

TWA-E Series



CECC Wet Electrolytic Tantalum Capacitor



The TWA-E series is an axial leaded wet electrolytic tantalum capacitor manufactured in EU in accordance with CECC 30 202-001. High capacitance cathode system allows high level of CV (Capacitance/Voltage) in DSCC compatible case sizes.

This design includes a welded tantalum can and header assembly that provides a hermetic seal to withstand harsh shock and vibration requirements of MIL-PRF-39006.

Customized capacitance and voltage packages are possible and welcomed. Contact the factory about design possibilities beyond those contained in this datasheet.

OUTLINE DIMENSIONS



CASE DIMENSIONS: millimeters (inches)

| DSCC Case Size | AVX Case Size | L +0.79 (0.031) -0.41 (0.016) | D | | E ±6.35 (0.250) |
|----------------|---------------|-------------------------------------|--|-------------------------------|--------------------|
| | | | Without Insulating Sleeve ±0.41 (0.016) | With Insulating Sleeve Max | |
| 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 | 25 | 30 | 50 | 60 | 75 | 100 | 125 |
| Derated Voltage: (V _C) | 125°C | 15 | 20 | 30 | 40 | 50 | 65 | 85 |
| Surge Voltage: (V _S) | 85°C | 28.8 | 34.5 | 57.5 | 69 | 86.3 | 115 | 144 |



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HOW TO ORDER

AVX PART NUMBER:

| | | | | | | | | | | | |
|------------|-----------|--|---|--------------|--|----------------------------|---|---------------------------|--------------------------------|--|--------------------------------------|
| TWA | D | 337 | * | 050 | □ | B | E | 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 | Inspection Level E = In accordance with CECC testing | Reliability Z = Non-ER | Qualification Level 0 = N/A | Termination Finish 0 = Sn/Pb 60/40 7 = Matte tin | Custom Test Options 00 = Standard |




LEAD-FREE
LEAD-FREE COMPATIBLE COMPONENT
For RoHS compliant products, please select correct termination style.

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 | 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 | – | – | |
| Voltage | 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 | – | |
| Voltage | | 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 | 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 | – | – | |
| Voltage | 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 | – | |
| Voltage | | 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_R (VOLTAGE CODE) RANGE (LETTER DENOTES CASE SIZE)

| Capacitance | | Rated Voltage DC (V_R) to 85°C | | | | | | |
|---------------|------|------------------------------------|-----|------|-----|------|------|------|
| μF | Code | 25V | 30V | 50V | 60V | 75V | 100V | 125V |
| 15 | 156 | | | | | | | A* |
| 22 | 226 | | | | | | A* | |
| 33 | 336 | | | | | A* | | |
| 47 | 476 | | | A* | | | | B* |
| 68 | 686 | A | | | | | B | |
| 100 | 107 | | | | B | B | | D |
| 120 | 127 | | | B | | | | D* |
| 150 | 157 | | | B | | | D | E |
| 220 | 227 | | B | | | D*,E | E | E |
| 330 | 337 | B | | D*,E | | E | E | |
| 470 | 477 | | | D,E | | E | | |
| 560 | 567 | D* | | | E | | | |
| 680 | 687 | E | D,E | E | | E | | |
| 750 | 757 | D,E | D,E | | | E | E* | |
| 1000 | 108 | D,E | E | D*,E | | | | |
| 1500 | 158 | E | | | | | | |
| 2200 | 228 | | | | E | | | |
| 3000 | 308 | | | E | | | | |
| 4700 | 478 | E | | | | | | |

Released codes

Engineering samples - please contact manufacturer

*Codes under development

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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) | | TANG δ Max +25°C (%) | Impedance max (Ohms) -55°C at 120Hz | Maximum Capacitance Change (%) | | | AC Ripple (mA rms) 85°C at 40kHz | Case Size | | |
|---|------------------------------|------------------------------------|-------------------------------|---------------------|-----------------|-------------------------|---|-----------------------------------|-------|--------|--|-----------|------|--|
| | | | | +25°C | +85 & +125°C | | | -55°C | +85°C | +125°C | | AVX | DSCC | |
| 25 VDC at 85°C 15 VDC at 125°C | | | | | | | | | | | | | | |
| TWAA686*025□BEZO^00 | 68 | 25 | 2.5 | 0.6 | 3 | 12 | 45 | -40 | 12 | 15 | 850 | A | T1 | |
| TWAB337*025□BEZO^00 | 330 | 25 | 1.3 | 2 | 20 | 30 | 25 | -60 | 10 | 15 | 1550 | B | T2 | |
| TWAE687*025□BEZO^00 | 680 | 25 | 0.75 | 3 | 12 | 45 | 12 | -50 | 8 | 15 | 2100 | E | T4 | |
| TWAD757*025□BEZO^00 | 750 | 25 | 1 | 3 | 25 | 45 | 15 | -50 | 8 | 15 | 2000 | D | T3 | |
| TWAE757*025□BEZO^00 | 750 | 25 | 0.75 | 3.5 | 16 | 50 | 9 | -55 | 10 | 18 | 2200 | E | T4 | |
| TWAD108*025□BEZO^00 | 1000 | 25 | 1 | 4 | 30 | 45 | 15 | -50 | 8 | 15 | 2300 | D | T3 | |
| TWAE108*025□BEZO^00 | 1000 | 25 | 0.7 | 4 | 20 | 60 | 9 | -55 | 10 | 18 | 2400 | E | T4 | |
| TWAE158*025□BEZO^00 | 1500 | 25 | 0.5 | 6 | 24 | 65 | 7 | -65 | 15 | 20 | 2850 | E | T4 | |
| TWAE478*025□BEZO^00 | 4700 | 25 | 0.25 | 18 | 92 | 90 | 1.8 | -74 | 32 | 34 | 5700 | E | T4 | |
| 30 VDC at 85°C 20 VDC at 125°C | | | | | | | | | | | | | | |
| TWAB227*030□BEZO^00 | 220 | 30 | 2 | 1.9 | 10 | 15 | 30 | -40 | 8 | 15 | 1200 | B | T2 | |
| TWAD687*030□BEZO^00 | 680 | 30 | 1 | 3.3 | 25 | 45 | 15 | -50 | 8 | 15 | 1900 | D | T3 | |
| TWAE687*030□BEZO^00 | 680 | 30 | 0.8 | 4.5 | 18 | 45 | 10 | -60 | 8 | 15 | 2100 | E | T4 | |
| TWAD757*030□BEZO^00 | 750 | 30 | 1 | 3.6 | 30 | 45 | 15 | -50 | 8 | 15 | 2000 | D | T3 | |
| TWAE757*030□BEZO^00 | 750 | 30 | 0.8 | 5 | 20 | 45 | 10 | -65 | 10 | 18 | 2200 | E | T4 | |
| TWAE108*030□BEZO^00 | 1000 | 30 | 0.7 | 5 | 20 | 55 | 7 | -70 | 10 | 18 | 2500 | E | T4 | |
| 50 VDC at 85°C 30 VDC at 125°C | | | | | | | | | | | | | | |
| TWAA476*050□BEZO^00 | 47 | 50 | 2 | 1 | 5 | 9 | 35 | -25 | 8 | 15 | 850 | A | T1 | |
| TWAB127*050□BEZO^00 | 120 | 50 | 2 | 2 | 10 | 14 | 30 | -45 | 8 | 15 | 1200 | B | T2 | |
| TWAB157*050□BEZO^00 | 150 | 50 | 2 | 2 | 10 | 16 | 25 | -50 | 8 | 15 | 1400 | B | T2 | |
| TWAD337*050□BEZO^00 | 330 | 50 | 0.85 | 3 | 25 | 25 | 15 | -50 | 8 | 15 | 1650 | D | T3 | |
| TWAE337*050□BEZO^00 | 330 | 50 | 0.8 | 2.5 | 25 | 24 | 15 | -50 | 8 | 15 | 1900 | E | T4 | |
| TWAD477*050□BEZO^00 | 470 | 50 | 1 | 3 | 25 | 35 | 11 | -50 | 8 | 15 | 2100 | D | T3 | |
| TWAE477*050□BEZO^00 | 470 | 50 | 0.75 | 3 | 30 | 32 | 10 | -50 | 8 | 15 | 2200 | E | T4 | |
| TWAE687*050□BEZO^00 | 680 | 50 | 0.7 | 5 | 40 | 42 | 8 | -58 | 10 | 20 | 2750 | E | T4 | |
| TWAD108*050□BEZO^00 | 1000 | 50 | 1.2 | 15 | 125 | 100 | 15 | -90 | 100 | 140 | 3800 | D | T3 | |
| TWAE108*050□BEZO^00 | 1000 | 50 | 0.7 | 11 | 110 | 45 | 20 | -70 | 30 | 40 | 3200 | E | T4 | |
| TWAE308*050□BEZO^00 | 3000 | 50 | 0.3 | 30 | 150 | 80 | 3.5 | -80 | 60 | 85 | 3100 | E | T4 | |
| 60 VDC at 85°C 40 VDC at 125°C | | | | | | | | | | | | | | |
| TWAB107*060□BEZO^00 | 100 | 60 | 2.5 | 1.7 | 10 | 12 | 30 | -40 | 8 | 15 | 1100 | B | T2 | |
| TWAE567*060□BEZO^00 | 560 | 60 | 0.8 | 5 | 40 | 45 | 10 | -58 | 8 | 15 | 2750 | E | T4 | |
| TWAE228*060□BEZO^00 | 2200 | 60 | 0.5 | 30 | 150 | 80 | 3.5 | -80 | 60 | 85 | 3000 | E | T4 | |
| 75 VDC at 85°C 50 VDC at 125°C | | | | | | | | | | | | | | |
| TWAA336*075□BEZO^00 | 33 | 75 | 2.5 | 1 | 5 | 8 | 66 | -25 | 5 | 9 | 1050 | A | T1 | |
| TWAB107*075□BEZO^00 | 100 | 75 | 2.5 | 2 | 10 | 12 | 24 | -35 | 6 | 10 | 1400 | B | T2 | |
| TWAD227*075□BEZO^00 | 220 | 75 | 1.2 | 3 | 30 | 24 | 20 | -45 | 6 | 10 | 1500 | D | T3 | |
| TWAE227*075□BEZO^00 | 220 | 75 | 1.1 | 2.5 | 30 | 22 | 20 | -50 | 6 | 10 | 1800 | E | T4 | |
| TWAE337*075□BEZO^00 | 330 | 75 | 1 | 3 | 40 | 30 | 12 | -50 | 6 | 10 | 2200 | E | T4 | |
| TWAE477*075□BEZO^00 | 470 | 75 | 0.9 | 5 | 50 | 38 | 12 | -55 | 6 | 10 | 2750 | E | T4 | |
| TWAE687*075□BEZO^00 | 680 | 75 | 0.9 | 11 | 110 | 45 | 10 | -70 | 30 | 40 | 2750 | E | T4 | |
| TWAE757*075□BEZO^00 | 750 | 75 | 0.7 | 12 | 120 | 60 | 10 | -70 | 30 | 40 | 3800 | E | T4 | |
| 100 VDC at 85°C 65 VDC at 125°C | | | | | | | | | | | | | | |
| TWAA226*100□BEZO^00 | 22 | 100 | 3.5 | 1 | 5 | 7 | 125 | -18 | 3 | 10 | 1400 | A | T1 | |
| TWAB686*100□BEZO^00 | 68 | 100 | 2.5 | 2 | 10 | 13 | 37 | -30 | 4 | 12 | 1650 | B | T2 | |
| TWAD157*100□BEZO^00 | 150 | 100 | 1.6 | 3 | 25 | 22 | 22 | -35 | 6 | 12 | 2100 | D | T3 | |
| TWAE227*100□BEZO^00 | 220 | 100 | 1.2 | 5 | 50 | 24 | 15 | -40 | 6 | 12 | 2750 | E | T4 | |
| TWAE337*100□BEZO^00 | 330 | 100 | 0.8 | 6 | 60 | 30 | 10 | -45 | 7 | 20 | 3600 | E | T4 | |
| TWAE757*100□BEZO^00 | 750 | 100 | 0.7 | 20 | 200 | 45 | 10 | -40 | 20 | 50 | 6700 | E | T4 | |
| 125 VDC at 85°C 85 VDC at 125°C | | | | | | | | | | | | | | |
| TWAD107*125□BEZO^00 | 100 | 125 | 1.8 | 3 | 25 | 18 | 35 | -35 | 5 | 12 | 2100 | D | T3 | |
| TWAE157*125□BEZO^00 | 150 | 125 | 1.6 | 5 | 50 | 35 | 20 | -35 | 6 | 16 | 2750 | E | T4 | |
| TWAE227*125□BEZO^00 | 220 | 125 | 1.4 | 10 | 50 | 25 | 12 | -40 | 8 | 15 | 3600 | 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.

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Тел: +7 (812) 336 43 04 (многоканальный)

Email: org@lifeelectronics.ru