



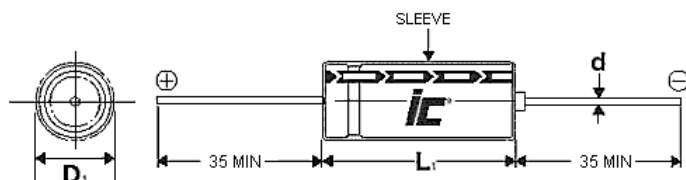
FEATURES

Axial lead - High voltage

APPLICATIONS

Filtering – Bypass – Coupling – Blocking

Operating Temperature Range		-40°C to +85°C (10 to 350 WVDC) -25°C to +85°C (450 WVDC)													
Capacitance Tolerance		+20% at 120 Hz, 20°C													
Surge voltage	WVDC	10	16	25	35	50	63	100	160	200	250	350	450		
	SVDC	13	20	32	44	63	79	125	200	250	300	400	500		
Dissipation Factor	WVDC	10	16	25	35	50	63	100	160	200	250	350	450		
	Tan δ	.24	.20	.16	.14	.12	.1	.1	.2	.2	.2	.25	.25		
		Add .02 for every 1000μF above 1000μF													
Leakage current		10 to 100 WVDC								160 to 450 WVDC					
		1 Minute				2 Minutes				1 Minute			1 Minute		
		.03CV or 4μA, Whichever is greater				.01CV or 3μA, Whichever is greater				CV≤1000 .04CV+100μA			CV>1000 .1CV+40μA		
Low temperature stability Impedance ratio (120 Hz)	WVDC	10	16	25	35	50	63	100	160	200	250	350	450		
	-25°C to +20°C	4	3	2	2	2	2	2	4	4	4	4	6		
	-40°C to +20°C	10	8	5	4	3	3	3	15	15	15	10	-		
Load Life		2000 hours at 85°C with rated WVDC and ripple current applied													
		Capacitance change				≤20% of initial measured value									
		Dissipation factor				≤200% of maximum specified value									
		Leakage current				≤100% of maximum specified value									
Shelf Life		1000 hours at 85°C with no voltage applied													
		Capacitance change				≤20% of initial measured value									
		Dissipation factor				≤200% of maximum specified value									
		Leakage current				≤100% of maximum specified value									
Ripple Current Multipliers		Capacitance		Frequency (Hz)						Temperature (°C)					
		μF		50	120	400	1k	10k	50k	+85	+70	+60	+30		
		C≤10		.8	1.0	1.3	1.45	1.65	1.7	1.0	1.3	1.5	1.8		
		10<C≤100		.8	1.0	1.23	1.36	1.48	1.53	1.0	1.3	1.5	1.8		
		100<C≤1000		.8	1.0	1.16	1.25	1.35	1.38	1.0	1.3	1.5	1.8		
		C>1000		.8	1.0	1.11	1.17	1.25	1.28	1.0	1.3	1.5	1.8		



D	5	6.3	8	10	12.5	16	18	22	25
d	0.5	0.5	0.6	0.6	0.6	0.8	0.8	0.8	0.8
B	0.5	0.5	0.5	0.5	0.8	0.5	0.5	1.0	1.0

D ≤ 10mm, L₁ = L + 1.5mm Max. mm
 D > 10mm, L₁ = L + 2mm Max.
 D₁ = D + B Max.

TTA

+85°C, Standard, general purpose 2000 hours

Capacitance (µF)	WVDC	IC PART NUMBER	Maximum ESR (Ω) 120 Hz, +20°C	Maximum RMS Ripple Current (mA) 120 Hz, +85°C	Dims DxL (mm)
0.47	100	474TTA100M	352.737	10	5x13
1	50	105TTA050M	165.786	10	5x13
1	100	105TTA100M	331.573	18	5x13
1	160	105TTA160M	331.573	14	6.3x13
1	350	105TTA350M	331.573	20	6.3x16
1	450	105TTA450M	414.466	19	8x16
2.2	50	225TTA050M	90.4289	23	5x13
2.2	100	225TTA100M	75.3575	27	5x13
2.2	160	225TTA160M	150.715	23	6.3x16
2.2	250	225TTA250M	150.715	30	8x16
2.2	350	225TTA350M	150.715	33	8x16
2.2	450	225TTA450M	188.394	31	10x21
3.3	100	335TTA100M	50.2383	34	5x13
3.3	160	335TTA160M	100.477	33	8x16
3.3	250	335TTA250M	100.477	40	8x16
3.3	450	335TTA450M	125.596	38	8x20
4.7	50	475TTA050M	42.3284	36	5x13
4.7	100	475TTA100M	50.3284	40	5x13
4.7	160	475TTA160M	70.5474	50	8x16
4.7	350	475TTA350M	70.5474	55	8x20
4.7	450	475TTA450M	88.184	50	10x26
10	35	106TTA035M	23.2101	41	5x13
10	50	106TTA050M	19.8944	50	5x13
10	63	106TTA063M	16.579	55	5x13
10	100	106TTA100M	16.579	65	6.3x13
10	160	106TTA160M	33.157	80	8x20
10	250	106TTA250M	33.157	90	10x21
10	350	106TTA350M	33.157	100	13x26
10	450	106TTA450M	41.4466	90	12.5x25
15	50	156TTA050M	13.2629	70	5x13
22	35	226TTA035M	10.55	70	5x13
22	50	226TTA050M	9.0429	85	6.3x13
22	100	226TTA100M	7.536	120	8x16
22	160	226TTA160M	15.072	130	10x26
22	250	226TTA250M	15.072	160	13x26
22	350	226TTA350M	15.072	150	13x31
22	450	226TTA450M	18.8394	160	16x31
22	500	226TTA500AQW	18.8394	115	16x32
33	25	336TTA025M	8.0381	80	5x13
33	50	336TTA050M	6.0286	115	6.3x16
33	100	336TTA100M	5.0238	145	8x16
33	160	336TTA160M	10.048	170	13x26
33	250	336TTA250M	10.048	190	13x31
33	350	336TTA350M	10.048	210	16x31.5
33	450	336TTA450M	12.5596	230	16x41
47	16	476TTA016M	7.0547	90	5x13
47	25	476TTA025M	5.6438	105	6.3x13
47	50	476TTA050M	4.2328	140	6.3x16
47	63	476TTA063M	3.527	165	8x16
47	100	476TTA100M	3.527	190	8x20
47	160	476TTA160M	7.055	225	13x31
47	250	476TTA250M	7.055	255	16x31
47	350	476TTA350M	7.055	290	16x41
47	450	476TTA450MRZ	8.8184	300	18x41
47	500	476TTA500ARZ	8.8184	290	18x40
68	16	686TTA016M	4.8761	150	6.3x16
68	35	686TTA035M	3.4132	200	8x16
68	63	686TTA063M	2.438	250	8x20

Capacitance (µF)	WVDC	IC PART NUMBER	Maximum ESR (Ω) 120 Hz, +20°C	Maximum RMS Ripple Current (mA) 120 Hz, +85°C	Dims DxL (mm)
100	10	107TTA010M	3.9789	130	6.3x13
100	25	107TTA025M	2.6526	170	6.3x13
100	35	107TTA035M	2.231	200	8x16
100	50	107TTA050M	1.9894	220	8x16
100	63	107TTA063M	1.658	260	8x20
100	100	107TTA100M	1.658	310	10x26
100	160	107TTA160M	3.316	400	16x31
100	250	107TTA250M	3.316	450	16x41
100	350	107TTA350M	3.316	460	18x41
100	450	107TTA450M	4.145	370	22x51
150	25	157TTA025M	1.7684	260	8x16
150	35	157TTA035M	1.5473	270	8x20
150	50	157TTA050M	1.3263	285	10x16
150	63	157TTA063M	1.052	310	10x21
150	100	157TTA100M	1.1052	515	13x26
220	16	227TTA016M	1.5071	260	8x16
220	25	227TTA025M	1.2057	280	8x16
220	35	227TTA035M	1.055	340	8x20
220	50	227TTA050M	0.9043	440	10x21
220	63	227TTA063M	0.754	490	10x25
220	100	227TTA100M	0.754	560	13x26
220	160	227TTA160M	1.507	660	22x41
220	250	227TTA250M	1.507	764	22x41
330	16	337TTA016M	1.0048	320	8x16
330	25	337TTA025M	0.8038	385	8x20
330	50	337TTA050M	0.6029	565	10x26
330	63	337TTA063M	0.502	650	13x26
330	100	337TTA100M	0.5024	730	13x31
470	10	477TTA010M	0.8466	350	8x16
470	16	477TTA016M	0.7055	450	8x20
470	25	477TTA025M	0.5644	560	10x21
470	35	477TTA035M	0.4938	640	10x26
470	50	477TTA050M	0.4233	740	13x26
470	63	477TTA063M	0.353	845	13x31
470	100	477TTA100M	0.353	960	16x31
1000	10	108TTA010M	0.3979	570	10x21
1000	16	108TTA016M	0.3316	700	10x26
1000	25	108TTA025M	0.2653	830	13x26
1000	35	108TTA035M	0.2321	980	13x26
1000	50	108TTA050M	0.1989	1130	16x30
1000	63	108TTA063M	0.1658	1330	16x31
1000	80	108TTA080M	0.1658	1500	16x41
1000	100	108TTA100M	0.1658	1640	18x41
1500	25	158TTA025M	0.1989	1150	13x26
1500	35	158TTA035M	0.1768	1280	16x31
1500	50	158TTA050M	0.1547	1480	16x41
2200	10	228TTA010M	0.211	1100	13x26
2200	16	228TTA016M	0.1809	1190	13x31
2200	25	228TTA025M	0.1507	1480	16x31
2200	35	228TTA035M	0.1356	1580	16x31
2200	50	228TTA050M	0.1206	1930	16x41
2200	63	228TTA063M	0.1055	2158	18x40
2200	80	228TTA080M	0.106	2260	22x51
2200	100	228TTA100M	0.1055	2560	25x51
3300	10	338TTA010M	0.131	1435	13x31
3300	16	338TTA016M	0.1306	1610	16x31
3300	25	338TTA025M	0.1105	1700	16x31
3300	35	338TTA035M	0.0904	1810	16x41

TTA

+85°C, Standard, general
purpose 2000 hours

Capacitance (μF)	WVDC	IC PART NUMBER	Maximum ESR (Ω) 120 Hz, +20°C	Maximum RMS Ripple Current (mA) 120 Hz, +85°C	Dims DxL (mm)
3300	50	338TTA050M	0.0804	2350	22x41
3300	63	338TTA063M	0.0804	2370	22x51
4700	10	478TTA010M	0.1129	1730	16x31
4700	16	478TTA016M	0.0988	1840	16x31.5
4700	25	478TTA025M	0.0847	2190	16x41
4700	35	478TTA035M	0.0705	2470	22x41
4700	50	478TTA050M	0.705	2510	22x51
4700	63	478TTA063M	0.0635	3080	25x60
6800	16	688TTA016M	0.078	2310	16x41

Capacitance (μF)	WVDC	IC PART NUMBER	Maximum ESR (Ω) 120 Hz, +20°C	Maximum RMS Ripple Current (mA) 120 Hz, +85°C	Dims DxL (mm)
6800	25	688TTA025M	0.0683	2480	18x41
6800	35	688TTA035M	0.0634	2760	22x51
10000	10	109TTA010M	0.063	2350	18x41
10000	16	109TTA016M	0.063	2520	18x41
10000	25	109TTA025M	0.063	3240	22x51
10000	35	109TTA035M	0.0531	3500	25x51
15000	16	159TTA016M	0.0531	3310	22x51
15000	25	159TTA025M	0.0486	3700	25x51
22000	16	229TTA016M	0.0467	3600	22x51