

Mallory Sonalert Tantalum Products Group TS5 Series Silver Case Tantalum Capacitors

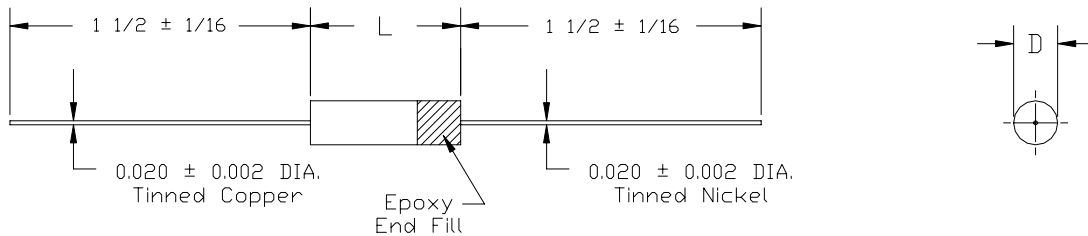
KEY FEATURES

- High capacitance per case size
- High capacitance-weight ratio
- Low DC Leakage
- Multiple case sizes to maximize volumetric efficiency

HIGHLIGHTS

- Capacitance: 1 uF to 1200 uF
- Voltage: 6 to 60 VDC @ 85°C
- Tolerance: U = -15% +75%
M = ± 20%
K = ± 10%
J = ± 5%

OUTLINE DRAWING

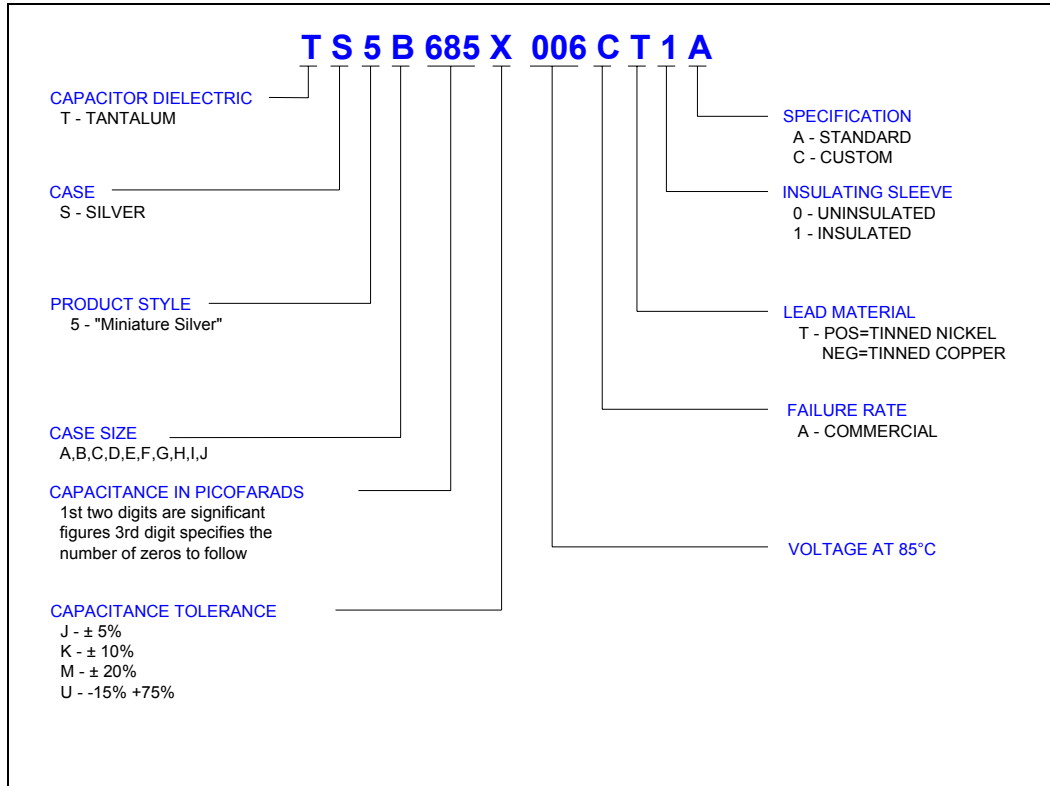


LENGTH, DIAMETER, & WEIGHT

CASE SIZE	LENGTH (L) TOL. ± 0.015 (0.38)	DIAMETER (D) TOL. ± 0.005 (0.127)	APPROXIMATE WEIGHT (GRAMS)
A	0.290 (7.37)	0.105 (2.67)	0.30
B	0.350 (8.89)	0.105 (2.67)	0.37
C	0.460 (11.68)	0.105 (2.67)	0.47
D	0.425 (10.80)	0.133 (3.38)	0.60
E	0.425 (10.80)	0.148 (3.76)	0.70
F	0.500 (12.70)	0.133 (3.38)	0.77
G	0.490 (12.45)	0.193 (4.90)	1.35
H	0.570 (14.48)	0.193 (4.90)	1.65
I	0.750 (19.05)	0.193 (4.90)	2.50
J	0.750 (19.05)	0.220 (5.59)	2.60

Length and Diameter are in inches and (mm).

PART NUMBER SCHEME



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TS5/MTP Cap (uF)	TS5/MTP WVDC +85°C	TS5 Case Size	MTP Case Size	TS5 Catalog Number	MTP Catalog Number	TS5 MAX DCL (uA) +85°C	MTP MAX DCL (uA) +85°C	TS5 MAX DF +25°C	MTP MAX DF +25°C	TS5 Case Dia (in)	MTP Case Dia (in)	TS5 Case Len (in)	MTP Case Len (in)
15	6	C	D	TS5C156X006CT1A	MTP156M006P1D	7.0	6.0	20	18	0.105	0.115	0.460	0.300
47	6	C	A	TS5C476X006CT1A	MTP476M006P1A	7.0	6.0	20	34	0.105	0.115	0.460	0.403
150	6	G	B	TS5G157X006CT1A	MTP157M006P1B	10.0	8.0	35	44	0.193	0.145	0.490	0.600
180	6	G	B	TS5G187X006CT1A	MTP187M006P1B	10.0	8.0	35	46	0.193	0.145	0.490	0.600
470	6	I	C	TS5I477X006CT1A	MTP477M006P1C	10.0	10.0	35	64	0.193	0.225	0.750	0.778
10	10	B	D	TS5B106X010CT1A	MTP106M010P1D	6.0	6.0	16	14	0.105	0.115	0.350	0.300
33	10	C	A	TS5C336X010CT1A	MTP336M010P1A	7.0	6.0	18	28	0.105	0.115	0.460	0.403
100	10	F	B	TS5F107X010CT1A	MTP107M010P1B	8.0	8.0	20	30	0.133	0.145	0.500	0.600
120	10	F	B	TS5F127X010CT1A	MTP127M010P1B	8.0	8.0	20	32	0.133	0.145	0.500	0.600
300	10	I	C	TS5I307X010CT1A	MTP307M010P1C	10.0	10.0	26	41	0.193	0.225	0.750	0.778
330	10	I	C	TS5I337X010CT1A	MTP337M010P1C	10.0	10.0	26	40	0.193	0.225	0.750	0.778
22	15	C	A	TS5C226X015CT1A	MTP226M015P1A	7.0	6.0	16	20	0.105	0.115	0.460	0.403
68	15	F	B	TS5F686X015CT1A	MTP686M015P1B	8.0	8.0	18	32	0.133	0.145	0.500	0.600
80	15	F	B	TS5F806X015CT1A	MTP806M015P1B	8.0	8.0	18	32	0.133	0.145	0.500	0.600
200	15	I	C	TS5I207X015CT1A	MTP207M015P1C	10.0	10.0	21	30	0.193	0.225	0.750	0.778
220	15	I	C	TS5I227X015CT1A	MTP227M015P1C	10.0	10.0	21	30	0.193	0.225	0.750	0.778
6.8	20	B	D	TS5B685X025CT1A	MTP685M020P1D	6.0	6.0	13	14	0.105	0.115	0.350	0.300
15	20	C	A	TS5C156X025CT1A	MTP156M020P1A	7.0	6.0	14	20	0.105	0.115	0.460	0.403
47	20	F	B	TS5F476X025CT1A	MTP476M020P1B	8.0	8.0	16	24	0.133	0.145	0.500	0.600
60	20	G	B	TS5G606X025CT1A	MTP606M020P1B	10.0	8.0	18	32	0.193	0.145	0.490	0.600
150	20	I	C	TS5I157X025CT1A	MTP157M020P1C	10.0	10.0	18	31	0.193	0.225	0.750	0.778
6	30	B	D	TS5B605X035CT1A	MTP605M030P1D	6.0	6.0	12	14	0.105	0.115	0.350	0.300
10	30	C	A	TS5C106X035CT1A	MTP106M030P1A	7.0	6.0	13	16	0.105	0.115	0.460	0.403
45	30	G	B	TS5G476X035CT1A	MTP456M030P1B	10.0	8.0	17	24	0.193	0.145	0.490	0.600
120	30	H	C	TS5H127X035CT1A	MTP127M030P1C	10.0	10.0	17	30	0.193	0.225	0.570	0.778
4.7	35	B	D	TS5B475X035CT1A	MTP475M035P1D	6.0	6.0	12	14	0.105	0.115	0.350	0.300
10	35	C	A	TS5C106X035CT1A	MTP106M035P1A	7.0	6.0	13	16	0.105	0.115	0.460	0.403
100	35	H	C	TS5H107X035CT1A	MTP107M035P1C	10.0	10.0	17	30	0.193	0.225	0.570	0.778
4	50	B	D	TS5B405X050CT1A	MTP405M050P1D	6.0	6.0	10	12	0.105	0.115	0.350	0.300
6.8	50	C	A	TS5C685X050CT1A	MTP685M050P1A	7.0	6.0	13	16	0.105	0.115	0.460	0.403
30	50	G	B	TS5G306X050CT1A	MTP306M050P1B	10.0	8.0	15	22	0.193	0.145	0.490	0.600
33	50	G	B	TS5G336X050CT1A	MTP336M050P1B	10.0	8.0	15	22	0.193	0.145	0.490	0.600
78	50	I	C	TS5I756X050CT1A	MTP786M050P1C	10.0	10.0	15	22	0.193	0.225	0.750	0.778
3.3	60	B	D	TS5B335X060CT1A	MTP335M060P1D	6.0	6.0	10	12	0.105	0.115	0.350	0.300
4.7	60	C	A	TS5C475X060CT1A	MTP475M060P1A	7.0	6.0	13	14	0.105	0.115	0.460	0.403
6.8	60	C	A	TS5C685X060CT1A	MTP685M060P1A	7.0	6.0	13	16	0.105	0.115	0.460	0.403
10	60	D	B	TS5D106X060CT1A	MTP106M060P1B	8.0	8.0	13	18	0.133	0.145	0.425	0.600
15	60	E	B	TS5E156X060CT1A	MTP156M060P1B	8.0	8.0	13	20	0.148	0.145	0.425	0.600
22	60	G	B	TS5G226X060CT1A	MTP226M060P1B	10.0	8.0	13	24	0.193	0.145	0.490	0.600
33	60	G	C	TS5G336X060CT1A	MTP336M060P1C	10.0	10.0	13	18	0.193	0.225	0.490	0.778
47	60	H	C	TS5H476X060CT1A	MTP476M060P1C	10.0	10.0	13	20	0.193	0.225	0.570	0.778
68	60	I	C	TS5I686X060CT1A	MTP686M060P1C	10.0	10.0	13	22	0.193	0.225	0.750	0.778

NOTE: Highlighting denotes significant differences in parameters. Capacitance Tolerance: U = -15% +75%; M = ± 20%; K = ± 10%; J = ± 5%

PHYSICAL FEATURES

- Terminals: Negative = Tin-Lead coated Copper
Positive = Tin-Lead coated Nickel
- Case: Silver
- Anode: Sintered Tantalum with embedded tantalum lead wire.

TEST PARAMETERS

Surge Voltage is intermittent DC voltage including transient and peak ripple voltage applied to the capacitor. The maximum surge voltage shall not exceed 115% of the rated voltage.

These capacitors shall withstand 1000 cycles of surge voltage applied at 85°C through a 1000-ohm resistor. Each cycle shall consist of ½ minute on voltage and 5 ½ minutes with no voltage applied. After the test the capacitor will meet the initial 25°C electrical requirements.

Life Test shall be for 1000 hours at 85°C with the full rated voltage applied. At the test's end, capacitance shall not have changed more than ±15% from the initial readings. For parts where the voltage rating is 10 or lower the amount of change allowed is +15% to -20%. DC leakage current shall not exceed the initial limits and the DF shall not exceed 1.5 times the initial limit.

Lead Pull – The leads shall withstand a 3-pound axial pull for 5 seconds.

Lead Bend – At the point of egress from the capacitor, the leads shall withstand three 90° bends around a radius equal to the lead diameter.

Marking - Capacitor polarity is indicated by the red epoxy end and by a + sign. The EIA date code, capacitance, voltage and tolerance are also printed on the case.

NOTES:

Operating Temperature - -55°C to +85°C

Reverse Voltage - Reverse voltage should never be applied to these capacitors.

Capacitance and Dissipation Factor are measured at 120Hz and 25°C with an AC voltage of 0.5 volts rms. A bias voltage of 1.2 to 2.2 volts shall be used.

DC Leakage Current shall be measured after 5 minutes (except 10 minutes for I and J case sizes) application of rated voltage at 25°C to the capacitor in series with a 1000 ohm resistor.

D.C. Rated Voltage - The maximum allowable continuous D.C. voltage at the rated temperature of 85° C. *Reverse voltage* should never be used with the TSR capacitor.

PACKAGING - TS5 capacitors are packaged in sealed plastic bags containing up to 100 parts, or on tape (at no additional cost). Orders constituting a small portion of a reel are packaged in ammo type boxes. All orders are carefully packed in order to avoid damage in transit and include identifying labels showing the quantity, part number, customer part number, description, customer order number, customer name and package order.