

TBM MULTIANODE

Tantalum Ultra Low ESR COTS-Plus



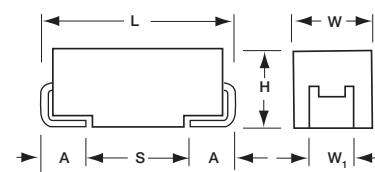
TBM COTS-Plus series uses an internal multi-anode design to achieve ultra-low ESR which improves performance in high ripple power applications.

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.



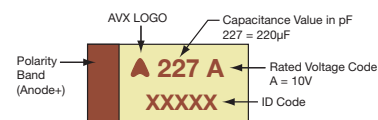
CASE DIMENSIONS: millimeters (inches)

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

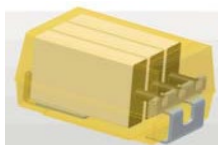
Capacitance		Rated Voltage DC (V _R) to 85°C								
µF	Code	2.5V (e)	4V (G)	6V (J)	10V (A)	12V (B)	16V (C)	20V (D)	25V (E)	35V (V)
22	226									D(70) E(60,100)
33	336								D(65)	E(50,65)
47	476								E(65)	E(55)
68	686								E(45)	
100	107							E(35,45)		
150	157						E(30,40)			
220	227				D(35)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

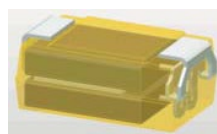
Notes: Voltage ratings are minimum values. AVX reserves the right to supply higher ratings in the same case size, to the same reliability standards.

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

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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											

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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.

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.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

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