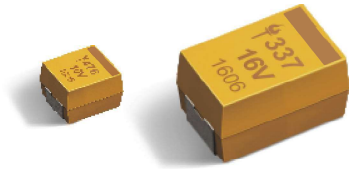


TANTALUM SOLID  
ELECTROLYTIC CHIP CAPACITORS

# POLYMER TANTALUM SOLID ELECTROLYTIC CHIP CAPACITORS



## FEATURES

- Extremely low ESR
- Low leakage current
- High frequency capacitance retention
- Non-ignition failure mode
- Voltage ratings of 2.5V~63V
- Operating temperature rang of -55°C to +125°C
- Moisture Sensitivity Level 3
- Lead-free termination, RoHS Compliant

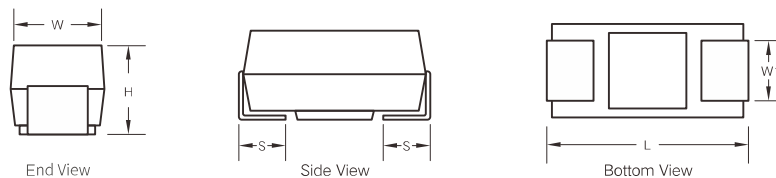
## »» APPLICATIONS

Typical applications include decoupling and filtering in industrial and automotive end applications such as DC/DC converters, portable electronics, telecommunications, and control units.

## »» ORDERING INFORMATION

CA55	D	35V	22μF	M
Series	Case size	Rated voltage	Capacitance	Capacitance tolerance
CA55	A、B、C、D、D1、E、F	2.5V 4V 6.3V 10V 16V 20V 25V 35V 50V 63V	Refer to Capacitance and Rated Voltage Range Table	M=±20%

## »» DIMENSIONS



Unit:mm

Size code	L	W	H	S	W1
A	3.20±0.35	1.60±0.25	1.60±0.25	0.80±0.30	1.20±0.10
B	3.50±0.35	2.80±0.25	1.90±0.25	0.80±0.30	2.20±0.10
C	6.00±0.35	3.20±0.30	2.50±0.30	1.30±0.30	2.20±0.10
D	7.30±0.35	4.30±0.30	2.80±0.30	1.30±0.30	2.40±0.10
D1	7.30±0.35	4.30±0.30	2.00±0.30	1.30±0.30	2.40±0.10
E	7.30±0.35	4.30±0.30	4.10±0.30	1.30±0.30	2.80±0.10
F	7.50±0.35	6.10±0.30	3.80±0.30	1.30±0.30	3.80±0.10

# POLYMER TANTALUM SOLID ELECTROLYTIC CHIP CAPACITORS

## » CAPACITANCE AND RATED VOLTAGE RANGE

Part NO.	Cap (μF)	Size code	Maximum Value									
			DF(%) @25°C			DCL(μA) @25°C			Rms Current(A)			ESR(mΩ) @100kHz 25°C
			-55°C	25°C	85°C 125°C	25°C	85°C	125°C	25°C	85°C	125°C	
<b>Rated voltage:2.5V Category voltage:1.7V</b>												
CA55-D-2.5V-330 μ F-M	330	D	14	10	14	83	825	1031	1.826	1.643	0.730	45
CA55-D1-2.5V-330 μ F-M	330	D1	14	10	14	83	825	1031	1.826	1.643	0.730	45
CA55-D-2.5V-470 μ F-M	470	D	14	10	14	118	1175	1469	1.826	1.643	0.730	45
CA55-D1-2.5V-470 μ F-M	470	D1	14	10	14	118	1175	1469	1.826	1.643	0.730	45
CA55-E-2.5V-1000 μ F-M	1000	E	18	14	18	250	2500	3125	1.972	1.775	0.789	45
<b>Rated voltage:4V Category voltage:2.7V</b>												
CA55-A-4V-22 μ F-M	22	A	10	6	10	9	88	110	0.354	0.318	0.141	600
CA55-B-4V-22 μ F-M	22	B	10	6	10	9	88	110	0.376	0.339	0.151	600
CA55-A-4V-33 μ F-M	33	A	10	6	10	13	132	165	0.387	0.349	0.155	500
CA55-B-4V-33 μ F-M	33	B	10	6	10	13	132	165	0.412	0.371	0.165	500
CA55-B-4V-47 μ F-M	47	B	10	6	10	19	188	235	0.652	0.587	0.261	200
CA55-B-4V-68 μ F-M	68	B	10	6	10	27	272	340	0.922	0.830	0.369	100
CA55-C-4V-68 μ F-M	68	C	10	6	10	27	272	340	1.049	0.944	0.420	100
CA55-C-4V-100 μ F-M	100	C	14	10	14	40	400	500	1.049	0.944	0.420	100
CA55-C-4V-150 μ F-M	150	C	14	10	14	60	600	750	1.173	1.055	0.469	80
CA55-C-4V-220 μ F-M	220	C	14	10	14	88	880	1100	1.254	1.128	0.501	70
CA55-D-4V-220 μ F-M	220	D	14	10	14	88	880	1100	1.464	1.317	0.586	70
CA55-D1-4V-220 μ F-M	220	D1	14	10	14	88	880	1100	1.464	1.317	0.586	70
CA55-C-4V-330 μ F-M	330	C	14	10	14	132	1320	1650	1.414	1.273	0.566	55
CA55-D-4V-330 μ F-M	330	D	14	10	14	132	1320	1650	1.651	1.486	0.661	55
CA55-D1-4V-330 μ F-M	330	D1	14	10	14	132	1320	1650	1.651	1.486	0.661	55
CA55-E-4V-330 μ F-M	330	E	14	10	14	132	1320	1650	1.784	1.605	0.714	55
CA55-E-4V-470 μ F-M	470	E	14	10	14	188	1880	2350	1.972	1.775	0.789	45
CA55-E-4V-680 μ F-M	680	E	18	14	18	272	2720	3400	1.972	1.775	0.789	45
CA55-E-4V-1000 μ F-M	1000	E	18	14	18	400	4000	5000	1.972	1.775	0.789	45
CA55-F-4V-1000 μ F-M	1000	F	18	14	18	400	4000	5000	2.000	1.800	0.800	45
<b>Rated voltage:6.3V Category voltage:4V</b>												
CA55-A-6.3V-6.8 μ F-M	6.8	A	10	6	10	5	50	63	0.306	0.276	0.122	800
CA55-A-6.3V-10 μ F-M	10	A	10	6	10	6	63	79	0.387	0.349	0.155	500
CA55-B-6.3V-10 μ F-M	10	B	10	6	10	6	63	79	0.412	0.371	0.165	500
CA55-A-6.3V-15 μ F-M	15	A	10	6	10	9	95	118	0.387	0.349	0.155	500
CA55-B-6.3V-15 μ F-M	15	B	10	6	10	9	95	118	0.532	0.479	0.213	300
CA55-A-6.3V-22 μ F-M	22	A	10	6	10	14	139	173	0.354	0.318	0.141	600
CA55-B-6.3V-22 μ F-M	22	B	10	6	10	14	139	173	0.412	0.371	0.165	500
CA55-B-6.3V-33 μ F-M	33	B	10	6	10	21	208	260	0.652	0.587	0.261	200

# POLYMER TANTALUM SOLID ELECTROLYTIC CHIP CAPACITORS

Part NO.	Cap (μF)	Size code	Maximum Value									
			DF(%) @25°C			DCL(μA) @25°C			Rms Current(A)			ESR(mΩ) @100kHz 25°C
			-55°C	25°C	85°C 125°C	25°C	85°C	125°C	25°C	85°C	125°C	
CA55-B-6.3V-47 μ F-M	47	B	10	6	10	30	296	370	0.652	0.587	0.261	200
CA55-C-6.3V-47 μ F-M	47	C	10	6	10	30	296	370	0.742	0.667	0.297	200
CA55-B-6.3V-68 μ F-M	68	B	10	6	10	43	428	536	0.652	0.587	0.261	200
CA55-C-6.3V-68 μ F-M	68	C	10	6	10	43	428	536	1.049	0.944	0.420	100
CA55-C-6.3V-100 μ F-M	100	C	14	10	14	63	630	788	1.049	0.944	0.420	100
CA55-C-6.3V-150 μ F-M	150	C	14	10	14	95	945	1181	1.049	0.944	0.420	100
CA55-D-6.3V-150 μ F-M	150	D	14	10	14	95	945	1181	1.225	1.102	0.490	100
CA55-D1-6.3V-150 μ F-M	150	D1	14	10	14	95	945	1181	1.225	1.102	0.490	100
CA55-C-6.3V-220 μ F-M	220	C	14	10	14	139	1386	1733	1.254	1.128	0.501	70
CA55-D-6.3V-220 μ F-M	220	D	14	10	14	139	1386	1733	1.464	1.317	0.586	70
CA55-D1-6.3V-220 μ F-M	220	D1	14	10	14	139	1386	1733	1.464	1.317	0.586	70
CA55-D-6.3V-330 μ F-M	330	D	14	10	14	208	2079	2599	1.651	1.486	0.661	55
CA55-E-6.3V-330 μ F-M	330	E	14	10	14	208	2079	2599	1.784	1.605	0.714	55
CA55-D-6.3V-470 μ F-M	470	D	14	10	14	296	2961	3701	1.826	1.643	0.730	45
CA55-E-6.3V-470 μ F-M	470	E	14	10	14	296	2961	3701	1.972	1.775	0.789	45
CA55-E-6.3V-680 μ F-M	680	E	18	14	18	428	4284	5355	1.972	1.775	0.789	45
CA55-F-6.3V-1000 μ F-M	1000	F	18	14	18	630	6300	7875	2.000	1.800	0.800	45
<b>Rated voltage:10V Category voltage:7V</b>												
CA55-A-10V-4.7 μ F-M	4.7	A	10	6	10	5	50	63	0.306	0.276	0.122	800
CA55-A-10V-6.8 μ F-M	6.8	A	10	6	10	7	68	85	0.306	0.276	0.122	800
CA55-B-10V-6.8 μ F-M	6.8	B	10	6	10	7	68	85	0.412	0.371	0.165	500
CA55-A-10V-10 μ F-M	10	A	10	6	10	10	100	125	0.500	0.450	0.200	300
CA55-B-10V-10 μ F-M	10	B	10	6	10	10	100	125	0.532	0.479	0.213	300
CA55-A-10V-15 μ F-M	15	A	10	6	10	15	150	188	0.500	0.450	0.200	300
CA55-B-10V-15 μ F-M	15	B	10	6	10	15	150	188	0.532	0.479	0.213	300
CA55-C-10V-15 μ F-M	15	C	10	6	10	15	150	188	0.742	0.667	0.297	200
CA55-B-10V-22 μ F-M	22	B	10	6	10	22	220	275	0.532	0.479	0.213	300
CA55-C-10V-22 μ F-M	22	C	10	6	10	22	220	275	0.856	0.771	0.343	150
CA55-B-10V-33 μ F-M	33	B	10	6	10	33	330	413	0.652	0.587	0.261	200
CA55-C-10V-33 μ F-M	33	C	10	6	10	33	330	413	0.742	0.667	0.297	200
CA55-C-10V-47 μ F-M	47	C	10	6	10	47	470	588	1.049	0.944	0.420	100
CA55-D-10V-47 μ F-M	47	D	10	6	10	47	470	588	1.225	1.102	0.490	100
CA55-C-10V-68 μ F-M	68	C	10	6	10	68	680	850	1.049	0.944	0.420	100
CA55-D-10V-68 μ F-M	68	D	10	6	10	68	680	850	1.225	1.102	0.490	100
CA55-D1-10V-68 μ F-M	68	D1	10	6	10	68	680	850	1.225	1.102	0.490	100
CA55-C-10V-100 μ F-M	100	C	14	10	14	100	1000	1250	1.049	0.944	0.420	100
CA55-D-10V-100 μ F-M	100	D	14	10	14	100	1000	1250	1.225	1.102	0.490	100
CA55-D1-10V-100 μ F-M	100	D1	14	10	14	100	1000	1250	1.225	1.102	0.490	100
CA55-C-10V-150 μ F-M	150	C	14	10	14	150	1500	1875	1.049	0.944	0.420	100

# POLYMER TANTALUM SOLID ELECTROLYTIC CHIP CAPACITORS

Part NO.	Cap (μF)	Size code	Maximum Value									
			DF(%) @25°C			DCL(μA) @25°C			Rms Current(A)			ESR(mΩ) @100kHz 25°C
			-55°C	25°C	85°C 125°C	25°C	85°C	125°C	25°C	85°C	125°C	
CA55-D-10V-150 μ F-M	150	D	14	10	14	150	1500	1875	1.225	1.102	0.490	100
CA55-D1-10V-150 μ F-M	150	D1	14	10	14	150	1500	1875	1.225	1.102	0.490	100
CA55-E-10V-150 μ F-M	150	E	14	10	14	150	1500	1875	1.323	1.191	0.529	100
CA55-D-10V-220 μ F-M	220	D	14	10	14	220	2200	2750	1.464	1.317	0.586	70
CA55-E-10V-220 μ F-M	220	E	14	10	14	220	2200	2750	1.581	1.423	0.632	70
CA55-D-10V-330 μ F-M	330	D	14	10	14	330	3300	4125	1.651	1.486	0.667	55
CA55-E-10V-330 μ F-M	330	E	14	10	14	330	3300	4125	1.784	1.605	0.714	55
CA55-F-10V-330 μ F-M	330	F	14	10	14	330	3300	4125	1.809	1.628	0.724	55
CA55-E-10V-470 μ F-M	470	E	14	10	14	470	4700	5875	1.972	1.775	0.789	45
CA55-F-10V-470 μ F-M	470	F	14	10	14	470	4700	5875	2.000	1.800	0.800	45
CA55-F-10V-680 μ F-M	680	F	18	14	18	680	6800	8500	2.000	1.800	0.800	45
<b>Rated voltage:16V Category voltage:10V</b>												
CA55-A-16V-4.7 μ F-M	4.7	A	10	6	10	8	75	94	0.354	0.318	0.141	600
CA55-A-16V-6.8 μ F-M	6.8	A	10	6	10	11	109	136	0.354	0.318	0.141	600
CA55-B-16V-6.8 μ F-M	6.8	B	10	6	10	11	109	136	0.376	0.339	0.151	600
CA55-A-16V-10 μ F-M	10	A	10	6	10	16	160	200	0.500	0.450	0.200	300
CA55-B-16V-10 μ F-M	10	B	10	6	10	16	160	200	0.532	0.479	0.213	300
CA55-B-16V-15 μ F-M	15	B	10	6	10	24	240	300	0.532	0.479	0.213	300
CA55-C-16V-15 μ F-M	15	C	10	6	10	24	240	300	0.742	0.667	0.297	300
CA55-B-16V-22 μ F-M	22	B	10	6	10	35	352	440	0.532	0.479	0.213	200
CA55-C-16V-22 μ F-M	22	C	10	6	10	35	352	440	0.856	0.771	0.343	150
CA55-C-16V-33 μ F-M	33	C	10	6	10	53	528	660	0.856	0.771	0.343	150
CA55-C-16V-47 μ F-M	47	C	10	6	10	75	752	940	1.049	0.944	0.420	100
CA55-D-16V-47 μ F-M	47	D	10	6	10	75	752	940	1.225	1.102	0.490	100
CA55-D1-16V-47 μ F-M	47	D1	10	6	10	75	752	940	1.225	1.102	0.490	100
CA55-C-16V-68 μ F-M	68	C	10	6	10	109	1088	1360	1.049	0.944	0.420	100
CA55-D-16V-68 μ F-M	68	D	10	6	10	109	1088	1360	1.225	1.102	0.490	100
CA55-D1-16V-68 μ F-M	68	D1	10	6	10	109	1088	1360	1.225	1.102	0.490	100
CA55-C-16V-100 μ F-M	100	C	14	10	14	160	1600	2000	1.409	0.944	0.420	100
CA55-D-16V-100 μ F-M	100	D	14	10	14	160	1600	2000	1.225	1.102	0.490	100
CA55-D1-16V-100 μ F-M	100	D1	14	10	14	160	1600	2000	1.225	1.102	0.490	100
CA55-E-16V-100 μ F-M	100	E	14	10	14	160	1600	2000	1.323	1.191	0.529	100
CA55-D-16V-150 μ F-M	150	D	14	10	14	240	2400	3000	1.225	1.102	0.490	100
CA55-E-16V-150 μ F-M	150	E	14	10	14	240	2400	3000	1.323	1.191	0.529	100
CA55-D-16V-220 μ F-M	220	D	14	10	14	352	3520	4400	1.464	1.317	0.580	70
CA55-E-16V-220 μ F-M	220	E	14	10	14	352	3520	4400	1.581	1.423	0.632	70
CA55-E-16V-330 μ F-M	330	E	14	10	14	528	5280	6600	1.784	1.605	0.724	55
CA55-F-16V-330 μ F-M	330	F	14	10	14	528	5280	6600	1.809	1.628	0.714	55
<b>Rated voltage:20V Category voltage:13V</b>												
CA55-A-20V-2.2 μ F-M	2.2	A	10	6	10	4	44	55	0.194	0.174	0.077	2000
CA55-A-20V-3.3 μ F-M	3.3	A	10	6	10	7	66	83	0.204	0.184	0.082	1800

# POLYMER TANTALUM SOLID ELECTROLYTIC CHIP CAPACITORS

Part NO.	Cap (μF)	Size code	Maximum Value									
			DF(%) @25°C			DCL(μA) @25°C			Rms Current(A)			ESR(mΩ) @100kHz 25°C
			-55°C	25°C	85°C 125°C	25°C	85°C	125°C	25°C	85°C	125°C	
CA55-A-20V-4.7 μ F-M	4.7	A	10	6	10	9	94	118	0.224	0.201	0.089	1500
CA55-B-20V-4.7 μ F-M	4.7	B	10	6	10	9	94	118	0.326	0.293	0.130	800
CA55-A-20V-6.8 μ F-M	6.8	A	10	6	10	14	136	170	0.274	0.246	0.110	1000
CA55-B-20V-6.8 μ F-M	6.8	B	10	6	10	14	136	170	0.376	0.339	0.151	600
CA55-B-20V-10 μ F-M	10	B	10	6	10	20	200	250	0.532	0.479	0.213	300
CA55-C-20V-10 μ F-M	10	C	10	6	10	20	200	250	0.606	0.545	0.242	300
CA55-B-20V-15 μ F-M	15	B	10	6	10	30	300	375	0.583	0.525	0.233	250
CA55-C-20V-15 μ F-M	15	C	10	6	10	30	300	375	0.742	0.667	0.297	200
CA55-B-20V-22 μ F-M	22	B	10	6	10	44	440	550	0.652	0.587	0.261	180
CA55-C-20V-22 μ F-M	22	C	10	6	10	44	440	550	0.782	0.704	0.313	180
CA55-D-20V-22 μ F-M	22	D	10	6	10	44	440	550	0.913	0.822	0.365	180
CA55-D1-20V-22 μ F-M	22	D1	10	6	10	44	440	550	0.913	0.822	0.365	180
CA55-C-20V-33 μ F-M	33	C	10	6	10	66	660	825	0.856	0.771	0.343	150
CA55-D-20V-33 μ F-M	33	D	10	6	10	66	660	825	1.000	0.900	0.400	150
CA55-D1-20V-33 μ F-M	33	D1	10	6	10	66	660	825	1.000	0.900	0.400	150
CA55-C-20V-47 μ F-M	47	C	10	6	10	94	940	1175	0.957	0.862	0.383	120
CA55-D-20V-47 μ F-M	47	D	10	6	10	94	940	1175	1.118	1.006	0.447	120
CA55-D1-20V-47 μ F-M	47	D1	10	6	10	94	940	1175	1.118	1.006	0.447	120
CA55-D-20V-68 μ F-M	68	D	10	6	10	136	1360	1700	1.225	1.102	0.490	100
CA55-D1-20V-68 μ F-M	68	D1	10	6	10	136	1360	1700	1.225	1.102	0.490	100
CA55-E-20V-68 μ F-M	68	E	10	6	10	136	1360	1700	1.323	1.191	0.529	100
CA55-D-20V-100 μ F-M	100	D	14	10	14	200	2000	2500	1.225	1.102	0.490	100
CA55-E-20V-100 μ F-M	100	E	14	10	14	200	2000	2500	1.323	1.191	0.529	100
CA55-E-20V-150 μ F-M	150	E	14	10	14	300	3000	3750	1.323	1.191	0.529	100
CA55-F-20V-150 μ F-M	150	F	14	10	14	300	3000	3750	1.342	1.207	0.537	100
CA55-E-20V-220 μ F-M	220	E	14	10	14	440	4400	5500	1.323	1.191	0.529	100
CA55-F-20V-220 μ F-M	220	F	14	10	14	440	4400	5500	1.342	1.207	0.537	100
<b>Rated voltage:25V Category voltage:17V</b>												
CA55-A-25V-1.5 μ F-M	1.5	A	10	6	10	4	38	47	0.274	0.246	0.110	1000
CA55-A-25V-2.2 μ F-M	2.2	A	10	6	10	6	55	69	0.306	0.276	0.122	800
CA55-A-25V-3.3 μ F-M	3.3	A	10	6	10	8	83	103	0.306	0.276	0.122	800
CA55-A-25V-4.7 μ F-M	4.7	A	10	6	10	12	118	147	0.306	0.276	0.122	800
CA55-B-25V-4.7 μ F-M	4.7	B	10	6	10	12	118	147	0.326	0.293	0.130	800
CA55-B-25V-6.8 μ F-M	6.8	B	10	6	10	17	170	213	0.376	0.339	0.151	600
CA55-C-25V-6.8 μ F-M	6.8	C	10	6	10	17	170	213	0.428	0.385	0.171	600
CA55-B-25V-10 μ F-M	10	B	10	6	10	25	250	313	0.532	0.479	0.213	300
CA55-C-25V-10 μ F-M	10	C	10	6	10	25	250	313	0.606	0.545	0.242	300
CA55-C-25V-15 μ F-M	15	C	10	6	10	38	375	469	0.742	0.667	0.297	200
CA55-C-25V-22 μ F-M	22	C	10	6	10	55	550	688	0.782	0.704	0.313	180
CA55-D-25V-22 μ F-M	22	D	10	6	10	55	550	688	0.913	0.822	0.365	180
CA55-D1-25V-22 μ F-M	22	D1	10	6	10	55	550	688	0.913	0.822	0.365	180

# POLYMER TANTALUM SOLID ELECTROLYTIC CHIP CAPACITORS

Part NO.	Cap (μF)	Size code	Maximum Value									
			DF(%) @25°C			DCL(μA) @25°C			Rms Current(A)			ESR(mΩ) @100kHz 25°C
			-55°C	25°C	85°C 125°C	25°C	85°C	125°C	25°C	85°C	125°C	
CA55-C-25V-33 μ F-M	33	C	10	6	10	83	825	1031	0.856	0.771	0.343	150
CA55-D-25V-33 μ F-M	33	D	10	6	10	83	825	1031	1.000	0.900	0.400	150
CA55-D1-25V-33 μ F-M	33	D1	10	6	10	83	825	1031	1.000	0.900	0.400	150
CA55-E-25V-33 μ F-M	33	E	10	6	10	83	825	1031	1.080	0.972	0.432	150
CA55-C-25V-47 μ F-M	47	C	10	6	10	118	1175	1469	0.856	0.771	0.343	150
CA55-D-25V-47 μ F-M	47	D	10	6	10	118	1175	1469	1.000	0.900	0.400	150
CA55-D1-25V-47 μ F-M	47	D1	10	6	10	118	1175	1469	1.000	0.900	0.400	150
CA55-E-25V-47 μ F-M	47	E	10	6	10	118	1175	1469	1.080	0.972	0.432	150
CA55-D-25V-68 μ F-M	68	D	10	6	10	170	1700	2125	1.225	1.102	0.490	100
CA55-E-25V-68 μ F-M	68	E	10	6	10	170	1700	2125	1.323	1.191	0.529	100
CA55-E-25V-100 μ F-M	100	E	14	10	14	250	2500	3125	1.323	1.191	0.529	100
CA55-F-25V-100 μ F-M	100	F	14	10	14	250	2500	3125	1.342	1.207	0.537	100
CA55-E-25V-150 μ F-M	150	E	14	10	14	375	3750	4688	1.323	1.191	0.529	100
CA55-F-25V-150 μ F-M	150	F	14	10	14	375	3750	4688	1.342	1.207	0.537	100
CA55-F-25V-220 μ F-M	220	F	14	10	14	550	5500	6875	1.342	1.207	0.537	100

## Rated voltage:35V Category voltage:23V

CA55-A-35V-1 μ F-M	1	A	10	6	10	5	50	63	0.158	0.142	0.063	3000
CA55-A-35V-1.5 μ F-M	1.5	A	10	6	10	5	53	66	0.173	0.156	0.069	2500
CA55-B-35V-1.5 μ F-M	1.5	B	10	6	10	5	53	66	0.184	0.166	0.074	2500
CA55-A-35V-2.2 μ F-M	2.2	A	10	6	10	8	77	96	0.306	0.276	0.122	800
CA55-B-35V-2.2 μ F-M	2.2	B	10	6	10	8	77	96	0.230	0.207	0.092	1600
CA55-B-35V-3.3 μ F-M	3.3	B	10	6	10	12	116	144	0.230	0.207	0.092	1600
CA55-B-35V-4.7 μ F-M	4.7	B	10	6	10	16	165	206	0.412	0.371	0.165	500
CA55-C-35V-4.7 μ F-M	4.7	C	10	6	10	16	165	206	0.371	0.334	0.148	800
CA55-C-35V-6.8 μ F-M	6.8	C	10	6	10	24	238	298	0.428	0.385	0.171	600
CA55-C-35V-10 μ F-M	10	C	10	6	10	35	350	438	0.742	0.667	0.297	200
CA55-D-35V-10 μ F-M	10	D	10	6	10	35	350	438	0.866	0.779	0.346	200
CA55-D1-35V-10 μ F-M	10	D1	10	6	10	35	350	438	0.866	0.779	0.346	200
CA55-C-35V-15 μ F-M	15	C	10	6	10	53	525	656	0.856	0.771	0.343	150
CA55-D-35V-15 μ F-M	15	D	10	6	10	53	525	656	1.000	0.900	0.400	150
CA55-D1-35V-15 μ F-M	15	D1	10	6	10	53	525	656	1.000	0.900	0.400	150
CA55-E-35V-15 μ F-M	15	E	10	6	10	53	525	656	1.080	0.972	0.432	150
CA55-C-35V-22 μ F-M	22	C	10	6	10	77	770	963	0.856	0.771	0.343	150
CA55-D-35V-22 μ F-M	22	D	10	6	10	77	770	963	1.000	0.900	0.400	150
CA55-D1-35V-22 μ F-M	22	D1	10	6	10	77	770	963	1.000	0.900	0.400	150
CA55-E-35V-22 μ F-M	22	E	10	6	10	77	770	963	1.080	0.972	0.432	150
CA55-D-35V-33 μ F-M	33	D	10	6	10	116	1155	1444	1.000	0.900	0.400	150
CA55-E-35V-33 μ F-M	33	E	10	6	10	116	1155	1444	1.080	0.972	0.432	150
CA55-F-35V-33 μ F-M	33	F	10	6	10	116	1155	1444	1.095	0.986	0.438	150
CA55-D-35V-47 μ F-M	47	D	10	6	10	165	1645	2056	1.225	1.102	0.490	100
CA55-E-35V-47 μ F-M	47	E	10	6	10	165	1645	2056	1.323	1.191	0.529	100

# POLYMER TANTALUM SOLID ELECTROLYTIC CHIP CAPACITORS

Part NO.	Cap (μF)	Size code	Maximum Value									
			DF(%) @25°C			DCL(μA) @25°C			Rms Current(A)			ESR(mΩ) @100kHz 25°C
			-55°C	25°C	85°C 125°C	25°C	85°C	125°C	25°C	85°C	125°C	
CA55-F-35V-47 μ F-M	47	F	10	6	10	165	1645	2056	1.342	1.207	0.537	100
CA55-E-35V-68 μ F-M	68	E	10	6	10	238	2380	2975	1.323	1.191	0.529	100
CA55-F-35V-68 μ F-M	68	F	10	6	10	238	2380	2975	1.342	1.207	0.537	100

## Rated voltage:50V Category voltage:33V

CA55-A-50V-0.68 μ F-M	0.68	A	10	6	10	3	34	43	0.173	0.156	0.069	2500
CA55-B-50V-1 μ F-M	1	B	10	6	10	5	50	63	0.184	0.166	0.074	2500
CA55-B-50V-1.5 μ F-M	1.5	B	10	6	10	8	75	94	0.206	0.186	0.082	2000
CA55-C-50V-1.5 μ F-M	1.5	C	10	6	10	8	75	94	0.235	0.211	0.094	2000
CA55-C-50V-2.2 μ F-M	2.2	C	10	6	10	11	110	138	0.291	0.262	0.116	1300
CA55-C-50V-3.3 μ F-M	3.3	C	10	6	10	17	165	206	0.303	0.272	0.121	1200
CA55-D-50V-3.3 μ F-M	3.3	D	10	6	10	17	165	206	0.354	0.318	0.141	1200
CA55-D1-50V-3.3 μ F-M	3.3	D1	10	6	10	17	165	206	0.354	0.318	0.141	1200
CA55-C-50V-4.7 μ F-M	4.7	C	10	6	10	24	235	294	0.371	0.334	0.148	800
CA55-D-50V-4.7 μ F-M	4.7	D	10	6	10	24	235	294	0.433	0.390	0.173	800
CA55-D1-50V-4.7 μ F-M	4.7	D1	10	6	10	24	235	294	0.433	0.390	0.173	800
CA55-D-50V-6.8 μ F-M	6.8	D	10	6	10	34	340	425	0.500	0.450	0.200	600
CA55-D1-50V-6.8 μ F-M	6.8	D1	10	6	10	34	340	425	0.500	0.450	0.200	600
CA55-D-50V-10 μ F-M	10	D	10	6	10	50	500	625	0.866	0.779	0.346	200
CA55-D1-50V-10 μ F-M	10	D1	10	6	10	50	500	625	0.866	0.779	0.346	200
CA55-E-50V-10 μ F-M	10	E	10	6	10	50	500	625	0.935	0.842	0.374	200
CA55-D-50V-15 μ F-M	15	D	10	6	10	75	750	938	1.000	0.900	0.400	150
CA55-E-50V-15 μ F-M	15	E	10	6	10	75	750	938	1.080	0.972	0.432	150
CA55-E-50V-22 μ F-M	22	E	10	6	10	110	1100	1375	1.080	0.972	0.432	150
CA55-F-50V-22 μ F-M	22	F	10	6	10	110	1100	1375	1.095	0.986	0.438	150
CA55-E-50V-33 μ F-M	33	E	10	6	10	165	1650	2063	1.080	0.972	0.432	150
CA55-F-50V-33 μ F-M	33	F	10	6	10	165	1650	2063	1.095	0.986	0.438	150
CA55-E-50V-47 μ F-M	47	E	10	6	10	235	2350	2938	1.323	1.191	0.529	100

## Rated voltage:63V Category voltage:45V

CA55-C-63V-1 μ F-M	1	C	10	6	10	6	63	79	0.235	0.211	0.094	2000
CA55-C-63V-1.5 μ F-M	1.5	C	10	6	10	9	95	118	0.235	0.211	0.094	2000
CA55-C-63V-2.2 μ F-M	2.2	C	10	6	10	14	139	173	0.291	0.262	0.116	1300
CA55-D-63V-2.2 μ F-M	2.2	D	10	6	10	14	139	173	0.340	0.306	0.136	1300
CA55-D1-63V-2.2 μ F-M	2.2	D1	10	6	10	14	139	173	0.340	0.306	0.136	1300
CA55-C-63V-3.3 μ F-M	3.3	C	10	6	10	21	208	260	0.303	0.272	0.121	1200
CA55-D-63V-3.3 μ F-M	3.3	D	10	6	10	21	208	260	0.354	0.318	0.141	1200
CA55-D1-63V-3.3 μ F-M	3.3	D1	10	6	10	21	208	260	0.354	0.318	0.141	1200
CA55-D-63V-4.7 μ F-M	4.7	D	10	6	10	30	296	370	0.433	0.390	0.173	800
CA55-D1-63V-4.7 μ F-M	4.7	D1	10	6	10	30	296	370	0.433	0.390	0.173	800
CA55-D-63V-6.8 μ F-M	6.8	D	10	6	10	43	428	536	0.500	0.450	0.200	600
CA55-E-63V-6.8 μ F-M	6.8	E	10	6	10	43	428	536	0.540	0.486	0.216	600
CA55-D-63V-10 μ F-M	10	D	10	6	10	63	630	788	0.866	0.779	0.346	200



# POLYMER TANTALUM SOLID ELECTROLYTIC CHIP CAPACITORS

Part NO.	Cap (μF)	Size code	Maximum Value									
			DF(%) @25°C			DCL(μA) @25°C			Rms Current(A)			ESR(mΩ) @100kHz 25°C
			-55°C	25°C	85°C 125°C	25°C	85°C	125°C	25°C	85°C	125°C	
CA55-E-63V-10μ F-M	10	E	10	6	10	63	630	788	0.935	0.842	0.374	200
CA55-E-63V-15μ F-M	15	E	10	6	10	95	945	1181	1.080	0.972	0.432	150
CA55-F-63V-15μ F-M	15	F	10	6	10	95	945	1181	1.095	0.986	0.438	150
CA55-E-63V-22μ F-M	22	E	10	6	10	139	1386	1733	1.080	0.972	0.432	150
CA55-F-63V-22μ F-M	22	F	10	6	10	139	1386	1733	1.095	0.986	0.438	150
CA55-F-63V-33μ F-M	33	F	10	6	10	208	2079	2599	1.095	0.986	0.438	150

## » TEMPERATURE CHARACTERISTIC

Temperature characteristic	-55°C	25°C	85°C	125°C
(ΔC/C)*	-20%~+10%	Initial value	-10%~+30%	-10%~+50%
Leakage current	N/A	$I_l=0.1 \cdot C_R \cdot U_R$ or 5μA (With larger)	$10 \cdot I_l$	$12.5 \cdot I_l$

## » ELECTRICAL CHARACTERISTICS

Capacitance and DF are measured at 100Hz, 1V RMS with DC bias of 2.2V.

Leakage Current is measured at rated voltage after 3 minutes, protective resistance of 1000Ω is connected in series with the capacitor in the measuring circuit.

# APPLICATION GUIDE OF TANTALUM AND POLYMER

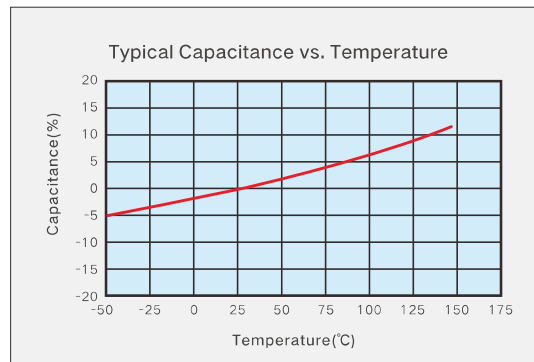
## »» CAPACITANCE

### Rated Capacitance

For tantalum and Polymer capacitors it is measured as the capacitance of the equivalent series circuit at 25°C using a measuring bridge supplied by a 1.0Vrms @100Hz sinusoidal signal, free of harmonics with a bias of 2.2Vdc.

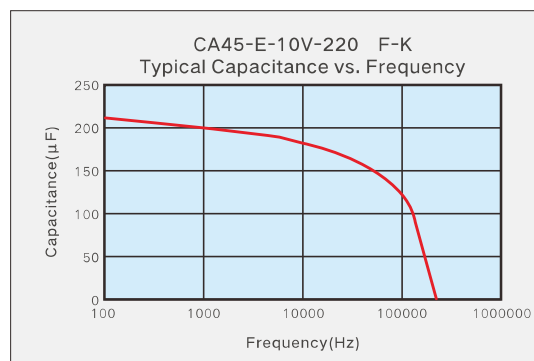
### Temperature Dependence Of Capacitance

The capacitance of a tantalum capacitor varies with temperature. This variation itself is dependent to a small extent on the rated voltage and capacitor size.



### Frequency Dependence Of Capacitance

The effective capacitance decreases as frequency increases. Beyond 100kHz the capacitance continues to drop until resonance is reached (typically between 0.5 - 5MHz depending on the rating). Beyond the resonant frequency the device becomes inductive.

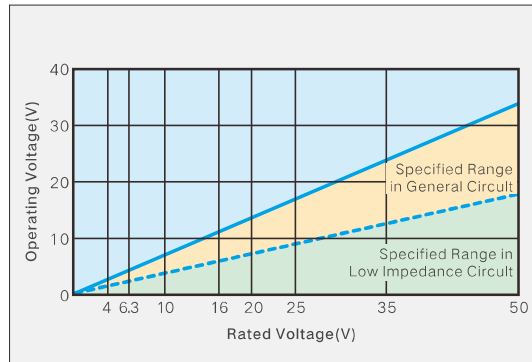


# APPLICATION GUIDE OF TANTALUM AND POLYMER

## » VOLTAGE

### Rated Voltage

This is the rated d.c. voltage for continuous operation up to 85 ° C. Operating voltage consists of the sum of DC bias voltage and ripple peak voltage. The peak voltage should not exceed the category voltage. For recommended voltage derating refer to the following figure.



Only suitable for Tantalum Solid Electrolytic Chip Capacitors

### Category Voltage and Surge Voltage

Category Voltage is the maximum voltage that may be applied continuously to a capacitor. It is equal to the rated voltage up to +85°C, beyond which it is subject to a linear derating to 2/3 VR at 125°C for tantalum.

Surge Voltage is the highest voltage that may be applied to a capacitor for short periods of time in circuits with minimum series resistance of 33Ω (CECC states 1kΩ). The surge voltage may be applied up to 10 times in an hour for periods of up to 30 seconds at a time. The surge voltage must not be used as a parameter in the design of circuits.

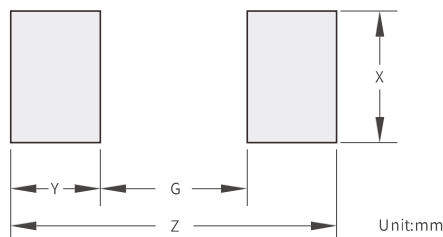
85°C		125°C	
Rated Voltage(Vdc)	Surge Voltage (Vdc)	Category Voltage(Vdc)	Surge Voltage (Vdc)
2.5	2.9	1.7	2.0
4	4.6	2.7	3.1
6.3	7.2	4	4.6
10	11.5	7	8.1
16	18.4	10	11.5
20	23.0	13	15.0
25	28.8	17	19.6
35	40.3	23	26.5
50	57.5	33	38.0
63	72.5	45	51.8

# APPLICATION GUIDE OF TANTALUM AND POLYMER

## »» RIPPLE CURRENT

The maximum ripple current allowed is derived from the power dissipation limits for a given temperature rise above ambient temperature, please refer to CAPACITANCE AND RATED VOLTAGE RANGE.

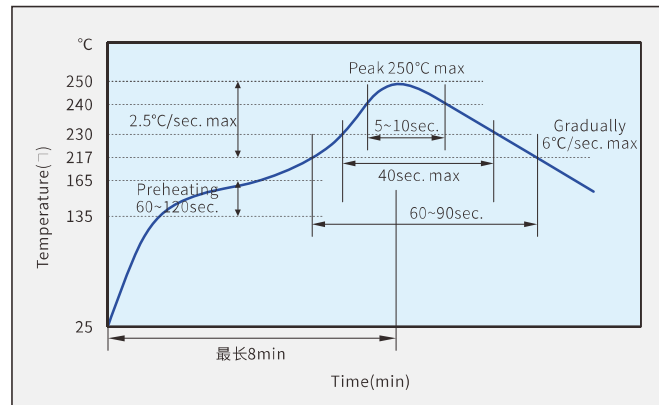
## »» LAND PATTERN DESIGN RECOMMENDATIONS



Case Size	G. Max.	Z Min.	X Min.	Y(Typical)
A	1.0	3.8	1.5	1.05
B	1.4	4.1	2.7	1.35
C	2.9	6.9	2.7	2.0
D/D1	4.1	8.2	2.9	2.05
E	4.1	8.2	2.9	2.05
F	4.1	8.2	4.6	2.05

## »» SOLDERING

Reflow soldering



Hand soldering

Pre-heating: 125°C~150°C/300sec. min

Max. Tip Temperature: 300°C

Max. Exposure Time: 3sec.

Soldering Iron: 30W

# APPLICATION GUIDE OF TANTALUM AND POLYMER

## »» CLEANING

Both Tantalum and Polymer are compatible with most PCB board cleaning systems. If aqueous cleaning is performed, parts must be allowed to dry prior to test. Ultrasonic agitation are not to be recommended.

## »» STORAGE

To maintain the solderability of terminal electrodes and to keep packaging materials in good condition, care must be taken to control temperature and humidity.

- Recommended conditions

Temperature : From -5 °C to 40 °C, Humidity : Below 60% RH

Even under ideal storage conditions, solderability of capacitor is deteriorated as time passes, so capacitors shall be used within 12 months from the time of delivery. If exceeding the above period, please check solderability before using the capacitors.

