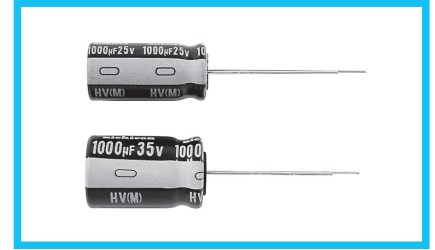
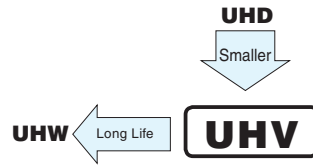


**UHV**

High Ripple Low Impedance



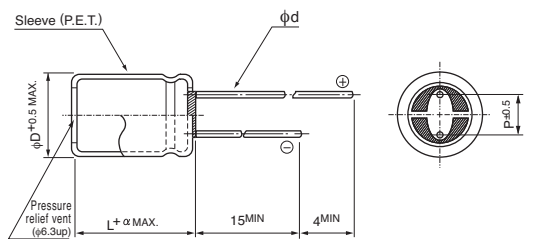
- Lower impedance at high frequency range.
- Smaller case size and high ripple current.
- Compliant to the RoHS directive (2011/65/EU).



## 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<br>ZT / Z20 (MAX.)                                                                                                                                                                                                                        | Z-25°C / Z+20°C | 2    | 2    | 2    | 2    |                    |                                                                  |
|                               |                                                                                                                                                                                                                                                           | Z-40°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 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.                                                                                                                                                                                                          |                 |      |      |      |      |                    |                                                                  |

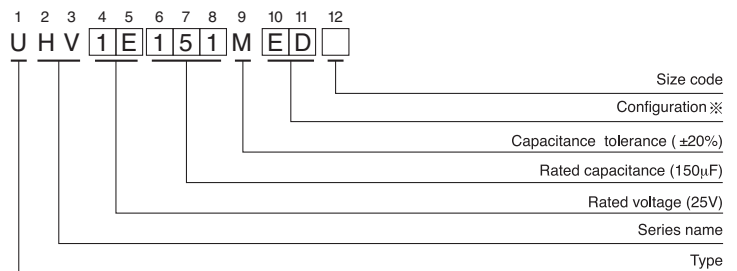
## Radial Lead Type



|   |          | (mm) |     |     |     |      |     |
|---|----------|------|-----|-----|-----|------|-----|
| α | (L < 20) | 1.5  |     |     |     |      |     |
|   | (L ≥ 20) | 2.0  |     |     |     |      |     |
|   |          |      |     |     |     |      |     |
|   | 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. φd = 0.8mm.

## Type numbering system (Example : 25V 150µF)



### ※ Configuration

| φ D       | Pb-free leadwire<br>Pb-free PET sleeve |
|-----------|----------------------------------------|
| 5         | DD                                     |
| 6.3       | ED                                     |
| 8 · 10    | PD                                     |
| 12.5 · 16 | 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.

• Dimension table in next page.

UHV

## ■ Standard Ratings

| Cap.(μF) \ V (Code) \ Item Code |     | 6.3 (0J)                     |                    |                |                                           | 10 (1A)                      |                    |                |                                           | 16 (1C)                      |                    |                |                                           |
|---------------------------------|-----|------------------------------|--------------------|----------------|-------------------------------------------|------------------------------|--------------------|----------------|-------------------------------------------|------------------------------|--------------------|----------------|-------------------------------------------|
|                                 |     | Case size<br>φ D × L<br>(mm) | Impedance (Ω) MAX. |                | Rated ripple<br>(mArms)<br>105°C / 100kHz | Case size<br>φ D × L<br>(mm) | Impedance (Ω) MAX. |                | Rated ripple<br>(mArms)<br>105°C / 100kHz | Case size<br>φ D × L<br>(mm) | Impedance (Ω) MAX. |                | Rated ripple<br>(mArms)<br>105°C / 100kHz |
|                                 |     |                              | 20°C / 100kHz      | -10°C / 100kHz |                                           |                              | 20°C / 100kHz      | -10°C / 100kHz |                                           |                              | 20°C / 100kHz      | -10°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) \ V (Code) \ Item Code |     | 25 (1E)                      |                    |                |                                           | 35 (1V)                      |                    |                |                                           |
|---------------------------------|-----|------------------------------|--------------------|----------------|-------------------------------------------|------------------------------|--------------------|----------------|-------------------------------------------|
|                                 |     | Case size<br>φ D × L<br>(mm) | Impedance (Ω) MAX. |                | Rated ripple<br>(mArms)<br>105°C / 100kHz | Case size<br>φ D × L<br>(mm) | Impedance (Ω) MAX. |                | Rated ripple<br>(mArms)<br>105°C / 100kHz |
|                                 |     |                              | 20°C / 100kHz      | -10°C / 100kHz |                                           |                              | 20°C / 100kHz      | -10°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           |

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