

# TBW Series



## Tantalum Fused DSCC Dwg 04053 COTS-Plus Weibull Grade & Space Level



TBW Fused Tantalum Capacitors offer protection from possible damaging short circuit failure modes. This is accomplished with an internal fuse in series with the capacitor. See the photograph on the right. The AVX fused tantalum offers lower ESR limits than competitive fused tantalum capacitors, and is available with Weibull and surge testing per MIL PRF 55365.



Anode, fuse and leadframe assembly



### CASE DIMENSIONS: millimeters (inches)

| Code | EIA Code | L±0.20 (0.008) | W+0.20 (0.008)<br>-0.10 (0.004) | H+0.20 (0.008)<br>-0.10 (0.004) | W <sub>1</sub> ±0.20 (0.008) | A+0.30 (0.012)<br>-0.20 (0.008) | S Min.       |
|------|----------|----------------|---------------------------------|---------------------------------|------------------------------|---------------------------------|--------------|
| C    | 6032-28  | 6.00 (0.236)   | 3.20 (0.126)                    | 2.60 (0.102)                    | 2.20 (0.087)                 | 1.30 (0.051)                    | 2.90 (0.114) |
| D    | 7343-31  | 7.30 (0.287)   | 4.30 (0.169)                    | 2.90 (0.114)                    | 2.40 (0.094)                 | 1.30 (0.051)                    | 4.40 (0.173) |
| E    | 7343-43  | 7.30 (0.287)   | 4.30 (0.169)                    | 4.10 (0.162)                    | 2.40 (0.094)                 | 1.30 (0.051)                    | 4.40 (0.173) |

### 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          | 4                                          | 6   | 10  | 16  | 20 | 25  | 35  | 50     |
| 0.47        |                                            |     |     |     |    |     |     | C      |
| 0.68        |                                            |     |     |     |    |     |     | C      |
| 1           |                                            |     |     |     |    |     |     | C      |
| 1.5         |                                            |     | -   | -   | -  | -   | C   | C      |
| 2.2         |                                            |     | -   | -   | -  | C   | C   | D      |
| 3.3         |                                            |     | -   | -   | -  | C   | C   | D      |
| 4.7         |                                            | -   | -   | -   | C  | C   | D   | D      |
| 6.8         |                                            | -   | -   | C   | C  | C   | D   |        |
| 10          |                                            | -   | C   | C   | C  | C/D | E   | E(20%) |
| 15          |                                            | C   | C   | C   | D  | D   | D/E | -      |
| 22          |                                            | C   | C   | C/D | D  | D/E | E   | -      |
| 33          |                                            | C   | C/D | D   | E  |     | -   | -      |
| 47          |                                            | C/D | C/D | D/E | E  | -   | -   | -      |
| 68          | C                                          | C/D | D   | E   | -  | -   | -   | -      |
| 100         | C                                          | D/E | D/E |     | -  | -   | -   | -      |
| 150         | D                                          | D   | D/E | -   | -  | -   | -   | -      |
| 220         | D                                          | D/E | E   | -   | -  | -   | -   | -      |
| 330         | E                                          | E   |     |     |    |     |     |        |
| 470         | E                                          |     |     |     |    |     |     |        |

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## Tantalum Fused DSCC Dwg 04053 COTS-Plus Weibull Grade & Space Level

### HOW TO ORDER

#### COTS-PLUS & DSCC DWG (04053):

| TBW  | D         | 686                                                                                                                                      | *                                                        | 006                                                                                                                                | C                                                       |                                                                                                                      | #                                                                           | @                                                                                                            | 0                                             | ^                                                                                                                                               | ++                                                                                                                                       |
|------|-----------|------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|-----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| 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>M = ±20%<br>K = ±10%<br>J = ±5% | Voltage Code<br>004 = 4Vdc<br>006 = 6Vdc<br>010 = 10Vdc<br>015 = 15Vdc<br>020 = 20Vdc<br>025 = 25Vdc<br>035 = 35Vdc<br>050 = 50Vdc | Standard or Low ESR Range<br>C = Std ESR<br>L = Low ESR | Packaging<br>B = Bulk<br>R = 7" T&R<br>S = 13" T&R<br>W = Waffle<br><br>See page 5 for additional packaging options. | Inspection Level<br>S = Std. Conformance<br>L = Group A<br><br>D = DSCC DWG | Reliability Grade<br>Weibull:<br>B = 0.1%/1000 hrs. 90% conf.<br>C = 0.01%/1000 hrs. 90% conf.<br>Z = Non-ER | Qualification Level<br>0 = N/A<br>9 = SRC9000 | Termination Finish<br>H = Solder Plated<br>0 = Fused Solder Plated<br>8 = Hot Solder Dipped<br>9 = Gold Plated<br>7 = Matte Sn (COTS-Plus only) | Surge Test Option<br>00 = None<br>23 = 10 Cycles, +25°C<br>24 = 10 Cycles, -55°C & +85°C<br>45 = 10 cycles, -55°C & +85°C before Weibull |

#### DSCC DWG P/N CROSS REFERENCE:

| 04053          | -01                              |
|----------------|----------------------------------|
| DSCC DWG 04053 | Dash Number<br>See Rating Tables |

NOTE: DSCC DWG 04053 specifies 20% capacitance tolerance and solder plated termination options only. For 10% capacitance tolerance, solder fused finish, Weibull grading and MIL surge options, order using AVX part number above.

#### SPACE LEVEL OPTIONS TO SRC9000\*:

| TBW  | D         | 686                                                                                                                                      | *                                                        | 006                                                                                                                                | C                                                       |                                                                                                                      | L                               | @                                                                                              | 9                                  | ^                                                                                                              | ++                                                                                                 |
|------|-----------|------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|---------------------------------|------------------------------------------------------------------------------------------------|------------------------------------|----------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| 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>M = ±20%<br>K = ±10%<br>J = ±5% | Voltage Code<br>004 = 4Vdc<br>006 = 6Vdc<br>010 = 10Vdc<br>015 = 15Vdc<br>020 = 20Vdc<br>025 = 25Vdc<br>035 = 35Vdc<br>050 = 50Vdc | Standard or Low ESR Range<br>C = Std ESR<br>L = Low ESR | Packaging<br>B = Bulk<br>R = 7" T&R<br>S = 13" T&R<br>W = Waffle<br><br>See page 5 for additional packaging options. | Inspection Level<br>L = Group A | Reliability Grade<br>Weibull:<br>B = 0.1%/1000 hrs. 90% conf.<br>C = 0.01%/1000 hrs. 90% conf. | Qualification Level<br>9 = SRC9000 | Termination Finish<br>H = Solder Plated<br>0 = Fused Solder Plated<br>8 = Hot Solder Dipped<br>9 = Gold Plated | Surge Test Option<br>00 = 10 Cycles, -55°C & +85°C<br>45 = 10 cycles, -55°C & +85°C before Weibull |

\*Qualifications Pending



### TECHNICAL SPECIFICATIONS

|                                    |                                                                                         |     |   |    |    |    |    |    |    |  |
|------------------------------------|-----------------------------------------------------------------------------------------|-----|---|----|----|----|----|----|----|--|
| Technical Data:                    | Unless otherwise specified, all technical data relate to an ambient temperature of 25°C |     |   |    |    |    |    |    |    |  |
| Capacitance Range:                 | 0.47 µF to 470 µF                                                                       |     |   |    |    |    |    |    |    |  |
| Capacitance Tolerance:             | ±10%; ±20%                                                                              |     |   |    |    |    |    |    |    |  |
| Rated Voltage (V <sub>R</sub> )    | ≤ +85°C:                                                                                | 4   | 6 | 10 | 15 | 20 | 25 | 35 | 50 |  |
| Category Voltage (V <sub>C</sub> ) | ≤ +125°C:                                                                               | 2.7 | 4 | 7  | 10 | 13 | 17 | 23 | 33 |  |
| Surge Voltage (V <sub>S</sub> )    | ≤ +85°C:                                                                                | 5.2 | 8 | 13 | 20 | 26 | 32 | 46 | 65 |  |
| Surge Voltage (V <sub>S</sub> )    | ≤ +125°C:                                                                               | 3.4 | 5 | 8  | 13 | 16 | 20 | 28 | 40 |  |
| Temperature Range:                 | -55°C to +125°C                                                                         |     |   |    |    |    |    |    |    |  |



## Tantalum Fused DSCC Dwg 04053 COTS-Plus Weibull Grade & Space Level

| RATING & PART NUMBER<br>REFERENCE |          |      | Parametric Specifications by Rating DSCC 04053 |                                     |                                    |         |       |        |        |             |       | Typical Ripple Data by Rating |                                 |                                 |                                  |                                 |                                 |                                  |      |
|-----------------------------------|----------|------|------------------------------------------------|-------------------------------------|------------------------------------|---------|-------|--------|--------|-------------|-------|-------------------------------|---------------------------------|---------------------------------|----------------------------------|---------------------------------|---------------------------------|----------------------------------|------|
|                                   |          |      | Cap<br>@ 120Hz<br>µF @<br>25°C                 | DC Rated<br>Voltage<br>V @<br>+85°C | ESR @<br>100kHz<br>Ohms @<br>+25°C | DCL max |       |        | DF max |             |       | Power<br>Dissipation<br>W     | 25°C<br>Ripple<br>A<br>(100kHz) | 85°C<br>Ripple<br>A<br>(100kHz) | 125°C<br>Ripple<br>A<br>(100kHz) | 25°C<br>Ripple<br>V<br>(100kHz) | 85°C<br>Ripple<br>V<br>(100kHz) | 125°C<br>Ripple<br>V<br>(100kHz) |      |
|                                   |          |      |                                                |                                     |                                    | +25°C   | +85°C | +125°C | +25°C  | +(85/125)°C | -55°C |                               |                                 |                                 |                                  |                                 |                                 |                                  |      |
| AVX P/N                           | DSCC P/N | Case |                                                |                                     |                                    | (µA)    | (µA)  | (µA)   | (%)    | (%)         | (%)   |                               |                                 |                                 |                                  |                                 |                                 |                                  |      |
| TBWC686*004C□#@0^++               | 04053    | 001  | C                                              | 68                                  | 4                                  | 1.6     | 2.7   | 27     | 32.4   | 6           | 9     | 9                             | 0.110                           | 0.26                            | 0.24                             | 0.10                            | 0.42                            | 0.38                             | 0.17 |
| TBWC107*004C□#@0^++               | 04053    | 002  | C                                              | 100                                 | 4                                  | 1.2     | 4     | 40     | 48     | 8           | 12    | 12                            | 0.110                           | 0.30                            | 0.27                             | 0.12                            | 0.36                            | 0.33                             | 0.15 |
| TBWD157*004C□#@0^++               | 04053    | 003  | D                                              | 150                                 | 4                                  | 0.8     | 6     | 60     | 72     | 8           | 12    | 12                            | 0.150                           | 0.43                            | 0.39                             | 0.17                            | 0.35                            | 0.31                             | 0.14 |
| TBWD227*004C□#@0^++               | 04053    | 004  | D                                              | 220                                 | 4                                  | 0.7     | 8.8   | 88     | 105.6  | 8           | 12    | 12                            | 0.150                           | 0.46                            | 0.42                             | 0.19                            | 0.32                            | 0.29                             | 0.13 |
| TBWD337*004C□#@0^++               | 04053    | 005  | D                                              | 330                                 | 4                                  | 0.7     | 13.2  | 132    | 158.4  | 8           | 12    | 12                            | 0.150                           | 0.46                            | 0.42                             | 0.19                            | 0.32                            | 0.29                             | 0.13 |
| TBWE337*004C□#@0^++               | 04053    | 006  | E                                              | 330                                 | 4                                  | 0.7     | 13.2  | 132    | 158.4  | 8           | 12    | 12                            | 0.165                           | 0.49                            | 0.44                             | 0.19                            | 0.34                            | 0.31                             | 0.14 |
| TBWE477*004C□#@0^++               | 04053    | 007  | E                                              | 470                                 | 4                                  | 0.5     | 18.8  | 188    | 225.6  | 8           | 12    | 12                            | 0.165                           | 0.57                            | 0.52                             | 0.23                            | 0.29                            | 0.26                             | 0.11 |
| TBWC156*006C□#@0^++               | 04053    | 011  | C                                              | 15                                  | 6                                  | 2       | 0.7   | 7      | 8.4    | 6           | 9     | 9                             | 0.110                           | 0.23                            | 0.21                             | 0.09                            | 0.47                            | 0.42                             | 0.19 |
| TBWC226*006C□#@0^++               | 04053    | 013  | C                                              | 22                                  | 6                                  | 2       | 1.4   | 14     | 16.8   | 6           | 9     | 9                             | 0.110                           | 0.23                            | 0.21                             | 0.09                            | 0.47                            | 0.42                             | 0.19 |
| TBWC336*006C□#@0^++               | 04053    | 014  | C                                              | 33                                  | 6                                  | 2       | 2     | 20     | 24     | 6           | 9     | 9                             | 0.110                           | 0.23                            | 0.21                             | 0.09                            | 0.47                            | 0.42                             | 0.19 |
| TBWD476*006C□#@0^++               | 04053    | 015  | D                                              | 47                                  | 6                                  | 1       | 2.9   | 29     | 34.8   | 6           | 9     | 9                             | 0.150                           | 0.39                            | 0.35                             | 0.15                            | 0.39                            | 0.35                             | 0.15 |
| TBWC476*006C□#@0^++               | 04053    | 016  | C                                              | 47                                  | 6                                  | 1.6     | 2.9   | 29     | 34.8   | 6           | 9     | 9                             | 0.110                           | 0.26                            | 0.24                             | 0.10                            | 0.42                            | 0.38                             | 0.17 |
| TBWD686*006C□#@0^++               | 04053    | 017  | D                                              | 68                                  | 6                                  | 1       | 4.1   | 41     | 49.2   | 6           | 9     | 9                             | 0.150                           | 0.39                            | 0.35                             | 0.15                            | 0.39                            | 0.35                             | 0.15 |
| TBWC686*006C□#@0^++               | 04053    | 018  | C                                              | 68                                  | 6                                  | 1.2     | 4.1   | 41     | 49.2   | 6           | 9     | 9                             | 0.110                           | 0.30                            | 0.27                             | 0.12                            | 0.36                            | 0.33                             | 0.15 |
| TBWX107*006C□#@0^++               | 04053    | 019  | E                                              | 100                                 | 6                                  | 0.9     | 6     | 60     | 72     | 8           | 12    | 12                            | 0.165                           | 0.43                            | 0.39                             | 0.17                            | 0.39                            | 0.35                             | 0.15 |
| TBWD107*006C□#@0^++               | 04053    | 020  | D                                              | 100                                 | 6                                  | 0.8     | 6     | 60     | 72     | 8           | 12    | 12                            | 0.150                           | 0.43                            | 0.39                             | 0.17                            | 0.35                            | 0.31                             | 0.14 |
| TBWD157*006C□#@0^++               | 04053    | 021  | D                                              | 150                                 | 6                                  | 0.7     | 9     | 90     | 108    | 8           | 12    | 12                            | 0.150                           | 0.46                            | 0.42                             | 0.19                            | 0.32                            | 0.29                             | 0.13 |
| TBWD227*006C□#@0^++               | 04053    | 022  | D                                              | 220                                 | 6                                  | 0.7     | 13.2  | 132    | 158.4  | 8           | 12    | 12                            | 0.150                           | 0.46                            | 0.42                             | 0.19                            | 0.32                            | 0.29                             | 0.13 |
| TBWE227*006C□#@0^++               | 04053    | 023  | E                                              | 220                                 | 6                                  | 0.7     | 13.2  | 132    | 158.4  | 8           | 12    | 12                            | 0.165                           | 0.49                            | 0.44                             | 0.19                            | 0.34                            | 0.31                             | 0.14 |
| TBWE337*006C□#@0^++               | 04053    | 024  | E                                              | 330                                 | 6                                  | 0.5     | 19.8  | 198    | 237.6  | 8           | 12    | 12                            | 0.165                           | 0.57                            | 0.52                             | 0.23                            | 0.29                            | 0.26                             | 0.11 |
| TBWC106*010C□#@0^++               | 04053    | 028  | C                                              | 10                                  | 10                                 | 2       | 1     | 10     | 12     | 6           | 9     | 9                             | 0.110                           | 0.23                            | 0.21                             | 0.09                            | 0.47                            | 0.42                             | 0.19 |
| TBWC156*010C□#@0^++               | 04053    | 030  | C                                              | 15                                  | 10                                 | 2       | 1.5   | 15     | 18     | 6           | 9     | 9                             | 0.110                           | 0.23                            | 0.21                             | 0.09                            | 0.47                            | 0.42                             | 0.19 |
| TBWC226*010C□#@0^++               | 04053    | 031  | C                                              | 22                                  | 10                                 | 2       | 2.2   | 22     | 26.4   | 6           | 9     | 9                             | 0.110                           | 0.23                            | 0.21                             | 0.09                            | 0.47                            | 0.42                             | 0.19 |
| TBWD336*010C□#@0^++               | 04053    | 032  | D                                              | 33                                  | 10                                 | 1       | 3.3   | 33     | 39.6   | 6           | 9     | 9                             | 0.150                           | 0.39                            | 0.35                             | 0.15                            | 0.39                            | 0.35                             | 0.15 |
| TBWC336*010C□#@0^++               | 04053    | 033  | C                                              | 33                                  | 10                                 | 1.6     | 3.3   | 33     | 39.6   | 6           | 9     | 9                             | 0.110                           | 0.26                            | 0.24                             | 0.10                            | 0.42                            | 0.38                             | 0.17 |
| TBWD476*010C□#@0^++               | 04053    | 034  | D                                              | 47                                  | 10                                 | 1       | 4.7   | 47     | 56.4   | 6           | 9     | 9                             | 0.150                           | 0.39                            | 0.35                             | 0.15                            | 0.39                            | 0.35                             | 0.15 |
| TBWC476*010C□#@0^++               | 04053    | 035  | C                                              | 47                                  | 10                                 | 1.2     | 4.7   | 47     | 56.4   | 6           | 9     | 9                             | 0.110                           | 0.30                            | 0.27                             | 0.12                            | 0.36                            | 0.33                             | 0.15 |
| TBWE686*010C□#@0^++               | 04053    | 036  | E                                              | 68                                  | 10                                 | 0.9     | 6.8   | 68     | 81.6   | 6           | 9     | 9                             | 0.165                           | 0.43                            | 0.39                             | 0.17                            | 0.39                            | 0.35                             | 0.15 |
| TBWD686*010C□#@0^++               | 04053    | 037  | D                                              | 68                                  | 10                                 | 0.8     | 6.8   | 68     | 81.6   | 6           | 9     | 9                             | 0.150                           | 0.43                            | 0.39                             | 0.17                            | 0.35                            | 0.31                             | 0.14 |
| TBWD107*010C□#@0^++               | 04053    | 038  | D                                              | 100                                 | 10                                 | 0.7     | 10    | 100    | 120    | 8           | 12    | 12                            | 0.150                           | 0.46                            | 0.42                             | 0.19                            | 0.32                            | 0.29                             | 0.13 |
| TBWE157*010C□#@0^++               | 04053    | 039  | E                                              | 150                                 | 10                                 | 0.7     | 15    | 150    | 180    | 8           | 12    | 12                            | 0.165                           | 0.49                            | 0.44                             | 0.19                            | 0.34                            | 0.31                             | 0.14 |
| TBWD157*010C□#@0^++               | 04053    | 040  | D                                              | 150                                 | 10                                 | 0.7     | 15    | 150    | 180    | 8           | 12    | 12                            | 0.150                           | 0.46                            | 0.42                             | 0.19                            | 0.32                            | 0.29                             | 0.13 |
| TBWE227*010C□#@0^++               | 04053    | 041  | E                                              | 220                                 | 10                                 | 0.5     | 22    | 220    | 264    | 8           | 12    | 12                            | 0.165                           | 0.57                            | 0.52                             | 0.23                            | 0.29                            | 0.26                             | 0.11 |
| TBWC685*016C□#@0^++               | 04053    | 045  | C                                              | 6.8                                 | 16                                 | 2       | 1.1   | 11     | 13.2   | 6           | 9     | 9                             | 0.110                           | 0.23                            | 0.21                             | 0.09                            | 0.47                            | 0.42                             | 0.19 |
| TBWC106*016C□#@0^++               | 04053    | 047  | C                                              | 10                                  | 16                                 | 2       | 1.6   | 16     | 19.2   | 6           | 9     | 9                             | 0.110                           | 0.23                            | 0.21                             | 0.09                            | 0.47                            | 0.42                             | 0.19 |
| TBWC156*016C□#@0^++               | 04053    | 048  | C                                              | 15                                  | 16                                 | 2       | 2.4   | 24     | 28.8   | 6           | 9     | 9                             | 0.110                           | 0.23                            | 0.21                             | 0.09                            | 0.47                            | 0.42                             | 0.19 |
| TBWD226*016C□#@0^++               | 04053    | 049  | D                                              | 22                                  | 16                                 | 1       | 3.6   | 36     | 43.2   | 6           | 9     | 9                             | 0.150                           | 0.39                            | 0.35                             | 0.15                            | 0.39                            | 0.35                             | 0.15 |
| TBWC226*016C□#@0^++               | 04053    | 050  | C                                              | 22                                  | 16                                 | 1.6     | 3.6   | 36     | 43.2   | 6           | 9     | 9                             | 0.110                           | 0.26                            | 0.24                             | 0.10                            | 0.42                            | 0.38                             | 0.17 |
| TBWD336*016C□#@0^++               | 04053    | 051  | D                                              | 33                                  | 16                                 | 1       | 5.3   | 53     | 63.6   | 6           | 9     | 9                             | 0.150                           | 0.39                            | 0.35                             | 0.15                            | 0.39                            | 0.35                             | 0.15 |
| TBWE476*016C□#@0^++               | 04053    | 052  | E                                              | 47                                  | 16                                 | 0.9     | 7.5   | 75     | 90     | 6           | 9     | 9                             | 0.165                           | 0.43                            | 0.39                             | 0.17                            | 0.39                            | 0.35                             | 0.15 |
| TBWD476*016C□#@0^++               | 04053    | 053  | D                                              | 47                                  | 16                                 | 0.8     | 7.5   | 75     | 90     | 6           | 9     | 9                             | 0.150                           | 0.43                            | 0.39                             | 0.17                            | 0.35                            | 0.31                             | 0.14 |
| TBWE107*016C□#@0^++               | 04053    | 054  | E                                              | 100                                 | 16                                 | 0.7     | 16    | 160    | 192    | 8           | 12    | 12                            | 0.165                           | 0.49                            | 0.44                             | 0.19                            | 0.34                            | 0.31                             | 0.14 |
| TBWC475*020C□#@0^++               | 04053    | 058  | C                                              | 4.7                                 | 20                                 | 2       | 1     | 10     | 12     | 6           | 9     | 9                             | 0.110                           | 0.23                            | 0.21                             | 0.09                            | 0.47                            | 0.42                             | 0.19 |
| TBWC685*020C□#@0^++               | 04053    | 059  | C                                              | 6.8                                 | 20                                 | 2       | 1.4   | 14     | 16.8   | 6           | 9     | 9                             | 0.110                           | 0.23                            | 0.21                             | 0.09                            | 0.47                            | 0.42                             | 0.19 |
| TBWC106*020C□#@0^++               | 04053    | 060  | C                                              | 10                                  | 20                                 | 2       | 2     | 20     | 24     | 6           | 9     | 9                             | 0.110                           | 0.23                            | 0.21                             | 0.09                            | 0.47                            | 0.42                             | 0.19 |
| TBWD156*020C□#@0^++               | 04053    | 061  | D                                              | 15                                  | 20                                 | 1       | 3     | 30     | 36     | 6           | 9     | 9                             | 0.150                           | 0.39                            | 0.35                             | 0.15                            | 0.39                            | 0.35                             | 0.15 |
| TBWD226*020C□#@0^++               | 04053    | 062  | D                                              | 22                                  | 20                                 | 1       | 4.4   | 44     | 52.8   | 6           | 9     | 9                             | 0.150                           | 0.39                            | 0.35                             | 0.15                            | 0.39                            | 0.35                             | 0.15 |
| TBWE336*020C□#@0^++               | 04053    | 063  | E                                              | 33                                  | 20                                 | 0.9     | 6.6   | 66     | 79.2   | 6           | 9     | 9                             | 0.165                           | 0.43                            | 0.39                             | 0.17                            | 0.39                            | 0.35                             | 0.15 |

All technical data relates to an ambient temperature of +25°C. Capacitance and DF are measured at 120Hz, 0.5V RMS with a maximum DC bias of 2.2 volts. DCL is measured at rated voltage after 5 minutes.

**NOTE: AVX reserves the right to supply a higher voltage rating or tighter tolerance part in the same case size, to the same reliability standards.**

## Tantalum Fused DSCC Dwg 04053 COTS-Plus Weibull Grade & Space Level

| RATING & PART NUMBER<br>REFERENCE |          |      |   | Parametric Specifications by Rating DSCC 04053 |                                     |                                    |         |       |        |        |             |       | Typical Ripple Data by Rating |                                 |                                 |                                  |                                 |                                 |                                  |
|-----------------------------------|----------|------|---|------------------------------------------------|-------------------------------------|------------------------------------|---------|-------|--------|--------|-------------|-------|-------------------------------|---------------------------------|---------------------------------|----------------------------------|---------------------------------|---------------------------------|----------------------------------|
|                                   |          |      |   | Cap<br>@ 120Hz<br>µF @<br>25°C                 | DC Rated<br>Voltage<br>V @<br>+85°C | ESR @<br>100kHz<br>Ohms @<br>+25°C | DCL max |       |        | DF max |             |       | Power<br>Dissipation<br>W     | 25°C<br>Ripple<br>A<br>(100kHz) | 85°C<br>Ripple<br>A<br>(100kHz) | 125°C<br>Ripple<br>A<br>(100kHz) | 25°C<br>Ripple<br>V<br>(100kHz) | 85°C<br>Ripple<br>V<br>(100kHz) | 125°C<br>Ripple<br>V<br>(100kHz) |
|                                   |          |      |   |                                                |                                     |                                    | +25°C   | +85°C | +125°C | +25°C  | +(85/125)°C | -55°C |                               |                                 |                                 |                                  |                                 |                                 |                                  |
| AVX P/N                           | DSCC P/N | Case |   |                                                |                                     | (µA)                               | (µA)    | (µA)  | (%)    | (%)    | (%)         |       |                               |                                 |                                 |                                  |                                 |                                 |                                  |
| TBWE476*004C□#@0^++               | 04053    | 064  | E | 47                                             | 20                                  | 0.3                                | 9.4     | 94    | 112.8  | 6      | 9           | 9     | 0.165                         | 0.74                            | 0.67                            | 0.30                             | 0.22                            | 0.20                            | 0.09                             |
| TBWC225*025C□#@0^++               | 04053    | 068  | C | 2.2                                            | 25                                  | 3.5                                | 0.6     | 6     | 7.2    | 6      | 9           | 9     | 0.110                         | 0.18                            | 0.16                            | 0.07                             | 0.62                            | 0.56                            | 0.25                             |
| TBWC335*025C□#@0^++               | 04053    | 069  | C | 3.3                                            | 25                                  | 2.5                                | 0.9     | 9     | 10.8   | 6      | 9           | 9     | 0.110                         | 0.21                            | 0.19                            | 0.08                             | 0.52                            | 0.47                            | 0.21                             |
| TBWC475*025C□#@0^++               | 04053    | 070  | C | 4.7                                            | 25                                  | 2.5                                | 1.2     | 12    | 14.4   | 6      | 9           | 9     | 0.110                         | 0.21                            | 0.19                            | 0.08                             | 0.52                            | 0.47                            | 0.21                             |
| TBWC685*025C□#@0^++               | 04053    | 071  | C | 6.8                                            | 25                                  | 2                                  | 1.7     | 17    | 20.4   | 6      | 9           | 9     | 0.110                         | 0.23                            | 0.21                            | 0.09                             | 0.47                            | 0.42                            | 0.19                             |
| TBWC106*025C□#@0^++               | 04053    | 072  | C | 10                                             | 25                                  | 0.6                                | 2.5     | 25    | 30     | 6      | 9           | 9     | 0.110                         | 0.43                            | 0.39                            | 0.17                             | 0.26                            | 0.23                            | 0.10                             |
| TBWD106*025C□#@0^++               | 04053    | 073  | D | 10                                             | 25                                  | 1.2                                | 2.5     | 25    | 30     | 6      | 9           | 9     | 0.150                         | 0.35                            | 0.32                            | 0.14                             | 0.42                            | 0.38                            | 0.17                             |
| TBWD156*025C□#@0^++               | 04053    | 074  | D | 15                                             | 25                                  | 1                                  | 3.8     | 38    | 45.6   | 6      | 9           | 9     | 0.150                         | 0.39                            | 0.35                            | 0.15                             | 0.39                            | 0.35                            | 0.15                             |
| TBWE226*025C□#@0^++               | 04053    | 075  | E | 22                                             | 25                                  | 0.9                                | 5.5     | 55    | 66     | 6      | 9           | 9     | 0.165                         | 0.43                            | 0.39                            | 0.17                             | 0.39                            | 0.35                            | 0.15                             |
| TBWD226*025C□#@0^++               | 04053    | 076  | D | 22                                             | 25                                  | 0.8                                | 5.5     | 55    | 66     | 6      | 9           | 9     | 0.150                         | 0.43                            | 0.39                            | 0.17                             | 0.35                            | 0.31                            | 0.14                             |
| TBWC155*035C□#@0^++               | 04053    | 080  | C | 1.5                                            | 35                                  | 4.5                                | 0.5     | 5     | 6      | 6      | 9           | 9     | 0.110                         | 0.16                            | 0.14                            | 0.06                             | 0.70                            | 0.63                            | 0.28                             |
| TBWC225*035C□#@0^++               | 04053    | 081  | C | 2.2                                            | 35                                  | 3.5                                | 0.8     | 8     | 9.6    | 6      | 9           | 9     | 0.110                         | 0.18                            | 0.16                            | 0.07                             | 0.62                            | 0.56                            | 0.25                             |
| TBWC335*035C□#@0^++               | 04053    | 082  | C | 3.3                                            | 35                                  | 2.5                                | 1.2     | 12    | 14.4   | 6      | 9           | 9     | 0.110                         | 0.21                            | 0.19                            | 0.08                             | 0.52                            | 0.47                            | 0.21                             |
| TBWD475*035C□#@0^++               | 04053    | 083  | D | 4.7                                            | 35                                  | 1.5                                | 1.7     | 17    | 20.4   | 6      | 9           | 9     | 0.150                         | 0.32                            | 0.28                            | 0.13                             | 0.47                            | 0.43                            | 0.19                             |
| TBWD685*035C□#@0^++               | 04053    | 084  | D | 6.8                                            | 35                                  | 1.3                                | 2.4     | 24    | 28.8   | 6      | 9           | 9     | 0.150                         | 0.34                            | 0.31                            | 0.14                             | 0.44                            | 0.40                            | 0.18                             |
| TBWE106*035C□#@0^++               | 04053    | 085  | E | 10                                             | 35                                  | 1                                  | 3.5     | 35    | 42     | 6      | 9           | 9     | 0.165                         | 0.41                            | 0.37                            | 0.16                             | 0.41                            | 0.37                            | 0.16                             |
| TBWD156*035C□#@0^++               |          |      | D | 15                                             | 35                                  | 0.75                               | 5.3     | 53    | 63.6   | 6      | 9           | 9     | 0.150                         | 0.45                            | 0.40                            | 0.18                             | 0.34                            | 0.30                            | 0.13                             |
| TBWE156*035C□#@0^++               | 04053    | 086  | E | 15                                             | 35                                  | 0.9                                | 5.3     | 53    | 63.6   | 6      | 9           | 9     | 0.165                         | 0.43                            | 0.39                            | 0.17                             | 0.39                            | 0.35                            | 0.15                             |
| TBWE226*035C□#@0^++               | 04053    | 087  | E | 22                                             | 35                                  | 0.3                                | 7.7     | 77    | 92.4   | 6      | 9           | 9     | 0.165                         | 0.74                            | 0.67                            | 0.30                             | 0.22                            | 0.20                            | 0.09                             |
| TBWC474*050C□#@0^++               | 04053    | 091  | C | 0.47                                           | 50                                  | 8                                  | 0.5     | 5     | 6      | 4      | 6           | 6     | 0.110                         | 0.12                            | 0.11                            | 0.05                             | 0.94                            | 0.84                            | 0.38                             |
| TBWC684*050C□#@0^++               | 04053    | 092  | C | 0.68                                           | 50                                  | 7                                  | 0.5     | 5     | 6      | 4      | 6           | 6     | 0.110                         | 0.13                            | 0.11                            | 0.05                             | 0.88                            | 0.79                            | 0.35                             |
| TBWC105*050C□#@0^++               | 04053    | 093  | C | 1                                              | 50                                  | 5.5                                | 0.5     | 5     | 6      | 4      | 6           | 6     | 0.110                         | 0.14                            | 0.13                            | 0.06                             | 0.78                            | 0.70                            | 0.31                             |
| TBWC155*050C□#@0^++               | 04053    | 094  | C | 1.5                                            | 50                                  | 5                                  | 0.8     | 8     | 9.6    | 6      | 9           | 9     | 0.110                         | 0.15                            | 0.13                            | 0.06                             | 0.74                            | 0.67                            | 0.30                             |
| TBWD225*050C□#@0^++               | 04053    | 095  | D | 2.2                                            | 50                                  | 2.5                                | 1.1     | 11    | 13.2   | 6      | 9           | 9     | 0.150                         | 0.24                            | 0.22                            | 0.10                             | 0.61                            | 0.55                            | 0.24                             |
| TBWD335*050C□#@0^++               | 04053    | 096  | D | 3.3                                            | 50                                  | 2                                  | 1.7     | 17    | 20.4   | 6      | 9           | 9     | 0.150                         | 0.27                            | 0.25                            | 0.11                             | 0.55                            | 0.49                            | 0.22                             |
| TBWD475*050C□#@0^++               |          |      | D | 4.7                                            | 50                                  | 0.75                               | 2.4     | 24    | 28.8   | 6      | 9           | 9     | 0.150                         | 0.45                            | 0.40                            | 0.18                             | 0.34                            | 0.30                            | 0.13                             |
| TBWE106M050C□#@0^++               |          |      | E | 10                                             | 50                                  | 1.5                                | 5       | 50    | 60     | 6      | 9           | 9     | 0.165                         | 0.33                            | 0.30                            | 0.13                             | 0.50                            | 0.45                            | 0.20                             |

All technical data relates to an ambient temperature of +25°C. Capacitance and DF are measured at 120Hz, 0.5V RMS with a maximum DC bias of 2.2 volts. DCL is measured at rated voltage after 5 minutes.

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