

# 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<br>+0.79 (0.031)<br>-0.41 (0.016) | D  |                               | E<br>±6.35 (0.250) |
|----------------|---------------|-------------------------------------|--|-------------------------------|--------------------|
|                |               |                                     | Without Insulating Sleeve<br>±0.41 (0.016) | With Insulating Sleeve<br>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 <sub>R</sub> )   | 85°C  | 25   | 30   | 50   | 60 | 75   | 100 | 125 |
| Derated Voltage: (V <sub>C</sub> ) | 125°C | 15   | 20   | 30   | 40 | 50   | 65  | 85  |
| Surge Voltage: (V <sub>S</sub> )   | 85°C  | 28.8 | 34.5 | 57.5 | 69 | 86.3 | 115 | 144 |



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### HOW TO ORDER

#### AVX PART NUMBER:

|            |           |  |   |              |  |                            |   |                           |                                |  |                                      |
|------------|-----------|--|---|--------------|--|----------------------------|---|---------------------------|--------------------------------|--|--------------------------------------|
| <b>TWA</b> | <b>D</b>  | <b>337</b>   | <b>*</b>                                      | <b>050</b>   | <b>□</b>   | <b>B</b>                   | <b>E</b>  | <b>Z</b>                  | <b>0</b>                       | <b>^</b>   | <b>00</b>                            |
| Type       | Case Size | Capacitance Code<br>pF code:<br>1st two digits represent significant figures 3rd digit represents multiplier (number of zeros to follow) | Capacitance Tolerance<br>K = ±10%<br>M = ±20% | Voltage Code | Insulation Sleeve<br>C = Without Sleeve<br>S = With Sleeve | Packaging<br>B = Tray Pack | Inspection Level<br>E = In accordance with CECC testing | Reliability<br>Z = Non-ER | Qualification Level<br>0 = N/A | Termination Finish<br>0 = Sn/Pb 60/40<br>7 = Matte tin | Custom Test Options<br>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<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 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 | –    |
| 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 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 | –    |
| 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.

## CECC Wet Electrolytic Tantalum Capacitor

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

| Capacitance   |      | Rated Voltage DC ( $V_R$ ) to 85°C |     |      |     |      |      |      |
|---------------|------|------------------------------------|-----|------|-----|------|------|------|
| $\mu\text{F}$ | 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

## CECC Wet Electrolytic Tantalum Capacitor

### RATINGS & PART NUMBER REFERENCE

| AVX Part Number                           | Cap (µF)<br>25°C<br>at 120Hz | DC Rated<br>Voltage (V)<br>at 85°C | ESR Max<br>(ohms)<br>at 120Hz | DC Leakage max (µA) |                 | TANG δ Max<br>+25°C (%) | Impedance<br>max (Ohms)<br>-55°C at 120Hz | Maximum Capacitance Change<br>(%) |       |        | AC Ripple<br>(mA rms)<br>85°C at 40kHz | Case Size |      |
|---|------------------------------|------------------------------------|-------------------------------|---------------------|-----------------|-------------------------|---|-----------------------------------|-------|--------|--|-----------|------|
|   |                              |                                    |                               | +25°C               | +85 &<br>+125°C |                         |   | -55°C                             | +85°C | +125°C |  | AVX       | DSCC |
| <b>25 VDC at 85°C    15 VDC at 125°C</b>  |                              |                                    |                               |                     |                 |                         |   |                                   |       |        |  |           |      |
| 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   |
| <b>30 VDC at 85°C    20 VDC at 125°C</b>  |                              |                                    |                               |                     |                 |                         |   |                                   |       |        |  |           |      |
| 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   |
| <b>50 VDC at 85°C    30 VDC at 125°C</b>  |                              |                                    |                               |                     |                 |                         |   |                                   |       |        |  |           |      |
| 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   |
| <b>60 VDC at 85°C    40 VDC at 125°C</b>  |                              |                                    |                               |                     |                 |                         |   |                                   |       |        |  |           |      |
| 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   |
| <b>75 VDC at 85°C    50 VDC at 125°C</b>  |                              |                                    |                               |                     |                 |                         |   |                                   |       |        |  |           |      |
| 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   |
| <b>100 VDC at 85°C    65 VDC at 125°C</b> |                              |                                    |                               |                     |                 |                         |   |                                   |       |        |  |           |      |
| 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   |
| <b>125 VDC at 85°C    85 VDC at 125°C</b> |                              |                                    |                               |                     |                 |                         |   |                                   |       |        |  |           |      |
| 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.



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

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