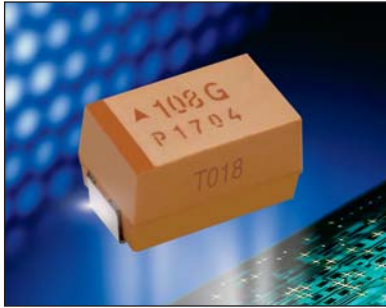


TBM Multianode



Tantalum Ultra Low ESR Space Level



TBM Space Level series is screened to SRC9000 and utilizes an internal multi-anode design to achieve ultra-low ESR which improves performance in high ripple power application.

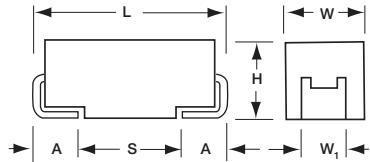
TBM Space Level is available with Weibull Grade "C" reliability and MIL-PRF-55365 Rev. G surge test option "C".

There are four termination finishes available: solder plated, fused solder plated, hot solder dipped and gold plated (these correspond to

"H", "K", "C" and "B" termination, respectively, per MIL-PRF-55365).

The molding compound has been selected to meet the requirements of UL94V-0 (Flame Retardancy) and outgassing requirements of ASTM E-595.

For moisture sensitivity levels please refer to the High Reliability Tantalum MSL section located in the back of the High Reliability Tantalum Catalog.



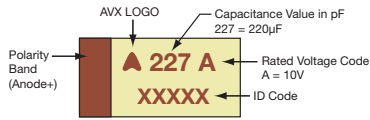
CASE DIMENSIONS: millimeters (inches)

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	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	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.

MARKING

D, E CASE



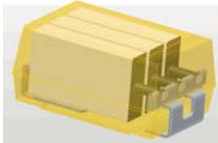
CAPACITANCE AND RATED VOLTAGE RANGE LETTER DENOTES CASE SIZE ESR LIMIT IN BRACKETS

Capacitance		Rated Voltage DC (V _R) to 85°C								
µF	Code	2.5V (e)	4V (G)	6V (J)	10V (A)	12V (B)	16V (C)	20V (D)	25V (E)	35V (V)
22	226									D(70) E(60,100)
33	336								D(65)	E(50,65)
47	476								E(65)	
68	686									
100	107							E(35,45)		
150	157						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)								

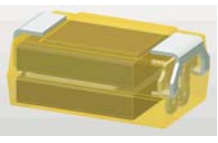
Available Ratings: ESR limits quoted in brackets (mOhms)

Notes: Voltage ratings are minimum values. AVX reserves the right to supply higher ratings in the same case size, to the same reliability standards. EIA standards for Low ESR solid tantalum capacitors allow an ESR movement of 1.25 times initial limit post mounting.

MULTIANODE CONSTRUCTION



MULTIANODE TBM D LOW SELF INDUCTANCE CONSTRUCTION "MIRROR" DESIGN





TBM Multianode



Tantalum Ultra Low ESR Space Level

HOW TO ORDER

SPACE LEVEL OPTIONS TO SRC9000:

TBM	E	477	*	006	L	□	L	@	9	^	++
Type	Case Size	Capacitance Code	Capacitance Tolerance	Voltage Code	Standard or Low ESR Range	Packaging	Inspection Level	Reliability Grade	Qualification Level	Termination Finish	Surge Test Option
		pF code: 1st two digits represent significant figures 3rd digit represents multiplier (number of zeros to follow)	M = ±20% K = ±10%	002 = 2.5Vdc 004 = 4Vdc 006 = 6Vdc 010 = 10Vdc 012 = 12Vdc 016 = 16Vdc 020 = 20Vdc 025 = 25Vdc 035 = 35Vdc	C = Std ESR L = Low ESR	B = Bulk R = 7" T&R S = 13" T&R W = Waffle See page 8 for additional packaging options.	L = Group A	Weibull: C = 0.01%/1000 hrs. 90% conf.	9 = SRC9000	H = Solder Plated 0 = Fused Solder Plated 8 = Hot Solder Dipped 9 = Gold Plated	45 = 10 cycles, -55°C & +85°C before Weibull
  <p>For RoHS compliant products, please select correct termination style.</p>											

TECHNICAL SPECIFICATIONS

Technical Data: Unless otherwise specified, all technical data relate to an ambient temperature of +25°C

Capacitance Range:	22 µF to 1500 µF										
Capacitance Tolerance:	±10%; ±20%										
Rated Voltage DC (V _R)	≤ +85°C:	2.5	4	6	10	12	16	20	25	35	
Category Voltage (V _C)	≤ +125°C:	1.7	2.7	4	7	8.4	10	13	17	23	
Surge Voltage (V _S)	≤ +85°C:	3.3	5.2	8	13	15.6	20	26	32	46	
Surge Voltage (V _S)	≤ +125°C:	2.2	3.4	5	8	9.6	12	16	20	28	
Temperature Range:	-55°C to +125°C										

TBM Multianode

Tantalum Ultra Low ESR Space Level



RATING & PART NUMBER REFERENCE		Parametric Specifications by Rating										Typical RMS Ripple Data by Rating													
		Cap @ 120Hz		DC Rated Voltage		ESR @ 100kHz		DGL max		DF max		Power Dissipation		25°C		85°C		125°C		25°C		85°C		125°C	
		µF @ 25°C	Case	V @ +85°C	V @ +85°C	mOhms @ +25°C	µA	µA	µA	µA	(%)	(%)	W	A (100kHz)	A (100kHz)	V (100kHz)	V (100kHz)	A (100kHz)	A (100kHz)	V (100kHz)	V (100kHz)	V (100kHz)	V (100kHz)	V (100kHz)	V (100kHz)
		2.5 Volt @ 85°C (1.7 Volt @ 125°C)																							
TBMD108*002□□L09*45	D	1000		2.5	25	18.8	188	376	8	11	0.255	3.194	2.874	1.277	0.080	0.072	0.032								
TBME158*002C□□L09*45	E	1500		2.5	18	28.1	281	562	6	9	0.270	3.873	3.486	1.549	0.070	0.063	0.028								
		4 Volt @ 85°C (2.7 Volt @ 125°C)																							
TBMD337*004□□L09*45	D	330		4	35	9.9	99	198	8	11	0.255	2.699	2.429	1.080	0.094	0.085	0.038								
TBMD477*004□□L09*45	D	470		4	35	14.1	141	282	8	11	0.255	2.699	2.429	1.080	0.094	0.085	0.038								
TBME687*004C□□L09*45	E	680		4	23	20.4	204	408	6	9	0.270	3.426	3.084	1.370	0.079	0.071	0.032								
TBME108*004C□□L09*45	E	1000		4	23	30	300	600	6	9	0.270	3.426	3.084	1.370	0.079	0.071	0.032								
		6 Volt @ 85°C (4 Volt @ 125°C)																							
TBMD337*006□□L09*45	D	330		6	35	14.9	149	298	8	11	0.255	2.699	2.429	1.080	0.094	0.085	0.038								
TBME477*006C□□L09*45	E	470		6	30	21.2	212	424	6	9	0.270	3.000	2.700	1.200	0.090	0.081	0.036								
		10 Volt @ 85°C (7 Volt @ 125°C)																							
TBMD227*010□□L09*45	D	220		10	35	16.5	165	330	8	11	0.255	2.699	2.429	1.080	0.094	0.085	0.038								
TBME337*010C□□L09*45	E	330		10	35	24.8	248	496	6	9	0.270	2.777	2.500	1.111	0.097	0.087	0.039								
		12 Volt @ 85°C (8.4 Volt @ 125°C)																							
TBME227*012C□□L09*45	E	220		12	35	19.8	198	396	6	9	0.270	2.777	2.500	1.111	0.097	0.087	0.039								
		16 Volt @ 85°C (10 Volt @ 125°C)																							
TBME157*016□□L09*45	E	150		16	30	18	180	360	6	9	0.270	3.000	2.700	1.200	0.090	0.081	0.036								
TBME157*016C□□L09*45	E	150		16	40	18	180	360	6	9	0.270	2.598	2.338	1.039	0.104	0.094	0.042								
		20 Volt @ 85°C (13 Volt @ 125°C)																							
TBME107*020□□L09*45	E	100		20	35	15	150	300	6	9	0.270	2.777	2.500	1.111	0.097	0.087	0.039								
TBME107*020C□□L09*45	E	100		20	45	15	150	300	6	9	0.270	2.449	2.205	0.980	0.110	0.099	0.044								
		25 Volt @ 85°C (17 Volt @ 125°C)																							
TBMD336*025□□L09*45	D	33		25	65	6.2	62	124	8	11	0.255	1.981	1.783	0.792	0.129	0.116	0.051								
TBME476*025□□L09*45	E	47		25	65	8.8	88	176	6	9	0.270	2.038	1.834	0.815	0.132	0.119	0.053								
		35 Volt @ 85°C (23 Volt @ 125°C)																							
TBMD226*035□□L09*45	D	22		35	70	5.8	58	116	8	11	0.255	1.909	1.718	0.763	0.134	0.120	0.053								
TBME226*035□□L09*45	E	22		35	60	5.8	58	116	6	9	0.270	2.121	1.909	0.849	0.127	0.115	0.051								
TBME226*035C□□L09*45	E	22		35	100	5.8	58	116	6	9	0.270	1.643	1.479	0.657	0.164	0.148	0.066								
TBME336*035□□L09*45	E	33		35	50	8.7	87	174	6	9	0.270	2.324	2.091	0.930	0.116	0.105	0.046								
TBME336*035C□□L09*45	E	33		35	65	8.7	87	174	6	9	0.270	2.038	1.834	0.815	0.132	0.119	0.053								

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.

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.

