

## Solid Tantalum Surface Mount Capacitors TANTAMOUNT® Molded Case, High Temperature



### FEATURES

- Operating temperature up to 150 °C with 50 % voltage derating
- High reliability
- RoHS compliant terminations available: Matte tin (all cases) or gold (D/E cases)
- Standard EIA 535BAAC case size (A through E)
- AEC-Q200 qualified
- 100 % surge current tested (B, C, D, E case sizes)
- Compliant to RoHS Directive 2002/95/EC
- Moisture sensitivity level 1


**RoHS**  
COMPLIANT

### Note

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

### PERFORMANCE CHARACTERISTICS

[www.vishay.com/doc?40088](http://www.vishay.com/doc?40088)
**Operating Temperature:** - 55 °C to + 150 °C

**Capacitance Range:** 0.33  $\mu$ F to 220  $\mu$ F

**Capacitance Tolerance:**  $\pm$  10 %,  $\pm$  20 %

**Voltage Rating:** 6.3 V<sub>DC</sub> to 50 V<sub>DC</sub>

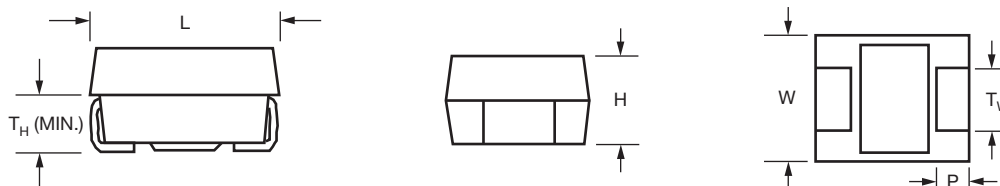
| ORDERING INFORMATION |                                   |  |                                  |  |   |  |
|----------------------|-----------------------------------|--|----------------------------------|--|---|--|
| TH3                  | D                                 | 106  | K                                | 035  | C   | 0700   |
| TYPE                 | CASE CODE                         | CAPACITANCE  | CAPACITANCE TOLERANCE            | DC VOLTAGE RATING AT + 85 °C   | TERMINATION AND PACKAGING   | ESR  |
|                      | See Ratings and Case Codes table. | This is expressed in picofarads. The first two digits are the significant figures. The third is the number of zeros to follow. | K = $\pm$ 10 %<br>M = $\pm$ 20 % | 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) | A: Gold/7" (178 mm) reels <sup>(1)</sup><br>B: Gold/13" (330 mm) reels <sup>(1)</sup><br>C: Matte tin/7" (178 mm) reels<br>D: Matte tin/13" (330 mm) reels<br>E: Tin/lead/7" (178 mm) reels<br>F: Tin/lead/13" (330 mm) reels | Maximum<br>100 kHz ESR<br>0500 = 500 m $\Omega$<br>5000 = 5.0 $\Omega$<br>10R0 = 10.0 $\Omega$ |

### Notes

- 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.

<sup>(1)</sup> Contact factory for availability

### DIMENSIONS in inches [millimeters]



| CASE CODE | EIA SIZE | L                                     | W                                     | H                                     | P                                      | T <sub>W</sub>                        | T <sub>H</sub> (MIN.) |
|-----------|----------|---------------------------------------|---------------------------------------|---------------------------------------|--|---------------------------------------|-----------------------|
| A         | 3216-18  | 0.126 $\pm$ 0.008<br>[3.2 $\pm$ 0.20] | 0.063 $\pm$ 0.008<br>[1.6 $\pm$ 0.20] | 0.063 $\pm$ 0.008<br>[1.6 $\pm$ 0.20] | 0.031 $\pm$ 0.012<br>[0.80 $\pm$ 0.30] | 0.047 $\pm$ 0.004<br>[1.2 $\pm$ 0.10] | 0.028<br>[0.70]       |
| B         | 3528-21  | 0.138 $\pm$ 0.008<br>[3.5 $\pm$ 0.20] | 0.110 $\pm$ 0.008<br>[2.8 $\pm$ 0.20] | 0.075 $\pm$ 0.008<br>[1.9 $\pm$ 0.20] | 0.031 $\pm$ 0.012<br>[0.80 $\pm$ 0.30] | 0.087 $\pm$ 0.004<br>[2.2 $\pm$ 0.10] | 0.028<br>[0.70]       |
| C         | 6032-28  | 0.236 $\pm$ 0.012<br>[6.0 $\pm$ 0.30] | 0.126 $\pm$ 0.012<br>[3.2 $\pm$ 0.30] | 0.098 $\pm$ 0.012<br>[2.5 $\pm$ 0.30] | 0.051 $\pm$ 0.012<br>[1.3 $\pm$ 0.30]  | 0.087 $\pm$ 0.004<br>[2.2 $\pm$ 0.10] | 0.039<br>[1.0]        |
| D         | 7343-31  | 0.287 $\pm$ 0.012<br>[7.3 $\pm$ 0.30] | 0.169 $\pm$ 0.012<br>[4.3 $\pm$ 0.30] | 0.110 $\pm$ 0.012<br>[2.8 $\pm$ 0.30] | 0.051 $\pm$ 0.012<br>[1.3 $\pm$ 0.30]  | 0.094 $\pm$ 0.004<br>[2.4 $\pm$ 0.10] | 0.039<br>[1.0]        |
| E         | 7343-43  | 0.287 $\pm$ 0.012<br>[7.3 $\pm$ 0.30] | 0.169 $\pm$ 0.012<br>[4.3 $\pm$ 0.30] | 0.157 $\pm$ 0.012<br>[4.0 $\pm$ 0.30] | 0.051 $\pm$ 0.012<br>[1.3 $\pm$ 0.30]  | 0.094 $\pm$ 0.004<br>[2.4 $\pm$ 0.10] | 0.039<br>[1.0]        |

| RATINGS AND CASE CODES |                 |   |                                  |                                      |                                  |                             |                 |
|------------------------|-----------------|---|----------------------------------|--------------------------------------|----------------------------------|-----------------------------|-----------------|
| μF                     | 6.3 V           | 10 V  | 16 V                             | 20 V                                 | 25 V                             | 35 V                        | 50 V            |
| 0.33                   |                 |   |                                  |                                      |                                  | A (11.0)                    |                 |
| 0.47                   |                 |   |                                  |                                      | A (14.0)                         |                             |                 |
| 0.68                   |                 |   |                                  |                                      |                                  |                             |                 |
| 1.0                    |                 |   | A (6.5)                          | A (5.9)                              | A (3.0, 5.2)/<br>B (0.5)         | A (6.6)/B (4.4)             | C (3.3)         |
| 1.5                    |                 |   | A (4.3)                          |                                      |                                  | B (4.2)/C (3.3)             |                 |
| 2.2                    |                 | A (4.6)   | A (3.4)/B (3.0)                  | A (5.9)/B (3.5)                      | A (5.2)/B (3.0)                  | B (2.5)/C (2.2)             |                 |
| 3.3                    |                 |   |                                  | B (2.7)/C (3.7)                      | B (3.0)/C (2.0)                  | B (2.5, 3.5)/<br>C (1.7)    | D (1.7)         |
| 4.7                    |                 | A (2.9)/B (2.7)                                     | A (2.9)/B (2.1)                  | A (5.0)/<br>B (2.9, 1.9)/<br>C (1.7) | A (5.0)/B (2.8)/<br>C (1.6)      | B (3.1)/C (1.3)/<br>D (1.0) | C (1.5)/D (0.9) |
| 6.8                    |                 | A (2.6)   | A (2.6, 2.0)/<br>B (1.8)/C (1.7) |                                      | B (2.4)/C (1.4)                  | C (1.8)/D (0.9)             | D (0.9)         |
| 10                     | A (3.4, 2.7)    | A (3.4)/B(1.8)/<br>C (1.8, 1.7)                     | B (2.0)/C (1.4)                  | C (1.1)                              | C (1.1)/D (0.9)                  | C (1.6)/<br>D (0.3, 0.7)    | D (0.8)/E (0.5) |
| 15                     | B (1.8)         | A (2.9, 2.0)/<br>B (2.0, 1.8, 1.5)/<br>C (1.8, 1.4) | B (2.0)/C (1.0)                  | B (2.0)/C (1.0)/<br>D (0.9)          | B (1.4, 2.0)/<br>C (1.2)/D (0.7) | D (0.7)                     |                 |
| 22                     | B (2.0, 1.5)    | B (1.5)/<br>C (1.5, 1.1)                            | B (1.9)/C (1.0)/<br>D (0.8)      | C (1.0)/D (0.7)                      | D (0.6)                          | D (0.3, 0.6)/<br>E (0.5)    |                 |
| 33                     | B (1.9, 1.7)    | B (1.9, 1.4)/<br>D (0.8)                            | C (0.9, 0.6)/<br>D (0.6)         | D (0.6)                              | D (0.5)                          |                             |                 |
| 47                     | B (1.8)/C (0.8) | B (1.8)/<br>C (0.8, 0.5)/<br>D (0.6)                | C (0.8, 0.6)/<br>D (0.6)         | D (0.7)/E (0.6)                      | E (0.6)                          |                             |                 |
| 68                     | B (1.8)         | C (1.0, 0.8)/<br>D (1.0, 0.6, 0.4)                  | D (0.6)                          | E (0.6)                              |                                  |                             |                 |
| 100                    | E (0.3)         | C (0.9, 0.5)/<br>D (0.6)                            | D (0.6)/<br>E (0.6, 0.15)        |                                      |                                  |                             |                 |
| 150                    |                 | D (0.6)   |                                  |                                      |                                  |                             |                 |
| 220                    |                 | E (0.5)   |                                  |                                      |                                  |                             |                 |

**Note**

- ESR limits in Ω are shown in parenthesis

| MARKING   |   |       |  |      |     |   |     |   |    |   |    |   |    |   |    |   |    |   |    |
|---|---|-------|--|------|-----|---|-----|---|----|---|----|---|----|---|----|---|----|---|----|
|   | <b>"A" CASE VOLTAGE CODE</b>  |       |  |      |     |   |     |   |    |   |    |   |    |   |    |   |    |   |    |
|   | <table border="1"> <thead> <tr> <th>VOLTS</th> <th>CODE</th> </tr> </thead> <tbody> <tr> <td>4.0</td> <td>G</td> </tr> <tr> <td>6.3</td> <td>J</td> </tr> <tr> <td>10</td> <td>A</td> </tr> <tr> <td>16</td> <td>C</td> </tr> <tr> <td>20</td> <td>D</td> </tr> <tr> <td>25</td> <td>E</td> </tr> <tr> <td>35</td> <td>V</td> </tr> <tr> <td>50</td> <td>T</td> </tr> </tbody> </table> | VOLTS |  | CODE | 4.0 | G | 6.3 | J | 10 | A | 16 | C | 20 | D | 25 | E | 35 | V | 50 |
| VOLTS   | CODE  |       |  |      |     |   |     |   |    |   |    |   |    |   |    |   |    |   |    |
| 4.0   | G   |       |  |      |     |   |     |   |    |   |    |   |    |   |    |   |    |   |    |
| 6.3   | J   |       |  |      |     |   |     |   |    |   |    |   |    |   |    |   |    |   |    |
| 10  | A   |       |  |      |     |   |     |   |    |   |    |   |    |   |    |   |    |   |    |
| 16  | C   |       |  |      |     |   |     |   |    |   |    |   |    |   |    |   |    |   |    |
| 20  | D   |       |  |      |     |   |     |   |    |   |    |   |    |   |    |   |    |   |    |
| 25  | E   |       |  |      |     |   |     |   |    |   |    |   |    |   |    |   |    |   |    |
| 35  | V   |       |  |      |     |   |     |   |    |   |    |   |    |   |    |   |    |   |    |
| 50  | T   |       |  |      |     |   |     |   |    |   |    |   |    |   |    |   |    |   |    |
| <b>Marking</b><br>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.<br>The Vishay Sprague® trademark is included if space permits. Capacitors rated at 6.3 V are marked 6 V.<br>A manufacturing date code is marked on all capacitors.<br>Call the factory for further explanation. |   |       |  |      |     |   |     |   |    |   |    |   |    |   |    |   |    |   |    |



| STANDARD RATINGS  |           |                      |  |                              |   |  |  |
|---|-----------|----------------------|--|------------------------------|---|--|--|
| 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>(%) | MAX. ESR<br>AT + 25 °C<br>100 kHz<br>( $\Omega$ ) | MAX. RIPPLE<br>100 kHz<br>$I_{RMS}$<br>(A) |  |
| <b>6.3 V<sub>DC</sub> AT + 85 °C; 4 V<sub>DC</sub> AT + 125 °C; 3.15 V<sub>DC</sub> AT + 150 °C</b> |           |                      |  |                              |   |  |  |
| 10  | A         | TH3A106(1)6R3(2)3400 | 0.6  | 6                            | 3.40  | 0.15                                       |  |
| 10  | A         | TH3A106(1)6R3(2)2700 | 0.6  | 6                            | 2.70  | 0.17                                       |  |
| 15  | B         | TH3B156(1)6R3(2)1800 | 0.9  | 6                            | 1.80  | 0.22                                       |  |
| 22  | B         | TH3B226(1)6R3(2)2000 | 1.3  | 6                            | 2.00  | 0.21                                       |  |
| 22  | B         | TH3B226(1)6R3(2)1500 | 1.3  | 6                            | 1.50  | 0.24                                       |  |
| 33  | B         | TH3B336(1)6R3(2)1900 | 2.0  | 6                            | 1.90  | 0.21                                       |  |
| 33  | B         | TH3B336(1)6R3(2)1700 | 2.0  | 6                            | 1.70  | 0.22                                       |  |
| 47  | B         | TH3B476(1)6R3(2)1800 | 2.8  | 8                            | 1.80  | 0.22                                       |  |
| 47  | C         | TH3C476(1)6R3(2)0800 | 2.8  | 6                            | 0.80  | 0.37                                       |  |
| 68  | B         | TH3B686(1)6R3(2)1800 | 4.1  | 6                            | 1.80  | 0.22                                       |  |
| 100   | E         | TH3E107(1)6R3(2)0300 | 6.0  | 6                            | 0.30  | 0.74                                       |  |
| <b>10 V<sub>DC</sub> AT + 85 °C; 7 V<sub>DC</sub> AT + 125 °C; 5 V<sub>DC</sub> AT + 150 °C</b>     |           |                      |  |                              |   |  |  |
| 2.2   | A         | TH3A225(1)010(2)4600 | 0.5  | 6                            | 4.60  | 0.13                                       |  |
| 4.7   | A         | TH3A475(1)010(2)2900 | 0.5  | 6                            | 2.90  | 0.16                                       |  |
| 4.7   | B         | TH3B475(1)010(2)2700 | 0.5  | 6                            | 2.70  | 0.18                                       |  |
| 6.8   | A         | TH3A685(1)010(2)2600 | 6.8  | 6                            | 2.60  | 0.17                                       |  |
| 10  | A         | TH3A106(1)010(2)3400 | 1.0  | 6                            | 3.40  | 0.15                                       |  |
| 10  | B         | TH3B106(1)010(2)1800 | 1.0  | 6                            | 1.80  | 0.22                                       |  |
| 10  | C         | TH3C106(1)010(2)1800 | 1.0  | 6                            | 1.80  | 0.25                                       |  |
| 10  | C         | TH3C106(1)010(2)1700 | 1.0  | 6                            | 1.70  | 0.25                                       |  |
| 15  | A         | TH3A156(1)010(2)2900 | 1.0  | 6                            | 2.90  | 0.16                                       |  |
| 15  | A         | TH3A156(1)010(2)2000 | 1.0  | 6                            | 2.00  | 0.19                                       |  |
| 15  | B         | TH3B156(1)010(2)2000 | 1.0  | 6                            | 2.00  | 0.21                                       |  |
| 15  | B         | TH3B156(1)010(2)1800 | 1.0  | 6                            | 1.80  | 0.22                                       |  |
| 15  | B         | TH3B156(1)010(2)1500 | 1.0  | 6                            | 1.50  | 0.24                                       |  |
| 15  | C         | TH3C156(1)010(2)1800 | 1.0  | 6                            | 1.80  | 0.25                                       |  |
| 15  | C         | TH3C156(1)010(2)1400 | 1.0  | 6                            | 1.40  | 0.28                                       |  |
| 22  | B         | TH3B226(1)010(2)1500 | 2.2  | 6                            | 1.50  | 0.24                                       |  |
| 22  | C         | TH3C226(1)010(2)1500 | 2.2  | 6                            | 1.50  | 0.27                                       |  |
| 22  | C         | TH3C226(1)010(2)1100 | 2.2  | 6                            | 1.10  | 0.32                                       |  |
| 33  | B         | TH3B336(1)010(2)1900 | 3.3  | 6                            | 1.90  | 0.21                                       |  |
| 33  | B         | TH3B336(1)010(2)1400 | 3.3  | 6                            | 1.40  | 0.25                                       |  |
| 33  | D         | TH3D336(1)010(2)0800 | 3.3  | 6                            | 0.80  | 0.43                                       |  |
| 47  | B         | TH3B476(1)010(2)1800 | 4.7  | 6                            | 1.80  | 0.22                                       |  |
| 47  | C         | TH3C476(1)010(2)0800 | 4.7  | 6                            | 0.80  | 0.37                                       |  |
| 47  | C         | TH3C476(1)010(2)0500 | 4.7  | 6                            | 0.50  | 0.47                                       |  |
| 47  | D         | TH3D476(1)010(2)0600 | 4.7  | 6                            | 0.60  | 0.50                                       |  |
| 68  | C         | TH3C686(1)010(2)1000 | 6.8  | 8                            | 1.00  | 0.33                                       |  |
| 68  | C         | TH3C686(1)010(2)0800 | 6.8  | 8                            | 0.80  | 0.37                                       |  |
| 68  | D         | TH3D686(1)010(2)1000 | 6.8  | 6                            | 1.00  | 0.39                                       |  |
| 68  | D         | TH3D686(1)010(2)0600 | 6.8  | 6                            | 0.60  | 0.50                                       |  |
| 68  | D         | TH3D686(1)010(2)0400 | 6.8  | 6                            | 0.40  | 0.61                                       |  |
| 100   | C         | TH3C107(1)010(2)0900 | 10.0   | 6                            | 0.90  | 0.35                                       |  |
| 100   | C         | TH3C107(1)010(2)0500 | 10.0   | 6                            | 0.50  | 0.47                                       |  |
| 100   | D         | TH3D107(1)010(2)0600 | 10.0   | 8                            | 0.60  | 0.50                                       |  |
| 150   | D         | TH3D157(1)010(2)0600 | 15.0   | 8                            | 0.60  | 0.50                                       |  |
| 220   | E         | TH3E227(1)010(2)0500 | 22.0   | 8                            | 0.50  | 0.61                                       |  |

**Note**

- Part number definitions:
  - Capacitance tolerance: K, M
  - Termination and packaging: C, D, E, F
  - Termination and packaging: A, B, C, D, E, F



| STANDARD RATINGS  |           |                      |  |                              |   |  |
|---|-----------|----------------------|--|------------------------------|---|--|
| 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>(%) | MAX. ESR<br>AT + 25 °C<br>100 kHz<br>( $\Omega$ ) | MAX. RIPPLE<br>100 kHz<br>$I_{RMS}$<br>(A) |
| <b>16 V<sub>DC</sub> AT + 85 °C; 10 V<sub>DC</sub> AT + 125 °C; 8 V<sub>DC</sub> AT + 150 °C</b>  |           |                      |  |                              |   |  |
| 1.0   | A         | TH3A105(1)016(2)6500 | 0.5  | 4                            | 6.50  | 0.11                                       |
| 2.2   | A         | TH3A225(1)016(2)4300 | 0.5  | 6                            | 4.30  | 0.13                                       |
| 3.3   | A         | TH3A335(1)016(2)3400 | 0.5  | 6                            | 3.40  | 0.15                                       |
| 3.3   | B         | TH3B335(1)016(2)3000 | 0.5  | 6                            | 3.00  | 0.17                                       |
| 4.7   | A         | TH3A475(1)016(2)2900 | 0.8  | 6                            | 2.90  | 0.16                                       |
| 4.7   | B         | TH3B475(1)016(2)2100 | 0.8  | 6                            | 2.10  | 0.2  |
| 6.8   | A         | TH3A685(1)016(2)2600 | 1.1  | 6                            | 2.60  | 0.17                                       |
| 6.8   | A         | TH3A685(1)016(2)2000 | 1.1  | 6                            | 2.00  | 0.19                                       |
| 6.8   | B         | TH3B685(1)016(2)1800 | 1.1  | 6                            | 1.80  | 0.22                                       |
| 6.8   | C         | TH3C685(1)016(2)1700 | 1.1  | 6                            | 1.70  | 0.25                                       |
| 10  | B         | TH3B106(1)016(2)2000 | 1.6  | 6                            | 2.00  | 0.21                                       |
| 10  | C         | TH3C106(1)016(2)1400 | 1.6  | 6                            | 1.40  | 0.28                                       |
| 15  | B         | TH3B156(1)016(2)2000 | 2.4  | 6                            | 2.00  | 0.21                                       |
| 15  | C         | TH3C156(1)016(2)1000 | 2.4  | 6                            | 1.00  | 0.33                                       |
| 22  | B         | TH3B226(1)016(2)1900 | 3.5  | 6                            | 1.90  | 0.21                                       |
| 22  | C         | TH3C226(1)016(2)1000 | 3.5  | 6                            | 1.00  | 0.33                                       |
| 22  | D         | TH3D226(1)016(3)0800 | 3.5  | 6                            | 0.80  | 0.43                                       |
| 33  | C         | TH3C336(1)016(2)0900 | 5.3  | 6                            | 0.90  | 0.35                                       |
| 33  | C         | TH3C336(1)016(2)0600 | 5.3  | 6                            | 0.60  | 0.43                                       |
| 33  | D         | TH3D336(1)016(3)0600 | 5.3  | 6                            | 0.60  | 0.50                                       |
| 47  | C         | TH3C476(1)016(2)0800 | 7.5  | 6                            | 0.80  | 0.37                                       |
| 47  | C         | TH3C476(1)016(2)0600 | 7.5  | 6                            | 0.60  | 0.43                                       |
| 47  | D         | TH3D476(1)016(3)0600 | 7.5  | 6                            | 0.60  | 0.43                                       |
| 68  | D         | TH3D686(1)016(3)0600 | 10.9   | 6                            | 0.60  | 0.50                                       |
| 100   | D         | TH3D107(1)016(3)0600 | 16.0   | 8                            | 0.60  | 0.50                                       |
| 100   | E         | TH3E107(1)016(3)0600 | 16.0   | 8                            | 0.60  | 0.56                                       |
| 100   | E         | TH3E107(1)016(3)0150 | 16.0   | 8                            | 0.15  | 1.11                                       |
| <b>20 V<sub>DC</sub> AT + 85 °C; 13 V<sub>DC</sub> AT + 125 °C; 10 V<sub>DC</sub> AT + 150 °C</b> |           |                      |  |                              |   |  |
| 1.0   | A         | TH3A105(1)020(2)5900 | 0.5  | 4                            | 5.90  | 0.11                                       |
| 2.2   | A         | TH3A225(1)020(2)5900 | 0.5  | 6                            | 5.90  | 0.11                                       |
| 2.2   | B         | TH3B225(1)020(2)3500 | 0.5  | 6                            | 3.50  | 0.16                                       |
| 3.3   | B         | TH3B335(1)020(2)2700 | 0.7  | 6                            | 2.70  | 0.18                                       |
| 3.3   | C         | TH3C335(1)020(2)2700 | 0.7  | 6                            | 2.70  | 0.20                                       |
| 4.7   | A         | TH3A475(1)020(2)5000 | 0.9  | 6                            | 5.00  | 0.12                                       |
| 4.7   | B         | TH3B475(1)020(2)1900 | 0.9  | 6                            | 2.90  | 0.17                                       |
| 4.7   | B         | TH3B475(1)020(2)2900 | 0.9  | 6                            | 1.90  | 0.21                                       |
| 4.7   | C         | TH3C475(1)020(2)1700 | 0.9  | 6                            | 1.70  | 0.25                                       |
| 10  | C         | TH3C106(1)020(2)1100 | 2.0  | 6                            | 1.10  | 0.32                                       |
| 15  | B         | TH3B156(1)020(2)2000 | 3.0  | 6                            | 2.00  | 0.21                                       |
| 15  | C         | TH3C156(1)020(2)1000 | 3.0  | 6                            | 1.00  | 0.33                                       |
| 15  | D         | TH3D156(1)020(2)0900 | 3.0  | 6                            | 0.90  | 0.41                                       |
| 22  | C         | TH3C226(1)020(2)1000 | 4.4  | 6                            | 1.00  | 0.33                                       |
| 22  | D         | TH3D226(1)020(2)0700 | 4.4  | 6                            | 0.70  | 0.46                                       |
| 33  | D         | TH3D336(1)020(2)0600 | 6.6  | 6                            | 0.60  | 0.5  |
| 47  | D         | TH3D476(1)020(2)0700 | 9.4  | 6                            | 0.70  | 0.46                                       |
| 47  | E         | TH3E476(1)020(2)0600 | 9.4  | 8                            | 0.60  | 0.56                                       |
| 68  | E         | TH3E686(1)020(2)0600 | 13.6   | 8                            | 0.60  | 0.56                                       |

**Note**

- Part number definitions:
  - Capacitance tolerance: K, M
  - Termination and packaging: C, D, E, F
  - Termination and packaging: A, B, C, D, E, F

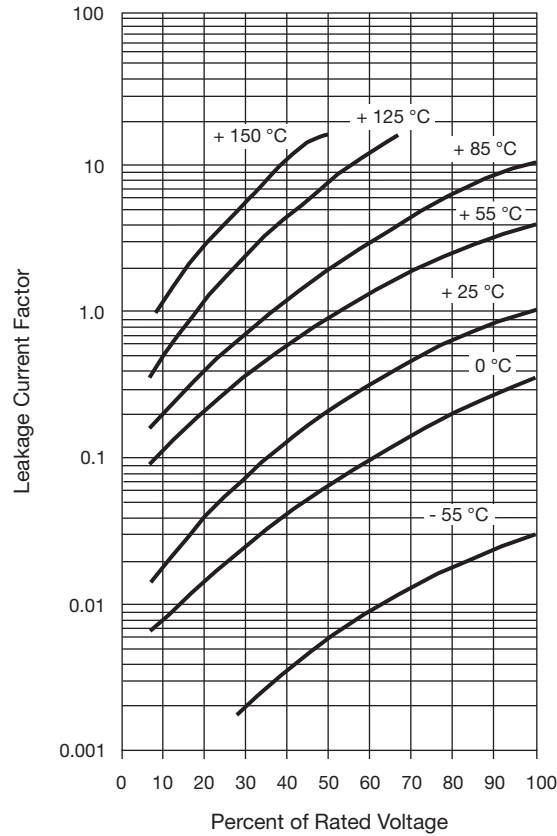


| STANDARD RATINGS  |           |                      |  |                              |   |  |
|---|-----------|----------------------|--|------------------------------|---|--|
| CAPACITANCE<br>( $\mu$ F)   | CASE CODE | PART NUMBER          | MAX. DC<br>LEAKAGE<br>AT + 25 °C<br>( $\mu$ A) | MAX. DF<br>AT + 25 °C<br>(%) | MAX. ESR<br>AT + 25 °C<br>100 kHz<br>( $\Omega$ ) | MAX. RIPPLE<br>100 kHz<br>$I_{RMS}$<br>(A) |
| <b>25 V<sub>DC</sub> AT + 85 °C; 17 V<sub>DC</sub> AT + 125 °C; 12.5 V<sub>DC</sub> AT + 150 °C</b> |           |                      |  |                              |   |  |
| 0.47  | A         | TH3A474(1)025(2)14R0 | 0.5  | 4                            | 14.00   | 0.073                                      |
| 1.0   | A         | TH3A105(1)025(2)5200 | 0.5  | 4                            | 5.20  | 0.12                                       |
| 1.0   | A         | TH3A105(1)025(2)3000 | 0.5  | 4                            | 3.00  | 0.16                                       |
| 1.0   | B         | TH3B105(1)025(2)5000 | 0.5  | 4                            | 5.00  | 0.13                                       |
| 2.2   | A         | TH3A225(1)025(2)5200 | 0.6  | 6                            | 5.20  | 0.12                                       |
| 2.2   | B         | TH3B225(1)025(2)3000 | 0.6  | 6                            | 3.00  | 0.17                                       |
| 3.3   | B         | TH3B335(1)025(2)3000 | 0.8  | 6                            | 3.00  | 0.17                                       |
| 3.3   | C         | TH3C335(1)025(2)2000 | 0.8  | 6                            | 2.00  | 0.23                                       |
| 4.7   | A         | TH3A475(1)025(2)5000 | 1.2  | 6                            | 5.00  | 0.12                                       |
| 4.7   | B         | TH3B475(1)025(2)2800 | 1.2  | 6                            | 2.80  | 0.17                                       |
| 4.7   | C         | TH3C475(1)025(2)1600 | 1.2  | 6                            | 1.60  | 0.26                                       |
| 6.8   | B         | TH3B685(1)025(2)2400 | 1.7  | 6                            | 2.40  | 0.19                                       |
| 6.8   | C         | TH3C685(1)025(2)1400 | 1.7  | 6                            | 1.40  | 0.28                                       |
| 10  | C         | TH3C106(1)025(2)1100 | 2.5  | 6                            | 1.10  | 0.32                                       |
| 10  | D         | TH3D106(1)025(2)0900 | 2.5  | 6                            | 0.90  | 0.41                                       |
| 15  | B         | TH3B156(1)025(2)2000 | 3.8  | 6                            | 2.00  | 0.21                                       |
| 15  | B         | TH3B156(1)025(2)1400 | 3.8  | 6                            | 1.40  | 0.25                                       |
| 15  | C         | TH3C156(1)025(2)1200 | 3.8  | 6                            | 1.20  | 0.30                                       |
| 15  | D         | TH3D156(1)025(2)0700 | 3.8  | 6                            | 0.70  | 0.46                                       |
| 22  | D         | TH3D226(1)025(2)0600 | 5.5  | 6                            | 0.60  | 0.50                                       |
| 33  | D         | TH3D336(1)025(2)0500 | 8.3  | 6                            | 0.50  | 0.55                                       |
| 47  | E         | TH3E476(1)025(2)0600 | 11.8   | 6                            | 0.60  | 0.56                                       |
| <b>35 V<sub>DC</sub> AT + 85 °C; 23 V<sub>DC</sub> AT + 125 °C; 17.5 V<sub>DC</sub> AT + 150 °C</b> |           |                      |  |                              |   |  |
| 0.33  | A         | TH3A334(1)035(2)11R0 | 0.5  | 4                            | 11.00   | 0.08                                       |
| 1.0   | A         | TH3A105(1)035(2)6600 | 0.5  | 4                            | 6.60  | 0.11                                       |
| 1.0   | B         | TH3B105(1)035(2)4400 | 0.5  | 4                            | 4.40  | 0.14                                       |
| 1.5   | B         | TH3B155(1)035(2)4200 | 0.5  | 6                            | 4.20  | 0.14                                       |
| 1.5   | C         | TH3C155(1)035(2)3300 | 0.5  | 6                            | 3.30  | 0.18                                       |
| 2.2   | B         | TH3B225(1)035(2)2500 | 0.8  | 6                            | 2.50  | 0.18                                       |
| 2.2   | C         | TH3C225(1)035(2)2200 | 0.8  | 6                            | 2.20  | 0.22                                       |
| 3.3   | B         | TH3B335(1)035(2)3500 | 1.2  | 6                            | 3.50  | 0.16                                       |
| 3.3   | B         | TH3B335(1)035(2)2500 | 1.2  | 6                            | 2.50  | 0.18                                       |
| 3.3   | C         | TH3C335(1)035(2)1700 | 1.2  | 6                            | 1.70  | 0.25                                       |
| 4.7   | B         | TH3B475(1)035(2)3100 | 1.7  | 6                            | 3.10  | 0.17                                       |
| 4.7   | C         | TH3C475(1)035(2)1300 | 1.6  | 6                            | 1.30  | 0.29                                       |
| 4.7   | D         | TH3D475(1)035(2)1000 | 1.6  | 6                            | 1.00  | 0.39                                       |
| 6.8   | C         | TH3C685(1)035(2)1800 | 2.4  | 6                            | 1.80  | 0.25                                       |
| 6.8   | D         | TH3D685(1)035(2)0900 | 2.4  | 6                            | 0.90  | 0.41                                       |
| 10  | C         | TH3C106(1)035(2)1600 | 3.5  | 6                            | 1.60  | 0.26                                       |
| 10  | D         | TH3D106(1)035(2)0700 | 3.5  | 6                            | 0.70  | 0.46                                       |
| 10  | D         | TH3D106(1)035(2)0300 | 3.5  | 6                            | 0.30  | 0.71                                       |
| 15  | D         | TH3D156(1)035(2)0700 | 5.3  | 6                            | 0.70  | 0.46                                       |
| 22  | D         | TH3D226(1)035(2)0600 | 7.7  | 6                            | 0.60  | 0.50                                       |
| 22  | D         | TH3D226(1)035(2)0300 | 7.7  | 6                            | 0.30  | 0.71                                       |
| 22  | E         | TH3E226(1)035(2)0500 | 7.7  | 6                            | 0.50  | 0.61                                       |
| <b>50 V<sub>DC</sub> AT + 85 °C; 33 V<sub>DC</sub> AT + 125 °C; 25 V<sub>DC</sub> AT + 150 °C</b>   |           |                      |  |                              |   |  |
| 1.0   | C         | TH3C105(1)050(2)3300 | 0.5  | 4                            | 3.30  | 0.18                                       |
| 3.3   | D         | TH3D335(1)050(2)1700 | 1.7  | 6                            | 1.70  | 0.30                                       |
| 4.7   | C         | TH3C475(1)050(2)1500 | 2.4  | 6                            | 1.50  | 0.27                                       |
| 4.7   | D         | TH3D475(1)050(2)0900 | 2.4  | 6                            | 0.90  | 0.41                                       |
| 6.8   | D         | TH3D685(1)050(2)0900 | 3.4  | 6                            | 0.90  | 0.41                                       |
| 10  | D         | TH3D106(1)050(2)0800 | 5.0  | 6                            | 0.80  | 0.43                                       |
| 10  | E         | TH3E106(1)050(2)0500 | 5.0  | 6                            | 0.50  | 0.61                                       |

**Note**

- Part number definitions:
  - (1) Capacitance tolerance: K, M
  - (2) Termination and packaging: C, D, E, F
  - (3) Termination and packaging: A, B, C, D, E, F

**TYPICAL LEAKAGE CURRENT FACTOR**



**Note**

- At + 25 °C, the leakage current shall not exceed the value listed in the Standard Ratings table.
- At + 85 °C, the leakage current shall not exceed 10 times the value listed in the Standard Ratings table.
- At + 125 °C, the leakage current shall not exceed 12 times the value listed in the Standard Ratings table.
- At + 150 °C, the leakage current shall not exceed 15 times the value listed in the Standard Ratings table.

**RECOMMENDED VOLTAGE DERATING GUIDELINES (for temperatures below + 85 °C)**

**STANDARD CONDITIONS. FOR EXAMPLE: OUTPUT FILTERS**

| Capacitor Voltage Rating | Operating Voltage |
|--------------------------|-------------------|
| 6.3                      | 3.6               |
| 10                       | 6.0               |
| 16                       | 10                |
| 20                       | 12                |
| 25                       | 15                |
| 35                       | 24                |
| 50                       | 28                |

**SEVERE CONDITIONS. FOR EXAMPLE: INPUT FILTERS**

| Capacitor Voltage Rating | Operating Voltage |
|--------------------------|-------------------|
| 6.3                      | 3.3               |
| 10                       | 5.0               |
| 16                       | 8.0               |
| 20                       | 10                |
| 25                       | 12                |
| 35                       | 15                |
| 50                       | 24                |



| POWER DISSIPATION |  |
|-------------------|--|
| CASE CODE         | MAXIMUM PERMISSIBLE POWER DISSIPATION AT + 25 °C (W) IN FREE AIR |
| A                 | 0.075  |
| B                 | 0.085  |
| C                 | 0.110  |
| D                 | 0.150  |
| E                 | 0.165  |

| STANDARD PACKAGING QUANTITY |                |          |
|-----------------------------|----------------|----------|
| CASE CODE                   | UNITS PER REEL |          |
|                             | 7" REEL        | 13" REEL |
| A                           | 2000           | 9000     |
| B                           | 2000           | 8000     |
| C                           | 500            | 3000     |
| D                           | 500            | 2500     |
| E                           | 400            | 1500     |

| PRODUCT INFORMATION                  |  |
|--------------------------------------|--|
| Guide for Molded Tantalum Capacitors | <a href="http://www.vishay.com/doc?40074">www.vishay.com/doc?40074</a> |
| Pad Dimensions                       |  |
| Package Dimensions                   |  |
| Moisture Sensitivity                 | <a href="http://www.vishay.com/doc?40135">www.vishay.com/doc?40135</a> |
| SELECTOR GUIDES                      |  |
| Solid Tantalum Selector Guide        | <a href="http://www.vishay.com/doc?49053">www.vishay.com/doc?49053</a> |
| Solid Tantalum Chip Capacitors       | <a href="http://www.vishay.com/doc?40091">www.vishay.com/doc?40091</a> |
| FAQ                                  |  |
| Frequently Asked Questions           | <a href="http://www.vishay.com/doc?40110">www.vishay.com/doc?40110</a> |



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