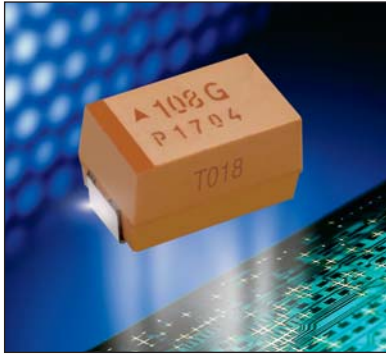


TBM Multianode



Tantalum Ultra Low ESR COTS-Plus Weibull Grade & Space Level



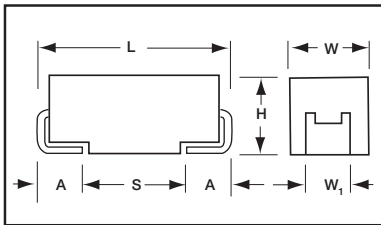
TBM COTS-Plus series uses an internal multi-anode design to achieve ultra-low ESR which improves performance in high ripple power applications.

TBM is available with Weibull Grade “B” reliability and all MIL-PRF-55365 surge test options (“A”, “B” & “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 NASA SP-R-0022A.



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.
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)

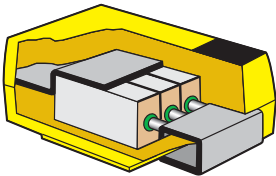
W₁ dimension applies to the termination width for A dimensional area only.

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)	16V (C)	20V (D)	25V (E)	35V (V)
10	106								
15	156								
22	226								E(60)
33	336								E(50)
47	476								E(55)
68	686							E(45)	
100	107						E(35)		
150	157					E(30)			
220	227					E(25)			
330	337				E(23)				
470	477			E(18)	E(23)				
680	687		E(18)	E(18), V(23)					
1000	108		E(18), V(18)						
1500	158	E(12)	E(15)						

NOTE: EIA standards for Low ESR solid tantalum capacitors allow an ESR movement of 1.25 times initial limit post mounting.

TBM MULTIANODE CONSTRUCTION





TBM Multianode

Tantalum Ultra Low ESR COTS-Plus Weibull Grade & Space Level

HOW TO ORDER

COTS-PLUS:

TBM	E	477	*	006	C	□	#	@	0	^	++
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% J = ±5%	004 = 4Vdc 006 = 6Vdc 010 = 10Vdc 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 5 for additional packaging options.	S = Std. Conformance L = Group A D = DSCC DWG (Pending)	Weibull: B = 0.1%/1000 hrs. 90% conf. C = 0.01%/1000 hrs. 90% conf. D = 0.001%/1000 hrs. 90% conf. T = T Level Z = Non-ER	0 = N/A 9 = SRC9000	H = Solder Plated 0 = Fused Solder Plated 8 = Hot Solder Dipped 9 = Gold Plated 7 = Matte Sn (COTS-Plus only)	00 = None 23 = 10 Cycles, +25°C 24 = 10 Cycles, -55°C & +85°C 45 = 10 cycles, -55°C & +85°C before Weibull

SPACE LEVEL OPTIONS TO SRC9000*:

TBM	H	227	*	006	C	□	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% J = ±5%	004 = 4Vdc 006 = 6Vdc 010 = 10Vdc 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 5 for additional packaging options.	L = Group A	Weibull: B = 0.1%/1000 hrs. 90% conf. C = 0.01%/1000 hrs. 90% conf. D = 0.001%/1000 hrs. 90% conf.	9 = SRC9000	H = Solder Plated 0 = Fused Solder Plated 8 = Hot Solder Dipped 9 = Gold Plated	00 = 10 Cycles, -55°C & +85°C 45 = 10 cycles, -55°C & +85°C before Weibull

*Qualifications Pending

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:	±5%; ±10%; ±20%									
Rated Voltage DC (V _R)	≤+85°C:	4	6	10	16	20	25	35	50	
Category Voltage (V _C)	≤+125°C:	2.7	4	7	10	13	17	23	33	
Surge Voltage (V _S)	≤+85°C:	5.2	8	13	20	26	32	46	65	
	≤+125°C:	3.4	5	8	12	16	20	28	40	
Temperature Range:	-55°C to +125°C									



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RATING & PART NUMBER REFERENCE		Parametric Specifications by Rating										Typical Ripple Data by Rating										
		Cap @ 120Hz µF @ 25°C	DC Rated Voltage V @ +85°C	ESR @ 100kHz mOhms @ +25°C	DCL max			DF max +(85/125)°C (%)	DF max +25°C (%)	Power Dissipation W	25°C		85°C		125°C		25°C		85°C		125°C	
					+25°C (µA)	+85°C (µA)	+125°C (µA)				Ripple A (100kHz)	Ripple A (100kHz)	Ripple A (100kHz)	Ripple V (100kHz)	Ripple A (100kHz)	Ripple A (100kHz)	Ripple V (100kHz)	Ripple A (100kHz)	Ripple V (100kHz)			
AVX P/N	Case	1500	2.5	12	38	380	475	6	9	10	0.165	4.743	4.269	1.897	0.057	0.051	0.063	0.063	0.063	0.063	0.028	0.028
TBME168*002□□S80^++	E	680	4	18	27	270	338	6	9	10	0.165	3.873	3.486	1.549	0.070	0.063	0.063	0.063	0.063	0.063	0.028	0.028
TBME108*004□□S80^++	E	1000	4	18	40	400	500	6	9	10	0.165	3.873	3.486	1.549	0.070	0.063	0.063	0.063	0.063	0.063	0.028	0.028
TBVM108*004□□S80^++	V	1000	4	18	40	400	500	6	9	10	0.250	3.979	3.581	1.592	0.072	0.064	0.064	0.064	0.064	0.064	0.029	0.029
TBME168*004□□S80^++	E	1500	4	15	40	400	500	6	9	10	0.165	4.243	3.818	1.897	0.064	0.057	0.057	0.057	0.057	0.057	0.025	0.025
TBME477*006□□S80^++	E	470	6	18	28	280	350	6	9	10	0.165	3.873	3.486	1.549	0.070	0.063	0.063	0.063	0.063	0.063	0.028	0.028
TBME687*006□□S80^++	E	680	6	18	41	410	513	6	9	10	0.165	3.873	3.486	1.549	0.070	0.063	0.063	0.063	0.063	0.063	0.028	0.028
TBVM687*006□□S80^++	V	680	6	23	41	410	513	6	9	10	0.250	3.520	3.168	1.408	0.081	0.073	0.073	0.073	0.073	0.073	0.032	0.032
TBME337*010□□S80^++	E	330	10	23	33	330	413	6	9	10	0.165	3.426	3.084	1.370	0.079	0.071	0.071	0.071	0.071	0.071	0.032	0.032
TBME477*010□□S80^++	E	470	10	23	47	470	588	6	9	10	0.165	3.426	3.084	1.370	0.079	0.071	0.071	0.071	0.071	0.071	0.032	0.032
TBME157*016□□S80^++	E	150	16	30	24	240	300	6	9	10	0.165	3.000	2.700	1.200	0.090	0.081	0.081	0.081	0.081	0.081	0.036	0.036
TBME227*016□□S80^++	E	220	16	25	35	350	438	6	9	10	0.165	3.286	2.958	1.315	0.082	0.074	0.074	0.074	0.074	0.074	0.033	0.033
TBME107*020□□S80^++	E	100	20	35	20	200	250	6	9	10	0.165	2.777	2.500	1.111	0.097	0.087	0.087	0.087	0.087	0.087	0.039	0.039
TBME686*025□□S80^++	E	68	25	45	17	170	213	6	9	10	0.165	2.449	2.205	0.960	0.110	0.099	0.099	0.099	0.099	0.099	0.044	0.044
TBME226*035□□S80^++	E	22	35	60	8	80	100	6	9	10	0.165	2.121	1.909	0.849	0.127	0.115	0.115	0.115	0.115	0.115	0.051	0.051
TBME336*035□□S80^++	E	33	35	50	12	120	150	6	9	10	0.165	2.324	2.091	0.930	0.116	0.105	0.105	0.105	0.105	0.105	0.046	0.046
TBME476*035□□S80^++	E	47	35	55	16	160	200	6	9	10	0.165	2.216	1.994	0.886	0.122	0.110	0.110	0.110	0.110	0.110	0.049	0.049

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.

