

TPM Multianode



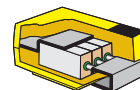
Tantalum Ultra Low ESR Capacitor



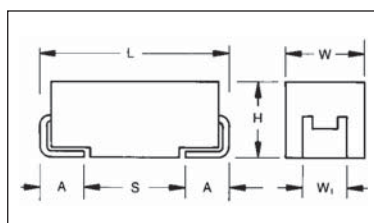
- Multi-anode construction
- Super low ESR
- CV range: 10-2200 μ F / 2.5-50V
- 4 case sizes available
- "Mirror" multi-anode construction used with D case capacitors reduces ESL to half



MULTIANODE CONSTRUCTION



CASE DIMENSIONS: millimeters (inches)



For part marking see page 132

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 ₁ ±0.20 (0.008)	A±0.30 (0.012) -0.20 (0.008)	S Min.
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)
V	2924	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	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.

HOW TO ORDER

TPM

Type

E

Case Size
See table above

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Capacitance Code
pF code: 1st two digits represent significant figures, 3rd digit represents multiplier (number of zeros to follow)

M

Tolerance
K=±10%
M=±20%

004

Rated DC Voltage
002=2.5Vdc
004=4Vdc
006=6.3Vdc
010=10Vdc
016=16Vdc
020=20Vdc
025=25Vdc
035=35Vdc
050=50Vdc

R

Packaging
R = 7" T/R Lead Free
S = 13" T/R Lead Free
H = Tin Lead 7" reel
(Contact Manufacturer)
K = Tin Lead 13" reel
(Contact Manufacturer)
H, K = Non RoHS

0018

ESR in m Ω

TECHNICAL SPECIFICATIONS

Technical Data:

All technical data relate to an ambient temperature of +25°C

Capacitance Range: 10 μ F to 2200 μ F

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 0.1 Ω /V series impedance, 60% confidence level

Meets requirements of AEC-Q200

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(70) E(60,100)	E(75,100)
33	336							D(65)	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)	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)					
680	687		D(25) E(18,23)	E(18,23), V(23)						
1000	108	D(25)	D(25,45) E(18,23), V(18)	E(25) ^(M) V(20) ^(M)						
1500	158	E(12,15,18)	E(15,18)							
2200	228	E(18) ^(M)								

Released codes ^(M tolerance only)

Engineering samples - please contact manufacturer

*Codes under development - subject to change

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
TPME108M006#0025	E	1000	6.3	63	8	25	3.286	2.958	1.315	0.082	0.074	0.033
TPMV108M006#0020	V	1000	6.3	63	8	20	3.775	3.397	1.510	0.075	0.068	0.030
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
TPME477*010#0023	E	470	10	47	6	23	3.426	3.084	1.370	0.079	0.071	0.032
TPME477*010#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)												
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
TPME337*016#0050	E	330	16	52.8	10	50	2.324	2.091	0.930	0.116	0.105	0.046
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)												
TPMD336*025#0065	D	33	25	8.3	8	65	1.981	1.783	0.792	0.129	0.116	0.051
TPMD476*025#0055	D	47	25	11.8	8	55	2.153	1.938	0.861	0.118	0.107	0.047
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)												
TPMD226*035#0070	D	22	35	7.7	8	70	1.909	1.718	0.763	0.134	0.120	0.053
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

* Insert K for ±10% and M for ±20%

Standard Plating – Insert R for 7" reel and S 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.