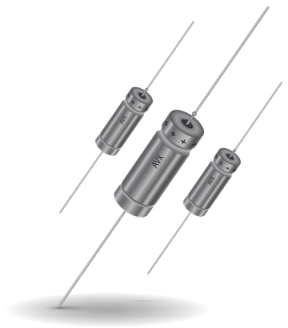
TWA SERIES

COTS-Plus – Wet Electrolytic Tantalum Capacitor



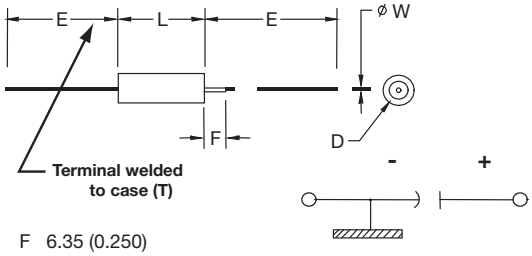
GENERAL DESCRIPTION

The TWA series is an axial leaded wet electrolytic tantalum capacitor with a unique cathode system that promotes very high CV (Capacitance/Voltage) per cc in traditional MIL-PRF-39006 case sizes.

The series also utilizes a welded tantalum can and header assembly to provide a hermetic seal and subsequent long operating lifetime.

The construction is similar to DLA 93026 with capability of meeting harsh shock and vibration conditions.

OUTLINE DIMENSIONS



F 6.35 (0.250)
W 0.64 +0.05 (.025 +.002)
T 2.380 (.094)

CASE DIMENSIONS: millimeters (inches)

DLA Case Size	AVX Case Size	L +0.79 (0.031) -0.41 (0.016)	D Without Insulating Sleeve ±0.41 (0.016)	D With Insulating Sleeve Max	E ±6.35 (0.250)
T1	A	11.51 (0.453)	4.78 (0.188)	5.56 (0.219)	38.10 (1.500)
T2	B	16.28 (0.641)	7.14 (0.281)	7.92 (0.312)	57.15 (2.250)
T3	D	19.46 (0.766)	9.52 (0.375)	10.31 (0.406)	57.15 (2.250)
T4	E	26.97 (1.062)	9.52 (0.375)	10.31 (0.406)	57.15 (2.250)

VOLTAGE RATINGS (Operating Temperature -55°C to 125°C)

Voltage (DC)									
Rated Voltage: (V_R)	85°C	15	25	30	50	60	75	100	125
Derated Voltage: (V_C)	125°C	10	15	20	30	40	50	65	85
Surge Voltage: (V_S)	85°C	17.3	28.8	34.5	57.5	69	86.3	115	144

HOW TO ORDER AVX PART NUMBER:

TWA	E	407	*	100	□	B	#	Z	0	^	00
Type	**Case Size**	**Capacitance Code** pF code: 1st two digits represent significant figures 3rd digit represents multiplier (number of zeros to follow)	**Capacitance Tolerance** K = ±10% M = ±20%	**Voltage Code**	**Insulation Sleeve** C = Without Sleeve S = With Sleeve	**Packaging** B = Tray Pack	**Qualification** E = Extended range S = COTS+ L = Group A	**Reliability** Z = Non-ER	**Qualification Level** 0 = N/A	**Termination Finish** 0 = Sn/Pb 60/40 7 = Matte tin	**Custom Test Options** 00 = Standard 01 = Random vibration*

LEAD-FREE
LEAD-FREE COMPATIBLE COMPONENT
RoHS COMPLIANT

For RoHS compliant products, please select correct termination style.

* Please contact the factory for additional details and availability.

RIPPLE CURRENT MULTIPLIERS vs. Frequency, temperature and applied voltage[1/ 2/]

Frequency of Applied Ripple Current		120Hz				800Hz				1kHz			
Ambient Still Air Temperature (°C)		≤55	85	105	125	≤55	85	105	125	≤55	85	105	125
% of 85°C Rated Peak Voltage	100%	0.60	0.39	–	–	0.71	0.43	–	–	0.72	0.45	–	–
	90%	0.60	0.46	–	–	0.71	0.55	–	_	0.72	0.55	–	–
	80%	0.60	0.52	0.35	–	0.71	0.62	0.42	–	0.72	0.62	0.42	–
	70%	0.60	0.58	0.44	–	0.71	0.69	0.52	–	0.72	0.70	0.52	–
	66-2/3%	0.60	0.60	0.46	0.27	0.71	0.71	0.55	0.32	0.72	0.72	0.55	0.32

Frequency of Applied Ripple Current		10kHz				40kHz				100kHz			
Ambient Still Air Temperature (°C)		≤55	85	105	125	≤55	85	105	125	≤55	85	105	125
% of 85°C Rated Peak Voltage	100%	0.88	0.55	–	–	1.00	0.63	–	–	1.10	0.69	–	–
	90%	0.88	0.67	–	–	1.00	0.77	–	_	1.10	0.85	–	–
	80%	0.88	0.76	0.52	–	1.00	0.87	0.59	–	1.10	0.96	0.65	–
	70%	0.88	0.85	0.64	–	1.00	0.97	0.73	–	1.10	1.07	0.80	–
	66-2/3%	0.88	0.88	0.68	0.40	1.00	1.00	0.77	0.45	1.10	1.10	0.85	0.50

1/ At 125°C the rated voltage of the capacitors decreases to 66 2/3 of the 85°C rated voltage.
2/ The peak of the applied ac ripple voltage plus the applied dc voltage must not exceed the dc voltage rating of the capacitors.

CAPACITANCE AND RATED VOLTAGE, V_R (VOLTAGE CODE) RANGE (LETTER DENOTES CASE SIZE)

Capacitance		Rated Voltage DC (VR) to 85°C							
µF	Code	15V	25V	30V	50V	60V	75V	100V	125V
10	106							A(M)	A
15	156							A	
22	226							B	
27	276								B
33	336						A		
47	476				B	A			B
68	686		A		A		A(M)	B	
82	826								E
100	107			A	A(M)	B	B		D
110	117						B		
120	127		A		B				D
150	157				B	B		D	E
220	227			B	B		E	D,E	E
270	277		B						
330	337		B		E		D,E	E	E
390	397	D				D			
400	407							E	
470	477			B	D,E		E	E	E
560	567		B			E		E	
660	667						E		
680	687		E	D,E	E	E	E		
750	757		D,E	D,E	E	E	E	E	
1000	108		D,E	D,E	D,E	E	E		
1200	128		D		E				
1500	158		E	E	E				
1800	188		E						
2200	228		E			E(M)			
3000	308				E				
4700	478		E						
5600	568								

Available Ratings (M tolerance only)

RATINGS & PART NUMBER REFERENCE

AVX Part Number	Cap (µF) 25°C at 120Hz	DC Rated Voltage (V) at 85°C	ESR max (ohms) at 120Hz	DC Leakage max (µA)		Impedance max (Ohms) -55°C at 120Hz	Maximum Capacitance Change (%)			AC Ripple (mA rms) 85°C at 40kHz	Case Size	
				+25°C	+85°C & +125°C		-55°C	+85°C	+125°C		AVX	DLA
15 Volts												
TWAD397*015□BSZ0^00	390	15	1.7	7	28	48	-70	25	25	1396	D	T3
25 Volts												
TWAA686*025□BEZ0^00	68	25	2.5	0.6	3	45	-40	12	15	850	A	T1
TWAA127*025□BSZ0000	120	25	1.3	1	5	25	-42	8	12	1250	A	T1
TWAA127*025□BEZ0^00*	120	25	2.3	2	10	35	-42	20	25	1250	A	T1
TWAB277*025□BEZ0^00	270	25	0.9	4	20	17.5	-50	18	28	1800	B	T2
TWAB337*025□BEZ0^00	330	25	1.3	2	20	25	-60	10	15	1550	B	T2
TWAB567*025□BSZ0^00	560	25	0.83	2	10	12	-65	10	15	2100	B	T2
TWAE687*025□BEZ0^00	680	25	0.75	3	12	12	-50	8	15	2100	E	T4
TWAD757*025□BEZ0^00	750	25	1	3	25	15	-50	8	15	2000	D	T3
TWAE757*025□BEZ0^00	750	25	0.75	3.5	16	9	-55	10	18	2200	E	T4
TWAD108*025□BEZ0^00	1000	25	1	4	30	15	-50	8	15	2300	D	T3
TWAE108*025□BEZ0^00	1000	25	0.7	4	20	9	-55	10	18	2400	E	T4
TWAD128*025□B#Z0^00	1200	25	0.65	5	20	7	-70	12	18	2600	D	T3
TWAE158*025□BEZ0^00	1500	25	0.5	6	24	7	-65	15	20	2850	E	T4
TWAE188*025□BSZ0^00	1800	25	0.5	6	25	7	-75	12	20	3100	E	T4
TWAE228*025□BSZ0^00	2200	25	0.5	10	80	10	-90	30	50	3200	E	T4
TWAE478*025□B#Z0^00	4700	25	0.5	30	180	5	-90	60	80	4250	E	T4
30 Volts												
TWAA107*030□BSZ0000	100	30	1.3	1	5	25	-38	8	12	1200	A	T1
TWAA107*030□BEZ0^00*	100	30	2.3	2	10	35	-38	20	25	1200	A	T1
TWAB227*030□BEZ0^00	220	30	2	1.9	10	40	-40	18	28	1200	B	T2
TWAB477*030□BSZ0^00	470	30	0.85	2	10	15	-65	10	18	1800	B	T2
TWAD687*030□BEZ0^00	680	30	1	3.3	25	15	-50	8	15	1900	D	T3
TWAE687*030□BEZ0^00	680	30	0.8	4.5	18	10	-60	8	15	2100	E	T4
TWAD757*030□BEZ0^00	750	30	1	3.6	30	15	-50	8	15	2000	D	T3
TWAE757*030□BEZ0^00	750	30	0.8	5	20	10	-65	10	18	2200	E	T4
TWAD108*030□B#Z0^00	1000	30	0.7	7	25	7	-70	10	18	2500	D	T3
TWAE108*030□BEZ0^00	1000	30	0.7	5	20	7	-70	10	18	2500	E	T4
TWAE158*030□BSZ0^00	1500	30	0.6	12	35	6	-72	10	20	3000	E	T4
50 Volts												
TWAB476*050□BSZ0^00	47	50	3	0.8	8	70	-28	13	15	1155	B	T2
TWAA686*050□BSZ0000	68	50	1.5	1	5	35	-25	8	15	1050	A	T1
TWAA686*050□BEZ0^00*	68	50	2.5	2	10	45	-25	20	25	1050	A	T1
TWAA107M050□BSZ0^00	100	50	5	2	15	70	-45	50	95	1500	A	T1
TWAB127*050□BEZ0^00	120	50	2	2	10	40	-45	8	15	1200	B	T2
TWAB157*050□BEZ0^00	150	50	2	2	10	25	-50	8	15	1400	B	T2
TWAB227*050□BSZ0000	220	50	0.9	2	10	17.5	-50	8	15	1800	B	T2
TWAB227*050□BEZ0^00*	220	50	0.9	4	20	17.5	-50	18	28	1800	B	T2
TWAE337*050□B#Z0^00	330	50	0.8	2.5	25	15	-50	8	15	1900	E	T4
TWAD477*050□BSZ0^00	470	50	0.75	3	25	10	-50	8	15	2100	D	T3
TWAD477*050□BEZ0^00*	470	50	1	3	25	11	-50	8	15	2100	D	T3
TWAE477*050□B#Z0^00	470	50	0.75	3	30	10	-50	8	15	2200	E	T4
TWAE687*050□B#Z0^00	680	50	0.7	5	40	8	-58	10	20	2750	E	T4
TWAE757*050□BEZ0^00	750	50	0.6	12	60	8	-50	15	20	2800	E	T4
TWAD108*050□BEZ0^00	1000	50	1.5	20	125	12	-90	100	140	2500	D	T3
TWAE108*050□BSZ0^00	1000	50	1.0	12	90	20	-90	30	50	3200	E	T4
TWAE108*050□BEZ0^00*	1000	50	0.7	11	110	20	-70	30	40	3200	E	T4
TWAE128*050□BSZ0^00	1200	50	1.0	12	90	20	-90	30	50	3200	E	T4
TWAE158*050□BSZ0^00	1500	50	1	35	130	6	-75	45	55	3500	E	T4
TWAE308M050□B#Z0^00	3000	50	0.3	30	150	3.5	-80	60	85	3100	E	T4
TWAE308K050□BSZ0^00	3000	50	0.6	30	150	5	-90	90	100	3100	E	T4
60 Volts												
TWAA476*060□BSZ0000	47	60	2	1	5	44	-25	8	12	1050	A	T1
TWAA476*060□BEZ0^00*	47	60	2	2	10	55	-25	15	25	1050	A	T1
TWAB107*060□BSZ0^00	100	60	1.5	1.7	10	30	-35	12	20	1650	B	T2
TWAB107*060□BEZ0^00*	100	60	2.5	1.7	10	40	-40	8	15	1100	B	T2
TWAB157*060□BSZ0000	150	60	1.1	2	10	20	-40	8	15	1650	B	T2
TWAB157*060□BEZ0^00*	150	60	1.5	2	10	30	-35	12	20	1650	B	T2
TWAD397*060□B#Z0^00	390	60	0.9	3	25	15	-60	8	15	2100	D	T3
TWAE567*060□B#Z0^00	560	60	0.8	5	40	10	-58	8	15	2750	E	T4
TWAE687*060□BEZ0^00	680	60	0.6	13	65	8	-50	15	20	2800	E	T4
TWAE757*060□BEZ0^00	750	60	0.6	15	75	8	-50	15	20	2800	E	T4
TWAE108*060□BSZ0^00	1000	60	1	12	90	20	-90	30	50	3200	E	T4
TWAE108*060□BEZ0^00*	1000	60	0.5	20	60	4.5	-70	30	60	3200	E	T4
TWAE228M060□BEZ0^00	2200	60	0.5	40	120	3.0	-80	60	80	3000	E	T4

RATINGS & PART NUMBER REFERENCE

AVX Part Number	Cap (µF) 25°C at 120Hz	DC Rated Voltage (V) at 85°C	ESR max (ohms) at 120Hz	DC Leakage max (µA)		Impedance max (Ohms) -55°C at 120Hz	Maximum Capacitance Change (%)			AC Ripple (mA rms) 85°C at 40kHz	Case Size	
				+25°C	+85°C & +125°C		-55°C	+85°C	+125°C		AVX	DLA
75 Volt												
TWAA336*075□BSZ0000	33	75	2.5	1	5	66	-25	5	9	1050	A	T1
TWAA336*075□BEZ0^00*	33	75	2.5	2	10	70	-25	15	25	1050	A	T1
TWAA686M075□BSZ0^00	68	75	5	2	15	70	-45	50	95	1500	A	T1
TWAB107*075□BEZ0^00	100	75	2.5	2	10	40	-35	6	10	1400	B	T2
TWAB117*075□BSZ0000	110	75	1.3	2	10	24	-35	6	10	1650	B	T2
TWAB117*075□BEZ0^00*	110	75	1.5	2	10	30	-35	12	20	1650	B	T2
TWAE227*075□B#Z0^00	220	75	1.1	2.5	30	20	-50	6	10	1800	E	T4
TWAD337*075□BSZ0^00	330	75	1	3	30	12	-45	6	10	2100	D	T3
TWAD337*075□BEZ0^00*	330	75	1.2	3	30	15	-60	10	20	2100	D	T3
TWAE337*075□BEZ0^00	330	75	1	3	40	12	-50	6	10	2200	E	T4
TWAE477*075□B#Z0^00	470	75	0.9	5	50	12	-55	6	10	2750	E	T4
TWAE667*075□BSZ0^00	660	75	0.7	12	120	10	-70	30	40	2750	E	T4
TWAE687*075□BEZ0^00*	680	75	0.9	11	110	10	-70	30	40	2750	E	T4
TWAE757*075□B#Z0^00	750	75	0.7	12	120	10	-70	30	40	3800	E	T4
TWAE108*075□BEZ0^00	1000	75	0.5	30	90	4.5	-70	30	60	3500	E	T4
100 Volt												
TWAA106M100□BSZ0^00	10	100	3.5	5	25	190	-18	10	30	1050	A	T1
TWAA156*100□BSZ0000	15	100	3.5	1	5	125	-18	3	10	1050	A	T1
TWAA156*100□BEZ0^00*	15	100	5.5	7	35	140	-18	10	30	1050	A	T1
TWAB226*100□BSZ0^00	22	100	4	1	5	100	-10	8	15	1065	B	T2
TWAB686*100□BSZ0000	68	100	2.1	2	10	37	-30	4	12	1650	B	T2
TWAB686*100□BEZ0^00*	68	100	2.5	2	10	37	-30	4	12	1650	B	T2
TWAD157*100□B#Z0^00	150	100	1.6	3	25	22	-35	6	12	2100	D	T3
TWAD227*100□BEZ0^00	220	100	1.4	5	25	18	-50	10	15	2500	D	T3
TWAE227*100□B#Z0^00	220	100	1.2	5	50	15	-40	6	12	2750	E	T4
TWAE337*100□B#Z0^00	330	100	0.8	6	60	10	-45	7	20	3600	E	T4
TWAE407*100□B#Z0^00	400	100	0.8	10	150	10	-50	10	35	4100	E	T4
TWAE477*100□BSZ0^00	470	100	0.7	15	150	10	-50	10	35	4100	E	T4
TWAE567*100□BSZ0^00	560	100	1.0	25	200	10	-60	45	110	4100	E	T4
TWAE757*100□BEZ0^00	750	100	0.6	30	150	5	-60	50	120	4200	E	T4
125 Volt												
TWAA106*125□BSZ0000	10	125	5.5	1	5	175	-15	3	10	1050	A	T1
TWAA106M125□BEZ0^00*	10	125	5.5	1	5	190	-15	10	30	1050	A	T1
TWAB276*125□BSZ0^00	27	125	4	2	10	100	-10	8	15	1200	B	T2
TWAB476*125□B#Z0^00	47	125	2.3	2	10	47	-25	5	12	1650	B	T2
TWAE826*125□BSZ0^00	82	125	1.6	2	10	39	-24	10	20	1900	E	T4
TWAD107*125□B#Z0^00	100	125	1.8	3	25	35	-35	5	12	2100	D	T3
TWAD127*125□BEZ0^00	120	125	1.8	3	25	35	-35	5	12	2100	D	T3
TWAE157*125□B#Z0^00	150	125	1.6	5	50	20	-35	6	12	2750	E	T4
TWAE227*125□BEZ0^00	220	125	1.4	10	50	12	-40	8	15	3600	E	T4
TWAE337*125□B#Z0^00	330	125	1	15	150	20	-60	20	60	2500	E	T4
TWAE477*125□BSZ0^00	470	125	1	30	160	25	-70	30	70	3500	E	T4

All technical data relates to an ambient temperature of +25°C. Capacitance and DF are measured at 120Hz, 0.5RMS with DC bias of 2.2V. DCL is measured at rated voltage after 5 minutes.
NOTE: AVX reserves the rights to supply higher voltage rating in the same case size, to the same reliability standards.

*Not recommended for new designs, for new design use part number with Inspection level "S" – COTS-Plus

DF = 2πfC x (ESR)
2π = 6.28
f = 120Hz
C = Actual measured capacitance
ESR = Actual measured ESR

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Mouser Electronics

Authorized Distributor

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AVX:

TWAE108K060CBSZ0000 TWAE687K050CBSZ0000 TWAA156K100CBSZ0000 TWAB227K050CBSZ0000
TWAD107K125CBSZ0000 TWAB567K025CBSZ0000 TWAA476K060CBSZ0000 TWAE157K125CBSZ0000
TWAB157K060CBSZ0000 TWAD108K030CBSZ0000 TWAB477K030CBSZ0000 TWAE228K025CBSZ0000
TWAE158K030CBSZ0000 TWAD477K050CBSZ0000 TWAE227K100CBSZ0000 TWAB117K075CBSZ0000
TWAB686K100CBSZ0000 TWAB476K125CBSZ0000 TWAD157K100CBSZ0000 TWAD128K025CBSZ0000
TWAD337K075CBSZ0000 TWAE567K060CBSZ0000 TWAA686K050CBSZ0000 TWAE188K025CBSZ0000
TWAE477K075CBSZ0000 TWAA336K075CBSZ0000 TWAD397K060CBSZ0000 TWAA106K125CBSZ0000
TWAA107K030CBSZ0000 TWAA127K025CBSZ0000 TWAE157M125CBSZ0000 TWAE158K050CBSZ0000
TWAA336K075SBSZ0000 TWAB157K060SBSZ0000 TWAD107K125SBSZ0000 TWAD397K060SBSZ0000
TWAE108K050SBSZ0000 TWAE109K010SBSZ0000 TWAE227M100SBSZ0000 TWAE477K075SBSZ0000
TWAE108K060SBSZ0000 TWAB117M075CBSZ0000 TWAB686M100CBSZ0000 TWAD108M060CBSZ0000
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