 × 20	0.052	0.104	1220
680	681	10 × 16	0.068	0.136	1050	10 × 20	0.052	0.104	1220
		▲8 × 20	0.065	0.130	995				
820	821	10 × 20	0.052	0.104	1220	10 × 25	0.045	0.090	1440
1000	102	10 × 20	0.052	0.104	1220	12.5 × 20	0.038	0.076	1660
						▲10 × 31.5	0.035	0.070	1815
1200	122	10 × 25	0.045	0.090	1440				
1500	152	12.5 × 20	0.038	0.076	1655	16 × 25	0.022	0.044	2555
		▲10 × 31.5	0.035	0.070	1815	▲12.5 × 25	0.030	0.060	1950
1800	182					12.5 × 31.5	0.025	0.050	2310
						▲16 × 20	0.029	0.058	2210
2200	222	12.5 × 25	0.030	0.060	1945	16 × 25	0.022	0.044	2555
						▲18 × 20	0.028	0.056	2490
						※12.5 × 35.5	0.022	0.044	2510
2700	272	12.5 × 31.5	0.025	0.050	2310	16 × 25	0.022	0.044	2555
		▲16 × 20	0.029	0.058	2210				
3300	332	16 × 25	0.022	0.044	2555	16 × 31.5	0.018	0.036	3010
		▲12.5 × 35.5	0.022	0.044	2510	▲18 × 25	0.020	0.040	2740
3900	392	16 × 25	0.022	0.044	2560	16 × 35.5	0.016	0.032	3150
		▲18 × 20	0.028	0.056	2490	▲18 × 31.5	0.016	0.032	3635
4700	472	16 × 31.5	0.018	0.036	3010	18 × 35.5	0.015	0.030	3680
		▲18 × 25	0.020	0.040	2740				
5600	562	16 × 35.5	0.016	0.032	3150				
		▲18 × 31.5	0.016	0.032	3635				
6800	682	18 × 35.5	0.015	0.030	3680	18 × 40	0.014	0.028	3800
8200	822	18 × 35.5	0.015	0.030	3680				
10000	103	18 × 40	0.014	0.028	3800				

▲ : In this case, 6 will be put at 12th digit of type numbering system.
※ : In this case, 3 will be put at 12th digit of type numbering system.

UPW

■Standard Ratings

Cap.(μF) \ V(Code) / Item / Code		35 (1V)				50 (1H)			
		Case size φD × L (mm)	Impedance (Ω) MAX. 20˚C / 100kHz	Impedance (Ω) MAX. −10˚C / 100kHz	Rated ripple (mArms) 105˚C / 100kHz	Case size φD × L (mm)	Impedance (Ω) MAX. 20˚C / 100kHz	Impedance (Ω) MAX. −10˚C / 100kHz	Rated ripple (mArms) 105˚C / 100kHz
0.47	R47					✻5 × 11	5.00	10.0	25
1	010					✻5 × 11	3.50	7.00	40
2.2	2R2					5 × 11	3.00	6.00	55
3.3	3R3					5 × 11	2.60	5.20	65
4.7	4R7	5 × 11	0.60	1.20	180	5 × 11	2.30	4.60	90
6.8	6R8	4 × 7	2.00	5.00	65				
10	100	5 × 11	0.60	1.20	180	5 × 11	1.40	2.80	120
		▲5 × 7	0.95	2.40	120	▲4 × 11	2.50	5.00	90
12	120	5 × 7	0.95	2.40	120				
18	180	4 × 11	1.30	2.60	120	5 × 11	1.30	2.60	155
22	220	5 × 11	0.60	1.20	180	5 × 11	1.20	2.40	170
27	270	5 × 11	0.60	1.20	180	5 × 15	0.90	1.80	215
		▲6.3 × 7	0.45	1.20	200				
33	330	5 × 11	0.60	1.20	180	6.3 × 11	0.43	0.86	300
39	390	5 × 15	0.50	1.00	235				
47	470	6.3 × 11	0.25	0.50	290	6.3 × 11	0.43	0.86	300
56	560	6.3 × 11	0.25	0.50	290	6.3 × 15	0.40	0.80	360
82	820	6.3 × 15	0.23	0.46	430	8 × 11.5	0.234	0.468	485
100	101	8 × 11.5	0.117	0.234	555	8 × 11.5	0.234	0.468	485
120	121					8 × 15	0.155	0.310	635
						▲10 × 12.5	0.162	0.324	620
150	151	8 × 11.5	0.117	0.234	555	10 × 12.5	0.162	0.324	615
180	181					8 × 20	0.120	0.240	860
						▲10 × 16	0.119	0.238	850
220	221	10 × 12.5	0.090	0.180	760	10 × 16	0.119	0.238	850
		▲8 × 15	0.085	0.170	730	▲10 × 20	0.090	0.180	1030
270	271					10 × 25	0.082	0.164	1200
330	331	10 × 16	0.068	0.136	1050	10 × 20	0.090	0.180	1030
		▲8 × 20	0.065	0.130	995	▲10 × 31.5	0.060	0.120	1610
390	391	10 × 20	0.052	0.104	1220	12.5 × 20	0.063	0.126	1480
470	471	10 × 20	0.052	0.104	1220	12.5 × 20	0.060	0.120	1500
560	561	10 × 25	0.045	0.090	1440	12.5 × 25	0.050	0.100	1832
680	681	12.5 × 20	0.038	0.076	1660	12.5 × 25	0.050	0.100	1840
		▲10 × 31.5	0.035	0.070	1815	▲16 × 20	0.048	0.096	1840
820	821					12.5 × 35.5	0.034	0.068	2290
						▲18 × 20	0.042	0.084	2420
1000	102	12.5 × 25	0.030	0.060	1950	16 × 25	0.034	0.068	2235
1200	122	12.5 × 31.5	0.025	0.050	2310	16 × 31.5	0.028	0.056	2700
		▲16 × 20	0.029	0.058	2210	▲18 × 25	0.029	0.058	2610
1500	152	16 × 25	0.022	0.044	2555	16 × 31.5	0.028	0.056	2700
		▲12.5 × 35.5	0.022	0.044	2510	▲16 × 35.5	0.025	0.050	2790
1800	182	16 × 25	0.022	0.044	2555	18 × 31.5	0.025	0.050	3000
		▲18 × 20	0.028	0.056	2490				
2200	222	16 × 31.5	0.018	0.036	3010	18 × 35.5	0.023	0.046	3100
		▲18 × 25	0.020	0.040	2740				
2700	272	16 × 35.5	0.016	0.032	3150				
		▲18 × 31.5	0.016	0.032	3635				
3300	332	18 × 35.5	0.015	0.030	3680				
4700	472	18 × 40	0.014	0.028	3800				

▲: In this case, 6 will be put at 12th digit of type numbering system.

UPW

■Standard Ratings

Cap.(μF)	Code	63 (1J) Case size φD × L (mm)	63 (1J) Impedance (Ω) MAX. 20°C / 100kHz	63 (1J) Impedance (Ω) MAX. −10°C / 100kHz	63 (1J) Rated ripple (mArms) 105°C / 100kHz	100 (2A) Case size φD × L (mm)	100 (2A) Impedance (Ω) MAX. 20°C / 100kHz	100 (2A) Impedance (Ω) MAX. −10°C / 100kHz	100 (2A) Rated ripple (mArms) 105°C / 100kHz
0.47	R47					✻5 × 11	43.0	86.0	20
1	010					✻5 × 11	20.0	40.0	30
2.2	2R2					5 × 11	9.80	19.6	44
3.3	3R3					5 × 11	6.60	13.2	58
4.7	4R7	5 × 11	4.70	9.40	68	5 × 11	4.60	9.20	74
6.8	6R8	5 × 11	2.50	5.00	95	5 × 11	3.50	7.00	95
		▲4 × 11	3.50	7.00	80				
10	100	5 × 11	2.10	4.20	110	6.3 × 11	1.80	3.60	130
12	120	5 × 11	2.00	4.00	145				
15	150	6.3 × 11	1.20	2.40	160	8 × 11.5	0.83	1.66	180
18	180	5 × 15	1.30	2.60	200	6.3 × 15	0.80	1.60	200
22	220	6.3 × 11	0.71	1.42	250	8 × 11.5	0.68	1.36	230
33	330	6.3 × 11	0.71	1.42	250	10 × 12.5	0.46	0.92	320
						▲8 × 15	0.45	0.90	360
39	390	6.3 × 15	0.70	1.40	330				
47	470	8 × 11.5	0.342	0.684	405	10 × 16	0.37	0.74	420
						▲8 × 20	0.37	0.74	420
68	680	8 × 11.5	0.342	0.684	405	10 × 20	0.30	0.60	490
82	820					10 × 25	0.25	0.50	540
100	101	10 × 12.5	0.256	0.512	540	12.5 × 20	0.18	0.36	580
		▲8 × 15	0.230	0.460	535				
120	121	10 × 16	0.194	0.388	600				
150	151	10 × 16	0.194	0.388	660	12.5 × 25	0.13	0.26	710
180	181	10 × 20	0.147	0.294	890	12.5 × 31.5	0.12	0.24	790
		▲12.5 × 15	0.150	0.300	1020	▲16 × 20	0.13	0.26	750
220	221	10 × 20	0.147	0.294	885	16 × 25	0.10	0.20	890
		▲10 × 25	0.130	0.260	1050	▲18 × 20	0.11	0.22	850
270	271	16 × 15	0.090	0.180	1410				
330	331	12.5 × 20	0.085	0.170	1290	16 × 25	0.090	0.18	1080
390	391	12.5 × 25	0.070	0.140	1720	18 × 25	0.083	0.166	1260
		▲18 × 15	0.086	0.172	1690				
470	471	12.5 × 25	0.070	0.140	1720	16 × 31.5	0.076	0.152	1310
		▲12.5 × 31.5	0.055	0.110	2090				
		※ 16 × 20	0.059	0.118	1770				
560	561					18 × 31.5	0.068	0.136	1370
680	681	16 × 25	0.050	0.100	2160	16 × 35.5	0.064	0.128	1410
		▲12.5 × 35.5	0.047	0.094	2270				
		※ 18 × 20	0.055	0.110	2290				
820	821	16 × 31.5	0.043	0.086	2670				
		▲18 × 25	0.043	0.086	2590				
1000	102	16 × 31.5	0.043	0.086	2770	18 × 40	0.047	0.094	1520
		▲16 × 35.5	0.036	0.072	2770				
1200	122	18 × 31.5	0.032	0.064	2950				
1500	152	18 × 35.5	0.030	0.060	3100				
2200	222	18 × 40	0.028	0.056	3200				

▲ : In this case, 6 will be put at 12th digit of type numbering system.
※ : In this case, 3 will be put at 12th digit of type numbering system.

Cap. (μF)	Code	160 2C		200 2D		250 2E		315 2F		350 2V		400 2G		450 2W	
0.47	R47	6.3 × 11	12	6.3 × 11	12	6.3 × 11	12	8 × 11.5	11	8 × 11.5	11				
1	010	6.3 × 11	17	6.3 × 11	17	6.3 × 11	17	8 × 11.5	16	10 × 12.5	17	10 × 12.5	16	10 × 12.5	18
2.2	2R2	6.3 × 11	25	6.3 × 11	25	8 × 11.5	29	10 × 12.5	28	10 × 16	31	10 × 16	27	10 × 20	29
3.3	3R3	8 × 11.5	36	8 × 11.5	36	10 × 12.5	42	10 × 12.5	34	10 × 16	38	10 × 20	36	12.5 × 20	41
4.7	4R7	8 × 11.5	43	10 × 12.5	50	10 × 12.5	50	10 × 16	45	10 × 20	49	10 × 20	43	12.5 × 20	49
10	100	10 × 12.5	70	10 × 16	80	10 × 20	88	10 × 20	72	12.5 × 20	82	12.5 × 25	72	16 × 25	75
22	220	10 × 20	130	10 × 20	140	12.5 × 25	155	12.5 × 25	120	16 × 25	130	16 × 25	110	16 × 31.5	115
33	330	12.5 × 20	180	12.5 × 25	190	12.5 × 25	190	16 × 25	155	16 × 31.5	160	16 × 31.5	140	●18 × 35.5	145
47	470	12.5 × 25	220	12.5 × 25	220	16 × 25	230	16 × 35.5	190	●18 × 35.5	200	●18 × 35.5	170	20 × 40	175
100	101	16 × 25	330	16 × 31.5	335	●18 × 35.5	340	Δ18 × 40	285	20 × 40	290	22 × 50	350	25 × 50	350
220	221	●18 × 35.5	500	Δ18 × 40	515	20 × 40	525	22 × 50	540	25 × 50	550				
330	331	20 × 40	900	22 × 40	1100	22 × 50	1150								
470	471	22 × 50	1200	22 × 50	1310	25 × 50	1350							Case size φD × L (mm)	※1

※1 Rated ripple current (mArms) at 105°C 120Hz
Size φ20 × 31 is available for capacitors marked " ● "
Size φ20 × 35 is available for capacitors marked " Δ "
In this case, 6 will be put at 12th digit of type numbering system.

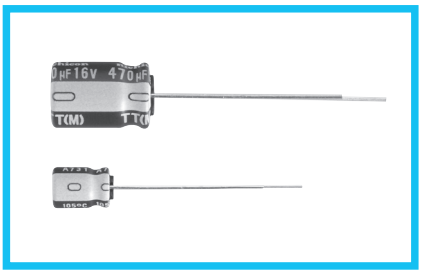
nichicon

UTT

Miniature Sized, Low Impedance, High Reliability For Switching Power Supplies

Smaller | Low Impedance | Long Life | Anti-Solvent Feature

- Smaller case size and Long Life product.
- Compliant to the RoHS directive (2011/65/EU).



UPW → Long Life → UTT

■Specifications

Item	Performance Characteristics
Category Temperature Range	−40 to +105˚C
Rated Voltage Range	6.3 to 50V
Rated Capacitance Range	1 to 470μF
Capacitance Tolerance	±20% at 120Hz, 20˚C
Leakage Current	After 2 minutes' application of rated voltage at 20°C, leakage current is less than 0.03CV or 3 (μA), whichever is greater.
Tangent of loss angle (tan δ)	Measurement frequency : 120Hz at 20°C

Rated voltage (V)	6.3	10	16	25	35	50
tan δ (MAX.)	0.30	0.28	0.24	0.18	0.16	0.14

Stability at Low Temperature — Measurement frequency : 120Hz

Rated voltage (V)		6.3	10	16	25	35	50
Impedance ratio ZT / Z20 (MAX.)	Z−25°C / Z+20°C	5	4	3	3	3	3
	Z−40°C / Z+20°C	10	10	8	6	4	4

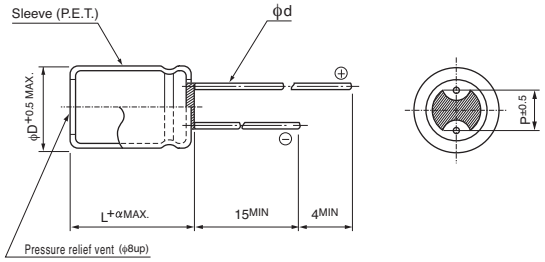
Endurance — The specifications listed at right shall be met when the capacitors are restored to 20˚C after the rated voltage is applied for 5000 hours at 105˚C.

Capacitance change	Within ±30% of the initial capacitance value
tan δ	300% or less than the initial specified value
Leakage current	Less than or equal to the initial specified value

Shelf Life — After storing the capacitors under no load at 105˚C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.

Marking — Printed with white color letter on dark blown sleeve.

■Radial Lead Type



α	(L = 7) 1.0
	(L ≧ 9) 1.5

(mm)

φD	4	5	6.3	8
P	1.5	2.0	2.5	3.5
φd	0.45	0.45	0.5 (0.45)	0.6

( ) : Applied to 7mmL products

Type numbering system (Example : 25V 100μF)

1	2	3	4	5	6	7	8	9	10	11
U	T	T	1	E	1	0	1	M	P	D

- Configuration ※
- Capacitance tolerance (±20%)
- Rated capacitance (100μF)
- Rated voltage (25V)
- Series name
- Type

※ Configuration

φD	Pb-free leadwire Pb-free PET sleeve
4 to 6.3	DD
8	PD

• Please refer to page 20 about the end seal configuration.

Please refer to page 20, 21, 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.

●Dimension table in next page.

UTT

■Standard Ratings

Cap.(μF) \ V (Code) / Item / Code		6.3 (0J)			10 (1A)			16 (1C)		
		Case size φD × L (mm)	Impedance (Ω) MAX. 20°C / 100kHz	Rated ripple (mArms) 105°C / 100kHz	Case size φD × L (mm)	Impedance (Ω) MAX. 20°C / 100kHz	Rated ripple (mArms) 105°C / 100kHz	Case size φD × L (mm)	Impedance (Ω) MAX. 20°C / 100kHz	Rated ripple (mArms) 105°C / 100kHz
10	100							4 × 7	7.4	46
22	220	4 × 7	7.4	46				5 × 7	4.0	74
33	330				5 × 7	4.0	74			
47	470	5 × 7	4.0	74				6.3 × 7	2.1	120
100	101	6.3 × 7	2.1	120				6.3 × 9	1.1	163
150	151				6.3 × 9	1.1	163	8 × 9	0.68	230
220	221	6.3 × 9	1.1	163	8 × 9	0.68	230	8 × 9	0.68	230
330	331	8 × 9	0.68	230				8 × 9	0.68	230
470	471	8 × 9	0.68	230				8 × 11.5	0.40	298

Cap.(μF) \ V (Code) / Item / Code		25 (1E)			35 (1V)			50 (1H)		
		Case size φD × L (mm)	Impedance (Ω) MAX. 20°C / 100kHz	Rated ripple (mArms) 105°C / 100kHz	Case size φD × L (mm)	Impedance (Ω) MAX. 20°C / 100kHz	Rated ripple (mArms) 105°C / 100kHz	Case size φD × L (mm)	Impedance (Ω) MAX. 20°C / 100kHz	Rated ripple (mArms) 105°C / 100kHz
1	010							4 × 7	30	23
2.2	2R2							4 × 7	23	26
3.3	3R3							4 × 7	20	29
4.7	4R7				4 × 7	7.4	37	5 × 7	14	37
10	100				5 × 7	4.0	74	6.3 × 7	4.4	84
22	220	5 × 7	4.0	74	6.3 × 7	2.1	120	6.3 × 9	2.4	112
33	330	6.3 × 7	2.1	120	6.3 × 9	1.1	163			
47	470	6.3 × 9	1.1	163	6.3 × 9	1.1	163	8 × 9	1.4	162
100	101	8 × 9	0.68	230						
150	151									
220	221	8 × 11.5	0.40	298						
330	331	8 × 11.5	0.40	298						

●Frequency coefficient of rated ripple current

Cap. (μF) \ Frequency	50Hz	120Hz	300Hz	1kHz	10kHz	100kHz or more
1 to 4.7	0.25	0.30	0.50	0.70	0.90	1.00
10 to 47	0.30	0.40	0.60	0.75	0.90	1.00
100 to 470	0.60	0.60	0.70	0.80	0.90	1.00

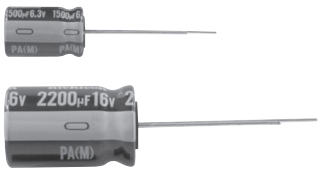
nichicon

UPA

Miniature Sized, Low Impedance, High Reliability For Switching Power Supplies

Smaller | Low Impedance | Long Life | Anti-Solvent Feature

- Lower impedance than UPW.
- Smaller case size and high ripple current.
- Compliant to the RoHS directive (2011/65/EU).

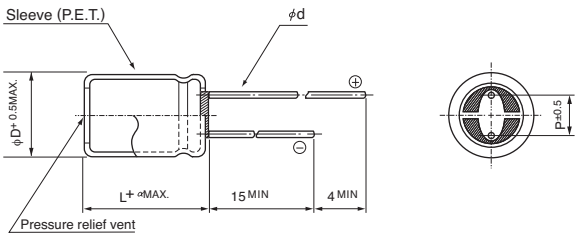


UPA ← Low Impedance → UPW

■Specifications

Item	Performance Characteristics						
Category Temperature Range	−55 to +105˚C						
Rated Voltage Range	6.3 to 35V						
Rated Capacitance Range	180 to 10000μF						
Capacitance Tolerance	±20% at 120Hz, 20˚C						
Leakage Current	After 1 minute's application of rated voltage at 20°C, leakage current is not more than 0.03CV or 4 (μA), whichever is greater.						
Tangent of loss angle (tan δ)	Rated voltage (V)	6.3	10	16	25	35	120Hz 20˚C
	tan δ (MAX.)	0.22	0.19	0.16	0.14	0.12	
	For capacitance of more than 1000μF, add 0.02 for every increase of 1000μF.						
Stability at Low Temperature	Rated voltage (V)	6.3	10	16	25	35	120Hz
	Impedance ratio ZT / Z20 (MAX.) Z−55˚C / Z+20˚C	3	3	3	3	3	
Endurance	The specifications listed at right shall be met when the capacitors are restored to 20˚C after D.C. bias plus rated ripple current is applied for 5000 hours (3000 hours for φD=8, 4000 hours for φD=10) at 105˚C, the peak voltage shall not exceed the rated voltage.						
	Capacitance change: Within ± 20% of the initial capacitance value (6.3V, 10V : ± 30%)						
	tan δ: 200% or less than the initial specified value (6.3V, 10V : 300%)						
	Leakage current: Less than or equal to the initial specified value						
Shelf Life	After storing the capacitors under no load at 105˚C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.						
Marking	Printed with white color letter on dark brown sleeve.						

■Radial Lead Type



α	
	(L < 20) 1.5
	(L ≥ 20) 2.0

(mm)

φD	8	10	12.5	16	18
P	3.5	5.0	5.0	7.5	7.5
φd	0.6	0.6	*0.6	0.8	0.8

※ : In case L > 25 for the φ12.5 dia. unit, lead dia. φ d = 0.8mm.

Type numbering system (Example : 10V 470μF)

1	2	3	4	5	6	7	8	9	10	11	12
U	P	A	1	A	4	7	1	M	P	D	

- Size code
- Configuration ※
- Capacitance tolerance (±20%)
- Rated capacitance (470μF)
- Rated voltage (10V)
- Series name
- Type

※ Configuration

φD	Pb-free leadwire Pb-free PET sleeve
8 · 10	PD
12.5 to 18	HD

● Frequency coefficient of rated ripple current

Cap. (μF) \ Frequency	50Hz	120Hz	300Hz	1kHz	10kHz or more
180 to 330	0.55	0.65	0.75	0.85	1.00
390 to 1000	0.70	0.75	0.80	0.90	1.00
1200 to 10000	0.80	0.85	0.90	0.95	1.00

• Please refer to page 20 about the end seal configuration.

Please refer to page 20, 21, 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.

●Dimension table in next page.

UPA

■Standard Ratings

Cap.(μF)	Code	6.3 (0J) Case size φD × L (mm)	Impedance (Ω) MAX. 20°C / 100kHz	Impedance (Ω) MAX. −10°C / 100kHz	Rated ripple (mArms) 105°C / 100kHz	10 (1A) Case size φD × L (mm)	Impedance (Ω) MAX. 20°C / 100kHz	Impedance (Ω) MAX. −10°C / 100kHz	Rated ripple (mArms) 105°C / 100kHz	16 (1C) Case size φD × L (mm)	Impedance (Ω) MAX. 20°C / 100kHz	Impedance (Ω) MAX. −10°C / 100kHz	Rated ripple (mArms) 105°C / 100kHz
330	331									8 × 11.5	0.090	0.180	630
390	391									8 × 11.5	0.090	0.180	630
470	471					8 × 11.5	0.090	0.180	630	10 × 12.5	0.063	0.126	900
560	561	8 × 11.5	0.090	0.180	630	8 × 11.5	0.090	0.180	630				
680	681	8 × 11.5	0.090	0.180	630					8 × 15	0.062	0.124	860
										▲10 × 12.5	0.063	0.126	900
820	821					8 × 15	0.062	0.124	860	8 × 20	0.044	0.088	1220
						▲10 × 12.5	0.063	0.126	900	▲10 × 16	0.049	0.098	1240
1000	102	8 × 15	0.062	0.124	860	8 × 20	0.044	0.088	1220	10 × 16	0.049	0.098	1240
		▲10 × 12.5	0.063	0.126	900	▲10 × 12.5	0.063	0.126	900				
						●10 × 16	0.049	0.098	1240	●10 × 20	0.035	0.070	1490
1200	122	10 × 12.5	0.063	0.126	900	8 × 20	0.044	0.088	1220	10 × 20	0.035	0.070	1490
		●10 × 16	0.049	0.098	1240	▲10 × 16	0.049	0.098	1240				
1500	152	8 × 20	0.044	0.088	1220	10 × 20	0.035	0.070	1490	10 × 25	0.033	0.066	1680
		▲10 × 16	0.049	0.098	1240								
		●10 × 20	0.035	0.070	1490								
1800	182					10 × 20	0.035	0.070	1490				
						▲10 × 25	0.033	0.066	1680				
2200	222	10 × 20	0.035	0.070	1490	10 × 25	0.033	0.066	1680	12.5 × 20	0.029	0.058	1890
		●10 × 25	0.033	0.066	1680	●12.5 × 20	0.029	0.058	1890	●12.5 × 25	0.022	0.044	2280
2700	272	10 × 25	0.033	0.066	1680	12.5 × 20	0.029	0.058	1890	12.5 × 25	0.022	0.044	2280
3300	332	12.5 × 20	0.029	0.058	1890	12.5 × 25	0.022	0.044	2280	12.5 × 31.5	0.018	0.036	2720
										▲16 × 20	0.026	0.052	2330
3900	392	12.5 × 25	0.022	0.044	2280	12.5 × 25	0.022	0.044	2280	12.5 × 35.5	0.016	0.032	2940
4700	472	12.5 × 25	0.022	0.044	2280	12.5 × 31.5	0.018	0.036	2720	16 × 25	0.019	0.038	2760
						▲16 × 20	0.026	0.052	2330	▲18 × 20	0.025	0.050	2640
5600	562	12.5 × 31.5	0.018	0.036	2720	12.5 × 35.5	0.016	0.032	2940	16 × 31.5	0.017	0.035	2810
		▲16 × 20	0.026	0.052	2330					▲18 × 25	0.018	0.036	2850
6800	682	12.5 × 35.5	0.016	0.032	2940	16 × 25	0.019	0.038	2760	18 × 25	0.018	0.036	2850
8200	822	16 × 25	0.019	0.038	2760	16 × 31.5	0.017	0.034	2810				
		▲18 × 20	0.025	0.050	2640	▲18 × 25	0.018	0.036	2850				
10000	103	16 × 31.5	0.017	0.034	2810								
		▲18 × 25	0.018	0.036	2850								

Cap.(μF)	Code	25 (1E) Case size φD × L (mm)	Impedance (Ω) MAX. 20°C / 100kHz	Impedance (Ω) MAX. −10°C / 100kHz	Rated ripple (mArms) 105°C / 100kHz	35 (1V) Case size φD × L (mm)	Impedance (Ω) MAX. 20°C / 100kHz	Impedance (Ω) MAX. −10°C / 100kHz	Rated ripple (mArms) 105°C / 100kHz
180	181					8 × 11.5	0.090	0.180	630
270	271	8 × 11.5	0.090	0.180	630	8 × 15	0.062	0.124	860
						▲10 × 12.5	0.063	0.126	900
330	331	8 × 11.5	0.090	0.180	630				
390	391	8 × 15	0.062	0.124	860	8 × 20	0.044	0.088	1220
						▲10 × 16	0.049	0.098	1240
470	471	8 × 15	0.062	0.124	860				
		▲10 × 12.5	0.063	0.126	900				
560	561	8 × 20	0.044	0.088	1220	10 × 20	0.035	0.070	1490
		▲10 × 16	0.049	0.098	1240				
680	681	10 × 16	0.049	0.098	1240	10 × 25	0.033	0.066	1680
820	821	10 × 20	0.035	0.070	1490	12.5 × 20	0.029	0.058	1890
1000	102	10 × 25	0.033	0.066	1680	12.5 × 20	0.029	0.058	1890
		●12.5 × 20	0.029	0.058	1890				
1200	122	12.5 × 20	0.029	0.058	1890	12.5 × 25	0.022	0.044	2280
1500	152					12.5 × 31.5	0.018	0.036	2720
						▲16 × 20	0.026	0.052	2330
1800	182	12.5 × 25	0.022	0.044	2280	12.5 × 35.5	0.016	0.032	2940
						▲16 × 20	0.026	0.052	2330
2200	222	12.5 × 31.5	0.018	0.036	2720	16 × 25	0.019	0.038	2760
		▲16 × 20	0.026	0.052	2330	▲18 × 20	0.025	0.050	2640
2700	272	12.5 × 35.5	0.016	0.032	2940	16 × 31.5	0.017	0.035	2810
						▲18 × 25	0.018	0.036	2850
3300	332	16 × 25	0.019	0.038	2760	18 × 31.5	0.016	0.032	2910
		▲18 × 20	0.025	0.050	2640				
4700	472	18 × 25	0.018	0.036	2850				

▲: In this case, 6 will be put at 12th digit of type numbering system.

●: In this case, 3 will be put at 12th digit of type numbering system.

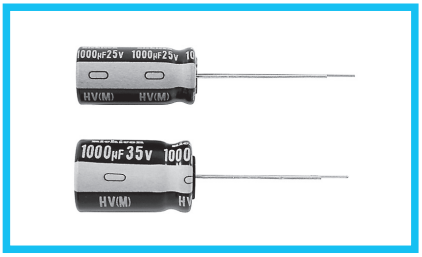
nichicon

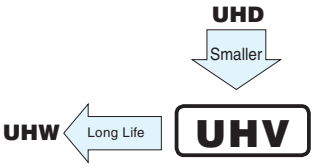
UHV

High Ripple Low Impedance

Smaller | Low Impedance | Long Life | Anti-Solvent Feature

- Lower impedance at high frequency range.
- Smaller case size and high ripple current.
- Compliant to the RoHS directive (2011/65/EU).





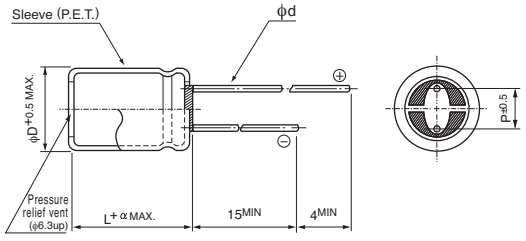
■Specifications

Item	Performance Characteristics						
Category Temperature Range	−40 to +105˚C						
Rated Voltage Range	6.3 to 35V						
Rated Capacitance Range	47 to 8200μF						
Capacitance Tolerance	±20% at 120Hz, 20˚C						
Leakage Current	After 2 minutes' application of rated voltage at 20°C, leakage current is not more than 0.01CV or 3 (μA), whichever is greater.						
Tangent of loss angle (tan δ)	Rated voltage (V)	6.3	10	16	25	35	120Hz 20˚C
	tan δ (MAX.)	0.21	0.18	0.15	0.13	0.11	
	For capacitance of more than 1000μF, add 0.02 for every increase of 1000μF.						
Stability at Low Temperature	Rated voltage (V)	6.3	10	16	25	35	120Hz
	Impedance ratio ZT / Z20 (MAX.) Z−25˚C / Z+20˚C	2	2	2	2	2	
	Impedance ratio ZT / Z20 (MAX.) Z−40˚C / Z+20˚C	3	3	3	3	3	
Endurance	The specifications listed at right shall be met when the capacitors are restored to 20˚C after D.C. bias plus rated ripple current is applied for 6000 hours (5000 hours for φD=5 and 6.3) at 105˚C, the peak voltage shall not exceed the rated voltage.						

Capacitance change	Within ± 25% of the initial capacitance value (6.3V 10V : ± 30%)
tan δ	200% or less than the initial specified value
Leakage current	Less than or equal to the initial specified value

Marking	Printed with white color letter on black sleeve.

■Radial Lead Type



α	
	(L < 20) 1.5
	(L ≧ 20) 2.0

(mm)

φD	5	6.3	8	10	12.5	16
P	2.0	2.5	3.5	5.0	5.0	7.5
φd	0.5	0.5	0.6	0.6	0.6※	0.8

※In case L > 25 for the φ12.5 dia. unit, lead dia. φ d = 0.8mm.

• Please refer to page 20 about the end seal configuration.

Type numbering system (Example : 25V 150μF)

1	2	3	4	5	6	7	8	9	10	11	12
U	H	V	1	E	1	5	1	M	E	D	

- Size code
- Configuration※
- Capacitance tolerance (±20%)
- Rated capacitance (150μF)
- Rated voltage (25V)
- Series name
- Type

※Configuration

φ D	Pb-free leadwire Pb-free PET sleeve
5	DD
6.3	ED
8 · 10	PD
12.5 · 16	HD

Please refer to page 20, 21, 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.

●Dimension table in next page.

UHV

■Standard Ratings

Cap.(μF)	Code	6.3 (0J) Case size φD × L (mm)	6.3 (0J) Impedance (Ω) MAX. 20°C / 100kHz	6.3 (0J) Impedance (Ω) MAX. -10°C / 100kHz	6.3 (0J) Rated ripple (mArms) 105°C / 100kHz	10 (1A) Case size φD × L (mm)	10 (1A) Impedance (Ω) MAX. 20°C / 100kHz	10 (1A) Impedance (Ω) MAX. -10°C / 100kHz	10 (1A) Rated ripple (mArms) 105°C / 100kHz	16 (1C) Case size φD × L (mm)	16 (1C) Impedance (Ω) MAX. 20°C / 100kHz	16 (1C) Impedance (Ω) MAX. -10°C / 100kHz	16 (1C) Rated ripple (mArms) 105°C / 100kHz
100	101									5 × 11	0.23	0.76	360
150	151					5 × 11	0.23	0.76	360	6.3 × 11	0.10	0.33	450
220	221	5 × 11	0.23	0.76	360	6.3 × 11	0.10	0.33	450	6.3 × 11	0.10	0.33	550
330	331	6.3 × 11	0.10	0.33	460	6.3 × 11	0.10	0.33	550	8 × 11.5	0.059	0.181	830
470	471	6.3 × 11	0.10	0.33	550	8 × 11.5	0.059	0.181	820	8 × 11.5	0.059	0.181	990
680	681	8 × 11.5	0.059	0.181	900	8 × 11.5	0.059	0.181	990	10 × 12.5	0.043	0.133	1360
										▲8 × 15	0.046	0.143	1330
820	821	8 × 11.5	0.059	0.181	990	10 × 12.5	0.043	0.133	1250	10 × 16	0.030	0.095	1650
1000	102	10 × 12.5	0.043	0.133	1250	10 × 12.5	0.043	0.133	1360	10 × 16	0.030	0.095	1815
						▲8 × 15	0.046	0.143	1330	▲8 × 20	0.031	0.105	1550
1200	122	10 × 12.5	0.043	0.133	1360	10 × 16	0.030	0.095	1650	10 × 20	0.019	0.057	1930
		▲8 × 15	0.046	0.143	1330								
1500	152	8 × 20	0.031	0.105	1550	10 × 16	0.030	0.095	1815	10 × 20	0.019	0.057	2160
						▲8 × 20	0.031	0.105	1550				
1800	182	10 × 16	0.030	0.095	1815	10 × 20	0.019	0.057	2160	10 × 25	0.017	0.051	2475
2200	222	10 × 20	0.019	0.057	2160	10 × 25	0.017	0.051	2475	12.5 × 20	0.016	0.041	2725
2700	272	10 × 25	0.017	0.051	2475	12.5 × 20	0.016	0.041	2475	12.5 × 25	0.014	0.036	3190
3300	332	12.5 × 20	0.016	0.041	2500	12.5 × 20	0.016	0.041	2725	12.5 × 31.5	0.012	0.031	3795
										▲16 × 20	0.014	0.036	3575
3900	392	12.5 × 20	0.016	0.041	2725	12.5 × 25	0.014	0.036	3190	12.5 × 35.5	0.011	0.029	3925
4700	472	12.5 × 25	0.014	0.036	3190	12.5 × 31.5	0.012	0.031	3795	16 × 25	0.012	0.033	3990
						▲16 × 20	0.014	0.036	3575				
5600	562	12.5 × 31.5	0.012	0.031	3795	12.5 × 35.5	0.011	0.029	3925				
6800	682	12.5 × 35.5	0.011	0.029	3925	16 × 25	0.012	0.033	3990				
		▲16 × 20	0.014	0.036	3575								
8200	822	16 × 25	0.012	0.033	3990								

Cap.(μF)	Code	25 (1E) Case size φD × L (mm)	25 (1E) Impedance (Ω) MAX. 20°C / 100kHz	25 (1E) Impedance (Ω) MAX. -10°C / 100kHz	25 (1E) Rated ripple (mArms) 105°C / 100kHz	35 (1V) Case size φD × L (mm)	35 (1V) Impedance (Ω) MAX. 20°C / 100kHz	35 (1V) Impedance (Ω) MAX. -10°C / 100kHz	35 (1V) Rated ripple (mArms) 105°C / 100kHz
47	470					5 × 11	0.23	0.76	360
68	680	5 × 11	0.23	0.76	360	6.3 × 11	0.10	0.33	450
100	101	6.3 × 11	0.10	0.33	450	6.3 × 11	0.10	0.33	550
150	151	6.3 × 11	0.10	0.33	550	8 × 11.5	0.059	0.181	820
220	221	8 × 11.5	0.059	0.181	810	8 × 11.5	0.059	0.181	990
270	271	8 × 11.5	0.059	0.181	900	8 × 15	0.046	0.143	1330
330	331	8 × 11.5	0.059	0.181	990	10 × 12.5	0.043	0.133	1360
390	391	8 × 15	0.046	0.143	1330	8 × 20	0.031	0.105	1550
470	471	10 × 12.5	0.043	0.133	1360	10 × 16	0.030	0.095	1815
560	561	8 × 20	0.031	0.105	1550	10 × 20	0.019	0.057	2160
680	681	10 × 16	0.030	0.095	1815	10 × 25	0.017	0.051	2475
820	821	10 × 20	0.019	0.057	2160	12.5 × 20	0.016	0.041	2725
1000	102	10 × 25	0.017	0.051	2475	12.5 × 20	0.016	0.041	2920
1200	122	12.5 × 20	0.016	0.041	2475	12.5 × 25	0.014	0.036	3190
1500	152	12.5 × 20	0.016	0.041	2725	12.5 × 31.5	0.012	0.031	3795
						▲16 × 20	0.014	0.036	3575
1800	182	12.5 × 25	0.014	0.036	3190	12.5 × 35.5	0.011	0.029	3925
2200	222	12.5 × 31.5	0.012	0.031	3795	16 × 25	0.012	0.033	3990
		▲16 × 20	0.014	0.036	3575				
2700	272	12.5 × 35.5	0.011	0.029	3925				
3300	332	16 × 25	0.012	0.033	3990				

▲: In this case, 6 will be put at 12th digit of type numbering system.

● Frequency coefficient of rated ripple current

Cap. (μF) \ Frequency	120Hz	1kHz	10kHz	100kHz or more
47 to 150	0.40	0.75	0.90	1.00
220 to 560	0.50	0.85	0.94	1.00
680 to 1800	0.60	0.87	0.95	1.00
2200 to 3900	0.75	0.90	0.95	1.00
4700 to 8200	0.85	0.95	0.98	1.00

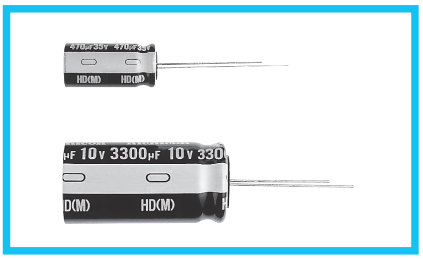
nichicon

UHD

High Ripple Low Impedance

Smaller | Low Impedance | Anti-Solvent Feature

- Lower impedance at high frequency range.
- Smaller case size and high ripple current.
- Compliant to the RoHS directive (2011/65/EU).



UHD
Smaller
UHV

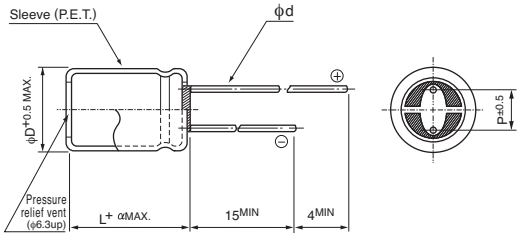
■Specifications

Item	Performance Characteristics							
Category Temperature Range	−40 to +105˚C							
Rated Voltage Range	6.3 to 50V							
Rated Capacitance Range	22 to 6800μF							
Capacitance Tolerance	±20% at 120Hz, 20˚C							
Leakage Current	After 2 minutes' application of rated voltage at 20°C, leakage current is not more than 0.01CV or 3 (μA), whichever is greater.							
Tangent of loss angle (tan δ)	Rated voltage (V)		6.3	10	16	25	35	50	120Hz 20˚C
	tan δ (MAX.)		0.22	0.19	0.16	0.14	0.12	0.10	
	For capacitance of more than 1000μF, add 0.02 for every increase of 1000μF.								
Stability at Low Temperature	Rated voltage (V)		6.3	10	16	25	35	50	120Hz
	Impedance ratio ZT / Z20 (MAX.)	Z−25˚C / Z+20˚C	2	2	2	2	2	2	
		Z−40˚C / Z+20˚C	3	3	3	3	3	3	
Endurance	The specifications listed at right shall be met when the capacitors are restored to 20˚C after D.C. bias plus rated ripple current is applied for 5000 hours (2000 hours for φD=5 and 6.3, 3000 hours for φD=8, 4000 hours for φD=10), at 105˚C, the peak voltage shall not exceed the rated voltage.								

Capacitance change	Within ±25% of the initial capacitance value
tan δ	200% or less than the initial specified value
Leakage current	Less than or equal to the initial specified value

Marking	Printed with white color letter on black sleeve.

■Radial Lead Type



α	
	(L < 20) 1.5
	(L ≧ 20) 2.0

(mm)

φD	5	6.3	8	10	12.5	16
P	2.0	2.5	3.5	5.0	5.0	7.5
φd	0.5	0.5	0.6	0.6	※0.6	0.8

※In case L > 25 for the φ12.5 dia. unit, lead dia. φ d = 0.8mm.

• Please refer to page 20 about the end seal configuration.

Type numbering system (Example : 10V 3300μF)

1	2	3	4	5	6	7	8	9	10	11	12
U	H	D	1	A	3	3	2	M	H	D	

Size code
Configuration※
Capacitance tolerance (±20%)
Rated capacitance (3300μF)
Rated voltage (10V)
Series name
Type

※Configuration

φ D	Pb-free leadwire Pb-free PET sleeve
5	DD
6.3	ED
8 · 10	PD
12.5 · 16	HD

Please refer to page 20, 21, 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.

●Dimension table in next page.

UHD

■Standard Ratings

Cap.(μF)	Code	6.3 (0J) Case size φD × L (mm)	6.3 (0J) Impedance (Ω) MAX. 20˚C / 100kHz	6.3 (0J) Impedance (Ω) MAX. −10˚C / 100kHz	6.3 (0J) Rated ripple (mArms) 105˚C / 100kHz	10 (1A) Case size φD × L (mm)	10 (1A) Impedance (Ω) MAX. 20˚C / 100kHz	10 (1A) Impedance (Ω) MAX. −10˚C / 100kHz	10 (1A) Rated ripple (mArms) 105˚C / 100kHz
100	101					5 × 11	0.30	1.0	250
150	151	5 × 11	0.30	1.0	250				
220	221					6.3 × 11	0.13	0.41	405
330	331	6.3 × 11	0.13	0.41	405				
470	471					8 × 11.5	0.072	0.22	760
560	561	8 × 11.5	0.072	0.22	760				
680	681					8 × 15	0.056	0.17	995
						▲10 × 12.5	0.053	0.16	1030
820	821	8 × 15	0.056	0.17	995				
1000	102	10 × 12.5	0.053	0.16	1030	8 × 20	0.041	0.13	1250
						▲10 × 16	0.038	0.12	1430
1200	122	8 × 20	0.041	0.13	1250	10 × 20	0.023	0.069	1820
		▲10 × 16	0.038	0.12	1430				
1500	152	10 × 20	0.023	0.069	1820	10 × 25	0.022	0.066	2150
2200	222	10 × 25	0.022	0.066	2150	12.5 × 20	0.021	0.053	2360
3300	332	12.5 × 20	0.021	0.053	2360	12.5 × 25	0.018	0.045	2770
3900	392	12.5 × 25	0.018	0.045	2770	12.5 × 31.5	0.016	0.041	3290
						▲16 × 20	0.018	0.045	3140
4700	472	12.5 × 31.5	0.016	0.041	3290	12.5 × 35.5	0.015	0.039	3400
5600	562	12.5 × 35.5	0.015	0.039	3400	16 × 25	0.016	0.043	3460
		▲16 × 20	0.018	0.045	3140				
6800	682	16 × 25	0.016	0.043	3460				

Cap. (μF)	Code	16 (1C) Case size φD × L (mm)	16 (1C) Impedance (Ω) MAX. 20˚C / 100kHz	16 (1C) Impedance (Ω) MAX. −10˚C / 100kHz	16 (1C) Rated ripple (mArms) 105˚C / 100kHz	25 (1E) Case size φD × L (mm)	25 (1E) Impedance (Ω) MAX. 20˚C / 100kHz	25 (1E) Impedance (Ω) MAX. −10˚C / 100kHz	25 (1E) Rated ripple (mArms) 105˚C / 100kHz
47	470					5 × 11	0.30	1.0	250
56	560	5 × 11	0.30	1.0	250				
100	101					6.3 × 11	0.13	0.41	405
120	121	6.3 × 11	0.13	0.41	405				
220	221					8 × 11.5	0.072	0.22	760
330	331	8 × 11.5	0.072	0.22	760	8 × 15	0.056	0.17	995
						▲10 × 12.5	0.053	0.16	1030
470	471	8 × 15	0.056	0.17	995	8 × 20	0.041	0.13	1250
		▲10 × 12.5	0.053	0.16	1030	▲10 × 16	0.038	0.12	1430
680	681	8 × 20	0.041	0.13	1250	10 × 20	0.023	0.069	1820
		▲10 × 16	0.038	0.12	1430				
820	821					10 × 25	0.022	0.066	2150
1000	102	10 × 20	0.023	0.069	1820	12.5 × 20	0.021	0.053	2360
1200	122	10 × 25	0.022	0.066	2150				
1500	152	12.5 × 20	0.021	0.053	2360	12.5 × 25	0.018	0.045	2770
1800	182					12.5 × 31.5	0.016	0.041	3290
						▲16 × 20	0.018	0.045	3140
2200	222	12.5 × 25	0.018	0.045	2770	12.5 × 35.5	0.015	0.039	3400
2700	272	12.5 × 31.5	0.016	0.041	3290	16 × 25	0.016	0.043	3460
		▲16 × 20	0.018	0.045	3140				
3300	332	12.5 × 35.5	0.015	0.039	3400				
3900	392	16 × 25	0.016	0.043	3460				

▲ : In this case, 6 will be put at 12th digit of type numbering system.

UHD

■Standard Ratings

Cap.(μF)	Code	35 (1V) Case size φD × L (mm)	35 (1V) Impedance (Ω) MAX. 20˚C / 100kHz	35 (1V) Impedance (Ω) MAX. −10˚C / 100kHz	35 (1V) Rated ripple (mArms) 105˚C / 100kHz	50 (1H) Case size φD × L (mm)	50 (1H) Impedance (Ω) MAX. 20˚C / 100kHz	50 (1H) Impedance (Ω) MAX. −10˚C / 100kHz	50 (1H) Rated ripple (mArms) 105˚C / 100kHz
22	220					5 × 11	0.34	1.18	238
33	330	5 × 11	0.30	1.0	250				
56	560	6.3 × 11	0.13	0.41	405	6.3 × 11	0.14	0.50	385
100	101					8 × 11.5	0.074	0.22	724
120	121					8 × 15	0.061	0.18	950
150	151	8 × 11.5	0.072	0.22	760	10 × 12.5	0.061	0.18	979
180	181					8 × 20	0.046	0.14	1190
220	221	8 × 15	0.056	0.17	995	10 × 16	0.042	0.12	1370
		▲10 × 12.5	0.053	0.16	1030				
270	271	8 × 20	0.041	0.13	1250	10 × 20	0.030	0.090	1580
330	331	10 × 16	0.038	0.12	1430	10 × 25	0.028	0.085	1870
470	471	10 × 20	0.023	0.069	1820	12.5 × 20	0.027	0.068	2050
560	561	10 × 25	0.022	0.066	2150	12.5 × 25	0.023	0.059	2410
680	681	12.5 × 20	0.021	0.053	2360	12.5 × 31.5	0.021	0.052	2860
820	821					12.5 × 35.5	0.019	0.051	2960
						▲16 × 20	0.023	0.059	2730
1000	102	12.5 × 25	0.018	0.045	2770	16 × 25	0.021	0.056	3010
1200	122	12.5 × 31.5	0.016	0.041	3290				
		▲16 × 20	0.018	0.045	3140				
1500	152	12.5 × 35.5	0.015	0.039	3400				
1800	182	16 × 25	0.016	0.043	3460				

▲: In this case, 6 will be put at 12th digit of type numbering system.

● Frequency coefficient of rated ripple current

Cap. (μF) \ Frequency	50Hz	120Hz	1kHz	10kHz	100kHz or more
22 to 33	0.45	0.55	0.75	0.90	1.00
47 to 330	0.60	0.70	0.85	0.95	1.00
470 to 1000	0.65	0.75	0.90	0.98	1.00
1200 to 6800	0.75	0.80	0.95	1.00	1.00

nichicon

UHE

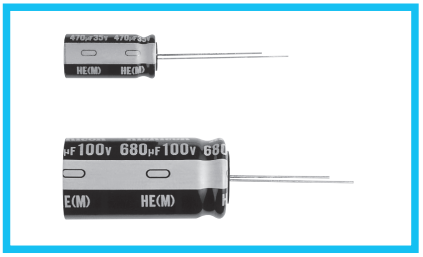
Miniature Sized, Low Impedance, High Reliability

Smaller | Low Impedance | Long Life | Anti-Solvent Feature

- Low impedance and high reliability withstanding 4000 hours to 10000 hours.
- Compliant to the RoHS directive (2011/65/EU).

Values marked with an ※ in the dimension table are scheduled to be discontinued and are not recommended for new designs.

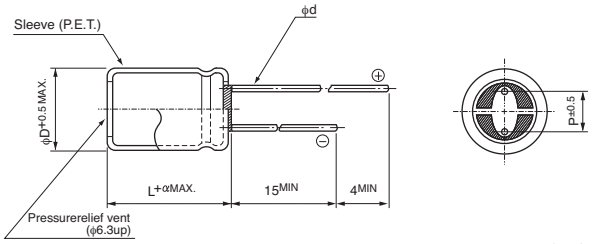
UHE ← Long Life → UHD



■Specifications

Item	Performance Characteristics									
Category Temperature Range	−40 to +105˚C									
Rated Voltage Range	6.3 to 100V									
Rated Capacitance Range	0.47 to 18000μF									
Capacitance Tolerance	±20% at 120Hz, 20˚C									
Leakage Current	After 2 minutes' application of rated voltage at 20°C, leakage current is not more than 0.01CV or 3 (μA), whichever is greater.									
Tangent of loss angle (tan δ)	Rated voltage (V)		6.3	10	16	25	35	50	63	100	120Hz 20˚C
	tan δ (MAX.)		0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.08	
	For capacitance of more than 1000μF, add 0.02 for every increase of 1000μF.										
Stability at Low Temperature	Rated voltage (V)		6.3	10	16	25	35	50	63	100	120Hz
	Impedance ratio ZT / Z20 (MAX.)	Z−25˚C / Z+20˚C	4	3	2	2	2	2	2	2	
		Z−40˚C / Z+20˚C	8	6	4	3	3	3	3	3	
Endurance	The following specifications shall be met when the capacitors are restored to 20˚C after D.C. bias plus rated ripple current is applied at 105˚C , the peak voltage shall not exceed the rated voltage.										
	Case size		φD ≦ 6.3		φD = 8 , 10		φD ≧ 12.5				
	Rated voltage (V)	6.3 to 10WV	4000 hours		6000 hours		8000 hours				
		16 to 100WV	5000 hours		7000 hours		10000 hours				
	Capacitance change		Within ±25% of the initial capacitance value								
	tan δ		200% or less than the initial specified value								
	Leakage current		Less than or equal to the initial specified value								
Marking	Printed with white color letter on black sleeve.										

■Radial Lead Type



α	
	(L < 20) 1.5
	(L ≧ 20) 2.0

(mm)

φD	5	6.3	8	10	12.5	16	18
P	2.0	2.5	3.5	5.0	5.0	7.5	7.5
φd	0.5	0.5	0.6	0.6	0.6※	0.8	0.8

※In case L > 25 for the φ12.5 dia. unit, lead dia. φd = 0.8mm

• Please refer to page 20 about the end seal configuration.

Type numbering system (Example : 10V 1000μF)

1	2	3	4	5	6	7	8	9	10	11	12
U	H	E	1	A	1	0	2	M	P	D	

- Size code
- Configuration ※
- Capacitance tolerance (±20%)
- Rated capacitance (1000μF)
- Rated voltage (10V)
- Series name
- Type

※ Configuration

φ D	Pb-free leadwire Pb-free PET sleeve
5	DD
6.3	ED
8 · 10	PD
12.5 to 18	HD

● Frequency coefficient of rated ripple current

Cap.(μF) \ Frequency	50Hz	120Hz	300Hz	1kHz	10kHz or more
0.47 to 33	0.45	0.55	0.70	0.90	1.00
39 to 330	0.60	0.70	0.85	0.95	1.00
390 to 1000	0.65	0.75	0.90	0.98	1.00
1200 to 18000	0.75	0.80	0.95	1.00	1.00

Please refer to page 20, 21, 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.

● Dimension table in next page.

UHE

Standard Ratings

Cap.(μF)	Code	6.3 (0J) Case size φD × L (mm)	6.3 (0J) Impedance (Ω) MAX. 20˚C / 100kHz	6.3 (0J) Impedance (Ω) MAX. −10˚C / 100kHz	6.3 (0J) Rated ripple (mArms) 105˚C / 100kHz	10 (1A) Case size φD × L (mm)	10 (1A) Impedance (Ω) MAX. 20˚C / 100kHz	10 (1A) Impedance (Ω) MAX. −10˚C / 100kHz	10 (1A) Rated ripple (mArms) 105˚C / 100kHz
100	101					5 × 11	0.58	2.3	210
150	151	5 × 11	0.58	2.3	210				
220	221					6.3 × 11	0.22	0.87	340
330	331	6.3 × 11	0.22	0.87	340				
470	471					8 × 11.5	0.13	0.52	640
680	681	8 × 11.5	0.13	0.52	640	8 × 15	0.087	0.35	840
						▲10 × 12.5	0.080	0.32	865
820	821	10 × 12.5	0.080	0.32	865				
1000	102	8 × 15	0.087	0.35	840	8 × 20	0.069	0.27	1050
						▲ 10 × 16	0.060	0.24	1210
1200	122	8 × 20	0.069	0.27	1050	10 × 20	0.046	0.18	1400
		▲10 × 16	0.060	0.24	1210				
1500	152	10 × 20	0.046	0.18	1400	10 × 25	0.042	0.17	1650
						▲12.5 × 15	0.049	0.16	1450
1800	182	12.5 × 15	0.049	0.16	1450				
2200	222	10 × 25	0.042	0.17	1650	10 × 31.5	0.031	0.12	1910
						▲12.5 × 20	0.035	0.12	1900
						● 16 × 15	0.042	0.12	1940
2700	272	▲10 × 31.5	0.031	0.12	1910	18 × 15	0.043	0.11	2210
		16 × 15	0.042	0.12	1940				
3300	332	12.5 × 20	0.035	0.12	1900	12.5 × 25	0.027	0.089	2230
3900	392	12.5 × 25	0.027	0.089	2230	12.5 × 31.5	0.024	0.078	2650
		▲18 × 15	0.043	0.11	2210	▲16 × 20	0.027	0.078	2530
4700	472	12.5 × 31.5	0.024	0.078	2650	12.5 × 35.5	0.020	0.065	2880
5600	562	12.5 × 35.5	0.020	0.065	2880	12.5 × 40	0.017	0.056	3350
		▲16 × 20	0.027	0.078	2530	▲ 16 × 25	0.021	0.060	2930
						● 18 × 20	0.026	0.067	2860
6800	682	12.5 × 40	0.017	0.056	3350	16 × 31.5	0.017	0.050	3450
		▲16 × 25	0.021	0.060	2930				
		●18 × 20	0.026	0.067	2860	▲18 × 25	0.019	0.049	3140
8200	822	16 × 31.5	0.017	0.050	3450	16 × 35.5	0.015	0.044	3610
						▲18 × 31.5	0.015	0.040	4170
10000	103	16 × 35.5	0.015	0.044	3610	16 × 40	0.013	0.038	4080
		▲18 × 25	0.019	0.049	3140	▲ 18 × 35.5	0.014	0.038	4220
12000	123	16 × 40	0.013	0.038	4080	18 × 40	0.012	0.032	4280
		▲18 × 31.5	0.015	0.040	4170				
15000	153	18 × 35.5	0.014	0.038	4220				
18000	183	18 × 40	0.012	0.032	4280				

▲ : In this case, 6 will be put at 12th digit of type numbering system.
● : In this case, 3 will be put at 12th digit of type numbering system.

UHE

Standard Ratings

Cap.(μF)	Code	16 (1C) Case size φD × L (mm)	16 (1C) Impedance (Ω) MAX. 20˚C / 100kHz	16 (1C) Impedance (Ω) MAX. −10˚C / 100kHz	16 (1C) Rated ripple (mArms) 105˚C / 100kHz	25 (1E) Case size φD × L (mm)	25 (1E) Impedance (Ω) MAX. 20˚C / 100kHz	25 (1E) Impedance (Ω) MAX. −10˚C / 100kHz	25 (1E) Rated ripple (mArms) 105˚C / 100kHz
47	470					5 × 11	0.58	2.3	210
56	560	5 × 11	0.58	2.3	210				
100	101					6.3 × 11	0.22	0.87	340
120	121	6.3 × 11	0.22	0.87	340				
220	221					8 × 11.5	0.13	0.52	640
330	331	8 × 11.5	0.13	0.52	640	8 × 15	0.087	0.35	840
						▲ 10 × 12.5	0.080	0.32	865
470	471	8 × 15	0.087	0.35	840	8 × 20	0.069	0.27	1050
		▲ 10 × 12.5	0.080	0.32	865	▲ 10 × 16	0.06	0.24	1210
680	681	8 × 20	0.069	0.27	1050	10 × 20	0.046	0.18	1400
		▲ 10 × 16	0.060	0.24	1210	▲ 12.5 × 15	0.049	0.16	1450
820	821					10 × 25	0.042	0.17	1650
1000	102	10 × 20	0.046	0.18	1400	10 × 31.5	0.031	0.12	1910
		▲ 12.5 × 15	0.049	0.16	1450	▲ 12.5 × 20	0.035	0.12	1900
						● 16 × 15	0.042	0.12	1940
1200	122	10 × 25	0.042	0.17	1650	18 × 15	0.043	0.11	2210
1500	152	10 × 31.5	0.031	0.12	1910	12.5 × 25	0.027	0.089	2230
		▲ 12.5 × 20	0.035	0.12	1900				
		● 16 × 15	0.042	0.12	1940				
1800	182					12.5 × 31.5	0.024	0.078	2650
						▲ 16 × 20	0.027	0.078	2530
2200	222	12.5 × 25	0.027	0.089	2230	12.5 × 35.5	0.020	0.065	2880
		▲ 18 × 15	0.043	0.11	2210	▲ 18 × 20	0.026	0.067	2860
2700	272	12.5 × 31.5	0.024	0.078	2650	12.5 × 40	0.017	0.056	3350
		▲ 16 × 20	0.027	0.078	2530	▲ 16 × 25	0.021	0.060	2930
3300	332	12.5 × 35.5	0.020	0.065	2880	16 × 31.5	0.017	0.050	3450
						▲ 18 × 25	0.019	0.049	3140
3900	392	12.5 × 40	0.017	0.056	3350	16 × 35.5	0.015	0.044	3610
		▲ 16 × 25	0.021	0.060	2930				
		● 16 × 20	0.026	0.067	2860	▲ 18 × 31.5	0.015	0.040	4170
4700	472	16 × 31.5	0.017	0.050	3450	16 × 40	0.013	0.038	4080
		▲ 18 × 25	0.019	0.049	3140	▲ 18 × 35.5	0.014	0.038	4220
5600	562	16 × 35.5	0.015	0.044	3610	18 × 40	0.012	0.032	4280
		▲ 18 × 31.5	0.015	0.040	4170				
6800	682	16 × 40	0.013	0.038	4080				
8200	822	18 × 35.5	0.014	0.038	4220				
10000	103	18 × 40	0.012	0.032	4280				

▲ : In this case, 6 will be put at 12th digit of type numbering system.
● : In this case, 3 will be put at 12th digit of type numbering system.

UHE

Standard Ratings

Cap.(μF) \ V (Code) / Item / Code	35 (1V)				50 (1H)			
	Case size φD × L (mm)	Impedance (Ω) MAX. 20˚C / 100kHz	Impedance (Ω) MAX. –10˚C / 100kHz	Rated ripple (mArms) 105˚C / 100kHz	Case size φD × L (mm)	Impedance (Ω) MAX. 20˚C / 100kHz	Impedance (Ω) MAX. –10˚C / 100kHz	Rated ripple (mArms) 105˚C / 100kHz
0.47 R47					※5 × 11	5.5	22	17
1 010					※5 × 11	4	16	30
2.2 2R2					5 × 11	2.5	10	43
3.3 3R3					5 × 11	2.2	8.8	53
4.7 4R7					5 × 11	1.9	7.6	88
10 100					5 × 11	1.5	6	100
22 220					5 × 11	0.70	2.8	180
33 330	5 × 11	0.58	2.3	210	6.3 × 11	0.30	1.2	295
47 470	6.3 × 11	0.22	0.87	250	6.3 × 11	0.30	1.2	295
56 560	6.3 × 11	0.22	0.87	340	6.3 × 11	0.30	1.2	295
100 101	8 × 11.5	0.13	0.52	640	8 × 11.5	0.17	0.68	555
120 121					8 × 15	0.12	0.48	730
150 151	8 × 11.5	0.13	0.52	640	10 × 12.5	0.12	0.48	760
180 181					8 × 20	0.091	0.36	910
220 221	8 × 15	0.087	0.35	840	10 × 16	0.084	0.34	1050
	▲ 10 × 12.5	0.080	0.32	865				
270 271	8 × 20	0.069	0.27	1050	10 × 20	0.060	0.24	1220
					▲ 12.5 × 15	0.061	0.20	1260
330 331	10 × 16	0.060	0.24	1210	10 × 25	0.055	0.22	1440
					▲ 10 × 20	0.060	0.24	1220
470 471	10 × 20	0.046	0.18	1400	10 × 31.5	0.043	0.17	1690
	▲ 12.5 × 15	0.049	0.16	1450	▲ 12.5 × 20	0.045	0.15	1660
					● 16 × 15	0.055	0.17	1690
560 561	10 × 25	0.042	0.17	1650	12.5 × 25	0.034	0.11	1950
					▲ 18 × 15	0.054	0.15	1930
680 681	10 × 31.5	0.031	0.12	1910	12.5 × 31.5	0.030	0.10	2310
	▲ 12.5 × 20	0.035	0.12	1900				
	● 16 × 15	0.042	0.12	1940				
820 821					12.5 × 35.5	0.025	0.083	2510
					▲ 16 × 20	0.034	0.10	2210
1000 102	12.5 × 25	0.027	0.089	2230	12.5 × 40	0.021	0.069	2920
	▲ 18 × 15	0.043	0.11	2210	▲ 16 × 25	0.025	0.075	2555
					● 18 × 20	0.036	0.097	2490
1200 122	12.5 × 31.5	0.024	0.078	2650	16 × 31.5	0.022	0.066	3010
	▲ 16 × 20	0.027	0.078	2530	▲ 18 × 25	0.026	0.070	2740
1500 152	12.5 × 35.5	0.020	0.065	2880	16 × 35.5	0.019	0.057	3150
1800 182	12.5 × 40	0.017	0.056	3350	16 × 40	0.016	0.048	3710
	▲ 16 × 25	0.021	0.060	2930				
	● 18 × 20	0.026	0.067	2860	▲ 18 × 31.5	0.021	0.057	3635
2200 222	16 × 31.5	0.017	0.050	3450	▲ 18 × 35.5	0.017	0.046	3680
	▲ 18 × 25	0.019	0.049	3140				
2700 272	16 × 35.5	0.015	0.044	3610	18 × 40	0.014	0.038	3800
	▲ 18 × 31.5	0.015	0.040	4170				
3300 332	16 × 40	0.013	0.038	4080				
	▲ 18 × 35.5	0.014	0.038	4220				
3900 392	18 × 40	0.012	0.032	4280				

▲ : In this case, 6 will be put at 12th digit of type numbering system.
● : In this case, 3 will be put at 12th digit of type numbering system.

UHE

Standard Ratings

Cap.(μF)	Code	63 (1J) Case size φD × L (mm)	63 (1J) Impedance (Ω) MAX. 20˚C / 100kHz	63 (1J) Impedance (Ω) MAX. –10˚C / 100kHz	63 (1J) Rated ripple (mArms) 105˚C / 100kHz	100 (2A) Case size φD × L (mm)	100 (2A) Impedance (Ω) MAX. 20˚C / 100kHz	100 (2A) Impedance (Ω) MAX. –10˚C / 100kHz	100 (2A) Rated ripple (mArms) 105˚C / 100kHz
6.8	6R8					5 × 11	2.3	9.3	62
15	150	5 × 11	2.3	9.3	62	6.3 × 11	1.2	5.0	126
27	270					8 × 11.5	0.63	2.8	260
33	330	6.3 × 11	1.2	5.0	126				
39	390					8 × 15	0.45	2.1	335
47	470	8 × 11.5	0.63	2.8	260	10 × 12.5	0.43	1.8	325
56	560	8 × 11.5	0.63	2.8	260	8 × 20	0.33	1.6	408
68	680					10 × 16	0.31	1.5	400
82	820	8 × 15	0.45	2.1	335	10 × 20	0.21	0.94	518
		▲10 × 12.5	0.43	1.8	325	▲12.5 × 15	0.23	1.1	527
100	101					10 × 25	0.20	0.84	595
						▲12.5 × 20	0.20	0.84	740
120	121	8 × 20	0.33	1.6	408	10 × 31.5	0.15	0.71	740
		▲10 × 16	0.31	1.5	400	▲12.5 × 20	0.16	0.64	765
150	151					16 × 15	0.14	0.66	895
180	181	10 × 20	0.21	0.94	518	12.5 × 25	0.12	0.45	875
		▲12.5 × 15	0.23	1.1	527	▲18 × 15	0.12	0.50	1030
220	221	10 × 25	0.20	0.84	595	12.5 × 31.5	0.10	0.42	1010
						▲16 × 20	0.091	0.38	1130
270	271	10 × 31.5	0.15	0.71	740	12.5 × 35.5	0.083	0.35	1140
		▲12.5 × 20	0.16	0.64	765				
		● 16 × 15	0.14	0.66	895	▲16 × 25	0.073	0.27	1350
330	331	12.5 × 25	0.12	0.45	875	12.5 × 40	0.071	0.30	1280
						▲18 × 20	0.080	0.30	1300
390	391	18 × 15	0.12	0.50	1030	16 × 31.5	0.054	0.20	1650
						▲18 × 25	0.057	0.21	1560
470	471	12.5 × 31.5	0.10	0.42	1010	16 × 35.5	0.045	0.17	1900
		▲16 × 20	0.091	0.38	1130	▲18 × 31.5	0.047	0.17	1720
560	561	12.5 × 35.5	0.083	0.35	1140	16 × 40	0.040	0.15	2130
		▲16 × 25	0.073	0.27	1350				
680	681	12.5 × 40	0.071	0.30	1280	18 × 35.5	0.040	0.15	1890
		▲18 × 20	0.080	0.30	1300				
820	821	16 × 31.5	0.054	0.20	1650	18 × 40	0.036	0.13	2470
		▲18 × 25	0.057	0.21	1560				
1000	102	16 × 35.5	0.045	0.17	1900				
		▲18 × 31.5	0.047	0.17	1720				
1200	122	16 × 40	0.040	0.15	2130				
		▲18 × 35.5	0.040	0.15	1890				
1500	152	18 × 40	0.036	0.13	2470				

▲ : In this case, 6 will be put at 12th digit of type numbering system.
● : In this case, 3 will be put at 12th digit of type numbering system.

nichicon

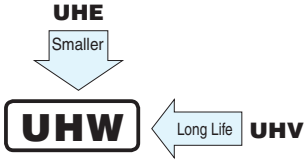
UHW

Miniature Sized, High Ripple Current, High Reliability

Smaller | Low Impedance | Long Life | Anti-Solvent Feature

Expanded

- Lower impedance at high frequency range.
- Smaller case size and high ripple current.
- Compliant to the RoHS directive (2011/65/EU).



■Specifications

Item	Performance Characteristics
Category Temperature Range	−40 to +105°C
Rated Voltage Range	6.3 to 100V
Rated Capacitance Range	82 to 15000μF
Capacitance Tolerance	±20% at 120Hz, 20°C
Leakage Current	After 2 minute's application of rated voltage at 20°C, leakage current is more than 0.01 CV(μA)

Tangent of loss angle (tan δ)

Rated voltage (V)	6.3	10	16	25	35	50	63	80	100
tan δ (MAX.)	0.21	0.18	0.15	0.13	0.11	0.10	0.09	0.09	0.08

Measurement frequency : 120Hz, Temperature : 20°C

For capacitance of more than 1000μF, add 0.02 for every increase of 1000μF.

Stability at Low Temperature

Rated voltage (V)		6.3	10	16	25	35	50	63	80	100
Impedance ratio ZT / Z20 (MAX.)	Z−25°C / Z+20°C	2	2	2	2	2	2	2	2	2
	Z−40°C / Z+20°C	3	3	3	3	3	3	3	3	3

Measurement frequency : 120Hz

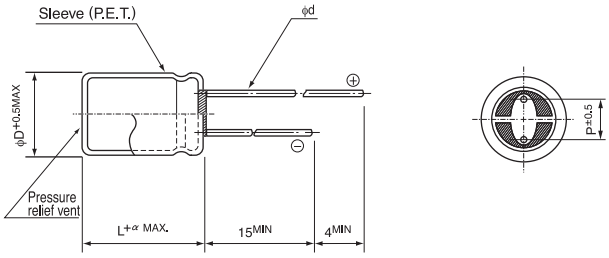
Endurance

The specifications listed at right shall be met when the capacitors are restored to 20°C after D.C. bias plus rated ripple current is applied for 10000 hours at 105°C, the peak voltage shall not exceed the rated voltage.

Capacitance Change	Within ±25% of the initial capacitance value (6.3V 10V : ±30%)
tan δ	200% or less than the initial specified value
Leakage current	Less than or equal to the initial specified value

Marking	Printed with white color letter on black sleeve.

■Radial Lead Type



(mm)

α	(L < 20) 1.5
	(L ≧ 20) 2.0

φD	10	12.5	16	18
P	5.0	5.0	7.5	7.5
φd	0.6	0.6※	0.8	0.8

※ In case L > 25 for the φ12.5 dia. unit, lead dia. φ d = 0.8mm.

Type numbering system (Example : 16V 2200μF)

1	2	3	4	5	6	7	8	9	10	11	12
U	H	W	1	C	2	2	2	M	H	D	

Size code
Configuration ※
Capacitance tolerance (±20%)
Rated capacitance (2200μF)
Rated voltage (16V)
Series name
Type

※ Configuration

φ D	Pb-free lead finishing Pb-free PET sleeve
10	PD
12.5 to 18	HD

● Frequency coefficient of rated ripple current

Cap. (μF) \ Frequency	120Hz	1kHz	10kHz	10kHz or more
82 to 180	0.40	0.75	0.90	1.00
220 to 560	0.50	0.85	0.94	1.00
680 to 1800	0.60	0.87	0.95	1.00
2200 to 3900	0.75	0.90	0.95	1.00
4700 to 15000	0.85	0.95	0.98	1.00

UHW

Dimensions

Cap.(μF)	Code	6.3 (0J) Case size φD × L (mm)	6.3 (0J) Impedance (Ω) MAX. 20˚C / 100kHz	6.3 (0J) Impedance (Ω) MAX. −10˚C / 100kHz	6.3 (0J) Rated ripple (mArms) 105˚C / 100kHz	10 (1A) Case size φD × L (mm)	10 (1A) Impedance (Ω) MAX. 20˚C / 100kHz	10 (1A) Impedance (Ω) MAX. −10˚C / 100kHz	10 (1A) Rated ripple (mArms) 105˚C / 100kHz
1200	122					10 × 16	0.030	0.090	2000
1500	152					10 × 16	0.030	0.090	2000
1800	182	10 × 16	0.030	0.090	2000	10 × 20	0.020	0.060	2500
2200	222	10 × 20	0.020	0.060	2500	10 × 25	0.017	0.051	2900
2700	272	10 × 20	0.020	0.060	2500	12.5 × 20	0.017	0.051	2600
3300	332	10 × 25	0.017	0.051	2900	12.5 × 20	0.017	0.051	2600
3900	392	12.5 × 20	0.017	0.051	2600	12.5 × 25	0.015	0.045	3200
4700	472	12.5 × 25	0.015	0.045	3200	12.5 × 31.5	0.012	0.036	3795
						▲16 × 20	0.015	0.045	3575
5600	562	12.5 × 31.5	0.012	0.036	3795	12.5 × 35.5	0.011	0.033	4120
		▲12.5 × 25	0.015	0.045	3200	▲16 × 25	0.013	0.039	3810
6800	682	12.5 × 31.5	0.011	0.033	3795	16 × 25	0.013	0.039	3810
		▲16 × 20	0.015	0.045	3575				
8200	822	16 × 25	0.013	0.039	3810	16 × 31.5	0.011	0.033	4000
10000	103	16 × 25	0.013	0.039	3810	16 × 31.5	0.011	0.033	4000
12000	123	16 × 31.5	0.011	0.033	4000	16 × 35.5	0.010	0.030	4200
15000	153	16 × 35.5	0.010	0.030	4200				

Cap.(μF)	Code	16 (1C) Case size φD × L (mm)	16 (1C) Impedance (Ω) MAX. 20˚C / 100kHz	16 (1C) Impedance (Ω) MAX. −10˚C / 100kHz	16 (1C) Rated ripple (mArms) 105˚C / 100kHz	25 (1E) Case size φD × L (mm)	25 (1E) Impedance (Ω) MAX. 20˚C / 100kHz	25 (1E) Impedance (Ω) MAX. −10˚C / 100kHz	25 (1E) Rated ripple (mArms) 105˚C / 100kHz
680	681					10 × 16	0.030	0.090	2000
820	821	10 × 16	0.030	0.090	2000	10 × 20	0.020	0.060	2500
						▲10 × 16	0.030	0.090	2000
1000	102	10 × 16	0.030	0.090	2000	10 × 20	0.020	0.060	2500
1200	122	10 × 20	0.020	0.060	2500	10 × 25	0.017	0.051	2900
		▲10 × 16	0.030	0.090	2000				
1500	152	10 × 20	0.020	0.060	2500	12.5 × 20	0.017	0.051	2600
1800	182	10 × 25	0.017	0.051	2900	12.5 × 25	0.015	0.045	3200
2200	222	12.5 × 20	0.017	0.051	2600	12.5 × 25	0.015	0.045	3200
						▲16 × 20	0.015	0.045	3575
2700	272	12.5 × 25	0.015	0.045	3200	12.5 × 31.5	0.012	0.036	3795
						▲16 × 20	0.015	0.045	3576
3300	332	12.5 × 25	0.015	0.045	3200	12.5 × 35.5	0.011	0.033	4120
		▲16 × 20	0.015	0.045	3575	▲16 × 25	0.013	0.039	3810
3900	392	12.5 × 31.5	0.012	0.036	3795	16 × 25	0.013	0.039	3810
		▲16 × 20	0.015	0.045	3575				
4700	472	12.5 × 35.5	0.011	0.033	4120	16 × 31.5	0.011	0.033	4000
		▲16 × 25	0.013	0.039	3810				
5600	562	16 × 25	0.013	0.039	3810	16 × 35.5	0.010	0.030	4200
6800	682	16 × 31.5	0.011	0.033	4000				
8200	822	16 × 35.5	0.010	0.030	4200				

▲ : In this case, 6 will be put at 12th digit of type numbering system.

UHW

■Dimensions

V (Code) / Item / Code / Cap.(μF)		35 (1V)				50 (1H)			
		Case size φD × L (mm)	Impedance (Ω) MAX.		Rated ripple (mArms) 105℃ /100kHz	Case size φD × L (mm)	Impedance (Ω) MAX.		Rated ripple (mArms) 105℃ /100kHz
			20℃ /100kHz	−10℃ /100kHz			20℃ /100kHz	−10℃ /100kHz	
220	221					10 × 16	0.042	0.126	1650
270	271					10 × 20	0.030	0.090	2060
330	331					10 × 20	0.030	0.090	2060
390	391	10 × 16	0.030	0.090	2000	10 × 25	0.028	0.084	2420
						▲10 × 20	0.030	0.090	2060
470	471	10 × 16	0.030	0.090	2000	10 × 25	0.028	0.084	2420
						▲12.5× 20	0.027	0.081	2300
560	561	10 × 20	0.020	0.060	2500	12.5× 20	0.027	0.081	2300
680	681	10 × 25	0.017	0.051	2900	12.5 × 25	0.023	0.069	2800
		▲10 × 20	0.020	0.060	2500				
820	821	10 × 25	0.017	0.051	2900	12.5 × 25	0.023	0.069	2800
		▲12.5× 20	0.017	0.051	2600	▲16 × 20	0.023	0.069	3070
1000	102	12.5× 20	0.017	0.051	2600	12.5 × 31.5	0.020	0.060	3500
						▲16 × 25	0.021	0.063	3270
1200	122	12.5× 25	0.015	0.045	3200	16 × 25	0.021	0.063	3270
1500	152	16 × 20	0.015	0.045	3575	12.5 × 35.5	0.019	0.057	3810
						▲16 × 25	0.021	0.063	3270
1800	182	12.5 × 31.5	0.012	0.036	3795	16× 31.5	0.019	0.057	3430
		▲16 × 25	0.013	0.039	3810				
2200	222	12.5 × 35.5	0.011	0.033	4120	16× 31.5	0.019	0.057	3430
		▲16 × 25	0.013	0.039	3810				
2700	272					16× 35.5	0.018	0.054	3600
3300	332	16× 31.5	0.011	0.033	4000				
3900	392	16× 35.5	0.010	0.030	4200				

V (Code) / Item / Code / Cap.(μF)		63 (1J)				80 (1K)			
		Case size φD × L (mm)	Impedance (Ω) MAX.		Rated ripple (mArms) 105℃ /100kHz	Case size φD × L (mm)	Impedance (Ω) MAX.		Rated ripple (mArms) 105℃ /100kHz
			20℃ /100kHz	−10℃ /100kHz			20℃ /100kHz	−10℃ /100kHz	
120	121					10 × 16	0.115	0.47	1040
180	181	10 × 16	0.115	0.47	1200	10 × 20	0.088	0.34	1430
						▲12.5 × 15	0.115	0.47	1430
220	221					10 × 25	0.072	0.28	1620
270	271	10 × 20	0.088	0.34	1570	10 × 31.5	0.063	0.18	1750
						▲12.5 × 20	0.065	0.18	1750
330	331	10 × 25	0.072	0.28	1990				
390	391	10 × 31.5	0.063	0.18	2050	12.5 × 25	0.049	0.14	2210
		▲12.5 × 20	0.065	0.18	1990				
470	471					12.5 × 31.5	0.044	0.13	2400
						▲16 × 20	0.050	0.15	1950
560	561	12.5 × 25	0.049	0.14	2460	12.5 × 35.5	0.038	0.11	2600
						▲18 × 20	0.047	0.14	2270
680	681	12.5 × 31.5	0.044	0.13	2760	12.5 × 40	0.033	0.095	2860
		▲16 × 20	0.050	0.15	2380	▲16 × 25	0.040	0.12	2430
820	821	12.5 × 35.5	0.038	0.11	3040	16 × 31.5	0.033	0.095	2640
		▲18 × 20	0.047	0.14	2460	▲18 × 25	0.038	0.11	2500
1000	102	12.5 × 40	0.033	0.095	3100	16 × 35.5	0.030	0.086	2860
		▲16 × 25	0.040	0.12	2890				
1200	122	16 × 31.5	0.025	0.072	2930	16 × 40	0.028	0.081	3510
		▲18 × 25	0.038	0.11	2930	▲18 × 31.5	0.031	0.090	2860
1500	152	16 × 35.5	0.023	0.066	3100	18 × 35.5	0.028	0.081	3510
		▲18 × 31.5	0.024	0.069	3100				
1800	182	16 × 40	0.021	0.060	3510	18 × 40	0.027	0.076	3860
		▲18 × 35.5	0.022	0.063	3510				
2200	222	18 × 40	0.020	0.057	3860				

▲: In this case, 6 will be put at 12th digit of type numbering system.

UHW

■Dimensions

V (Code) / Item / Code / Cap.(μF)		100 (2A)			
		Case size φD × L (mm)	Impedance (Ω) MAX.		Rated ripple (mArms)
			20℃ /100kHz	−10℃ /100kHz	105℃ /100kHz
82	82	10 × 16	0.115	0.47	1040
100	101	10 × 20	0.088	0.34	1430
		▲12.5 × 15	0.115	0.47	1430
120	121	10 × 25	0.072	0.28	1620
180	181	12.5 × 20	0.065	0.18	1750
220	221	12.5 × 25	0.049	0.14	2210
270	271	12.5 × 31.5	0.044	0.13	2400
		▲ 16 × 20	0.050	0.15	1950
390	391	12.5 × 35.5	0.038	0.11	2600
		▲ 16 × 25	0.040	0.12	2430
		※ 18 × 20	0.047	0.14	2270
470	471	12.5 × 40	0.033	0.095	2860
		▲ 18 × 25	0.038	0.11	2500
560	561	16 × 31.5	0.033	0.095	2640
680	681	16 × 35.5	0.030	0.086	2860
		▲ 18 × 31.5	0.031	0.090	2860
820	821	16 × 40	0.028	0.081	3510
		▲ 18 × 35.5	0.028	0.081	3510
1000	102	18 × 40	0.027	0.076	3860

▲: In this case, 6 will be put at 12th digit of type numbering system.

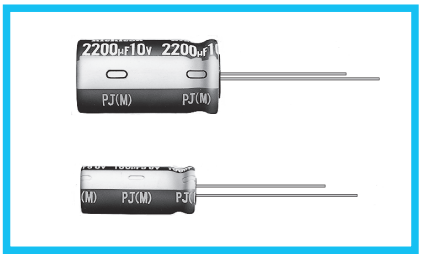
※: In this case, 3 will be put at 12th digit of type numbering system.

nichicon

UPJ

Low Impedance, For Switching Power Supplies

Low Impedance | Long Life | Anti-Solvent Feature (Through 100V only)



- Low impedance and high reliability withstanding 5000 hours load life at +105˚C (3000 / 2000 hours for smaller case sizes as specified below).
- Capacitance ranges available based on the numerical values in E12 series under JIS.
- Ideally suited for use of switching power supplies.
- Compliant to the RoHS directive (2011/65/EU).

Values marked with an ※ in the dimension table are scheduled to be discontinued and are not recommended for new designs.

UPJ → Smaller → UPS

■Specifications

Item	Performance Characteristics
Category Temperature Range	−55 to +105˚C (6.3 to 100V), −40 to +105˚C (160 to 400V), −25 to +105˚C (450V)
Rated Voltage Range	6.3 to 450V
Rated Capacitance Range	0.47 to 15000μF
Capacitance Tolerance	±20% at 120Hz, 20˚C
Leakage Current	Rated Voltage (V): 6.3 to 100 / 160 to 450 Leakage current: After 1 minute's application of rated voltage at 20°C, leakage current is not more than 0.03CV or 4 (μA), whichever is greater. / CV ≦ 1000 : I = 0.1CV+40 (μA) max. CV > 1000 : I = 0.04CV+100 (μA) max.
Tangent of loss angle (tan δ)	120Hz, 20˚C

Rated Voltage (V)	6.3	10	16	25	35	50	63 to 100	160 to 350	400・450
tan δ (MAX.)	0.22	0.19	0.16	0.14	0.12	0.10	0.08	0.20	0.25

For capacitance of more than 1000μF, add 0.02 for every increase of 1000μF.

Stability at Low Temperature — 120Hz

Rated voltage (V)		6.3・10	16	25・35	50 to 100	160・200	250	315・350	400	450
Impedance ratio (MAX.)	Z−25˚C / Z+20˚C	—	—	—	—	—	—	—	—	15
	Z−40˚C / Z+20˚C	—	—	—	—	4	6	8	10	—
	Z−55˚C / Z+20˚C	4	3	3	2	—	—	—	—	—

Endurance

The specifications listed at right shall be met when the capacitors are restored to 20˚C after D.C. bias plus rated ripple current is applied for 5000 hours (2000 hours for φD=5 and 6.3, 3000 hours for φD=8) at 105˚C, the peak voltage shall not exceed the rated voltage.

Capacitance change	Within ±20% of the initial capacitance value
tan δ	200% or less than the initial specified value
Leakage current	Less than or equal to the initial specified value

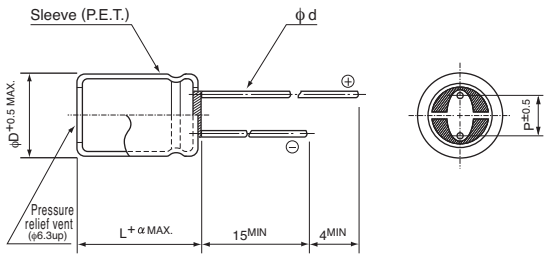
Shelf Life

After storing the capacitors under no load at 105˚C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed at right.

Capacitance change	Within ±20% of the initial capacitance value
tan δ	150% or less than the initial specified value
Leakage current	Less than or equal to the initial specified value

Marking: Printed with white color letter on dark brown sleeve.

■Radial Lead Type



α	(φD < 10) 1.0
	(φD ≥ 10) 1.5

(mm)

φD	5	6.3	8	10	12.5	16	18
P	2.0	2.5	3.5	5.0	5.0	7.5	7.5
φd	0.5	0.5	0.6	0.6	0.6※	0.8	0.8

※ In case L >25 for the φ12.5 dia. unit, lead dia. φ d=0.8mm.

• Please refer to page 20 about the end seal configuration.

Type numbering system (Example : 25V 470μF)

1	2	3	4	5	6	7	8	9	10	11	12
U	P	J	1	E	4	7	1	M	P	D	

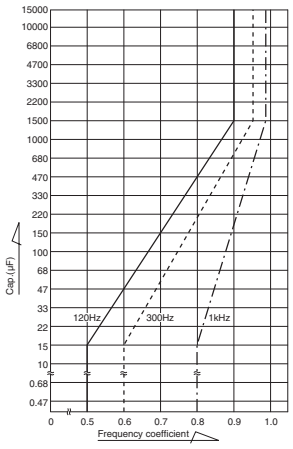
- 12: Size code
- 10 11: Configuration ※
- 9: Capacitance tolerance (±20%)
- 6 7 8: Rated capacitance (470μF)
- 4 5: Rated voltage (25V)
- 3: Series name
- 1 2: Type

Type	Code
Small Dia	—
Low Profile	6

※ Configuration

φ D	Pb-free leadwire Pb-free PET sleeve
5	DD
6.3	ED
8・10	PD
12.5 to 18	HD

• Frequency coefficient of rated ripple current

Rated voltage	Frequency coefficient
6.3 to 100V (10kHz to 200kHz = 1)	

160 to 450V	50Hz	120Hz	300Hz	1kHz	10kHz or more
	0.80	1.00	1.25	1.40	1.60

Please refer to page 20, 21, 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.
• Dimension table in next pages.

UPJ

■Dimensions

Cap. (μF) \ V (Code) / Size code / Code		6.3 (0J)		10 (1A)		16 (1C)		25 (1E)		35 (1V)	
		—	6	—	6	—	6	—	6	—	6
22	220									5 × 11	
27	270									5 × 11	
33	330							5 × 11		6.3 × 11	
39	390							5 × 11		6.3 × 11	
47	470					5 × 11		6.3 × 11		6.3 × 11	
56	560					5 × 11		6.3 × 11		6.3 × 11	
68	680			5 × 11		6.3 × 11		6.3 × 11		6.3 × 15	
82	820			5 × 11		6.3 × 11		6.3 × 11		6.3 × 15	
100	101	5 × 11		6.3 × 11		6.3 × 11		6.3 × 15		8 × 11.5	
120	121	5 × 11		6.3 × 11		6.3 × 11		6.3 × 15		8 × 15	10 × 12.5
150	151	6.3 × 11		6.3 × 11		6.3 × 15		8 × 11.5		8 × 15	10 × 12.5
180	181	6.3 × 11		6.3 × 11		6.3 × 15		8 × 15	10 × 12.5	8 × 20	10 × 15
220	221	6.3 × 11		6.3 × 15		8 × 11.5		8 × 15	10 × 12.5	8 × 20	10 × 15
270	271	6.3 × 15		6.3 × 15		8 × 15	10 × 12.5	8 × 20	10 × 15	10 × 20	12.5 × 15
330	331	6.3 × 15		8 × 11.5		8 × 15	10 × 12.5	8 × 20	10 × 15	10 × 20	12.5 × 15
390	391	8 ×11.5		8 × 15	10 × 12.5	8 × 20	10 × 15	10 × 20	12.5 × 15	10 × 25	12.5 × 15
470	471	8 × 15	10 × 12.5	8 × 15	10 × 12.5	8 × 20	10 × 15	10 × 20	12.5 × 15	10 × 31.5	16 × 15
560	561	8 × 15	10 × 12.5	8 × 20	10 × 15	10 × 20	12.5 × 15	10 × 25	12.5 × 15	12.5 × 20	16 × 15
680	681	8 × 20	10 × 15	8 × 20	10 × 15	10 × 20	12.5 × 15	10 × 31.5	16 × 15	12.5 × 25	18 × 15
820	821	8 × 20	10 × 15	10 × 20	12.5 × 15	10 × 25	12.5 × 15	12.5 × 20	16 × 15	12.5 × 25	18 × 15
1000	102	10 × 20	12.5 × 15	10 × 20	12.5 × 15	10 × 31.5	16 × 15	12.5 × 25	18 × 15	12.5 × 31.5	16 × 20
1200	122	10 × 20	12.5 × 15	10 × 25	12.5 × 15	12.5 × 20	16 × 15	12.5 × 25	18 × 15	12.5 × 35.5	16 × 25
1500	152	10 × 25	12.5 × 15	10 × 31.5	16 × 15	12.5 × 25	18 × 15	12.5 × 31.5	16 × 20	12.5 × 40	18 × 20
1800	182	10 × 31.5	16 × 15	12.5 × 20	16 × 15	12.5 × 31.5	16 × 20	12.5 × 35.5	16 × 25	16 × 31.5	18 × 25
2200	222	10 × 31.5	16 × 15	12.5 × 25	18 × 15	12.5 × 31.5	16 × 20	12.5 × 40	18 × 20	16 × 35.5	18 × 31.5
2700	272	12.5 × 25	18 × 15	12.5 × 31.5	16 × 20	12.5 × 35.5	16 × 25	16 × 31.5	18 × 25	16 × 40	18 × 35.5
3300	332	12.5 × 25	18 × 15	12.5 × 35.5	16 × 20	12.5 × 40	18 × 20	16 × 35.5	18 × 31.5	18 × 40	
3900	392	12.5 × 31.5	16 × 20	12.5 × 40	18 × 20	16 × 31.5	18 × 25	16 × 40	18 × 35.5		
4700	472	12.5 × 35.5	18 × 20	16 × 31.5	18 × 25	16 × 35.5	18 × 31.5	18 × 40			
5600	562	12.5 × 40	18 × 20	16 × 35.5	18 × 25	16 × 40	18 × 35.5				
6800	682	16 × 31.5	18 × 25	16 × 35.5	18 × 31.5	18 × 35.5					
8200	822	16 × 35.5	18 × 31.5	16 × 40	18 × 35.5	18 × 40					
10000	103	16 × 40	18 × 31.5	18 × 40							
12000	123	18 × 35.5									φD × L (mm)
15000	153	18 × 40									

Cap. (μF) \ V (Code) / Size code / Code		50 (1H)		63 (1J)		80 (1K)		100 (2A)	
		—	6	—	6	—	6	—	6
0.47	R47	※5 × 11						※5 × 11	
0.68	R68	※5 × 11						※5 × 11	
1	010	※5 × 11						※5 × 11	
1.5	1R5	※5 × 11						※5 × 11	
2.2	2R2	5 × 11						5 × 11	
3.3	3R3	5 × 11						5 × 11	
4.7	4R7	5 × 11				5 × 11		6.3 × 11	
6.8	6R8	5 × 11				5 × 11		6.3 × 11	
10	100	5 × 11		5 × 11		6.3 × 11		6.3 × 11	
12	120	5 × 11		5 × 11		6.3 × 11		6.3 × 11	
15	150	5 × 11		6.3 × 11		6.3 × 11		6.3 × 15	
18	180	5 × 11		6.3 × 11		6.3 × 11		6.3 × 15	
22	220	6.3 × 11		6.3 × 11		6.3 × 15		8 × 11.5	
27	270	6.3 × 11		6.3 × 11		6.3 × 15		8 × 15	10 × 12.5
33	330	6.3 × 11		6.3 × 15		8 × 11.5		8 × 15	10 × 12.5
39	390	6.3 × 11		6.3 × 15		8 × 15	10 × 12.5	8 × 20	10 × 15
47	470	6.3 × 15		8 × 11.5		8 × 15	10 × 12.5	10 × 20	12.5 × 15
56	560	6.3 × 15		8 × 15	10 × 12.5	8 × 20	10 × 15	10 × 20	12.5 × 15
68	680	8 × 11.5		8 × 15	10 × 12.5	10 × 20	12.5 × 15	10 × 25	12.5 × 15
82	820	8 × 15	10 × 12.5	8 × 20	10 × 15	10 × 20	12.5 × 15	10 × 31.5	16 × 15
100	101	8 × 20	10 × 15	10 × 20	12.5 × 15	10 × 25	12.5 × 15	10 × 31.5	16 × 15
120	121	8 × 20	10 × 15	10 × 20	12.5 × 15	10 × 31.5	16 × 15	12.5 × 25	16 × 15
150	151	10 × 20	12.5 × 15	10 × 25	12.5 × 15	10 × 31.5	16 × 15	12.5 × 25	18 × 15
180	181	10 × 20	12.5 × 15	10 × 31.5	16 × 15	12.5 × 25	16 × 15	12.5 × 31.5	16 × 20
220	221	10 × 25	12.5 × 15	12.5 × 20	16 × 15	12.5 × 31.5	18 × 15	12.5 × 35.5	16 × 25
270	271	10 × 31.5	16 × 15	12.5 × 25	18 × 15	12.5 × 31.5	16 × 20	12.5 × 40	18 × 20
330	331	10 × 31.5	16 × 15	12.5 × 25	18 × 15	12.5 × 35.5	16 × 25	16 × 31.5	18 × 25
390	391	12.5 × 25	16 × 15	12.5 × 31.5	16 × 20	12.5 × 40	18 × 20	16 × 35.5	18 × 31.5
470	471	12.5 × 25	18 × 15	12.5 × 35.5	16 × 25	16 × 31.5	18 × 25	16 × 40	18 × 35.5
560	561	12.5 × 31.5	16 × 20	12.5 × 40	18 × 20	16 × 35.5	18 × 31.5	18 × 35.5	
680	681	12.5 × 35.5	16 × 20	16 × 31.5	18 × 25	16 × 40	18 × 31.5	18 × 40	
820	821	12.5 × 40	18 × 20	16 × 35.5	18 × 31.5	18 × 35.5			
1000	102	16 × 31.5	18 × 25	16 × 40	18 × 35.5	18 × 40			
1200	122	16 × 35.5	18 × 31.5	18 × 40					
1500	152	16 × 40	18 × 31.5						
1800	182	18 × 35.5							φD × L (mm)
2200	222	18 × 40							

In case of low profile type, 6 will be put at 12th digit of type numbering system.

Dimension table for 160 to 450V products are shown in 231 page.

UPJ

■Standard Ratings

V (Code) / Size code / Item / Cap. (μF) / Code		6.3 (0J)									
		—					6				
		Case size φD × L (mm)	Impedance (Ω) MAX.		Rated ripple (mArms)		Case size φD × L (mm)	Impedance (Ω) MAX.		Rated ripple (mArms)	
			20°C / 100kHz	−10°C / 100kHz	105°C / 10kHz to 200kHz	105°C / 120Hz		20°C / 100kHz	−10°C / 100kHz	105°C / 10kHz to 200kHz	105°C / 120Hz
100	101	5 × 11	1.40	3.50	150	99					
120	121	5 × 11	1.10	2.80	175	115					
150	151	6.3 × 11	0.78	2.10	225	155					
180	181	6.3 × 11	0.60	1.50	250	175					
220	221	6.3 × 11	0.48	1.20	285	205					
270	271	6.3 × 15	0.39	1.00	370	275					
330	331	6.3 × 15	0.32	0.80	405	310					
390	391	8 × 11.5	0.27	0.68	445	345					
470	471	8 × 15	0.22	0.55	550	435	10 × 12.5	0.23	0.58	575	455
560	561	8 × 15	0.19	0.48	595	480	10 × 12.5	0.21	0.53	600	485
680	681	8 × 20	0.16	0.40	730	605	10 × 15	0.18	0.45	700	580
820	821	8 × 20	0.13	0.33	795	670	10 × 15	0.15	0.38	750	635
1000	102	10 × 20	0.12	0.30	950	820	12.5 × 15	0.13	0.33	890	765
1200	122	10 × 20	0.10	0.25	1020	895	12.5 × 15	0.12	0.30	950	835
1500	152	10 × 25	0.084	0.21	1220	1090	12.5 × 15	0.10	0.25	1020	915
1800	182	10 × 31.5	0.078	0.20	1370	1230	16 × 15	0.084	0.21	1270	1140
2200	222	10 × 31.5	0.066	0.17	1470	1320	16 × 15	0.078	0.20	1340	1200
2700	272	12.5 × 25	0.051	0.14	1590	1430	18 × 15	0.072	0.18	1500	1350
3300	332	12.5 × 25	0.045	0.11	1710	1530	18 × 15	0.065	0.16	1600	1440
3900	392	12.5 × 31.5	0.037	0.093	1910	1710	16 × 20	0.056	0.14	1720	1540
4700	472	12.5 × 35.5	0.034	0.085	2100	1890	18 × 20	0.050	0.13	1920	1720
5600	562	12.5 × 40	0.031	0.078	2270	2040	18 × 20	0.047	0.12	1980	1780
6800	682	16 × 31.5	0.029	0.073	2370	2130	18 × 25	0.039	0.098	2210	1980
8200	822	16 × 35.5	0.027	0.068	2550	2290	18 × 31.5	0.031	0.078	2390	2150
10000	103	16 × 40	0.025	0.063	2750	2470	18 × 31.5	0.028	0.070	2490	2240
12000	123	18 × 35.5	0.023	0.058	2820	2530					
15000	153	18 × 40	0.022	0.055	2960	2660					

V (Code) / Size code / Item / Cap.(μF) / Code		10 (1A)									
		—					6				
		Case size φD × L (mm)	Impedance (Ω) MAX.		Rated ripple (mArms)		Case size φD × L (mm)	Impedance (Ω) MAX.		Rated ripple (mArms)	
			20°C / 100kHz	−10°C / 100kHz	105°C / 10kHz to 200kHz	105°C / 120Hz		20°C / 100kHz	−10°C / 100kHz	105°C / 10kHz to 200kHz	105°C / 120Hz
68	680	5 × 11	1.30	3.30	155	97					
82	820	5 × 11	1.10	2.80	175	110					
100	101	6.3 × 11	0.84	2.10	210	135					
120	121	6.3 × 11	0.72	1.80	235	160					
150	151	6.3 × 11	0.55	1.40	265	185					
180	181	6.3 × 11	0.46	1.20	290	205					
220	221	6.3 × 15	0.38	0.95	370	270					
270	271	6.3 × 15	0.31	0.78	405	300					
330	331	8 × 11.5	0.26	0.65	460	350					
390	391	8 × 15	0.22	0.55	550	430	10 × 12.5	0.24	0.60	555	430
470	471	8 × 15	0.19	0.48	595	475	10 × 12.5	0.21	0.53	600	475
560	561	8 × 20	0.16	0.40	730	590	10 × 15	0.18	0.45	700	565
680	681	8 × 20	0.13	0.33	795	660	10 × 15	0.14	0.35	770	635
820	821	10 × 20	0.11	0.28	985	835	12.5 × 15	0.13	0.33	920	780
1000	102	10 × 20	0.096	0.24	1060	915	12.5 × 15	0.10	0.25	1040	895
1200	122	10 × 25	0.078	0.20	1280	1120	12.5 × 15	0.096	0.24	1060	930
1500	152	10 × 31.5	0.072	0.18	1440	1290	16 × 15	0.078	0.20	1330	1190
1800	182	12.5 × 20	0.057	0.14	1470	1320	16 × 15	0.072	0.18	1420	1270
2200	222	12.5 × 25	0.045	0.11	1710	1530	18 × 15	0.060	0.15	1600	1440
2700	272	12.5 × 31.5	0.036	0.090	1940	1740	16 × 20	0.051	0.13	1740	1560
3300	332	12.5 × 35.5	0.032	0.080	2180	1960	16 × 20	0.045	0.11	1850	1660
3900	392	12.5 × 40	0.030	0.075	2360	2120	18 × 20	0.041	0.10	2050	1840
4700	472	16 × 31.5	0.028	0.070	2420	2170	18 × 25	0.035	0.088	2250	2020
5600	562	16 × 35.5	0.026	0.065	2610	2340	18 × 25	0.033	0.083	2340	2100
6800	682	16 × 35.5	0.024	0.060	2680	2410	18 × 31.5	0.027	0.068	2540	2280
8200	822	16 × 40	0.023	0.058	2820	2530	18 × 35.5	0.025	0.063	2690	2420
10000	103	18 × 40	0.021	0.053	3040	2730					

In case of low profile type, 6 will be put at 12th digit of type numbering system.

UPJ

■Standard Ratings

Cap. (μF)	Code	V (Code)	16 (1C)									
		Size code	—					6				
		Item	Case size φD × L (mm)	Impedance (Ω) MAX.		Rated ripple (mArms)		Case size φD × L (mm)	Impedance (Ω) MAX.		Rated ripple (mArms)	
				20°C / 100kHz	−10°C / 100kHz	105°C / 10kHz to 200kHz	105°C / 120Hz		20°C / 100kHz	−10°C / 100kHz	105°C / 10kHz to 200kHz	105°C / 120Hz
47	470		5 × 11	1.30	3.30	155	92					
56	560		5 × 11	1.10	2.80	175	105					
68	680		6.3 × 11	0.78	2.00	220	135					
82	820		6.3 × 11	0.66	1.70	240	155					
100	101		6.3 × 11	0.55	1.40	265	175					
120	121		6.3 × 11	0.45	1.10	290	195					
150	151		6.3 × 15	0.37	0.93	375	260					
180	181		6.3 × 15	0.31	0.78	405	285					
220	221		8 × 11.5	0.26	0.65	460	335					
270	271		8 × 15	0.22	0.55	550	410	10 × 12.5	0.22	0.55	575	430
330	331		8 × 15	0.18	0.45	595	455	10 × 12.5	0.18	0.45	625	480
390	391		8 × 20	0.16	0.40	730	570	10 × 15	0.16	0.40	730	570
470	471		8 × 20	0.14	0.35	770	615	10 × 15	0.14	0.35	770	615
560	561		10 × 20	0.12	0.30	950	770	12.5 × 15	0.13	0.33	920	745
680	681		10 × 20	0.10	0.25	1020	845	12.5 × 15	0.11	0.28	985	815
820	821		10 × 25	0.084	0.21	1220	1030	12.5 × 15	0.096	0.24	1060	895
1000	102		10 × 31.5	0.072	0.18	1410	1210	16 × 15	0.084	0.21	1270	1090
1200	122		12.5 × 20	0.060	0.15	1430	1250	16 × 15	0.072	0.18	1390	1220
1500	152		12.5 × 25	0.048	0.12	1660	1490	18 × 15	0.066	0.17	1560	1400
1800	182		12.5 × 31.5	0.039	0.10	1880	1690	16 × 20	0.054	0.14	1700	1530
2200	222		12.5 × 31.5	0.034	0.085	2010	1800	16 × 20	0.048	0.12	1800	1620
2700	272		12.5 × 35.5	0.031	0.078	2220	1990	16 × 25	0.040	0.10	2010	1800
3300	332		12.5 × 40	0.028	0.070	2410	2160	18 × 20	0.039	0.10	2090	1880
3900	392		16 × 31.5	0.027	0.068	2470	2220	18 × 25	0.034	0.085	2290	2060
4700	472		16 × 35.5	0.025	0.063	2680	2410	18 × 31.5	0.028	0.070	2490	2240
5600	562		16 × 40	0.024	0.060	2820	2530	18 × 35.5	0.027	0.068	2620	2350
6800	682		18 × 35.5	0.022	0.055	2900	2610					
8200	822		18 × 40	0.021	0.053	3040	2730					

Cap. (μF)	Code	V (Code)	25 (1E)									
		Size code	—					6				
		Item	Case size φD × L (mm)	Impedance (Ω) MAX.		Rated ripple (mArms)		Case size φD × L (mm)	Impedance (Ω) MAX.		Rated ripple (mArms)	
				20°C / 100kHz	−10°C / 100kHz	105°C / 10kHz to 200kHz	105°C / 120Hz		20°C / 100kHz	−10°C / 100kHz	105°C / 10kHz to 200kHz	105°C / 120Hz
33	330		5 × 11	1.30	3.30	155	88					
39	390		5 × 11	1.10	2.80	175	100					
47	470		6.3 × 11	0.84	2.10	210	125					
56	560		6.3 × 11	0.72	1.80	235	140					
68	680		6.3 × 11	0.57	1.40	260	160					
82	820		6.3 × 11	0.47	1.20	285	180					
100	101		6.3 × 15	0.39	0.98	370	245					
120	121		6.3 × 15	0.32	0.80	405	275					
150	151		8 × 11.5	0.26	0.65	460	320					
180	181		8 × 15	0.22	0.55	550	390	10 × 12.5	0.24	0.60	555	395
220	221		8 × 15	0.18	0.45	625	455	10 × 12.5	0.21	0.53	600	435
270	271		8 × 20	0.15	0.38	750	560	10 × 15	0.18	0.45	700	525
330	331		8 × 20	0.13	0.33	795	610	10 × 15	0.15	0.38	750	575
390	391		10 × 20	0.11	0.28	985	770	12.5 × 15	0.13	0.33	920	720
470	471		10 × 20	0.10	0.25	1020	810	12.5 × 15	0.11	0.28	985	785
560	561		10 × 25	0.084	0.21	1220	990	12.5 × 15	0.10	0.25	1060	860
680	681		10 × 31.5	0.072	0.18	1420	1180	16 × 15	0.084	0.21	1270	1050
820	821		12.5 × 20	0.059	0.15	1430	1210	16 × 15	0.079	0.20	1340	1130
1000	102		12.5 × 25	0.048	0.12	1660	1430	18 × 15	0.066	0.17	1520	1310
1200	122		12.5 × 25	0.043	0.11	1760	1550	18 × 15	0.061	0.15	1600	1400
1500	152		12.5 × 31.5	0.035	0.088	1980	1780	16 × 20	0.050	0.13	1770	1590
1800	182		12.5 × 35.5	0.032	0.080	2180	1960	16 × 25	0.041	0.10	1980	1780
2200	222		12.5 × 40	0.029	0.073	2360	2120	18 × 20	0.040	0.10	2050	1840
2700	272		16 × 31.5	0.027	0.068	2470	2220	18 × 25	0.034	0.085	2290	2060
3300	332		16 × 35.5	0.025	0.063	2680	2410	18 × 31.5	0.029	0.073	2490	2240
3900	392		16 × 40	0.023	0.058	2820	2530	18 × 35.5	0.026	0.065	2690	2420
4700	472		18 × 40	0.022	0.055	2960	2660					

In case of low profile type, will 6 be put at 12th digit of type numbering system.

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■Standard Ratings

Cap. (μF)	Code	Case size φD × L (mm)	Impedance (Ω) MAX. 20˚C / 100kHz	Impedance (Ω) MAX. −10˚C / 100kHz	Rated ripple (mArms) 105˚C / 10kHz to 200kHz	Rated ripple (mArms) 105˚C / 120Hz	Case size φD × L (mm)	Impedance (Ω) MAX. 20˚C / 100kHz	Impedance (Ω) MAX. −10˚C / 100kHz	Rated ripple (mArms) 105˚C / 10kHz to 200kHz	Rated ripple (mArms) 105˚C / 120Hz
	V (Code)	35 (1V)									
	Size code	—					6				
	Item										
22	220	5 × 11	1.30	3.30	160	85					
27	270	5 × 11	1.00	2.50	180	99					
33	330	6.3 × 11	0.78	2.00	225	125					
39	390	6.3 × 11	0.66	1.70	245	140					
47	470	6.3 × 11	0.54	1.40	270	160					
56	560	6.3 × 11	0.45	1.10	295	180					
68	680	6.3 × 15	0.37	0.93	370	230					
82	820	6.3 × 15	0.31	0.78	415	265					
100	101	8 × 11.5	0.26	0.65	460	305					
120	121	8 × 15	0.22	0.55	550	370	10 × 12.5	0.24	0.60	555	375
150	151	8 × 15	0.18	0.45	595	415	10 × 12.5	0.20	0.50	625	435
180	181	8 × 20	0.16	0.40	730	520	10 × 15	0.18	0.45	700	500
220	221	8 × 20	0.13	0.33	795	580	10 × 15	0.14	0.35	770	560
270	271	10 × 20	0.11	0.28	985	735	12.5 × 15	0.13	0.33	920	690
330	331	10 × 20	0.096	0.24	1060	810	12.5 × 15	0.10	0.25	1020	780
390	391	10 × 25	0.084	0.21	1220	955	12.5 × 15	0.096	0.24	1060	825
470	471	10 × 31.5	0.072	0.18	1420	1130	16 × 15	0.084	0.21	1270	1010
560	561	12.5 × 20	0.059	0.15	1430	1160	16 × 15	0.075	0.19	1360	1100
680	681	12.5 × 25	0.048	0.12	1660	1370	18 × 15	0.066	0.17	1540	1270
820	821	12.5 × 25	0.042	0.11	1760	1490	18 × 15	0.060	0.15	1620	1370
1000	102	12.5 × 31.5	0.035	0.088	1980	1710	16 × 20	0.050	0.13	1770	1530
1200	122	12.5 × 35.5	0.031	0.078	2180	1920	16 × 25	0.041	0.10	1980	1740
1500	152	12.5 × 40	0.029	0.073	2360	2120	18 × 20	0.040	0.10	2050	1840
1800	182	16 × 31.5	0.027	0.068	2470	2220	18 × 25	0.034	0.085	2290	2060
2200	222	16 × 35.5	0.024	0.060	2680	2410	18 × 31.5	0.028	0.070	2490	2240
2700	272	16 × 40	0.022	0.055	2900	2610	18 × 35.5	0.026	0.065	2690	2420
3300	332	18 × 40	0.021	0.053	3040	2730					

Cap. (μF)	Code	Case size φD × L (mm)	Impedance (Ω) MAX. 20˚C / 100kHz	Impedance (Ω) MAX. −10˚C / 100kHz	Rated ripple (mArms) 105˚C / 10kHz to 200kHz	Rated ripple (mArms) 105˚C / 120Hz	Case size φD × L (mm)	Impedance (Ω) MAX. 20˚C / 100kHz	Impedance (Ω) MAX. −10˚C / 100kHz	Rated ripple (mArms) 105˚C / 10kHz to 200kHz	Rated ripple (mArms) 105˚C / 120Hz
	V (Code)	50 (1H)									
	Size code	—					6				
	Item										
0.47	R47	※5 × 11	31.0	80.0	22	11					
0.68	R68	※5 × 11	21.0	55.0	28	14					
1	010	※5 × 11	14.0	38.0	36	18					
1.5	1R5	※5 × 11	9.80	28.0	45	22					
2.2	2R2	5 × 11	6.50	18.0	54	27					
3.3	3R3	5 × 11	4.60	12.0	66	33					
4.7	4R7	5 × 11	3.10	7.80	81	40					
6.8	6R8	5 × 11	2.50	6.30	91	45					
10	100	5 × 11	2.00	5.00	115	57					
12	120	5 × 11	1.70	4.30	125	62					
15	150	5 × 11	1.30	3.30	145	72					
18	180	5 × 11	1.10	2.80	155	79					
22	220	6.3 × 11	0.91	2.30	195	100					
27	270	6.3 × 11	0.74	1.90	215	115					
33	330	6.3 × 11	0.60	1.50	240	135					
39	390	6.3 × 11	0.50	1.30	260	150					
47	470	6.3 × 15	0.42	1.10	330	195					
56	560	6.3 × 15	0.35	0.88	360	220					
68	680	8 × 11.5	0.28	0.70	410	255					
82	820	8 × 15	0.22	0.55	500	320	10 × 12.5	0.23	0.58	510	330
100	101	8 × 20	0.18	0.45	620	410	10 × 15	0.21	0.53	580	385
120	121	8 × 20	0.16	0.40	670	455	10 × 15	0.17	0.43	640	435
150	151	10 × 20	0.13	0.33	820	570	12.5 × 15	0.14	0.35	785	545
180	181	10 × 20	0.11	0.28	890	635	12.5 × 15	0.12	0.31	845	605
220	221	10 × 25	0.098	0.25	1040	760	12.5 × 15	0.10	0.25	920	670
270	271	10 × 31.5	0.085	0.21	1200	900	16 × 15	0.091	0.23	1120	840
330	331	10 × 31.5	0.072	0.18	1300	995	16 × 15	0.078	0.20	1210	925
390	391	12.5 × 25	0.053	0.13	1440	1120	16 × 15	0.072	0.18	1270	990
470	471	12.5 × 25	0.048	0.12	1500	1190	18 × 15	0.060	0.15	1470	1170
560	561	12.5 × 31.5	0.040	0.10	1680	1360	16 × 20	0.053	0.13	1550	1260
680	681	12.5 × 35.5	0.036	0.090	1850	1530	16 × 20	0.048	0.12	1630	1350
820	821	12.5 × 40	0.033	0.083	2010	1700	18 × 20	0.043	0.11	1810	1530
1000	102	16 × 31.5	0.030	0.075	2120	1830	18 × 25	0.036	0.090	2000	1730
1200	122	16 × 35.5	0.028	0.070	2260	1990	18 × 31.5	0.031	0.078	2140	1880
1500	152	16 × 40	0.026	0.065	2410	2170	18 × 31.5	0.029	0.073	2220	1990
1800	182	18 × 35.5	0.025	0.063	2460	2210					
2200	222	18 × 40	0.024	0.060	2560	2300					

In case of low profile type, 6 will be put at 12th digit of type numbering system.

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■Standard Ratings

Cap. (μF)	Code	63 (1J) — Case size φD × L (mm)	Impedance (Ω) MAX. 20˚C / 100kHz	Impedance (Ω) MAX. −10˚C / 100kHz	Rated ripple (mArms) 105˚C / 10kHz to 200kHz	Rated ripple (mArms) 105˚C / 120Hz	63 (1J) 6 — Case size φD × L (mm)	Impedance (Ω) MAX. 20˚C / 100kHz	Impedance (Ω) MAX. −10˚C / 100kHz	Rated ripple (mArms) 105˚C / 10kHz to 200kHz	Rated ripple (mArms) 105˚C / 120Hz
10	100	5 × 11	1.60	4.00	135	67					
12	120	5 × 11	1.40	3.50	145	72					
15	150	6.3 × 11	1.10	2.80	185	92					
18	180	6.3 × 11	0.95	2.40	195	100					
22	220	6.3 × 11	0.78	2.00	215	110					
27	270	6.3 × 11	0.64	1.60	240	130					
33	330	6.3 × 15	0.52	1.30	305	170					
39	390	6.3 × 15	0.45	1.10	330	190					
47	470	8 × 11.5	0.37	0.93	365	215					
56	560	8 × 15	0.31	0.78	450	275	10 × 12.5	0.34	0.85	450	275
68	680	8 × 15	0.26	0.65	500	315	10 × 12.5	0.28	0.70	495	310
82	820	8 × 20	0.22	0.55	600	385	10 × 15	0.24	0.60	580	375
100	101	10 × 20	0.18	0.45	750	495	12.5 × 15	0.20	0.50	695	460
120	121	10 × 20	0.15	0.38	820	555	12.5 × 15	0.18	0.45	750	510
150	151	10 × 25	0.13	0.33	950	665	12.5 × 15	0.14	0.35	845	590
180	181	10 × 31.5	0.11	0.28	1110	790	16 × 15	0.12	0.30	1050	750
220	221	12.5 × 20	0.094	0.24	1140	835	16 × 15	0.10	0.25	1120	820
270	271	12.5 × 25	0.081	0.20	1340	1000	18 × 15	0.088	0.22	1290	965
330	331	12.5 × 25	0.072	0.18	1420	1090	18 × 15	0.078	0.20	1410	1080
390	391	12.5 × 31.5	0.059	0.15	1620	1260	16 × 20	0.070	0.18	1500	1170
470	471	12.5 × 35.5	0.052	0.13	1780	1420	16 × 25	0.063	0.16	1700	1350
560	561	12.5 × 40	0.047	0.12	1950	1580	18 × 20	0.058	0.15	1730	1400
680	681	16 × 31.5	0.043	0.11	2050	1700	18 × 25	0.051	0.13	1940	1610
820	821	16 × 35.5	0.040	0.10	2220	1880	18 × 31.5	0.043	0.12	2110	1780
1000	102	16 × 40	0.037	0.093	2370	2050	18 × 35.5	0.040	0.10	2280	1970
1200	122	18 × 40	0.034	0.085	2510	2210					

Cap. (μF)	Code	80 (1K) — Case size φD × L (mm)	Impedance (Ω) MAX. 20˚C / 100kHz	Impedance (Ω) MAX. −10˚C / 100kHz	Rated ripple (mArms) 105˚C / 10kHz to 200kHz	Rated ripple (mArms) 105˚C / 120Hz	80 (1K) 6 — Case size φD × L (mm)	Impedance (Ω) MAX. 20˚C / 100kHz	Impedance (Ω) MAX. −10˚C / 100kHz	Rated ripple (mArms) 105˚C / 10kHz to 200kHz	Rated ripple (mArms) 105˚C / 120Hz
4.7	4R7	5 × 11	4.20	11.00	53	26					
6.8	6R8	5 × 11	2.60	7.00	68	34					
10	100	6.3 × 11	1.70	4.60	87	43					
12	120	6.3 × 11	1.40	3.80	96	48					
15	150	6.3 × 11	1.20	3.20	104	52					
18	180	6.3 × 11	1.00	2.70	114	58					
22	220	6.3 × 15	0.77	2.10	135	71					
27	270	6.3 × 15	0.63	1.70	149	80					
33	330	8 × 11.5	0.53	1.40	234	132					
39	390	8 × 15	0.46	1.20	272	156	10 × 12.5	0.49	1.30	271	155
47	470	8 × 15	0.39	1.10	295	175	10 × 12.5	0.42	1.10	293	174
56	560	8 × 20	0.34	0.92	347	208	10 × 15	0.36	0.97	337	202
68	680	10 × 20	0.28	0.76	426	264	12.5 × 15	0.31	0.84	402	249
82	820	10 × 20	0.25	0.68	447	284	12.5 × 15	0.27	0.73	430	273
100	101	10 × 25	0.21	0.57	526	347	12.5 × 15	0.23	0.62	466	308
120	121	10 × 31.5	0.18	0.49	606	406	16 × 15	0.20	0.54	663	444
150	151	10 × 31.5	0.15	0.41	663	459	16 × 15	0.18	0.47	699	484
180	181	12.5 × 25	0.13	0.35	734	520	16 × 15	0.15	0.41	766	543
220	221	12.5 × 31.5	0.12	0.32	816	595	18 × 15	0.13	0.35	881	643
270	271	12.5 × 31.5	0.10	0.27	894	667	16 × 20	0.11	0.30	995	742
330	331	12.5 × 35.5	0.088	0.24	1000	767	16 × 25	0.099	0.27	1140	874
390	391	12.5 × 40	0.078	0.21	1060	822	18 × 20	0.089	0.24	1170	908
470	471	16 × 31.5	0.069	0.19	1450	1150	18 × 25	0.080	0.22	1330	1060
560	561	16 × 35.5	0.062	0.17	1600	1300	18 × 31.5	0.072	0.19	1490	1210
680	681	16 × 40	0.055	0.15	1770	1470	18 × 31.5	0.065	0.18	1560	1300
820	821	18 × 35.5	0.049	0.13	1890	1590					
1000	102	18 × 40	0.044	0.12	2080	1790					

In case of low profile type, 6 will be put at 12th digit of type numbering system.

UPJ

■Standard Ratings

Cap. (μF)	Code	100 (2A) — Case size φD × L (mm)	Impedance (Ω) MAX. 20˚C / 100kHz	Impedance (Ω) MAX. −10˚C / 100kHz	Rated ripple (mArms) 105˚C / 10kHz to 200kHz	Rated ripple (mArms) 105˚C / 120Hz	100 (2A) 6 — Case size φD × L (mm)	Impedance (Ω) MAX. 20˚C / 100kHz	Impedance (Ω) MAX. −10˚C / 100kHz	Rated ripple (mArms) 105˚C / 10kHz to 200kHz	Rated ripple (mArms) 105˚C / 120Hz
0.47	R47	※5 × 11	43.0	116.0	17	8					
0.68	R68	※5 × 11	23.0	62.0	23	11					
1	010	※5 × 11	17.0	46.0	27	13					
1.5	1R5	※5 × 11	10.0	27.0	35	17					
2.2	2R2	5 × 11	6.60	18.0	43	21					
3.3	3R3	5 × 11	4.10	11.0	54	27					
4.7	4R7	6.3 × 11	2.80	7.60	68	34					
6.8	6R8	6.3 × 11	1.90	5.10	83	41					
10	100	6.3 × 11	1.20	3.20	104	52					
12	120	6.3 × 11	1.00	2.70	114	57					
15	150	6.3 × 15	0.81	2.20	131	65					
18	180	6.3 × 15	0.67	1.80	155	80					
22	220	8 × 11.5	0.55	1.50	230	122					
27	270	8 × 15	0.47	1.30	269	146	10 × 12.5	0.50	1.40	268	145
33	330	8 × 15	0.38	1.00	299	169	10 × 12.5	0.42	1.10	293	166
39	390	8 × 20	0.33	0.89	352	202	10 × 15	0.36	0.97	337	193
47	470	10 × 20	0.28	0.76	423	252	12.5 × 15	0.31	0.84	402	239
56	560	10 × 20	0.24	0.65	456	274	12.5 × 15	0.27	0.73	430	258
68	680	10 × 25	0.21	0.57	526	326	12.5 × 15	0.23	0.62	466	289
82	820	10 × 31.5	0.18	0.49	606	386	16 × 15	0.19	0.51	681	433
100	101	10 × 31.5	0.15	0.41	663	438	16 × 15	0.17	0.46	719	475
120	121	12.5 × 25	0.13	0.35	774	519	16 × 15	0.14	0.38	793	531
150	151	12.5 × 25	0.11	0.30	798	553	18 × 15	0.12	0.32	917	635
180	181	12.5 × 31.5	0.098	0.26	904	641	16 × 20	0.11	0.30	995	706
220	221	12.5 × 35.5	0.087	0.23	1000	730	16 × 25	0.093	0.25	1170	854
270	271	12.5 × 40	0.072	0.19	1130	843	18 × 20	0.080	0.22	1230	918
330	331	16 × 31.5	0.062	0.17	1520	1160	18 × 25	0.070	0.19	1420	1080
390	391	16 × 35.5	0.053	0.14	1730	1340	18 × 31.5	0.062	0.17	1600	1240
470	471	16 × 40	0.047	0.13	1920	1530	18 × 35.5	0.056	0.15	1770	1410
560	561	18 × 35.5	0.041	0.11	2070	1680					
680	681	18 × 40	0.036	0.097	2300	1910					

In case of low profile type, 6 will be put at 12th digit of type numbering system.

Cap. (μF)	Code	160 2C		200 2D		250 2E		315 2F		350 2V		400 2G		450 2W	
1	010	8 × 11.5	19	8 × 11.5	19	8 × 11.5	19	8 × 11.5	19	10 × 12.5	21	10 × 12.5	17	10 × 15	17
2.2	2R2	8 × 11.5	30	8 × 11.5	30	10 × 12.5	32	10 × 12.5	32	10 × 15	34	10 × 15	28	10 × 20	28
3.3	3R3	10 × 12.5	50	10 × 12.5	50	10 × 15	52	10 × 15	52	10 × 20	54	10 × 20	47	12.5 × 20	48
4.7	4R7	10 × 12.5	57	10 × 15	60	10 × 15	60	10 × 20	65	10 × 20	65	12.5 × 20	55	12.5 × 25	55
10	100	10 × 15	90	10 × 20	95	12.5 × 20	98	12.5 × 20	98	12.5 × 25	100	12.5 × 25	85	16 × 25	90
22	220	12.5 × 20	140	12.5 × 25	145	16 × 25	150	16 × 25	150	16 × 25	150	16 × 31.5	130	16 × 35.5	135
33	330	12.5 × 25	175	16 × 25	180	16 × 25	180	16 × 31.5	185	16 × 35.5	190	18 × 35.5	170	18 × 40	170
47	470	16 × 25	220	16 × 25	220	16 × 31.5	225	18 × 35.5	235	18 × 40	240				
100	101	16 × 35.5	330	18 × 40	345	18 × 40	345							Case size	※1

※1 Rated ripple current (mArms) at 105˚C 120Hz

nichicon

UPS

Miniature Sized, Low Impedance, For Switching Power Supplies

Smaller | Low Impedance | Anti-Solvent Feature (Through 100V only)

- Wide temperature range type, miniature sized.
- Compliant to the RoHS directive (2011/65/EU).

Values marked with an ※ in the dimension table are scheduled to be discontinued and are not recommended for new designs.

UPJ → Smaller → UPS

■Specifications

Item	Performance Characteristics
Category Temperature Range	−55 to +105˚C (6.3 to 100V), −40 to +105˚C (160 to 400V), −25 to +105˚C (450V)
Rated Voltage Range	6.3 to 450V
Rated Capacitance Range	0.47 to 15000μF
Capacitance Tolerance	±20% at 120Hz, 20˚C

Leakage Current

Rated voltage (V)	6.3 to 100	160 to 450
Leakage current	After 1 minute's application of rated voltage at 20°C, leakage current is not more than 0.03CV or 4 (μA) , whichever is greater.	CV ≦ 1000 : I= 0.1CV+40 (μA)max. CV > 1000 : I= 0.04CV+100 (μA)max.

Tangent of loss angle (tan δ)

For capacitance of more than 1000μF, add 0.02 for every increase of 1000μF Measurement frequency : 120Hz at 20˚C

Rated voltage (V)	6.3	10	16	25	35	50	63	100	160 to 250	315 · 350	400 · 450
tan δ (MAX.)	0.24	0.20	0.16	0.14	0.12	0.10	0.09	0.08	0.15	0.20	0.25

Stability at Low Temperature

Measurement frequency : 120Hz

Rated voltage (V)		6.3 · 10	16 · 25	35 · 50	63 · 100	160 · 200	250	315 · 350	400	450
Impedance ratio (MAX.)	Z−25˚C / Z+20˚C	—	—	—	2	3	3	4	6	15
	Z−40˚C / Z+20˚C	—	—	—	3	4	6	8	10	—
	Z−55˚C / Z+20˚C	5	4	3	—	—	—	—	—	—

Endurance

The specifications listed at right shall be met when the capacitors are restored to 20˚C after D.C. bias plus rated ripple current is applied for 3000 hours (2000 hours for φD= 5 to 10) at 105˚C, the peak voltage shall not exceed the rated voltage.

Capacitance change	Within ±20% of the initial capacitance value
tan δ	200% or less than the initial specified value
Leakage current	Less than or equal to the initial specified value

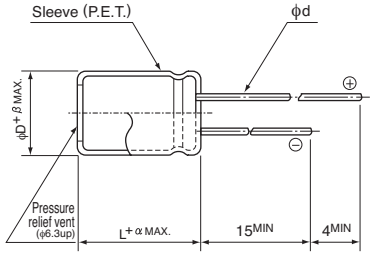
Shelf Life

After storing the capacitors under no load at 105˚C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.

Marking

Printed with white color letter on dark brown sleeve.

■Radial Lead Type



(mm)

α	(L < 20) 1.5
	(L ≧ 20) 2.0

φD	5	6.3	8	10	12.5	16	18	20	22	25
P	2.0	2.5	3.5	5.0	5.0	7.5	7.5	10.0	10.0	12.5
φd	0.5	0.5	0.6	0.6	0.6	0.8	0.8	1.0	1.0	1.0
β	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.0	1.0

• Please refer to page 20 about the end seal configuration.

Type numbering system (Example : 25V 470μF)

1	2	3	4	5	6	7	8	9	10	11	12
U	P	S	1	E	4	7	1	M	P	D	

Size code
Configuration ※
Capacitance tolerance (±20%)
Rated capacitance (470μF)
Rated voltage (25V)
Series name
Type

※ Configuration

φ D	Pb-free leadwire Pb-free PET sleeve
5	DD
6.3	ED
8 · 10	PD
12.5 to 18	HD
20 to 25	RD

● Frequency coefficient of rated ripple current

V	Cap.(μF) \ Frequency	50Hz	120Hz	300Hz	1kHz	10kHz or more
6.3 to 100	0.47 to 47	—	0.17	0.40	0.65	1.00
	100 to 220	0.30	0.50	0.65	0.80	1.00
	330 to 680	0.57	0.71	0.82	0.90	1.00
	1000 to 15000	0.75	0.87	0.96	0.98	1.00
160 to 450	0.47 to 220	0.80	1.00	1.25	1.40	1.60
	330 to 470	0.90	1.00	1.10	1.13	1.15

Please refer to page 20, 21, 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.
● Dimension table in next pages.

UPS

■Standard Ratings

Cap. (μF) / Code \ V (Code) / Item		6.3 (0J)			10 (1A)			16 (1C)			25 (1E)		
		Case size φD × L (mm)	Impedance (Ω) MAX. 20˚C/100kHz	Rated ripple (mArms) 105˚C/100kHz	Case size φD × L (mm)	Impedance (Ω) MAX. 20˚C/100kHz	Rated ripple (mArms) 105˚C/100kHz	Case size φD × L (mm)	Impedance (Ω) MAX. 20˚C/100kHz	Rated ripple (mArms) 105˚C/100kHz	Case size φD × L (mm)	Impedance (Ω) MAX. 20˚C/100kHz	Rated ripple (mArms) 105˚C/100kHz
4.7	4R7										5 × 11	1.50	160
10	100							5 × 11	1.50	160	5 × 11	1.50	160
22	220	5 × 11	1.50	160	5 × 11	1.50	160	5 × 11	1.50	160	5 × 11	1.50	160
33	330	5 × 11	1.50	160	5 × 11	1.50	160	5 × 11	1.50	160	5 × 11	1.50	160
47	470	5 × 11	1.50	160	5 × 11	1.50	160	5 × 11	1.50	160	5 × 11	1.50	160
100	101	5 × 11	1.50	160	5 × 11	1.50	160	6.3 × 11	0.50	250	6.3 × 11	0.50	250
150	151	6.3 × 11	0.50	250	6.3 × 11	0.50	250	6.3 × 11	0.50	250	8 × 11.5	0.28	410
220	221	6.3 × 11	0.50	250	6.3 × 11	0.50	250	8 × 11.5	0.28	410	8 × 11.5	0.28	410
330	331	6.3 × 11	0.50	250	8 × 11.5	0.28	410	8 × 11.5	0.28	410	10 × 12.5	0.19	600
470	471	8 × 11.5	0.28	410	8 × 11.5	0.28	410	10 × 12.5	0.19	600	10 × 16	0.14	800
680	681	10 × 12.5	0.19	600	10 × 12.5	0.19	600	10 × 16	0.14	800	10 × 20	0.11	1000
1000	102	10 × 12.5	0.19	600	10 × 16	0.14	800	10 × 20	0.11	1000	12.5 × 20	0.075	1250
1500	152	10 × 20	0.11	1000	10 × 20	0.11	1000	12.5 × 20	0.075	1250	16 × 25	0.038	1900
2200	222	12.5 × 20	0.075	1250	12.5 × 20	0.075	1250	12.5 × 25	0.057	1550	16 × 25	0.038	1900
3300	332	12.5 × 20	0.075	1250	12.5 × 25	0.057	1550	16 × 25	0.038	1900	16 × 31.5	0.033	2350
4700	472	16 × 25	0.038	1900	16 × 25	0.038	1900	16 × 31.5	0.033	2350	18 × 35.5	0.030	2700
6800	682	16 × 25	0.038	1900	16 × 31.5	0.033	2350	18 × 35.5	0.030	2700	18 × 40	0.027	3300
10000	103	16 × 31.5	0.033	2350	18 × 35.5	0.030	2700	18 × 40	0.027	3300			
15000	153	18 × 35.5	0.030	2700	18 × 40	0.027	3300						

Cap. (μF) / Code \ V (Code) / Item		35 (1V)			50 (1H)			63 (1J)			100 (2A)		
		Case size φD × L (mm)	Impedance (Ω) MAX. 20˚C/100kHz	Rated ripple (mArms) 105˚C/100kHz	Case size φD × L (mm)	Impedance (Ω) MAX. 20˚C/100kHz	Rated ripple (mArms) 105˚C/100kHz	Case size φD × L (mm)	Impedance (Ω) MAX. 20˚C/100kHz	Rated ripple (mArms) 105˚C/100kHz	Case size φD × L (mm)	Impedance (Ω) MAX. 20˚C/100kHz	Rated ripple (mArms) 105˚C/100kHz
0.47	R47				※5 × 11	7.50	25				※5 × 11	43.0	20
1	010				※5 × 11	5.30	40				※5 × 11	20.0	30
2.2	2R2				5 × 11	4.50	55				5 × 11	9.80	44
3.3	3R3				5 × 11	3.90	65				5 × 11	6.60	58
4.7	4R7	5 × 11	1.50	160	5 × 11	3.50	90	5 × 11	4.70	68	5 × 11	4.60	74
10	100	5 × 11	1.50	160	5 × 11	2.10	120	5 × 11	2.10	110	6.3 × 11	1.80	130
22	220	5 × 11	1.50	160	5 × 11	1.80	150	6.3 × 11	0.98	180	8 × 11.5	0.68	230
33	330	5 × 11	1.50	160	6.3 × 11	0.65	250	6.3 × 11	0.71	220	10 × 12.5	0.46	320
47	470	6.3 × 11	0.50	250	6.3 × 11	0.65	250	8 × 11.5	0.65	310	10 × 16	0.37	420
100	101	8 × 11.5	0.28	410	8 × 11.5	0.36	340	10 × 12.5	0.31	390	12.5 × 20	0.18	580
150	151	8 × 11.5	0.28	410	10 × 12.5	0.26	490	10 × 16	0.25	440	12.5 × 25	0.13	710
220	221	10 × 12.5	0.19	600	10 × 16	0.18	650	10 × 20	0.20	700	16 × 25	0.10	890
330	331	10 × 16	0.14	800	10 × 20	0.15	810	12.5 × 20	0.12	980	16 × 25	0.090	1080
470	471	10 × 20	0.11	1000	12.5 × 20	0.13	1100	12.5 × 25	0.081	1200	16 × 31.5	0.076	1310
680	681	12.5 × 20	0.075	1250	12.5 × 25	0.10	1200	16 × 25	0.058	1300	16 × 35.5	0.064	1410
1000	102	12.5 × 25	0.057	1550	16 × 25	0.058	1600	16 × 31.5	0.049	1380	18 × 40	0.047	1520
1500	152	16 × 25	0.038	1900	16 × 31.5	0.040	2000	18 × 35.5	0.038	1750			
2200	222	16 × 31.5	0.033	2350	18 × 35.5	0.035	2300	18 × 40	0.032	2120			
3300	332	18 × 35.5	0.030	2700									
4700	472	18 × 40	0.027	3300									

Cap.(μF) / Code \ V		160		200		250		315		350		400		450	
		2C		2D		2E		2F		2V		2G		2W	
0.47	R47	6.3 × 11	12	6.3 × 11	12	6.3 × 11	12	8 × 11.5	11	8 × 11.5	11				
1	010	6.3 × 11	17	6.3 × 11	17	6.3 × 11	17	8 × 11.5	16	10 × 12.5	17	10 × 12.5	16	10 × 12.5	18
2.2	2R2	6.3 × 11	25	6.3 × 11	25	8 × 11.5	29	10 × 12.5	28	10 × 16	31	10 × 16	27	10 × 20	29
3.3	3R3	8 × 11.5	36	8 × 11.5	36	10 × 12.5	42	10 × 12.5	34	10 × 16	38	10 × 20	36	12.5 × 20	41
4.7	4R7	8 × 11.5	43	10 × 12.5	50	10 × 12.5	50	10 × 16	45	10 × 20	49	10 × 20	43	12.5 × 20	49
10	100	10 × 12.5	70	10 × 16	80	10 × 20	88	10 × 20	72	12.5 × 20	82	12.5 × 25	72	16 × 25	75
22	220	10 × 20	130	10 × 20	140	12.5 × 25	155	12.5 × 25	120	16 × 25	130	16 × 25	110	16 × 31.5	115
33	330	12.5 × 20	180	12.5 × 25	190	12.5 × 25	190	16 × 25	155	16 × 31.5	160	16 × 31.5	140	•18 × 35.5	145
47	470	12.5 × 25	220	12.5 × 25	220	16 × 25	230	16 × 35.5	190	•18 × 35.5	200	•18 × 35.5	170	20 × 40	175
100	101	16 × 25	330	16 × 31.5	335	•18 × 35.5	340	Δ18 × 40	285	20 × 40	290	22 × 50	350	25 × 50	350
220	221	•18 × 35.5	500	Δ18 × 40	515	20 × 40	525	22 × 50	540	25 × 50	550				
330	331	20 × 40	900	22 × 40	1100	22 × 50	1150							Case size φD × L (mm)	Rated ripple
470	471	22 × 50	1200	22 × 50	1310	25 × 50	1350								

Size φ20×31 is available for capacitors marked "•"
Size φ20×35 is available for capacitors marked "Δ"
In this case, 6 will be put at 12th digit of type numbering system.

Rated ripple current (mArms) at 105˚C 120Hz

nichicon

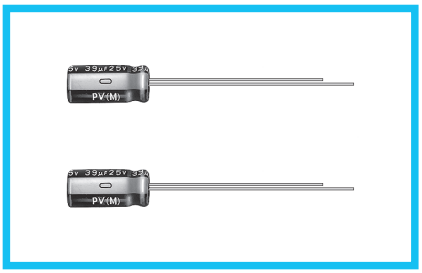
UPV

Miniature Sized, Low Impedance,
High Reliability

Low Impedance Long Life Anti-Solvent Feature

- Miniature sized low impedance series withstanding 5000 hours load life at +105°C.
- Compliant to the RoHS directive (2011/65/EU).

Values marked with an ※ in the dimension table are scheduled to be discontinued and are not recommended for new designs.



UPJ Long Life → UPV

■Specifications

Item	Performance Characteristics
Category Temperature Range	−55 to +105°C
Rated Voltage Range	6.3 to 50V
Rated Capacitance Range	0.47 to 390μF
Capacitance Tolerance	±20% at 120Hz, 20°C
Leakage Current	After 1 minute's application of rated voltage at 20°C, leakage current is not more than 0.03CV or 4 (μA), whichever is greater.
Tangent of loss angle (tan δ)	Measurement frequency : 120Hz at 20°C

Rated voltage (V)	6.3	10	16	25	35	50
tan δ (MAX.)	0.22	0.19	0.16	0.14	0.12	0.10

Stability at Low Temperature — Measurement frequency : 120Hz

Rated voltage (V)		6.3	10	16	25	35	50
Impedance ratio ZT / Z20 (MAX.)	Z−55°C / Z+20°C	5	5	4	3	3	2

Endurance — The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 5000 hours at 105°C.

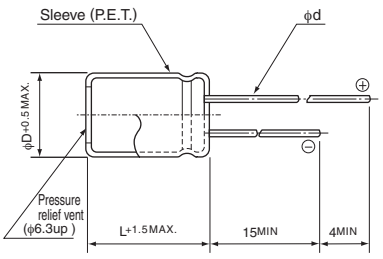
Capacitance change	Within ±30% of the initial capacitance value
tan δ	300% or less than the initial specified value
Leakage current	Less than or equal to the initial specified value

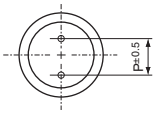
Shelf Life — After storing the capacitors under no load at 105˚C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed at right.

Capacitance change	Within ±20% of the initial capacitance value
tan δ	150% or less than the initial specified value
Leakage current	Less than or equal to the initial specified value

Marking	Printed with white color letter on dark brown sleeve.

■Radial Lead Type





(mm)

φD	5	6.3	8
P	2.0	2.5	3.5
φd	0.5	0.5	0.6

Type numbering system (Example : 25V 47μF)

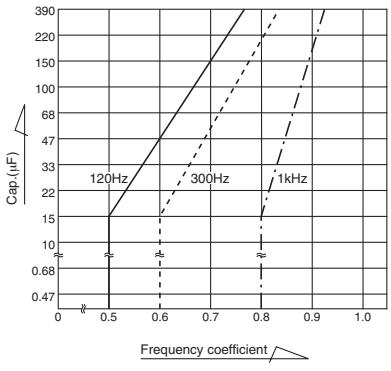
1	2	3	4	5	6	7	8	9	10	11
U	P	V	1	E	4	7	0	M	G	D

Configuration ※
Capacitance tolerance (±20%)
Rated capacitance (47μF)
Rated voltage (25V)
Series name
Type

※ Configuration

φD	Pb-free leadwire Pb-free PET sleeve
5	FD
6.3,8	GD

- Frequency coefficient of rated ripple current
(10kHz to 200kHz=1)



Please refer to page 20, 21, 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.
●Dimension table in next page.

UPV

■Dimensions

V(Code) / Item / Code / Cap.(μF)		6.3 (0J)			10 (1A)			16 (1C)			25 (1E)		
		Case size φD × L (mm)	Impedance (Ω) MAX. 20°C/100kHz	Rated ripple (mArms) 105°C/100kHz	Case size φD × L (mm)	Impedance (Ω) MAX. 20°C/100kHz	Rated ripple (mArms) 105°C/100kHz	Case size φD × L (mm)	Impedance (Ω) MAX. 20°C/100kHz	Rated ripple (mArms) 105°C/100kHz	Case size φD × L (mm)	Impedance (Ω) MAX. 20°C/100kHz	Rated ripple (mArms) 105°C/100kHz
33	330										5 × 11	1.40	155
39	390										5 × 11	1.10	175
47	470							5 × 11	1.40	155	6.3 × 11	0.94	210
56	560							5 × 11	1.10	175	6.3 × 11	0.75	235
68	680				5 × 11	1.40	155	6.3 × 11	0.85	220	6.3 × 11	0.61	260
82	820				5 × 11	1.10	175	6.3 × 11	0.71	240	6.3 × 11	0.51	285
100	101	5 × 11	1.50	150	6.3 × 11	0.94	210	6.3 × 11	0.60	265	8 × 11.5	0.41	370
120	121	5 × 11	1.10	175	6.3 × 11	0.75	235	6.3 × 11	0.49	290	8 × 11.5	0.34	405
150	151	6.3 × 11	0.83	225	6.3 × 11	0.60	265	8 × 11.5	0.39	375	8 × 11.5	0.27	460
180	181	6.3 × 11	0.66	250	6.3 × 11	0.49	290	8 × 11.5	0.34	405			
220	221	6.3 × 11	0.51	285	8 × 11.5	0.41	370	8 × 11.5	0.27	460			
270	271	8 × 11.5	0.41	370	8 × 11.5	0.34	405						
330	331	8 × 11.5	0.34	405	8 × 11.5	0.27	460						
390	391	8 × 11.5	0.29	445									

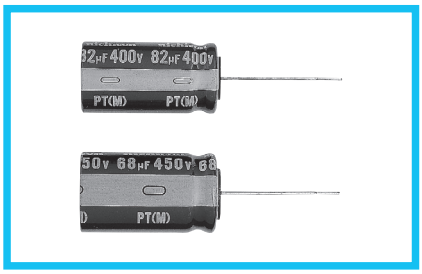
V(Code) / Item / Code / Cap.(μF)		35 (1V)			50 (1H)		
		Case size φD × L (mm)	Impedance (Ω) MAX. 20°C/100kHz	Rated ripple (mArms) 105°C/100kHz	Case size φD × L (mm)	Impedance (Ω) MAX. 20°C/100kHz	Rated ripple (mArms) 105°C/100kHz
0.47	R47				※5 × 11	32.0	22
0.68	R68				※5 × 11	22.0	28
1	010				※5 × 11	15.0	36
1.5	1R5				5 × 11	11.0	45
2.2	2R2				5 × 11	7.00	54
3.3	3R3				5 × 11	4.60	66
4.7	4R7				5 × 11	3.10	81
6.8	6R8				5 × 11	2.50	91
10	100				5 × 11	2.00	115
12	120				5 × 11	1.70	125
15	150				5 × 11	1.30	145
18	180				5 × 11	1.10	155
22	220	5 × 11	1.30	160	6.3 × 11	0.91	195
27	270	5 × 11	1.00	180	6.3 × 11	0.74	215
33	330	6.3 × 11	0.83	225	6.3 × 11	0.60	240
39	390	6.3 × 11	0.70	245	6.3 × 11	0.50	260
47	470	6.3 × 11	0.58	270	8 × 11.5	0.42	330
56	560	6.3 × 11	0.48	295	8 × 11.5	0.35	360
68	680	8 × 11.5	0.41	370	8 × 11.5	0.28	410
82	820	8 × 11.5	0.32	415			
100	101	8 × 11.5	0.27	460			

nichicon

UPT

Miniature Sized, High Ripple Current, Long Life

Smaller | Long Life | High Ripple Current



- High ripple current.
- Suited for ballast application.
- Compliant to the RoHS directive (2011/65/EU).

UCA ← Long Life — UPT — Smaller → UPZ

■Specifications

Item	Performance Characteristics
Category Temperature Range	−25 to +105°C
Rated Voltage Range	200 to 450V
Rated Capacitance Range	15 to 820μF
Capacitance Tolerance	±20% at 120Hz, 20°C
Leakage Current	After 2 minutes' application of rated voltage at 20°C, leakage current is not more than 0.06CV+10 (μA)
Tangent of loss angle (tan δ)	Measurement frequency : 120Hz at 20°C

Rated voltage (V)	200	220	250	400	420	450
tan δ (MAX.)	0.12	0.12	0.12	0.15	0.20	0.20

Stability at Low Temperature	Measurement frequency : 120Hz						
Rated voltage (V)		200	220	250	400	420	450
Impedance ratio ZT / Z20 (MAX.)	Z−25°C / Z+20°C	3	3	3	8	8	8

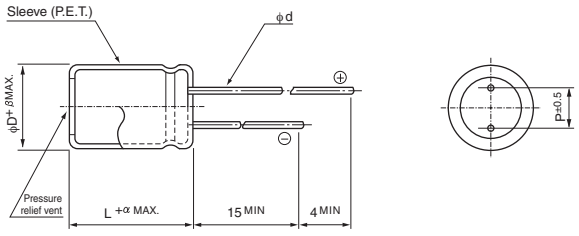
Endurance

The specifications listed at right shall be met when the capacitors are restored to 20°C after D.C. bias plus rated ripple current is applied for 5000 hours at 105°C, the peak voltage shall not exceed the rated voltage.

Capacitance change	Within ±20% of the initial capacitance value
tan δ	200% or less than the initial specified value
Leakage current	Less than or equal to the initial specified value

Shelf Life	After storing the capacitors under no load at 105˚C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.
Marking	Printed with white color letter on dark brown sleeve.

■Radial Lead Type



(mm)

φD	10	12.5	16	18	20	22	25
P	5.0	5.0	7.5	7.5	10.0	10.0	12.5
φd	0.6	0.6※	0.8	0.8	1.0	1.0	1.0
β	0.5	0.5	0.5	0.5	0.5	1.0	1.0

※In case L > 25 for the φ12.5 dia. unit, lead dia. φ d = 0.8mm.

α	(φD < 20) : 1.5
	(φD ≧ 20) : 2.0

• Please refer to page 20 about the end seal configuration.

Type numbering system (Example : 250V 220μF)

1	2	3	4	5	6	7	8	9	10	11	12
U	P	T	2	E	2	2	1	M	H	D	

Size code
Configuration※
Capacitance tolerance (±20%)
Rated capacitance (220μF)
Rated voltage (250V)
Series name
Type

※ Configuration

φ D	Pb-free leadwire Pb-free PET sleeve
10	PD
12.5 to 18	HD
20 to 25	RD

Please refer to page 20, 21, 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.
● Dimension table in next page.

UPT

■Dimensions

Cap \ V	Code	200		220		250		400		420		450	
		2D		2P		2E		2G		W6		2W	
15	150											10 × 31.5	0.15
18	180									10 × 31.5	0.17	12.5 × 25	0.18
22	220							10 × 31.5	0.21	12.5 × 25	0.20	12.5 × 31.5	0.22
27	270							12.5 × 25	0.24	12.5 × 31.5	0.24	12.5 × 31.5	0.25
33	330							12.5 × 31.5	0.29	12.5 × 31.5	0.27	12.5 × 35.5	0.28
39	390							12.5 × 31.5	0.32	12.5 × 35.5	0.31	12.5 × 40	0.32
47	470					10 × 31.5	0.27	12.5 × 35.5	0.37	12.5 × 40	0.36	16 × 31.5	0.38
56	560			10 × 31.5	0.29	12.5 × 25	0.31	12.5 × 40	0.42	16 × 31.5	0.43	16 × 35.5	0.44
68	680	10 × 31.5	0.35	12.5 × 25	0.34	12.5 × 31.5	0.36	16 × 31.5	0.46	16 × 35.5 ▲18 × 31.5	0.51 0.51	16 × 40 ▲18 × 31.5	0.49 0.48
82	820	12.5 × 25	0.41	12.5 × 31.5	0.39	12.5 × 31.5	0.40	16 × 31.5	0.50	16 × 40 ▲18 × 31.5	0.57 0.57	18 × 35.5	0.55
100	101	12.5 × 31.5	0.48	12.5 × 31.5	0.43	12.5 × 35.5	0.46	16 × 35.5 ▲ 18 × 31.5	0.58 0.58	18 × 35.5	0.61	18 × 40	0.65
120	121	12.5 × 31.5	0.53	12.5 × 35.5	0.49	12.5 × 40	0.53	16 × 40 ▲ 18 × 35.5	0.66 0.67	18 × 40	0.66	22 × 40	0.77
150	151	12.5 × 35.5	0.62	12.5 × 40	0.58	16 × 31.5	0.62	18 × 40	0.77	22 × 40	0.80	22 × 50 ▲25 × 40	0.92 0.92
180	181	12.5 × 40	0.70	16 × 31.5	0.67	16 × 35.5 ▲18 × 31.5	0.72 0.72	22 × 40	0.85	22 × 50 ▲25 × 40	0.95 0.95	25 × 50	1.10
220	221	16 × 31.5 ▲18 × 31.5	0.76 0.81	16 × 35.5 ▲ 18 × 31.5	0.77 0.77	16 × 40 ▲18 × 35.5	0.83 0.83						
270	271	16 × 35.5 ▲18 × 31.5	0.88 0.87	16 × 40 ▲ 18 × 35.5	0.88 0.88	18 × 40	0.95	22 × 50 ▲ 25 × 40	1.30 1.30	25 × 50	1.20		
330	331	18 × 35.5	1.01	18 × 40	1.01	22 × 40	1.05	25 × 50	1.40				
390	391	18 × 40	1.13	22 × 40	1.15								
470	471	22 × 40	1.20			22 × 50 ▲25 × 40	1.45 1.45						
560	561			22 × 50 ▲25 × 40	1.50 1.50	25 × 50	1.55						
680	681	22 × 50 ▲ 25 × 40	1.50 1.50	25 × 50	1.60								
820	821	25 × 50	1.60									Case size φ D × L(mm)	※

※: Rated ripple current (Arms) at 105°C 120Hz

▲: In this case, 6 will be put at 12th digit of type numbering system.

• Frequency coefficient of rated ripple current

Frequency	50Hz	120Hz	300Hz	1kHz	10kHz or more
Coefficient	0.80	1.00	1.25	1.40	1.60

nichicon

UPZ

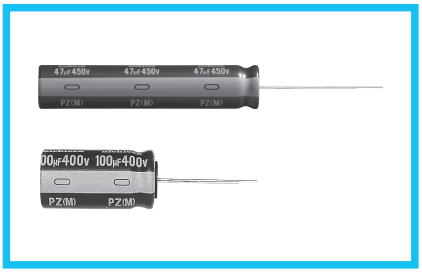
High Voltage, Miniature-sized

Smaller

HR High Ripple Current

- High ripple current.
- Load life of 2000 hours at 105°C.
- Suited for ballast applications.
- Compliant to the RoHS directive (2011/65/EU).

UPT
Smaller
UPZ
Smaller
UPH



Specifications

Item	Performance Characteristics
Category Temperature Range	−25 to +105°C
Rated Voltage Range	200 to 450V
Rated Capacitance Range	18 to 470μF
Capacitance Tolerance	±20% at 120Hz, 20°C
Leakage Current	After 1 minute's application of rated voltage at 20°C, leakage current is not more than 0.04CV+100 (μA).
Tangent of loss angle (tan δ)	Measurement frequency : 120Hz at 20°C

Rated voltage (V)	200	250	400	420	450
tan δ (MAX.)	0.12	0.15	0.15	0.20	0.20

Stability at Low Temperature	Measurement frequency : 120Hz				
Rated voltage (V)	200	250	400	420	450
Impedance ratio ZT / Z20 (MAX.) Z−25°C / Z+20°C	3	3	8	8	8

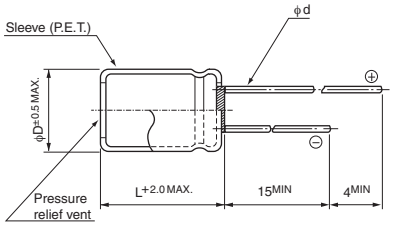
Endurance

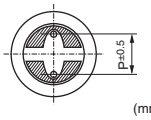
The specifications listed at right shall be met when the capacitors are restored to 20°C after D.C. bias plus rated ripple current is applied for 2000 hours at 105°C, the peak voltage shall not exceed the rated voltage.

Capacitance change	Within ±20% of the initial capacitance value
tan δ	200% or less than the initial specified value
Leakage current	Less than or equal to the initial specified value

Shelf Life	After storing the capacitors under no load at 105˚C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.
Marking	Printed with white color letter on dark brown sleeve.

Radial Lead Type

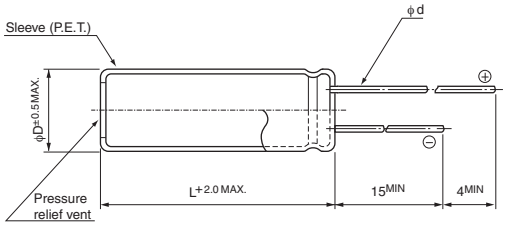


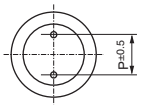


(mm)

φD	10	12.5	16	18
P	5.0	5.0	7.5	7.5
φd	0.6	0.8	0.8	0.8

Pencil - shaped Type





(mm)

φD	10	12.5
P	5.0	5.0
φd	0.6	0.6

• Please refer to page 20 about the end seal configuration.

Type numbering system (Example : 200V 220μF)

1	2	3	4	5	6	7	8	9	10	11	12
U	P	Z	2	D	2	2	1	M	H	D	

Size code
Configuration※
Capacitance tolerance (±20%)
Rated capacitance (220μF)
Rated voltage (200V)
Series name
Type

※Configuration

Size code	Blank, 6	9
φ D	Pb-free leadwire	Pb-free PET sleeve
10	PD	ND
12.5 to 18	HD	NY

Please refer to page 20, 21, 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.

● Dimension table in next page.

UPZ

■Dimensions

Cap.(μF) \ V	Code	200		400		420		450	
		2D		2G		W6		2W	
18	180							10×31.5	180
22	220					10×31.5	200		
27	270			10×31.5	240				
33	330							12.5×31.5	280
39	390					12.5×31.5	310	12.5×35.5	320
47	470			12.5×31.5	370	12.5×35.5	360	12.5×40	380
56	560			12.5×35.5	420	12.5×40	430	16×31.5	440
68	680			12.5×40	480	16×31.5	510	16×35.5	490
82	820	10×31.5	400			16×35.5	570	16×40	550
								▲18×31.5	550
100	101			16×31.5	580	16×40	610	18×35.5	650
						▲18×31.5	610		
120	121			16×35.5	670	18×35.5	660	18×40	740
				▲18×31.5	670				
150	151	12.5×31.5	620	16×40	770	18×40	710		
				▲18×35.5	770				
180	181	12.5×35.5	700	18×40	880				
220	221	12.5×40	800						
270	271	16×31.5	870						
330	331	16×35.5	1010						
		▲18×31.5	1010						
390	391	16×40	1130						
		▲18×35.5	1120						
470	471	18×40	1270					Case size φD×L (mm)	Rated ripple

Rated ripple current (mArms) at 105°C 120Hz

▲: In this case, 6 will be put at 12th digit of type numbering system.

Pencil-shaped Type

Cap.(μF) \ V	Code	200		250		400		450	
		2D		2E		2G		2W	
33	330							● 10×40	360
47	470					● 10×40	435	● 10×50	450
56	560					● 10×50	520		
82	820			● 10×40	610			● 12.5×50	730
100	101					● 12.5×50	770		
120	121	● 10×40	680	● 10×50	740				
150	151	● 10×50	830						
220	221			● 12.5×50	1140			Case size φD×L (mm)	Rated ripple
270	271	● 12.5×50	1265						

Rated ripple current (mArms) at 105°C 120Hz

●: In this case, 9 will be put at 12th digit of type numbering system.

● Frequency coefficient of rated ripple current

V	60Hz	120Hz	500Hz	1kHz	10kHz or more
200・250	0.80	1.00	1.20	1.30	1.40
400 to 450	0.80	1.00	1.25	1.40	1.50

nichicon

UPH

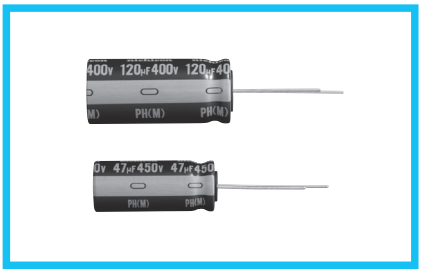
High Voltage, Miniature-sized

Smaller

HR High Ripple Current

- High ripple current.
- Load life of 2000 hours at 105°C.
- Suited for ballast applications.
- Compliant to the RoHS directive (2011/65/EU).

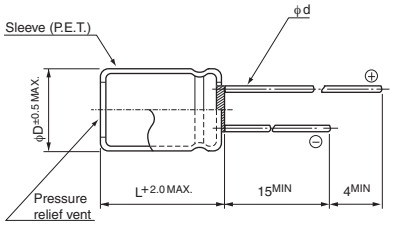
UPZ
Smaller
UPH

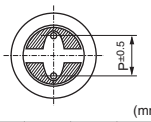


Specifications

Item	Performance Characteristics
Category Temperature Range	−25 to +105°C
Rated Voltage Range	400 to 450V
Rated Capacitance Range	27 to 220μF
Capacitance Tolerance	±20% at 120Hz, 20°C
Leakage Current	After 1 minute's application of rated voltage at 20°C, leakage current is not more than 0.04CV+100 (μA).
Tangent of loss angle (tan δ)	Measurement frequency : 120Hz at 20°C Rated voltage (V): 400 / 420 / 450 tan δ (MAX.): 0.15 / 0.20 / 0.20
Stability at Low Temperature	Measurement frequency : 120Hz Rated voltage (V): 400 / 420 / 450 Impedance ratio ZT / Z20 (MAX.) Z−25°C / Z+20°C: 8 / 8 / 8
Endurance	The specifications listed at right shall be met when the capacitors are restored to 20°C after D.C. bias plus rated ripple current is applied for 2000 hours at 105°C, the peak voltage shall not exceed the rated voltage. Capacitance change: Within ±20% of the initial capacitance value tan δ: 200% or less than the initial specified value Leakage current: Less than or equal to the initial specified value
Shelf Life	After storing the capacitors under no load at 105˚C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.
Marking	Printed with white color letter on dark brown sleeve.

Radial Lead Type





(mm)

φD	10	12.5	16	18
P	5.0	5.0	7.5	7.5
φd	0.6	0.8	0.8	0.8

• Please refer to page 20 about the end seal configuration.

Type numbering system (Example : 400V 220μF)

1	2	3	4	5	6	7	8	9	10	11	12
U	P	H	2	G	2	2	1	M	H	D	

Size code
Configuration ※
Capacitance tolerance (±20%)
Rated capacitance (220μF)
Rated voltage (400V)
Series name
Type

※Configuration

φ D	Pb-free leadwire Pb-free PET sleeve
10	PD
12.5 to 18	HD

Dimensions

Cap \ V	Code	400		420		450	
		2G		W6		2W	
27	270					10×31.5	300
33	330	10×31.5	330	10×31.5	320		
47	470					12.5×31.5	430
56	560	12.5×31.5	470	12.5×31.5	460	12.5×35.5	490
68	680	12.5×33.5	540			12.5×40	560
82	820	12.5×40	620			16×31.5	640
100	101	16×31.5	710	16×31.5	690	16×35.5	730
120	121	16×35.5	800	16×35.5	780	16×40	820
				▲18×31.5	800	▲18×31.5	800
150	151	16×40	920	18×35.5	920	18×40	970
		▲18×31.5	890				
180	181	18×40	1060	18×40	1040	18×46	1090
220	221	18×46	1200			Case size φD × L (mm)	Rated ripple

Rated ripple current (mArms) at 105°C 120Hz

▲: In this case, 6 will be put at 12th digit of type numbering system.

• Frequency coefficient of rated ripple current

Frequency	60Hz	120Hz	500Hz	1kHz	10kHz or more
Coefficient	0.80	1.00	1.25	1.40	1.50

Please refer to page 20, 21, 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.

nichicon

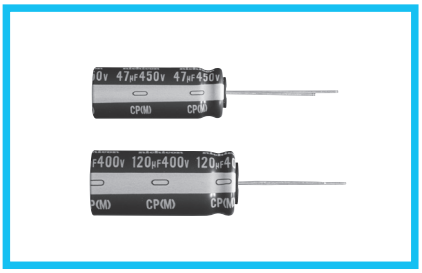
UCP

High Voltage, Miniature sized, Long Life Assurance

Smaller | Long Life | High Ripple Current

- High ripple current.
- Load life of 10000 hours at 105°C.
- Suited for ballast applications.
- Compliant to the RoHS directive (2011/65/EU).

UCS
Smaller
UCP



Specifications

Item	Performance Characteristics
Category Temperature Range	−25 to +105°C
Rated Voltage Range	400 to 450V
Rated Capacitance Range	27 to 220μF
Capacitance Tolerance	±20% at 120Hz, 20°C
Leakage Current	After 1 minutes' application of rated voltage at 20°C, leakage current is not more than I=0.04CV+100 (μA).
Tangent of loss angle (tan δ)	Measurement frequency : 120Hz at 20°C

Rated voltage (V)	400	420	450
tan δ (MAX.)	0.24	0.24	0.24

Stability at Low Temperature	Measurement frequency : 120Hz			
Rated voltage (V)		400	420	450
Impedance ratio (MAX.)	Z−25°C / Z+20°C	8	8	8

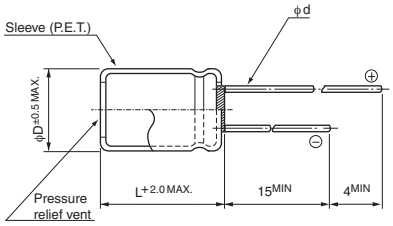
Endurance

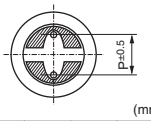
The specifications listed at right shall be met when the capacitors are restored to 20°C after D.C. bias plus rated ripple current is applied for 10000 hours at 105°C, the peak voltage shall not exceed the rated voltage.

Capacitance change	Within ±20% of the initial capacitance value
tan δ	200% or less than the initial specified value
Leakage current	Less than or equal to the initial specified value

Item	Performance Characteristics
Shelf Life	After storing the capacitors under no load at 105˚C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.
Marking	Printed with white color letter on dark brown sleeve.

Radial Lead Type





(mm)

φD	10	12.5	16	18
P	5.0	5.0	7.5	7.5
φd	0.6	0.8	0.8	0.8

• Please refer to page 20 about the end seal configuration.

Type numbering system (Example : 400V 220μF)

1	2	3	4	5	6	7	8	9	10	11	12
U	C	P	2	G	2	2	1	M	H	D	

Size code
Configuration ※
Capacitance tolerance (±20%)
Rated capacitance (220μF)
Rated voltage (400V)
Series name
Type

※Configuration

φ D	Pb-free leadwire Pb-free PET sleeve
10	PD
12.5 to 18	HD

Dimensions

Cap \ V	Code	400		420		450	
		2G		W6		2W	
27	270					10×31.5	300
33	330	10×31.5	330	10×31.5	320		
47	470					12.5×31.5	430
56	560	12.5×31.5	470	12.5×31.5	460	12.5×35.5	490
68	680	12.5×35.5	540			12.5×40	560
82	820	12.5×40	620			16×31.5	640
100	101	16×31.5	710	16×31.5	690	16×35.5	730
120	121	16×35.5	800	16×35.5	780	16×40	820
				▲18×31.5	800	▲18×31.5	800
150	151	16×40	920	18×35.5	920	18×40	970
		▲18×31.5	890				
180	181	18×40	1060	18×40	1040	18×46	1090
220	221	18×46	1200			Case size φD X L (mm)	Rated ripple

Rated ripple current (mArms) at 105°C 120Hz

▲: In this case, 6 will be put at 12th digit of type numbering system.

• Frequency coefficient of rated ripple current

Frequency	60Hz	120Hz	500Hz	1kHz	10kHz or more
Coefficient	0.80	1.00	1.25	1.40	1.50

Please refer to page 20, 21, 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.

nichicon

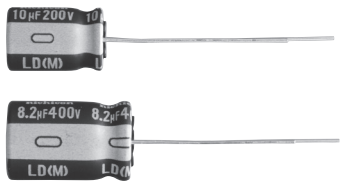
ULD

Miniature sized, Long Life Assurance

Long Life

- Long Life product withstanding load life of 10000 to 20000 hours at +105°C.
- Suited for the power supply for LED lighting.
- Compliant to the RoHS directive (2011/65/EU).

UCY / UHE → Long Life → ULD



Specifications

Item	Performance Characteristics
Category Temperature Range	−25 to +105°C(10 to 100V, 450V), −40 to +105°C(160 to 400V)
Rated Voltage Range	10 to 450V
Rated Capacitance Range	1 to 330μF
Capacitance Tolerance	±20% at 120Hz, 20°C

Leakage Current

Rated Voltage(V)	10 to 100	160 to 450
—	After 2 minute's application of rated voltage at 20°C, leakage current is not more than 0.01CV or 3(μA), whichever is greater.	After 1 minute's application of rated voltage at 20°C, CV ≦ 1000 : I=0.1CV+40(μA) or less After 1 minute's application of rated voltage at 20°C, CV>1000: I=0.04CV+100(μA) or less

Tangent of loss angle (tan δ)

Measurement frequency : 120Hz at 20°C

Rated voltage (V)	10	16	25	35	50	63	100	160 to 450
tan δ (MAX.)	0.45	0.35	0.3	0.22	0.19	0.17	0.15	0.24

Stability at Low Temperature

Measurement frequency : 120Hz

Rated voltage (V)		10	16	25·35	50 to 100	160 to 250	400	450
Impedance ratio	Z−25°C / Z+20°C	8	6	4	3	3	6	6
ZT / Z20 (MAX.)	Z−40°C / Z+20°C	—	—	—	—	8	10	—

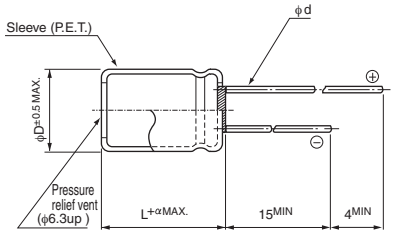
Endurance

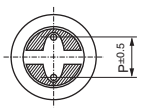
Rated Voltage(V)	10 to 100	160 to 450
—	The specifications listed below shall be met when the capacitors are restored to 20˚C after D.C. bias plus rated ripple current is applied for 10000 hours at 105˚C, the peak voltage shall not exceed the rated voltage.	The specifications listed below shall be met when the capacitors are restored to 20˚C after D.C. bias plus rated ripple current is applied for 20000 hours (12000 hours for φ6.3×11L, φ8×9L φ10×9L, 15000 hours φ8×11.5L, φ10×12.5L) at 105°C, the peakvoltage shall not exceed the rated voltage.

Capacitance change	Within ± 25%(10V to 100V) ± 30%(160V to 450V) of the initial capacitance value
tan δ	300% or less than the initial specified value
Leakage current	Less than or equal to the initial specified value

Shelf Life	After storing the capacitors under no load at 105˚C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.
Marking	Printed with white color letter on dark brown sleeve.

Radial Lead Type





(mm)

φD	5	6.3	8	10	12.5	16	18
P	2.0	2.5	3.5	5.0	5.0	7.5	7.5
φd	0.5	0.5	0.6	0.6	0.6	0.8	0.8
α	1.5	1.5	2.0	2.0	2.0	2.0	2.0

Type numbering system (Example : 400V 6.8μF)

1	2	3	4	5	6	7	8	9	10	11	12
U	L	D	2	G	6	R	8	M	P	D	

- Size code
- Configuration ※
- Capacitance tolerance (±20%)
- Rated capacitance (6.8μF)
- Rated voltage (400V)
- Series name
- Type

※Configuration

φ D	Pb-free leadwire Pb-free PET sleeve
5	DD
6.3	ED
8 • 10	PD
12.5 to 18	HD

- Please refer to page 20 about the end seal configuration.
- Please refer to page 20, 21, 22 about the formed or taped product spec.
- Please refer to page 4 for the minimum order quantity.

ULD

■Dimensions

Cap \ V	10		16		25		35		50		63		100	
Code	1A		1C		1E		1V		1H		1J		2A	
1	010								5×11	25			Case size φD × L (mm)	※
2.2	2R2								5×11	35				
3.3	3R3								5×11	70				
4.7	4R7								5×11	80			5×11	70
6.8	6R8								5×11	80			5×11	70
10	100								5×11	90	5×11	80	6.3×11	150
22	220								5×11	135	6.3×11	170	8×11.5	230
33	330				5×11	130	5×11	130	6.3×11	190	6.3×11	170		
47	470			5×11	130	5×11	130	6.3×11	210	6.3×11	190	8×11.5	240		
100	101	5×11	130	6.3×11	210	6.3×11	210	8×11.5	330	8×11.5	270				
150	151			6.3×11	210	8×11.5	330								
220	221	6.3×11	210	8×11.5	330										
270	271			8×11.5	330										
330	331	8×11.5	330												

※ : Rated ripple (mArms) at 105°C 100kHz

• Frequency coefficient of rated ripple current

Cap.(μF) \ Frequency	120Hz	1kHz	10kHz	100kHz
1 to 10μF	0.42	0.60	0.80	1.00
22 to 33μF	0.55	0.75	0.90	1.00
47 to 330μF	0.70	0.85	0.95	1.00

Cap \ V	160		200		250		400		450	
Code	2C		2D		2E		2G		2W	
1	010								6.3 × 11	24	Case size φD × L (mm)	※
1.2	1R2								8 × 9	28		
1.5	1R5								6.3 × 11	29		
									▲ 8 × 9	30		
1.8	1R8						6.3 × 11	33	8 × 9	33		
2.2	2R2			6.3 × 11	36	6.3 × 11	36	8 × 11.5	40		
									▲ 8 × 9	33		
2.7	2R7								8 × 11.5	43		
3.3	3R3			6.3 × 11	42	6.3 × 11	42	8 × 11.5	47		
									▲ 10 × 9	48		
3.9	3R9								10 × 12.5	57		
4.7	4R7			6.3 × 11	49	8 × 9	53	10 × 12.5	61		
5.6	5R6	6.3 × 11	52	6.3 × 11	50	8 × 11.5	62	10 × 12.5	64	10 × 16	58
				▲ 8 × 9	56						
6.8	6R8	6.3 × 11	55	8 × 9	62	8 × 11.5	68	10 × 16	85	10 × 16	62
8.2	8R2			8 × 9	66	10 × 9	76	10 × 16	88	10 × 20	88
10	100	8 × 9	70	8 × 11.5	80	10 × 12.5	90			10 × 20	92
12	120			10 × 9	88	10 × 12.5	97				
15	150	8 × 11.5	92							12.5 × 20	140
		▲ 10 × 9	95								
18	180			10 × 12.5	113	10 × 16	129				
22	220	10 × 12.5	121							12.5 × 25	240
										▲ 16 × 20	292
27	270			10 × 16	149					16 × 20	305
33	330	10 × 16	158							16 × 25	392
										▲ 18 × 20	312
47	470									18 × 25	480
68	680									18 × 31.5	520

• Frequency coefficient of rated ripple current

Cap.(μF) \ Frequency	120Hz	1kHz	10kHz	100kHz or more
1 to 5.6μF	1.00	1.60	1.80	2.00
6.8 to 18μF	1.00	1.50	1.70	1.90
22 to 68μF	1.00	1.40	1.60	1.80

※: Rated ripple current (mArms) at 105°C 120Hz

▲: In this case, 6 will be put at 12th digit of type numbering system.

nichicon

UCA

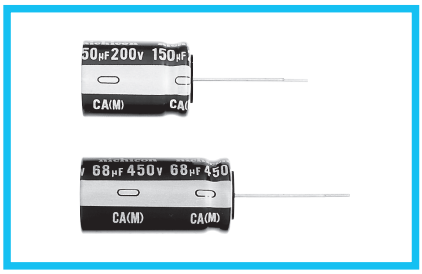
Miniature Sized, High Ripple Current, Long Life

Smaller | Long Life | High Ripple Current

- High ripple current and Long Life product withstanding load life of 12000 hours(10000 hours for φD=10) at +105°C.
- Suited for ballast application.
- Compliant to the RoHS directive (2011/65/EU).

UCA — Long Life → UPT

UCA — Smaller → UCS



■Specifications

Item	Performance Characteristics
Category Temperature Range	−25 to +105°C
Rated Voltage Range	160 to 450V
Rated Capacitance Range	6.8 to 220μF
Capacitance Tolerance	±20% at 120Hz, 20°C
Leakage Current	After 1 minute's application of rated voltage at 20°C, leakage current is not more than 0.04CV+100 (μA)
Tangent of loss angle (tan δ)	Measurement frequency : 120Hz at 20°C

Rated voltage (V)	160	200	250	350	400	450
tan δ (MAX.)	0.15	0.15	0.15	0.20	0.20	0.20

Stability at Low Temperature	Measurement frequency : 120Hz					
Rated voltage (V)	160	200	250	350	400	450
Impedance ratio ZT / Z20 (MAX.) Z−25°C / Z+20°C	3	3	3	6	6	6

Endurance

The specifications listed at right shall be met when the capacitors are restored to 20°C after D.C. bias plus rated ripple current is applied for 12000 hours (10000 hours for φD=10) at 105°C, the peak voltage shall not exceed the rated voltage.

Capacitance change	Within ±20% of the initial capacitance value
tan δ	200% or less than the initial specified value
Leakage current	Less than or equal to the initial specified value

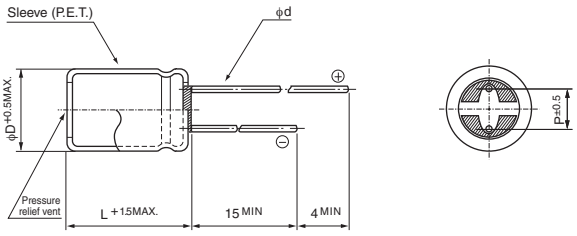
Shelf Life

After storing the capacitors under no load at 105˚C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.

Marking

Printed with white color letter on dark brown sleeve.

■Radial Lead Type



(mm)

φD	10	12.5	16	18
P	5.0	5.0	7.5	7.5
φd	0.6	0.6	0.8	0.8

• Please refer to page 20 about the end seal configuration.

Type numbering system (Example : 250V 100μF)

1	2	3	4	5	6	7	8	9	10	11	12
U	C	A	2	E	1	0	1	M	H	D	

Size code
Configuration ※
Capacitance tolerance (±20%)
Rated capacitance (100μF)
Rated voltage (250V)
Series name
Type

※Configuration

φ D	Pb-free leadwire Pb-free PET sleeve
10	PD
12.5 to 18	HD

Please refer to page 20, 21, 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.
●Dimension table in next page.

UCA

■Dimensions

Cap. (μF) \ V	Code	160		200		250		350		400		450	
		2C		2D		2E		2V		2G		2W	
6.8	6R8							10 × 16	220	10 × 16	220	10 × 20	150
10	100	10 × 16	250	10 × 16	250	10 × 20	300	10 × 20	280	10 × 20	280	12.5 × 20	320
22	220	10 × 20	500	10 × 20	500	12.5 × 20	600	12.5 × 20	350	12.5 × 20	430	16 × 25	560
										▲16 × 20	600	▲18 × 20	560
33	330	10 × 20	565	12.5 × 20	600	12.5 × 20	630	16 × 20	600	16 × 25	640	16 × 31.5	700
										▲18 × 20	640	▲18 × 25	700
47	470	12.5 × 20	725	12.5 × 20	780	12.5 × 25	720	16 × 25	700	16 × 31.5	840	18 × 31.5	900
						▲16 × 20	750	▲18 × 20	750	▲18 × 25	840		
68	680	12.5 × 25	950	12.5 × 25	950	16 × 25	1000	16 × 31.5	1100	18 × 31.5	1000		
		▲16 × 20	970	▲16 × 20	970	▲18 × 20	920	▲18 × 25	875				
100	101	16 × 25	1280	16 × 25	1280	16 × 31.5	1400						
		▲18 × 20	1180	▲18 × 20	1180	▲18 × 25	1345						
150	151	16 × 31.5	1360	16 × 31.5	1360	18 × 31.5	1500						
		▲18 × 25	1360	▲18 × 25	1360								
220	221	16 × 31.5	1400	18 × 31.5	1700							Case size φD × L (mm)	※
		▲18 × 25	1400										

※: Rated ripple current (mArms) at 105°C 100kHz

▲: In this case, 6 will be put at 12th digit of type numbering system.

• Frequency coefficient of rated ripple current

Frequency	50Hz	120Hz	1kHz	10kHz	100kHz or more
Coefficient	0.40	0.50	0.80	0.90	1.00

nichicon

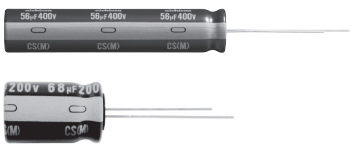
UCS

Miniature Sized, High Ripple Current, High Reliability

Smaller | Long Life | High Ripple Current

- High ripple current and Long Life product withstanding load life of 8000 to 10000 hours at +105°C.
- Suited for ballast application.
- Compliant to the RoHS directive (2011/65/EU).

UCA
Smaller
UCS
Smaller
UCP UCY



Specifications

Item	Performance Characteristics
Category Temperature Range	−40 to +105°C (160 to 400V) , −25 to +105°C (450V)
Rated Voltage Range	160 to 450V
Rated Capacitance Range	6.8 to 330μF
Capacitance Tolerance	±20% at 120Hz, 20°C
Leakage Current	After 1 minute's application of rated voltage at 20°C, leakage current is not more than 0.04CV+100 (μA)
Tangent of loss angle (tan δ)	Measurement frequency : 120Hz at 20°C

Rated voltage (V)	160	200	250	350	400	450
tan δ (MAX.)	0.20	0.20	0.20	0.24	0.24	0.24

Stability at Low Temperature — Measurement frequency : 120Hz

Rated voltage (V)		160	200	250	350	400	450
Impedance ratio ZT / Z20 (MAX.)	Z−25°C / Z+20°C	3	3	3	5	5	6
	Z−40°C / Z+20°C	6	6	6	6	6	–

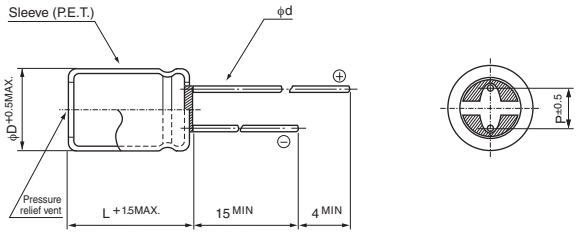
Endurance — The specifications listed at right shall be met when the capacitors are restored to 20°C after D.C. bias plus rated ripple current is applied for 10000 hours (8000 hours for φD=10 × 16L, 10 × 20L) at 105°C, the peak voltage shall not exceed the rated voltage.

Capacitance change	Within ±20% of the initial capacitance value
tan δ	200% or less than the initial specified value
Leakage current	Less than or equal to the initial specified value

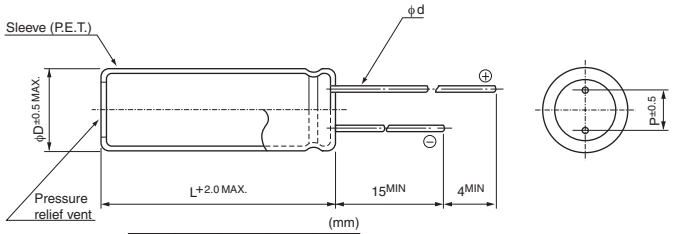
Shelf Life — After storing the capacitors under no load at 105˚C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.

Marking — Printed with white color letter on dark brown sleeve.

Radial Lead Type



Pencil - shaped Type



(mm)

φD	10	12.5	16	18
P	5.0	5.0	7.5	7.5
φd	0.6	0.6	0.8	0.8

• Please refer to page 20 about the end seal configuration.

Type numbering system (Example : 250V 100μF)

1	2	3	4	5	6	7	8	9	10	11	12
U	C	S	2	E	1	0	1	M	H	D	

Size code ※2
Configuration ※
Capacitance tolerance (±20%)
Rated capacitance (100μF)
Rated voltage (250V)
Series name
Type

※Configuration

Size code ※2	Blank, 6	9
φ D	Pb-free leadwire Pb-free PET sleeve	Pb-free leadwire Pb-free PET sleeve
10	PD	ND
12.5 to 18	HD	NY

Please refer to page 20, 21, 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.
● Dimension table in next page.

UCS

Dimensions

Cap \ V	Code	160		200		250		350		400		450	
		2C		2D		2E		2V		2G		2W	
6.8	6R8							10 × 16	280	10 × 16	280	10 × 20	280
10	100	10 × 16	320	10 × 16	320	10 × 20	350	10 × 20	350	10 × 20	350	12.5 × 20	450
15	150									12.5 × 20	550	12.5 × 25	600
22	220	10 × 20	500	10 × 20	500	10 × 20	500	12.5 × 20	650	12.5 × 20	760	16 × 20	730
33	330	10 × 20	650	10× 20	650	12.5 × 20	800	16 × 20	900	16 × 20	900	16 × 25 ▲ 18 × 20	980 980
47	470	10 × 20	750	12.5 × 20	980	12.5 × 20	980	16 × 20	1080	16 × 25 ▲ 18 × 20	1180 1180	18 × 25	1200
68	680	12.5 × 20	1180	12.5 × 20	1300	16 × 20	1300	16 × 25 ▲ 18 × 20	1400 1375	18 × 25	1470	18 × 31.5	1575
82	820	12.5 × 20	1275	16 × 20	1380	16 × 20	1380	18 × 25	1530	18 × 25	1525		
100	101	12.5 × 25 ▲ 16 × 20	1420 1420	16 × 20	1420	16 × 25	1530	18 × 25	1575				
150	151	16 × 20	1890	16 × 25	1890	18 × 25	1940						
220	221	16 × 25	2370	18 × 25	2365	18 × 31.5	3130					Case size φD × L (mm)	※
330	331	18 × 31.5	3130	18 × 35.5	3220								

※ : Rated ripple current (mArms) at 105°C 100kHz

▲ : In this case, 6 will be put at 12th digit of type numbering system.

Pencil-shaped Type

Cap.(μF) \ V	Code	200		250		400		450	
		2D		2E		2G		2W	
27	270							● 10 × 40	580
33	330							● 10 × 40	720
39	390					● 10 × 40	800	● 10 × 50	820
56	560					● 10 × 50	1040		
68	680							● 12.5 × 50	1340
82	820			● 10 × 40	1220	● 12.5 × 50	1400		
100	101	● 10 × 40	1260	● 10 × 50	1360				
120	121	● 10 × 40	1360						
150	151	● 10 × 50	1660						
180	181			● 12.5 × 50	2070			Case size φD × L (mm)	※
270	271	● 12.5 × 50	2530						

Rated ripple current (mArms) at 105°C 100kHz

● : In this case, 9 will be put at 12th digit of type numbering system.

• Frequency coefficient of rated ripple current

Frequency	50Hz	120Hz	1kHz	10kHz	100kHz or more
Coefficient	0.40	0.50	0.80	0.90	1.00

nichicon

UCV

Chip Type, Low Impedance.

For SMD | Low Impedance | Anti-Solvent Feature

- Chip type, low impedance temperature range up to +105°C.
- Applicable to automatic mounting machine fed with carrier tape.
- Compliant to the RoHS directive (2011/65/EU).

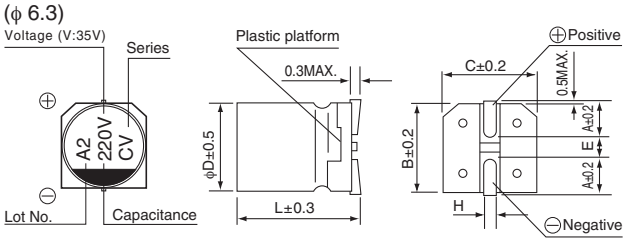
UCM
Smaller
Higher capacitance
UCV

■Specifications

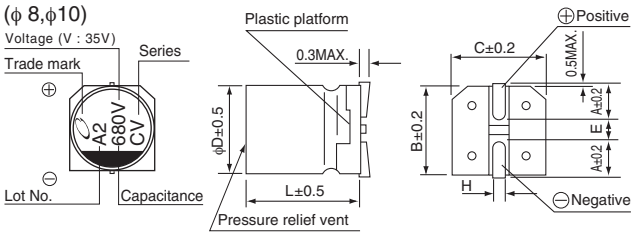
Item	Performance Characteristics
Category Temperature Range	−55 to +105°C
Rated Voltage Range	25 to 35V
Rated Capacitance Range	220 to 1000μF
Capacitance Tolerance	±20% at 120Hz, 20°C
Leakage Current	After 2 minutes' application of rated voltage, leakage current is not more than 0.01CV.
Tangent of loss angle (tan δ)	Rated voltage (V): 25 / 35; tan δ (MAX.): 0.14 / 0.12. Measurement frequency : 120Hz at 20°C
Stability at Low Temperature	Rated voltage (V): 25 / 35. Impedance ratio ZT / Z20 (MAX.): Z–25°C / Z+20°C: 2 / 2; Z–40°C / Z+20°C: 3 / 3; Z–55°C / Z+20°C: 3 / 3. Measurement frequency : 120Hz
Endurance	The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 2000 hours at 105°C. Capacitance change: Within ±30% of the initial capacitance value; tan δ: 200% or less than the initial specified value; Leakage current: Less than or equal to the initial specified value
Shelf Life	After storing the capacitors under no load at 105°C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.
Resistance to soldering heat	The capacitors are kept on a hot plate for 30 seconds, which is maintained at 250°C. The capacitors shall meet the characteristic requirements listed at right when they are removed from the plate and restored to 20°C. Capacitance change: Within ±10% of the initial capacitance value; tan δ: Less than or equal to the initial specified value; Leakage current: Less than or equal to the initial specified value
Marking	Black print on the case top.

■Chip Type

(φ 6.3)



(φ 8,φ10)



Type numbering system (Example : 35V 220μF)

1	2	3	4	5	6	7	8	9	10	11	12	13	14
U	C	V	1	V	2	2	1	M	C	L	1	G	S

- 14: Taping code
- 12–13: Size code
- 10–11: Configuration
- 9: Capacitance tolerance (±20%)
- 6–8: Rated capacitance (220μF)
- 4–5: Rated voltage (35V)
- 3: Series name
- 1–2: Type

φd	Code
6.3	CL
8・10	NL

Rated Voltage

V	25	35
Code	E	V

Standard (mm)

φDXL	6.3X7.7	8X10	10X10
A	2.4	2.9	3.2
B	6.6	8.3	10.3
C	6.6	8.3	10.3
E	2.2	3.1	4.5
L	7.7	10	10
H	0.5 to 0.8	0.8 to 1.1	0.8 to 1.1

■Dimensions

Cap. (μF) \ V	Code	25			35		
		1E			1V		
220	221				6.3 × 7.7	0.16	600
330	331	6.3 × 7.7	0.16	600			
470	471				8 × 10	0.08	850
560	561	8 × 10	0.08	850			
680	681				10 × 10	0.06	1190
820	821				Case size φD × L (mm)	Impedance	Rated ripple
1000	102	10 × 10	0.06	1190			

●Frequency coefficient of rated ripple current

Frequency	50Hz	120Hz	300Hz	1kHz	10kHz or more
Coefficient	0.35	0.50	0.64	0.83	1.00

MAX. Impedance (Ω) at 20℃ 100kHz,
Rated ripple current(mArms) at 105℃ 100kHz

nichicon

UPX

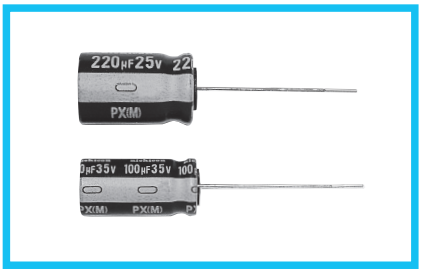
Long Life Assurance

Long Life | Low Impedance | Anti-Solvent Feature

- Load life of 20000 hours at 105°C.
- Compliant to the RoHS directive (2011/65/EU).

Products which are scheduled to be discontinued.
Not recommended for new designs

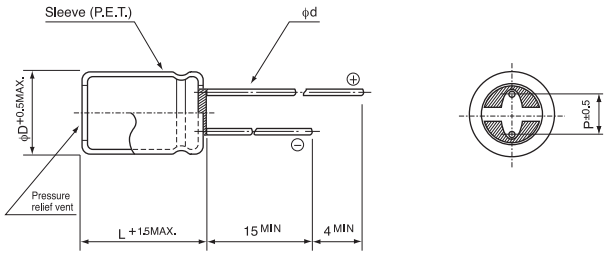
UPM Long Life UPX



Specifications

Item	Performance Characteristitcs					
Category Temperature Range	−55 to +105˚C					
Rated Voltage Range	10 to 35V					
Rated Capacitance Range	1 to 4700μF					
Capacitance Tolerance	±20% (120Hz, 20˚C)					
Leakage Current	After 1 minute's application of rated voltage at 20°C, leakage current is not more than 0.03CV or 4 (μA), whichever is greater.					
Tangent of loss angle (tan δ)	Rated voltage (V)	10	16	25	35	Measurement frequency : 120Hz
	tan δ (MAX)	0.20	0.16	0.14	0.12	Temperature : 20˚C
	For capacitance of more than 1000μF, add 0.02 for every increase of 1000μF.					
Stability at Low Temperature	Rated voltage (V)		10	16	25	35
	Impedance ratio (MAX.)	Z−25˚C / Z+20˚C	3	2	2	2
		Z−40˚C / Z+20˚C	4	4	4	4
Endurance	The specifications listed at right shall be met when the capacitors are restored to 20˚C after D.C. bias plus rated ripple current is applied for 20000 hours at 105˚C, the peak voltage shall not exceed the rated voltage.					
	Capacitance change	Within ±30% of the initial capacitance value				
	tan δ	300% or less than the initial specified value				
	Leakage current	Less than or equal to the initial specified value				
Shelf Life	After storing the capacitors under no load at 105˚C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.					
Marking	Printed with white color letter on dark brown sleeve.					

Radial Lead Type



(mm)

φD	10	12.5	16	18
P	5.0	5.0	7.5	7.5
φd	0.6	0.6	0.8	0.8

• Please refer to page 20 about the end seal configuration.

Type numbering system (Example : 16V 220μF)

1	2	3	4	5	6	7	8	9	10	11
U	P	X	1	C	2	2	1	M	P	D

Configuration ※
Capacitance tolerance (±20%)
Rated capacitance (220μF)
Rated voltage (16V)
Series name
Type

※Configuration

φ D	Pb-free leadwire Pb-free PET sleeve
10	PD
12.5 to 18	HD

Please refer to page 20, 21, 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.

● Dimension table in next page.

UPX

Dimensions

Cap. (μF)	V (Code) / Item / Code	10 (1A)		16 (1C)		25 (1E)		35 (1V)	
		Case size φD × L (mm)	Rated ripple (mArms) 105°C / 100kHz	Case size φD × L (mm)	Rated ripple (mArms) 105°C / 100kHz	Case size φD × L (mm)	Rated ripple (mArms) 105°C / 100kHz	Case size φD × L (mm)	Rated ripple (mArms) 105°C / 100kHz
1	010							10 × 12.5	59
2.2	2R2							10 × 12.5	84
3.3	3R3							10 × 12.5	101
4.7	4R7							10 × 12.5	143
10	100							10 × 12.5	294
22	220							10 × 12.5	336
33	330							10 × 12.5	378
47	470							10 × 12.5	420
100	101					10 × 12.5	420	10 × 20	672
220	221			10 × 16	504	12.5 × 20	840	12.5 × 25	1008
330	331	10 × 16	504	10 × 20	672	12.5 × 25	1008	16 × 25	1344
470	471	10 × 20	672	12.5 × 20	1008	16 × 25	1344	16 × 31.5	1680
1000	102	12.5 × 25	1008	16 × 25	1344	16 × 31.5	1680	18 × 40	2184
2200	222	16 × 31.5	1680	18 × 35.5	2016				
3300	332	18 × 35.5	2016	18 × 40	2184				
4700	472	18 × 40	2184						

• Frequency coefficient of rated ripple current

Frequency	120Hz	1kHz	10kHz	100kHz or more
Coefficient	0.75	0.80	0.90	1.00

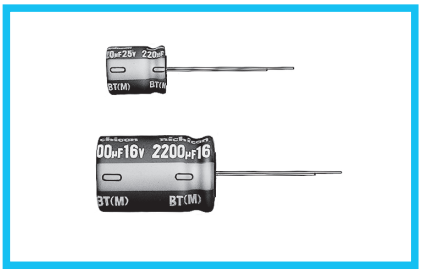
nichicon

UBT

High Temperature Range, For +125°C Use

Long Life

Anti-Solvent Feature (Through 100V only)



- Highly dependable reliability withstanding load life of 2000 to 10000 hours at +125°C.
- Suited for automobile electronics where heavy duty services are indispensable.
- Compliant to the RoHS directive (2011/65/EU).

Values marked with an ※ in the dimension table are scheduled to be discontinued and are not recommended for new designs.

UBW (High Temperature) — UBT — Higher Capacitance UBY

■Specifications

Item	Performance Characteristics		
Category Temperature Range	−40 to +125°C (10 to 250V), −25 to +125°C (350 to 450V)		
Rated Voltage Range	10 to 450V		
Rated Capacitance Range	1 to 4700μF		
Capacitance Tolerance	±20% at 120Hz, 20°C		
Leakage Current	Rated Voltage (V)	10 to 100	160 to 450
	Leakage current	After 1 minute's application of rated voltage at 20°C, leakage current is not more than 0.03CV or 4 (μA), whichever is greater.	CV ≦ 1000 : I = 0.1CV+40 (μA) max. CV > 1000 : I = 0.04CV+100 (μA) max.

Tangent of loss angle (tan δ) — 120Hz, 20°C

Rated voltage (V)	10	16	25	35	50	63	80	100	160 to 250	350 to 450
tan δ (MAX.)	0.20	0.16	0.14	0.12	0.10	0.10	0.08	0.08	0.20	0.24

For capacitance of more than 1000μF, add 0.02 for every increase of 1000μF.

Stability at Low Temperature — 120Hz

Rated voltage (V)		10	16	25	35	50	63	80	100	160 to 250	350 to 450
Impedance ratio	Z−25°C / Z+20°C	3	2	2	2	2	2	2	2	3	6
ZT / Z20 (MAX.)	Z−40°C / Z+20°C	4	4	4	4	4	4	4	4	6	–

Endurance

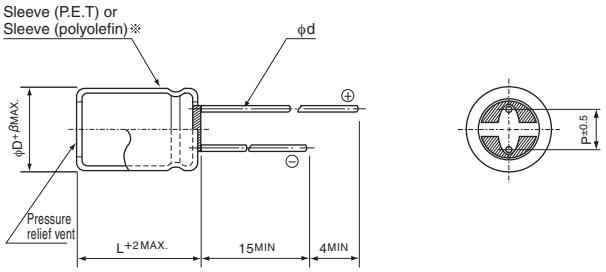
The specifications listed at right shall be met when the capacitors are restored to 20˚C after D.C. bias plus rated ripple current is applied for less than 50V (φD = 8 : 2000 hours, φD = 10 : 5000 hours, φD ≧ 12.5 : 10000 hours), 63 to 100V (φD = 8 : 2000 hours, φD = 10 : 3000 hours, φD ≧ 12.5 : 5000 hours), more than 160V (2000 hours) at 125˚C, the peak voltage shall not exceed the rated voltage.

Capacitance change	Within ±30% of the initial capacitance value (10 to 100V) Within ±20% of the initial capacitance value (160 to 450V)
Dissipation Factor	300% or less than the initial specified value (10 to 100V) 200% or less than the initial specified value (160 to 450V)
Leakage current	Less than or equal to the initial specified value

Shelf Life: After storing the capacitors under no load at 125˚C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.

Marking: Printed with white color letter on blue sleeve.

■Radial Lead Type



※ polyolefin sleeve product is also available upon request.

(mm)

φD	8	10	12.5	16	18
β	0.8	0.8	1.0	1.0	1.0
P	3.5	5.0	5.0	7.5	7.5
φd	0.6	0.6	0.6*	0.8	0.8

※ In case L > 25 for the φ12.5 dia. unit, lead dia. φ d = 0.8mm.

• Please refer to page 20 about the end seal configuration.

Type numbering system (Example : 10V 220μF)

1	2	3	4	5	6	7	8	9	10	11	12
U	B	T	1	A	2	2	1	M	P	D	8

Configuration※
Capacitance tolerance (±20%)
Rated capacitance (220μF)
Rated voltage (10V)
Series name
Type

※ Configuration

φ D	Standard type	Semi-standard type
	Pb-free leadwire Pb-free PET sleeve	Pb-free leadwire Pb-free Polyolefin sleeve
8,10	PD8	PD
12.5 to 18	HD8	HD

Please refer to page 20, 21, 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.
●Dimension table in next page.

UBT

■ Dimensions

Cap. (μF) \ V(Code) / Item / Code	10 (1A)			16 (1C)			25 (1E)			35 (1V)			50 (1H)		
	Case size φD × L (mm)	Impedance (Ω) MAX.	Rated ripple (mArms)	Case size φD × L (mm)	Impedance (Ω) MAX.	Rated ripple (mArms)	Case size φD × L (mm)	Impedance (Ω) MAX.	Rated ripple (mArms)	Case size φD × L (mm)	Impedance (Ω) MAX.	Rated ripple (mArms)	Case size φD × L (mm)	Impedance (Ω) MAX.	Rated ripple (mArms)
1 010													※8 × 11.5	2.00	35
2.2 2R2													※8 × 11.5	1.80	50
3.3 3R3													※8 × 11.5	1.50	60
4.7 4R7													8 × 11.5	1.15	85
10 100													8 × 11.5	0.75	180
22 220													8 × 11.5	0.50	250
33 330													8 × 11.5	0.45	300
47 470													8 × 11.5	0.35	440
100 101				8 × 11.5	0.32	340	8 × 11.5	0.13	500	10 × 12.5	0.15	620	10 × 12.5	0.18	555
220 221	8 × 11.5	0.26	340	10 × 12.5	0.15	620	10 × 12.5	0.10	680	10 × 16	0.094	790	10 × 20	0.098	930
330 331	10 × 12.5	0.15	620	10 × 12.5	0.10	680	10 × 16	0.075	945	10 × 20	0.075	950	12.5 × 20	0.070	1330
470 471	10 × 12.5	0.10	680	10 × 16	0.075	945	10 × 20	0.057	1100	12.5 × 20	0.058	1330	12.5 × 25	0.055	1650
1000 102	10 × 20	0.057	1100	12.5 × 20	0.042	1490	12.5 × 25	0.033	1750	16 × 25	0.031	2010	16 × 31.5	0.031	2430
2200 222	12.5 × 25	0.033	1750	16 × 25	0.024	2300	16 × 31.5	0.020	2710	18 × 35.5	0.025	2790			
3300 332	16 × 25	0.024	2300	16 × 31.5	0.020	2710	18 × 31.5	0.017	3310						
4700 472	16 × 31.5	0.020	2710	18 × 31.5	0.018	3270									

Cap. (μF) \ V(Code) / Item / Code	63 (1J)			80 (1K)			100 (2A)		
	Case size φD × L (mm)	Impedance (Ω) MAX.	Rated ripple (mArms)	Case size φD × L (mm)	Impedance (Ω) MAX.	Rated ripple (mArms)	Case size φD × L (mm)	Impedance (Ω) MAX.	Rated ripple (mArms)
4.7 4R7							※8 × 11.5	2.00	130
10 100							8 × 11.5	1.50	150
22 220	8 × 11.5	2.00	130	8 × 11.5	1.50	150	10 × 12.5	0.80	480
33 330	8 × 11.5	1.50	150	10 × 12.5	0.80	480	10 × 12.5	0.80	480
47 470	10 × 12.5	0.59	530	10 × 12.5	0.80	480	10 × 16	0.55	630
100 101	10 × 16	0.41	690	10 × 20	0.39	790	12.5 × 20	0.25	990
220 221	12.5 × 20	0.16	1050	12.5 × 25	0.18	1240	16 × 25	0.11	1500
330 331	12.5 × 25	0.12	1290	12.5 × 31.5	0.16	1390	16 × 31.5	0.079	1790
470 471	12.5 × 31.5	0.097	1460	16 × 25	0.11	1500			

Rated ripple current (mArms) at 125°C 100kHz
Impedance (Ω) MAX. at 20°C 100kHz

● Frequency coefficient of rated ripple current

V	CV \ Frequency	120Hz	300Hz	1kHz	10kHz or more
10 to 100	1000 > CV	0.50	0.64	0.83	1.00
	1000 ≦ CV	0.67	0.79	0.91	1.00

Cap. \ V(Code) / Item / Code	160 (2C)		200 (2D)		250 (2E)		350 (2V)		400 (2G)		450 (2W)	
	Case size φD × L (mm)	Rated ripple (mArms)	Case size φD × L (mm)	Rated ripple (mArms)	Case size φD × L (mm)	Rated ripple (mArms)	Case size φD × L (mm)	Rated ripple (mArms)	Case size φD × L (mm)	Rated ripple (mArms)	Case size φD × L (mm)	Rated ripple (mArms)
4.7 4R7							10 × 20	53	10 × 20	53	10 × 25	58
10 100			10 × 20	78	10 × 20	78	10 × 25	85	10 × 25	86	12.5 × 20	86
22 220	10 × 20	115	10 × 25	126	12.5 × 20	128	12.5 × 25	139	12.5 × 31.5	142	16 × 25	154
33 330	10 × 25	154	12.5 × 20	157	12.5 × 25	171	16 × 25	189	16 × 25	189	16 × 31.5	203
47 470	12.5 × 20	187	12.5 × 25	204	16 × 25	225	16 × 31.5	243	16 × 31.5	243		
68 680	12.5 × 25	245	16 × 20	250	16 × 31.5	292						
100 101	16 × 25	329	16 × 25	329								
150 151	16 × 31.5	434										

Rated ripple current (mArms) at 125°C 120Hz

● Frequency coefficient of rated ripple current

V	Cap. (μF) \ Frequency	50Hz	120Hz	300Hz	1kHz	10kHz	100kHz or more
160 to 450	4.7 to 33	0.75	1.00	1.25	1.50	1.75	1.80
	47 to 150	0.80	1.00	1.15	1.30	1.40	1.50

nichicon

UBW

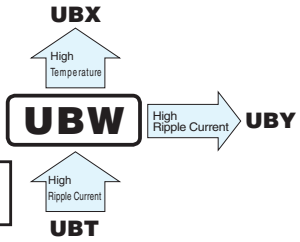
High Temperature Range, For +135°C Use

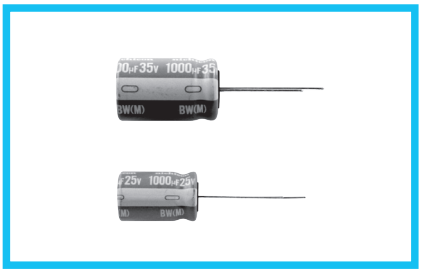
Long Life

Anti-Solvent Feature

- Highly dependable reliability withstanding load life of 1000 to 3000 hours at +135°C.
- Suited for automobile electronics where heavy duty services are indispensable.
- Compliant to the RoHS directive (2011/65/EU).

Values marked with an ※ in the dimension table are scheduled to be discontinued and are not recommended for new designs.

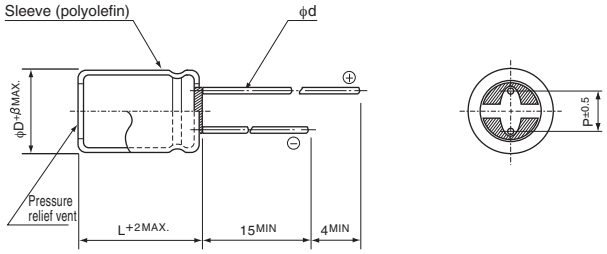




Specifications

Item	Performance Characteristics
Category Temperature Range	−55 to +135°C
Rated Voltage Range	10 to 100V
Rated Capacitance Range	1 to 4700μF
Capacitance Tolerance	±20% at 120Hz, 20°C
Leakage Current	After 1 minute's application of rated voltage at 20°C, leakage current is not more than 0.03CV or 4 (μA), whichever is greater.
Tangent of loss angle (tan δ)	Rated voltage (V): 10 / 16 / 25 / 35 / 50 / 63 / 80 / 100 tan δ (MAX.): 0.20 / 0.16 / 0.14 / 0.12 / 0.10 / 0.10 / 0.08 / 0.08 120Hz, 20°C For capacitance of more than 1000μF, add 0.02 for every increase of 1000μF.
Stability at Low Temperature	120Hz Rated voltage (V): 10 / 16 / 25 / 35 / 50 / 63 / 80 / 100 Impedance ratio Z−25°C / Z+20°C: 3 / 2 / 2 / 2 / 2 / 2 / 2 / 2 ZT / Z20 (MAX.) Z−40°C / Z+20°C: 4 / 4 / 4 / 4 / 4 / 4 / 4 / 4
Endurance	The specifications listed at right shall be met when the capacitors are restored to 20°C after D.C. bias plus rated ripple current is applied for 3000 hours (1000 hours for φD=8, 2000 hours for φD=10) at 135°C, the peak voltage shall not exceed the rated voltage. Capacitance change: Within ±30% of the initial capacitance value Dissipation Factor: 300% or less than the initial specified value Leakage current: Less than or equal to the initial specified value
Shelf Life	After storing the capacitors under no load at 135˚C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.
Marking	Printed with white color letter on blue sleeve.

Radial Lead Type



(mm)

φD	8	10	12.5	16
β	0.8	0.8	1.0	1.0
P	3.5	5.0	5.0	7.5
φd	0.8	0.6	0.6*	0.8

※ In case L > 25 for the φ12.5 dia. unit, lead dia. φ d = 0.8mm.

• Please refer to page 20 about the end seal configuration.

Type numbering system (Example : 10V 220μF)

1	2	3	4	5	6	7	8	9	10	11
U	B	W	1	A	2	2	1	M	P	D

Configuration※
Capacitance tolerance (±20%)
Rated capacitance (220μF)
Rated voltage (10V)
Series name
Type

※ Configuration

φ D	Pb-free leadwire Pb-free Polyolefin sleeve
8,10	PD
12.5 · 16	HD

Please refer to page 20, 21, 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.
●Dimension table in next page.

UBW

■ Dimensions

Cap. (μF)	Code	V (Code)	10 (1A)			16 (1C)			25 (1E)			35 (1V)		
		Item	Case size φD × L (mm)	Impedance (Ω) MAX.	Rated ripple (mArms)	Case size φD × L (mm)	Impedance (Ω) MAX.	Rated ripple (mArms)	Case size φD × L (mm)	Impedance (Ω) MAX.	Rated ripple (mArms)	Case size φD × L (mm)	Impedance (Ω) MAX.	Rated ripple (mArms)
100	101					8 × 11.5	0.32	340	8 × 11.5	0.13	500	10 × 12.5	0.15	620
220	221		8 × 11.5	0.26	340	10 × 12.5	0.15	620	10 × 12.5	0.10	680	10 × 16	0.094	790
330	331		10 × 12.5	0.15	620	10 × 12.5	0.10	680	10 × 16	0.075	945	10 × 20	0.075	950
470	471		10 × 12.5	0.10	680	10 × 16	0.075	945	10 × 20	0.057	1100	12.5 × 20	0.058	1330
1000	102		10 × 20	0.057	1100	12.5 × 20	0.042	1490	12.5 × 25	0.033	1750	16 × 25	0.031	2010
2200	222		12.5 × 25	0.033	1750	16 × 25	0.024	2300	16 × 31.5	0.020	2710			
3300	332		16 × 25	0.024	2300	16 × 31.5	0.020	2710						
4700	472		16 × 31.5	0.020	2710									

Cap. (μF)	Code	V(Code)	50 (1H)			63 (1J)			80 (1K)			100 (2A)		
		Item	Case size φD × L (mm)	Impedance (Ω) MAX.	Rated ripple (mArms)	Case size φD × L (mm)	Impedance (Ω) MAX.	Rated ripple (mArms)	Case size φD × L (mm)	Impedance (Ω) MAX.	Rated ripple (mArms)	Case size φD × L (mm)	Impedance (Ω) MAX.	Rated ripple (mArms)
1	010		※8 × 11.5	2.00	35									
2.2	2R2		※8 × 11.5	1.80	50									
3.3	3R3		※8 × 11.5	1.50	60									
4.7	4R7		8 × 11.5	1.15	85							※8 × 11.5	2.00	130
10	100		8 × 11.5	0.75	180							8 × 11.5	1.50	150
22	220		8 × 11.5	0.50	250	8 × 11.5	2.00	130	8 × 11.5	1.50	150	10 × 12.5	0.80	480
33	330		8 × 11.5	0.45	300	8 × 11.5	1.50	150	10 × 12.5	0.80	480	10 × 12.5	0.80	480
47	470		8 × 11.5	0.35	440	10 × 12.5	0.59	530	10 × 12.5	0.80	480	10 × 16	0.55	630
100	101		10 × 12.5	0.18	555	10 × 16	0.41	690	10 × 20	0.39	790	12.5 × 20	0.25	990
220	221		10 × 20	0.098	930	12.5 × 20	0.16	1050	12.5 × 25	0.18	1240	16 × 25	0.11	1500
330	331		12.5 × 20	0.070	1330	12.5 × 25	0.12	1290	12.5 × 31.5	0.16	1390	16 × 31.5	0.079	1790
470	471		12.5 × 25	0.055	1650	12.5 × 31.5	0.097	1460	16 × 25	0.11	1500			
1000	102		16 × 31.5	0.031	2430	16 × 31.5	0.055	1900						

Rated ripple current (mArms) at 135°C 100kHz
Impedance (Ω) MAX. at 20°C 100kHz

● Frequency coefficient of rated ripple current

CV \ Frequency	120Hz	300Hz	1kHz	10kHz or more
1000 > CV	0.50	0.64	0.83	1.00
1000 ≦ CV	0.67	0.79	0.91	1.00

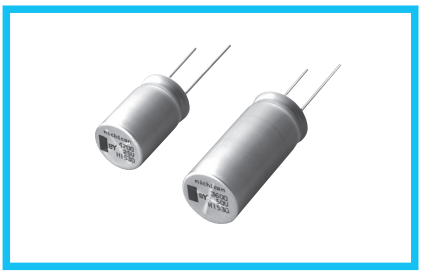
nichicon

UBY

High Temperature Range,
For +125°C or 135°C Use
(125°C / 135°C 3000hour)

Long Life | Smaller | Low Impedance | Anti-Solvent Feature

NEW



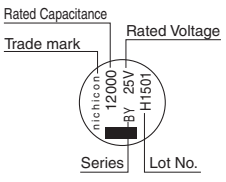
- Higher capacitance and higher ripple current than UBT and UBW.
- Application suggestion high temperature, electric power steering.
- Compliant to the RoHS directive (2011/65/EU).

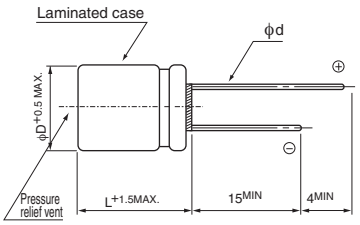
UBT
UBW
→ Higher Capacitance, Higher ripple current → UBY

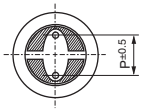
■Specifications

Item	Performance Characteristics
Category Temperature Range	−40 to +135°C
Rated Voltage Range	25 to 50V
Rated Capacitance Range	620 to 12000μF
Capacitance Tolerance	±20% at 120Hz, 20°C
Leakage Current	I = 0.03 (After 1 minute's application of rated voltage at 20°C)
Tangent of loss angle (tan δ)	Rated voltage (V): 25 / 35 / 50; tan δ (MAX.): 0.14 / 0.12 / 0.10 (120Hz, 20°C) For capacitance of more than 1000μF, add 0.02 for every increase of 1000μF.
Stability at Low Temperature	120Hz Rated voltage (V): 25 / 35 / 50 Impedance ratio Z−25°C / Z+20°C: 2 / 2 / 2 ZT / Z20 (MAX.) Z−40°C / Z+20°C: 4 / 4 / 4
Endurance	The specifications listed at right shall be met when the capacitors are restored to 20°C after D.C. bias plus rated ripple current is applied for 3000 hours at 125°C or 135°C, the peak voltage shall not exceed the rated voltage. Capacitance change: Within ±30% of the initial capacitance value tan δ: 300% or less than the initial specified value Leakage current: Less than or equal to the initial specified value
Shelf Life	After storing the capacitors under no load at 125˚C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.
Marking	Black print on the case top.

■Radial Lead Type







(mm)

φD	12.5	16	18
P	5.0	7.5	7.5
φd	0.6※	0.8	0.8

※ In case L > 25 for the φ12.5 dia. unit, lead dia. φ d = 0.8mm.

Type numbering system (Example : 25V 12000μF)

1	2	3	4	5	6	7	8	9	10	11	12
U	B	Y	1	E	1	2	3	M	H	L	□

- 12: size code
- 11: Configuration
- 10: Capacitance tolerance (±20%)
- 9: Rated capacitance (12000μF)
- 8: Rated voltage (25V)
- 7: Series name
- 6: Type

UBY

■Dimensions

Cap.(μF) \ V (Code) / Item / Code	25(1E) Case size φD × L (mm)	25(1E) ESR (Ω) MAX. 20℃/100kHz	25(1E) ESR (Ω) MAX. −40℃/100kHz	25(1E) Rated ripple (mArms) 125℃/100kHz	25(1E) Rated ripple (mArms) 135℃/100kHz	35(1V) Case size φD × L (mm)	35(1V) ESR (Ω) MAX. 20℃/100kHz	35(1V) ESR (Ω) MAX. −40℃/100kHz	35(1V) Rated ripple (mArms) 125℃/100kHz	35(1V) Rated ripple (mArms) 135℃/100kHz
1300 132						12.5 × 20	0.042	0.48	2760	1690
1800 182						12.5 × 25	0.033	0.30	3480	2010
2000 202	12.5 × 20	0.042	0.48	2760	1690					
2200 222						12.5 × 31.5	0.028	0.24	4490	2900
						▲16 × 20	0.031	0.27	3040	1860
2700 272						12.5 × 35.5	0.025	0.21	5140	3190
						▲18 × 20	0.030	0.22	3250	1870
3000 302	12.5 × 25	0.033	0.30	3480	2010	16 × 25	0.026	0.22	4260	2870
3300 332	16 × 20	0.031	0.27	3040	1860	12.5 × 40	0.024	0.19	5810	3470
3600 362	12.5 × 31.5	0.028	0.24	4490	2900					
3900 392						16 × 31.5	0.023	0.18	5480	3400
						▲18 × 25	0.025	0.19	4500	2900
4300 432	18 × 20	0.030	0.22	3250	1870					
4700 472	16 × 25	0.026	0.22	4260	2870	16 × 35.5	0.020	0.14	6070	3630
5100 512	12.5 × 40	0.024	0.19	5810	3470	18 × 31.5	0.022	0.16	5600	3470
5600 562						16 × 40	0.019	0.12	6810	3930
6200 622	16 × 31.5	0.023	0.18	5480	3400	18 × 35.5	0.019	0.12	6280	3750
	▲18 × 25	0.025	0.19	4500	2900					
7500 752	16 × 35.5	0.020	0.14	6070	3630	18 × 40	0.018	0.10	7070	4080
8200 822	18 × 31.5	0.022	0.16	5600	3470					
9100 912	16 × 40	0.019	0.12	6810	3930					
10000 103	18 × 35.5	0.019	0.12	6280	3750					
12000 123	18 × 40	0.018	0.10	7070	4080					

Cap.(μF) \ V (Code) / Item / Code	50(1H) Case size φD × L (mm)	50(1H) ESR (Ω) MAX. 20℃/100kHz	50(1H) ESR (Ω) MAX. −40℃/100kHz	50(1H) Rated ripple (mArms) 125℃/100kHz	50(1H) Rated ripple (mArms) 135℃/100kHz
620 621	12.5 × 20	0.056	0.88	2400	1470
820 821	12.5 × 25	0.044	0.67	3350	2260
1000 102	16 × 20	0.039	0.55	2960	1870
1100 112	12.5 × 31.5	0.037	0.52	4220	2520
1300 132	12.5 × 35.5	0.033	0.44	4810	2780
	▲16 × 25	0.033	0.44	4040	2500
	※18 × 20	0.038	0.44	3130	2110
1600 162	12.5 × 40	0.032	0.36	5240	3020
1800 182	16 × 31.5	0.029	0.36	5130	2960
	▲18 × 25	0.032	0.32	4230	2530
2200 222	16 × 35.5	0.025	0.27	5480	3160
2400 242	18 × 31.5	0.028	0.25	5240	3020
2700 272	16 × 40	0.024	0.22	5930	3420
3000 302	18 × 35.5	0.024	0.20	5870	3390
3600 362	18 × 40	0.023	0.16	6420	3700

▲: In this case, 6 will be put at 12th digit of type numbering system.
※: In this case, 3 will be put at 12th digit of type numbering system.

● Frequency coefficient of rated ripple current

Cap. (μF) \ Frequency	120Hz	1kHz	10kHz	100kHz or more
620～ 2000	0.60	0.87	0.95	1.00
2200～ 4300	0.75	0.90	0.95	1.00
4700～12000	0.85	0.95	0.98	1.00

The UBY series places emphasis on high ripple current, as a result the lifetime calculation is different than other series. Please conntact Nichicon for details.

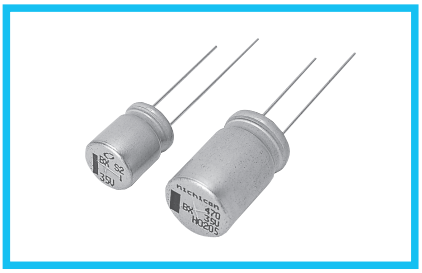
nichicon

UBX

High Temperature Range, For +150°C Use

Long Life

Anti-Solvent Feature (Through 100V only)



- Laminated case series.
- Suited for automobile electronics where heavy duty services are indispensable.
- Compliant to the RoHS directive (2011/65/EU).

UBX — High Temperature — UBW

Item	Performance Characteristics		
Category Temperature Range	−55 to +150°C (10 to 100V), −40 to +150°C (160 · 200V), −25 to +150°C (350 · 400V)		
Rated Voltage Range	10 to 400V		
Rated Capacitance Range	1 to 4700μF		
Capacitance Tolerance	±20% at 120Hz, 20°C		
Leakage Current	Rated Voltage (V)	10 to 100	160 to 400
	Leakage current	After 1 minute's application of rated voltage at 20°C, leakage current is not more than 0.03CV or 4 (μA), whichever is greater.	CV ≦ 1000 : I = 0.1CV+40 (μA) max. CV > 1000 : I = 0.04CV+100 (μA) max.
Tangent of loss angle (tan δ)	See table below		
Stability at Low Temperature	See table below		
Endurance	The specifications listed at right shall be met when the capacitors are restored to 20°C after D.C. bias plus rated ripple current is applied for 2000 hours (1000 hours for φD=10 and 12.5) at 150°C, the peak voltage shall not exceed the rated voltage.		
Marking	Black print on the case top.		

Rated voltage (V)	10	16	25	35	50	63	80	100	160 · 200	350 · 400
tan δ (MAX.)	0.20	0.16	0.14	0.12	0.10	0.10	0.08	0.08	0.20	0.24

120Hz 20°C

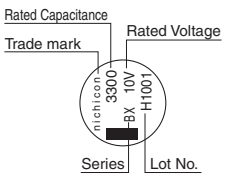
For capacitance of more than 1000μF, add 0.02 for every increase of 1000μF.

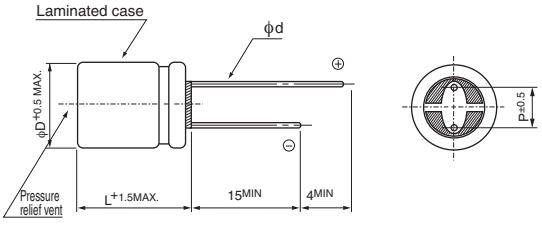
Rated voltage (V)		10	16	25	35	50	63	80	100	160 · 200	350 · 400
Impedance ratio	Z−25°C / Z+20°C	3	2	2	2	2	2	2	2	3	6
ZT / Z20 (MAX.)	Z−40°C / Z+20°C	4	4	4	4	4	4	4	4	6	-

120Hz

Capacitance change	Within ±30% of the initial capacitance value (10 to 100V) Within ±20% of the initial capacitance value (160 to 400V)
tan δ	300% or less than the initial specified value (10 to 100V) 200% or less than the initial specified value(160 to 400V)
Leakage current	Less than or equal to the initial specified value

■Radial Lead Type

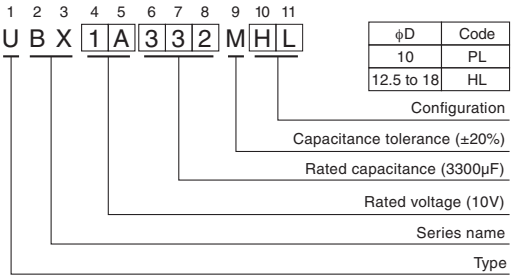




(mm)

φD	10	12.5	16	18
P	5.0	5.0	7.5	7.5
φd	0.6	0.6	0.8	0.8

Type numbering system (Example : 10V 3300μF)



φD	Code
10	PL
12.5 to 18	HL

• Please refer to page 20 about the end seal configuration.

Please refer to page 20, 21, 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.

● Dimension table in next page.

UBX

■Dimensions

Cap. (μF) \ V (Code)	10		16		25		35	
Code	1A		1C		1E		1V	
1	010						10 × 12.5	35
2.2	2R2						10 × 12.5	50
3.3	3R3						10 × 12.5	60
4.7	4R7						10 × 12.5	85
10	100						10 × 12.5	175
22	220						10 × 12.5	200
33	330						10 × 12.5	225
47	470						10 × 12.5	250
100	101				10 × 12.5	250	10 × 20	400
220	221		10 × 16	300	12.5 × 20	500	12.5 × 25	600
330	331	10 × 16	10 × 20	400	12.5 × 25	600	16 × 25	800
470	471	10 × 20	12.5 × 20	600	16 × 25	800	16 × 31.5	1000
1000	102	12.5 × 25	16 × 25	800	16 × 31.5	1000	18 × 40	1300
2200	222	16 × 31.5	1000	18 × 35.5	1200			
3300	332	18 × 35.5	1200	18 × 40	1300		Case size φD × L (mm)	Rated ripple
4700	472	18 × 40	1300					

Cap. (μF) \ V (Code)	50		63		80		100	
Code	1H		1J		1K		2A	
22	220						10 × 12.5	390
33	330				10 × 12.5	420	10 × 16	510
47	470				10 × 16	550	10 × 20	640
56	560		10 × 12.5	430	10 × 20	690	10 × 20	640
68	680		10 × 16	560	10 × 20	690	12.5 × 20	760
100	101	10 × 12.5	10 × 20	710	12.5 × 20	820	12.5 × 25	950
220	221	10 × 20	640	12.5 × 25	1040	16 × 25	1250	16 × 31.5	1380
330	331	12.5 × 20	770	12.5 × 31.5	1170	16 × 31.5	1480	18 × 31.5	1430
470	471	12.5 × 25	960	16 × 25	1280	18 × 31.5	1530		
560	561	12.5 × 31.5	1080	16 × 31.5	1520				
680	681	16 × 25	1190	16 × 35.5	1520		Case size φD × L (mm)	Rated ripple
1000	102	16 × 31.5	1420					

Rated ripple current (mArms) at 150°C 100kHz

● Frequency coefficient of rated ripple current

V	CV \ Frequency	120Hz	300Hz	1kHz	10kHz or more
10 to 100	1000 > CV	0.50	0.64	0.83	1.00
	1000 ≦ CV	0.67	0.79	0.91	1.00

Cap. (μF) \ V (Code)	160		200		350		400	
Code	2C		2D		2V		2G	
4.7	4R7				10 × 16	77	10 × 20	83
6.8	6R8		10 × 12.5	83	10 × 20	110	12.5 × 20	88
10	100	10 × 12.5	110	10 × 12.5	83	12.5 × 20	120	12.5 × 25	105
15	150	10 × 12.5	110	10 × 16	130	12.5 × 25	130	12.5 × 25	105
22	220	10 × 16	160	10 × 20	170				
33	330	12.5 × 20	230	12.5 × 20	210				
47	470	12.5 × 20	250	12.5 × 25	250				
56	560	12.5 × 25	270	16 × 20	270				
68	680	16 × 20	290	16 × 25	290			Case size φD × L (mm)	Rated ripple
100	101	16 × 25	300						

Rated ripple current (mArms) at 150°C 120Hz

● Frequency coefficient of rated ripple current

V	Cap. (μF) \ Frequency	50Hz	120Hz	300Hz	1kHz	10kHz	100kHz or more
160 to 400	4.7 to 33	0.75	1.00	1.25	1.50	1.75	1.80
	47 to 100	0.80	1.00	1.15	1.30	1.40	1.50

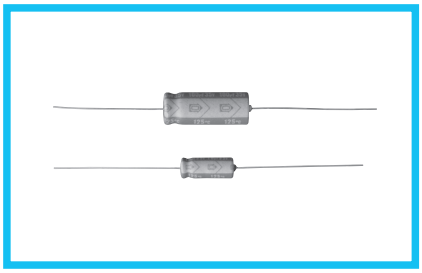
nichicon

TBE

High Temperature Range, For -40 to +125°C Use

(02type)

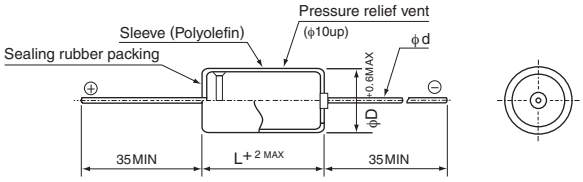
- Highly dependable reliability withstanding load life of 2000 hours at 125°C.
- Suited for automobile electronics, space equipment and communication appliances, where heavy duty services and indispensable.
- Compliant to the RoHS directive (2011/65/EU).



■Specifications

Item	Performance Characteristics
Category Temperature Range	−40 to +125°C
Rated Voltage Range	10 to 50V
Rated Capacitance Range	0.47 to 470μF
Capacitance Tolerance	±20% at 120Hz, 20°C
Leakage Current	After 5 minutes' application of rated voltage at 20°C, leakage current is not more than 0.002CV or 2 (μA), whichever is greater.
Tangent of loss angle (tan δ)	Measurement frequency : 120Hz at 20°C Rated voltage (V): 10 / 16 / 25 / 35 / 50 tan δ (MAX.): 0.15 / 0.12 / 0.10 / 0.10 / 0.08
Stability at Low Temperature	Measurement frequency : 120Hz Rated voltage (V): 10 / 16 / 25 / 35 / 50 Impedance ratio ZT / Z20 (MAX.) Z−25°C / Z+20°C: 3 / 2 / 2 / 2 / 2 Impedance ratio ZT / Z20 (MAX.) Z−40°C / Z+20°C: 6 / 4 / 4 / 4 / 4
Endurance	The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 2000 hours at 125°C. Capacitance change: Within ±20% of the initial capacitance value tan δ: 200% or less than the initial specified value Leakage current: Less than or equal to the initial specified value
Shelf Life	After storing the capacitors under no load at 125°C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.
Marking	Printed with white color letter on blue sleeve.

■Axial Lead Type



(mm)

φD	6.3 to 13	16
φd	0.6	0.8

Type numbering system (Example : 16V 47μF)

1	2	3	4	5	6	7	8	9	10	11
T	B	E	1	C	4	7	0	M	A	D

- 10, 11: Configuration ※
- 9: Capacitance tolerance (±20%)
- 6, 7, 8: Rated capacitance (47μF)
- 4, 5: Rated voltage (16V)
- 3: Series name
- 1, 2: Type

※Configuration

φD	Pb-free leadwire Pb-free Polyolefin sleeve
6.3・8	AD
10 to 16	CD

■Dimensions

Cap.(μF) \ V	10	16	25	35	50
Code	1A	1C	1E	1V	1H
0.47	R47					6.3 × 16
1	010					6.3 × 16
2.2	2R2					6.3 × 16
3.3	3R3					6.3 × 16
4.7	4R7					6.3 × 16
10	100				6.3 × 16	6.3 × 16
22	220			6.3 × 16	8 × 16	8 × 20
33	330	6.3 × 16	8 × 16	8 × 20	8 × 20	10 × 21
47	470	6.3 × 16	8 × 16	8 × 20	10 × 21	10 × 26
100	101	8 × 20	10 × 21	10 × 21	10 × 26	13 × 26
220	221	10 × 21	10 × 26	13 × 26	13 × 31.5	16 × 31.5
330	331	13 × 26	13 × 26	13 × 31.5	16 × 31.5	
470	471	13 × 31.5	13 × 31.5	16 × 31.5		

Please refer to page 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.

nichicon

UKL

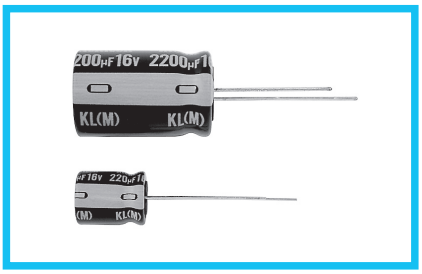
Low Leakage Current

Low Leakage Current | Anti-Solvent Feature

- Standard low leakage current series.
- Compliant to the RoHS directive (2011/65/EU).

Values marked with an ※ in the dimension table are scheduled to be discontinued and are not recommended for new designs.

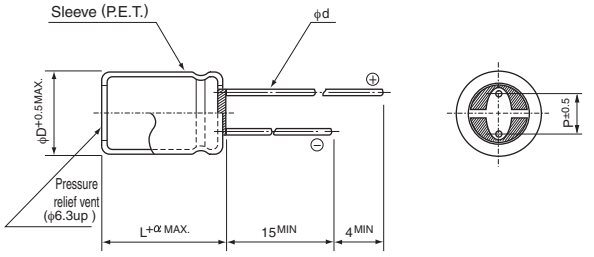
UVR → Low Leakage Current → UKL



■Specifications

Item	Performance Characteristics
Category Temperature Range	−40 to +85°C (−40 to +105°C product is also available upon request, but product rated at up to 50V less than or equal to φ10 × 12.5 Lmm)
Rated Voltage Range	6.3 to 100V
Rated Capacitance Range	0.1 to 10000μF
Capacitance Tolerance	±20% (M), ±10% (K) at 120Hz 20°C
Leakage Current	After 1 minute's (for case size 10 × 12.5 or smaller) or 2 minutes' (for case size 10 × 16 or larger) application of rated voltage at 20°C, leakage current is not more than 0.002CV or 0.2 (μA) whichever is greater.
Tangent of loss angle (tan δ)	Rated voltage (V): 6.3 / 10 / 16 / 25 / 35 / 50 / 63 / 100 tan δ (MAX.) Less than φ10 × 12.5: 0.18 / 0.15 / 0.12 / 0.08 / 0.08 / 0.08 / 0.07 / 0.07 tan δ (MAX.) φ10 × 16 or more: 0.21 / 0.17 / 0.14 / 0.12 / 0.12 / 0.10 / 0.08 / 0.08 120Hz, 20°C For capacitance of more than 1000μF, add 0.02 for every increase of 1000μF.
stability at Low Temperature	Rated voltage (V): 6.3 / 10 / 16 / 25 / 35 / 50 / 63 / 100 Impedance ratio Z−25°C / Z+20°C: 3 (4) / 2 (3) / 2 / 1.5 / 1.5 / 1.5 / 1.5 / 1.5 ZT / Z20 (MAX.) Z−40°C / Z+20°C: 5 (8) / 4 (6) / 3 (4) / 2 (4) / 2 (3) / 2 (3) / 2 (3) / 2 (3) 120Hz Values in ( ) applicable to φ10 × 16 or larger case size.
Endurance	The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 2000 hours at 85°C, or 1000 hours at 105°C. Capacitance change: Within ±15% of the initial capacitance value (6.3V : Within ±20%) tan δ: 150% or less than the initial specified value Leakage current: Less than or equal to the initial specified value
Shelf Life	After storing the capacitors under no load at 85˚C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.
Marking	Printed with white color letter on black sleeve.

■Radial Lead Type



(mm)

α	
	(φ10 × 12.5 or smaller) 1.0
	(φ10 × 16 or or greater) 1.5

φD	5	6.3	8	10	12.5	16	18
P	2.0	2.5	3.5	5.0	5.0	7.5	7.5
φd	0.5	0.5	0.6	0.6	0.6	0.8	0.8

• Please refer to page 20 about the end seal configuration.

Type numbering system (Example : 10V 47μF)

1	2	3	4	5	6	7	8	9	10	11	12	13	14
U	K	L	1	A	4	7	0	M	D	D	A	N	A

※2
Configuration ※1
Capacitance tolerance (M : ±20%, K : ±10%)
Rated capacitance (47μF)
Rated voltage (10V)
Series name
Type

※2 In case 105°C unit is required

※1 Configuration

φ D	Pb-free leadwire Pb-free PET sleeve
5	DD
6.3	ED
8 · 10	PD
12.5 to 18	HD

● Frequency coefficient of rated ripple current

Cap.(μF) \ Frequency	50Hz	120Hz	300Hz	1kHz	10kHz or more
0.1 to 68	0.75	1.00	1.35	1.57	2.00
100 to 680	0.80	1.00	1.23	1.34	1.50
1000 to 10000	0.85	1.00	1.10	1.13	1.15

Please refer to page 20, 21, 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.
● Dimension table in next page.

UKL

■Dimensions

Cap.(μF) \ V	Code	6.3		10		16		25	
		0J		1A		1C		1E	
4.7	4R7							5 × 11	45
6.8	6R8							5 × 11	55
10	100					5 × 11	55	5 × 11	70
15	150					5 × 11	70	5 × 11	85
22	220					5 × 11	85	5 × 11	100
33	330					5 × 11	100	6.3 × 11	140
47	470			5 × 11	110	6.3 × 11	140	6.3 × 11	170
68	680			6.3 × 11	150	6.3 × 11	160	8 × 11.5	230
100	101			6.3 × 11	180	8 × 11.5	230	8 × 11.5	280
150	151			8 × 11.5	250	8 × 11.5	280	10 × 12.5	370
220	221			8 × 11.5	310	10 × 12.5	370	10 × 16	400
330	331			10 × 12.5	400	10 × 16	420	10 × 20	490
470	471	10 × 12.5	390	10 × 16	530	10 × 20	550	12.5 × 20	660
680	681	10 × 16	480	10 × 20	600	12.5 × 20	730	12.5 × 25	810
1000	102	10 × 20	650	12.5 × 20	810	12.5 × 25	910	16 × 25	1010
1500	152	12.5 × 25	910	12.5 × 25	1020	16 × 25	1150	16 × 31.5	1270
2200	222	12.5 × 25	1060	16 × 25	1200	16 × 25	1300	16 × 35.5	1440
3300	332	16 × 25	1270	16 × 31.5	1420	16 × 35.5	1550	18 × 40	1720
4700	472	16 × 31.5	1500	16 × 35.5	1650	18 × 35.5	1820		
6800	682	18 × 35.5	1760	18 × 35.5	1890				
10000	103	18 × 40	1900						

Cap.(μF) \ V	Code	35		50		63		100	
		1V		1H		1J		2A	
0.1	0R1			※5 × 11	1.1			5 × 11	2.1
0.15	R15			※5 × 11	1.6			5 × 11	3.2
0.22	R22			※5 × 11	2.3			5 × 11	4.7
0.33	R33			※5 × 11	3.5			5 × 11	7.0
0.47	R47			※5 × 11	5.0			5 × 11	10.1
0.68	R68			※5 × 11	7.3			5 × 11	14.5
1	010			※5 × 11	10.7			5 × 11	19
1.5	1R5			5 × 11	16			5 × 11	23
2.2	2R2			5 × 11	23			5 × 11	28
3.3	3R3			5 × 11	40			5 × 11	45
4.7	4R7			5 × 11	45			5 × 11	50
6.8	6R8			5 × 11	55	5 × 11	59	6.3 × 11	65
10	100			5 × 11	70	6.3 × 11	75	8 × 11.5	90
15	150	5 × 11	85	6.3 × 11	95	6.3 × 11	100	8 × 11.5	110
22	220	6.3 × 11	110	6.3 × 11	110	8 × 11.5	115	10 × 12.5	136
33	330	6.3 × 11	140	8 × 11.5	165	8 × 11.5	170	10 × 16	180
47	470	8 × 11.5	190	8 × 11.5	190	10 × 12.5	200	10 × 20	220
68	680	8 × 11.5	230	10 × 12.5	250	10 × 16	270	10 × 20	290
100	101	10 × 12.5	300	10 × 16	320	10 × 20	330	12.5 × 20	370
150	151	10 × 16	400	10 × 20	420	12.5 × 20	450	12.5 × 25	470
220	221	10 × 20	440	12.5 × 20	490	12.5 × 20	550	16 × 25	580
330	331	12.5 × 20	550	12.5 × 20	600	12.5 × 25	710	16 × 31.5	730
470	471	12.5 × 25	680	16 × 25	760	16 × 25	850	18 × 35.5	910
680	681	16 × 25	840	16 × 25	910	16 × 31.5	1050		
1000	102	16 × 25	1100	16 × 31.5	1140	18 × 35.5	1330		
1500	152	16 × 35.5	1390	18 × 40	1480			Case size φD × L (mm)	Rated ripple
2200	222	18 × 35.5	1580						

Rated ripple current (mArms) at 85°C 120Hz

Rated ripple current (mArms) of 105°C product : 70 percent value of rated ripple of 85°C product at 105°C 120Hz

nichicon

UAQ

Wide Temperature Range, Permissible Abnormal Voltage

- Improved safety feature for abnormally excessive voltage.
- High ripple current product.
- Compliant to the RoHS directive (2011/65/EU).

UAQ
Smaller
UAS

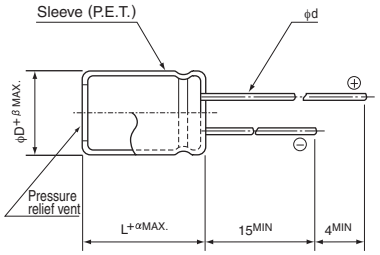
■Specifications

Item	Performance Characteristics
Category Temperature Range	−40 to +105°C
Rated Voltage Range	200 · 400V
Rated Capacitance Range	10 to 220μF
Capacitance Tolerance	±20% at 120Hz, 20°C
Leakage Current	After 1 minute's application of rated voltage at 20°C, leakage current is 0.04CV+100 (μA) or less.
Tangent of loss angle (tan δ)	Rated voltage (V): 200 / 400; tan δ (MAX.): 0.15 / 0.15. Measurement frequency:120Hz at 20°C
Stability at Low Temperature	Rated voltage (V): 200 / 400. Impedance ratio ZT / Z20 (MAX.): Z−25°C / Z+20°C: 3 / 8; Z−40°C / Z+20°C: 6 / 10. Measurement frequency : 120Hz
Endurance	The specifications listed at right shall be met when the capacitors are restored to 20°C after D.C. bias plus rated ripple current is applied for 2000 hours at 105°C, the peak voltage shall not exceed the rated voltage. Capacitance change: Within ±20% of the initial capacitance value; tan δ: 200% or less than the initial specified value; Leakage current: Less than or equal to the initial specified value
Shelf Life	After storing the capacitors under no load at 105°C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.
Safety Performance	The pressure relief vent will operate in normal conditions, with no dangerous conditons such as flames, ignitions or dispersion of pieces of the capacitor and / or case.

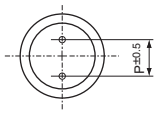
voltage (V)	Test conditions: Limited DC current	Test conditions: Test Voltage
200	4A	300VDC and 375VDC
400	2A	500VDC and 600VDC

Marking	Printed with white color letter on dark brown sleeve.

■Radial Lead Type



• Please refer to page 20 about the end seal configuration.



(mm)

φD	10	12.5	16	18	22
β	0.5	0.5	0.5	0.5	1.0
P	5.0	5.0	7.5	7.5	10
φd	0.6	0.6※	0.8	0.8	1.0

※In case L>25 for φ12.5 (D) case sizes, lead diameter φ0.8 (d) will be applied.

α	(φD≦18) 2.0
	(φD >18) 3.0

Type numbering system (Example : 200V 100μF)

1	2	3	4	5	6	7	8	9	10	11	12
U	A	Q	2	D	1	0	1	M	H	D	

Size code
Configuration※
Capacitance tolerance (±20%)
Rated capacitance (100μF)
Rated voltage (200V)
Series name
Type

※Configuration

φ D	Pb-free leadwire Pb-free PET sleeve
10	PD
12.5 to 18	HD
22	RD

■Dimensions

Cap.(μF) \ V(Code) / Code \ φD	200 (2D) φ10	φ12.5	φ16	φ18	φ22	400 (2G) φ12.5	φ16	φ18	φ22
10	100						12.5 × 20 100			
22	220	10 × 20 120					12.5 × 31.5 145	○16 × 20 145		
33	330	10 × 25 160	○12.5 × 20 160				12.5 × 40 195	○16 × 25 195	※18 × 20 195	
47	470	10 × 31.5 195	○12.5 × 20 195					16 × 35.5 280	○18 × 25 280	※22 × 20 280
56	560		12.5 × 25 210					16 × 35.5 320	○18 × 31.5 320	※22 × 25 320
68	680		12.5 × 25 250					16 × 40 350	○18 × 35.5 350	
82	820		12.5 × 31.5 285	○16 × 20 285					18 × 40 420	
100	101		12.5 × 35.5 335	○16 × 25 335	※18 × 20 335					
150	151			16 × 31.5 435	○18 × 25 435	※22 × 20 435				
180	181			16 × 35.5 495	○18 × 31.5 495	※22 × 25 495				
220	221				18 × 35.5 575					Case size φD×L (mm) Rated ripple

Rated ripple current (mArms) at 105°C 120Hz

○ : In case of low profile type, 6 will be put at 12th digit of type numbering system.
※ : For further low profile product, 3 will be put at 12th digit.

• Frequency coefficient of rated ripple current

Frequency	50, 60Hz	120Hz	300Hz	1kHz	10kHz or more
Coefficient	0.80	1.00	1.25	1.40	1.60

Please refer to page 20, 21, 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.

nichicon

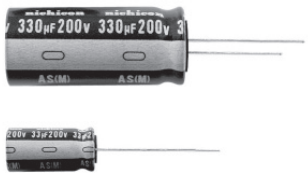
UAS

Wide Temperature Range, Miniature Type Permissible Abnormal Voltage

Smaller

- Improved safety feature for abnormally excessive voltage.
- High ripple current product.
- Compliant to the RoHS directive (2011/65/EU).

UAQ
Smaller
UAS

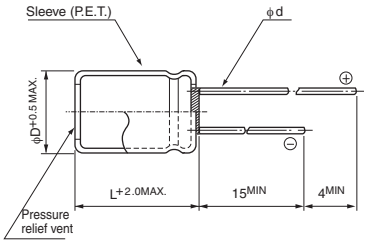


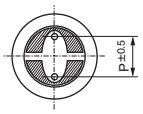
Specifications

Item	Performance Characteristics
Category Temperature Range	−40 to +105°C
Rated Voltage Range	200V, 400V
Rated Capacitance Range	4.7 to 330μF
Capacitance Tolerance	±20% at 120Hz, 20°C
Leakage Current	After 1 minute's application of rated voltage at 20°C, leakage current is 0.04CV+100 (μA) or less.
Tangent of loss angle (tan δ)	Rated voltage (V): 200 / 400; tan δ (MAX.): 0.15 / 0.15. Measurement frequency:120Hz at 20°C
Stability at Low Temperature	Rated voltage (V): 200 / 400. Impedance ratio ZT / Z20 (MAX.): Z−25°C / Z+20°C: 3 / 8; Z−40°C / Z+20°C: 6 / 10. Measurement frequency : 120Hz
Endurance	The specifications listed at right shall be met when the capacitors are restored to 20°C after D.C. bias plus rated ripple current is applied for 2000 hours at 105°C, the peak voltage shall not exceed the rated voltage. Capacitance change: Within ±20% of the initial capacitance value; tan δ: 200% or less than the initial specified value; Leakage current: Less than or equal to the initial specified value
Shelf Life	After leaving capacitors under no load at 105°C for 1000 hours they shall meet the specified values for the endurance characteristics listed above.
Safety Performance	The pressure relief vent will operate in normal conditions, with no dangerous conditons such as flames, ignitions or dispersion of pieces of the capacitor and / or case.

Safety Performance	voltage (V)	Test conditions: Limited DC current	Test conditions: Test Voltage
	200	4A (5A : 330μF)	300VDC and 375VDC
	400	2A (4A : 100μF or more)	500VDC and 600VDC
Marking	Printed with white color letter on dark brown sleeve.		

Radial Lead Type





(mm)

φD	10	12.5	16	18
P	5.0	5.0	7.5	7.5
φd	0.6	0.6※	0.8	0.8

※In case L>25 for φ12.5 (D) case sizes, lead diameter φ0.8 (d) will be applied.

• Please refer to page 20 about the end seal configuration.

Type numbering system (Example : 200V 220μF)

1	2	3	4	5	6	7	8	9	10	11	12
U	A	S	2	D	2	2	1	M	H	D	

Size code
Configuration ※
Capacitance tolerance (±20%)
Rated capacitance (220μF)
Rated voltage (200V)
Series name
Type

※Configuration

φ D	Pb-free leadwire Pb-free PET sleeve
10	PD
12.5 to 18	HD

Dimensions

Cap.(μF)	Code	V / φD	200 (2D) φ10		φ12.5		φ16		φ18		400 (2G) φ10		φ12.5		φ16		φ18	
4.7	4R7										10 x 9	60						
22	220												12.5 x 20	165				
27	270												12.5 x 25	200				
33	330		10 x 20	160											16 x 20	225		
39	390														16 x 25	255	▲18 x 20	255
47	470		10 x 25	195	▲12.5 x 20	195									16 x 25	290	▲18 x 20	280
56	560				12.5 x 20	210									16 x 31.5	340	▲18 x 25	320
68	680				12.5 x 25	320									16 x 35.5	385	▲18 x 25	360
82	820				12.5 x 25	360									16 x 40	435	▲18 x 31.5	430
100	101				12.5 x 31.5	430	▲16 x 20	430									18 x 35.5	490
120	121																18 x 40	540
150	151						16 x 25	460	▲18 x 20	460								
180	181						16 x 31.5	600	▲18 x 25	600								
220	221								18 x 31.5	710								
270	271								18 x 35.5	890							Case size φDxL (mm)	Rated ripple
330	331								18 x 40	910								

Frequency coefficient of rated ripple current

Frequency	50, 60Hz	120Hz	300Hz	1kHz	10kHz or more
Coefficient	0.80	1.00	1.25	1.40	1.60

Rated ripple current (mArms) at 105°C 120Hz

▲: In case of low profile type, 6 will be put at 12th digit of type numbering system.

Please refer to page 20, 21, 22 about the formed or taped product spec.

Please refer to page 4 for the minimum order quantity.

nichicon

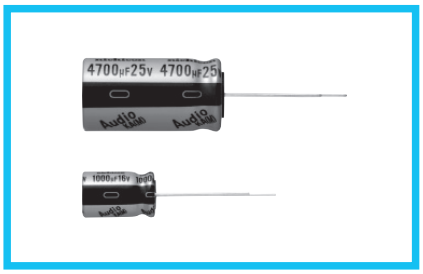
UKA

For High Grade Audio Equipment,
Wide Temperature Range.

For Audio Use Anti-Solvent Feature

- 105°C high quality capacitors for audio equipment.
- Selected materials to create superior acoustic sound.
- Compliant to the RoHS directive (2011/65/EU).

UKA
High Grade
UKT



■Specifications

Item	Performance Characteristics
Category Temperature Range	– 55 to +105°C
Rated Voltage Range	6.3 to 50V
Rated Capacitance Range	22 to 22000 μF
Capacitance Tolerance	±20% at 120Hz, 20°C
Leakage Current	After 1 minute's application of rated voltage at 20°C, leakage current is not more than 0.03CV or 4 (μA), whichever is greater. After 2 minutes' application of rated voltage at 20°C, leakage current is not more than 0.01CV or 3 (μA), whichever is greater.
Tangent of loss angle (tan δ)	Measurement frequency : 120Hz at 20°C

Rated voltage (V)	6.3	10	16	25	35	50
tan δ (MAX.)	0.30	0.26	0.22	0.18	0.16	0.14

For capacitors with more than 1000μF, add 0.02 for every increase of 1000μF.

Stability at Low Temperature — Measurement frequency : 120Hz

Rated voltage (V)		6.3	10	16	25	35	50
tan δ (MAX.)	Z–25°C / Z+20°C	5	4	3	2	2	2
	Z–40°C / Z+20°C	10	8	6	4	3	3

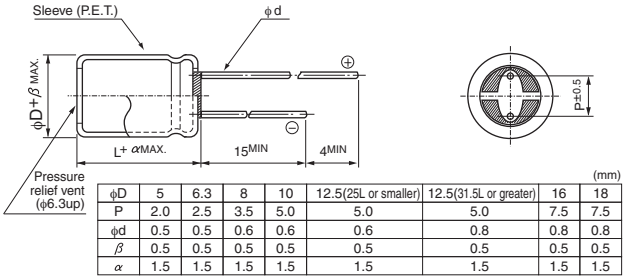
Endurance — The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 2000 hours at 105°C.

Capacitance Change	Within 20% of the initial capacitance value
tan δ	200% or less than the initial specified value
Leakage current	Less than or equal to the initial specified value

Shelf Life — After storing the capacitors under no load at 105°C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.

Marking — Printed with black color letter on pearl blue sleeve.

■Radial Lead Type



(mm)

φD	5	6.3	8	10	12.5(25L or smaller)	12.5(31.5L or greater)	16	18
P	2.0	2.5	3.5	5.0	5.0	5.0	7.5	7.5
φd	0.5	0.5	0.6	0.6	0.6	0.8	0.8	0.8
β	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
α	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5

Type numbering system (Example : 16V 1000μF)

1	2	3	4	5	6	7	8	9	10	11
U	K	A	1	C	1	0	2	M	P	D

Configuration
Capacitance tolerance (±20%)
Rated capacitance (1000μF)
Rated voltage (16V)
Series name
Type

φ D	Pb-free leadwire Pb-free PET sleeve
5	DD
6.3	ED
8 -10	PD
12.5 to 18	HD

• Please refer to page 20 about the end seal configuration.

■Dimensions

Cap (μF) \ V	6.3		10		16		25		35		50	
Code	0J		1A		1C		1E		1V		1H	
22	220	5×11	45	5×11	45	5×11	54	5×11	58	5×11	61	5×11	68
33	330	5×11	55	5×11	58	5×11	65	5×11	68	5×11	75	5×11	90
47	470	5×11	65	5×11	68	5×11	79	5×11	83	5×11	93	6.3×11	115
100	101	5×11	95	5×11	105	5×11	115	6.3×11	140	6.3×11	150	8×11.5	190
220	221	6.3×11	160	6.3×11	175	6.3×11	190	8×11.5	240	8×11.5	260	10×12.5	300
330	331	6.3×11	195	8×11.5	240	8×11.5	265	8×11.5	290	10×12.5	350	10×16	410
470	471	8×11.5	270	8×11.5	280	8×11.5	315	10×12.5	380	10×16	460	12.5×20	530
1000	102	10×12.5	420	10×16	500	10×16	560	10×20	680	12.5×25	860	12.5×31.5	1040
2200	222	10×20	710	12.5×20	810	12.5×20	920	12.5×31.5	1200	12.5×40	1260	16×35.5	1470
3300	332	12.5×20	910	12.5×25	1050	12.5×31.5	1270	12.5×35.5	1400	16×35.5	1610	18×35.5	1770
4700	472	12.5×25	1120	12.5×35.5	1300	12.5×35.5	1480	16×31.5	1710	18×35.5	1910		
6800	682	12.5×35.5	1360	12.5×40	1570	16×31.5	1780	18×35.5	2040				
10000	103	12.5×40	1650	16×35.5	1890	18×35.5	2060						
15000	153	16×35.5	2010	18×40	2400							Case size φD × L(mm)	Rated ripple
22000	223	18×40	2350										

Rated ripple current (mArms) at 105°C 120Hz

• Frequency coefficient of rated ripple current

Cap.(μF) \ Frequency	50Hz	120Hz	300Hz	1kHz	10kHz or more
22 to 47	0.75	1.00	1.35	1.57	2.00
100 to 470	0.80	1.00	1.23	1.34	1.50
1000 to 22000	0.85	1.00	1.10	1.13	1.15

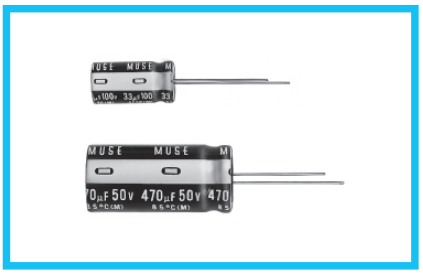
Please refer to page 20, 21, 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.

nichicon MUSE UKZ

Premium Grade Type, For Audio Equipment

For Audio Use Anti-Solvent Feature

- Premium grade “nichicon MUSE” acoustic series.
- Ideally suited for first class audio equipment where qualitative and quantitative comfortableness is required.
- Compliant to the RoHS directive (2011/65/EU).

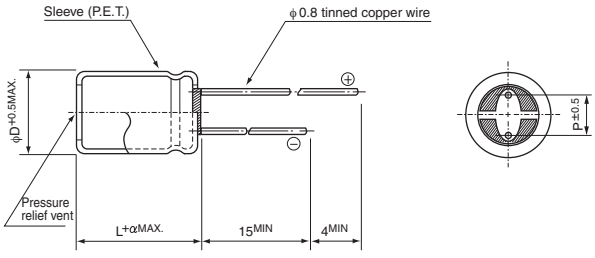


UKZ ← High Grade UFG

■Specifications

Item	Performance Characteristics
Category Temperature Range	−40 to +85°C
Rated Voltage Range	25 to 100V
Rated Capacitance Range	10 to 1000μF
Capacitance Tolerance	±20% at 120Hz, 20°C
Leakage Current	After 1 minute's application of rated voltage at 20°C, leakage current is 0.01CV or less.
Tangent of loss angle (tan δ)	Measurement frequency : 120Hz at 20°C Rated voltage (V): 25 / 50 / 100 tan δ (MAX.): 0.12 / 0.08 / 0.07
Stability at Low Temperature	Measurement frequency : 120Hz Rated voltage (V): 25 / 50 / 100 Impedance ratio ZT / Z20 (MAX.) Z−25°C / Z+20°C: 2 / 2 / 2 Impedance ratio ZT / Z20 (MAX.) Z−40°C / Z+20°C: 4 / 3 / 3
Endurance	The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 1000 hours at 85°C. Capacitance change: Within ±20% of the initial capacitance value tan δ: 150% or less than the initial specified value Leakage Current: Less than or equal to the initial specified value
Shelf Life	After storing the capacitors under no load at 85°C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.
Marking	Printed with gold color letter on black sleeve.

■Radial Lead Type



(mm)

α	(φD < 10) 1.0					
	(φD ≧ 10) 1.5					
φD	8	10	12.5	16	18	
P	3.5	5.0	5.0	7.5	7.5	

• Please refer to page 20 about the end seal configuration.

Type numbering system (Example : 25V 100μF)

1	2	3	4	5	6	7	8	9	10	11
U	K	Z	1	E	1	0	1	M	P	M

- 11: Configuration

φD	Code
8 · 10	PM
12.5 to 18	HM

- 9: Capacitance tolerance (±20%)
- 6 7 8: Rated capacitance (100μF)
- 4 5: Rated voltage (25V)
- 1 2 3: Series name
- Type

■Dimensions

φD×L (mm)

Cap.(μF) \ V	Code	25	50	100
		1E	1H	2A
10	100			8×11.5
22	220		8×11.5	10×16
33	330	8×11.5	10×12.5	10×20
47	470	10×12.5	10×16	12.5×20
100	101	10×16	12.5×20	16×25
220	221	12.5×20	16×25	16×35.5
330	331	12.5×25	16×31.5	18×35.5
470	471	16×25	16×35.5	
1000	102	16×35.5	18×40	

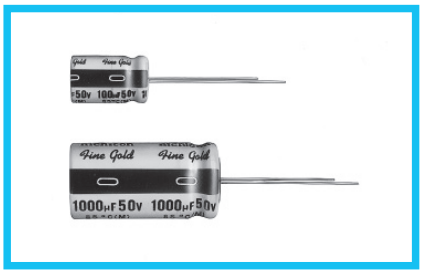
Please refer to page 20, 21, 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.

nichicon

UFG

High Grade Standard Type, For Audio Equipment

For Audio Use Anti-Solvent Feature



- "Fine Gold" MUSE acoustic series suited for high grade audio equipment, using state of the art etching techniques.
- Rich sound in the bass register and clearer high end, most suited for AV equipment like DVD.
- Compliant to the RoHS directive (2011/65/EU).

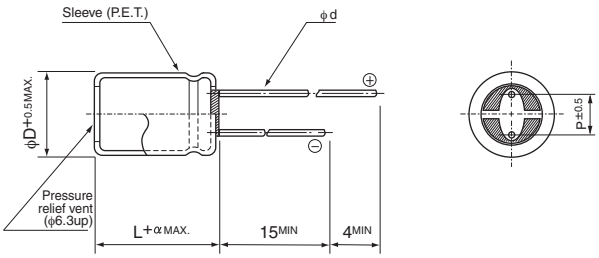
Values marked with an ※ in the dimension table are scheduled to be discontinued and are not recommended for new designs.

UKZ ← High Grade **UFG** High Grade → UFW

■Specifications

Item	Performance Characteristics
Category Temperature Range	−40 to +85°C
Rated Voltage Range	6.3 to 100V
Rated Capacitance Range	0.1 to 10000μF
Capacitance Tolerance	±20% at 120Hz, 20°C
Leakage Current	After 1 minute's application of rated voltage at 20°C, leakage current is not more than 0.01CV or 3 (μA) , whichever is greater.
Tangent of loss angle (tan δ)	Measurement frequency : 120Hz at 20°C Rated voltage (V): 6.3 / 10 / 16 / 25 / 35 / 50 / 63 / 80 / 100 tan δ (MAX.): 0.22 / 0.19 / 0.16 / 0.14 / 0.12 / 0.10 / 0.09 / 0.09 / 0.08 For capacitance of more than 1000μF add 0.02 for every increase of 1000μF.
Stability at Low Temperature	Measurement frequency : 120Hz Rated voltage (V): 6.3 / 10 / 16 / 25 / 35 / 50 / 63 / 80 / 100 Impedance ratio ZT / Z20 (MAX.) Z−25°C / Z+20°C: 4 / 3 / 2 / 2 / 2 / 2 / 2 / 2 / 2 Impedance ratio ZT / Z20 (MAX.) Z−40°C / Z+20°C: 8 / 6 / 4 / 4 / 3 / 3 / 3 / 3 / 3
Endurance	The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 1000 hours at 85°C. Capacitance change: Within ±20% of the initial measurement for units of not more than 16V or φ6.3; Within ±15% of the initial measurement for units of not less than 25V or above φ6.3 tan δ: 150% or less than the initial specified value Leakage current: Less than or equal to the initial specified value
Shelf Life	After storing the capacitors under no load at 85°C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.
Marking	Printed with black color letter on gold sleeve.

■Radial Lead Type



(mm)

φD	5	6.3	8	10	12.5	16	18
P	2.0	2.5	3.5	5.0	5.0	7.5	7.5
φd	0.6	0.6	0.6	0.6	0.8	0.8	0.8

α	(L < 20) 1.5
	(L ≧ 20) 2.0

• Please refer to page 20 about the end seal configuration.

Type numbering system (Example : 10V 47μF)

1	2	3	4	5	6	7	8	9	10	11
U	F	G	1	A	4	7	0	M	D	M

Configuration
Capacitance tolerance (±20%)
Rated capacitance (47μF)
Rated voltage (10V)
Series name
Type

φD	Code
5	DM
6.3	EM
8 · 10	PM
12.5 to 18	HM

Please refer to page 20, 21, 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.

● Dimension table in next page.

UFG

■ Dimensions

Cap.(μF) \ V	Code	6.3		10		16		25		35		50	
		0J		1A		1C		1E		1V		1H	
0.1	0R1											※5×11	1.1
0.22	R22											※5×11	2.4
0.33	R33											※5×11	3.6
0.47	R47											※5×11	5.0
1	010											5×11	9.0
2.2	2R2											5×11	18
3.3	3R3											5×11	22
4.7	4R7											5×11	27
10	100											5×11	39
22	220							5×11	50	6.3×11	60	6.3×11	65
33	330					5×11	57	6.3×11	70	6.3×11	75	8×11.5	93
47	470			5×11	60	6.3×11	74	6.3×11	85	8×11.5	101	8×11.5	111
100	101			6.3×11	99	8×11.5	128	8×11.5	140	10×12.5	176	10×16	215
220	221			8×11.5	170	10×12.5	226	10×16	260	10×20	320	12.5×20	390
330	331			10×12.5	247	10×16	309	10×20	351	12.5×20	446	12.5×20	488
470	471	10×12.5	270	10×16	330	10×20	406	12.5×20	476	12.5×25	590	16×25	650
1000	102	10×20	485	12.5×20	601	12.5×25	723	16×25	854	16×25	1060	16×31.5	1143
2200	222	12.5×25	867	16×25	1047	16×25	1290	16×35.5	1570	18×35.5	1840		
3300	332	16×25	1135	16×31.5	1520	16×35.5	1720	18×40	1794				
4700	472	16×31.5	1431	16×35.5	1840	18×35.5	2140						
6800	682	18×35.5	1810	18×40	2049								
10000	103	18×40	2100										

Cap.(μF) \ V	Code	63		80		100	
		1J		1K		2A	
0.1	0R1					※5×11	2.3
0.22	R22					※5×11	5.5
0.33	R33					※5×11	8.0
0.47	R47					※5×11	10
1	010					5×11	15
2.2	2R2					5×11	22
3.3	3R3					5×11	27
4.7	4R7					5×11	36
10	100	6.3×11	50	6.3×11	55	8×11.5	65
22	220	8×11.5	85	8×11.5	100	10×12.5	110
33	330	8×11.5	105	10×12.5	130	10×16	150
47	470	10×12.5	140	10×16	170	10×20	190
100	101	10×20	255	12.5×20	270	12.5×20	300
220	221	12.5×20	420	12.5×25	490	16×25	549
330	331	12.5×25	541	16×31.5	650	16×31.5	734
470	471	16×25	840	16×35.5	920	18×35.5	980
1000	102	18×35.5	1400			Case size φD×L (mm)	Rated ripple

Rated ripple current (mArms) at 85°C 120Hz

● Frequency coefficient of rated ripple current

Cap.(μF) \ Frequency	50Hz	120Hz	300Hz	1kHz	10kHz or more
0.1 to 47	0.75	1.00	1.35	1.57	2.00
100 to 470	0.80	1.00	1.23	1.34	1.50
1000 to 10000	0.85	1.00	1.10	1.13	1.15

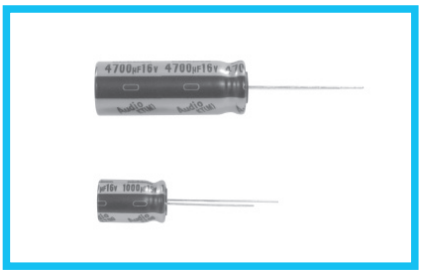
nichicon

UKT

For General Audio Equipment, Wide Temperature Range.

For Audio Use | Anti-Solvent Feature

UKA
High Sound Quality
UKT
High Sound Quality
UVZ



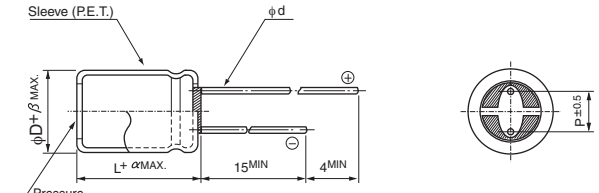
- 105°C standard for audio equipment.
- Compliant to the RoHS directive (2011/65/EU).

Values marked with an ※ in the dimension table are scheduled to be discontinued and are not recommended for new designs.

■Specifications

Item	Performance Characteristics
Category Temperature Range	−55 to +105°C
Rated Voltage Range	6.3 to 50V
Rated Capacitance Range	0.1 to 33000μF
Capacitance Tolerance	±20% at 120Hz, 20°C
Leakage Current	After 1 minute's application of rated voltage at 20°C, leakage current is not more than 0.03CV or 4 (μA) , whichever is greater. After 2 minutes' application of rated voltage at 20°C, leakage current is not more than 0.01CV or 3 (μA) , whichever is greater.
Tangent of loss angle (tan δ)	Rated voltage (V): 6.3 / 10 / 16 / 25 / 35 / 50 tan δ (MAX.): 0.30 / 0.26 / 0.22 / 0.18 / 0.16 / 0.14 Measurement frequency : 120Hz at 20°C For capacitance of more than 1000μF, add 0.02 for every increase of 1000μF
Stability at Low Temperature	Rated voltage (V): 6.3 / 10 / 16 / 25 / 35 / 50 Impedance ratio ZT / Z20 (MAX.): Z−25°C / Z+20°C: 5 / 4 / 3 / 2 / 2 / 2; Z−40°C / Z+20°C: 10 / 8 / 6 / 4 / 3 / 3 Measurement frequency : 120Hz
Endurance	The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 1000 hours at 105°C. Capacitance change: Within ±20% of the initial capacitance value tan δ: 200% or less than the initial specified value Leakage current: Less than or equal to the initial specified value
Shelf Life	After storing the capacitors under no load at 105°C tor 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.
Marking	Printed with black color letter on pearl blue sleeve.

■Radial Lead Type



(mm)

φD	5	6.3	8	10	12.5(25L or smaller)	12.5(31.5L or greater)	16	18	20	22	25
P	2.0	2.5	3.5	5.0	5.0	5.0	7.5	7.5	10.0	10.0	12.5
φd	0.5	0.5	0.6	0.6	0.6	0.8	0.8	0.8	1.0	1.0	1.0
β	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.0	1.0
α	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	2.0	2.0

Type numbering system (Example : 16V 1000μF)

1	2	3	4	5	6	7	8	9	10	11
U	K	T	1	C	1	0	2	M	P	D

- 11: Configuration※
- 9: Capacitance tolerance (±20%)
- 6–8: Rated capacitance (1000μF)
- 5: Rated voltage (16V)
- 1–3: Series name
- 4: Type

※Configuration

φ D	Pb-free leadwire Pb-free PET sleeve
5	DD
6.3	ED
8 . 10	PD
12.5 to 18	HD
20 to 25	RD

■Dimensions

• Please refer to page 20 about the end seal configuration.

Cap.(μF) \ V	code	6.3		10		16		25		35		50	
		0J		1A		1C		1E		1V		1H	
0.1	0R1											※5 X 11	1.3
0.22	R22											※5 X 11	2.9
0.33	R33											※5 X 11	4.3
0.47	R47											※5 X 11	7.0
1	010											※5 X 11	13
2.2	2R2											5 X 11	20
3.3	3R3											5 X 11	25
4.7	4R7							5 X 11	25	5 X 11	28	5 X 11	30
10	100					5 X 11	35	5 X 11	36	5 X 11	41	5 X 11	46
22	220	5 X 11	45	5 X 11	45	5 X 11	54	5 X 11	58	5 X 11	61	5 X 11	68
33	330	5 X 11	55	5 X 11	58	5 X 11	65	5 X 11	68	5 X 11	75	5 X 11	90
47	470	5 X 11	65	5 X 11	68	5 X 11	79	5 X 11	83	5 X 11	93	6.3 X 11	115
100	101	5 X 11	95	5 X 11	105	5 X 11	115	6.3 X 11	140	6.3 X 11	150	8 X 11.5	190
220	221	6.3 X 11	160	6.3 X 11	175	6.3 X 11	190	8 X 11.5	240	8 X 11.5	260	10 X 12.5	300
330	331	6.3 X 11	195	8 X 11.5	240	8 X 11.5	265	8 X 11.5	290	10 X 12.5	350	10 X 16	410
470	471	8 X 11.5	270	8 X 11.5	280	8 X 11.5	315	10 X 12.5	380	10 X 16	460	12.5 X 20	530
1000	102	10 X 12.5	420	10 X 16	500	10 X 16	560	10 X 20	680	12.5 X 25	860	12.5 X 31.5	1040
2200	222	10 X 20	710	12.5 X 20	810	12.5 X 20	920	12.5 X 31.5	1200	12.5 X 40	1260	16 X 35.5	1470
3300	332	12.5 X 20	910	12.5 X 25	1050	12.5 X 31.5	1270	12.5 X 35.5	1400	16 X 35.5	1610	18 X 35.5	1770
4700	472	12.5 X 25	1120	12.5 X 35.5	1300	12.5 X 35.5	1480	16 X 31.5	1710	18 X 35.5	1910	20 X 40	2100
6800	682	12.5 X 35.5	1360	12.5 X 40	1570	16 X 31.5	1780	18 X 35.5	2040	20 X 40	2150	22 X 50	2500
10000	103	12.5 X 40	1650	16 X 35.5	1890	18 X 35.5	2060	20 X 40	2150	22 X 50	2650		
15000	153	16X 35.5	2010	18 X 40	2400	20 X 40	2430	22 X 50	2750			Case size φD x L (mm)	Rated ripple
22000	223	18X 40	2350	22 X 40	2650	22 X 50	3000						
33000	333	22X 50	2800	25 X 50	2880								

Rated ripple current (mArms) at 105°C 120Hz

• Frequency coefficient of rated ripple current

Cap.(μF) \ Frequency	50Hz	120Hz	300Hz	1kHz	10kHz or more
0.1 to 47	0.75	1.00	1.35	1.57	2.00
100 to 470	0.80	1.00	1.23	1.34	1.50
1000 to 33000	0.85	1.00	1.10	1.13	1.15

Please refer to page 20, 21, 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.

nichicon

UKW

Standard, For Audio Equipment

For Audio Use Anti-Solvent Feature

- Realization of a harmonious balance of sound quality, made possible by the development of new electrolyte.
- Most suited for AV equipment like DVD, MD.
- Compliant to the RoHS directive (2011/65/EU).

Values marked with an ※ in the dimension table are scheduled to be discontinued and are not recommended for new designs.

UKW

High Sound Quality

UFW

■Specifications

Item	Performance Characteristics
Category Temperature Range	−40 to +85°C
Rated Voltage Range	6.3 to 100V
Rated Capacitance Range	0.1 to 33000μF
Capacitance Tolerance	±20% at 120Hz, 20°C
Leakage Current	After 1 minute's application of rated voltage at 20°C, leakage current is not more than 0.03 CV or 4 (μA) , whichever is greater. After 2 minutes' application of rated voltage at 20°C, leakage current is not more than 0.01 CV or 3 (μA) , whichever is greater.
Tangent of loss angle (tan δ)	Measurement frequency : 120Hz at 20°C

Rated voltage (V)	6.3	10	16	25	35	50	63	100
tan δ (MAX.)	0.28	0.24	0.20	0.16	0.14	0.12	0.10	0.08

For capacitance of more than 1000μF, add 0.02 for every increase of 1000μF.

Stability at Low Temperature

Measurement frequency : 120Hz

Rated voltage (V)		6.3	10	16	25	35	50	63	100
Impedance ratio ZT / Z20 (MAX.)	Z−25°C / Z+20°C	5	4	3	2	2	2	2	2
	Z−40°C / Z+20°C	12	10	8	5	4	3	3	3

Endurance

The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 2000 hours at 85°C.

Capacitance change	Within ±20% of the initial capacitance value
tan δ	200% or less than the initial specified value
Leakage current	Less than or equal to the initial specified value

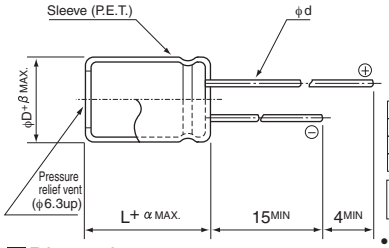
Shelf Life

After sroring the capacitors under no load at 85°C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.

Marking

Printed with gold color letter on black sleeve.

■Radial Lead Type



(mm)

φD	5	6.3	8	10	12.5	16	18	20	22	25
P	2.0	2.5	3.5	5.0	5.0	7.5	7.5	10	10	12.5
φd	0.5	0.5	0.6	0.6	0.6	0.8	0.8	1.0	1.0	1.0
β	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.0	1.0

α	
	(φD < 20) 1.5
	(φD ≧ 20) 2.0

Type numbering system (Example : 10V 1000μF)

1	2	3	4	5	6	7	8	9	10	11
U	K	W	1	A	1	0	2	M	P	D

Configuration

Capacitance tolerance (±20%)

Rated capacitance (1000μF)

Rated voltage (10V)

Series name

Type

φ D	Pb-free leadwire Pb-free PET sleeve
5	DD
6.3	ED
8 ·10	PD
12.5 to 18	HD
20 to 25	RD

• Please refer to page 20 about the end seal configuration.

■Dimensions

Cap. (μF) \ V	6.3		10		16		25		35		50		63		100	
Code	0J		1A		1C		1E		1V		1H		1J		2A	
0.1	0R1										※5×11	1.1			※5×11	2.1
0.22	R22										※5×11	2.4			※5×11	4.7
0.33	R33										※5×11	3.5			※5×11	7.0
0.47	R47										※5×11	5.0			※5×11	10
1	010										※5×11	10			※5×11	21
2.2	2R2										5×11	23			5×11	30
3.3	3R3										5×11	35			5×11	40
4.7	4R7										5×11	40			5×11	45
10	100										5×11	65	5×11	70	6.3×11	75
22	220										5×11	95	5×11	100	6.3×11	120
33	330								5×11	105	5×11	120	6.3×11	140	8×11.5	160
47	470						5×11	115	5×11	120	6.3×11	150	6.3×11	165	10×12.5	210
100	101		5×11	145	5×11	155	6.3×11	185	6.3×11	200	8×11.5	250	10×12.5	300	10×20	350
220	221		6.3×11	230	6.3×11	250	8×11.5	320	10×12.5	370	10×12.5	410	10×16	470	12.5×25	600
330	331	6.3×11	6.3×11	270	8×11.5	360	10×12.5	420	10×12.5	470	10×16	570	10×20	650	12.5×25	750
470	471	6.3×11	6.3×11	330	8×11.5	420	10×12.5	530	10×16	630	12.5×20	760	12.5×20	880	16×25	1000
1000	102	8×11.5	10×12.5	630	10×16	770	10×20	950	12.5×20	1100	12.5×25	1300	16×25	1300	18×40	1370
2200	222	10×20	10×20	1050	12.5×20	1250	12.5×25	1550	16×25	1800	16×35.5	2090	18×35.5	2200	22×50	2400
3300	332	10×20	12.5×20	1420	12.5×25	1700	16×25	1950	16×35.5	2220	18×35.5	2360	20×40	2700	25×50	2900
4700	472	12.5×20	12.5×25	1800	16×25	2100	16×31.5	2360	18×35.5	2490	20×40	2900	22×50	3400		
6800	682	12.5×25	16×25	2150	16×35.5	2500	18×35.5	2590	20×40	3000	22×50	3500	25×50	3500		
10000	103	16×25	16×35.5	2500	18×35.5	2640	20×40	3000	22×50	3700	25×50	4000				
15000	153	16×35.5	18×35.5	2720	20×40	3400	22×50	3800	25×50	4300						
22000	223	18×40	20×40	3700	22×50	4200	25×50	4500								
33000	333	22×50	22×50	4500	25×50	4800										

Case size φD × L (mm) | Rated ripple

● Frequency coefficient of rated ripple current

Rated ripple current (mArms) at 85°C 120Hz

Cap.(μF) \ Frequency	50Hz	120Hz	300Hz	1kHz	10kHz or more
0.1 to 47	0.75	1.00	1.35	1.57	2.00
100 to 470	0.80	1.00	1.23	1.34	1.50
1000 to 33000	0.85	1.00	1.10	1.13	1.15

Please refer to page 20, 21, 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.

nichicon

UFW

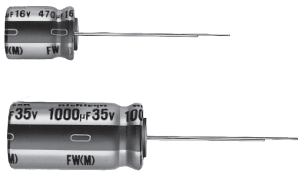
Standard, For Audio Equipment

Smaller | For Audio Use | Anti-Solvent Feature

● Compliant to the RoHS directive (2011/65/EU).

Values marked with an ※ in the dimension table are scheduled to be discontinued and are not recommended for new designs.

UKW (High Sound Quality) / UFG (High Grade) / UFW



■Specifications

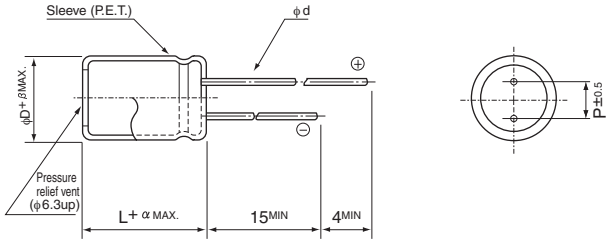
Item	Performance Characteristics
Category Temperature Range	−40 to +85°C
Rated Voltage Range	6.3 to 100V
Rated Capacitance Range	0.1 to 33000μF
Capacitance Tolerance	±20% at 120Hz, 20°C
Leakage Current	After 1 minute's application of rated voltage at 20°C, leakage current is not more than 0.03 CV or 4 (μA) , whichever is greater. After 2 minutes' application of rated voltage at 20°C, leakage current is not more than 0.01 CV or 3 (μA) , whichever is greater.
Tangent of loss angle (tan δ)	Measurement frequency : 120Hz at 20°C For capacitance of more than 1000μF, add 0.02 for every increase of 1000μF.
Stability at Low Temperature	Measurement frequency : 120Hz
Endurance	The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 2000 hours at 85°C.
Shelf Life	After storing the capacitors under no load at 85°C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.
Marking	Printed with black color letter on Gold sleeve.

Rated voltage (V)	6.3	10	16	25	35	50	63	100
tan δ (MAX.)	0.28	0.24	0.20	0.16	0.14	0.12	0.10	0.08

Rated voltage (V)		6.3	10	16	25	35	50	63	100
Impedance ratio ZT / Z20 (MAX.)	Z−25°C / Z+20°C	5	4	3	2	2	2	2	2
	Z−40°C / Z+20°C	12	10	8	5	4	3	3	3

Capacitance change	Within ±20% of the initial capacitance value
tan δ	200% or less than the initial specified value
Leakage current	Less than or equal to the initial specified value

■Radial Lead Type



(mm)

φD	5	6.3	8	10	12.5	16	18	20	22	25
P	2.0	2.5	3.5	5.0	5.0	7.5	7.5	10	10	12.5
φd	0.5	0.5	0.6	0.6	0.6	0.8	0.8	1.0	1.0	1.0
β	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.0	1.0

α	(φD < 20) 1.5
	(φD ≧ 20) 2.0

Type numbering system (Example : 10V 1000μF)

1	2	3	4	5	6	7	8	9	10	11
U	F	W	1	A	1	0	2	M	P	D

Configuration ※
Capacitance tolerance (±20%)
Rated capacitance (1000μF)
Rated voltage (10V)
Series name
Type

※Configuration

φ D	Pb-free leadwire Pb-free PET sleeve
5	DD
6.3	ED
8 ·10	PD
12.5 to 18	HD
20 to 25	RD

• Please refer to page 20 about the end seal configuration.

Please refer to page 20, 21, 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.

●Dimension table in next page.

UFW

■Dimensions

Cap.(μF) \ V	6.3		10		16		25		35		50		63		100	
Code	0J		1A		1C		1E		1V		1H		1J		2A	
0.1	0R1										※5×11	1.1			※5×11	2.1
0.22	R22										※5×11	2.4			※5×11	4.7
0.33	R33										※5×11	3.5			※5×11	7.0
0.47	R47										※5×11	5.0			※5×11	10
1	010										※5×11	10			※5×11	21
2.2	2R2										5×11	23			5×11	30
3.3	3R3										5×11	35			5×11	40
4.7	4R7										5×11	40			5×11	45
10	100										5×11	65	5×11	70	6.3×11	75
22	220										5×11	95	5×11	100	6.3×11	120
33	330								5×11	105	5×11	120	6.3×11	140	8×11.5	160
47	470						5×11	115	5×11	120	6.3×11	150	6.3×11	165	10×12.5	210
100	101			5×11	145	5×11	155	6.3×11	185	6.3×11	200	8×11.5	250	10×12.5	300	10×20	350
220	221			6.3×11	230	6.3×11	250	8×11.5	320	10×12.5	370	10×12.5	410	10×16	470	12.5×25	600
330	331	6.3×11	265	6.3×11	270	8×11.5	360	10×12.5	420	10×12.5	470	10×16	570	10×20	650	12.5×25	750
470	471	6.3×11	310	6.3×11	330	8×11.5	420	10×12.5	530	10×16	630	12.5×20	760	12.5×20	880	16×25	1000
1000	102	8×11.5	530	10×12.5	630	10×16	770	10×20	950	12.5×20	1100	12.5×25	1300	16×25	1300	18×40	1370
2200	222	10×20	980	10×20	1050	12.5×20	1250	12.5×25	1550	16×25	1800	16×35.5	2090	18×35.5	2200	22×50	2400
3300	332	10×20	1170	12.5×20	1420	12.5×25	1700	16×25	1950	16×35.5	2220	18×35.5	2360	20×40	2700	25×50	2900
4700	472	12.5×20	1350	12.5×25	1800	16×25	2100	16×31.5	2360	18×35.5	2490	20×40	2900	22×50	3400		
6800	682	12.5×25	1600	16×25	2150	16×35.5	2500	18×35.5	2590	20×40	3000	22×50	3500	25×50	3500		
10000	103	16×25	2000	16×35.5	2500	18×35.5	2640	20×40	3000	22×50	3700	25×50	4000				
15000	153	16×35.5	2550	18×35.5	2720	20×40	3400	22×50	3800	25×50	4300						
22000	223	18×40	3200	20×40	3700	22×50	4200	25×50	4500								
33000	333	22×50	3900	22×50	4500	25×50	4800									Case size φD x L (mm)	Rated ripple

Rated ripple current (mArms) at 85°C 120Hz

● Frequency coefficient of rated ripple current

Cap.(μF) \ Frequency	50Hz	120Hz	300Hz	1kHz	10kHz or more
0.1 to 47	0.75	1.00	1.35	1.57	2.00
100 to 470	0.80	1.00	1.23	1.34	1.50
1000 to 33000	0.85	1.00	1.10	1.13	1.15

nichicon

USW

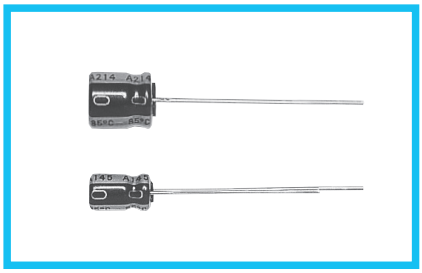
7mmL, For Audio Equipment

For Audio Use Anti-Solvent Feature

- Acoustic series, with 7mm height.
- Compliant to the RoHS directive (2011/65/EU).

Values marked with an ※ in the dimension table are scheduled to be discontinued and are not recommended for new designs.

USW → Smaller → UMW



■Specifications

Item	Performance Characteristics
Category Temperature Range	−40 to +85˚C
Rated Voltage Range	6.3 to 50V
Rated Capacitance Range	0.1 to 220μF
Capacitance Tolerance	±20% at 120Hz, 20˚C
Leakage Current	After 2 minutes' application of rated voltage at 20°C, leakage current is not more than 0.01CV or 3 (μA) , whichever is greater.
Tangent of loss angle (tan δ)	Measurement frequency : 120Hz at 20°C

Rated voltage (V)	6.3	10	16	25	35	50
tan δ (MAX.)	0.24	0.20	0.16	0.14	0.12	0.10

Stability at Low Temperature — Measurement frequency : 120Hz

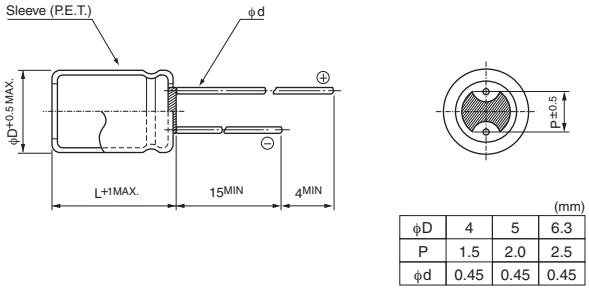
Rated voltage (V)		6.3	10	16	25	35	50
Impedance ratio ZT / Z20 (MAX.)	Z−25˚C / Z+20˚C	4	3	2	2	2	2
	Z−40˚C / Z+20˚C	8	6	4	4	3	3

Endurance — The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 1000 hours at 85°C.

Capacitance change	Within ±20% of the initial capacitance value
tan δ	200% or less than the initial specified value
Leakage current	Less than or equal to the initial specified value

Shelf Life	After storing the capacitors under no load at 85°C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.
Marking	Printed with black color letter on gold sleeve.

■Radial Lead Type



(mm)

φD	4	5	6.3
P	1.5	2.0	2.5
φd	0.45	0.45	0.45

Type numbering system (Example : 10V 33μF)

1	2	3	4	5	6	7	8	9	10	11
U	S	W	1	A	3	3	0	M	D	D

- 11: Configuration※
- 9–10: Capacitance tolerance (±20%)
- 6–8: Rated capacitance (33μF)
- 4–5: Rated voltage (10V)
- 3: Series name
- 1–2: Type

※Configuration

φD	Pb-free leadwire Pb-free PET sleeve
4 to 6.3	DD

■Dimensions

Cap.(μF) \ V	6.3		10		16		25		35		50	
Code	0J		1A		1C		1E		1V		1H	
0.1	0R1										※4 × 7	1.0
0.22	R22										※4 × 7	2.3
0.33	R33										※4 × 7	3.5
0.47	R47										※4 × 7	5.0
1	010										4 × 7	10
2.2	2R2										4 × 7	19
3.3	3R3										4 × 7	24
4.7	4R7								4 × 7	24	4 × 7	28
10	100				4 × 7	28	4 × 7	28	4 × 7	31	5 × 7	38
22	220	4 × 7	34	4 × 7	35	4 × 7	39	5 × 7	48	5 × 7	52	6.3 × 7	58
33	330	4 × 7	40	4 × 7	43	5 × 7	55	5 × 7	58	6.3 × 7	65		
47	470	4 × 7	48	5 × 7	59	5 × 7	65	6.3 × 7	71				
100	101	5 × 7	78	6.3 × 7	87	6.3 × 7	98					Case size φD × L (mm)	Rated ripple
220	221	6.3 × 7	120										

Rated ripple current (mArms) at 85°C 120Hz

● Frequency coefficient of rated ripple current

Frequency	50Hz	120Hz	300Hz	1kHz	10kHz or more
Coefficient	0.70	1.00	1.17	1.36	1.50

Please refer to page 20, 21, 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.

nichicon

UMW

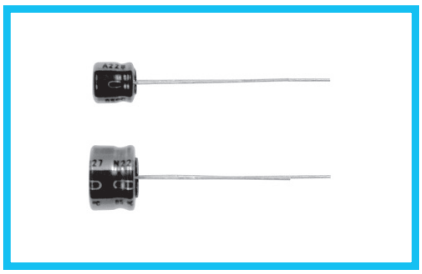
5mmL, For General Audio Equipment

For Audio Use | Anti-Solvent Feature

- Acoustic series, with 5mm height.
- Compliant to the RoHS directive (2011/65/EU).

Values marked with an ※ in the dimension table are scheduled to be discontinued and are not recommended for new designs.

USW
Smaller
UMW



■Specifications

Item	Performance Characteristics
Category Temperature Range	−40 to +85°C
Rated Voltage Range	4 to 50V
Rated Capacitance Range	0.1 to 470μF
Capacitance Tolerance	±20% at 120Hz, 20°C
Leakage Current	After 2 minutes' application of rated voltage at 20°C, leakage current is not more than 0.01CV or 3 (μA) , whichever is greater.
Tangent of loss angle (tan δ)	Measurement frequency : 120Hz at 20°C

Rated voltage (V)	4	6.3	10	16	25	35	50
tan δ (MAX.)	0.35	0.24	0.20	0.16	0.14	0.12	0.10

Stability at Low Temperature — Measurement frequency : 120Hz

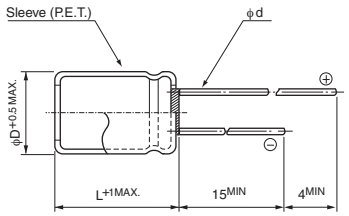
Rated voltage (V)		4	6.3	10	16	25	35	50
Impedance ratio ZT / Z20 (MAX.)	Z−25°C / Z+20°C	7	4	3	2	2	2	2
	Z−40°C / Z+20°C	15	8	6	4	4	3	3

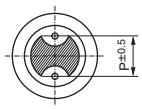
Endurance — The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 1000 hours at 85°C.

Capacitance change	Within ±20% of the initial capacitance value
tan δ	200% or less than the initial specified value
Leakage current	Less than or equal to the initial specified value

Shelf Life	After storing the capacitors under no load at 85°C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.
Marking	Printed with black color letter on gold sleeve.

■Radial Lead Type





(mm)

φD	4	5	6.3	8
P	1.5	2.0	2.5	2.5
φd	0.45	0.45	0.45	0.45

Type numbering system (Example : 25V 10μF)

1	2	3	4	5	6	7	8	9	10	11
U	M	W	1	E	1	0	0	M	D	D

- 11: Configuration※
- 10: Capacitance tolerance (±20%)
- 9: Rated capacitance (10μF)
- 8: Rated voltage (25V)
- 5: Series name
- 1: Type

※Configuration

φ D	Pb-free leadwire Pb-free PET sleeve
4 to 8	DD

■Dimensions

Cap.(μF) \ V	code	4		6.3		10		16		25		35		50	
		0G		0J		1A		1C		1E		1V		1H	
0.1	0R1													※4×5	1.0
0.22	R22													※4×5	2.0
0.33	R33													※4×5	2.8
0.47	R47													※4×5	4.0
1	010													4×5	8.4
2.2	2R2													4×5	13
3.3	3R3											4×5	15	4×5	17
4.7	4R7									4×5	16	4×5	18	5×5	20
10	100							4×5	23	5×5	27	5×5	29	6.3×5	33
22	220			4×5	28	5×5	33	5×5	37	6.3×5	42	6.3×5	46	8×5	52
33	330	4×5	28	5×5	37	5×5	41	6.3×5	49	6.3×5	52	8×5	62	8×5	71
47	470	4×5	33	5×5	45	6.3×5	52	6.3×5	58	8×5	70	8×5	80		
100	101	5×5	56	6.3×5	70	8×5	80	8×5	92	8×5	110				
220	221	6.3×5	96	8×5	110	8×5	135								
330	331	8×5	145	8×5	170									Case size φD×L (mm)	Rated ripple
470	471	8×5	185												

Rated ripple current(mArms) at 85°C 120Hz

●Frequency coefficient of rated ripple current

Frequency	50 Hz	120 Hz	300 Hz	1 kHz	10 kHz or more
Coefficient	0.70	1.00	1.17	1.36	1.50

Please refer to page 20, 21, 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.

nichicon

UUQ

Chip Type, For Audio Equipment
Wide Temperature Range

For SMD | For Audio Use | Anti-Solvent Feature

- Chip type acoustic series within the wide temperature range.
- Applicable to automatic mounting machine fed with carrier tape.
- Compliant to the RoHS directive (2011/65/EU)

Values marked with an ※ in the dimension table are scheduled to be discontinued and are not recommended for new designs.

UUQ ← Chip type → UMW

■Specifications

Item	Performance Characteristics
Category Temperature Range	−40 to +105°C
Rated Voltage Range	6.3 to 50V
Rated Capacitance Range	0.1 to 1000μF
Capacitance Tolerance	±20% (120Hz, 20°C)
Leakage Current	After 1 minute's application of rated voltage at 20°C, leakage current is not more than 0.03 CV or 4 (μA) , whichever is greater.
Tangent of loss angle (tan δ)	Measurement frequency : 120Hz at 20°C

Rated voltage (V)	6.3	10	16	25	35	50
tan δ (MAX.)	0.30	0.26	0.22	0.16	0.13	0.12

Stability at Low Temperature — Measurement frequency : 120Hz

Rated voltage (V)		6.3	10	16	25	35	50
Impedance ratio ZT / Z20 (MAX.)	Z−25°C / Z+20°C	4	3	2	2	2	2
	Z−40°C / Z+20°C	8	5	4	3	3	3

Endurance — The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 1000 hours at 105°C.

Capacitance change	Within ±20% of the initial capacitance value
tan δ	200% or less than the initial specified value
Leakage current	Less than or equal to the initial specified value

Shelf Life — After storing the capacitors under no load at 105°C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.

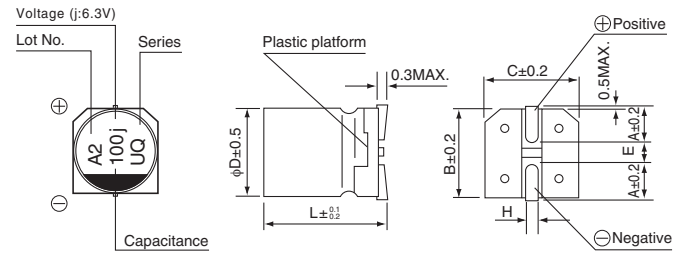
Resistance to soldering heat — The capacitors are kept on a hot plate for 30 seconds, which is maintained at 250°C. The capacitors shall meet the characteristic requirements listed at right when they are removed from the plate and restored to 20°C.

Capacitance change	Within ±10% of the initial capacitance value
tan δ	Less than or equal to the initial specified value
Leakage current	Less than or equal to the initial specified value

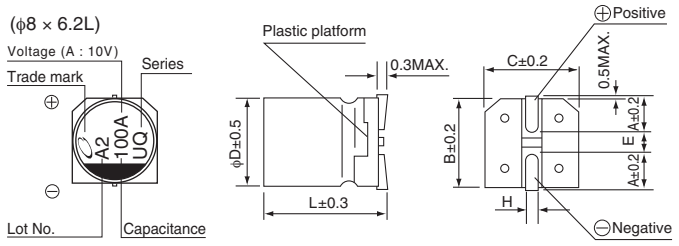
Marking — Black print on the case top.

■Chip Type

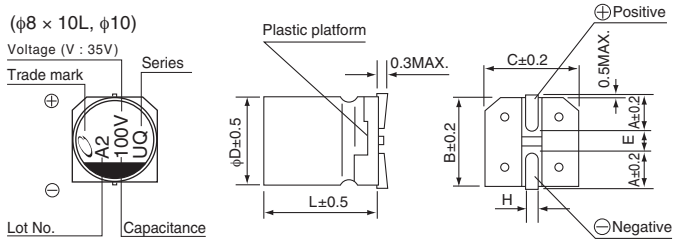
(φ4 to φ6.3)



(φ8 × 6.2L)



(φ8 × 10L, φ10)



● Dimension table in next page.

Type numbering system (Example : 6.3V 100μF)

1	2	3	4	5	6	7	8	9	10	11	12	13	14
U	U	Q	0	J	1	0	1	M	C	L	1	G	B

Taping code
Size code
Configuration
Capacitance tolerance (±20%)
Rated capacitance (100μF)
Rated voltage (6.3V)
Series name
Type

φD	code
4 to 6.3	GB
8・10	GS

(mm)

φD × L	4 × 5.4	5 × 5.4	6.3 × 5.4	8 × 6.2	8 × 10	10 × 10
A	1.8	2.1	2.4	3.3	2.9	3.2
B	4.3	5.3	6.6	8.3	8.3	10.3
C	4.3	5.3	6.6	8.3	8.3	10.3
E	1.0	1.3	2.2	2.3	3.1	4.5
L	5.4	5.4	5.4	6.2	10	10
H	0.5 to 0.8	0.5 to 0.8	0.5 to 0.8	0.5 to 0.8	0.8 to 1.1	0.8 to 1.1

Rated voltage

V	6.3	10	16	25	35	50
Code	j	A	C	E	V	H

UUQ

■Dimensions

V / Cap.(μF)	Code	6.3 0J		10 1A		16 1C		25 1E		35 1V		50 1H	
0.1	0R1											※4 × 5.4	1.0
0.22	R22											※4 × 5.4	2.6
0.33	R33											※4 × 5.4	3.2
0.47	R47											※4 × 5.4	3.8
1	010											4 × 5.4	6.2
2.2	2R2											4 × 5.4	11
3.3	3R3											4 × 5.4	14
4.7	4R7							4 × 5.4	13	4 × 5.4	15	5 × 5.4	19
10	100			4 × 5.4	22	4 × 5.4	18	5 × 5.4	23	5 × 5.4	25	6.3 × 5.4	30
22	220	4 × 5.4	22	5 × 5.4	27	5 × 5.4	30	6.3 × 5.4	38	6.3 × 5.4	42	8 × 6.2	51
33	330	5 × 5.4	30	5 × 5.4	35	6.3 × 5.4	40	6.3 × 5.4	48	8 × 6.2	59	8 × 10	140
47	470	5 × 5.4	36	6.3 × 5.4	46	6.3 × 5.4	50	8 × 6.2	66	8 × 10	155	8 × 10	180
100	101	6.3 × 5.4	60	○6.3 × 5.4	60 (90)	● 8 × 6.2	102 (210)	8 × 10	155	10 × 10	300	10 × 10	220
220	221	● 8 × 6.2	102 (210)	● 8 × 6.2	102 (210)	△8 × 10	210 (310)	10 × 10	300	10 × 10	300		
330	331	● 8 × 6.2	102 (210)	△ 8 × 10	210 (310)	△8 × 10	210 (310)						
470	471	△8 × 10	210 (310)	△ 8 × 10	210 (310)	△8 × 10	210 (310)					Case size φD × L (mm)	Rated ripple
1000	102	10 × 10	310										

Size φ8 × 6.2L is available for capacitors marked "○".
Size φ8 × 10L is available for capacitors marked "●".
Size φ10 × 10L is available for capacitors marked "△".
※In this case, 6 will be put at 12th digit of type numbering system.

Rated ripple current (mArms) at 105°C 120Hz

● Frequency coefficient of rated ripple current

Frequency	50 Hz	120 Hz	300 Hz	1 kHz	10 kHz or more
Coefficient	0.70	1.00	1.17	1.36	1.50

- Taping specifications are given in page 23.
- Recommended land size, soldering by reflow are given in page 18, 19.
- Please refer to page 3 for the minimum order quantity.

nichicon

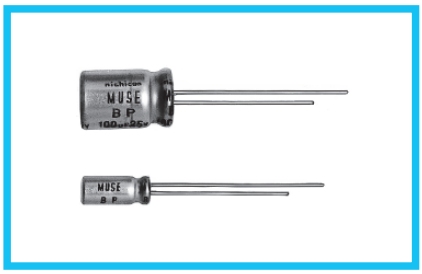
nichicon MUSE UES

Bi-Polarized, For Audio Equipment

For Audio Use | Bi-polarized | Anti-Solvent Feature

- Bi-polarized “nichicon MUSE” acoustic series.
- Suited for audio signal circuits.
- Compliant to the RoHS directive (2011/65/EU).

Values marked with an ※ in the dimension table are scheduled to be discontinued and are not recommended for new designs.



UES ← Bi-polarized UFW

■Specifications

Item	Performance Characteristics
Category Temperature Range	−40 to +85°C
Rated Voltage Range	6.3 to 50V
Rated Capacitance Range	0.47 to 1000μF
Capacitance Tolerance	±20% at 120Hz, 20°C
Leakage Current	After 1 minute's application of rated voltage at 20°C, leakage current is not more than 0.03CV or 3 (μA), whichever is greater.
Tangent of loss angle (tan δ)	Measurement frequency : 120Hz at 20°C

Rated voltage (V)	6.3	10	16	25	35	50
tan δ (MAX.)	0.24	0.20	0.16	0.16	0.14	0.12

Stability at Low Temperature — Measurement frequency : 120Hz

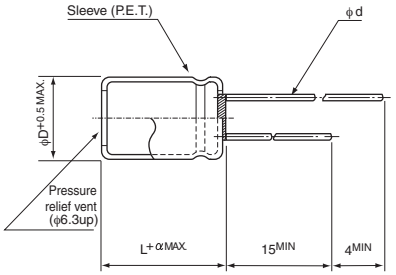
Rated voltage (V)		6.3	10	16	25	35	50
Impedance ratio ZT / Z20 (MAX.)	Z−25°C / Z+20°C	4	3	2	2	2	2
	Z−40°C / Z+20°C	8	6	4	4	4	4

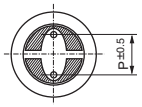
Endurance — The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 1000 hours at 85°C with the polarity inverted every 250 hours.

Capacitance change	Within ±20% of the initial capacitance value
tan δ	150% or less than the initial specified value
Leakage current	Less than or equal to the initial specified value

Shelf Life	After storing the capacitors under no load at 85°C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.
Marking	Printed with black color letter on clear green sleeve.

■Radial Lead Type





(mm)

φD	5	6.3	8	10	12.5	16
P	2.0	2.5	3.5	5.0	5.0	7.5
φd	0.6	0.6	0.6	0.6	0.8	0.8

α	
	(φD < 10) 1.0
	(φD ≧ 10) 1.5

• Please refer to page 20 about the end seal configuration.

Type numbering system (Example : 10V 47μF)

1	2	3	4	5	6	7	8	9	10	11
U	E	S	1	A	4	7	0	M	E	M

Configuration

φD	Code
5	DM
6.3	EM
8 · 10	PM
12.5 · 16	HM

Capacitance tolerance (±20%)
Rated capacitance (47μF)
Rated voltage (10V)
Series name
Type

■Dimensions

φD×L (mm)

Cap.(μF) \ V	Code	6.3	10	16	25	35	50
		0J	1A	1C	1E	1V	1H
0.47	R47						※5×11
1	010						5×11
2.2	2R2						5×11
3.3	3R3						5×11
4.7	4R7				5×11	5×11	6.3×11
10	100			5×11	5×11	6.3×11	8×11.5
22	220		5×11	6.3×11	6.3×11	8×11.5	10×12.5
33	330	5×11	6.3×11	6.3×11	8×11.5	10×12.5	10×16
47	470	6.3×11	6.3×11	8×11.5	10×12.5	10×12.5	10×20
100	101	8×11.5	10×12.5	10×12.5	10×16	10×20	12.5×25
220	221	10×12.5	10×16	10×20	12.5×25	12.5×25	16×25
330	331	10×16	10×20	12.5×20	12.5×25	16×25	16×31.5
470	471	10×20	12.5×20	12.5×25	16×25	16×25	
1000	102	12.5×25	16×25	16×25	16×31.5		

Please refer to page 20, 21, 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.

nichicon

UDB

Bi-Polarized, For Speaker Network

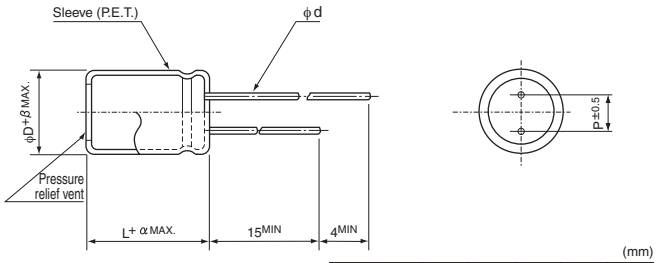
For Audio Use | Bi-polarized | Anti-Solvent Feature

- Bi-polarized series.
- Designed specifically for crossover networks in Hi-Fi sound systems.
- Compliant to the RoHS directive (2011/65/EU).

■Specifications

Item	Performance Characteristics
Category Temperature Range	−40 to +85°C
Rated Voltage Range	50V
Rated Capacitance Tolerance	±20% at 1kHz
Leakage Current (After 5 minutes' application of rated voltage at 20°C)	Leakage current is not more than 0.03CV or 3 (μA), whichever is greater.
Tangent of loss angle (tan δ) (1 kHz) (5 kHz)	0.10 or less 0.15 or less
Allowable Continuous Current (8Ω - fc)	Value in table or less
Marking	Printed with white color letter on black sleeve.

■Radial Lead Type



(mm)

φD	8	10	12.5	16	18	22
P	3.5	5.0	5.0	7.5	7.5	10.0
φd	0.8	0.8	0.8	0.8	0.8	1.0
α	1	1	1	1	1	2
β	0.5	0.5	0.5	0.5	0.5	1

• Please refer to page 20 about the end seal configuration.

■Dimensions

φD × L (mm)

Cap. (μF)	Code	1H (50V)	Allowable Continuous Current (8Ω · fc) Frequency (Hz)	Rated ripple (mArms)
1	010	8 × 11.5	20k	205
1.5	1R5	8 × 11.5	13k	245
2.2	2R2	10 × 12.5	9k	320
3.3	3R3	10 × 16	6k	400
4.7	4R7	10 × 20	4.2k	480
6.8	6R8	12.5 × 20	2.9k	540
10	100	12.5 × 25	2k	600
15	150	12.5 × 25	1.3k	660
22	220	16 × 25	900	740
33	330	16 × 31.5	600	800
47	470	18 × 35.5	420	1020
68	680	22 × 40	290	1200

Type numbering system (Example : UDB 50V 10μF)

1	2	3	4	5	6	7	8	9	10	11
U	D	B	1	H	1	0	0	M	H	M

Configuration
Capacitance tolerance : M(±20%)
Rated capacitance (10μF)
Rated voltage (50V)
Series name
Type

φD	Code
8 · 10	PM
12.5 to 18	HM
22	RM

Please refer to page 20, 21, 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.