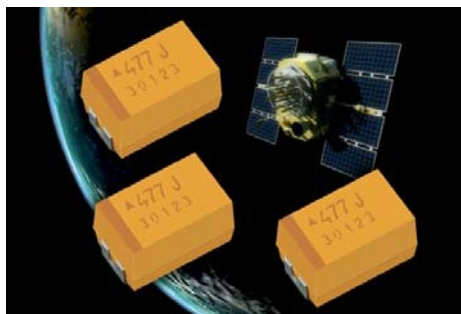


TBM MULTIANODE

Tantalum Ultra Low ESR COTS-Plus



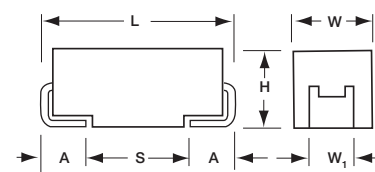
TBM COTS-Plus series uses an internal multi-anode design to achieve ultra-low ESR which improves performance in high ripple power applications.

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.



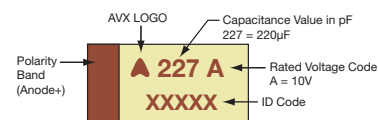
CASE DIMENSIONS: millimeters (inches)

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.

MARKING

D, E, V CASE



CAPACITANCE AND RATED VOLTAGE RANGE

LETTER DENOTES CASE SIZE ESR LIMIT IN BRACKETS

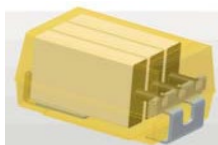
Capacitance		Rated Voltage DC (V _R) to 85°C								
µF	Code	2.5V (e)	4V (G)	6V (J)	10V (A)	12V (B)	16V (C)	20V (D)	25V (E)	35V (V)
22	226									D(70) E(60,100)
33	336								D(65)	E(50,65)
47	476								E(65)	E(55)
68	686								E(45)	
100	107							E(35,45)		
150	157						E(30,40)			
220	227				D(35)	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)

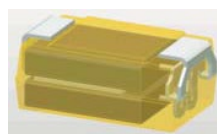
Notes: Voltage ratings are minimum values. AVX reserves the right to supply higher ratings in the same case size, to the same reliability standards.

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



HOW TO ORDER

COTS-PLUS:

TBM

E

477

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Type

Case Size

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

Capacitance Tolerance
M = ±20%
K = ±10%

Voltage Code
002 = 2.5Vdc
004 = 4Vdc
006 = 6Vdc
010 = 10Vdc
012 = 12Vdc
016 = 16Vdc
020 = 20Vdc
025 = 25Vdc
035 = 35Vdc

Standard or Low ESR Range
C = Std ESR
L = Low ESR

Packaging
B = Bulk
R = 7" T&R
S = 13" T&R
W = Waffle

See page 8 for additional packaging options.

Inspection Level
S = Std. Conformance
L = Group A

Reliability Grade
Weibull:
C = 0.01%/1000 hrs. 90% conf.
Z = Non-ER

Qualification Level
0 = N/A

Termination Finish
H = Solder Plated
0 = Fused Solder Plated
8 = Hot Solder Dipped
9 = Gold Plated
7 = Matte Sn

Surge Test Option
00 = None
23 = 10 Cycles, +25°C
24 = 10 Cycles, -55°C & +85°C
45 = 10 cycles, -55°C & +85°C before Weibull


LEAD-FREE
LEAD-FREE COMPATIBLE COMPONENT


RoHS
COMPLIANT

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
TBMV108*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
TBMV687*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.

Mouser Electronics

Authorized Distributor

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AVX:

TBME336K035LRSB0824	TBME687K006LRSB0824	TBME107K020LBSB0823	TBME107M020LBSB0824
TBME158K004LBSB0824	TBME336K035LBSB0824	TBME477K010LBSB0823	TBME477K010LBSB0824
TBME477K010LRSB0823	TBME686K025LBSB0823	TBME337K010LBSB0823	TBME687M006LRSB0824
TBME686K025LRSB0824	TBME107K020LBSB0824	TBME476K035LBSB0824	TBMD227K010LBSZ0000
TBME106K050LBSZ0000	TBME106M050LBSB0H00	TBME107K020LBLC0H24	TBME107K020LBLC9812
TBME107K020LBSZ0000	TBME108K004LBLC9845	TBME108K004LBSB0924	TBME108K004LBSZ0000
TBME157J016LBSZ0H00	TBME157K016LBSZ0000	TBME158K004LBSZ0000	TBME226K035LBLC0024
TBME226K035LBSB0024	TBME226K035LBSZ0000	TBME226K050LBSZ0000	TBME226M050LBSZ0000
TBME227K016LBSZ0000	TBME227K016LBSZ0H00	TBME227M016LBSC0845	TBME336K035LBSB0045
TBME336K035LBSZ0000	TBME337K010LBLB9812	TBME337K010LBSB0700	TBME337K010LBSZ0000
TBME476K035LBSB0H00	TBME477K006LBSB0700	TBME477K006LBSZ0000	TBME477K006LWSZ0800
TBME477K010LBSZ0000	TBME686K025LBSZ0000	TBME686M025LBSC0H23	TBME686M025LRSB0824
TBME226K050LBSB0823	TBME106K050LBSB0823	TBME477M010LBSB0823	TBME337K010LBSB0923
TBME227K016LBSB0823	TBME686M025LRSB0024	TBME686K025LBSB0023	TBME337M010LSSB0800
TBME476K035LRSB0824	TBME226K035LRSB0700	TBME337K010LRSZ0000	TBME227K016LRSB0745
TBME686M025LBSB0H00	TBME337K010CBSC0700	TBME157K016LRSB0000	TBME336M035LRLZ0H00
TBME337K010CBSB0845	TBME477K006LRSZ0000	TBME108K004LRLB0024	TBME157M016LRSZ0700
TBME686M025CBSZ0000	TBME477K010LRLC0045	TBME476K025LBSB0823	TBME157K016LBLC0845
TBME227K016LRSB0H00	TBME337K010LBSZ0H00	TBME336K035LRLC0045	TBME337M010LBSB0823
TBME157K016LRLB0045	TBME686K025LBSZ0800	TBME337K010LRLB0024	TBME686K025LBSZ0700
TBME337M010LBSB0800	TBME107K020LRSZ0923	TBME227K016LWLC0024	TBMD337K006LBSZ0H00
TBME686K025LRSB0023	TBME107K020LRSB0800	TBME476K035LBSB0800	TBME476K035LRSZ0000
TBME107M020LRSZ0H00	TBME108M004LRSB0000	TBME107M020LRSB0723	TBME687K004LSSZ0800
TBME477K010LBSZ0H00	TBME476K035LRSB0723	TBME687K006LBSB0824	TBME227M016LRSB0800
TBME227M016LBSB0823	TBME337K010LBSZ0800	TBME477M006LBSB0H00	TBME107K020LWSB0H24

Данный компонент на территории Российской Федерации

Вы можете приобрести в компании MosChip.

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

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В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

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