



## FEATURES

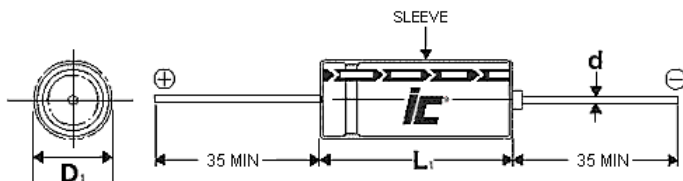
Axial Lead - High Voltage

## APPLICATIONS

Filtering - Bypass - Coupling - Blocking

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

### Special Order Options



D	5	6.3	8	10	13	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, L<sub>1</sub> = L + 1.5mm Max.

D > 10mm, L<sub>1</sub> = L + 2mm Max.

D<sub>1</sub> = D + B Max.

mm

Americas / EU

Phone: 1-508-996-8561

Email: cdena@cde.com



**CORNELL  
DUBILIER**



Asia

Phone: 852-2793-0931

Email: cdeasia@cde.com

# TTA

**+85°C, Standard, General Purpose, 2000 hours**

WVDC	Capacitance (µF)	IC PART NUMBER	Maximum ESR (Ω) 120 Hz, +20°C	Maximum RMS Ripple Current (mA) 120 Hz, +85°C	Dims DxDL (mm)
10	100	107TTA010M	3.9789	130	6.3x13
10	470	477TTA010M	0.8466	350	8x16
10	1000	108TTA010M	0.3979	570	10x21
10	2200	228TTA010M	0.211	1100	13x26
10	3300	338TTA010M	0.131	1435	13x31
10	4700	478TTA010M	0.1129	1730	16x31
10	10000	109TTA010M	0.063	2350	18x41
16	47	476TTA016M	7.0547	90	5x13
16	68	686TTA016M	4.8761	150	6.3x16
16	220	227TTA016M	1.5071	260	8x16
16	330	337TTA016M	1.0048	320	8x16
16	470	477TTA016M	0.7055	450	8x20
16	1000	108TTA016M	0.3316	700	10x26
16	2200	228TTA016M	0.1809	1190	13x31
16	3300	338TTA016M	0.1306	1610	16x31
16	4700	478TTA016M	0.0988	1840	16x31.5
16	6800	688TTA016M	0.078	2310	16x41
16	10000	109TTA016M	0.063	2520	18x41
16	15000	159TTA016M	0.0531	3310	22x51
16	22000	229TTA016M	0.0467	3600	22x51
25	33	336TTA025M	8.0381	80	5x13
25	47	476TTA025M	5.6438	105	6.3x13
25	100	107TTA025M	2.6526	170	6.3x13
25	150	157TTA025M	1.7684	260	8x16
25	220	227TTA025M	1.2057	280	8x16
25	330	337TTA025M	0.8038	385	8x20
25	470	477TTA025M	0.5644	560	10x21
25	1000	108TTA025M	0.2653	830	13x26
25	1500	158TTA025M	0.1989	1150	13x26
25	2200	228TTA025M	0.1507	1480	16x31
25	3300	338TTA025M	0.1105	1700	16x31
25	4700	478TTA025M	0.0847	2190	16x41
25	6800	688TTA025M	0.0683	2480	18x41
25	10000	109TTA025M	0.063	3240	22x51
25	15000	159TTA025M	0.0486	3700	22x50
35	10	106TTA035M	23.2101	41	5x13
35	22	226TTA035M	10.55	70	5x13
35	68	686TTA035M	3.4132	200	8x16
35	100	107TTA035M	2.231	200	8x16
35	150	157TTA035M	1.5473	270	8x20
35	220	227TTA035M	1.055	340	8x20
35	470	477TTA035M	0.4938	640	10x26
35	1000	108TTA035M	0.2321	980	13x26
35	1500	158TTA035M	0.1768	1280	16x31
35	2200	228TTA035M	0.1356	1580	16x31
35	3300	338TTA035M	0.0904	1810	16x41
35	4700	478TTA035M	0.0705	2470	22x41
35	6800	688TTA035M	0.0634	2760	22x51
35	10000	109TTA035M	0.0531	3500	25x51
50	1	105TTA050M	165.786	10	5x13
50	2.2	225TTA050M	90.4289	23	5x13
50	4.7	475TTA050M	42.3284	36	5x13
50	10	106TTA050M	19.8944	50	5x13
50	15	156TTA050M	13.2629	70	5x13
50	22	226TTA050M	9.0429	85	6.3x13
50	33	336TTA050M	6.0286	115	6.3x16
50	47	476TTA050M	4.2328	140	6.3x16
50	100	107TTA050M	1.9894	220	8x16

WVDC	Capacitance (µF)	IC PART NUMBER	Maximum ESR (Ω) 120 Hz, +20°C	Maximum RMS Ripple Current (mA) 120 Hz, +85°C	Dims DxDL (mm)
50	150	157TTA050M	1.3263	285	10x16
50	220	227TTA050M	0.9043	440	10x21
50	330	337TTA050M	0.6029	565	10x26
50	470	477TTA050M	0.4233	740	13x26
50	1000	108TTA050M	0.1989	1130	16x30
50	1500	158TTA050M	0.1547	1480	16x41
50	2200	228TTA050M	0.1206	1930	16x41
50	3300	338TTA050M	0.0804	2350	22x41
50	4700	478TTA050M	0.705	2510	22x51
63	10	106TTA063M	16.579	55	5x13
63	47	476TTA063M	3.527	165	8x16
63	68	686TTA063M	2.438	250	8x20
63	100	107TTA063M	1.658	260	8x20
63	150	157TTA063M	1.052	310	10x21
63	220	227TTA063M	0.754	490	10x25
63	330	337TTA063M	0.502	650	13x26
63	470	477TTA063M	0.353	845	13x31
63	1000	108TTA063M	0.1658	1330	16x31
63	2200	228TTA063M	0.1055	2158	18x40
63	3300	338TTA063M	0.0804	2370	22x51
63	4700	478TTA063M	0.0635	3080	25x60
80	1000	108TTA080M	0.1658	1500	16x41
80	2200	228TTA080M	0.106	2260	22x51
100	0.47	474TTA100M	352.737	10	5x13
100	1	105TTA100M	331.573	18	5x13
100	2.2	225TTA100M	75.3575	27	5x13
100	3.3	335TTA100M	50.3284	34	5x13
100	4.7	475TTA100M	50.2383	40	5x13
100	10	106TTA100M	16.579	65	6.3x13
100	22	226TTA100M	7.536	120	8x16
100	33	336TTA100M	5.0238	145	8x16
100	47	476TTA100M	3.527	190	8x20
100	100	107TTA100M	1.658	310	10x26
100	150	157TTA100M	1.1052	515	13x26
100	220	227TTA100M	0.754	560	13x26
100	330	337TTA100M	0.5024	730	13x31
100	470	477TTA100M	0.353	960	16x31
100	1000	108TTA100M	0.1658	1640	18x41
100	2200	228TTA100M	0.1055	2560	25x51
160	1	105TTA160M	331.573	14	6.3x13
160	2.2	225TTA160M	150.715	23	6.3x16
160	3.3	335TTA160M	100.477	33	8x16
160	4.7	475TTA160M	70.5474	50	8x16
160	10	106TTA160M	33.157	80	8x20
160	22	226TTA160M	15.072	130	10x26
160	33	336TTA160M	10.048	170	13x26
160	47	476TTA160M	7.055	225	13x31
160	100	107TTA160M	3.316	400	16x31
160	220	227TTA160M	1.507	660	22x41
250	2.2	225TTA250M	150.715	30	8x16
250	3.3	335TTA250M	100.477	40	8x16
250	10	106TTA250M	33.157	90	10x21
250	22	226TTA250M	15.072	160	13x26
250	33	336TTA250M	10.048	190	13x31
250	47	476TTA250M	7.055	255	16x31
250	100	107TTA250M	3.316	450	16x41
250	220	227TTA250M	1.507	764	22x41
350	1	105TTA350M	331.573	20	6.3x16

Americas / EU  
Phone: 1-508-996-8561  
Email: cdena@cde.com



Asia  
Phone: 852-2793-0931  
Email: cdeasia@cde.com

# TTA

+85°C, Standard, General  
Purpose, 2000 hours

WVDC	Capacitance (μF)	IC PART NUMBER	Maximum ESR (Ω) 120 Hz, +20°C	Maximum RMS Ripple Current (mA) 120 Hz, +85°C	Dims DxL (mm)
350	2.2	225TTA350M	150.715	33	8x16
350	4.7	475TTA350M	70.5474	55	8x20
350	10	106TTA350M	33.157	100	13x26
350	22	226TTA350M	15.072	150	13x31
350	33	336TTA350M	10.048	210	16x31.5
350	47	476TTA350M	7.055	290	16x41
350	100	107TTA350M	3.316	460	18x41
450	1	105TTA450M	414.466	19	8x16
450	2.2	225TTA450M	188.394	31	10x21

WVDC	Capacitance (μF)	IC PART NUMBER	Maximum ESR (Ω) 120 Hz, +20°C	Maximum RMS Ripple Current (mA) 120 Hz, +85°C	Dims DxL (mm)
450	3.3	335TTA450M	125.596	38	8x20
450	4.7	475TTA450M	88.184	50	10x26
450	10	106TTA450M	41.4466	90	13x25
450	22	226TTA450M	18.8394	160	16x31
450	33	336TTA450M	12.5596	230	16x41
450	47	476TTA450MRZ	8.8184	300	18x41
450	100	107TTA450M	4.145	370	22x51
500	22	226TTA500AQW	18.8394	115	16x32
500	47	476TTA500ARZ	8.8184	290	18x40

Americas / EU  
Phone: 1-508-996-8561  
Email: [cdena@cde.com](mailto:cdena@cde.com)



Asia  
Phone: 852-2793-0931  
Email: [cdeasia@cde.com](mailto:cdeasia@cde.com)