

# TWA-E Series



## CECC Wet Electrolytic Tantalum Capacitor

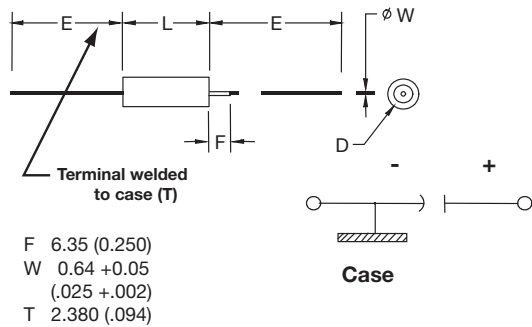


The TWA-E series is an axial leaded wet electrolytic tantalum capacitor manufactured in EU in accordance with CECC 30 202-001. High capacitance cathode system allows high level of CV (Capacitance/Voltage) in DSCC compatible case sizes.

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<br>Without Insulating Sleeve<br>±0.41 (0.016) | D<br>With Insulating Sleeve<br>Max | E<br>±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  | 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                                                                                                  | Capacitance Tolerance | Voltage Code | Insulation Sleeve                     | Packaging     | Inspection Level                    | Reliability | Qualification Level | Termination Finish               | Custom Test Options |
|      |           | pF code: 1st two digits represent significant figures 3rd digit represents multiplier (number of zeros to follow) | K = ±10%<br>M = ±20%  |              | C = Without Sleeve<br>S = With Sleeve | B = Tray Pack | E = In accordance with CECC testing | Z = Non-ER  | 0 = N/A             | 0 = Sn/Pb 60/40<br>7 = Matte tin | 00 = Standard       |



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

| 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                                | 100%    | 0.60  | 0.39 | —    | —    | 0.71  | 0.43 | —    | —    | 0.72 | 0.45 | —    | —    |
| 85°C                                | 90%     | 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 | —    |
| Peak                                | 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                                | 100%    | 0.88  | 0.55 | —    | —    | 1.00  | 0.63 | —    | —    | 1.10   | 0.69 | —    | —    |
| 85°C                                | 90%     | 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 | —    |
| Peak                                | 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.

## 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>Votage (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 |
|                                 |                              |                                   |                               |                     |                 |                         |                                           |                                   |       |        |                                        |           |      |
| 25 VDC at 85°C 15 VDC at 125°C  |                              |                                   |                               |                     |                 |                         |                                           |                                   |       |        |                                        |           |      |
| TWAA686*025□BEZ0^00             | 68                           | 25                                | 2.5                           | 0.6                 | 3               | 12                      | 45                                        | -40                               | 12    | 15     | 850                                    | A         | T1   |
| TWAB337*025□BEZ0^00             | 330                          | 25                                | 1.3                           | 2                   | 20              | 30                      | 25                                        | -60                               | 10    | 15     | 1550                                   | B         | T2   |
| TWAE687*025□BEZ0^00             | 680                          | 25                                | 0.75                          | 3                   | 12              | 45                      | 12                                        | -50                               | 8     | 15     | 2100                                   | E         | T4   |
| TWAD757*025□BEZ0^00             | 750                          | 25                                | 1                             | 3                   | 25              | 45                      | 15                                        | -50                               | 8     | 15     | 2000                                   | D         | T3   |
| TWAE757*025□BEZ0^00             | 750                          | 25                                | 0.75                          | 3.5                 | 16              | 50                      | 9                                         | -55                               | 10    | 18     | 2200                                   | E         | T4   |
| TWAD108*025□BEZ0^00             | 1000                         | 25                                | 1                             | 4                   | 30              | 45                      | 15                                        | -50                               | 8     | 15     | 2300                                   | D         | T3   |
| TWAE108*025□BEZ0^00             | 1000                         | 25                                | 0.7                           | 4                   | 20              | 60                      | 9                                         | -55                               | 10    | 18     | 2400                                   | E         | T4   |
| TWAE158*025□BEZ0^00             | 1500                         | 25                                | 0.5                           | 6                   | 24              | 65                      | 7                                         | -65                               | 15    | 20     | 2850                                   | E         | T4   |
| TWAE478*025□BEZ0^00             | 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□BEZ0^00             | 220                          | 30                                | 2                             | 1.9                 | 10              | 15                      | 30                                        | -40                               | 8     | 15     | 1200                                   | B         | T2   |
| TWAD687*030□BEZ0^00             | 680                          | 30                                | 1                             | 3.3                 | 25              | 45                      | 15                                        | -50                               | 8     | 15     | 1900                                   | D         | T3   |
| TWAE687*030□BEZ0^00             | 680                          | 30                                | 0.8                           | 4.5                 | 18              | 45                      | 10                                        | -60                               | 8     | 15     | 2100                                   | E         | T4   |
| TWAD757*030□BEZ0^00             | 750                          | 30                                | 1                             | 3.6                 | 30              | 45                      | 15                                        | -50                               | 8     | 15     | 2000                                   | D         | T3   |
| TWAE757*030□BEZ0^00             | 750                          | 30                                | 0.8                           | 5                   | 20              | 45                      | 10                                        | -65                               | 10    | 18     | 2200                                   | E         | T4   |
| TWAE108*030□BEZ0^00             | 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□BEZ0^00             | 47                           | 50                                | 2                             | 1                   | 5               | 9                       | 35                                        | -25                               | 8     | 15     | 850                                    | A         | T1   |
| TWAB127*050□BEZ0^00             | 120                          | 50                                | 2                             | 2                   | 10              | 14                      | 30                                        | -45                               | 8     | 15     | 1200                                   | B         | T2   |
| TWAB157*050□BEZ0^00             | 150                          | 50                                | 2                             | 2                   | 10              | 16                      | 25                                        | -50                               | 8     | 15     | 1400                                   | B         | T2   |
| TWAD337*050□BEZ0^00             | 330                          | 50                                | 0.85                          | 3                   | 25              | 25                      | 15                                        | -50                               | 8     | 15     | 1650                                   | D         | T3   |
| TWAE337*050□BEZ0^00             | 330                          | 50                                | 0.8                           | 2.5                 | 25              | 24                      | 15                                        | -50                               | 8     | 15     | 1900                                   | E         | T4   |
| TWAD477*050□BEZ0^00             | 470                          | 50                                | 1                             | 3                   | 25              | 35                      | 11                                        | -50                               | 8     | 15     | 2100                                   | D         | T3   |
| TWAE477*050□BEZ0^00             | 470                          | 50                                | 0.75                          | 3                   | 30              | 32                      | 10                                        | -50                               | 8     | 15     | 2200                                   | E         | T4   |
| TWAE687*050□BEZ0^00             | 680                          | 50                                | 0.7                           | 5                   | 40              | 42                      | 8                                         | -58                               | 10    | 20     | 2750                                   | E         | T4   |
| TWAD108*050□BEZ0^00             | 1000                         | 50                                | 1.2                           | 15                  | 125             | 100                     | 15                                        | -90                               | 100   | 140    | 3800                                   | D         | T3   |
| TWAE108*050□BEZ0^00             | 1000                         | 50                                | 0.7                           | 11                  | 110             | 45                      | 20                                        | -70                               | 30    | 40     | 3200                                   | E         | T4   |
| TWAE308*050□BEZ0^00             | 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□BEZ0^00             | 100                          | 60                                | 2.5                           | 1.7                 | 10              | 12                      | 30                                        | -40                               | 8     | 15     | 1100                                   | B         | T2   |
| TWAE567*060□BEZ0^00             | 560                          | 60                                | 0.8                           | 5                   | 40              | 45                      | 10                                        | -58                               | 8     | 15     | 2750                                   | E         | T4   |
| TWAE228*060□BEZ0^00             | 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□BEZ0^00             | 33                           | 75                                | 2.5                           | 1                   | 5               | 8                       | 66                                        | -25                               | 5     | 9      | 1050                                   | A         | T1   |
| TWAB107*075□BEZ0^00             | 100                          | 75                                | 2.5                           | 2                   | 10              | 12                      | 24                                        | -35                               | 6     | 10     | 1400                                   | B         | T2   |
| TWAD227*075□BEZ0^00             | 220                          | 75                                | 1.2                           | 3                   | 30              | 24                      | 20                                        | -45                               | 6     | 10     | 1500                                   | D         | T3   |
| TWAE227*075□BEZ0^00             | 220                          | 75                                | 1.1                           | 2.5                 | 30              | 22                      | 20                                        | -50                               | 6     | 10     | 1800                                   | E         | T4   |
| TWAE337*075□BEZ0^00             | 330                          | 75                                | 1                             | 3                   | 40              | 30                      | 12                                        | -50                               | 6     | 10     | 2200                                   | E         | T4   |
| TWAE477*075□BEZ0^00             | 470                          | 75                                | 0.9                           | 5                   | 50              | 38                      | 12                                        | -55                               | 6     | 10     | 2750                                   | E         | T4   |
| TWAE687*075□BEZ0^00             | 680                          | 75                                | 0.9                           | 11                  | 110             | 45                      | 10                                        | -70                               | 30    | 40     | 2750                                   | E         | T4   |
| TWAE757*075□BEZ0^00             | 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□BEZ0^00             | 22                           | 100                               | 3.5                           | 1                   | 5               | 7                       | 125                                       | -18                               | 3     | 10     | 1400                                   | A         | T1   |
| TWAB686*100□BEZ0^00             | 68                           | 100                               | 2.5                           | 2                   | 10              | 13                      | 37                                        | -30                               | 4     | 12     | 1650                                   | B         | T2   |
| TWAD157*100□BEZ0^00             | 150                          | 100                               | 1.6                           | 3                   | 25              | 22                      | 22                                        | -35                               | 6     | 12     | 2100                                   | D         | T3   |
| TWAE227*100□BEZ0^00             | 220                          | 100                               | 1.2                           | 5                   | 50              | 24                      | 15                                        | -40                               | 6     | 12     | 2750                                   | E         | T4   |
| TWAE337*100□BEZ0^00             | 330                          | 100                               | 0.8                           | 6                   | 60              | 30                      | 10                                        | -45                               | 7     | 20     | 3600                                   | E         | T4   |
| TWAE757*100□BEZ0^00             | 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□BEZ0^00             | 100                          | 125                               | 1.8                           | 3                   | 25              | 18                      | 35                                        | -35                               | 5     | 12     | 2100                                   | D         | T3   |
| TWAE157*125□BEZ0^00             | 150                          | 125                               | 1.6                           | 5                   | 50              | 35                      | 20                                        | -35                               | 6     | 16     | 2750                                   | E         | T4   |
| TWAE227*125□BEZ0^00             | 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 «Океан Электроники» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Поставка оригинальных импортных электронных компонентов напрямую с производств Америки, Европы и Азии, а так же с крупнейших складов мира;
- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Компания «Океан Электроники» является официальным дистрибьютором и эксклюзивным представителем в России одного из крупнейших производителей разъемов военного и аэрокосмического назначения «JONHON», а так же официальным дистрибьютором и эксклюзивным представителем в России производителя высокотехнологичных и надежных решений для передачи СВЧ сигналов «FORSTAR».



## JONHON

«JONHON» (основан в 1970 г.)

Разъемы специального, военного и аэрокосмического назначения:

(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

«FORSTAR» (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели,  
кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).



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