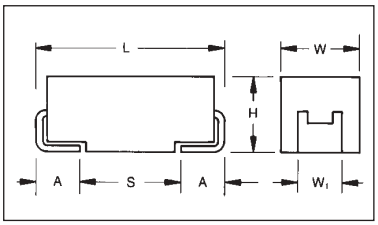
TPS Series

Low ESR

TPS surface mount products have inherently low ESR (equivalent series resistance) and are capable of higher ripple current handling, producing lower ripple voltages, less power and heat dissipation than standard product for the most efficient use of circuit power. TPS has been designed, manufactured, and preconditioned for optimum performance in typical power supply applications. By combining the latest improvements intantalum powder technology, improved manufacturing processes, and application specific preconditioning tests, AVX is able to provide a technologically superior alternative to the standard range.



For part marking see page 93

CASE DIMENSIONS: millimeters (inches)

Code	EIA Code	Dimension Low Profile	L±0.20 (0.008)	W+0.20 (0.008) -0.10 (0.004)	H (Nom.)	W_1±0.20 (0.008)	A+0.30 (0.012) -0.20 (0.008)	S Min.
A	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	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	6032-28	–	6.00 (0.236)	3.20 (0.126)	2.6 (0.102)	2.20 (0.087)	1.30 (0.051)	2.90 (0.114)
D	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	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)
R*	2012-12	R Case (1.20)	2.05 (0.081)	1.30 (0.051)	1.20 (0.047)	1.20 (0.047)	0.50 (0.020)	0.85 (0.033)
S**	3216-12	A Case (1.20)	3.20 (0.126)	1.60 (0.063)	1.20 (0.047)	1.20 (0.047)	0.80 (0.031)	1.10 (0.043)
T**	3528-12	B Case (1.50)	3.50 (0.138)	2.80 (0.110)	1.20 (0.047)	2.20 (0.087)	0.80 (0.031)	1.40 (0.055)
V	7361-38	–	7.30 (0.287)	6.10 (0.240)	3.45 ±0.30 (0.136 ±0.012)	3.10 (0.120)	1.40 (0.055)	4.40 (0.173)
W**	6032-15	C Case (1.50	6.00 (0.236)	3.20 (0.126)	1.50 (0.059)	2.20 (0.087)	1.30 (0.051)	2.90 (0.114)
X**	7343-15	D Case (1.50)	7.30 (0.287)	4.30 (0.169)	1.50 (0.059)	2.40 (0.094)	1.30 (0.051)	4.40 (0.173)
Y**	7343-20	D Case (2.00)	7.30 (0.287)	4.30 (0.169)	2.00 (0.079)	2.40 (0.094)	1.30 (0.051)	4.40 (0.173)

W_1 dimension applies to the termination width for A dimensional area only.

*** 0805 Footprint Compatible ** Low Profile Versions of A & B & C & D Case**

HOW TO ORDER

TPS	C	107	M	010	R	0100
Type	**Case Size** See table above	**Capacitor Code** pF code: 1st two digits represent significant figures, 3rd digit represents multiplier (number of zeros to follow)	**Tolerance** K = ±10% M = ±20%	**Rated DC Voltage** 006 = 6.3Vdc 010 = 10Vdc 016 = 16Vdc 020 = 20Vdc 025 = 25Vdc 035 = 35Vdc 050 = 50Vdc	**Packaging** R = 7" T/R S = 13" T/R A = Gold Plating 7" Reel B = Gold Plating 13" Reel	**Maximum ESR in Milliohms** See note below

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

TECHNICAL SPECIFICATIONS

Technical Data:		All technical data relate to an ambient temperature of +25°C						
Capacitance Range:		1.0µF to 470µF						
Capacitance Tolerance:		±10%; ±20%						
Rated Voltage (V_R)	≦ +85°C:	6.3	10	16	20	25	35	50
Category Voltage (V_C)	≦ +125°C:	4	7	10	13	17	23	33
Surge Voltage (V_S)	≦ +85°C:	8	13	20	26	32	46	65
Surge Voltage (V_S)	≦ +125°C:	5	8	12	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, Vr with 0.1Ω/V series impedance, 60% confidence level						

TPS Series

Low ESR

CAPACITANCE AND RATED VOLTAGE, V_R (VOLTAGE CODE) RANGE (LETTER DENOTES CASE SIZE)

Capacitance		Rated Voltage DC (V_R) to 85°C								
µF	Code	2.5V	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)	
0.47	474							A(7000)	A(6000) B(4000)	
0.68	684							A(6000)	A(6000)	
1	105				R(9000)		A(3000), R(6000) S(6000), T(2000)		A(3000) B(2000)	C(2500)
1.5	155							A(3000) B(1800)	B(2500)	C(1500,2000)
2.2	225			R(7000)	A(1800)	A(1800,3500) T(2000)	A(3000)	B(1200,2500)	B(2000) C(1000)	D(1200)
3.3	335					A(3500)	A(2500) B(1300)	B(2000)	C(700)	D(800)
4.7	475			S(4000)	A(1400) R(3000, 5000)	A(2000) B(800,1500)	A(1800) B(1000)	B(700,900,1500)	B(1500) C(600)	D(300,500,700)
6.8	685			A(1800)	A(1800) T(1800)	A(1500) B(1200)	B(1000) C(700)	C(500,600,700)	C(500)	D(500,600)
10	106		R(3000)	A(1500) R(1000,1500, 3000)	A(900,1800) P(2000) T(1000,2000)	B(800), C(500) T(800,1000) W(600)	B(1000) C(500,700)	C(300,500)	D(125,300) E(200)	E(400,500)
15	156			A(700,1500)	A(1000) B(600)	B(800)	C(400,450)	C(300) D(100,300)	C(450) D(100,300)	
22	226			A(500,900) B(600)	B(400,500,700) T(800)	B(600) C(250,300,375) W(500)	C(150,400) D(300)	C(400) D(100,200,300)	D(125,200, 300,400) E(125,200,300)	
33	336			A(600) B(600) T(800)	B(425,500,650) C(150,375,500) W(350)	C(225,300) D(200) W(175,250, 400,500) Y(300,400)	C(300) D(100,200)	D(100,200,300) E(100,175, 200,300)	D(200,300) E(100,250,300)	
47	476		A(500)	B(250,350,500) C(300)	B(350,500,650) C(350) D(100) W(125,150,250)	C(350) D(80,100, 150,200) Y(250)	D(100,200) E(70,125,150, 200,250)	D(150,250) E(100,125)	E(200,250)	
68	686			B(350,500) C(150,200) W(125,250)	C(200,300) D(100,150) Y(100,200)	C(200) D(70,100,150) Y(200,250)	D(70,150, 200,300) E(125,150,200)	E(125,200) V(95,150,200)		
100	107		B(350,500)	B(400) C(75,150) Y(100)	C(75,100,150,200) D(50,65,80,100, 125,140,150) E(125), Y(100,150,200) X(150,200)	D(60,100, 125,150) E(55,100, 125,150) Y(100,150,200)	D(150) E(150,200) V(60,85,100,200)			
150	157			C(150,200,250) D(50,125)	D(50,85,100) Y(100,150,200)	D(100,125,150) E(100), V(45,75)				
220	227	B(600)	D(50,100)	C(100,125,250) D(50,100,150) E(100) Y(100,150)	D(50,100,150) E(50,60,70,100, 125,150) Y(150,200)	E(100,150) V(50,75, 100,150)				
330	337		D(45,100)	D(45,50,70,100) E(50,100,125,150) Y(150)	D(100,150) E(40,50,60,100) V(40,60,100)					
470	477		D(45,100) E(100)	D(100,200) E(45,50,60,100,200) V(40,55,100)	E(45,50,60,100,200) V(60,100)					
680	687		D(100) E(40,60,100)	E(45,60,100) V(35,40,50)						
1000	108		E(60) V(35,40,50)							

For C, D and E case ratings in TPS Series, ESR ratings are printed on capacitor side in the following format:
T x x x -where x x x is ESR limit in milliohms i.e. T100 represents max. ESR of 100 milliohms.

ESR limits quoted in brackets (milliohms)

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

TPS Series

Low ESR

RATINGS & PART NUMBER REFERENCE

AVX Part No.	Case Size	Capacitance (µF)	Rated Voltage (V)	DCL (µA) Max.	DF % Max.	ESR Max. (mΩ) @100kHz	100kHz Ripple Current Ratings (A)			100kHz Ripple Voltage Ratings (V)		
							25ºC	85ºC	125ºC	25ºC	85ºC	125ºC
TPSR106*004#3000	R	10	4	0.5	6	3000	0.135	0.122	0.049	0.405	0.364	0.162
TPSA476*004#0500	A	47	4	1.9	8	500	0.387	0.348	0.155	0.194	0.175	0.078
TPSD157*004#0050	D	150	4	6	6	50	1.732	1.559	0.693	0.087	0.078	0.035
TPSD227*004#0100	D	220	4	8.8	8	100	1.225	1.102	0.490	0.122	0.110	0.049
TPSD337*004#0045	D	330	4	13.2	8	45	1.826	1.643	0.730	0.082	0.074	0.033
TPSD337*004#0100	D	330	4	13.2	8	100	1.225	1.102	0.490	0.122	0.110	0.049
TPSD477*004#0045	D	470	4	18.8	12	45	1.826	1.643	0.730	0.082	0.074	0.033
TPSD477*004#0100	D	470	4	18.8	12	100	1.225	1.102	0.490	0.122	0.110	0.049
TPSD687*004#0100	D	680	4	27.2	14	100	1.284	1.156	0.513	0.128	0.115	0.051
TPSE687*004#0060	E	680	4	27.2	14	60	1.658	1.492	0.663	0.099	0.090	0.040
TPSE687*004#0100	E	680	4	27.2	14	100	1.284	1.156	0.513	0.128	0.116	0.051
TPSV108*004#0040	V	1000	4	40	16	40	2.500	2.250	1.000	0.100	0.090	0.040
TPSV108*004#0050	V	1000	4	40	16	50	2.236	2.012	0.894	0.112	0.101	0.045
TPSR225*006#7000	R	2.2	6.3	0.5	6	7000	0.088	0.079	0.035	0.620	0.558	0.248
TPSS475*006#4000	S	4.7	6.3	0.5	6	4000	0.127	0.115	0.051	0.508	0.457	0.203
TPSA685*006#1800	A	6.8	6.3	0.5	6	1800	0.204	0.184	0.082	0.367	0.331	0.147
TPSR106*006#3000	R	10	6.3	0.6	8	3000	0.135	0.122	0.049	0.405	0.364	0.162
TPSR106*006#1500	R	10	6.3	0.6	8	1500	0.191	0.172	0.076	0.287	0.258	0.115
TPSR106*006#1000	R	10	6.3	0.6	8	1000	0.235	0.211	0.094	0.335	0.211	0.094
TPSA106*006#1500	A	10	6.3	0.6	6	1500	0.224	0.200	0.089	0.335	0.300	0.134
TPSA156*006#1500	A	15	6.3	0.9	8	1500	0.224	0.200	0.089	0.235	0.300	0.134
TPSA226*006#0900	A	22	6.3	1.4	6	900	0.289	0.260	0.115	0.260	0.234	0.104
TPSB226*006#0600	B	22	6.3	1.4	6	600	0.376	0.339	0.151	0.226	0.202	0.090
TPSA336*006#0600	A	33	6.3	2.1	8	600	0.353	0.318	0.141	0.212	0.190	0.084
TPSB336*006#0600	B	33	6.3	2.1	6	600	0.376	0.337	0.151	0.226	0.202	0.090
TPSB476*006#0500	B	47	6.3	3	6	500	0.412	0.371	0.165	0.206	0.186	0.082
TPSB476*006#0350	B	47	6.3	3	6	350	0.493	0.444	0.197	0.173	0.156	0.069
TPSB476*006#0250	B	47	6.3	3	6	250	0.583	0.525	0.233	0.146	0.131	0.058
TPSC476*006#0300	C	47	6.3	3	6	300	0.606	0.545	0.242	0.182	0.163	0.073
TPSB686*006#0500	B	68	6.3	4.3	8	500	0.412	0.371	0.165	0.206	0.186	0.082
TPSW686*006#0250	W	68	6.3	4.3	6	250	0.600	0.540	0.240	0.150	0.135	0.060
TPSW686*006#0125	W	68	6.3	4.3	6	125	0.849	0.764	0.339	0.106	0.095	0.042
TPSC686*006#0200	C	68	6.3	4.3	6	200	0.742	0.667	0.297	0.148	0.133	0.059
TPSC686*006#0150	C	68	6.3	4.3	6	150	0.856	0.766	0.343	0.128	0.115	0.051
TPSB107*006#0400	B	100	6.3	6.3	10	400	0.461	0.415	0.184	0.184	0.166	0.074
TPSC107*006#0150	C	100	6.3	6.3	6	150	0.856	0.766	0.343	0.128	0.115	0.051
TPSC107*006#0075	C	100	6.3	6.3	6	75	1.211	1.090	0.484	0.091	0.082	0.036
TPSY107*006#0100	Y	100	6.3	6.3	6	100	1.118	1.006	0.447	0.112	0.101	0.045
TPSC157*006#0250	C	150	6.3	9.5	6	250	0.663	0.597	0.265	0.166	0.149	0.066
TPSC157*006#0200	C	150	6.3	9.5	6	200	0.742	0.667	0.297	0.148	0.133	0.059
TPSC157*006#0150	C	150	6.3	9.5	6	150	0.856	0.771	0.343	0.128	0.116	0.051
TPSD157*006#0125	D	150	6.3	9.5	6	125	1.095	0.980	0.438	0.137	0.122	0.055
TPSD157*006#0050	D	150	6.3	9.5	6	50	1.732	1.559	0.693	0.087	0.078	0.035
TPSC227*006#0250	C	220	6.3	13.9	8	250	0.663	0.597	0.265	0.166	0.149	0.066
TPSC227*006#0125	C	220	6.3	13.9	8	125	0.938	0.844	0.375	0.117	0.106	0.047
TPSC227*006#0100	C	220	6.3	13.9	8	100	1.049	0.944	0.419	0.105	0.094	0.042
TPSD227*006#0125	D	220	6.3	13.9	8	125	1.095	0.986	0.438	0.137	0.123	0.055
TPSD227*006#0050	D	220	6.3	13.9	8	50	1.732	1.559	0.693	0.087	0.078	0.035
TPSD227*006#0100	D	220	6.3	13.2	8	100	1.125	1.102	0.490	0.122	0.110	0.049
TPSE227*006#0100	E	220	6.3	13.2	8	100	1.285	1,156	0.514	0.128	0.116	0.051
TPSD337*006#0100	D	330	6.3	20.8	8	100	1.125	1.102	0.490	0.122	0.110	0.049
TPSD337*006#0070	D	330	6.3	20.8	8	70	1.464	1.317	0.586	0.102	0.092	0.041
TPSD337*006#0050	D	330	6.3	20.8	8	50	1.732	1.559	0.693	0.087	0.078	0.035
TPSD337*006#0045	D	330	6.3	20.8	8	45	1.826	1.643	0.730	0.082	0.074	0.033
TPSE337*006#0150	E	330	6.3	20.8	8	150	1.049	0.938	0.420	0.157	0.141	0.063
TPSE337*006#0125	E	330	6.3	20.8	8	125	1.149	1.028	0.460	0.144	0.128	0.057
TPSE337*006#0100	E	330	6.3	20.8	8	100	1.285	1.149	0.514	0.128	0.115	0.051
TPSD477*006#0200	D	470	6.3	29.6	12	200	0.866	0.779	0.346	0.173	0.156	0.069
TPSD477*006#0100	D	470	6.3	29.6	12	100	1.225	1.102	0.490	0.122	0.110	0.049
TPSE477*006#0200	E	470	6.3	29.6	10	200	0.908	0.817	0.363	0.182	0.163	0.073
TPSE477*006#0100	E	470	6.3	29.6	10	100	1.285	1.156	0.514	0.128	0.116	0.051
TPSE477*006#0060	E	470	6.3	29.6	10	60	1.658	1.492	0.663	0.099	0.090	0.040
TPSE477*006#0050	E	470	6.3	29.6	10	50	1.817	1.635	0.727	0.091	0.082	0.036
TPSE477*006#0045	E	470	6.3	29.6	10	45	1.915	1.723	0.766	0.086	0.078	0.034
TPSV477*006#0100	V	470	6.3	29.6	10	100	1.581	1.414	0.632	0.158	0.141	0.063
TPSV477*006#0055	V	470	6.3	29.6	10	55	2.132	1.907	0.853	0.117	0.105	0.047
TPSE687*006#0100	E	680	6.3	42.8	10	100	1.284	1.156	0.514	0.128	0.115	0.051
TPSE687*006#0060	E	680	6.3	42.8	10	60	1.658	1.492	0.663	0.099	0.089	0.040
TPSE687*006#0045	E	680	6.3	42.8	10	45	1.915	1.723	0.766	0.086	0.078	0.034

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.
* Insert K for ±10% and M for ±20% Capacitance Tolerance

 # Standard Plating – Insert R for 7" reel and S for 13" reel
 # Gold Plating – Insert A for 7" reel and B for 13" reel

TPS Series

Low ESR

RATINGS & PART NUMBER REFERENCE

AVX Part No.	Case Size	Capacitance (µF)	Rated Voltage (V)	DCL (µA) Max.	DF % Max.	ESR Max. (mΩ) @100kHz	100kHz Ripple Current Ratings (A)			100kHz Ripple Voltage Ratings (V)		
							25ºC	85ºC	125ºC	25ºC	85ºC	125ºC
TPSR105*010#9000	R	1	10	0.5	4	9000	0.078	0.070	0.031	0.702	0.632	0.281
TPSA225*010#1800	A	2.2	10	0.5	6	1800	0.204	0.184	0.082	0.367	0.331	0.147
TPSR475*010#5000	R	4.7	10	0.5	6	5000	0.105	0.094	0.042	0.525	0.472	0.210
TPSR475*010#3000	R	4.7	10	0.5	6	3000	0.135	0.122	0.054	0.406	0.366	0.162
TPSA475*010#1400	A	4.7	10	0.5	6	1400	0.231	0.208	0.093	0.324	0.292	0.130
TPSA685*010#1800	A	6.8	10	0.7	6	1800	0.204	0.184	0.082	0.367	0.331	0.147
TPST685*010#1800	T	6.8	10	0.7	6	1800	0.211	0.189	0.084	0.380	0.342	0.152
TPSA106*010#1800	A	10	10	1	6	1800	0.204	0.183	0.082	0.367	0.329	0.147
TPSA106*010#0900	A	10	10	1	6	900	0.289	0.260	0.115	0.260	0.234	0.104
TPST106*010#2000	T	10	10	1	6	2000	0.200	0.180	0.080	0.400	0.360	0.160
TPST106*010#1000	T	10	10	1	6	1000	0.283	0.254	0.113	0.283	0.254	0.113
TPSA156*010#1000	A	15	10	1.5	6	1000	0.274	0.246	0.110	0.274	0.246	0.110
TPSB226*010#0700	B	22	10	2.2	6	700	0.348	0.312	0.139	0.244	0.218	0.098
TPSB226*010#0500	B	22	10	2.2	6	500	0.412	0.371	0.165	0.205	0.185	0.082
TPST226*010#0800	T	22	10	2.2	8	800	0.316	0.284	0.126	0.253	0.227	0.101
TPSB336*010#0650	B	33	10	3.3	6	650	0.362	0.325	0.145	0.235	0.212	0.094
TPSB336*010#0500	B	33	10	3.3	6	500	0.412	0.371	0.165	0.206	0.186	0.082
TPSB336*010#0425	B	33	10	3.3	6	425	0.447	0.402	0.179	0.190	0.171	0.076
TPSC336*010#0500	C	33	10	3.3	6	500	0.469	0.420	0.188	0.235	0.210	0.094
TPSC336*010#0375	C	33	10	3.3	6	375	0.542	0.484	0.217	0.203	0.182	0.081
TPSC336*010#0150	C	33	10	3.3	6	150	0.856	0.771	0.343	0.128	0.116	0.051
TPSW336*010#0350	W	33	10	3.3	6	350	0.507	0.456	0.203	0.177	0.160	0.071
TPSB476*010#0650	B	47	10	4.7	8	650	0.362	0.325	0.145	0.235	0.212	0.094
TPSB476*010#0500	B	47	10	4.7	8	500	0.412	0.371	0.165	0.206	0.186	0.082
TPSC476*010#0350	C	47	10	4.7	6	350	0.561	0.501	0.224	0.196	0.175	0.078
TPSD476*010#0100	D	47	10	4.7	6	100	1.225	1.102	0.490	0.122	0.110	0.049
TPSW476*010#0250	W	47	10	4.7	6	250	0.600	0.540	0.240	0.150	0.135	0.060
TPSW476*010#0150	W	47	10	4.7	6	150	0.775	0.697	0.310	0.116	0.105	0.046
TPSY686*010#0200	Y	68	10	6.8	6	200	0.791	0.712	0.316	0.158	0.142	0.063
TPSY686*010#0100	Y	68	10	6.8	6	100	1.118	1.006	0.447	0.112	0.101	0.045
TPSD686*010#0150	D	68	10	6.8	6	150	1.000	0.900	0.400	0.150	0.135	0.060
TPSD686*010#0100	D	68	10	6.8	6	100	1.225	1.102	0.490	0.122	0.110	0.049
TPSC686*010#0300	C	68	10	6.8	6	300	0.605	0.544	0.242	0.181	0.163	0.073
TPSC686*010#0200	C	68	10	6.8	6	200	0.741	0.667	0.296	0.148	0.133	0.059
TPSY107*010#0200	Y	100	10	10	6	200	0.791	0.712	0.316	0.158	0.142	0.063
TPSY107*010#0150	Y	100	10	10	6	150	0.913	0.822	0.365	0.137	0.123	0.055
TPSY107*010#0100	Y	100	10	10	6	100	1.118	1.006	0.447	0.112	0.101	0.045
TPSC107*010#0200	C	100	10	10	8	200	0.742	0.667	0.297	0.148	0.133	0.059
TPSC107*010#0100	C	100	10	10	8	100	1.049	0.944	0.420	0.105	0.094	0.042
TPSC107*010#0075	C	100	10	10	8	75	1.211	1.090	0.484	0.091	0.082	0.036
TPSD107*010#0150	D	100	10	10	6	150	1.000	0.894	0.400	0.150	0.134	0.060
TPSD107*010#0140	D	100	10	10	6	150	1,000	0.900	0.400	0.150	0.135	0.060
TPSD107*010#0125	D	100	10	10	6	125	1.095	0.980	0.438	0.137	0.122	0.055
TPSD107*010#0100	D	100	10	10	6	100	1.225	1.095	0.490	0.122	0.110	0.049
TPSD107*010#0080	D	100	10	10	6	80	1.369	1.225	0.548	0.110	0.098	0.044
TPSD107*010#0065	D	100	10	10	6	65	1.519	1.367	0.607	0.098	0.089	0.039
TPSD107*010#0050	D	100	10	10	6	50	1.732	1.559	0.693	0.087	0.078	0.035
TPSE107*010#0125	E	100	10	10	6	125	1.149	1.028	0.460	0.144	0.128	0.057
TPSX107*010#0200	X	100	10	10	8	200	0.707	0.636	0.283	0.141	0.127	0.056
TPSX107*010#0150	X	100	10	10	8	150	0.816	0.735	0.327	0.122	0.110	0.049
TPSY157*010#0200	Y	150	10	15	6	200	0.791	0.712	0.316	0.158	0.142	0.063
TPSY157*010#0150	Y	150	10	15	6	150	0.913	0.822	0.365	0.137	0.123	0.055
TPSY157*010#0100	Y	150	10	15	6	100	1.118	1.006	0.447	0.112	0.101	0.045
TPSD157*010#0100	D	150	10	15	8	100	1.225	1.095	0.490	0.122	0.110	0.049
TPSD157*010#0085	D	150	10	15	8	85	1.328	1.195	0.531	0.113	0.102	0.045
TPSD157*010#0050	D	150	10	15	8	50	1.732	1.559	0.693	0.087	0.078	0.035
TPSY227*010#0200	Y	220	10	22	10	200	0.790	0.711	0.316	0.158	0.142	0.063
TPSY227*010#0150	Y	220	10	22	10	150	0.913	0.822	0.365	0.137	0.123	0.055
TPSD227*010#0150	D	220	10	22	8	150	1,000	0.900	0.400	0.150	0.135	0.060
TPSD227*010#0100	D	220	10	22	8	100	1.225	1.102	0.490	0.122	0.110	0.049
TPSD227*010#0050	D	220	10	22	8	50	1.732	1.559	0.692	0.087	0.078	0.035
TPSE227*010#0150	E	220	10	22	8	150	1.049	0.938	0.420	0.157	0.141	0.063
TPSE227*010#0125	E	220	10	22	8	125	1.149	1.028	0.460	0.144	0.128	0.057
TPSE227*010#0100	E	220	10	22	8	100	1.285	1.149	0.514	0.128	0.115	0.051
TPSE227*010#0070	E	220	10	22	8	70	1.535	1.382	0.614	0.107	0.097	0.043
TPSE227*010#0060	E	220	10	22	8	60	1.658	1.483	0.663	0.099	0.089	0.040

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.
* Insert K for ±10% and M for ±20% Capacitance Tolerance

 # Standard Plating – Insert R for 7" reel and S for 13" reel
 # Gold Plating – Insert A for 7" reel and B for 13" reel

TPS Series

Low ESR

RATINGS & PART NUMBER REFERENCE

AVX Part No.	Case Size	Capacitance (µF)	Rated Voltage (V)	DCL (µA) Max.	DF % Max.	ESR Max. (mΩ) @100kHz	100kHz Ripple Current Ratings (A)			100kHz Ripple Voltage Ratings (V)		
							25ºC	85ºC	125ºC	25ºC	85ºC	125ºC
TPSD227*010#0050	D	220	10	22	10	50	1.732	1.559	0.693	0.087	0.078	0.035
TPSD337*010#0150	D	330	10	33	10	150	1.000	0.900	0.400	0.150	0.135	0.060
TPSD337*010#0100	D	330	10	33	10	100	1.225	1.102	0.490	0.122	0.110	0.049
TPSE337*010#0100	E	330	10	33	10	100	1.285	1.149	0.514	0.128	0.115	0.051
TPSE337*010#0060	E	330	10	33	10	60	1.658	1.483	0.663	0.099	0.089	0.040
TPSE337*010#0050	E	330	10	33	10	50	1.817	1.635	0.727	0.091	0.082	0.036
TPSV337*010#0100	V	330	10	33	10	100	1.581	1.414	0.632	0.158	0.141	0.063
TPSV337*010#0060	V	330	10	33	10	60	2.041	1.826	0.816	0.122	0.110	0.049
TPSE477*010#0200	E	470	10	47	10	200	0.908	0.812	0.363	0.181	0.162	0.072
TPSE477*010#0100	E	470	10	47	10	100	1.285	1.149	0.514	0.128	0.115	0.051
TPSE477*010#0060	E	470	10	47	10	60	1.658	1.492	0.663	0.099	0.090	0.040
TPSE477*010#0050	E	470	10	47	10	50	1.817	1.625	0.727	0.091	0.081	0.036
TPSE477*010#0045	E	470	10	47	10	45	1.915	1.723	0.766	0.086	0.078	0.034
TPSV477*010#0100	V	470	10	47	10	100	1.581	1.423	0.632	0.158	0.142	0.063
TPSV477*010#0060	V	470	10	47	10	60	2.041	1.825	0.816	0.122	0.110	0.049
TPSA225*016#3500	A	2.2	16	0.5	6	3500	0.146	0.131	0.059	0.512	0.458	0.205
TPSA225*016#1800	A	2.2	16	0.5	6	1800	0.204	0.184	0.081	0.367	0.330	0.146
TPST225*016#2000	T	2.2	16	0.5	6	2000	0.200	0.180	0.080	0.400	0.360	0.160
TPSA335*016#3500	A	3.3	16	0.5	6	3500	0.146	0.131	0.059	0.512	0.458	0.205
TPSA475*016#2000	A	4.7	16	0.8	6	2000	0.194	0.174	0.077	0.387	0.349	0.155
TPSB475*016#1500	B	4.7	16	0.8	6	1500	0.238	0.214	0.095	0.357	0.321	0.143
TPSB685*016#1200	B	6.8	16	1.1	6	1200	0.266	0.240	0.106	0.319	0.287	0.128
TPSB106*016#0800	B	10	16	1.6	6	800	0.326	0.293	0.130	0.261	0.235	0.104
TPSC106*016#0500	C	10	16	1.6	6	500	0.469	0.422	0.188	0.235	0.212	0.094
TPSW106*016#0600	W	10	16	1.6	6	600	0.387	0.349	0.155	0.232	0.209	0.093
TPST106*016#1000	T	10	16	1.6	8	1000	0.283	0.255	0.113	0.283	0.255	0.113
TPST106*016#0800	T	10	16	1.6	8	800	0.316	0.284	0.126	0.253	0.228	0.101
TPSB156*016#0800	B	15	16	2.4	6	800	0.326	0.292	0.130	0.261	0.233	0.104
TPSB226*016#0600	B	22	16	3.5	6	600	0.376	0.338	0.150	0.225	0.203	0.090
TPSC226*016#0375	C	22	16	3.5	6	375	0.542	0.484	0.217	0.203	0.182	0.081
TPSC226*016#0300	C	22	16	3.5	6	300	0.605	0.545	0.242	0.181	0.163	0.073
TPSW226*016#0500	W	22	16	3.5	6	500	0.424	0.382	0.170	0.212	0.191	0.085
TPSC336*016#0300	C	33	16	5.3	6	300	0.606	0.545	0.242	0.182	0.163	0.073
TPSC336*016#0225	C	33	16	5.3	6	225	0.699	0.629	0.279	0.157	0.141	0.063
TPSW336*016#0500	W	33	16	5.3	6	500	0.424	0.381	0.169	0.212	0.191	0.085
TPSW336*016#0400	W	33	16	5.3	6	400	0.474	0.427	0.189	0.189	0.170	0.076
TPSW336*016#0250	W	33	16	5.3	6	250	0.600	0.540	0.240	0.150	0.135	0.060
TPSY336*016#0400	Y	33	16	5.3	6	400	0.559	0.503	0.224	0.224	0.202	0.090
TPSY336*016#0300	Y	33	16	5.3	6	300	0.645	0.580	0.258	0.194	0.174	0.078
TPSC476*016#0350	C	47	16	7.5	6	350	0.561	0.501	0.224	0.196	0.175	0.078
TPSY476*016#0250	Y	47	16	7.5	6	250	0.707	0.636	0.283	0.176	0.159	0.071
TPSD476*016#0200	D	47	16	7.5	6	200	0.866	0.775	0.346	0.173	0.155	0.069
TPSD476*016#0150	D	47	16	7.5	6	150	1.000	0.894	0.400	0.150	0.134	0.060
TPSD476*016#0100	D	47	16	7.5	6	100	1.225	1.103	0.490	0.123	0.110	0.049
TPSD476*016#0080	D	47	16	7.5	6	80	1.369	1.232	0.548	0.110	0.099	0.044
TPSY686*016#0250	Y	68	16	10.9	6	250	0.707	0.636	0.283	0.177	0.159	0.071
TPSY686*016#0200	Y	68	16	10.9	6	200	0.791	0.712	0.316	0.158	0.142	0.063
TPSC686*016#0200	C	68	16	10.9	6	200	0.741	0.667	0.297	0.148	0.133	0.059
TPSD686*016#0150	D	68	16	10.9	6	150	1,000	0.894	0.400	0.150	0.134	0.060
TPSD686*016#0100	D	68	16	10.9	6	100	1.225	1.102	0.490	0.122	0.110	0.049
TPSD686*016#0070	D	68	16	10.8	6	70	1.464	1.317	0.586	0.102	0.092	0.041
TPSY107*016#0200	Y	100	16	16	8	200	0.791	0.712	0.316	0.158	0.142	0.063
TPSY107*016#0150	Y	100	16	16	8	150	0.912	0.812	0.365	0.135	0.121	0.055
TPSD107*016#0150	D	100	16	16	6	150	1.000	0.894	0.400	0.150	0.134	0.060
TPSD107*016#0125	D	100	16	16	6	125	1.095	0.980	0.438	0.137	0.122	0.055
TPSD107*016#0100	D	100	16	16	6	100	1.225	1.102	0.490	0.122	0.110	0.049
TPSE107*016#0150	E	100	16	16	6	150	1.049	0.938	0.420	0.157	0.141	0.063
TPSE107*016#0125	E	100	16	16	6	125	1.149	1.028	0.460	0.144	0.128	0.057
TPSE107*016#0100	E	100	16	16	6	100	1.285	1.149	0.514	0.128	0.115	0.051
TPSD157*016#0150	D	150	16	24	6	150	1.000	0.900	0.400	0.150	0.135	0.060
TPSD157*016#0125	D	150	16	24	6	125	1.095	0.986	0.438	0.137	0.123	0.055
TPSD157*016#0100	D	150	16	24	6	100	1.225	1.103	0.490	0.123	0.110	0.049
TPSE227*016#0150	E	220	16	35.2	10	150	1.049	0.944	0.420	0.157	0.142	0.063
TPSE227*016#0100	E	220	16	35.2	10	100	1.285	1.156	0.514	0.128	0.116	0.051
TPSV227*016#0150	V	220	16	35.2	8	150	1.291	1.162	0.516	0.194	0.175	0.078
TPSV227*016#0100	V	220	16	35.2	8	100	1.581	1.414	0.632	0.158	0.141	0.063
TPSV227*016#0075	V	220	16	35.2	8	75	1.825	1.643	0.730	0.137	0.123	0.054

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.
* Insert K for ±10% and M for ±20% Capacitance Tolerance

 # Standard Plating – Insert R for 7" reel and S for 13" reel
 # Gold Plating – Insert A for 7" reel and B for 13" reel

TPS Series

Low ESR

RATINGS & PART NUMBER REFERENCE

AVX Part No.	Case Size	Capacitance (µF)	Rated Voltage (V)	DCL (µA) Max.	DF % Max.	ESR Max. (mΩ) @100kHz	100kHz Ripple Current Ratings (A)			100kHz Ripple Voltage Ratings (V)		
							25ºC	85ºC	125ºC	25ºC	85ºC	125ºC
TPSS105*020#6000	S	1	20	0.5	4	6000	0.104	0.093	0.042	0.624	0.561	0.249
TPSR105*020#6000	R	1	20	0.5	4	6000	0.096	0.086	0.038	0.574	0.517	0.230
TPST105*020#2000	T	1	20	0.5	4	2000	0.115	0.104	0.046	0.693	0.624	0.277
TPSA225*020#3000	A	2.2	20	0.5	6	3000	0.158	0.142	0.063	0.474	0.427	0.190
TPSA335*020#2500	A	3.3	20	0.7	6	2500	0.173	0.156	0.069	0.433	0.390	0.173
TPSB335*020#1300	B	3.3	20	0.7	6	1300	0.256	0.230	0.102	0.333	0.299	0.133
TPSA475*020#1800	A	4.7	20	0.9	6	1800	0.204	0.183	0.082	0.367	0.329	0.147
TPSB685*020#1000	B	6.8	20	1.4	6	1000	0.292	0.262	0.117	0.292	0.262	0.117
TPSC685*020#0700	C	6.8	20	1.4	6	700	0.396	0.357	0.159	0.277	0.250	0.111
TPSB106*020#1000	B	10	20	2	6	1000	0.292	0.261	0.117	0.292	0.261	0.117
TPSC106*020#0700	C	10	20	2	6	700	0.396	0.357	0.159	0.277	0.250	0.111
TPSC156*020#0450	C	15	20	3	6	450	0.494	0.442	0.198	0.222	0.199	0.089
TPSC156*020#0400	C	15	20	3	6	400	0.524	0.472	0.210	0.210	0.189	0.084
TPSC226*020#0400	C	22	20	4.4	6	400	0.524	0.472	0.210	0.210	0.189	0.084
TPSD226*020#0300	D	22	20	4.4	6	300	0.707	0.636	0.283	0.212	0.191	0.085
TPSD336*020#0200	D	33	20	6.6	6	200	0.866	0.775	0.346	0.173	0.155	0.069
TPSD476*020#0200	D	47	20	9.4	6	200	0.866	0.779	0.346	0.173	0.156	0.069
TPSD476*020#0100	D	47	20	9.4	6	100	1.225	1.102	0.490	0.122	0.110	0.049
TPSE476*020#0250	E	47	20	9.4	6	250	0.812	0.731	0.325	0.203	0.183	0.081
TPSE476*020#0200	E	47	20	9.4	6	200	0.908	0.817	0.363	0.182	0.163	0.073
TPSE476*020#0150	E	47	20	9.4	6	150	1.049	0.938	0.420	0.157	0.141	0.063
TPSD686*020#0200	D	68	20	13.6	6	200	0.866	0.779	0.346	0.173	0.156	0.069
TPSD686*020#0150	D	68	20	13.6	6	150	1.000	0.900	0.400	0.150	0.135	0.060
TPSE686*020#0200	E	68	20	13.6	6	200	0.908	0.817	0.363	0.182	0.163	0.073
TPSE686*020#0150	E	68	20	13.6	6	150	1.049	0.938	0.420	0.157	0.141	0.063
TPSE686*020#0125	E	68	20	13.6	6	125	1.149	1.028	0.460	0.144	0.128	0.057
TPSE107*020#0200	E	100	20	20	6	200	0.908	0.817	0.363	0.182	0.163	0.073
TPSE107*020#0150	E	100	20	20	6	150	1.049	0.944	0.420	0.157	0.142	0.063
TPSV107*020#0200	V	100	20	20	8	200	1.118	1.006	0.447	0.224	0.202	0.090
TPSV107*020#0100	V	100	20	20	8	100	1.581	1.414	0.632	0.158	0.141	0.063
TPSV107*020#0085	V	100	20	20	8	85	1.715	1.543	0.686	0.145	0.131	0.058
TPSA474*025#7000	A	0.47	25	0.5	4	7000	0.103	0.093	0.041	0.721	0.649	0.288
TPSA684*025#6000	A	0.68	25	0.5	4	6000	0.112	0.101	0.045	0.671	0.604	0.268
TPSA155*025#3000	A	1.5	25	0.5	6	3000	0.158	0.141	0.063	0.474	0.424	0.190
TPSB155*025#1800	B	1.5	25	0.5	6	1800	0.217	0.196	0.087	0.391	0.351	0.156
TPSB225*025#2500	B	2.2	25	0.6	6	2500	0.184	0.166	0.074	0.461	0.415	0.184
TPSB335*025#2000	B	3.3	25	0.8	6	2000	0.206	0.186	0.082	0.412	0.371	0.165
TPSB475*025#1500	B	4.7	25	1.2	6	1500	0.238	0.213	0.095	0.357	0.319	0.143
TPSC685*025#0700	C	6.8	25	1.7	6	700	0.396	0.357	0.159	0.277	0.250	0.111
TPSC685*025#0600	C	6.8	25	1.7	6	600	0.428	0.385	0.171	0.257	0.231	0.103
TPSC685*025#0500	C	6.8	25	1.7	6	500	0.469	0.422	0.188	0.235	0.211	0.094
TPSC106*025#0500	C	10	25	2.5	6	500	0.469	0.420	0.188	0.235	0.210	0.094
TPSC106*025#0300	C	10	25	2.5	6	300	0.606	0.545	0.242	0.182	0.163	0.073
TPSC156*025#0300	C	15	25	3.8	6	300	0.606	0.545	0.242	0.182	0.163	0.073
TPSD156*025#0300	D	15	25	3.8	6	300	0.707	0.636	0.283	0.212	0.191	0.085
TPSD226*025#0300	D	22	25	5.5	6	300	0.707	0.636	0.283	0.212	0.191	0.085
TPSD226*025#0200	D	22	25	5.5	6	200	0.866	0.775	0.346	0.173	0.155	0.069
TPSD226*025#0100	D	22	25	5.5	6	100	1.225	1.102	0.490	0.122	0.110	0.049
TPSD336*025#0300	D	33	25	8.3	6	300	0.707	0.636	0.283	0.212	0.191	0.085
TPSD336*025#0200	D	33	25	8.3	6	200	0.866	0.775	0.346	0.173	0.155	0.069
TPSD336*025#0100	D	33	25	8.3	6	100	1.225	1.102	0.490	0.122	0.110	0.049
TPSE336*025#0300	E	33	25	8.3	6	300	0.742	0.663	0.297	0.222	0.199	0.089
TPSE336*025#0200	E	33	25	8.3	6	200	0.908	0.812	0.363	0.182	0.162	0.073
TPSE336*025#0175	E	33	25	8.3	6	175	0.971	0.868	0.388	0.170	0.152	0.068
TPSD476*025#0250	D	47	25	11.8	6	250	0.775	0.697	0.310	0.194	0.174	0.077
TPSD476*025#0150	D	47	25	11.8	6	150	1.000	0.900	0.400	0.150	0.135	0.060
TPSE476*025#0125	E	47	25	8.3	6	125	1.149	1.034	0.460	0.144	0.129	0.057
TPSE686*025#0200	E	68	25	17	6	200	0.908	0.817	0.363	0.181	0.163	0.073
TPSE686*025#0125	E	68	25	17	6	125	1.149	1.034	0.459	0.143	0.129	0.057
TPSV686*025#0200	V	68	25	17	6	200	1.118	1.006	0.447	0.223	0.201	0.089
TPSV686*025#0150	V	68	25	17	6	150	1.291	1.162	0.516	0.194	0.174	0.077
TPSV686*025#0095	V	68	25	17	6	95	1.622	1.460	0.649	0.154	0.139	0.062

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.
* Insert K for ±10% and M for ±20% Capacitance Tolerance

 # Standard Plating – Insert R for 7" reel and S for 13" reel
 # Gold Plating – Insert A for 7" reel and B for 13" reel

TPS Series

Low ESR

RATINGS & PART NUMBER REFERENCE

AVX Part No.	Case Size	Capacitance (µF)	Rated Voltage (V)	DCL (µA) Max.	DF % Max.	ESR Max. (mΩ) @100kHz	100kHz Ripple Current Ratings (A)			100kHz Ripple Voltage Ratings (V)		
							25ºC	85ºC	125ºC	25ºC	85ºC	125ºC
TPSA224*035#6000	A	0.22	35	0.5	4	6000	0.112	0.101	0.045	0.672	0.605	0.269
TPSA334*035#6000	A	0.33	35	0.5	4	6000	0.112	0.101	0.045	0.672	0.605	0.269
TPSB474*035#4000	B	0.47	35	0.5	4	4000	0.146	0.131	0.058	0.584	0.526	0.234
TPSA684*035#6000	A	0.68	35	0.5	4	6000	0.112	0.101	0.045	0.672	0.605	0.269
TPSA105*035#3000	A	1	35	0.5	4	3000	0.158	0.142	0.063	0.474	0.427	0.190
TPSB105*035#2000	B	1	35	0.5	4	2000	0.206	0.186	0.082	0.412	0.371	0.165
TPSB155*035#2500	B	1.5	35	0.5	6	2500	0.184	0.166	0.074	0.461	0.415	0.184
TPSB225*035#2000	B	2.2	35	0.8	6	2000	0.206	0.186	0.082	0.412	0.371	0.165
TPSC225*035#1000	C	2.2	35	0.8	6	1000	0.332	0.298	0.133	0.332	0.298	0.133
TPSC335*035#0700	C	3.3	35	1.2	6	700	0.396	0.357	0.159	0.277	0.250	0.111
TPSB475*035#1500	B	4.7	35	1.2	6	1500	0.238	0.214	0.095	0.357	0.321	0.143
TPSC475*035#0600	C	4.7	35	1.6	6	600	0.428	0.383	0.171	0.257	0.230	0.103
TPSD685*035#0500	D	6.8	35	2.4	6	500	0.548	0.493	0.219	0.274	0.246	0.110
TPSD106*035#0300	D	10	35	3.5	6	300	0.707	0.632	0.283	0.212	0.190	0.085
TPSD106*035#0125	D	10	35	3.5	6	125	1.095	0.986	0.438	0.137	0.123	0.055
TPSE106*035#0200	E	10	35	3.5	6	200	0.908	0.817	0.363	0.182	0.163	0.073
TPSC156*035#0450	C	15	35	5.3	6	450	0.494	0.445	0.198	0.222	0.200	0.089
TPSD156*035#0300	D	15	35	5.3	6	300	0.707	0.632	0.283	0.212	0.190	0.085
TPSD156*035#0100	D	15	35	5.3	6	100	1.225	1.102	0.490	0.122	0.110	0.049
TPSD226*035#0400	D	22	35	7.7	6	400	0.612	0.548	0.245	0.245	0.219	0.098
TPSD226*035#0300	D	22	35	7.7	6	300	0.707	0.632	0.283	0.212	0.190	0.085
TPSD226*035#0200	D	22	35	7.7	6	200	0.866	0.775	0.346	0.173	0.155	0.069
TPSD226*035#0125	D	22	35	7.7	6	125	1.095	0.986	0.438	0.137	0.123	0.055
TPSE226*035#0300	E	22	35	7.7	6	300	0.742	0.663	0.297	0.222	0.199	0.089
TPSE226*035#0200	E	22	35	7.7	6	200	0.908	0.812	0.363	0.182	0.162	0.073
TPSD336*035#0300	D	33	35	11.6	6	300	0.707	0.636	0.283	0.212	0.191	0.085
TPSD336*035#0200	D	33	35	11.6	6	200	0.866	0.775	0.346	0.173	0.155	0.069
TPSE476*035#0250	E	47	35	16.5	6	250	0.812	0.731	0.325	0.203	0.183	0.081
TPSE476*035#0200	E	47	35	16.5	6	200	0.908	0.817	0.363	0.182	0.163	0.073
TPSA154*050#9000	A	0.15	50	0.5	4	9000	0.091	0.082	0.036	0.819	0.737	0.328
TPSA224*050#7000	A	0.22	50	0.5	4	7000	0.103	0.093	0.041	0.721	0.649	0.288
TPSC155*050#2000	C	1.5	50	0.8	6	2000	0.234	0.211	0.094	0.468	0.421	0.187
TPSC155*050#1500	C	1.5	50	0.8	6	1500	0.271	0.243	0.108	0.406	0.366	0.163
TPSD225*050#1200	D	2.2	50	1.1	6	1200	0.354	0.318	0.141	0.424	0.382	0.170
TPSD335*050#0800	D	3.3	50	1.7	6	800	0.433	0.390	0.173	0.346	0.311	0.138
TPSD475*050#0700	D	4.7	50	2.4	6	700	0.463	0.417	0.185	0.324	0.292	0.130
TPSD475*050#0500	D	4.7	50	2.4	6	500	0.548	0.493	0.219	0.274	0.246	0.110
TPSD475*050#0300	D	4.7	50	2.4	6	300	0.707	0.636	0.283	0.212	0.191	0.085
TPSD685*050#0600	D	6.8	50	3.4	6	600	0.500	0.450	0.200	0.300	0.270	0.120
TPSD685*050#0500	D	6.8	50	3.4	6	500	0.548	0.493	0.219	0.274	0.246	0.110
TPSC105*050#2500	C	1	50	0.5	4	2500	0.210	0.189	0.084	0.524	0.472	0.210
TPSE106*050#0400	E	10	50	5	6	400	0.642	0.578	0.257	0.257	0.231	0.103
TPSE106*050#0500	E	10	50	5	6	500	0.574	0.516	0.230	0.287	0.258	0.115

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.
* Insert K for ±10% and M for ±20% Capacitance Tolerance

 # Standard Plating – Insert R for 7" reel and S for 13" reel
 # Gold Plating – Insert A for 7" reel and B for 13" reel