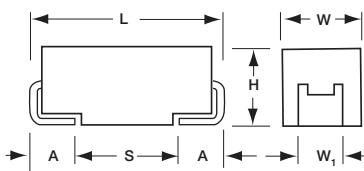
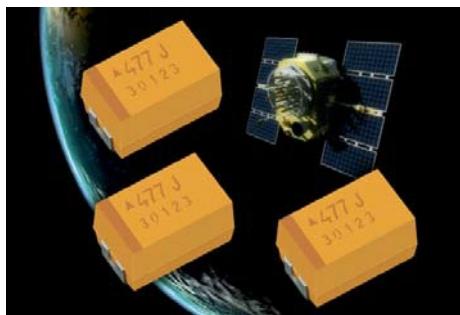


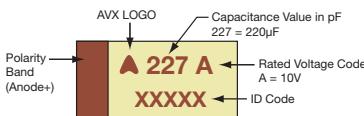
TBM MULTIANODE

Tantalum Ultra Low ESR COTS-Plus



MARKING

D, E, V CASE



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 Rev. G 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 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)
V	7.30 (0.287)	6.10 (0.240)	3.55 (0.140)	3.10 (0.122)	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

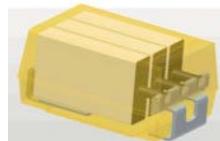
Capacitance		Rated Voltage DC (V _R) to 85°C								
μF	Code	2.5V (e)	4V (G)	6V (J)	10V (A)	12V (B)	16V (C)	20V (D)	25V (E)	35V (V)
22	226									D(70) E(60,100)
33	336									D(65)
47	476									E(65)
68	686									E(45)
100	107							E(35,45)		
150	157						E(30,40)			
220	227				D(35)	E(35)	E(25)			
330	337		D(35)	D(35)	E(23,35)					
470	477		D(35)	E(18,30)	E(23)					
680	687		E(18,23)	E(18), V(23)						
1000	108	D(25)	E(18,23) V(18)							
1500	158	E(12,18)	E(15)							
2000	208									

Available Ratings: ESR limits quoted in brackets (mOhms)

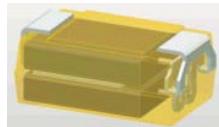
Notes: Voltage ratings are minimum values. AVX reserves the right to supply higher ratings in the same case size, to the same reliability standards.

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 COTS-Plus

HOW TO ORDER

COTS-PLUS:

TBM	E	477	*	006	L	□	#	@	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%	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	S = Std. Conformance Group A	Weibull: C = 0.01%/1000 hrs. 90% conf. Z = Non-ER	0 = N/A	H = Solder Plated 0 = Fused Solder Plated 8 = Hot Solder Dipped 9 = Gold Plated 7 = Matte Sn	00 = None 23 = 10 Cycles,+25°C 24 = 10 Cycles, -55°C & +85°C 45 = 10 cycles, -55°C & +85°C before Weibull



For RoHS compliant products,
please select correct termination style.

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 COTS-Plus



RATING & PART NUMBER REFERENCE		Parametric Specifications by Rating										Typical RMS Ripple Data by Rating						
		Cap @ 120Hz	DC Rated Voltage	ESR @ 100kHz	DCL max			DF Max				Power Dissipation	25°C Ripple Current	85°C Ripple Current	125°C Ripple Current	25°C Ripple Voltage	85°C Ripple Voltage	125°C Ripple Voltage
					+25°C	+85°C	+125°C	+25°C	+(85/125)°C	-55°C								
AVX P/N	Case	µF @ 25°C	V @ +85°C	mOhms @ +25°C	(µA)	(µA)	(µA)	(%)	(%)	(%)	W	A (100kHz)	A (100kHz)	A (100kHz)	V (100kHz)	V (100kHz)	V (100kHz)	
2.5 Volt @ 85°C (1.7 Volt @ 125°C)																		
TBMD108*002L□#@0^++	D	1000	2.5	25	18.8	188	376	8	11	12	0.255	3.194	2.874	1.277	0.080	0.072	0.032	
TBME158*002C□#@0^++	E	1500	2.5	18	28.1	281	562	6	9	10	0.270	3.873	3.486	1.549	0.070	0.063	0.028	
TBME158*002L□#@0^++	E	1500	2.5	12	38	380	760	6	9	10	0.270	4.743	4.269	1.897	0.057	0.051	0.023	
4 Volt @ 85°C (2.7 Volt @ 125°C)																		
TBMD337*004L□#@0^++	D	330	4	35	9.9	99	198	8	11	12	0.255	2.699	2.429	1.080	0.094	0.085	0.038	
TBMD477*004L□#@0^++	D	470	4	35	14.1	141	282	8	11	12	0.255	2.699	2.429	1.080	0.094	0.085	0.038	
TBME687*004C□#@0^++	E	680	4	23	20.4	204	408	6	9	10	0.270	3.426	3.084	1.370	0.079	0.071	0.032	
TBME687*004L□#@0^++	E	680	4	18	27	270	540	6	9	10	0.270	3.873	3.486	1.549	0.070	0.063	0.028	
TBME108*004C□#@0^++	E	1000	4	23	30	300	600	6	9	10	0.270	3.426	3.084	1.370	0.079	0.071	0.032	
TBME108*004L□#@0^++	E	1000	4	18	40	400	800	6	9	10	0.270	3.873	3.486	1.549	0.070	0.063	0.028	
TBME108*004L□#@0^++	V	1000	4	18	40	400	800	6	9	10	0.285	3.979	3.581	1.592	0.072	0.064	0.029	
TBME158*004L□#@0^++	E	1500	4	15	40	400	800	6	9	10	0.270	4.243	3.818	1.697	0.064	0.057	0.025	
6 Volt @ 85°C (4 Volt @ 125°C)																		
TBMD337*006L□#@0^++	D	330	6	35	14.9	149	298	8	11	12	0.255	2.699	2.429	1.080	0.094	0.085	0.038	
TBME477*006C□#@0^++	E	470	6	30	21.2	212	424	6	9	10	0.270	3.000	2.700	1.200	0.090	0.081	0.036	
TBME477*006L□#@0^++	E	470	6	18	28	280	560	6	9	10	0.270	3.873	3.486	1.549	0.070	0.063	0.028	
TBME687*006L□#@0^++	E	680	6	18	41	410	820	6	9	10	0.270	3.873	3.486	1.549	0.070	0.063	0.028	
TBME687*006L□#@0^++	V	680	6	23	41	410	820	6	9	10	0.285	3.520	3.168	1.408	0.081	0.073	0.032	
10 Volt @ 85°C (7 Volt @ 125°C)																		
TBMD227*010L□#@0^++	D	220	10	35	16.5	165	330	8	11	12	0.255	2.699	2.429	1.080	0.094	0.085	0.038	
TBME337*010C□#@0^++	E	330	10	35	24.8	248	496	6	9	10	0.270	2.777	2.500	1.111	0.097	0.087	0.039	
TBME337*010L□#@0^++	E	330	10	23	33	330	660	6	9	10	0.270	3.426	3.084	1.370	0.079	0.071	0.032	
TBME477*010L□#@0^++	E	470	10	23	47	470	940	6	9	10	0.270	3.426	3.084	1.370	0.079	0.071	0.032	
12 Volt @ 85°C (8.4 Volt @ 125°C)																		
TBME227*012C□#@0^++	E	220	12	35	19.8	198	396	6	9	10	0.270	2.777	2.500	1.111	0.097	0.087	0.039	
16 Volt @ 85°C (10 Volt @ 125°C)																		
TBME157*016C□#@0^++	E	150	16	40	18	180	360	6	9	10	0.270	2.598	2.338	1.039	0.104	0.094	0.042	
TBME157*016L□#@0^++	E	150	16	30	18	180	360	6	9	10	0.270	3.000	2.700	1.200	0.090	0.081	0.036	
TBME227*016L□#@0^++	E	220	16	25	35	350	700	6	9	10	0.270	3.286	2.958	1.315	0.082	0.074	0.033	
20 Volt @ 85°C (13 Volt @ 125°C)																		
TBME107*020C□#@0^++	E	100	20	45	15	150	300	6	9	10	0.270	2.449	2.205	0.980	0.110	0.099	0.044	
TBME107*020L□#@0^++	E	100	20	35	15	150	300	6	9	10	0.270	2.777	2.500	1.111	0.097	0.087	0.039	
25 Volt @ 85°C (17 Volt @ 125°C)																		
TBMD336*025L□#@0^++	D	33	25	65	6.2	62	124	8	11	12	0.255	1.981	1.783	0.792	0.129	0.116	0.051	
TBME476*025L□#@0^++	E	47	25	65	8.8	88	176	6	9	10	0.270	2.038	1.834	0.815	0.132	0.119	0.053	
TBME686*025L□#@0^++	E	68	25	45	17	170	340	6	9	10	0.270	2.449	2.205	0.980	0.110	0.099	0.044	
35 Volt @ 85°C (23 Volt @ 125°C)																		
TBMD226*035L□#@0^++	D	22	35	70	5.8	58	116	8	11	12	0.255	1.909	1.718	0.763	0.134	0.120	0.053	
TBME226*035C□#@0^++	E	22	35	100	5.8	58	116	6	9	10	0.270	1.643	1.479	0.657	0.164	0.148	0.066	
TBME226*035L□#@0^++	E	22	35	60	5.8	58	116	6	9	10	0.270	2.121	1.909	0.849	0.127	0.115	0.051	
TBME336*035C□#@0^++	E	33	35	65	8.7	87	174	6	9	10	0.270	2.038	1.834	0.815	0.132	0.119	0.053	
TBME336*035L□#@0^++	E	33	35	50	8.7	87	174	6	9	10	0.270	2.324	2.091	0.930	0.116	0.105	0.046	
TBME476*035L□#@0^++	E	47	35	55	16	160	320	6	9	10	0.270	2.216	1.994	0.886	0.122	0.110	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.



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Электрон
Связь**

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Электронная почта: sales@st-electron.ru

Адрес: 198099, Санкт-Петербург,
Промышленная ул, дом № 19, литер Н,
помещение 100-Н Офис 331