

# TWA-X Series with Extension to 230°C

## Wet Electrolytic Tantalum Capacitor



The TWA-X series represents a high temperature version of conventional wet electrolytic tantalum capacitors that are designed for use at 230°C. High capacitance cathode system allows high level of CV (Capacitance/Voltage) in standard case sizes.

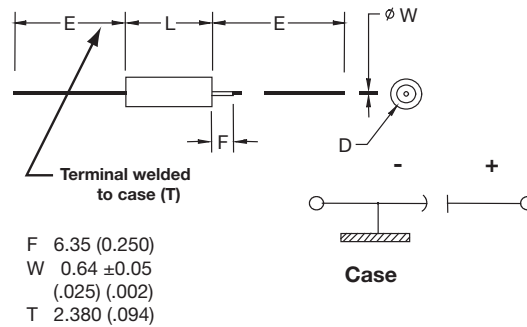
Selected values of the TWA-X are capable of up to 500 hours of operation at extreme temperatures with the applicable derated voltage.

Mechanical testing being conducted in accordance to MIL-STD- 202, High Frequency vibration - method 204, test condition "D" Mechanical Shock Test - method 213, test condition "I".

This design includes a welded tantalum can and header assembly that provides a hermetic seal to withstand also harsh shock and vibration requirements.

Contact the factory for additional options for customized component design.

### OUTLINE DIMENSIONS



### CASE DIMENSIONS: millimeters (inches)

DSCC Case Size	AVX Case Size	L	D		E
			Without Insulating Sleeve	With Insulating Sleeve Max	
T4	E	+0.79 (0.031) -0.41 (0.016)	±0.41 (0.016)	10.31 (0.406)	±6.35 (0.250)



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### HOW TO ORDER

#### AVX PART NUMBER:

<b>TWA</b>	<b>E</b>	<b>407</b>	<b>*</b>	<b>100</b>	<b>□</b>	<b>B</b>	<b>X</b>	<b>Z</b>	<b>0</b>	<b>^</b>	<b>00</b>
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 X = High-Temp up to 230°C	Reliability Z = Non-ER	Qualification Level 0 = N/A	Termination Finish 0 = Sn/Pb 60/40 7 = Matte tin	Custom Test Options 00 = Standard

For RoHS compliant products, please select correct termination style.

### RIPPLE CURRENT MULTIPLIERS vs. Frequency, temperature and applied voltage<sup>1/2/</sup>

Frequency of Applied Ripple Current		120Hz				800Hz				1kHz			
		≤55	85	105	125	≤55	85	105	125	≤55	85	105	125
% of	100%	0.60	0.39	–	–	0.71	0.43	–	–	0.72	0.45	–	–
	85°C	0.60	0.46	–	–	0.71	0.55	–	–	0.72	0.55	–	–
Rated	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	–
Peak	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			
		≤55	85	105	125	≤55	85	105	125	≤55	85	105	125
% of	100%	0.88	0.55	–	–	1.00	0.63	–	–	1.10	0.69	–	–
	85°C	0.88	0.67	–	–	1.00	0.77	–	–	1.10	0.85	–	–
Rated	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	–
Peak	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.

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### CAPACITANCE AND RATED VOLTAGE, V<sub>R</sub> (VOLTAGE CODE) RANGE (LETTER DENOTES CASE SIZE)

Capacitance		Rated Voltage DC (V <sub>R</sub> ) to 85°C		
μF	Code	75V	100V	125V
220	227			
330	337			E
400	407		E	
470	477			

Available Ratings

### RATINGS & PART NUMBER REFERENCE

AVX Part Number	Case Size		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 120 Hz	Maximum Capacitance change (%)			AC Ripple (mA rms) 85°C at 40kHz	85°C Capability max. Time at 85°C (hrs)	200°C Capability max.			230°C Capability max		
	AVX	DSCC				+25°C	+85 & +125°C		-55°C	+85°C	+125°C			U <sub>r</sub> (V)	Time at 200°C (hrs)	DCL @ 200°C (μA)	U <sub>r</sub> (V)	Time at 230°C (hrs)	DCL @ 230°C (μA)
TWAE407*100=BKZ0*00	E	T4	400	100	0.8	10	150	10	-50	10	35	4100	2000	60	2000	1000	25	500	1000
TWAE337*125=BKZ0*00	E	T4	330	125	0.8	10	60	10	-45	15	25	3600	500	75	500	1000	40	500	1000

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.

$$DF = 2\pi fC \times (ESR)$$

$$2\pi = 6.28$$

$$f = 120\text{Hz}$$

C = Actual measured capacitance

ESR = Actual measured ESR