

TRM Professional Multianode



Tantalum Ultra Low ESR Capacitor



- Improved reliability – 0.5%/1khrs (twice better than standard)
- DCL reduced by 25% to 0.0075 CV
- Robust against higher thermo-mechanical stresses during assembly process
- Multi-anode construction
- Super low ESR
- CV range 4.7-1500 μ F / 2.5-50V
- “Mirror” construction used with D case capacitors reduces ESL to half
- Automotive, medical, aerospace, military and other hi-end application



LEAD-FREE

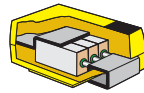
LEAD-FREE COMPATIBLE COMPONENT



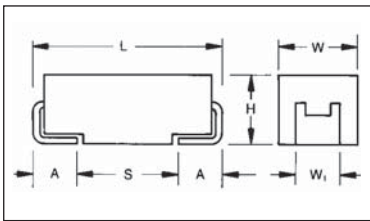
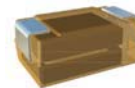
RoHS COMPLIANT

SnPb termination option is not RoHS compliant.

MULTIANODE CONSTRUCTION



MULTIANODE TRMD LOW SELF INDUCTANCE CONSTRUCTION “MIRROR” DESIGN



For part marking see page 169

CASE DIMENSIONS: millimeters (inches)

Code	EIA Code	EIA Metric	L \pm 0.20 (0.008)	W+0.20 (0.008) -0.10 (0.004)	H+0.20 (0.008) -0.10 (0.004)	W \pm 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)

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

HOW TO ORDER

TRM

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)

Tolerance
K=±10%
M=±20%

004

Rated DC Voltage
002 = 2.5Vdc
004 = 4Vdc
006 = 6.3Vdc
010 = 10Vdc
012 = 12Vdc
016 = 16Vdc
020 = 20Vdc
025 = 25Vdc
035 = 35Vdc
050 = 50Vdc

R

Packaging
R = Pure Tin 7" Reel
S = Pure Tin 13" Reel
H = Tin Lead 7" Reel
(Contact Manufacturer)
K = Tin Lead 13" Reel
(Contact Manufacturer)
H, K = Non RoHS

0023

ESR in m Ω

TECHNICAL SPECIFICATIONS

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

Capacitance Range: 4.7 μ F to 1500 μ F

Capacitance Tolerance: ±10%; ±20%

Rated Voltage (V _R)	≤ +85°C:	2.5	4	6.3	10	12	16	20	25	35	50
Category Voltage (V _C)	≤ +125°C:	1.7	2.7	4	7	8	10	13	17	23	33
Surge Voltage (V _S)	≤ +85°C:	3.3	5.2	8	13	16	20	26	32	46	65
Surge Voltage (V _S)	≤ +125°C:	2.2	3.4	5	8	10	13	16	20	28	40

Temperature Range: -55°C to +125°C

Reliability: 0.5% per 1000 hours at 85°C, V_R with 0.1 Ω /V series impedance, 60% confidence level

Meets requirements of AEC-Q200



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CAPACITANCE AND RATED VOLTAGE RANGE (LETTER DENOTES CASE SIZE)

Capacitance		Rated Voltage DC (V_R) to 85°C									
μF	Code	2.5V (e)	4V (G)	6.3V (J)	10V (A)	12V (B)	16V (C)	20V (D)	25V (E)	35V (V)	50V (T)
4.7	475										D(200)
6.8	685										
10	106									D(120)	E(150)*
15	156										
22	226									D(70)/E(60,100)	
33	336								D(65)	E(50,65)	
47	476						D(100)	D(55)	E(65)		
68	686										
100	107						D(55)*	E(35,45)			
150	157				D(45)		E(30,40)				
220	227				D(35)	E(35)					
330	337		D(35)	D(35)	E(35)						
470	477		D(35)	E(30)							
680	687		E(23)								
1000	108	D(25)	E(23)								
1500	158	E(18)									
2200	228										

Available Ratings, (ESR ratings in mOhms in brackets)

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.

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RATINGS & PART NUMBER REFERENCE

AVX Part No.	Case Size	Capacitance (µF)	Rated Voltage (V)	DCL (µA) Max.	DF % Max.	ESR Max. (mΩ) @100kHz	MSL	100kHz RMS Current (A)			100kHz RMS Voltage (V)		
								25°C	85°C	125°C	25°C	85°C	125°C
2.5 Volt @ 85°C (1.7 Volt @ 125°C)													
TRMD108*002#0025	D	1000	2.5	18.8	8	25	3	3.194	2.874	1.277	0.080	0.072	0.032
TRME158*002#0018	E	1500	2.5	28.1	6	18	3	3.873	3.486	1.549	0.070	0.063	0.028
4 Volt @ 85°C (2.7 Volt @ 125°C)													
TRMD337*004#0035	D	330	4	9.9	8	35	3	2.699	2.429	1.080	0.094	0.085	0.038
TRMD477*004#0035	D	470	4	14.1	8	35	3	2.699	2.429	1.080	0.094	0.085	0.038
TRME687*004#0023	E	680	4	20.4	6	23	3	3.426	3.084	1.370	0.079	0.071	0.032
TRME108*004#0023	E	1000	4	30	6	23	3	3.426	3.084	1.370	0.079	0.071	0.032
6.3 Volt @ 85°C (4 Volt @ 125°C)													
TRMD337*006#0035	D	330	6.3	14.9	8	35	3	2.699	2.429	1.080	0.094	0.085	0.038
TRME477*006#0030	E	470	6.3	21.2	6	30	3	3.000	2.700	1.200	0.090	0.081	0.036
10 Volt @ 85°C (7 Volt @ 125°C)													
TRMD157*010#0045	D	150	10	11.3	8	45	3	2.380	2.142	0.952	0.107	0.096	0.043
TRMD227*010#0035	D	220	10	16.5	8	35	3	2.699	2.429	1.080	0.094	0.085	0.038
TRME337*010#0035	E	330	10	24.8	6	35	3	2.777	2.500	1.111	0.097	0.087	0.039
12 Volt @ 85°C (8.4 Volt @ 125°C)													
TRME227*012#0035	E	220	12	19.8	6	35	3	2.777	2.500	1.111	0.097	0.087	0.039
16 Volt @ 85°C (10 Volt @ 125°C)													
TRMD476*016#0100	D	47	16	5.6	8	100	3	1.597	1.437	0.639	0.160	0.144	0.064
TRME157*016#0030	E	150	16	18	6	30	3	3.000	2.700	1.200	0.090	0.081	0.036
TRME157*016#0040	E	150	16	18	6	40	3	2.598	2.338	1.039	0.104	0.094	0.042
20 Volt @ 85°C (13 Volt @ 125°C)													
TRMD476*020#0055	D	47	20	7.1	8	55	3	2.153	1.938	0.861	0.118	0.107	0.047
TRME107*020#0035	E	100	20	15	6	35	3	2.777	2.500	1.111	0.097	0.087	0.039
TRME107*020#0045	E	100	20	15	6	45	3	2.449	2.205	0.980	0.110	0.099	0.044
25 Volt @ 85°C (17 Volt @ 125°C)													
TRMD336*025#0065	D	33	25	6.2	8	65	3	1.981	1.783	0.792	0.129	0.116	0.051
TRME476*025#0065	E	47	25	8.8	6	65	3	2.038	1.834	0.815	0.132	0.119	0.053
35 Volt @ 85°C (23 Volt @ 125°C)													
TRMD106*035#0120	D	10	35	2.6	8	120	3	1.458	1.312	0.583	0.175	0.157	0.070
TRMD226*035#0070	D	22	35	5.8	8	70	3	1.909	1.718	0.763	0.134	0.120	0.053
TRME226*035#0060	E	22	35	5.8	6	60	3	2.121	1.909	0.849	0.127	0.115	0.051
TRME226*035#0100	E	22	35	5.8	6	100	3	1.643	1.479	0.657	0.164	0.148	0.066
TRME336*035#0050	E	33	35	8.7	6	50	3	2.324	2.091	0.930	0.116	0.105	0.046
TRME336*035#0065	E	33	35	8.7	6	65	3	2.038	1.834	0.815	0.132	0.119	0.053
50 Volt @ 85°C (33 Volt @ 125°C)													
TRMD475*050#0200	D	4.7	50	1.8	8	200	3	1.129	1.016	0.452	0.226	0.203	0.090

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 162.

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.

