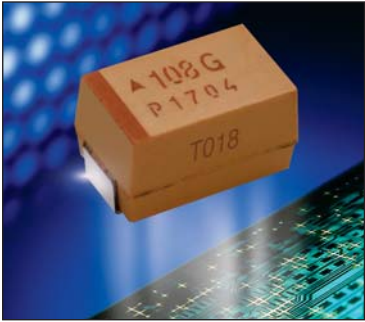


TPM Multianode

Tantalum Ultra Low ESR Capacitor

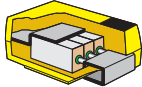


Low ESR, high capacitance and high ripple current are the key parameters for processor filtering. Multianode configuration within a standard E case package meets these requirements. Parameters such as ESR 15mΩ, capacitance 1500μF and ripple current above 4A rms makes TPM series ready to use with the latest processor families.

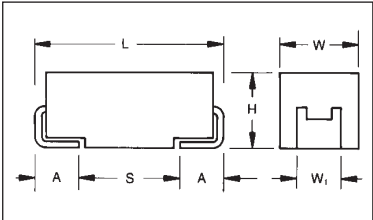
TPM D case capacitors in addition are using a “mirror” multianode construction that reduces self-inductance ESL from 2.4nH to 1.0nH and thus frequency range is extended to about 500 kHz.



MULTIANODE CONSTRUCTION



CASE DIMENSIONS: millimeters (inches)



Code	EIA Code	L±0.20 (0.008)	W+0.20 (0.008) -0.10 (0.004)	H+0.20 (0.008) -0.10 (0.004)	W ₁ ±0.20 (0.008)	A+0.30 (0.012) -0.20 (0.008)	S Min.
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)
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)
Y	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.

For part marking see page 122

HOW TO ORDER

TPM	E	108	*	004	R	0018
Type	Case Size See table above	Capacitance Code pF code: 1st two digits represent significant figures, 3rd digit represents multiplier (number of zeros to follow)	Capacitance Tolerance K=±10% M=±20%	Rated DC Voltage 002=2.5Vdc 004=4Vdc 006=6.3Vdc 010=10Vdc 016=16Vdc 020=20Vdc 025=25Vdc 035=35Vdc 050=50Vdc	Packaging R = 7" T/R Lead Free S = 13" T/R Lead Free H = 7" Reel Tin Lead K = 13" Reel Tin Lead	Maximum ESR in Milliohms

TECHNICAL SPECIFICATIONS

Technical Data:	All technical data relate to an ambient temperature of +25°C									
Capacitance Range:	10 μF to 2200 μF									
Capacitance Tolerance:	±10%, ±20%									
Rated Voltage (V _R)	≤ +85°C:	2.5	4	6.3	10	16	20	25	35	50
Category Voltage (V _C)	≤ +125°C:	1.7	2.7	4	7	10	13	17	23	33
Surge Voltage (V _S)	≤ +85°C:	3.3	5.2	8	13	20	26	32	46	65
Surge Voltage (V _S)	≤ +125°C:	2.2	3.4	5	8	13	16	20	28	40
Temperature Range:	-55°C to +125°C									
Reliability:	1% per 1000 hours at 85°C, V _R with 0.1Ω/V series impedance, 60% confidence level									
	Meets requirements of AEC-Q200									

TPM Multianode



Tantalum Ultra Low ESR Capacitor

CAPACITANCE AND RATED VOLTAGE RANGE LETTER DENOTES CASE SIZE ESR LIMIT IN BRACKETS

Capacitance		Rated Voltage DC (V _R) 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)
6.8	685									
10	106									D(140) E(120)
15	156									E(75,100)
22	226								D(65)* E(60,100)	E(75,100)
33	336							D(60)*	E(50,65)	
47	476							D(55)*	E(55,65)	
68	686							E(45,55)		
100	107				Y(45) ^(M)		E(35,45)			
150	157				Y(45) ^(M)	D(45) E(30,40)	E(35)			
220	227			Y(30) ^(M)	D(35)	E(25,40)				
330	337		D(25,35)	D(25,35)	D(35) E(23,35)	E(50)*				
470	477		D(25,35)	D(30) E(18,23,30)	E(23,30) ^(M)					
680	687		D(25) E(18,23)	E(18,23), V(23)	Y(50)*					
1000	108	D(25)	D(25,45) E(18,23), V(18)	V(25)						
1500	158	E(12,15,18)	E(15,18)							
2200	228	E(18) ^(M)								

Engineering samples - please contact manufacturer

*Codes under development - subject to change.

Released codes ^(M tolerance only)

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

TPM Multianode



Tantalum Ultra Low ESR Capacitor

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)		
							25°C	85°C	125°C	25°C	85°C	125°C
2.5 Volt @ 85°C (1.7 Volt @ 125°C)												
TPMD108*002#0025	D	1000	2.5	25	8	25	3.194	2.874	1.277	0.080	0.072	0.032
TPME158*002#0012	E	1500	2.5	38	6	12	4.743	4.269	1.897	0.057	0.051	0.023
TPME158*002#0015	E	1500	2.5	38	6	15	4.243	3.818	1.697	0.064	0.057	0.025
TPME158*002#0018	E	1500	2.5	38	6	18	3.873	3.486	1.549	0.070	0.063	0.028
TPME228M002#0018	E	2200	2.5	44	10	18	3.873	3.486	1.549	0.070	0.063	0.028
4 Volt @ 85°C (2.7 Volt @ 125°C)												
TPMD337*004#0025	D	330	4	13.2	8	25	3.194	2.874	1.277	0.080	0.072	0.032
TPMD337*004#0035	D	330	4	13.2	8	35	2.699	2.429	1.080	0.094	0.085	0.038
TPMD477*004#0025	D	470	4	18.8	8	25	3.194	2.874	1.277	0.080	0.072	0.032
TPMD477*004#0035	D	470	4	18.8	8	35	2.699	2.429	1.080	0.094	0.085	0.038
TPMD687*004#0025	D	680	4	27.2	8	25	3.194	2.874	1.277	0.080	0.072	0.032
TPME687*004#0018	E	680	4	27	6	18	3.873	3.486	1.549	0.070	0.063	0.028
TPME687*004#0023	E	680	4	27	6	23	3.426	3.084	1.370	0.079	0.071	0.032
TPMD108*004#0025	D	1000	4	40	8	25	3.194	2.874	1.277	0.080	0.072	0.032
TPMD108*004#0045	D	1000	4	40	8	45	2.380	2.142	0.952	0.107	0.096	0.043
TPME108*004#0018	E	1000	4	40	6	18	3.873	3.486	1.549	0.070	0.063	0.028
TPME108*004#0023	E	1000	4	40	6	23	3.426	3.084	1.370	0.079	0.071	0.032
TPMV108*004#0018	V	1000	4	40	6	18	3.979	3.581	1.592	0.072	0.064	0.029
TPME158*004#0015	E	1500	4	40	6	15	4.243	3.818	1.697	0.064	0.057	0.025
TPME158*004#0018	E	1500	4	40	6	18	3.873	3.486	1.549	0.070	0.063	0.028
6.3 Volt @ 85°C (4 Volt @ 125°C)												
TPMY227M006#0030	Y	220	6.3	13.2	6	30	2.646	2.381	1.058	0.079	0.071	0.032
TPMD337*006#0025	D	330	6.3	19.8	8	25	3.194	2.874	1.277	0.080	0.072	0.032
TPMD337*006#0035	D	330	6.3	19.8	8	35	2.699	2.429	1.080	0.094	0.085	0.038
TPMD477*006#0030	D	470	6.3	28.2	8	30	2.915	2.624	1.166	0.087	0.079	0.035
TPME477*006#0018	E	470	6.3	28	6	18	3.873	3.486	1.549	0.070	0.063	0.028
TPME477*006#0023	E	470	6.3	28	6	23	3.426	3.084	1.370	0.079	0.071	0.032
TPME477*006#0030	E	470	6.3	28	6	30	3.000	2.700	1.200	0.090	0.081	0.036
TPME687*006#0018	E	680	6.3	41	6	18	3.873	3.486	1.549	0.070	0.063	0.028
TPME687*006#0023	E	680	6.3	41	6	23	3.426	3.084	1.370	0.079	0.071	0.032
TPMV687*006#0023	V	680	6.3	41	6	23	3.520	3.168	1.408	0.081	0.073	0.032
TPMV108*006#0025	V	1000	6.3	63	8	25	3.376	3.039	1.351	0.084	0.076	0.034
10 Volt @ 85°C (7 Volt @ 125°C)												
TPMY107M010#0045	Y	100	10	10	8	45	2.160	1.944	0.864	0.097	0.087	0.039
TPMY157M010#0045	Y	150	10	15	8	45	2.160	1.944	0.864	0.097	0.087	0.039
TPMD227*010#0035	D	220	10	22	8	35	2.699	2.429	1.080	0.094	0.085	0.038
TPMD337*010#0035	D	330	10	33	8	35	2.699	2.429	1.080	0.094	0.085	0.038
TPME337*010#0023	E	330	10	33	6	23	3.426	3.084	1.370	0.079	0.071	0.032
TPME337*010#0035	E	330	10	33	6	35	2.777	2.500	1.111	0.097	0.087	0.039
TPME477M010#0023	E	470	10	47	6	23	3.426	3.084	1.370	0.079	0.071	0.032
TPME477M010#0030	E	470	10	47	6	30	3.000	2.700	1.200	0.090	0.081	0.036
16 Volt @ 85°C (10 Volt @ 125°C)												
TPMD157*016#0050	D	150	16	16	8	50	2.258	2.032	0.903	0.113	0.102	0.045
TPME157*016#0030	E	150	16	24	6	30	3.000	2.700	1.200	0.090	0.081	0.036
TPME157*016#0040	E	150	16	24	6	40	2.598	2.338	1.039	0.104	0.094	0.042
TPME227*016#0025	E	220	16	35	6	25	3.286	2.958	1.315	0.082	0.074	0.033
TPME227*016#0040	E	220	16	35	6	40	2.598	2.338	1.039	0.104	0.094	0.042
20 Volt @ 85°C (13 Volt @ 125°C)												
TPME107*020#0035	E	100	20	20	6	35	2.777	2.500	1.111	0.097	0.087	0.039
TPME107*020#0045	E	100	20	20	6	45	2.449	2.205	0.980	0.110	0.099	0.044
TPME157*020#0035	E	150	20	30	10	35	2.777	2.500	1.111	0.097	0.087	0.039
25 Volt @ 85°C (17 Volt @ 125°C)												
TPME686*025#0045	E	68	25	17	6	45	2.449	2.205	0.980	0.110	0.099	0.044
TPME686*025#0055	E	68	25	17	6	55	2.216	1.994	0.886	0.122	0.110	0.049
35 Volt @ 85°C (23 Volt @ 125°C)												
TPME226*035#0060	E	22	35	8	6	60	2.121	1.909	0.849	0.127	0.115	0.051
TPME226*035#0100	E	22	35	8	6	100	1.643	1.479	0.657	0.164	0.148	0.066
TPME336*035#0050	E	33	35	12	6	50	2.324	2.091	0.930	0.116	0.105	0.046
TPME336*035#0065	E	33	35	12	6	65	2.038	1.834	0.815	0.132	0.119	0.053
TPME476*035#0055	E	47	35	16	6	55	2.216	1.994	0.886	0.122	0.110	0.049
TPME476*035#0065	E	47	35	16	6	65	2.038	1.834	0.815	0.132	0.119	0.053
50 Volt @ 85°C (33 Volt @ 125°C)												
TPMD106*050#0140	D	10	50	5	8	140	1.350	1.215	0.540	0.189	0.170	0.076
TPME106*050#0120	E	10	50	5	6	120	1.500	1.350	0.600	0.180	0.162	0.072
TPME156*050#0075	E	15	50	7.5	6	75	1.897	1.708	0.759	0.142	0.128	0.057
TPME156*050#0100	E	15	50	7.5	6	100	1.643	1.479	0.657	0.164	0.148	0.066
TPME226*050#0075	E	22	50	11	8	75	1.897	1.708	0.759	0.142	0.128	0.057
TPME226*050#0100	E	22	50	11	8	100	1.643	1.479	0.657	0.164	0.148	0.066

Engineering samples - please contact manufacturer

* 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
 # **Tin Lead Plating** - Insert H for 7" reel and K for 13" reel

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

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. TPM series is MSL level 3 according to J-STD-020C.

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

