

## Solid Tantalum Chip Capacitors TANTAMOUNT® Conformal Coated, Maximum CV



### FEATURES

- Large capacitance rating range
- Terminations: Tin (2) standard
- 8 mm, 12 mm tape and reel packaging available per EIA 481-1 and reeling per IEC 286-3. 7" [178 mm] standard. 13" [330 mm] available.
- Case code compatibility with EIA 535BAAC and CECC30801 molded chips



**RoHS\***  
COMPLIANT

### PERFORMANCE CHARACTERISTICS

**Operating Temperature:** - 55 °C to + 85 °C  
(To + 125 °C with voltage derating)

**Note:** Refer to Doc. 40088

**Capacitance Range:** 0.1 µF to 1500 µF

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

**Voltage Rating:** 4 WVDC to 50 WVDC

| <b>ORDERING INFORMATION</b>  |  |                             |  |                                  |  |   |
|--|--|-----------------------------|--|----------------------------------|--|---|
| 595D<br>TYPE   | 106<br>CAPACITANCE   | X0<br>CAPACITANCE TOLERANCE | 010<br>DC VOLTAGE RATING AT + 85 °C  | A<br>CASE CODE                   | 2<br>TERMINATION   | T<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 %  | This is expressed in volts. To complete the three-digit block, zeros precede the voltage rating. A decimal point is indicated by an "R" (6R3 = 6.3 volts). | See Ratings and Case Codes Table | 2 = 100 % Tin<br>4 = Gold Plated<br>8 = Solder Plated (60/40)<br>Special Order | T = Tape and Reel<br>7" [178 mm] Reel<br>W = 13" [330 mm] Reel<br>See Tape and Reel Specifications. |
| <p><b>Note:</b> Preferred Tolerance and reel sizes are in bold. 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.</p> |  |                             |  |                                  |  |   |

| <b>DIMENSIONS</b> in inches [millimeters] |                              |  |  |                                |                                |                |                |
|---|------------------------------|--|--|--------------------------------|--------------------------------|----------------|----------------|
|   |                              |  |  |                                |                                |                |                |
| CASE CODE                                 | L (Max.)                     | W  | H  | A                              | B                              | D (REF.)       | J (MAX.)       |
| T   | 0.087<br>[2.2]               | 0.045 ± 0.012<br>[1.1 ± 0.3]               | 0.045 ± 0.012<br>[1.1 ± 0.3]               | 0.016 ± 0.008<br>[0.4 ± 0.2]   | 0.042 ± 0.010<br>[1.07 ± 0.25] | 0.063<br>[1.6] | 0.004<br>[0.1] |
| S   | 0.126 ± 0.008<br>[3.2 ± 0.2] | 0.067 ± 0.008<br>[1.7 ± 0.2]               | 0.051 ± 0.008<br>[1.3 ± 0.2]               | 0.031 ± 0.012<br>[0.80 ± 0.30] | 0.078 ± 0.012<br>[2.0 ± 0.3]   | 0.086<br>[2.2] | 0.004<br>[0.1] |
| A   | 0.146<br>[3.7]               | 0.072 ± 0.012<br>[1.8 ± 0.3]               | 0.056 ± 0.012<br>[1.4 ± 0.3]               | 0.031 ± 0.012<br>[0.80 ± 0.30] | 0.085 ± 0.016<br>[2.2 ± 0.4]   | 0.115<br>[2.9] | 0.004<br>[0.1] |
| B   | 0.158<br>[4.0]               | 0.110 + 0.012 - 0.016<br>[2.8 + 0.3 - 0.4] | 0.075 + 0.012 - 0.024<br>[1.9 + 0.3 - 0.6] | 0.031 ± 0.012<br>[0.80 ± 0.30] | 0.097 ± 0.016<br>[2.5 ± 0.4]   | 0.138<br>[3.5] | 0.004<br>[0.1] |
| C   | 0.281<br>[7.1]               | 0.126 ± 0.012<br>[3.2 ± 0.3]               | 0.098 ± 0.012<br>[2.5 ± 0.3]               | 0.051 ± 0.012<br>[1.3 ± 0.30]  | 0.180 ± 0.024<br>[4.6 ± 0.6]   | 0.236<br>[6.0] | 0.004<br>[0.1] |
| G   | 0.205 ± 0.016<br>[5.2 ± 0.4] | 0.144 ± 0.016<br>[3.65 ± 0.4]              | 0.087<br>[2.2] Max.                        | 0.051 ± 0.012<br>[1.3 ± 0.3]   | 0.133 ± 0.016<br>[3.4 ± 0.4]   | 0.173<br>[4.4] | 0.004<br>[0.1] |
| H   | 0.205 ± 0.016<br>[5.2 ± 0.4] | 0.181 ± 0.016<br>[4.6 ± 0.4]               | 0.078<br>[2.0] Max.                        | 0.051 ± 0.012<br>[1.3 ± 0.30]  | 0.133 ± 0.016<br>[3.4 ± 0.4]   | 0.173<br>[4.4] | 0.004<br>[0.1] |
| D   | 0.293<br>[7.5]               | 0.170 ± 0.012/- 0.024<br>[4.3 ± 0.3/- 0.6] | 0.110 ± 0.012<br>[2.8 ± 0.3]               | 0.051 ± 0.012<br>[1.3 ± 0.30]  | 0.180 ± 0.024<br>[4.6 ± 0.6]   | 0.253<br>[6.4] | 0.004<br>[0.1] |
| M   | 0.129 ± 0.012<br>[3.3 ± 0.3] | 0.106 ± 0.012<br>[2.7 ± 0.3]               | 0.067 ± 0.012<br>[1.7 ± 0.3]               | 0.031 ± 0.012<br>[0.80 ± 0.3]  | 0.078 ± 0.012<br>[2.0 ± 0.3]   | 0.095<br>[2.5] | 0.004<br>[0.1] |
| R   | 0.283<br>[7.2]               | 0.235 ± 0.012/- 0.024<br>[6.0 ± 0.3/- 0.6] | 0.136 ± 0.012<br>[3.5 ± 0.3]               | 0.051 ± 0.012<br>[1.3 ± 0.30]  | 0.180 ± 0.024<br>[4.6 ± 0.6]   | 0.243<br>[6.2] | 0.004<br>[0.1] |

**Note:** The anode termination (D less B) will be a minimum of 0.010" (0.3 mm). T Case = 0.005" (0.13 mm) minimum.

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



Solid Tantalum Chip Capacitors  
TANTAMOUNT® Conformal Coated,  
Maximum CV

Vishay Sprague

| RATINGS AND CASE CODES |     |         |       |      |      |      |      |      |
|------------------------|-----|---------|-------|------|------|------|------|------|
| µF                     | 4 V | 6.3 V   | 10 V  | 16 V | 20 V | 25 V | 35 V | 50 V |
| 0.10                   |     |         |       |      |      |      |      | T    |
| 0.15                   |     |         |       |      |      |      |      | T    |
| 0.22                   |     |         |       |      |      |      |      | T    |
| 0.33                   |     |         |       |      |      |      | T    | A    |
| 0.47                   |     |         |       |      |      | T    | A    | A    |
| 0.68                   |     |         |       |      | T    |      | A    | A/B  |
| 1.0                    |     |         |       |      | T    | A    | A    | A/B  |
| 1.5                    |     |         |       | T    |      | A    | A/B  | C    |
| 2.2                    |     |         | T     | T/A  | A    | A    | B    | B/C  |
| 3.3                    |     | T       |       | T    | A    | B/C  | C    | C    |
| 4.7                    | T   |         | T     | A    | A/B  |      | B/C  | C    |
| 6.8                    |     | T       |       | A    | A/B  | B    | C    | C/D  |
| 10                     | T   |         | A     | A/B  | B    | B/C  | D    | D/R  |
| 15                     | A   | A       | A/B   | A/B  | B    | C    | C/D  | R    |
| 22                     |     | A/B     | A     | B/M  | B/C  | C/D  | D/R  | R    |
| 33                     | A/B | S/A/B   | A/B   | B/C  |      | C/D  | R    |      |
| 47                     | A   | A/B     | B     | B/C  | C/D  | D/R  | R    |      |
| 68                     | A   | A/B     | B/C   | C/D  | D    | D/R  |      |      |
| 100                    | A/B | B/C/M   | B/D   | C/D  | D/R  | R    |      |      |
| 120                    | C   | C       | D     | R    | R    |      |      |      |
| 150                    | B/C |         | C/D   | D/R  | R    |      |      |      |
| 180                    | D   | D       | D/R   | R    |      |      |      |      |
| 220                    | C/D | C/D/G/H | C/D/R | R    |      |      |      |      |
| 270                    | C/D |         | R     |      |      |      |      |      |
| 330                    | C*  | C/D/R   | D/R   | R    |      |      |      |      |
| 390                    | D   | R       | R     |      |      |      |      |      |
| 470                    | C/R | D/R     | R     |      |      |      |      |      |
| 560                    |     | R       |       |      |      |      |      |      |
| 680                    | D   | R       | R     |      |      |      |      |      |
| 1000                   | R   | R       |       |      |      |      |      |      |
| 1500                   | R   |         |       |      |      |      |      |      |

Note: \* Preliminary values, contact factory for availability

| STANDARD/EXTENDED RATINGS   |           |                 |                          |                               |                                 |                              |  |
|---|-----------|-----------------|--------------------------|-------------------------------|---------------------------------|------------------------------|--|
| CAPACITANCE (µF)  | CASE CODE | PART NUMBER     | MAX. DCL AT + 25 °C (µA) | MAX. DF AT + 25 °C 120 Hz (%) | MAX. ESR AT + 25 °C 100 kHz (Ω) | MAX. RIPPLE 100 kHz Irms (A) |  |
| 4 WVDC AT+ 85 °C, SURGE = 5.2 V . . . 2.7 WVDC AT + 125 °C, SURGE = 3.4 V |           |                 |                          |                               |                                 |                              |  |
| 4.7   | T         | 595D475X_004T2T | 0.5                      | 6                             | 7.8                             | 0.06                         |  |
| 10  | T         | 595D106X_004T2T | 0.5                      | 6                             | 7.8                             | 0.06                         |  |
| 15  | A         | 595D156X_004A2T | 0.6                      | 6                             | 1.4                             | 0.23                         |  |
| 33  | A         | 595D336X_004A2T | 1.3                      | 6                             | 1.4                             | 0.23                         |  |
| 33  | B         | 595D336X_004B2T | 1.3                      | 6                             | 0.47                            | 0.43                         |  |
| 47  | A         | 595D476X_004A2T | 1.9                      | 6                             | 1.40                            | 0.23                         |  |
| 68  | A         | 595D686X_004A2T | 2.7                      | 6                             | 1.30                            | 0.24                         |  |
| 100   | A         | 595D107X_004A2T | 4.0                      | 12                            | 0.60                            | 0.35                         |  |
| 100   | B         | 595D107X_004B2T | 4.0                      | 8                             | 0.45                            | 0.44                         |  |
| 120   | C         | 595D127X_004C2T | 4.8                      | 8                             | 0.19                            | 0.76                         |  |

Note: \* Preliminary values, contact factory for availability. For 10 % tolerance, specify "9"; for 20 % tolerance, change to "0".

| STANDARD/EXTENDED RATINGS   |           |                  |                                      |  |  |   |
|---|-----------|------------------|--------------------------------------|--|--|---|
| CAPACITANCE<br>( $\mu$ F)   | CASE CODE | PART NUMBER      | MAX. DCL<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 ( $\Omega$ ) | MAX. RIPPLE<br>100 kHz<br>I <sub>rms</sub><br>(A) |
| <b>4 WVDC AT + 85 °C, SURGE = 5.2 V . . . 2.7 WVDC AT + 125 °C, SURGE = 3.4 V</b> |           |                  |                                      |  |  |   |
| 150   | B         | 595D157X_004B2T  | 6.0                                  | 8                                      | 0.45   | 0.44  |
| 150   | C         | 595D157X_004C2T  | 6.0                                  | 8                                      | 0.18   | 0.78  |
| 180   | D         | 595D187X_004D2T  | 7.2                                  | 8                                      | 0.14   | 1.04  |
| 220   | C         | 595D227X_004C2T  | 8.8                                  | 8                                      | 0.18   | 0.78  |
| 220   | D         | 595D227X_004D2T  | 8.8                                  | 8                                      | 0.14   | 1.04  |
| 270   | C         | 595D277X_004C2T  | 10.8                                 | 8                                      | 0.17   | 0.80  |
| 270   | D         | 595D277X_004D2T  | 10.8                                 | 8                                      | 0.13   | 1.07  |
| 330*  | C*        | 595D337X_004C2T* | 13.2*                                | 8*                                     | 0.17*  | 0.80*   |
| 390   | D         | 595D397X_004D2T  | 15.6                                 | 8                                      | 0.13   | 1.07  |
| 470   | C         | 595D477X_004C2T  | 18.8                                 | 10                                     | 0.16   | 0.83  |
| 470   | R         | 595D477X_004R2T  | 18.8                                 | 10                                     | 0.13   | 1.39  |
| 680   | D         | 595D687X_004D2T  | 27.2                                 | 12                                     | 0.13   | 1.07  |
| 1000  | R         | 595D108X_004R2T  | 40.0                                 | 16                                     | 0.07   | 1.88  |
| 1500  | R         | 595D158X_004R2T  | 60.0                                 | 20                                     | 0.07   | 1.88  |
| <b>6.3 WVDC AT + 85 °C, SURGE = 8 V . . . 4 WVDC AT + 125 °C, SURGE = 5 V</b>     |           |                  |                                      |  |  |   |
| 3.3   | T         | 595D335X_6R3T2T  | 0.5                                  | 6                                      | 8.5  | 0.06  |
| 6.8   | T         | 595D685X_6R3T2T  | 0.5                                  | 6                                      | 8.5  | 0.06  |
| 15  | A         | 595D156X_6R3A2T  | 0.9                                  | 6                                      | 1.7  | 0.20  |
| 22  | A         | 595D226X_6R3A2T  | 1.4                                  | 6                                      | 1.7  | 0.20  |
| 22  | B         | 595D226X_6R3B2T  | 1.4                                  | 6                                      | 0.57   | 0.37  |
| 33  | A         | 595D336X_6R3A2T  | 2.1                                  | 6                                      | 1.70   | 0.20  |
| 33  | B         | 595D336X_6R3B2T  | 1.7                                  | 5                                      | 0.57   | 0.39  |
| 33  | S         | 595D336X_6R3S2T  | 2.1                                  | 8                                      | 1.30   | 0.20  |
| 47  | A         | 595D476X_6R3A2T  | 2.8                                  | 6                                      | 1.50   | 0.22  |
| 47  | B         | 595D336X_6R3B2T  | 2.4                                  | 5                                      | 0.57   | 0.39  |
| 68  | A         | 595D686X_6R3A2T  | 4.3                                  | 12                                     | 0.5  | 0.19  |
| 68  | B         | 595D686X_6R3B2T  | 4.3                                  | 6                                      | 0.55   | 0.38  |
| 100   | B         | 595D107X_6R3B2T  | 6.3                                  | 8                                      | 0.55   | 0.39  |
| 100   | C         | 595D107X_6R3C2T  | 6.3                                  | 8                                      | 0.20   | 0.74  |
| 100   | M         | 595D107X_6R3M2T  | 6.3                                  | 14                                     | 0.40   | 0.49  |
| 120   | C         | 595D127X_6R3C2T  | 7.6                                  | 8                                      | 0.19   | 0.76  |
| 180   | D         | 595D187X_6R3D2T  | 11.3                                 | 8                                      | 0.14   | 1.04  |
| 220   | C         | 595D227X_6R3C2T  | 13.9                                 | 8                                      | 0.18   | 0.78  |
| 220   | D         | 595D227X_6R3D2T  | 13.9                                 | 8                                      | 0.14   | 1.04  |
| 220   | G         | 595D227X_6R3G2T  | 13.9                                 | 8                                      | 0.18   | 0.75  |
| 220   | H         | 595D227X_6R3H2T  | 13.9                                 | 8                                      | 0.18   | 0.75  |
| 330   | C         | 595D337X_6R3C2T  | 20.8                                 | 8                                      | 0.17   | 0.80  |
| 330   | C         | 595D337X_6W3C2T  | 20.8                                 | 8                                      | 0.17   | 0.80  |
| 330   | D         | 595D337X_6R3D2T  | 20.8                                 | 8                                      | 0.14   | 1.04  |
| 330   | R         | 595D337X_6R3R2T  | 20.8                                 | 8                                      | 0.13   | 1.39  |
| 390   | R         | 595D397X_6R3R2T  | 24.6                                 | 8                                      | 0.13   | 1.39  |
| 470   | D         | 595D477X_6R3D2T  | 29.6                                 | 8                                      | 0.13   | 1.07  |
| 470   | D         | 595D477X_6W3D2T  | 29.6                                 | 10                                     | 0.12   | 1.44  |
| 470   | R         | 595D477X_6R3R2T  | 29.6                                 | 10                                     | 0.12   | 1.44  |
| 560   | R         | 595D567X_6R3R2T  | 35.3                                 | 10                                     | 0.11   | 1.51  |
| 680   | R         | 595D687X_6R3R2T  | 42.8                                 | 10                                     | 0.09   | 1.66  |
| 680   | R         | 595D687X_6W3R2T  | 42.8                                 | 10                                     | 0.09   | 1.66  |
| 1000  | R         | 595D108X_6R3R2T  | 63.0                                 | 16                                     | 0.07   | 1.88  |
| 1000  | R         | 595D108X_6W3R2T  | 63.0                                 | 16                                     | 0.07   | 1.88  |

**Note:** \* Preliminary values, contact factory for availability. For 10 % tolerance, specify "9"; for 20 % tolerance, change to "0".



Solid Tantalum Chip Capacitors  
TANTAMOUNT® Conformal Coated,  
Maximum CV

Vishay Sprague

| <b>STANDARD/EXTENDED RATINGS</b>  |           |                 |                                      |  |  |   |  |
|---|-----------|-----------------|--------------------------------------|--|--|---|--|
| CAPACITANCE<br>( $\mu$ F)   | CASE CODE | PART NUMBER     | MAX. DCL<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 ( $\Omega$ ) | MAX. RIPPLE<br>100 kHz<br>I <sub>rms</sub><br>(A) |  |
| <b>10 WVDC AT + 85 °C, SURGE = 13 V . . . 7 WVDC AT + 125 °C, SURGE = 8 V</b>   |           |                 |                                      |  |  |   |  |
| 2.2   | T         | 595D225X_010T2T | 0.5                                  | 6                                      | 8.6  | 0.06  |  |
| 4.7   | T         | 595D475X_010T2T | 0.5                                  | 6                                      | 8.6  | 0.06  |  |
| 10  | A         | 595D106X_010A2T | 1.0                                  | 6                                      | 1.9  | 0.19  |  |
| 15  | A         | 595D156X_010A2T | 1.5                                  | 6                                      | 1.8  | 0.20  |  |
| 15  | B         | 595D156X_010B2T | 1.5                                  | 6                                      | 0.67   | 0.35  |  |
| 22  | A         | 595D226X_010A2T | 2.2                                  | 6                                      | 1.80   | 0.20  |  |
| 33  | A         | 595D336X_010A2T | 3.3                                  | 8                                      | 3.0  | 0.16  |  |
| 33  | B         | 595D336X_010B2T | 3.3                                  | 6                                      | 1.90   | 0.21  |  |
| 47  | B         | 595D476X_010B2T | 4.7                                  | 6                                      | 0.65   | 0.35  |  |
| 68  | B         | 595D686X_010B2T | 6.8                                  | 6                                      | 0.65   | 0.36  |  |
| 68  | C         | 595D686X_010C2T | 6.8                                  | 6                                      | 0.24   | 0.68  |  |
| 100   | B         | 595D107X_010B2T | 10.0                                 | 12                                     | 0.4  | 0.46  |  |
| 100   | D         | 595D107X_010D2T | 8.0                                  | 7                                      | 0.15   | 1.00  |  |
| 120   | D         | 595D127X_010D2T | 12.0                                 | 8                                      | 0.14   | 1.04  |  |
| 150   | C         | 595D157X_010C2T | 15.0                                 | 8                                      | 0.22   | 0.71  |  |
| 150   | D         | 595D157X_010D2T | 15.0                                 | 8                                      | 0.14   | 1.04  |  |
| 180   | D         | 595D187X_010D2T | 18.0                                 | 8                                      | 0.38   | 0.63  |  |
| 180   | R         | 595D187X_010R2T | 18.0                                 | 8                                      | 0.13   | 1.39  |  |
| 220   | C         | 595D227X_010C2T | 22.0                                 | 8                                      | 0.20   | 0.74  |  |
| 220   | D         | 595D227X_010D2T | 22.0                                 | 8                                      | 0.14   | 1.04  |  |
| 220   | R         | 595D227X_010R2T | 22.0                                 | 8                                      | 0.13   | 1.39  |  |
| 270   | R         | 595D277X_010R2T | 27.0                                 | 8                                      | 0.13   | 1.39  |  |
| 330   | D         | 595D337X_010D2T | 33.0                                 | 8                                      | 0.14   | 1.04  |  |
| 330   | R         | 595D337X_010R2T | 33.0                                 | 8                                      | 0.13   | 1.39  |  |
| 390   | R         | 595D397X_010R2T | 39.0                                 | 8                                      | 0.12   | 1.44  |  |
| 470   | R         | 595D477X_010R2T | 47.0                                 | 8                                      | 0.12   | 1.44  |  |
| 680   | R         | 595D687X_010R2T | 68.0                                 | 14                                     | 0.09   | 1.66  |  |
| <b>16 WVDC AT + 85 °C, SURGE = 20 V . . . 10 WVDC AT + 125 °C, SURGE = 12 V</b> |           |                 |                                      |  |  |   |  |
| 1.5   | T         | 595D155X_016T2T | 0.5                                  | 6                                      | 8.7  | 0.06  |  |
| 2.2   | T         | 595D225X_016T2T | 0.5                                  | 6                                      | 8.7  | 0.06  |  |
| 2.2   | A         | 595D225X_010D2T | 0.4                                  | 5                                      | 3.9  | 0.14  |  |
| 3.3   | T         | 595D335X_016T2T | 0.5                                  | 6                                      | 8.6  | 0.06  |  |
| 4.7   | A         | 595D475X_016A2T | 0.8                                  | 6                                      | 2.9  | 0.16  |  |
| 6.8   | A         | 595D685X_016A2T | 1.1                                  | 6                                      | 2.8  | 0.16  |  |
| 10  | A         | 595D106X_016A2T | 1.6                                  | 6                                      | 2.5  | 0.17  |  |
| 10  | B         | 595D106X_016B2T | 1.6                                  | 6                                      | 0.76   | 0.32  |  |
| 15  | A         | 595D156X_016A2T | 2.4                                  | 6                                      | 2.40   | 0.17  |  |
| 15  | B         | 595D156X_016B2T | 2.4                                  | 6                                      | 0.75   | 0.33  |  |
| 22  | B         | 595D226X_016B2T | 3.5                                  | 6                                      | 0.75   | 0.32  |  |
| 22  | M         | 595D226X_016M2T | 3.5                                  | 6                                      | 0.50   | 0.44  |  |
| 33  | B         | 595D336X_016B2T | 5.3                                  | 6                                      | 0.72   | 0.33  |  |
| 33  | C         | 595D336X_016C2T | 5.3                                  | 6                                      | 0.29   | 0.62  |  |
| 47  | B         | 595D476X_016B2T | 7.5                                  | 6                                      | 0.72   | 0.33  |  |
| 47  | C         | 595D476X_016C2T | 7.5                                  | 6                                      | 0.28   | 0.63  |  |
| 68  | C         | 595D686X_016C2T | 10.9                                 | 6                                      | 0.26   | 0.64  |  |
| 68  | D         | 595D686X_016D2T | 10.9                                 | 6                                      | 0.14   | 1.04  |  |
| 100   | C         | 595D107X_016C2T | 16.0                                 | 8                                      | 0.27   | 0.64  |  |

**Note:** \* Preliminary values, contact factory for availability. For 10 % tolerance, specify "9"; for 20 % tolerance, change to "0".



| <b>STANDARD/EXTENDED RATINGS</b>  |           |                 |   |  |  |   |  |
|---|-----------|-----------------|---|--|--|---|--|
| CAPACITANCE<br>( $\mu\text{F}$ )  | CASE CODE | PART NUMBER     | MAX. DCL<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 ( $\Omega$ ) | MAX. RIPPLE<br>100 kHz<br>I <sub>rms</sub><br>(A) |  |
| <b>16 WVDC AT + 85 °C, SURGE = 20 V . . . 10 WVDC AT + 125 °C, SURGE = 12 V</b> |           |                 |   |  |  |   |  |
| 100   | D         | 595D107X_016D2T | 16.0  | 8                                      | 0.14   | 1.04  |  |
| 120   | R         | 595D127X_016R2T | 19.2  | 8                                      | 0.14   | 1.34  |  |
| 150   | D         | 595D157X_016D2T | 24.0  | 8                                      | 0.14   | 1.04  |  |
| 150   | R         | 595D157X_016R2T | 24.0  | 8                                      | 0.13   | 1.39  |  |
| 180   | R         | 595D187X_016R2T | 28.8  | 8                                      | 0.13   | 1.39  |  |
| 220   | R         | 595D227X_016R2T | 35.2  | 8                                      | 0.12   | 1.44  |  |
| 330   | R         | 595D337X_016R2T | 52.8  | 14                                     | 0.11   | 1.51  |  |
| <b>20 WVDC AT + 85 °C, SURGE = 26 V . . . 13 WVDC AT + 125 °C, SURGE = 16 V</b> |           |                 |   |  |  |   |  |
| 0.68  | T         | 595D684X_020T2T | 0.5   | 4                                      | 10.8   | 0.05  |  |
| 1.0   | T         | 595D105X_020T2T | 0.5   | 4                                      | 9.0  | 0.06  |  |
| 2.2   | A         | 595D225X_020A2T | 0.5   | 6                                      | 3.8  | 0.14  |  |
| 3.3   | A         | 595D335X_020A2T | 0.7   | 6                                      | 3.8  | 0.14  |  |
| 4.7   | A         | 595D475X_020A2T | 0.9   | 6                                      | 3.1  | 0.15  |  |
| 4.7   | B         | 595D475X_020B2T | 0.9   | 6                                      | 0.95   | 0.29  |  |
| 6.8   | A         | 595D685X_020A2T | 1.4   | 6                                      | 3.0  | 0.15  |  |
| 6.8   | B         | 595D685X_020B2T | 1.4   | 6                                      | 0.95   | 0.29  |  |
| 10  | B         | 595D106X_020B2T | 2.0   | 6                                      | 1.0  | 0.28  |  |
| 15  | B         | 595D156X_020B2T | 3.0   | 6                                      | 1.0  | 0.28  |  |
| 22  | B         | 595D226X_020B2T | 4.4   | 6                                      | 0.90   | 0.31  |  |
| 22  | C         | 595D226X_020C2T | 4.4   | 6                                      | 0.38   | 0.54  |  |
| 47  | C         | 595D476X_020C2T | 9.4   | 6                                      | 0.35   | 0.56  |  |
| 47  | D         | 595D476X_020D2T | 9.4   | 6                                      | 0.19   | 0.89  |  |
| 68  | D         | 595D686X_020D2T | 12.2  | 6                                      | 0.19   | 0.89  |  |
| 100   | D         | 595D107X_020D2T | 20.0  | 8                                      | 0.18   | 0.91  |  |
| 100   | R         | 595D107X_020R2T | 20.0  | 8                                      | 0.14   | 1.34  |  |
| 120   | R         | 595D127X_020R2T | 24.0  | 8                                      | 0.14   | 1.34  |  |
| 150   | R         | 595D157X_020R2T | 30.0  | 8                                      | 0.14   | 1.34  |  |
| <b>25 WVDC AT + 85 °C, SURGE = 32 V . . . 17 WVDC AT + 125 °C, SURGE = 20 V</b> |           |                 |   |  |  |   |  |
| 0.47  | T         | 595D474X_025T2T | 0.5   | 4                                      | 13.5   | 0.05  |  |
| 1   | A         | 595D105X_025A2T | 0.4   | 4                                      | 4.2  | 0.13  |  |
| 1.5   | A         | 595D155X_025A2T | 0.5   | 6                                      | 3.8  | 0.14  |  |
| 2.2   | A         | 595D225X_025A2T | 0.6   | 6                                      | 3.8  | 0.14  |  |
| 3.3   | B         | 595D335X_025B2T | 0.8   | 6                                      | 1.9  | 0.21  |  |
| 4.7   | C         | 595D475X_025C2T | 1.3   | 5                                      | 0.68   | 0.40  |  |
| 6.8   | B         | 595D685X_025B2T | 1.7   | 6                                      | 1.5  | 0.23  |  |
| 10  | B         | 595D106X_025B2T | 2.5   | 6                                      | 1.5  | 0.23  |  |
| 10  | C         | 595D106X_025C2T | 2.5   | 6                                      | 0.57   | 0.44  |  |
| 15  | C         | 595D156X_025C2T | 3.8   | 6                                      | 0.56   | 0.44  |  |
| 22  | C         | 595D226X_025C2T | 5.5   | 6                                      | 0.50   | 0.47  |  |
| 22  | D         | 595D226X_025D2T | 5.5   | 6                                      | 0.28   | 0.73  |  |
| 33  | C         | 595D336X_025C2T | 8.3   | 6                                      | 0.45   | 0.49  |  |
| 33  | D         | 595D336X_025D2T | 8.3   | 6                                      | 0.27   | 0.75  |  |
| 47  | D         | 595D476X_025D2T | 11.8  | 6                                      | 0.26   | 0.76  |  |
| 47  | R         | 595D476X_025R2T | 11.8  | 6                                      | 0.20   | 1.12  |  |
| 68  | D         | 595D686X_025D2T | 17.0  | 8                                      | 0.26   | 0.76  |  |
| 68  | R         | 595D686X_025R2T | 17.0  | 6                                      | 0.20   | 1.12  |  |
| 100   | R         | 595D107X_025R2T | 25.0  | 8                                      | 0.20   | 1.12  |  |

**Note:** \* Preliminary values, contact factory for availability. For 10 % tolerance, specify "9"; for 20 % tolerance, change to "0".



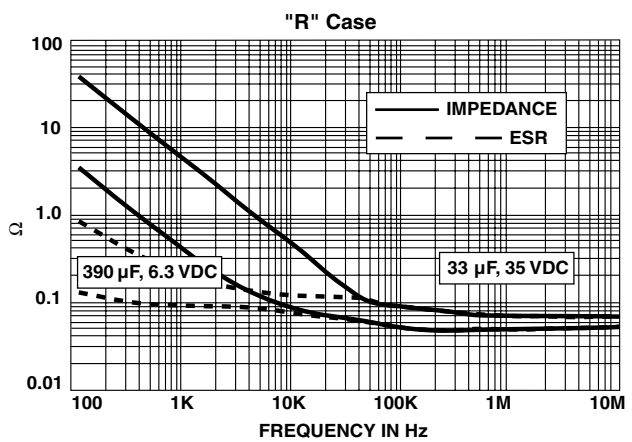
Solid Tantalum Chip Capacitors  
TANTAMOUNT® Conformal Coated,  
Maximum CV

Vishay Sprague

| <b>STANDARD/EXTENDED RATINGS</b>  |                  |                    |  |  |  |  |
|---|------------------|--------------------|--|--|--|--|
| <b>CAPACITANCE<br/>(<math>\mu</math>F)</b>                                      | <b>CASE CODE</b> | <b>PART NUMBER</b> | <b>MAX. DCL<br/>AT + 25 °C<br/>(<math>\mu</math>A)</b> | <b>MAX. DF<br/>AT + 25 °C<br/>120 Hz<br/>(%)</b> | <b>MAX. ESR<br/>AT + 25 °C<br/>100 kHz (<math>\Omega</math>)</b> | <b>MAX. RIPPLE<br/>100 kHz<br/>I<sub>rms</sub><br/>(A)</b> |
| <b>35 WVDC AT + 85 °C, SURGE = 46 V . . . 23 WVDC AT + 125 °C, SURGE = 28 V</b> |                  |                    |  |  |  |  |
| 0.33  | T                | 595D334X_035T2T    | 0.5  | 4  | 14.4   | 0.05   |
| 0.47  | A                | 595D474X_035A2T    | 0.5  | 4  | 4.3  | 0.13   |
| 0.68  | A                | 595D684X_035A2T    | 0.5  | 4  | 4.2  | 0.13   |
| 1.0   | A                | 595D105X_035A2T    | 0.5  | 4  | 4.1  | 0.13   |
| 1.5   | A                | 595D155X_035A2T    | 0.5  | 6  | 3.8  | 0.14   |
| 1.5   | B                | 595D155X_035B2T    | 0.5  | 6  | 2.8  | 0.17   |
| 2.2   | B                | 595D225X_035B2T    | 0.8  | 6  | 2.3  | 0.19   |
| 3.3   | C                | 595D335X_035C2T    | 1.2  | 6  | 0.75   | 0.38   |
| 4.7   | B                | 595D475X_035B2T    | 1.6  | 6  | 2.2  | 0.19   |
| 4.7   | C                | 595D475X_035C2T    | 1.6  | 6  | 0.66   | 0.41   |
| 6.8   | C                | 595D685X_035C2T    | 2.4  | 6  | 0.63   | 0.42   |
| 10  | D                | 595D106X_035D2T    | 3.5  | 6  | 0.43   | 0.59   |
| 15  | C                | 595D156X_035C2T    | 5.3  | 6  | 0.60   | 0.43   |
| 15  | D                | 595D156X_035D2T    | 5.3  | 6  | 0.41   | 0.60   |
| 22  | D                | 595D226X_035D2T    | 7.7  | 6  | 0.32   | 0.68   |
| 22  | R                | 595D226X_035R2T    | 7.7  | 6  | 0.28   | 0.94   |
| 33  | R                | 595D336X_035R2T    | 11.6   | 6  | 0.28   | 0.94   |
| 47  | R                | 595D476X_035R2T    | 16.5   | 6  | 0.28   | 0.94   |
| <b>50 WVDC AT + 85 °C, SURGE = 65 V . . . 33 WVDC AT + 125 °C, SURGE = 38 V</b> |                  |                    |  |  |  |  |
| 0.10  | T                | 595D104X_050T2T    | 0.5  | 4  | 22.5   | 0.04   |
| 0.15  | T                | 595D154X_050T2T    | 0.5  | 4  | 18.0   | 0.04   |
| 0.22  | T                | 595D224X_050T2T    | 0.5  | 4  | 15.3   | 0.04   |
| 0.33  | A                | 595D334X_050A2T    | 0.5  | 4  | 8.1  | 0.09   |
| 0.47  | A                | 595D474X_050A2T    | 0.5  | 4  | 7.2  | 0.10   |
| 0.68  | A                | 595D684X_050A2T    | 0.5  | 4  | 6.1  | 0.11   |
| 0.68  | B                | 595D684X_050B2T    | 0.5  | 4  | 5.4  | 0.12   |
| 1.0   | A                | 595D105X_050A2T    | 0.5  | 4  | 6.0  | 0.11   |
| 1.0   | B                | 595D105X_050B2T    | 0.5  | 4  | 5.0  | 0.13   |
| 1.5   | C                | 595D155X_050C2T    | 0.8  | 6  | 1.8  | 0.25   |
| 2.2   | B                | 595D225X_050B2T    | 1.1  | 6  | 3.2  | 0.16   |
| 2.2   | C                | 595D225X_050C2T    | 1.1  | 6  | 1.7  | 0.25   |
| 3.3   | C                | 595D335X_050C2T    | 1.7  | 6  | 1.6  | 0.26   |
| 4.7   | C                | 595D475X_050C2T    | 2.4  | 6  | 1.4  | 0.28   |
| 6.8   | C                | 595D685X_050C2T    | 3.4  | 6  | 1.3  | 0.29   |
| 6.8   | D                | 595D685X_050D2T    | 3.4  | 6  | 0.82   | 0.43   |
| 10  | D                | 595D106X_050D2T    | 5.0  | 6  | 0.80   | 0.43   |
| 10  | R                | 595D106X_050R2T    | 5.0  | 6  | 0.65   | 0.62   |
| 15  | R                | 595D156X_050R2T    | 7.5  | 6  | 0.40   | 0.79   |
| 22  | R                | 595D226X_050R2T    | 11.0   | 6  | 0.39   | 0.80   |



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





## Disclaimer

All product specifications and data are subject to change without notice.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained herein or in any other disclosure relating to any product.

Vishay disclaims any and all liability arising out of the use or application of any product described herein or of any information provided herein to the maximum extent permitted by law. The product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein, which apply to these products.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications unless otherwise expressly indicated. Customers using or selling Vishay products not expressly indicated for use in such applications do so entirely at their own risk and agree to fully indemnify Vishay for any damages arising or resulting from such use or sale. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

Product names and markings noted herein may be trademarks of their respective owners.



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

Наши преимущества:

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

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



## JONHON

«JONHON» (основан в 1970 г.)

Разъемы специального, военного и аэрокосмического назначения:

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

«FORSTAR» (основан в 1998 г.)

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

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



Телефон: 8 (812) 309-75-97 (многоканальный)

Факс: 8 (812) 320-03-32

Электронная почта: [ocean@oceanchips.ru](mailto:ocean@oceanchips.ru)

Web: <http://oceanchips.ru/>

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, д. 2, корп. 4, лит. А