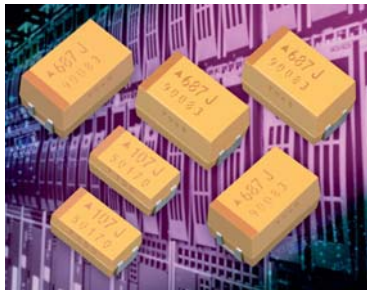


# TPS Series

## Low ESR



### FEATURES

- Low ESR series of robust MnO<sub>2</sub> solid electrolyte capacitors
- CV range: 0.15-1500µF / 2.5-50V
- 14 case sizes available
- Power supply applications



SnPb termination option is not RoHS compliant.

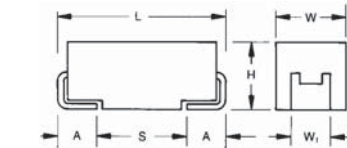
### APPLICATIONS

- General medium power DC/DC convertors

### CASE DIMENSIONS: millimeters (inches)

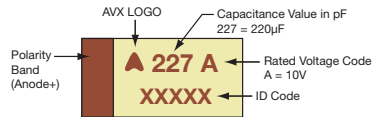
Code	EIA Code	EIA Metric	L±0.20 (0.008)	W+0.20 (0.008) -0.10 (0.004)	H+0.20 (0.008) -0.10 (0.004)	W <sub>1</sub> ±0.20 (0.008)	A+0.30 (0.012) -0.20 (0.008)	S Min.
A	1206	3216-18	3.20 (0.126)	1.60 (0.063)	1.60 (0.063)	1.20 (0.047)	0.80 (0.031)	1.10 (0.043)
B	1210	3528-21	3.50 (0.138)	2.80 (0.110)	1.90 (0.075)	2.20 (0.087)	0.80 (0.031)	1.40 (0.055)
C	2312	6032-28	6.00 (0.236)	3.20 (0.126)	2.60 (0.102)	2.20 (0.087)	1.30 (0.051)	2.90 (0.114)
D	2917	7343-31	7.30 (0.287)	4.30 (0.169)	2.90 (0.114)	2.40 (0.094)	1.30 (0.051)	4.40 (0.173)
E	2917	7343-43	7.30 (0.287)	4.30 (0.169)	4.10 (0.162)	2.40 (0.094)	1.30 (0.051)	4.40 (0.173)
F	2312	6032-20	6.00 (0.236)	3.20 (0.126)	2.00 (0.079) max.	2.20 (0.087)	1.30 (0.051)	2.90 (0.114)
P	0805	2012-15	2.05 (0.081)	1.35 (0.053)	1.50 (0.059) max.	1.00±0.10 (0.039±0.004)	0.50 (0.020)	0.85 (0.033)
R	0805	2012-12	2.05 (0.081)	1.30 (0.051)	1.20 (0.047) max.	1.00±0.10 (0.039±0.004)	0.50 (0.020)	0.85 (0.033)
S	1206	3216-12	3.20 (0.126)	1.60 (0.063)	1.20 (0.047) max.	1.20 (0.047)	0.80 (0.031)	1.10 (0.043)
T	1210	3528-12	3.50 (0.138)	2.80 (0.110)	1.20 (0.047) max.	2.20 (0.087)	0.80 (0.031)	1.40 (0.055)
V	2924	7361-38	7.30 (0.287)	6.10 (0.240)	3.55 (0.140)	3.10 (0.120)	1.30 (0.051)	4.40 (0.173)
W	2312	6032-15	6.00 (0.236)	3.20 (0.126)	1.50 (0.059) max.	2.20 (0.087)	1.30 (0.051)	2.90 (0.114)
X	2917	7343-15	7.30 (0.287)	4.30 (0.169)	1.50 (0.059) max.	2.40 (0.094)	1.30 (0.051)	4.40 (0.173)
Y	2917	7343-20	7.30 (0.287)	4.30 (0.169)	2.00 (0.079) max.	2.40 (0.094)	1.30 (0.051)	4.40 (0.173)

W1 dimension applies to the termination width for A dimensional area only.

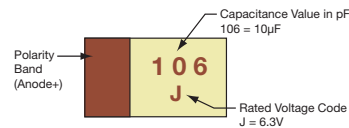


### MARKING

A, B, C, D, E, F, S, T, V, W, X, Y CASE



### P, R CASE



### HOW TO ORDER

TPS	C	107	M	010	R	0100	-
<b>Type</b>	<b>Case Size</b> See table above	<b>Capacitance Code</b> pF code: 1st two digits represent significant figures, 3rd digit represents multiplier (number of zeros to follow)	<b>Tolerance</b> K = ±10% M = ±20%	<b>Rated DC Voltage</b> 002 = 2.5Vdc 004 = 4Vdc 006 = 6.3Vdc 010 = 10Vdc 016 = 16Vdc 020 = 20Vdc 025 = 25Vdc 035 = 35Vdc 050 = 50Vdc	<b>Packaging</b> R = Pure Tin 7" Reel S = Pure Tin 13" Reel A = Gold Plating 7" Reel B = Gold Plating 13" Reel H = Tin Lead 7" Reel (Contact Manufacturer) K = Tin Lead 13" Reel (Contact Manufacturer) H, K = Non RoHS	<b>ESR in mΩ</b>	<b>Additional characters may be added for special requirements</b> V = Dry pack Option (selected ratings only)

### TECHNICAL SPECIFICATIONS

Technical Data:	All technical data relate to an ambient temperature of +25°C									
Capacitance Range:	0.15 µF to 1500 µF									
Capacitance Tolerance:	±10%; ±20%									
Rated Voltage (V <sub>R</sub> )	≤ +85°C:	2.5	4	6.3	10	16	20	25	35	50
Category Voltage (V <sub>C</sub> )	≤ +125°C:	1.7	2.7	4	7	10	13	17	23	33
Surge Voltage (V <sub>S</sub> )	≤ +85°C:	3.3	5.2	8	13	20	26	32	46	65
Surge Voltage (V <sub>S</sub> )	≤ +125°C:	2.2	3.4	5	8	13	16	20	28	40
Temperature Range:	-55°C to +125°C									
Environmental Classification:	55/125/56 (IEC 68-2)									
Reliability:	1% per 1000 hours at 85°C, V <sub>R</sub> with 0.1Ω/V series impedance, 60% confidence level									
Termination Finished:	Sn Plating (standard), Gold and SnPb Plating upon request									
	For AEC-Q200 availability, please contact AVX									



### CAPACITANCE AND RATED VOLTAGE RANGE (LETTER DENOTES CASE SIZE)

Capacitance		Rated Voltage DC (V <sub>R</sub> ) to 85°C								
µF	Code	2.5V (e)	4V (G)	6.3V (J)	10V (A)	16V (C)	20V (D)	25V (E)	35V (V)	50V (T)
0.15	154									A(9000)
0.22	224								A(6000)	A(7000)
0.33	334								A(6000)	A(7000)
0.47	474							A(7000)	A(6000) B(4000)	A(6500), B(6000) C(2300)
0.68	684							A(6000)	A(6000)	B(4000)
1.0	105				R(9000)	A(6200)	A(3000), R(6000) S(6000), T(2000)	A(4000) R(2500,4000)	A(3000) B(2000)	A(3000) C(2500)
1.5	155						A(3000)	A(3000) B(1800)	A(3000) B(2500)	C(1500,2000)
2.2	225			R(7000)	A(1800)	A(1800,3500) T(2000)	A(3000), B(1700)	A(2500) B(1300)	A(1500), B(750), 1500,2000, C(1000)	C(1500) D(1200)
3.3	335			A(2100)	T(1500)	A(3500), B(2500)	A(2500) B(1300)	A(1000,1500) B(750,1500,2000)	B(1000) C(700)	C(1000) D(800)
4.7	475			S(4000)	A(1400), B(1400) R(3000,5000)	A(2000) B(800,1500)	A(1800) B(750,1000)	B(700,900,1500) C(700)	B(700,1500) C(600), D(700)	C(800) D(250,300,500,700) X(500)
6.8	685			A(1800)	A(1800), B(1300) T(1800)	A(1500) B(600,1200)	A(1000) B(600,1000) C(700)	B(700) C(500,600,700)	C(350) D(150,400,500)	D(200, 300, 500,600)
10	106		R(3000)	A(1500), B(1500) R(1000,1500,3000) T(1000)	A(900,1800), B(1000) P(2000) <sup>M</sup> , S(900) T(1000,2000)	A(1000), B(500,800) C(500), T(800,1000) W(500,600)	B(500,1000) C(500,700) W(250, 500)	B(1800) C(300,500) D(500)	C(600) D(125,300) E(200), Y(250)	D(500) E(250,300, 400,500)
15	156			A(700,1500)	A(1000) B(450,600), C(700) T(1200)	B(500,800) C(300,700)	B(500) C(400,450)	C(220,300) D(100,300)	C(350,450) D(100,300) Y(250)	E(250) V(250)
22	226			A(500,900) B(375,600) C(500), S(900)	A(900) B(400,500,700) C(300), T(800)	B(400,600) C(150,250,300,375) D(700), W(500)	B(400,600) C(100,150,400) D(200,300)	C(275,400) D(100,200,300) F(300)	D(125,200,300,400) E(125,200,300) Y(200)	
33	336			A(600) B(250,350,450,600) T(800)	A(700) B(250,425,500,650) C(150,375,500) W(350)	B(350,500) C(100,150,225,300) D(200), W(140,175, 250,400,500) Y(300,400)	C(300) D(100,200)	C(400) D(100,200,300) E(100,175, 200,300) Y(200)	D(200,300) E(100,250,300) V(200)	
47	476		A(500)	A(800) B(250,350,500) C(300), T(1200)	B(250,350,500,650) C(200,350) D(100,300) W(125,150,250)	C(110,350) D(80,100,150,200) W(200) X(180), Y(250)	D(75,100,200) E(70,125,150, 200,250) X(200)	D(125,150,250) E(80,100,125) Y(250)	E(200,250) V(150,200)	
68	686			B(250,350,500) C(150,200) W(110,125,250)	B(600) C(80,100,200,300) D(100,150), W(100,150) Y(100,200)	C(125,200) D(70,100,150) F(200), X(150) Y(150,200,250)	D(70,150, 200,300) E(125,150,200) Y(200)	D(150,200,300) E(125,200) V(80,95,150,200)	V(150,200)	
100	107	B(200)	B(200,250, 350,500) W(100)	B(250,400) C(75,150), D(300) W(100,150) Y(100)	B(400) C(75,100,150,200) D(50,65,80,100,125, 150), E(125) W(150) X(85,150,200) Y(100,150,200)	C(200) D(60,100,125,150) E(55,100,125,150) F(150,200) <sup>M</sup> Y(100,150,200)	D(85,100,150) E(100,150,200) V(60,85,100,200)	E(150), V(100)		
150	157	B(150)	B(250) C(70,80)	C(50,90,150,200,250) D(50,125), Y(40,50)	C(150), D(50,85,100), E(100), F(200), X(100) <sup>M</sup> Y(100,150,200)	D(60,85,100,125,150) E(100), V(45,75) Y(200) <sup>M</sup>	V(80)	V(150) <sup>M</sup>		
220	227	B(150, 200,600) D(45)	D(40,50,100) Y(40,50,75)	C(70,100,125,250) D(50,100,125) E(100), F(200) Y(100,150)	D(40,50,100,150) E(50,60,70,100, 125,150) Y(100,150,200)	E(100,150) V(50,75,100,150)				
330	337	Y(40)	C(100) D(35,45,100) F(200) X(100)	C(80,100) D(45,50,70,100) E(50,100,125,150) V(100), Y(75,100,150)	D(50,65,100,150) E(40,50,60,100) V(40,60,100)	E(200) <sup>M</sup>				
470	477	D(35) F(200) Y(100)	D(45,100) E(35,45,100)	D(45,60,100,200) E(45,50,60,100,200) V(40,55,100), Y(150)	E(45,50,60,100,200) V(40,60,100)					
680	687	D(35,50) E(35,50) Y(100)	D(45,60,100) E(40,60,100)	E(45,60,100) V(35,40,50)	E(150) <sup>M</sup> V(100) <sup>M</sup>					
1000	108	E(30,40) Y(100) <sup>M</sup>	E(40,60) V(25,35,40,50)	E(100) <sup>M</sup> , V(40,50) <sup>M</sup>						
1500	158	D(100) E(50) V(30,40) <sup>M</sup>	E(50,75) V(50,75) <sup>M</sup>							

Not recommended for new designs; higher voltage or smaller case size alternatives are available.

Released ratings<sup>M</sup> (ESR ratings in mOhms in parentheses)

Engineering samples - please contact AVX

\*Ratings under development – subject to change

NOTE: Voltage ratings are minimum values. AVX reserves the right to supply higher voltage ratings in the same case size, to the same reliability standards.

### RATINGS & PART NUMBER REFERENCE

AVX Part No.	Case Size	Capacitance (µF)	Rated Voltage (V)	Rated Temperature (°C)	Category Voltage (V)	Category Temperature (°C)	DCL Max. (µA)	DF Max. (%)	ESR Max. @ 100kHz (mΩ)	MSL	100kHz RMS Current (A)		
											25°C	85°C	125°C
<b>2.5 Volt @ 85°C</b>													
TPSB107*002#0200	B	100	2.5	85	1.7	125	2.5	8	200	1	0.652	0.587	0.261
TPSB157*002#0150	B	150	2.5	85	1.7	125	3	10	150	1	0.753	0.677	0.301
TPSB227*002#0150	B	220	2.5	85	1.7	125	4.4	16	150	1	0.753	0.677	0.301
TPSB227*002#0200	B	220	2.5	85	1.7	125	4.4	16	200	1	0.652	0.587	0.261
TPSB227*002#0600	B	220	2.5	85	1.7	125	4.4	16	600	1	0.376	0.339	0.151
TPSD227*002#0045	D	220	2.5	85	1.7	125	5.5	8	45	1	1.826	1.643	0.730
TPSY337*002#0040	Y	330	2.5	85	1.7	125	8.2	8	40	1 <sup>1)</sup>	1.768	1.591	0.707
TPSD477*002#0035	D	470	2.5	85	1.7	125	11.6	8	35	1	2.070	1.863	0.828
TPSF477*002#0200	F	470	2.5	85	1.7	125	11.8	12	200	1	0.707	0.636	0.283
TPSY477*002#0100	Y	470	2.5	85	1.7	125	11	12	100	1 <sup>1)</sup>	1.118	1.006	0.447
TPSD687*002#0035	D	680	2.5	85	1.7	125	17	16	35	1	2.070	1.863	0.828
TPSD687*002#0050	D	680	2.5	85	1.7	125	17	16	50	1	1.732	1.559	0.693
TPSE687*002#0035	E	680	2.5	85	1.7	125	17	10	35	1 <sup>1)</sup>	2.171	1.954	0.868
TPSE687*002#0050	E	680	2.5	85	1.7	125	17	10	50	1 <sup>1)</sup>	1.817	1.635	0.727
TPSY687*002#0100	Y	680	2.5	85	1.7	125	17	12	100	1 <sup>1)</sup>	1.118	1.006	0.447
TPSE108*002#0030	E	1000	2.5	85	1.7	125	25	14	30	1 <sup>1)</sup>	2.345	2.111	0.938
TPSE108*002#0040	E	1000	2.5	85	1.7	125	25	14	40	1 <sup>1)</sup>	2.031	1.828	0.812
TPSY108M002#0100	Y	1000	2.5	85	1.7	125	25	30	100	1 <sup>1)</sup>	1.118	1.006	0.447
TPSD158*002#0100	D	1500	2.5	85	1.7	125	37.5	60	100	1	1.125	1.102	0.490
TPSE158*002#0050	E	1500	2.5	85	1.7	125	37.5	20	50	1 <sup>1)</sup>	1.817	1.635	0.727
TPSV158M002#0030	V	1500	2.5	85	1.7	125	30	20	30	1 <sup>1)</sup>	2.887	2.598	1.155
TPSV158M002#0040	V	1500	2.5	85	1.7	125	30	20	40	1 <sup>1)</sup>	2.500	2.250	1.000
<b>4 Volt @ 85°C</b>													
TPSR106*004#3000	R	10	4	85	2.7	125	0.5	6	3000	1	0.135	0.122	0.054
TPSA476*004#0500	A	47	4	85	2.7	125	1.9	8	500	1	0.387	0.349	0.155
TPSB107*004#0200	B	100	4	85	2.7	125	4	8	200	1	0.652	0.587	0.261
TPSB107*004#0250	B	100	4	85	2.7	125	4	8	250	1	0.583	0.525	0.233
TPSB107*004#0350	B	100	4	85	2.7	125	4	8	350	1	0.493	0.444	0.197
TPSB107*004#0500	B	100	4	85	2.7	125	4	8	500	1	0.412	0.371	0.165
TPSW107*004#0100	W	100	4	85	2.7	125	4	6	100	1	0.949	0.854	0.379
TPSB157*004#0250	B	150	4	85	2.7	125	6	10	250	1	0.583	0.525	0.233
TPSC157*004#0070	C	150	4	85	2.7	125	6	6	70	1	1.254	1.128	0.501
TPSC157*004#0080	C	150	4	85	2.7	125	6	6	80	1	1.173	1.055	0.469
TPSD227*004#0040	D	220	4	85	2.7	125	8.8	8	40	1	1.936	1.743	0.775
TPSD227*004#0050	D	220	4	85	2.7	125	8.8	8	50	1	1.732	1.559	0.693
TPSD227*004#0100	D	220	4	85	2.7	125	8.8	8	100	1	1.225	1.102	0.490
TPSY227*004#0040	Y	220	4	85	2.7	125	8.8	8	40	1 <sup>1)</sup>	1.768	1.591	0.707
TPSY227*004#0050	Y	220	4	85	2.7	125	8.8	8	50	1 <sup>1)</sup>	1.581	1.423	0.632
TPSY227*004#0075	Y	220	4	85	2.7	125	8.8	8	75	1 <sup>1)</sup>	1.291	1.162	0.516
TPSC337*004#0100	C	330	4	85	2.7	125	13.2	8	100	1	1.049	0.944	0.420
TPSD337*004#0035	D	330	4	85	2.7	125	13.2	8	35	1	2.070	1.863	0.828
TPSD337*004#0045	D	330	4	85	2.7	125	13.2	8	45	1	1.826	1.643	0.730
TPSD337*004#0100	D	330	4	85	2.7	125	13.2	8	100	1	1.225	1.102	0.490
TPSF337*004#0200	F	330	4	85	2.7	125	13.2	10	200	1	0.707	0.636	0.283
TPSX337*004#0100	X	330	4	85	2.7	125	13.2	8	100	1 <sup>1)</sup>	1.000	0.900	0.400
TPSD477*004#0045	D	470	4	85	2.7	125	18.8	12	45	1	1.826	1.643	0.730
TPSD477*004#0100	D	470	4	85	2.7	125	18.8	12	100	1	1.225	1.102	0.490
TPSE477*004#0035	E	470	4	85	2.7	125	18.8	10	35	1 <sup>1)</sup>	2.171	1.954	0.868
TPSE477*004#0045	E	470	4	85	2.7	125	18.8	10	45	1 <sup>1)</sup>	1.915	1.723	0.766
TPSE477*004#0100	E	470	4	85	2.7	125	18.8	10	100	1 <sup>1)</sup>	1.285	1.156	0.514
TPSD687*004#0045	D	680	4	85	2.7	125	27.2	14	45	1	1.826	1.643	0.730
TPSD687*004#0060	D	680	4	85	2.7	125	27.2	14	60	1	1.581	1.423	0.632
TPSD687*004#0100	D	680	4	85	2.7	125	27.2	14	100	1	1.225	1.102	0.490
TPSE687*004#0040	E	680	4	85	2.7	125	27.2	10	40	1 <sup>1)</sup>	2.031	1.828	0.812
TPSE687*004#0060	E	680	4	85	2.7	125	27.2	10	60	1 <sup>1)</sup>	1.658	1.492	0.663
TPSE687*004#0100	E	680	4	85	2.7	125	27.2	10	100	1 <sup>1)</sup>	1.285	1.156	0.514
TPSE108*004#0040	E	1000	4	85	2.7	125	40	14	40	1 <sup>1)</sup>	2.031	1.828	0.812
TPSE108*004#0060	E	1000	4	85	2.7	125	40	14	60	1 <sup>1)</sup>	1.658	1.492	0.663
TPSV108*004#0025	V	1000	4	85	2.7	125	40	16	25	1 <sup>1)</sup>	3.162	2.846	1.265
TPSV108*004#0035	V	1000	4	85	2.7	125	40	16	35	1 <sup>1)</sup>	2.673	2.405	1.069
TPSV108*004#0040	V	1000	4	85	2.7	125	40	16	40	1 <sup>1)</sup>	2.500	2.250	1.000
TPSV108*004#0050	V	1000	4	85	2.7	125	40	16	50	1 <sup>1)</sup>	2.236	2.012	0.894
TPSE158*004#0050	E	1500	4	85	2.7	125	60	30	50	1 <sup>1)</sup>	1.817	1.635	0.727
TPSE158*004#0075	E	1500	4	85	2.7	125	60	30	75	1 <sup>1)</sup>	1.483	1.335	0.593
TPSV158M004#0050	V	1500	4	85	2.7	125	60	30	50	1 <sup>1)</sup>	2.236	2.012	0.894
TPSV158M004#0075	V	1500	4	85	2.7	125	60	30	75	1 <sup>1)</sup>	1.826	1.643	0.730
<b>6.3 Volt @ 85°C</b>													
TPSR225*006#7000	R	2.2	6.3	85	4	125	0.5	6	7000	1	0.089	0.080	0.035
TPSA335*006#2100	A	3.3	6.3	85	4	125	0.5	6	2100	1	0.189	0.170	0.076
TPSS475*006#4000	S	4.7	6.3	85	4	125	0.5	6	4000	1	0.127	0.115	0.051

















### RATINGS & PART NUMBER REFERENCE

AVX Part No.	Case Size	Capacitance (µF)	Rated Voltage (V)	Rated Temperature (°C)	Category Voltage (V)	Category Temperature (°C)	DCL Max. (µA)	DF Max. (%)	ESR Max. @ 100kHz (mΩ)	MSL	100kHz RMS Current (A)		
											25°C	85°C	125°C
TPSV686*035#0150	V	68	35	85	23	125	23.8	6	150	1 <sup>1)</sup>	1.291	1.162	0.516
TPSV686*035#0200	V	68	35	85	23	125	23.8	6	200	1 <sup>1)</sup>	1.118	1.006	0.447
<b>50 Volt @ 85°C</b>													
TPSA154*050#9000	A	0.15	50	85	33	125	0.5	4	9000	1	0.091	0.082	0.037
TPSA224*050#7000	A	0.22	50	85	33	125	0.5	4	7000	1	0.104	0.093	0.041
TPSA334*050#7000	A	0.33	50	85	33	125	0.5	4	7000	1	0.104	0.093	0.041
TPSA474*050#6500	A	0.47	50	85	33	125	0.5	4	6500	1	0.107	0.097	0.043
TPSB474*050#6000	B	0.47	50	85	33	125	0.5	4	6000	1	0.119	0.107	0.048
TPSC474*050#2300	C	0.47	50	85	33	125	0.5	4	2300	1	0.219	0.197	0.087
TPSB684*050#4000	B	0.68	50	85	33	125	0.5	4	4000	1	0.146	0.131	0.058
TPSB105*050#3000	B	1	50	85	33	125	0.5	6	3000	1	0.168	0.151	0.067
TPSC105*050#2500	C	1	50	85	33	125	0.5	4	2500	1	0.210	0.189	0.084
TPSC155*050#1500	C	1.5	50	85	33	125	0.8	6	1500	1	0.271	0.244	0.108
TPSC155*050#2000	C	1.5	50	85	33	125	0.8	6	2000	1	0.235	0.211	0.094
TPSC225*050#1500	C	2.2	50	85	33	125	1.1	8	1500	1	0.271	0.244	0.108
TPSD225*050#1200	D	2.2	50	85	33	125	1.1	6	1200	1	0.354	0.318	0.141
TPSC335*050#1000	C	3.3	50	85	33	125	1.6	6	1000	1	0.332	0.298	0.133
TPSD335*050#0800	D	3.3	50	85	33	125	1.7	6	800	1	0.433	0.390	0.173
TPSC475*050#0800	C	4.7	50	85	33	125	2.4	6	800	1	0.371	0.334	0.148
TPSD475*050#0250	D	4.7	50	85	33	125	2.4	6	250	1	0.775	0.697	0.310
TPSD475*050#0300	D	4.7	50	85	33	125	2.4	6	300	1	0.707	0.636	0.283
TPSD475*050#0500	D	4.7	50	85	33	125	2.4	6	500	1	0.548	0.493	0.219
TPSD475*050#0700	D	4.7	50	85	33	125	2.4	6	700	1	0.463	0.417	0.185
TPSX475*050#0500V	X	4.7	50	85	33	125	2.4	6	500	3	0.447	0.402	0.179
TPSD685*050#0200	D	6.8	50	85	33	125	3.4	6	200	1	0.866	0.779	0.346
TPSD685*050#0300	D	6.8	50	85	33	125	3.4	6	300	1	0.707	0.636	0.283
TPSD685*050#0500	D	6.8	50	85	33	125	3.4	6	500	1	0.548	0.493	0.219
TPSD685*050#0600	D	6.8	50	85	33	125	3.4	6	600	1	0.500	0.450	0.200
TPSD106*050#0500	D	10	50	85	33	125	5	6	500	1	0.548	0.493	0.219
TPSE106*050#0250	E	10	50	85	33	125	5	6	250	1 <sup>1)</sup>	0.812	0.731	0.325
TPSE106*050#0300	E	10	50	85	33	125	5	6	300	1 <sup>1)</sup>	0.742	0.667	0.297
TPSE106*050#0400	E	10	50	85	33	125	5	6	400	1 <sup>1)</sup>	0.642	0.578	0.257
TPSE106*050#0500	E	10	50	85	33	125	5	6	500	1 <sup>1)</sup>	0.574	0.517	0.230
TPSE156*050#0250	E	15	50	85	33	125	7.5	6	250	1 <sup>1)</sup>	0.812	0.731	0.325
TPSV156*050#0250	V	15	50	85	33	125	7.5	6	250	1 <sup>1)</sup>	1.000	0.900	0.400

<sup>1)</sup> -Dry pack option (see How to order) is recommended for reduction of stress during soldering. Dry pack parts should be treated as MSL 3.

**For AEC-Q200 availability, please contact AVX.**

Moisture Sensitivity Level (MSL) is defined according to J-STD-020

All technical data relates to an ambient temperature of +25°C. Capacitance and DF are measured at 120Hz, 0.5V RMS with a maximum DC bias of 2.2 volts.

DCL is measured at rated voltage after 5 minutes.

The EIA & CECC standards for low ESR Solid Tantalum Capacitors allow an ESR movement to 1.25 times catalogue limit post mounting.

For typical weight and composition see page 222.

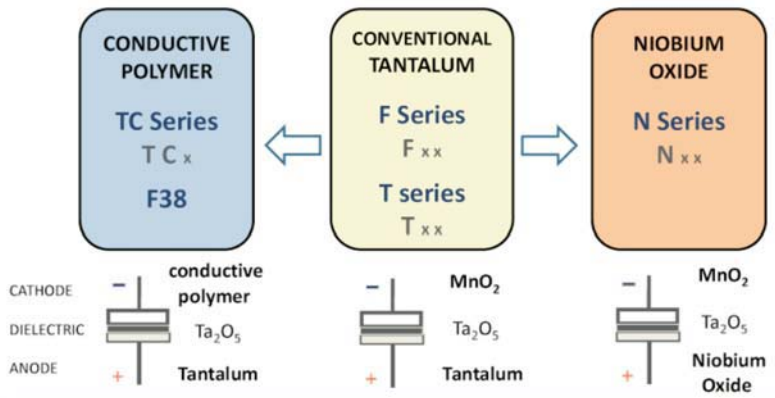
**NOTE: AVX reserves the right to supply a higher voltage ratings or tighter tolerance part in the same case size, to the same reliability standards.**

### QUALIFICATION TABLE

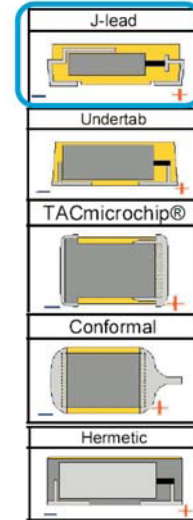
TEST	TPS series (Temperature range -55°C to +125°C)										
	Condition			Characteristics							
<b>Endurance</b>	Apply rated voltage (UR) at 85±2°C and / or category voltage (Uc) at 125±2°C for 2000 +48/-0 hours through a circuit impedance of ≤0.1Ω/V. Stabilize at room temperature for 1-2 hours before measuring.			Visual examination	no visible damage						
				DCL	1.5 x initial limit						
				ΔC/C	within ±10% of initial value						
				DF	initial limit						
				ESR	1.25 x initial limit						
<b>Humidity</b>	Store at 65±2°C and 95±2% relative humidity for 500 +48/-0 hours, with no applied voltage. Stabilize at room temperature and humidity for 1-2 hours before measuring.			Visual examination	no visible damage						
				DCL	1.5 x initial limit						
				ΔC/C	within ±10% of initial value						
				DF	1.2 x initial limit						
				ESR	1.25 x initial limit						
<b>Temperature Stability</b>	Step	Temperature°C	Duration(min)		+20°C	-55°C	+20°C	+85°C	+125°C	+20°C	
	1	+20±2	15	DCL	IL*	n/a	IL*	10 x IL*	12.5 x IL*	IL*	
	2	-55+0/-3	15		ΔC/C	n/a	+0/-10%	±5%	+10/-0%	+12/-0%	±5%
	3	+20±2	15	DF		IL*	1.5 x IL*	IL*	1.5 x IL*	2 x IL*	IL*
	4	+85+3/-0	15		ESR	1.25 x IL*	2.5 x IL*	1.25 x IL*	1.25 x IL*	1.25 x IL*	1.25 x IL*
	5	+125+3/-0	15								
	6	+20±2	15								
<b>Surge Voltage</b>	Apply 1.3x category voltage (Uc) at 125 +3/-0°C for 1,000 cycles of duration 6 mins. (30 secs. charge, 5 min. 30 sec. discharge) through a charge / discharge resistance of 1000±100Ω			Visual examination	no visible damage						
				DCL	initial limit						
				ΔC/C	within ±5% of initial value						
				DF	initial limit						
				ESR	1.25 x initial limit						

\*Initial Limit

### AVX SOLID ELECTROLYTIC CAPACITOR ROADMAP



### FIVE CAPACITOR CONSTRUCTION STYLES



### SERIES LINE UP: CONVENTIONAL SMD MnO<sub>2</sub>

