TMA

Aluminum Electrolytic Capacitors

+105°C General Purpose, Axial Lead



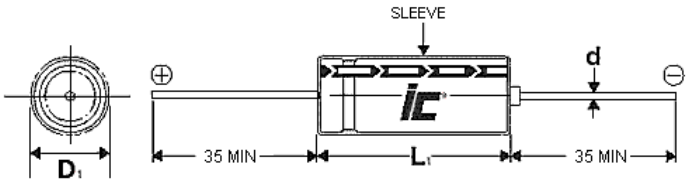
FEATURES Extended Life - High Voltage

APPLICATIONS Filtering – Bypass – Coupling – Blocking

Operating Temperature Range		**-40°C to +105°C (6.3 to 100VDC) -25°C to +105°C (160 to 450VDC)**													
Capacitance Tolerance		**±20% at 120 Hz, 20°C**													
Surge voltage	**WVDC**	**6.3**	**10**	**16**	**25**	**35**	**50**	**63**	**100**	**160**	**200**	**250**	**350**	**400**	**450**
	SVDC	7.9	13	20	32	44	63	79	125	200	250	300	400	450	500
Dissipation Factor	**WVDC**	**6.3**	**10**	**16**	**25**	**35**	**50**	**63**	**100**	**160**	**200**	**250**	**350**	**400**	**450**
	Tan δ	.28	.24	.2	.16	.14	.12	.1	.1	.2	.2	.2	.2	.25	.25
		Add .02 for every 1000uF above 1000µF													
Leakage current		**6.3 to 100 WVDC**								160 to 450 WVDC					
		1 Minutes								**1 Minute**			**1 Minute**		
		.03CV or 4uA, Whichever is greater								CV≤1000 .01CV+40uA			CV>1000 .04CV+100uA		
Low temperature stability Impedance ratio (120 Hz)	**WVDC**	**6.3**	**10**	**16**	**25**	**35**	**50**	**63**	**100**	**160**	**200**	**250**	**350**	**400**	**450**
	-25°C to +20°C	5	4	3	2	2	2	2	2	3	3	3	3	3	5
	-40°C to +20°C	12	10	8	6	5	4	4	4	8	6	6	6	6	-
Load Life		**2000 hours at 105°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 105°C with no voltage applied**													
		Capacitance change	≤20% 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**	**+105**	**+85**	**+70**
	C<47	.75	1.0	1.35	1.57	2.0	2.0	1.0	1.4	1.62
	47<C≤470	.8	1.0	1.23	1.34	1.5	1.5	1.0	1.4	1.62
	C>470	.85	1.0	1.1	1.13	1.15	1.15	1.0	1.4	1.62

Special Order Options



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

mm

D≤ 10mm, L_1=L+1.5mm Max.
D> 10mm, L_1=L+2mm Max.
D_1=D+B Max.

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+105°C, Extended Life, 2000 hours

WVDC	Capacitance (µF)	IC PART NUMBER	Maximum ESR (Ω) 120 Hz, +20°C	Maximum RMS Ripple Current (mA) 120 Hz, +105°C	Dims DxL (mm)
6.3	100	107TMA6R3M	4.642	89	6.3x13
6.3	3300	338TMA6R3M	0.171	860	13x26
6.3	4700	478TMA6R3M	0.127	1060	13x31
6.3	10000	109TMA6R3M	0.076	1620	16x41
6.3	15000	159TMA6R3M	0.062	1740	18x41
6.3	22000	229TMA6R3M	0.054	2000	22x41
10	47	476TMA010M	8.466	57	5x13
10	220	227TMA010M	1.809	115	6.3x16
10	470	477TMA010M	0.847	250	8x16
10	1000	108TMA010M	0.398	460	10x21
10	2200	228TMA010M	0.211	780	13x26
10	3300	338TMA010M	0.151	980	13x31
10	4700	478TMA010M	0.113	1220	16x31
10	6800	688TMA010M	0.0878	1370	16x31
10	10000	109TMA010M	0.0696	1690	18x41
10	15000	159TMA010M	0.0575	1950	22x41
10	22000	229TMA010M	0.053	2080	22x51
16	33	336TMA016M	10.048	54	5x13
16	47	476TMA016M	7.055	71	6.3x13
16	330	337TMA016M	1.005	230	8x16
16	470	477TMA016M	0.706	310	8x20
16	1000	108TMA016M	0.332	550	10x26
16	2200	228TMA016M	0.181	910	13x31
16	3300	338TMA016M	0.131	1140	16x31
16	4700	478TMA016M	0.099	1300	16x31
16	6800	688TMA016M	0.078	1620	16x41
16	10000	109TMA016M	0.063	1900	22x41
16	15000	159TMA016M	0.053	2050	22x51
25	22	226TMA025M	12.057	48	5x13
25	33	336TMA025M	8.038	64	6.3x13
25	100	107TMA025M	2.653	120	6.3x16
25	220	227TMA025M	1.206	200	8x16
25	330	337TMA025M	0.804	270	8x20
25	470	477TMA025M	0.564	370	10x21
25	1000	108TMA025M	0.265	640	13x26
25	2200	228TMA025M	0.151	1040	16x31
25	3300	338TMA025M	0.111	1200	16x31
25	4700	478TMA025M	0.085	1540	18x41
25	6800	688TMA025M	0.0683	1810	22x41
25	10000	109TMA025M	0.0729	1980	22x51
35	10	106TMA035M	23.21	33	5x13
35	22	226TMA035M	10.55	57	6.3x13
35	220	227TMA035M	1.055	240	8x20
35	330	337TMA035M	0.703	330	10x21
35	470	477TMA035M	0.494	430	10x26
35	1000	108TMA035M	0.232	750	13x31
35	2200	228TMA035M	0.136	1120	16x31
35	3300	338TMA035M	0.101	1430	16x41
35	4700	478TMA035M	0.078	1740	22x41
35	6800	688TMA035M	0.0634	1910	22x51
50	1	105TMA050M	198.944	10	5x13
50	2.2	225TMA050M	90.428	18	5x13
50	3.3	335TMA050M	60.286	22	5x13
50	10	106TMA050M	19.894	41	5x13
50	47	476TMA050M	4.233	100	6.3x16
50	100	107TMA050M	1.989	155	8x16
50	220	227TMA050M	0.904	290	10x21
50	330	337TMA050M	0.603	400	10x26

WVDC	Capacitance (µF)	IC PART NUMBER	Maximum ESR (Ω) 120 Hz, +20°C	Maximum RMS Ripple Current (mA) 120 Hz, +105°C	Dims DxL (mm)
50	470	477TMA050M	0.423	530	13x26
50	1000	108TMA050M	0.199	890	16x31
50	2200	228TMA050M	0.121	1360	18x41
50	3300	338TMA050M	0.0904	1660	22x41
50	4700	478TMA050M	0.071	1860	22x51
63	4.7	475TMA063M	35.274	32	5x13
63	10	106TMA063M	16.579	44	6.3x13
63	22	226TMA063M	7.536	73	6.3x16
63	33	336TMA063M	5.024	89	6.3x16
63	47	476TMA063M	3.527	115	8x16
63	100	107TMA063M	1.658	185	8x20
63	220	227TMA063M	0.754	340	10x26
63	330	337TMA063M	0.504	460	13x26
63	470	477TMA063M	0.353	590	13x31
63	1000	108TMA063M	0.166	940	16x31
63	2200	228TMA063M	0.106	1740	22x41
63	3300	338TMA063M	0.0804	1740	22x51
100	0.47	474TMA100M	317.463	10	5x13
100	1	105TMA100M	149.208	14	5x13
100	2.2	225TMA100M	67.822	19	5x13
100	3.3	335TMA100M	45.215	27	6.3x13
100	4.7	475TMA100M	31.746	32	6.3x13
100	10	106TMA100M	14.921	52	6.3x16
100	22	226TMA100M	6.782	85	8x16
100	33	336TMA100M	4.522	115	8x20
100	47	476TMA100M	3.175	135	8x20
100	100	107TMA100M	1.492	240	10x26
100	220	227TMA100M	0.678	430	13x31
100	330	337TMA100M	0.452	570	16x31
100	470	477TMA100M	0.318	770	16x41
100	1000	108TMA100M	0.149	1210	22x41
160	10	106TMA160M	33.157	43	8x20
160	22	226TMA160M	15.071	85	10x26
160	33	336TMA160M	10.048	120	13x26
160	47	476TMA160M	7.055	155	13x31
160	100	107TMA160M	3.316	300	16x41
160	220	227TMA160M	1.507	510	22x41
200	1	105TMA200M	331.573	9	6.3x13
200	2.2	225TMA200M	150.715	17	6.3x16
200	4.7	475TMA200M	70.547	28	8x16
200	10	106TMA200M	33.157	50	10x21
200	33	336TMA200M	10.048	135	13x26
200	47	476TMA200M	7.055	155	13x31
200	100	107TMA200M	3.316	300	16x41
200	220	227TMA200M	1.507	510	22x41
250	3.3	335TMA250M	100.477	24	8x16
250	4.7	475TMA250M	70.547	32	8x20
250	10	106TMA250M	33.157	50	10x21
250	22	226TMA250M	15.071	100	13x26
250	33	336TMA250M	10.048	135	13x26
250	47	476TMA250M	7.055	175	16x31
250	100	107TMA250M	3.316	300	16x41
250	220	227TMA250M	1.507	550	22x51
350	1	105TMA350M	331.573	10	6.3x16
350	2.2	225TMA350M	150.715	17	8x16
350	3.3	335TMA350M	100.477	24	8x20
350	4.7	475TMA350M	70.547	33	10x20
350	10	106TMA350M	33.157	60	13x26

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350	22	226TMA350M	15.071	110	16x31
350	33	336TMA350M	10.048	150	16x31
350	47	476TMA350M	7.055	185	16x41
350	100	107TMA350M	3.316	310	22x41
400	1	105TMA400M	414.466	12	8x16
400	2.2	225TMA400M	188.394	19	8x20
400	3.3	335TMA400M	125.596	27	10x21
400	4.7	475TMA400M	88.184	33	10x20
400	10	106TMA400M	41.447	60	13x26
400	22	226TMA400M	18.839	110	16x31
400	33	336TMA400M	12.56	155	16x41

WVDC	Capacitance (µF)	IC PART NUMBER	Maximum ESR (Ω) 120 Hz, +20°C	Maximum RMS Ripple Current (mA) 120 Hz, +105°C	Dims DxL (mm)
400	47	476TMA400M	8.818	200	18x41
400	100	107TMA400M	4.145	330	22x51
450	1	105TMA450M	414.466	12	8x20
450	2.2	225TMA450M	199.394	22	10x20
450	3.3	335TMA450M	125.596	27	10x21
450	4.7	475TMA450M	88.184	36	10x25
450	10	106TMA450M	41.447	67	12.5x30
450	22	226TMA450M	18.839	130	16x40
450	33	336TMA450M	12.56	160	18x40
450	47	476TMA450M	8.818	220	22x40

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