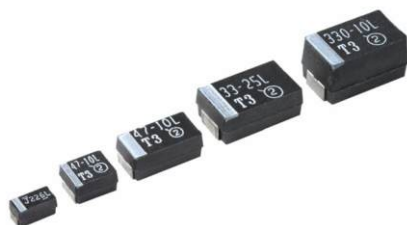


# Solid Tantalum Surface Mount Capacitors

## TANTAMOUNT® Molded Case, Standard Industrial Grade



### FEATURES

- Terminations: 100 % matte tin, standard, tin/lead available
- Compliant terminations
- Molded case available in six case codes
- Compatible with "High Volume" automatic pick and place equipment
- Optical character recognition qualified
- Meets IEC specification QC300801/US0001 and EIA535BAAC mechanical and performance requirements
- Compliant to RoHS directive 2002/95/EC



**RoHS\***  
COMPLIANT

### PERFORMANCE/ELECTRICAL CHARACTERISTICS

**Operating Temperature:** - 55 °C to + 125 °C

**Note:** Refer to Doc. 40088

**Capacitance Range:** 0.10 µF to 1000 µF

**Capacitance Tolerance:** ± 5 %, ± 10 %, ± 20 %

**100 % Surge Current Tested (D and E Case Codes)**

**Voltage Rating:** 4 VDC to 63 VDC

### ORDERING INFORMATION

| 293D<br>TYPE | 107<br>CAPACITANCE                                                                                                             | X9<br>CAPACITANCE<br>TOLERANCE           | 010<br>DC VOLTAGE RATING<br>AT + 85 °C                                                                                                             | D<br>CASE CODE                   | 2WE3<br>TERMINATION AND<br>PACKAGING                                                                                                         |
|--------------|--------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
|              | This is expressed in picofarads. The first two digits are the significant figures. The third is the number of zeros to follow. | X0 = ± 20 %<br>X9 = ± 10 %<br>X5 = ± 5 % | This is expressed in V. To complete the three-digit block, zeros precede the voltage rating. A decimal point is indicated by an "R" (6R3 = 6.3 V). | See Ratings and Case Codes table | 2TE3: Matte tin, 7" (178 mm) reel<br>2WE3: Matte tin, 13" (330 mm) reel<br>8T: Tin/lead, 7" (178 mm) reel<br>8W: Tin/lead, 13" (330 mm) reel |

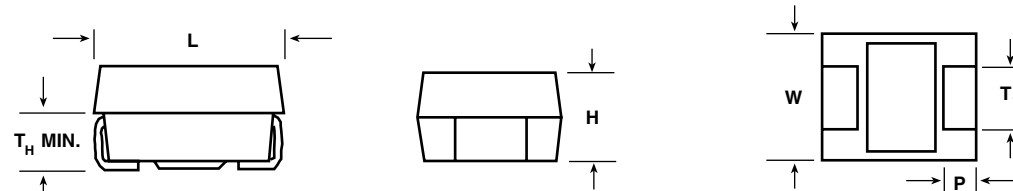
#### Note

We reserve the right to supply higher voltage ratings and tighter capacitance tolerance capacitors in the same case size.

Voltage substitutions will be marked with the higher voltage rating.

Effective July 15, 2008, part numbers with solderable termination codes "2T" and "2W" may have either matte tin or tin/lead terminations. Codes 2TE3 and 2WE3 specify only matte tin terminations. Codes 8T and 8W specify only tin/lead terminations.

### DIMENSIONS in inches [millimeters]

|  |          |                               |                               |                               |                                |                               |                 |
|--------------------------------------------------------------------------------------|----------|-------------------------------|-------------------------------|-------------------------------|--------------------------------|-------------------------------|-----------------|
| CASE CODE                                                                            | EIA SIZE | L                             | W                             | H                             | P                              | Tw                            | TH MIN.         |
| A                                                                                    | 3216-18  | 0.126 ± 0.008<br>[3.2 ± 0.20] | 0.063 ± 0.008<br>[1.6 ± 0.20] | 0.063 ± 0.008<br>[1.6 ± 0.20] | 0.031 ± 0.012<br>[0.80 ± 0.30] | 0.047 ± 0.004<br>[1.2 ± 0.10] | 0.028<br>[0.70] |
| B                                                                                    | 3528-21  | 0.138 ± 0.008<br>[3.5 ± 0.20] | 0.110 ± 0.008<br>[2.8 ± 0.20] | 0.075 ± 0.008<br>[1.9 ± 0.20] | 0.031 ± 0.012<br>[0.80 ± 0.30] | 0.087 ± 0.004<br>[2.2 ± 0.10] | 0.028<br>[0.70] |
| C                                                                                    | 6032-28  | 0.236 ± 0.012<br>[6.0 ± 0.30] | 0.126 ± 0.012<br>[3.2 ± 0.30] | 0.098 ± 0.012<br>[2.5 ± 0.30] | 0.051 ± 0.012<br>[1.3 ± 0.30]  | 0.087 ± 0.004<br>[2.2 ± 0.10] | 0.039<br>[1.0]  |
| D                                                                                    | 7343-31  | 0.287 ± 0.012<br>[7.3 ± 0.30] | 0.170 ± 0.012<br>[4.3 ± 0.30] | 0.110 ± 0.012<br>[2.8 ± 0.30] | 0.051 ± 0.012<br>[1.3 ± 0.30]  | 0.095 ± 0.004<br>[2.4 ± 0.10] | 0.039<br>[1.0]  |
| E                                                                                    | 7343-43  | 0.287 ± 0.012<br>[7.3 ± 0.30] | 0.170 ± 0.012<br>[4.3 ± 0.30] | 0.158 ± 0.012<br>[4.0 ± 0.30] | 0.051 ± 0.012<br>[1.3 ± 0.30]  | 0.095 ± 0.004<br>[2.4 ± 0.10] | 0.039<br>[1.0]  |
| V                                                                                    | 7343-20  | 0.287 ± 0.012<br>[7.3 ± 0.30] | 0.170 ± 0.012<br>[4.3 ± 0.30] | 0.079 max.<br>[2.0 max.]      | 0.051 ± 0.012<br>[1.3 ± 0.30]  | 0.095 ± 0.004<br>[2.4 ± 0.10] | 0.039<br>[1.0]  |

\* Pb containing terminations are not RoHS compliant, exemptions may apply

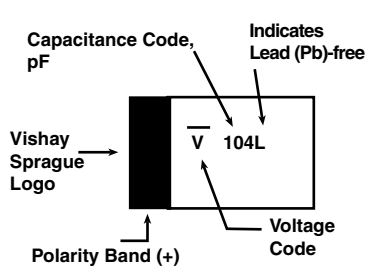
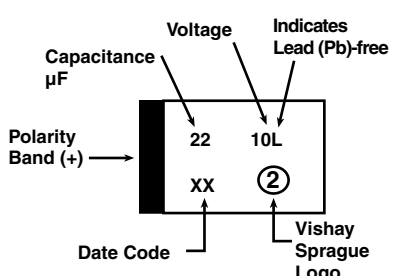
**RATINGS AND CASE CODES**

| μF   | 4 V     | 6.3 V   | 10 V    | 16 V  | 20 V  | 25 V    | 35 V  | 50 V  | 63 V |
|------|---------|---------|---------|-------|-------|---------|-------|-------|------|
| 0.10 |         |         |         |       |       |         | A     | A     |      |
| 0.15 |         |         |         |       |       |         | A     | A/B   |      |
| 0.22 |         |         |         |       |       |         | A     | A/B   |      |
| 0.33 |         |         |         |       |       |         | A     | A/B   |      |
| 0.47 |         |         |         |       |       | A       | A/B   | A/B/C |      |
| 0.68 |         |         |         |       | A     | A       | A/B   | B/C   |      |
| 1.0  |         |         |         | A     | A     | A/B     | A/B   | B/C   |      |
| 1.5  |         |         | A       | A     | A     | A/B     | B/C   | B/C   |      |
| 2.2  |         | A       | A       | A/B   | A/B   | A/B     | B/C   | C/D   |      |
| 3.3  | A       | A       | A       | A/B   | A/B   | A/B/C   | B/C   | C/D   |      |
| 4.7  | A       | A/B     | A/B     | A/B   | A/B/C | A/B/C/D | B/C/D | D     | D    |
| 6.8  | A       | A/B     | A/B     | A/B/C | A/B/C | B/C     | C/D   | D/E   |      |
| 10   | A/B     | A/B/C   | A/B/C   | A/B/C | B/C   | B/C/D   | C/D   | D/E   | E    |
| 15   | A/B     | A/B/C   | A/B/C   | B/C   | B/C/D | B/C/D   | D/E   | E     |      |
| 22   | A/BC    | A/B/C   | A/B/C   | B/C/D | B/C/D | C/D/V   | D/E   |       |      |
| 33   | A/B/C   | A/B/C   | B/C/D   | B/C/D | C/D   | D/E     |       |       |      |
| 47   | A/B/C   | A/B/C/D | B/C/D   | C/D   | D/E   | D/E     |       |       |      |
| 68   | B/C/D   | B/C/D   | B/C/D/V | D     | D/E   |         |       |       |      |
| 100  | A/B/C/D | B/C/D/V | B/C/D/V | D/E   | D/E   |         |       |       |      |
| 150  | B/C/D   | C/D/E   | D/E     | D/E   |       |         |       |       |      |
| 220  | B/C/D/E | C/D/E   | D/E     | E     |       |         |       |       |      |
| 330  | D/E     | D/E     | D/E     |       |       |         |       |       |      |
| 470  | D/E     | D/E     | E       |       |       |         |       |       |      |
| 680  | E       | E       |         |       |       |         |       |       |      |
| 1000 | E       |         |         |       |       |         |       |       |      |

**Note**

- Preliminary values, contact factory for availability.

**MARKING**

|  <p><b>"A" Case Size</b></p> | <b>"A" CASE VOLTAGE CODE</b> |             |  <p><b>"B, C, D, E, V" Case Sizes</b></p> |
|-----------------------------------------------------------------------------------------------------------------|------------------------------|-------------|--------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                 | <b>VOLTS</b>                 | <b>CODE</b> |                                                                                                                                |
|                                                                                                                 | 4.0                          | G           |                                                                                                                                |
|                                                                                                                 | 6.3                          | J           |                                                                                                                                |
|                                                                                                                 | 10                           | A           |                                                                                                                                |
|                                                                                                                 | 16                           | C           |                                                                                                                                |
|                                                                                                                 | 20                           | D           |                                                                                                                                |
|                                                                                                                 | 25                           | E           |                                                                                                                                |
|                                                                                                                 | 35                           | V           |                                                                                                                                |
|                                                                                                                 | 50                           | T           |                                                                                                                                |

**Marking**

Capacitor marking includes an anode (+) polarity band, capacitance in microfarads and the voltage rating. "A" Case capacitors use a letter code for the voltage and EIA capacitance code.

The Vishay Sprague® trademark is included if space permits. Capacitors rated at 6.3 V are marked 6 V.

A manufacturing date code is marked on all capacitors.

Capacitors might bear a slightly different marking than the one shown above. For example, rating 22 μF 10 V could be marked either as 22-10L or 22R10.

Call the factory for further explanation.

Solid Tantalum Surface Mount Capacitors  
TANTAMOUNT® Molded Case, Standard Industrial Grade

Vishay Sprague

| RATINGS AND PART NUMBER REFERENCE     |           |                   |                                                |                                        |                                                   |                                            |
|---------------------------------------|-----------|-------------------|------------------------------------------------|----------------------------------------|---------------------------------------------------|--------------------------------------------|
| CAPACITANCE<br>( $\mu$ F)             | CASE CODE | PART NUMBER       | MAX. DC<br>LEAKAGE<br>AT + 25 °C<br>( $\mu$ A) | MAX. DF<br>AT + 25 °C<br>120 Hz<br>(%) | MAX. ESR<br>AT + 25 °C<br>100 kHz<br>( $\Omega$ ) | MAX. RIPPLE<br>100 kHz<br>$I_{rms}$<br>(A) |
| 4 VDC AT + 85 °C, 2.7 VDC AT + 125 °C |           |                   |                                                |                                        |                                                   |                                            |
| 3.3                                   | A         | 293D335(1)004A(2) | 0.5                                            | 6                                      | 7.6                                               | 0.10                                       |
| 4.7                                   | A         | 293D475(1)004A(2) | 0.5                                            | 6                                      | 6.3                                               | 0.11                                       |
| 6.8                                   | A         | 293D685(1)004A(2) | 0.5                                            | 6                                      | 5.5                                               | 0.12                                       |
| 10                                    | A         | 293D106(1)004A(2) | 0.5                                            | 6                                      | 5.1                                               | 0.12                                       |
| 10                                    | B         | 293D106(1)004B(2) | 0.5                                            | 6                                      | 3.5                                               | 0.16                                       |
| 15                                    | A         | 293D156(1)004A(2) | 0.6                                            | 6                                      | 3.4                                               | 0.15                                       |
| 15                                    | B         | 293D156(1)004B(2) | 0.6                                            | 6                                      | 2.9                                               | 0.17                                       |
| 22                                    | A         | 293D226(1)004A(2) | 0.9                                            | 6                                      | 2.9                                               | 0.16                                       |
| 22                                    | B         | 293D226(1)004B(2) | 0.9                                            | 6                                      | 2.5                                               | 0.18                                       |
| 22                                    | C         | 293D226(1)004C(2) | 0.9                                            | 6                                      | 1.8                                               | 0.25                                       |
| 33                                    | A         | 293D336(1)004A(2) | 1.3                                            | 6                                      | 2.9                                               | 0.16                                       |
| 33                                    | B         | 293D336(1)004B(2) | 1.3                                            | 6                                      | 2.0                                               | 0.21                                       |
| 33                                    | C         | 293D336(1)004C(2) | 1.3                                            | 6                                      | 1.8                                               | 0.25                                       |
| 47                                    | A         | 293D476(1)004A(2) | 1.9                                            | 14                                     | 2.5                                               | 0.17                                       |
| 47                                    | B         | 293D476(1)004B(2) | 1.9                                            | 6                                      | 1.9                                               | 0.21                                       |
| 47                                    | C         | 293D476(1)004C(2) | 1.9                                            | 6                                      | 1.8                                               | 0.25                                       |
| 68                                    | B         | 293D686(1)004B(2) | 2.7                                            | 6                                      | 1.9                                               | 0.21                                       |
| 68                                    | C         | 293D686(1)004C(2) | 2.7                                            | 6                                      | 1.4                                               | 0.28                                       |
| 68                                    | D         | 293D686(1)004D(2) | 2.7                                            | 6                                      | 0.8                                               | 0.43                                       |
| 100                                   | A         | 293D107(1)004A(2) | 10.0                                           | 30                                     | 2.5                                               | 0.22                                       |
| 100                                   | B         | 293D107(1)004B(2) | 4.0                                            | 8                                      | 1.8                                               | 0.22                                       |
| 100                                   | C         | 293D107(1)004C(2) | 4.0                                            | 6                                      | 0.8                                               | 0.37                                       |
| 100                                   | D         | 293D107(1)004D(2) | 4.0                                            | 6                                      | 0.7                                               | 0.46                                       |
| 150                                   | B         | 293D157(1)004B(2) | 6.0                                            | 14                                     | 1.6                                               | 0.23                                       |
| 150                                   | C         | 293D157(1)004C(2) | 6.0                                            | 12                                     | 0.7                                               | 0.40                                       |
| 150                                   | D         | 293D157(1)004D(2) | 6.0                                            | 8                                      | 0.6                                               | 0.50                                       |
| 220                                   | B         | 293D227X0004B(2)  | 8.8                                            | 18                                     | 1.5                                               | 0.24                                       |
| 220                                   | C         | 293D227(1)004C(2) | 8.8                                            | 8                                      | 0.7                                               | 0.40                                       |
| 220                                   | D         | 293D227(1)004D(2) | 8.8                                            | 8                                      | 0.6                                               | 0.50                                       |
| 220                                   | E         | 293D227(1)004E(2) | 8.8                                            | 8                                      | 0.5                                               | 0.57                                       |
| 330                                   | D         | 293D337(1)004D(2) | 13.2                                           | 8                                      | 0.6                                               | 0.50                                       |
| 330                                   | E         | 293D337(1)004E(2) | 13.2                                           | 8                                      | 0.5                                               | 0.57                                       |
| 470                                   | D         | 293D477(1)004D(2) | 18.8                                           | 10                                     | 0.6                                               | 0.50                                       |
| 470                                   | E         | 293D477(1)004E(2) | 18.8                                           | 10                                     | 0.5                                               | 0.57                                       |
| 680                                   | E         | 293D687(1)004E(2) | 27.2                                           | 12                                     | 0.5                                               | 0.57                                       |
| 1000                                  | E         | 293D108X0004E(2)  | 40.0                                           | 20                                     | 0.5                                               | 0.57                                       |
| 6.3 VDC AT + 85 °C, 4 VDC AT + 125 °C |           |                   |                                                |                                        |                                                   |                                            |
| 2.2                                   | A         | 293D225(1)6R3A(2) | 0.5                                            | 6                                      | 7.6                                               | 0.10                                       |
| 3.3                                   | A         | 293D335(1)6R3A(2) | 0.5                                            | 6                                      | 6.3                                               | 0.11                                       |
| 4.7                                   | A         | 293D475(1)6R3A(2) | 0.5                                            | 6                                      | 5.5                                               | 0.12                                       |
| 6.8                                   | A         | 293D685(1)6R3A(2) | 0.5                                            | 6                                      | 5.0                                               | 0.12                                       |
| 6.8                                   | B         | 293D685(1)6R3B(2) | 0.5                                            | 6                                      | 3.4                                               | 0.16                                       |
| 10                                    | A         | 293D106(1)6R3A(2) | 0.6                                            | 6                                      | 3.4                                               | 0.15                                       |
| 10                                    | B         | 293D106(1)6R3B(2) | 0.6                                            | 6                                      | 2.9                                               | 0.17                                       |
| 15                                    | A         | 293D156(1)6R3A(2) | 0.9                                            | 6                                      | 2.9                                               | 0.16                                       |
| 15                                    | B         | 293D156(1)6R3B(2) | 0.9                                            | 6                                      | 2.5                                               | 0.18                                       |
| 15                                    | C         | 293D156(1)6R3C(2) | 0.9                                            | 6                                      | 1.8                                               | 0.25                                       |
| 22                                    | A         | 293D226(1)6R3A(2) | 1.3                                            | 6                                      | 2.9                                               | 0.16                                       |
| 22                                    | B         | 293D226(1)6R3B(2) | 1.3                                            | 6                                      | 2.0                                               | 0.21                                       |
| 22                                    | C         | 293D226(1)6R3C(2) | 1.3                                            | 6                                      | 1.8                                               | 0.25                                       |
| 33                                    | A         | 293D336(1)6R3A(2) | 2.0                                            | 14                                     | 2.5                                               | 0.17                                       |
| 33                                    | B         | 293D336(1)6R3B(2) | 2.0                                            | 6                                      | 1.9                                               | 0.21                                       |
| 33                                    | C         | 293D336(1)6R3C(2) | 2.0                                            | 6                                      | 1.5                                               | 0.27                                       |
| 47                                    | A         | 293D476(1)6R3A(2) | 2.8                                            | 12                                     | 1.6                                               | 0.22                                       |
| 47                                    | B         | 293D476(1)6R3B(2) | 2.8                                            | 6                                      | 1.9                                               | 0.21                                       |
| 47                                    | C         | 293D476(1)6R3C(2) | 2.8                                            | 6                                      | 1.4                                               | 0.28                                       |

## Notes

- (1) Tolerance: X0, X9, X5
- (2) Terminations and packaging: 2TE3, 2WE3, 8T, 8W

**RATINGS AND PART NUMBER REFERENCE**

| CAPACITANCE<br>( $\mu$ F)                    | CASE CODE | PART NUMBER       | MAX. DC<br>LEAKAGE<br>AT + 25 °C<br>( $\mu$ A) | MAX. DF<br>AT + 25 °C<br>120 Hz<br>(%) | MAX. ESR<br>AT + 25 °C<br>100 kHz<br>( $\Omega$ ) | MAX. RIPPLE<br>100 kHz<br>$I_{rms}$<br>(A) |
|----------------------------------------------|-----------|-------------------|------------------------------------------------|----------------------------------------|---------------------------------------------------|--------------------------------------------|
| <b>6.3 VDC AT + 85 °C, 4 VDC AT + 125 °C</b> |           |                   |                                                |                                        |                                                   |                                            |
| 47                                           | D         | 293D476(1)6R3D(2) | 2.8                                            | 6                                      | 0.8                                               | 0.43                                       |
| 68                                           | B         | 293D686(1)6R3B(2) | 4.1                                            | 6                                      | 1.8                                               | 0.22                                       |
| 68                                           | C         | 293D686(1)6R3C(2) | 4.1                                            | 6                                      | 0.8                                               | 0.37                                       |
| 68                                           | D         | 293D686(1)6R3D(2) | 4.1                                            | 6                                      | 0.7                                               | 0.46                                       |
| 100                                          | B         | 293D107(1)6R3B(2) | 6.0                                            | 15                                     | 1.7                                               | 0.22                                       |
| 100                                          | C         | 293D107(1)6R3C(2) | 6.0                                            | 6                                      | 0.8                                               | 0.37                                       |
| 100                                          | D         | 293D107(1)6R3D(2) | 6.0                                            | 6                                      | 0.7                                               | 0.46                                       |
| 100                                          | V         | 293D107(1)6R3V(2) | 6.0                                            | 8                                      | 0.7                                               | 0.42                                       |
| 150                                          | C         | 293D157(1)6R3C(2) | 9.0                                            | 8                                      | 0.7                                               | 0.40                                       |
| 150                                          | D         | 293D157(1)6R3D(2) | 9.0                                            | 8                                      | 0.6                                               | 0.50                                       |
| 150                                          | E         | 293D157(1)6R3E(2) | 9.0                                            | 8                                      | 0.5                                               | 0.57                                       |
| 220                                          | C         | 293D227(1)6R3C(2) | 13.9                                           | 14                                     | 0.7                                               | 0.39                                       |
| 220                                          | D         | 293D227(1)6R3D(2) | 13.2                                           | 8                                      | 0.6                                               | 0.50                                       |
| 220                                          | E         | 293D227(1)6R3E(2) | 13.2                                           | 8                                      | 0.5                                               | 0.57                                       |
| 330                                          | D         | 293D337(1)6R3D(2) | 19.8                                           | 8                                      | 0.6                                               | 0.50                                       |
| 330                                          | E         | 293D337(1)6R3E(2) | 19.8                                           | 8                                      | 0.5                                               | 0.57                                       |
| 470                                          | D         | 293D477(1)6R3D(2) | 28.2                                           | 14                                     | 0.5                                               | 0.55                                       |
| 470                                          | E         | 293E477(1)6R3E(2) | 28.2                                           | 10                                     | 1.5                                               | 0.57                                       |
| 680                                          | E         | 293D687X06R3E(2)  | 42.8                                           | 20                                     | 0.5                                               | 0.57                                       |
| <b>10 VDC AT + 85 °C, 7 VDC AT + 125 °C</b>  |           |                   |                                                |                                        |                                                   |                                            |
| 1.5                                          | A         | 293D155(1)010A(2) | 0.5                                            | 6                                      | 8.0                                               | 0.10                                       |
| 2.2                                          | A         | 293D225(1)010A(2) | 0.5                                            | 6                                      | 6.3                                               | 0.11                                       |
| 3.3                                          | A         | 293D335(1)010A(2) | 0.5                                            | 6                                      | 5.5                                               | 0.12                                       |
| 4.7                                          | A         | 293D475(1)010A(2) | 0.5                                            | 6                                      | 5.0                                               | 0.12                                       |
| 4.7                                          | B         | 293D475(1)010B(2) | 0.5                                            | 6                                      | 3.4                                               | 0.16                                       |
| 6.8                                          | A         | 293D685(1)010A(2) | 0.7                                            | 6                                      | 4.2                                               | 0.13                                       |
| 6.8                                          | B         | 293D685(1)010B(2) | 0.7                                            | 6                                      | 2.9                                               | 0.17                                       |
| 10                                           | A         | 293D106(1)010A(2) | 1.0                                            | 6                                      | 3.4                                               | 0.15                                       |
| 10                                           | B         | 293D106(1)010B(2) | 1.0                                            | 6                                      | 2.5                                               | 0.18                                       |
| 10                                           | C         | 293D106(1)010C(2) | 1.0                                            | 6                                      | 1.8                                               | 0.25                                       |
| 15                                           | A         | 293D156(1)010A(2) | 1.5                                            | 6                                      | 2.9                                               | 0.16                                       |
| 15                                           | B         | 293D156(1)010B(2) | 1.5                                            | 6                                      | 2.0                                               | 0.21                                       |
| 15                                           | C         | 293D156(1)010C(2) | 1.5                                            | 6                                      | 1.8                                               | 0.25                                       |
| 22                                           | A         | 293D226(1)010A(2) | 2.2                                            | 8                                      | 2.5                                               | 0.17                                       |
| 22                                           | B         | 293D226(1)010B(2) | 2.2                                            | 6                                      | 1.9                                               | 0.21                                       |
| 22                                           | C         | 293D226(1)010C(2) | 2.2                                            | 6                                      | 1.5                                               | 0.27                                       |
| 33                                           | B         | 293D336(1)010B(2) | 3.3                                            | 6                                      | 1.9                                               | 0.21                                       |
| 33                                           | C         | 293D336(1)010C(2) | 3.3                                            | 6                                      | 1.4                                               | 0.28                                       |
| 33                                           | D         | 293D336(1)010D(2) | 3.3                                            | 6                                      | 0.8                                               | 0.43                                       |
| 47                                           | B         | 293D476(1)010B(2) | 4.7                                            | 6                                      | 1.8                                               | 0.22                                       |
| 47                                           | C         | 293D476(1)010C(2) | 4.7                                            | 6                                      | 1.1                                               | 0.32                                       |
| 47                                           | D         | 293D476(1)010D(2) | 4.7                                            | 6                                      | 0.7                                               | 0.46                                       |
| 68                                           | B         | 293D686(1)010B(2) | 6.8                                            | 14                                     | 1.8                                               | 0.22                                       |
| 68                                           | C         | 293D686(1)010C(2) | 6.8                                            | 6                                      | 1.0                                               | 0.33                                       |
| 68                                           | D         | 293D686(1)010D(2) | 6.8                                            | 6                                      | 0.7                                               | 0.46                                       |
| 68                                           | V         | 293D686(1)010V(2) | 6.8                                            | 6                                      | 0.7                                               | 0.42                                       |

**Notes**

- (1) Tolerance: X0, X9, X5
- (2) Terminations and packaging: 2TE3, 2WE3, 8T, 8W



Solid Tantalum Surface Mount Capacitors  
TANTAMOUNT® Molded Case, Standard Industrial Grade

Vishay Sprague

| RATINGS AND PART NUMBER REFERENCE     |           |                   |                                                |                                        |                                                   |                                            |
|---------------------------------------|-----------|-------------------|------------------------------------------------|----------------------------------------|---------------------------------------------------|--------------------------------------------|
| CAPACITANCE<br>( $\mu$ F)             | CASE CODE | PART NUMBER       | MAX. DC<br>LEAKAGE<br>AT + 25 °C<br>( $\mu$ A) | MAX. DF<br>AT + 25 °C<br>120 Hz<br>(%) | MAX. ESR<br>AT + 25 °C<br>100 kHz<br>( $\Omega$ ) | MAX. RIPPLE<br>100 kHz<br>$I_{rms}$<br>(A) |
| 10 VDC AT + 85 °C, 7 VDC AT + 125 °C  |           |                   |                                                |                                        |                                                   |                                            |
| 100                                   | B         | 293D107X0010B(2)  | 10                                             | 25                                     | 2.5                                               | 0.18                                       |
| 100                                   | C         | 293D107(1)010C(2) | 10                                             | 8                                      | 0.9                                               | 0.35                                       |
| 100                                   | D         | 293D107(1)010D(2) | 10                                             | 8                                      | 0.6                                               | 0.50                                       |
| 100                                   | V         | 293D107(1)010V(2) | 10                                             | 8                                      | 0.7                                               | 0.42                                       |
| 150                                   | D         | 293D157(1)010D(2) | 15                                             | 8                                      | 0.6                                               | 0.50                                       |
| 150                                   | E         | 293D157(1)010E(2) | 15                                             | 8                                      | 0.5                                               | 0.57                                       |
| 220                                   | D         | 293D227(1)010D(2) | 22                                             | 8                                      | 0.6                                               | 0.50                                       |
| 220                                   | E         | 293D227(1)010E(2) | 22                                             | 8                                      | 0.5                                               | 0.57                                       |
| 330                                   | D         | 293D337X0010D(2)  | 33                                             | 15                                     | 0.5                                               | 0.57                                       |
| 330                                   | E         | 293D337(1)010E(2) | 33                                             | 10                                     | 0.5                                               | 0.57                                       |
| 470                                   | E         | 293D477X0010E(2)  | 47                                             | 15                                     | 0.5                                               | 0.57                                       |
| 16 VDC AT + 85 °C, 10 VDC AT + 125 °C |           |                   |                                                |                                        |                                                   |                                            |
| 1.0                                   | A         | 293D105(1)016A(2) | 0.5                                            | 4                                      | 9.3                                               | 0.09                                       |
| 1.5                                   | A         | 293D155(1)016A(2) | 0.5                                            | 6                                      | 6.7                                               | 0.11                                       |
| 2.2                                   | A         | 293D225(1)016A(2) | 0.5                                            | 6                                      | 5.9                                               | 0.11                                       |
| 2.2                                   | B         | 293D225(1)016B(2) | 0.5                                            | 6                                      | 4.6                                               | 0.14                                       |
| 3.3                                   | A         | 293D335(1)016A(2) | 0.5                                            | 6                                      | 5.0                                               | 0.12                                       |
| 3.3                                   | B         | 293D335(1)016B(2) | 0.5                                            | 6                                      | 3.5                                               | 0.16                                       |
| 4.7                                   | A         | 293D475(1)016A(2) | 0.8                                            | 6                                      | 5.0                                               | 0.12                                       |
| 4.7                                   | B         | 293D475(1)016B(2) | 0.8                                            | 6                                      | 2.9                                               | 0.17                                       |
| 6.8                                   | A         | 293D685(1)016A(2) | 1.1                                            | 6                                      | 4.2                                               | 0.13                                       |
| 6.8                                   | B         | 293D685(1)016B(2) | 1.1                                            | 6                                      | 2.5                                               | 0.18                                       |
| 6.8                                   | C         | 293D685(1)016C(2) | 1.1                                            | 6                                      | 1.9                                               | 0.24                                       |
| 10                                    | A         | 293D106(1)016A(2) | 1.6                                            | 6                                      | 3.0                                               | 0.16                                       |
| 10                                    | B         | 293D106(1)016B(2) | 1.6                                            | 6                                      | 2.0                                               | 0.21                                       |
| 10                                    | C         | 293D106(1)016C(2) | 1.6                                            | 6                                      | 1.8                                               | 0.25                                       |
| 15                                    | B         | 293D156(1)016B(2) | 2.4                                            | 6                                      | 2.0                                               | 0.21                                       |
| 15                                    | C         | 293D156(1)016C(2) | 2.4                                            | 6                                      | 1.5                                               | 0.27                                       |
| 22                                    | B         | 293D226X0016B(2)  | 3.5                                            | 6                                      | 1.9                                               | 0.21                                       |
| 22                                    | C         | 293D226(1)016C(2) | 3.5                                            | 6                                      | 1.4                                               | 0.28                                       |
| 22                                    | D         | 293D226(1)016D(2) | 3.5                                            | 6                                      | 0.8                                               | 0.43                                       |
| 33                                    | B         | 293D336(1)016B(2) | 5.3                                            | 6                                      | 1.8                                               | 0.22                                       |
| 33                                    | C         | 293D336(1)016C(2) | 5.3                                            | 6                                      | 1.1                                               | 0.32                                       |
| 33                                    | D         | 293D336(1)016D(2) | 5.3                                            | 6                                      | 0.7                                               | 0.46                                       |
| 47                                    | C         | 293D476(1)016C(2) | 7.5                                            | 6                                      | 1.0                                               | 0.33                                       |
| 47                                    | D         | 293D476(1)016D(2) | 7.5                                            | 6                                      | 0.7                                               | 0.46                                       |
| 68                                    | D         | 293D686(1)016D(2) | 10.9                                           | 6                                      | 0.6                                               | 0.50                                       |
| 100                                   | D         | 293D107(1)016D(2) | 16                                             | 8                                      | 0.6                                               | 0.50                                       |
| 100                                   | E         | 293D107(1)016E(2) | 16                                             | 8                                      | 0.6                                               | 0.52                                       |
| 150                                   | D         | 293D157(1)016D(2) | 24                                             | 8                                      | 0.6                                               | 0.50                                       |
| 150                                   | E         | 293D157(1)016E(2) | 24                                             | 8                                      | 0.5                                               | 0.57                                       |
| 220                                   | E         | 293D227(1)016E(2) | 35.2                                           | 14                                     | 0.5                                               | 0.57                                       |
| 20 VDC AT + 85 °C, 13 VDC AT + 125 °C |           |                   |                                                |                                        |                                                   |                                            |
| 0.68                                  | A         | 293D684(1)020A(2) | 0.5                                            | 4                                      | 10.0                                              | 0.09                                       |
| 1.0                                   | A         | 293D105(1)020A(2) | 0.5                                            | 4                                      | 8.4                                               | 0.09                                       |
| 1.5                                   | A         | 293D155(1)020A(2) | 0.5                                            | 6                                      | 6.3                                               | 0.11                                       |
| 2.2                                   | A         | 293D225(1)020A(2) | 0.5                                            | 6                                      | 5.9                                               | 0.11                                       |
| 2.2                                   | B         | 293D225(1)020B(2) | 0.5                                            | 6                                      | 3.5                                               | 0.16                                       |
| 3.3                                   | A         | 293D335(1)020A(2) | 0.7                                            | 6                                      | 5.9                                               | 0.11                                       |
| 3.3                                   | B         | 293D335(1)020B(2) | 0.7                                            | 6                                      | 3.0                                               | 0.17                                       |
| 4.7                                   | A         | 293D475(1)020A(2) | 0.9                                            | 6                                      | 5.0                                               | 0.12                                       |
| 4.7                                   | B         | 293D475(1)020B(2) | 0.9                                            | 6                                      | 2.9                                               | 0.17                                       |
| 4.7                                   | C         | 293D475(1)020C(2) | 0.9                                            | 6                                      | 2.3                                               | 0.22                                       |

**Notes**

- (1) Tolerance: X0, X9, X5
- (2) Terminations and packaging: 2TE3, 2WE3, 8T, 8W

| RATINGS AND PART NUMBER REFERENCE     |           |                   |                                                |                                        |                                                   |                                            |
|---------------------------------------|-----------|-------------------|------------------------------------------------|----------------------------------------|---------------------------------------------------|--------------------------------------------|
| CAPACITANCE<br>( $\mu$ F)             | CASE CODE | PART NUMBER       | MAX. DC<br>LEAKAGE<br>AT + 25 °C<br>( $\mu$ A) | MAX. DF<br>AT + 25 °C<br>120 Hz<br>(%) | MAX. ESR<br>AT + 25 °C<br>100 kHz<br>( $\Omega$ ) | MAX. RIPPLE<br>100 kHz<br>$I_{rms}$<br>(A) |
| 20 VDC AT + 85 °C, 13 VDC AT + 125 °C |           |                   |                                                |                                        |                                                   |                                            |
| 6.8                                   | A         | 293D685(1)020A(2) | 1.4                                            | 6                                      | 4.5                                               | 0.13                                       |
| 6.8                                   | B         | 293D685(1)020B(2) | 1.4                                            | 6                                      | 2.5                                               | 0.18                                       |
| 6.8                                   | C         | 293D685(1)020C(2) | 1.4                                            | 6                                      | 1.9                                               | 0.24                                       |
| 10                                    | B         | 293D106(1)020B(2) | 2.0                                            | 6                                      | 2.1                                               | 0.20                                       |
| 10                                    | C         | 293D106(1)020C(2) | 2.0                                            | 6                                      | 1.7                                               | 0.25                                       |
| 15                                    | B         | 293D156(1)020B(2) | 3.0                                            | 6                                      | 2.3                                               | 0.19                                       |
| 15                                    | C         | 293D156(1)020C(2) | 3.0                                            | 6                                      | 1.5                                               | 0.27                                       |
| 15                                    | D         | 293D156(1)020D(2) | 3.0                                            | 6                                      | 0.9                                               | 0.41                                       |
| 22                                    | B         | 293D226(1)020B(2) | 4.4                                            | 6                                      | 2.1                                               | 0.20                                       |
| 22                                    | C         | 293D226(1)020C(2) | 4.4                                            | 6                                      | 1.1                                               | 0.32                                       |
| 22                                    | D         | 293D226(1)020D(2) | 4.4                                            | 6                                      | 0.7                                               | 0.46                                       |
| 33                                    | C         | 293D336(1)020C(2) | 6.6                                            | 6                                      | 1.0                                               | 0.33                                       |
| 33                                    | D         | 293D336(1)020D(2) | 6.6                                            | 6                                      | 0.7                                               | 0.46                                       |
| 47                                    | D         | 293D476(1)020D(2) | 9.4                                            | 6                                      | 0.7                                               | 0.46                                       |
| 47                                    | E         | 293D476(1)020E(2) | 9.4                                            | 6                                      | 0.6                                               | 0.52                                       |
| 68                                    | D         | 293D686(1)020D(2) | 13.6                                           | 6                                      | 0.7                                               | 0.46                                       |
| 68                                    | E         | 293D686(1)020E(2) | 13.6                                           | 6                                      | 0.6                                               | 0.52                                       |
| 100                                   | D         | 293D107(1)020D(2) | 20.0                                           | 8                                      | 0.6                                               | 0.50                                       |
| 100                                   | E         | 293D107(1)020E(2) | 20.0                                           | 8                                      | 0.5                                               | 0.57                                       |
| 25 VDC AT + 85 °C, 17 VDC AT + 125 °C |           |                   |                                                |                                        |                                                   |                                            |
| 0.47                                  | A         | 293D474(1)025A(2) | 0.5                                            | 4                                      | 12.0                                              | 0.08                                       |
| 0.68                                  | A         | 293D684(1)025A(2) | 0.5                                            | 4                                      | 8.4                                               | 0.09                                       |
| 1.0                                   | A         | 293D105(1)025A(2) | 0.5                                            | 4                                      | 7.6                                               | 0.10                                       |
| 1.0                                   | B         | 293D105(1)025B(2) | 0.5                                            | 4                                      | 5.0                                               | 0.13                                       |
| 1.5                                   | A         | 293D155(1)025A(2) | 0.5                                            | 6                                      | 6.7                                               | 0.11                                       |
| 1.5                                   | B         | 293D155(1)025B(2) | 0.5                                            | 6                                      | 4.6                                               | 0.14                                       |
| 2.2                                   | A         | 293D225(1)025A(2) | 0.6                                            | 6                                      | 6.3                                               | 0.11                                       |
| 2.2                                   | B         | 293D225(1)025B(2) | 0.6                                            | 6                                      | 3.8                                               | 0.15                                       |
| 3.3                                   | A         | 293D335(1)025A(2) | 0.8                                            | 6                                      | 4.0                                               | 0.14                                       |
| 3.3                                   | B         | 293D335(1)025B(2) | 0.8                                            | 6                                      | 3.1                                               | 0.17                                       |
| 3.3                                   | C         | 293D335(1)025C(2) | 0.8                                            | 6                                      | 2.3                                               | 0.22                                       |
| 4.7                                   | A         | 293D475(1)025A(2) | 1.2                                            | 6                                      | 5.5                                               | 0.12                                       |
| 4.7                                   | B         | 293D475(1)025B(2) | 1.2                                            | 6                                      | 2.8                                               | 0.17                                       |
| 4.7                                   | C         | 293D475(1)025C(2) | 1.2                                            | 6                                      | 2.0                                               | 0.24                                       |
| 4.7                                   | D         | 293D475(1)025D(2) | 1.2                                            | 6                                      | 1.3                                               | 0.34                                       |
| 6.8                                   | B         | 293D685(1)025B(2) | 1.7                                            | 6                                      | 2.4                                               | 0.19                                       |
| 6.8                                   | C         | 293D685(1)025C(2) | 1.7                                            | 6                                      | 1.7                                               | 0.25                                       |
| 10                                    | B         | 293D106(1)025B(2) | 2.5                                            | 6                                      | 2.3                                               | 0.19                                       |
| 10                                    | C         | 293D106(1)025C(2) | 2.5                                            | 6                                      | 1.5                                               | 0.27                                       |
| 10                                    | D         | 293D106(1)025D(2) | 2.5                                            | 6                                      | 1.0                                               | 0.39                                       |
| 15                                    | B         | 293D156(1)025B(2) | 3.8                                            | 6                                      | 2.2                                               | 0.20                                       |
| 15                                    | C         | 293D156(1)025C(2) | 3.8                                            | 6                                      | 1.2                                               | 0.30                                       |
| 15                                    | D         | 293D156(1)025D(2) | 3.8                                            | 6                                      | 0.8                                               | 0.43                                       |
| 22                                    | C         | 293D226(1)025C(2) | 5.5                                            | 6                                      | 1.2                                               | 0.30                                       |
| 22                                    | D         | 293D226(1)025D(2) | 5.5                                            | 6                                      | 0.7                                               | 0.46                                       |
| 22                                    | V         | 293D226(1)025V(2) | 5.5                                            | 6                                      | 0.7                                               | 0.42                                       |
| 33                                    | D         | 293D336(1)025D(2) | 8.3                                            | 6                                      | 0.7                                               | 0.46                                       |
| 33                                    | E         | 293D336(1)025E(2) | 8.3                                            | 6                                      | 0.6                                               | 0.52                                       |
| 47                                    | D         | 293D476(1)025D(2) | 11.8                                           | 8                                      | 0.7                                               | 0.46                                       |
| 47                                    | E         | 293D476(1)025E(2) | 11.8                                           | 6                                      | 0.6                                               | 0.52                                       |

**Notes**

- (1) Tolerance: X0, X9, X5
- (2) Terminations and packaging: 2TE3, 2WE3, 8T, 8W



Solid Tantalum Surface Mount Capacitors  
TANTAMOUNT® Molded Case, Standard Industrial Grade

Vishay Sprague

| RATINGS AND PART NUMBER REFERENCE     |           |                   |                                                |                                        |                                                   |                                            |
|---------------------------------------|-----------|-------------------|------------------------------------------------|----------------------------------------|---------------------------------------------------|--------------------------------------------|
| CAPACITANCE<br>( $\mu$ F)             | CASE CODE | PART NUMBER       | MAX. DC<br>LEAKAGE<br>AT + 25 °C<br>( $\mu$ A) | MAX. DF<br>AT + 25 °C<br>120 Hz<br>(%) | MAX. ESR<br>AT + 25 °C<br>100 kHz<br>( $\Omega$ ) | MAX. RIPPLE<br>100 kHz<br>$I_{rms}$<br>(A) |
| 35 VDC AT + 85 °C, 23 VDC AT + 125 °C |           |                   |                                                |                                        |                                                   |                                            |
| 0.10                                  | A         | 293D104(1)035A(2) | 0.5                                            | 4                                      | 20.0                                              | 0.06                                       |
| 0.15                                  | A         | 293D154(1)035A(2) | 0.5                                            | 4                                      | 18.0                                              | 0.07                                       |
| 0.22                                  | A         | 293D224(1)035A(2) | 0.5                                            | 4                                      | 15.0                                              | 0.07                                       |
| 0.33                                  | A         | 293D334(1)035A(2) | 0.5                                            | 4                                      | 13.0                                              | 0.08                                       |
| 0.47                                  | A         | 293D474(1)035A(2) | 0.5                                            | 4                                      | 10.0                                              | 0.09                                       |
| 0.47                                  | B         | 293D474(1)035B(2) | 0.5                                            | 4                                      | 8.0                                               | 0.10                                       |
| 0.68                                  | A         | 293D684(1)035A(2) | 0.5                                            | 4                                      | 7.6                                               | 0.10                                       |
| 0.68                                  | B         | 293D684(1)035B(2) | 0.5                                            | 4                                      | 6.5                                               | 0.11                                       |
| 1.0                                   | A         | 293D105(1)035A(2) | 0.5                                            | 4                                      | 7.5                                               | 0.10                                       |
| 1.0                                   | B         | 293D105(1)035B(2) | 0.5                                            | 4                                      | 5.0                                               | 0.13                                       |
| 1.5                                   | B         | 293D155(1)035B(2) | 0.5                                            | 6                                      | 4.2                                               | 0.14                                       |
| 1.5                                   | C         | 293D155(1)035C(2) | 0.5                                            | 6                                      | 3.8                                               | 0.17                                       |
| 2.2                                   | B         | 293D225(1)035B(2) | 0.8                                            | 6                                      | 3.8                                               | 0.15                                       |
| 2.2                                   | C         | 293D225(1)035C(2) | 0.8                                            | 6                                      | 2.9                                               | 0.20                                       |
| 3.3                                   | B         | 293D335(1)035B(2) | 1.2                                            | 6                                      | 3.5                                               | 0.16                                       |
| 3.3                                   | C         | 293D335(1)035C(2) | 1.2                                            | 6                                      | 2.1                                               | 0.23                                       |
| 4.7                                   | B         | 293D475(1)035B(2) | 1.7                                            | 6                                      | 3.1                                               | 0.17                                       |
| 4.7                                   | C         | 293D475(1)035C(2) | 1.6                                            | 6                                      | 1.9                                               | 0.24                                       |
| 4.7                                   | D         | 293D475(1)035D(2) | 1.6                                            | 6                                      | 1.3                                               | 0.34                                       |
| 6.8                                   | C         | 293D685(1)035C(2) | 2.4                                            | 6                                      | 1.8                                               | 0.25                                       |
| 6.8                                   | D         | 293D685(1)035D(2) | 2.4                                            | 6                                      | 1.1                                               | 0.37                                       |
| 10                                    | C         | 293D106(1)035C(2) | 3.5                                            | 6                                      | 1.6                                               | 0.26                                       |
| 10                                    | D         | 293D106(1)035D(2) | 3.5                                            | 6                                      | 0.8                                               | 0.43                                       |
| 15                                    | D         | 293D156(1)035D(2) | 5.3                                            | 6                                      | 0.7                                               | 0.46                                       |
| 15                                    | E         | 293D156(1)035E(2) | 5.3                                            | 6                                      | 0.7                                               | 0.49                                       |
| 22                                    | D         | 293D226(1)035D(2) | 7.7                                            | 6                                      | 0.6                                               | 0.52                                       |
| 22                                    | E         | 293D226(1)035E(2) | 7.7                                            | 6                                      | 0.6                                               | 0.52                                       |
| 50 VDC AT + 85 °C, 33 VDC AT + 125 °C |           |                   |                                                |                                        |                                                   |                                            |
| 0.10                                  | A         | 293D104(1)050A(2) | 0.5                                            | 4                                      | 19.0                                              | 0.06                                       |
| 0.15                                  | A         | 293D154(1)050A(2) | 0.5                                            | 4                                      | 17.0                                              | 0.07                                       |
| 0.15                                  | B         | 293D154(1)050B(2) | 0.5                                            | 4                                      | 14.0                                              | 0.08                                       |
| 0.22                                  | A         | 293D224(1)050A(2) | 0.5                                            | 4                                      | 15.0                                              | 0.07                                       |
| 0.22                                  | B         | 293D224(1)050B(2) | 0.5                                            | 4                                      | 12.0                                              | 0.08                                       |
| 0.33                                  | A         | 293D334(1)050A(2) | 0.5                                            | 4                                      | 14.0                                              | 0.07                                       |
| 0.33                                  | B         | 293D334(1)050B(2) | 0.5                                            | 4                                      | 10.0                                              | 0.09                                       |
| 0.47                                  | A         | 293D474(1)050A(2) | 0.5                                            | 4                                      | 12.0                                              | 0.08                                       |
| 0.47                                  | B         | 293D474(1)050B(2) | 0.5                                            | 4                                      | 8.4                                               | 0.10                                       |
| 0.47                                  | C         | 293D474(1)050C(2) | 0.5                                            | 4                                      | 6.7                                               | 0.13                                       |
| 0.68                                  | B         | 293D684(1)050B(2) | 0.5                                            | 4                                      | 7.6                                               | 0.11                                       |
| 0.68                                  | C         | 293D684(1)050C(2) | 0.5                                            | 4                                      | 5.9                                               | 0.14                                       |
| 1.0                                   | B         | 293D105(1)050B(2) | 0.5                                            | 4                                      | 6.7                                               | 0.11                                       |
| 1.0                                   | C         | 293D105(1)050C(2) | 0.5                                            | 4                                      | 4.6                                               | 0.16                                       |
| 1.5                                   | B         | 293D155(1)050B(2) | 0.8                                            | 6                                      | 6.0                                               | 0.12                                       |
| 1.5                                   | C         | 293D155(1)050C(2) | 0.8                                            | 6                                      | 3.4                                               | 0.18                                       |
| 2.2                                   | C         | 293D225(1)050C(2) | 1.1                                            | 6                                      | 2.9                                               | 0.20                                       |
| 2.2                                   | D         | 293D225(1)050D(2) | 1.1                                            | 6                                      | 2.1                                               | 0.27                                       |
| 3.3                                   | C         | 293D335(1)050C(2) | 1.7                                            | 6                                      | 2.5                                               | 0.21                                       |
| 3.3                                   | D         | 293D335(1)050D(2) | 1.7                                            | 6                                      | 1.7                                               | 0.30                                       |
| 4.7                                   | C         | 293D457(1)050C(2) | 2.4                                            | 6                                      | 1.5                                               | 0.27                                       |
| 4.7                                   | D         | 293D475(1)050D(2) | 2.4                                            | 6                                      | 1.2                                               | 0.37                                       |

**Notes**

- (1) Tolerance: X0, X9, X5
- (2) Terminations and packaging: 2TE3, 2WE3, 8T, 8W

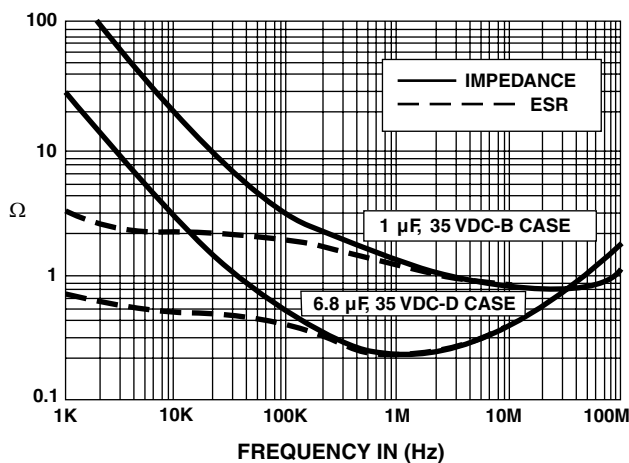
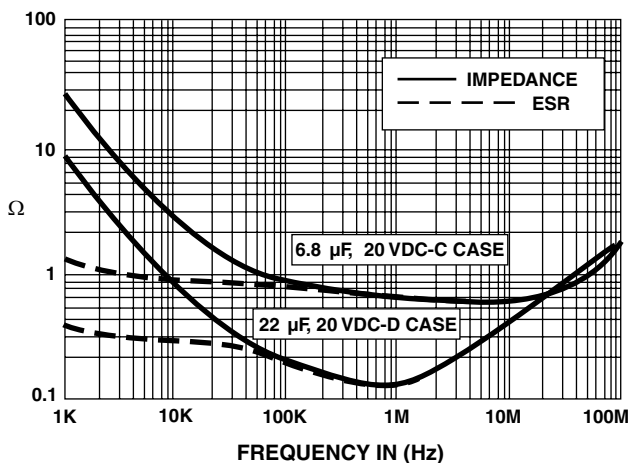
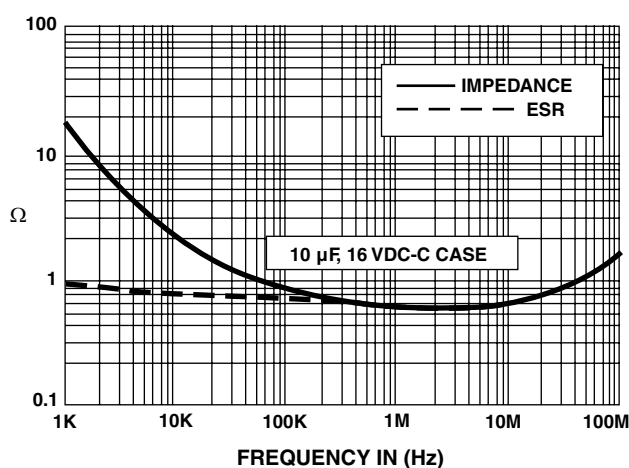
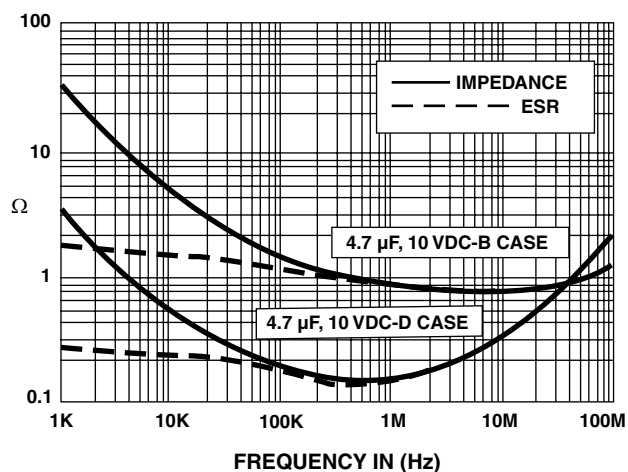
## RATINGS AND PART NUMBER REFERENCE

| CAPACITANCE<br>( $\mu\text{F}$ )      | CASE CODE | PART NUMBER       | MAX. DC<br>LEAKAGE<br>AT + 25 °C<br>( $\mu\text{A}$ ) | MAX. DF<br>AT + 25 °C<br>120 Hz<br>(%) | MAX. ESR<br>AT + 25 °C<br>100 kHz<br>( $\Omega$ ) | MAX. RIPPLE<br>100 kHz<br>$I_{\text{rms}}$<br>(A) |
|---------------------------------------|-----------|-------------------|-------------------------------------------------------|----------------------------------------|---------------------------------------------------|---------------------------------------------------|
| 50 VDC AT + 85 °C, 33 VDC AT + 125 °C |           |                   |                                                       |                                        |                                                   |                                                   |
| 6.8                                   | D         | 293D685(1)050D(2) | 3.4                                                   | 6                                      | 0.9                                               | 0.41                                              |
| 6.8                                   | E         | 293D685(1)050E(2) | 3.4                                                   | 6                                      | 0.9                                               | 0.43                                              |
| 10                                    | D         | 293D106(1)050D(2) | 5.0                                                   | 6                                      | 0.8                                               | 0.43                                              |
| 10                                    | E         | 293D106(1)050E(2) | 5.0                                                   | 6                                      | 0.8                                               | 0.45                                              |
| 15                                    | E         | 293D156(1)050E(2) | 7.5                                                   | 6                                      | 0.8                                               | 0.45                                              |
| 63 VDC AT + 85 °C, 40 VDC AT + 125 °C |           |                   |                                                       |                                        |                                                   |                                                   |
| 4.7                                   | D         | 293D475(1)063D(2) | 3.0                                                   | 6                                      | 1.1                                               | 0.37                                              |
| 10                                    | E         | 293D106(1)063E(2) | 6.3                                                   | 6                                      | 1.0                                               | 0.41                                              |

## Notes

- (1) Tolerance: X0, X9, X5
- (2) Terminations and packaging: 2TE3, 2WE3, 8T, 8W

## TYPICAL CURVES AT + 25 °C, IMPEDANCE AND ESR VS. FREQUENCY





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