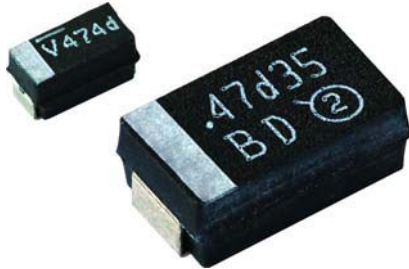


## Solid Tantalum Surface Mount, TANTAMOUNT<sup>®</sup>, Molded Case, Very Low DCL


**FEATURES**

- Terminations: 100 % matte tin and tin/lead
- Molded case available in five case codes
- Compatible with “High Volume” automatic pick and place equipment
- 100 % surge current tested (B, C, D and E case sizes)
- Improved reliability: 0.50 %/1000 h, 85 °C, rated voltage
- Standard EIA 535BAAC case size (A through E)
- DC leakage at 0.005 CV
- Low ESR options
- Mounting: Surface mount
- Compliant to RoHS Directive 2011/65/EU
- Halogen-free according to IEC 61249-2-21 definition
- Moisture sensitivity level 1


**RoHS\***  
COMPLIANT

 HALOGEN  
**FREE**  
Available

**Note**

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

**PERFORMANCE/ELECTRICAL CHARACTERISTICS**
[www.vishay.com/doc?40088](http://www.vishay.com/doc?40088)

**Operating Temperature:** - 55 °C to + 125 °C  
(above 85 °C voltage derating is required)

**Capacitance Range:** 0.1 µF to 470 µF

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

**Voltage Rating:** 4 V to 50 V

| <b>ORDERING INFORMATION</b> |                                   |  |                          |  |  |  |
|-----------------------------|-----------------------------------|--|--------------------------|--|--|--|
| TL3                         | D                                 | 107  | K                        | 010  | C  | 0100                                       |
| 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 significant figures. The third is the number of zeros to follow. | K = ± 10 %<br>M = ± 20 % | 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 V). | 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 100 kHz ESR in mΩ. See note below. |

**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.
- The EIA and CECC standards for low ESR solid tantalum chip capacitors, allow delta ESR of 1.25 times the datasheet limit after mounting.
- Dry pack is available per request, contact regional marketing.

| <b>DIMENSIONS</b> 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] | 0.169 ± 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]  | 0.094 ± 0.004<br>[2.4 ± 0.10] | 0.039<br>[1.0]  |
| E   | 7343-43  | 0.287 ± 0.012<br>[7.3 ± 0.30] | 0.169 ± 0.012<br>[4.3 ± 0.30] | 0.157 ± 0.012<br>[4.0 ± 0.30] | 0.051 ± 0.012<br>[1.3 ± 0.30]  | 0.094 ± 0.004<br>[2.4 ± 0.10] | 0.039<br>[1.0]  |



| RATINGS AND CASE CODES |                                    |  |  |   |  |  |                                    |                                      |
|------------------------|------------------------------------|--|--|---|--|--|------------------------------------|--------------------------------------|
| μF                     | 4 V                                | 6.3 V  | 10 V   | 16 V  | 20 V   | 25 V   | 35 V                               | 50 V                                 |
| 0.10                   |                                    |  |  |   |  |  | A (20.00, 10.00)                   | A (19.00, 10.00)                     |
| 0.15                   |                                    |  |  |   |  |  | A (18.00, 6.00)                    | A (17.00, 10.00)/<br>B (14.00, 9.00) |
| 0.22                   |                                    |  |  |   |  |  | A (15.00, 6.00)                    | B (12.00, 8.50)                      |
| 0.33                   |                                    |  |  |   |  | A (14.00, 10.00)                                     | A (13.00, 6.00)                    | B (10.00, 4.50)                      |
| 0.47                   |                                    |  |  |   | A (12.00, 9.00)                                      | A (12.00, 9.00)                                      | A (10.00, 4.00)/<br>B (8.00, 2.50) | B (8.40, 4.00)/<br>C (6.70, 1.80)    |
| 0.68                   |                                    |  |  | A (11.00, 8.00)                                       | A (10.00, 8.00)                                      | B (7.00, 5.00)                                       | B (6.50, 2.50)                     | C (5.90, 1.60)                       |
| 1.0                    |                                    |  | A (9.30, 6.00)                                       | A (9.30, 6.00)  | A (8.40, 5.50)                                       | A (7.60, 4.00)/<br>B (5.00, 2.00)                    | A (7.50, 6.00)/<br>B (5.00, 2.00)  | B (6.70, 2.00)/<br>C (4.60, 1.60)    |
| 1.5                    |                                    | A (8.00, 6.00)                                       | A (8.00, 6.00)                                       | A (8.00, 6.00)  | B (4.60, 2.50)                                       | B (4.60, 2.00)                                       | B (4.20, 3.00)/<br>C (3.80, 1.50)  | C (3.40, 1.50)/<br>D (2.90, 1.00)    |
| 2.2                    | A (7.60, 6.00)                     | A (7.60, 6.00)                                       |  | B (4.60, 2.50)  | A (5.90, 4.00)/<br>B (3.50, 1.50)                    | A (6.30, 4.00)/<br>B (3.80, 2.30)/<br>C (2.90, 1.00) | B (3.80, 2.30)/<br>C (2.90, 0.90)  | C (2.90, 1.50)/<br>D (2.10, 0.80)    |
| 3.3                    | A (7.60, 4.00)                     | A (6.30, 5.00)                                       | B (3.50, 2.50)                                       | B (3.50, 2.00)  | B (3.00, 1.30)                                       | B (3.10, 1.50)/<br>C (2.30, 1.00)                    | B (3.50, 1.50)/<br>C (2.10, 0.70)  | D (1.70, 0.80)                       |
| 4.7                    | A (6.30, 3.50)                     | A (5.50, 3.50)/<br>B (3.40, 1.80)                    | A (5.00, 3.00)/<br>B (3.40, 1.50)                    | A (3.50, 2.50)/<br>B (2.90, 1.50)                     | A (5.50, 3.50)/<br>B (2.90, 1.00)/<br>C (2.30, 0.60) | B (2.80, 1.50)/<br>C (2.0, 0.525)                    | C (1.90, 0.60)/<br>D (1.30, 0.60)  | D (1.20, 0.60)                       |
| 6.8                    | B (4.50, 2.00)                     | B (3.40, 1.20)                                       | B (2.90, 1.20)                                       | C (1.90, 0.60)  | C (1.90, 0.55)                                       | C (1.70, 0.50)/<br>D (1.20, 0.35)                    | C (1.80, 0.900)/<br>D (1.10, 0.30) | E (0.90, 0.54)                       |
| 10                     | B (3.50, 1.20)                     | B (2.90, 1.00)                                       | A (3.40, 2.00)/<br>C (1.80, 0.55)                    | A (3.00, 1.70)/<br>B (2.80, 0.80)/<br>C (1.80, 0.45)  | B (2.50, 1.00)/<br>C (1.70, 0.45)                    | B (2.30, 1.30)/<br>C (1.50, 0.45)/<br>D (1.00, 0.30) | C (1.60, 0.85)/<br>D (0.80, 0.30)  | E (0.80, 0.55)                       |
| 15                     | B (2.90, 1.20)                     | C (1.80, 0.60)                                       | A (2.90, 2.00)/<br>C (1.80, 0.50)                    | B (2.00, 0.80)  | D (0.90, 0.30)                                       | C (1.20, 0.425)/<br>D (0.80, 0.25)                   | D (0.80, 0.30)                     |                                      |
| 22                     |                                    | A (2.90, 2.00)/<br>C (1.80, 0.60)                    | A (2.50, 1.50)                                       | B (1.90, 1.00)/<br>D (0.80, 0.25)                     | C (1.20, 0.375)/<br>D (0.70, 0.225)                  | D (0.70, 0.20)                                       | D (0.70, 0.40)/<br>E (0.60, 0.300) |                                      |
| 33                     | A (2.90, 1.50)/<br>C (1.80, 0.50)  | B (1.90, 0.60)/<br>C (1.50, 0.40)                    | B (1.90, 0.60)/<br>C (1.40, 0.35)/<br>D (0.80, 0.25) | B (1.80, 0.50)/<br>C (1.10, 0.30)/<br>D (0.70, 0.225) | D (0.70, 0.20)                                       | D (0.70, 0.30)/<br>E (0.60, 0.20)                    |                                    |                                      |
| 47                     | B (2.50, 0.60)/<br>C (1.80, 0.40)  | B (2.00, 0.55)/<br>C (1.40, 0.30)/<br>D (0.80, 0.20) | B (1.80, 0.60)/<br>C (1.10, 0.30)/<br>D (0.70, 0.20) | C (1.00, 0.30)/<br>D (0.70, 0.15)                     | D (0.70, 0.20)/<br>E (0.60, 0.15)                    | D (0.70, 0.35)/<br>E (0.60, 0.30)                    |                                    |                                      |
| 68                     | D (0.80, 0.175)                    | D (0.70, 0.20)                                       | D (0.70, 0.15)                                       | D (0.60, 0.15)  | D (0.70, 0.175)/<br>E (0.60, 0.15)                   |  |                                    |                                      |
| 100                    | B (1.80, 0.45)/<br>D (0.70, 0.175) | B (1.70, 0.70)/<br>D (0.70, 0.14)                    | C (0.90, 0.20)/<br>D (0.60, 0.10)                    | D (0.60, 0.125)/<br>E (0.60, 0.10)                    | E (0.50, 0.15)                                       |  |                                    |                                      |
| 150                    | D (0.60, 0.15)                     | D (0.60, 0.125)/<br>E (0.50, 0.10)                   | D (0.60, 0.10)                                       | E (0.50, 0.15)  |  |  |                                    |                                      |
| 220                    |                                    | C (0.70, 0.30)/<br>D (0.60, 0.10)/<br>E (0.50, 0.10) | D (0.60, 0.36)/<br>E (0.50, 0.10)                    |   |  |  |                                    |                                      |
| 330                    | E (0.50, 0.10)                     | E (0.50, 0.10)                                       | E (0.50, 0.10)                                       |   |  |  |                                    |                                      |
| 470                    |                                    |  | E (0.50, 0.20)                                       |   |  |  |                                    |                                      |

| MARKING   |                                |             |
|---|--------------------------------|-------------|
| <p><b>A Case</b></p>  | <b>"A" CASE VOLTAGE CODE</b>   |             |
|   | <b>VOLTS</b>                   | <b>CODE</b> |
|   | 4.0                            | G           |
|   | 6.3                            | J           |
|   | 10                             | A           |
|   | 16                             | C           |
|   | 20                             | D           |
| 25  | E                              |             |
| 35  | V                              |             |
| 50  | T                              |             |
|   | <p><b>B, C, D, E Cases</b></p> |             |
| <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>(μF)  | CASE CODE | PART NUMBER          | MAX. DC<br>LEAKAGE<br>AT + 25 °C<br>(μA) | MAX. DF<br>AT + 25 °C<br>120 Hz<br>(%) | MAX. ESR<br>AT + 25 °C<br>100 kHz<br>(Ω) | MAX. RIPPLE<br>100 kHz<br>I <sub>RMS</sub><br>(A) |  |
| <b>4 V<sub>DC</sub> AT + 85 °C; 2.7 V<sub>DC</sub> AT + 125 °C</b> |           |                      |  |  |  |   |  |
| 2.2  | A         | TL3A225(1)004(2)7600 | 0.25                                     | 6                                      | 7.600                                    | 0.10  |  |
| 2.2  | A         | TL3A225(1)004(2)6000 | 0.25                                     | 6                                      | 6.000                                    | 0.11  |  |
| 3.3  | A         | TL3A335(1)004(2)7600 | 0.25                                     | 6                                      | 7.600                                    | 0.10  |  |
| 3.3  | A         | TL3A335(1)004(2)4000 | 0.25                                     | 6                                      | 4.000                                    | 0.14  |  |
| 4.7  | A         | TL3A475(1)004(2)6300 | 0.25                                     | 6                                      | 6.300                                    | 0.11  |  |
| 4.7  | A         | TL3A475(1)004(2)3500 | 0.25                                     | 6                                      | 3.500                                    | 0.15  |  |
| 6.8  | B         | TL3B685(1)004(2)4500 | 0.25                                     | 6                                      | 4.500                                    | 0.14  |  |
| 6.8  | B         | TL3B685(1)004(2)2000 | 0.25                                     | 6                                      | 2.000                                    | 0.20  |  |
| 10   | B         | TL3B106(1)004(2)3500 | 0.25                                     | 6                                      | 3.500                                    | 0.16  |  |
| 10   | B         | TL3B106(1)004(2)1200 | 0.25                                     | 6                                      | 1.200                                    | 0.27  |  |
| 15   | B         | TL3B156(1)004(2)2900 | 0.30                                     | 6                                      | 2.900                                    | 0.17  |  |
| 15   | B         | TL3B156(1)004(2)1200 | 0.30                                     | 6                                      | 1.200                                    | 0.27  |  |
| 33   | A         | TL3A336(1)004(2)2900 | 0.66                                     | 6                                      | 2.900                                    | 0.16  |  |
| 33   | A         | TL3A336(1)004(2)1500 | 0.66                                     | 6                                      | 1.500                                    | 0.22  |  |
| 33   | C         | TL3C336(1)004(2)1800 | 0.66                                     | 6                                      | 1.800                                    | 0.25  |  |
| 33   | C         | TL3C336(1)004(2)0500 | 0.66                                     | 6                                      | 0.500                                    | 0.47  |  |
| 47   | B         | TL3B476(1)004(2)2500 | 0.94                                     | 6                                      | 2.500                                    | 0.18  |  |
| 47   | B         | TL3B476(1)004(2)0600 | 0.94                                     | 6                                      | 0.600                                    | 0.38  |  |
| 47   | C         | TL3C476(1)004(2)1800 | 0.94                                     | 6                                      | 1.800                                    | 0.25  |  |
| 47   | C         | TL3C476(1)004(2)0400 | 0.94                                     | 6                                      | 0.400                                    | 0.52  |  |
| 68   | D         | TL3D686(1)004(2)0800 | 1.36                                     | 6                                      | 0.800                                    | 0.43  |  |
| 68   | D         | TL3D686(1)004(2)0175 | 1.36                                     | 6                                      | 0.175                                    | 0.93  |  |
| 100  | B         | TL3B107(1)004(2)1800 | 2.00                                     | 6                                      | 1.800                                    | 0.22  |  |
| 100  | B         | TL3B107(1)004(2)0450 | 2.00                                     | 6                                      | 0.450                                    | 0.43  |  |
| 100  | D         | TL3D107(1)004(2)0700 | 2.00                                     | 6                                      | 0.700                                    | 0.46  |  |
| 100  | D         | TL3D107(1)004(2)0175 | 2.00                                     | 6                                      | 0.175                                    | 0.93  |  |
| 150  | D         | TL3D157(1)004(2)0600 | 3.00                                     | 8                                      | 0.600                                    | 0.50  |  |
| 150  | D         | TL3D157(1)004(2)0150 | 3.00                                     | 8                                      | 0.150                                    | 1.00  |  |
| 330  | E         | TL3E337(1)004(2)0500 | 6.60                                     | 8                                      | 0.500                                    | 0.57  |  |
| 330  | E         | TL3E337(1)004(2)0100 | 6.60                                     | 8                                      | 0.100                                    | 1.28  |  |

**Note**

- Part number definitions:
  - Capacitance tolerance: K, M
  - Termination and packaging: 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>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 V<sub>DC</sub> AT + 85 °C; 4 V<sub>DC</sub> AT + 125 °C</b> |           |                      |  |  |   |  |
| 1.5  | A         | TL3A155(1)6R3(2)8000 | 0.25   | 6                                      | 8.000   | 0.10                                       |
| 1.5  | A         | TL3A155(1)6R3(2)6000 | 0.25   | 6                                      | 6.000   | 0.11                                       |
| 2.2  | A         | TL3A225(1)6R3(2)7600 | 0.25   | 6                                      | 7.600   | 0.10                                       |
| 2.2  | A         | TL3A225(1)6R3(2)6000 | 0.25   | 6                                      | 6.000   | 0.11                                       |
| 3.3  | A         | TL3A335(1)6R3(2)6300 | 0.25   | 6                                      | 6.300   | 0.11                                       |
| 3.3  | A         | TL3A335(1)6R3(2)5000 | 0.25   | 6                                      | 5.000   | 0.12                                       |
| 4.7  | A         | TL3A475(1)6R3(2)5500 | 0.25   | 6                                      | 5.500   | 0.12                                       |
| 4.7  | A         | TL3A475(1)6R3(2)3500 | 0.25   | 6                                      | 3.500   | 0.15                                       |
| 4.7  | B         | TL3B475(1)6R3(2)3400 | 0.25   | 6                                      | 3.400   | 0.16                                       |
| 4.7  | B         | TL3B475(1)6R3(2)1800 | 0.25   | 6                                      | 1.800   | 0.22                                       |
| 6.8  | B         | TL3B685(1)6R3(2)3400 | 0.25   | 6                                      | 3.400   | 0.16                                       |
| 6.8  | B         | TL3B685(1)6R3(2)1200 | 0.25   | 6                                      | 1.200   | 0.27                                       |
| 10   | B         | TL3B106(1)6R3(2)2900 | 0.30   | 6                                      | 2.900   | 0.17                                       |
| 10   | B         | TL3B106(1)6R3(2)1000 | 0.3  | 6                                      | 1.000   | 0.29                                       |
| 15   | C         | TL3C156(1)6R3(2)1800 | 0.45   | 6                                      | 1.800   | 0.25                                       |
| 15   | C         | TL3C156(1)6R3(2)0600 | 0.45   | 6                                      | 0.600   | 0.43                                       |
| 22   | A         | TL3A226(1)6R3(2)2900 | 0.66   | 6                                      | 2.900   | 0.16                                       |
| 22   | A         | TL3A226(1)6R3(2)2000 | 0.66   | 6                                      | 2.000   | 0.19                                       |
| 22   | C         | TL3C226(1)6R3(2)1800 | 0.66   | 6                                      | 1.800   | 0.25                                       |
| 22   | C         | TL3C226(1)6R3(2)0600 | 0.66   | 6                                      | 0.600   | 0.43                                       |
| 33   | B         | TL3B336(1)6R3(2)1900 | 0.99   | 6                                      | 1.900   | 0.21                                       |
| 33   | B         | TL3B336(1)6R3(2)0600 | 0.99   | 6                                      | 0.600   | 0.38                                       |
| 33   | C         | TL3C336(1)6R3(2)1500 | 0.99   | 6                                      | 1.500   | 0.27                                       |
| 33   | C         | TL3C336(1)6R3(2)0400 | 0.99   | 6                                      | 0.400   | 0.52                                       |
| 47   | B         | TL3B476(1)6R3(2)2000 | 1.41   | 6                                      | 2.000   | 0.21                                       |
| 47   | B         | TL3B476(1)6R3(2)0550 | 1.41   | 6                                      | 0.550   | 0.39                                       |
| 47   | C         | TL3C476(1)6R3(2)1400 | 1.41   | 6                                      | 1.400   | 0.28                                       |
| 47   | C         | TL3C476(1)6R3(2)0300 | 1.41   | 6                                      | 0.300   | 0.61                                       |
| 47   | D         | TL3D476(1)6R3(2)0800 | 1.41   | 6                                      | 0.800   | 0.43                                       |
| 47   | D         | TL3D476(1)6R3(2)0200 | 1.41   | 6                                      | 0.200   | 0.87                                       |
| 68   | D         | TL3D686(1)6R3(2)0700 | 2.04   | 6                                      | 0.700   | 0.46                                       |
| 68   | D         | TL3D686(1)6R3(2)0200 | 2.04   | 6                                      | 0.200   | 0.87                                       |
| 100  | B         | TL3B107(1)6R3(2)1700 | 3.00   | 15                                     | 1.700   | 0.22                                       |
| 100  | B         | TL3B107(1)6R3(2)0700 | 3.00   | 15                                     | 0.700   | 0.35                                       |
| 100  | D         | TL3D107(1)6R3(2)0700 | 3.00   | 6                                      | 0.700   | 0.46                                       |
| 100  | D         | TL3D107(1)6R3(2)0140 | 3.00   | 6                                      | 0.140   | 1.04                                       |
| 150  | D         | TL3D157(1)6R3(2)0600 | 4.50   | 8                                      | 0.600   | 0.50                                       |
| 150  | D         | TL3D157(1)6R3(2)0125 | 4.50   | 8                                      | 0.125   | 1.10                                       |
| 150  | E         | TL3E157(1)6R3(2)0500 | 4.50   | 8                                      | 0.500   | 0.57                                       |
| 150  | E         | TL3E157(1)6R3(2)0100 | 4.50   | 8                                      | 0.100   | 1.28                                       |
| 220  | C         | TL3C227(1)6R3(2)0700 | 6.60   | 14                                     | 0.700   | 0.40                                       |
| 220  | C         | TL3C227(1)6R3(2)0300 | 6.60   | 14                                     | 0.300   | 0.61                                       |
| 220  | D         | TL3D227(1)6R3(2)0600 | 6.60   | 8                                      | 0.600   | 0.50                                       |
| 220  | D         | TL3D227(1)6R3(2)0100 | 6.60   | 8                                      | 0.100   | 1.22                                       |
| 220  | E         | TL3E227(1)6R3(2)0500 | 6.60   | 8                                      | 0.500   | 0.57                                       |
| 220  | E         | TL3E227(1)6R3(2)0100 | 6.60   | 8                                      | 0.100   | 1.28                                       |
| 330  | E         | TL3E337(1)6R3(2)0500 | 9.90   | 8                                      | 0.500   | 0.57                                       |
| 330  | E         | TL3E337(1)6R3(2)0100 | 9.90   | 8                                      | 0.100   | 1.28                                       |

**Note**

- Part number definitions:
  - Capacitance tolerance: K, M
  - Termination and packaging: 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>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>10 V<sub>DC</sub> AT + 85 °C; 7 V<sub>DC</sub> AT + 125 °C</b> |           |                      |  |  |   |  |
| 1.0   | A         | TL3A105(1)010(2)9300 | 0.25   | 4                                      | 9.300   | 0.09                                       |
| 1.0   | A         | TL3A105(1)010(2)6000 | 0.25   | 4                                      | 6.000   | 0.11                                       |
| 1.5   | A         | TL3A155(1)010(2)8000 | 0.25   | 6                                      | 8.000   | 0.10                                       |
| 1.5   | A         | TL3A155(1)010(2)6000 | 0.25   | 6                                      | 6.000   | 0.11                                       |
| 3.3   | B         | TL3B335(1)010(2)3500 | 0.25   | 6                                      | 3.500   | 0.16                                       |
| 3.3   | B         | TL3B335(1)010(2)2500 | 0.25   | 6                                      | 2.500   | 0.18                                       |
| 4.7   | A         | TL3A475(1)010(2)5000 | 0.25   | 6                                      | 5.000   | 0.12                                       |
| 4.7   | A         | TL3A475(1)010(2)3000 | 0.25   | 6                                      | 3.000   | 0.16                                       |
| 4.7   | B         | TL3B475(1)010(2)3400 | 0.25   | 6                                      | 3.400   | 0.16                                       |
| 4.7   | B         | TL3B475(1)010(2)1500 | 0.25   | 6                                      | 1.500   | 0.24                                       |
| 6.8   | B         | TL3B685(1)010(2)2900 | 0.34   | 6                                      | 2.900   | 0.17                                       |
| 6.8   | B         | TL3B685(1)010(2)1200 | 0.34   | 6                                      | 1.200   | 0.27                                       |
| 10  | A         | TL3A106(1)010(2)3400 | 0.50   | 6                                      | 3.400   | 0.15                                       |
| 10  | A         | TL3A106(1)010(2)2000 | 0.50   | 6                                      | 2.000   | 0.19                                       |
| 10  | C         | TL3C106(1)010(2)1800 | 0.50   | 6                                      | 1.800   | 0.25                                       |
| 10  | C         | TL3C106(1)010(2)0550 | 0.50   | 6                                      | 0.550   | 0.45                                       |
| 15  | A         | TL3A156(1)010(2)2900 | 0.75   | 6                                      | 2.900   | 0.16                                       |
| 15  | A         | TL3A156(1)010(2)2000 | 0.75   | 6                                      | 2.000   | 0.19                                       |
| 15  | C         | TL3C156(1)010(2)1800 | 0.75   | 6                                      | 1.800   | 0.25                                       |
| 15  | C         | TL3C156(1)010(2)0500 | 0.75   | 6                                      | 0.500   | 0.47                                       |
| 22  | A         | TL3A226(1)010(2)2500 | 1.10   | 8                                      | 2.500   | 0.17                                       |
| 22  | A         | TL3A226(1)010(2)1500 | 1.10   | 8                                      | 1.500   | 0.22                                       |
| 33  | B         | TL3B336(1)010(2)1900 | 1.65   | 6                                      | 1.900   | 0.21                                       |
| 33  | B         | TL3B336(1)010(2)0600 | 1.65   | 6                                      | 0.600   | 0.38                                       |
| 33  | C         | TL3C336(1)010(2)1400 | 1.65   | 6                                      | 1.400   | 0.28                                       |
| 33  | C         | TL3C336(1)010(2)0350 | 1.65   | 6                                      | 0.350   | 0.56                                       |
| 33  | D         | TL3D336(1)010(2)0800 | 1.65   | 6                                      | 0.800   | 0.43                                       |
| 33  | D         | TL3D336(1)010(2)0250 | 1.65   | 6                                      | 0.250   | 0.77                                       |
| 47  | B         | TL3B476(1)010(2)1800 | 2.35   | 6                                      | 1.800   | 0.22                                       |
| 47  | B         | TL3B476(1)010(2)0600 | 2.35   | 6                                      | 0.600   | 0.38                                       |
| 47  | C         | TL3C476(1)010(2)1100 | 2.35   | 6                                      | 1.100   | 0.32                                       |
| 47  | C         | TL3C476(1)010(2)0300 | 2.35   | 6                                      | 0.300   | 0.61                                       |
| 47  | D         | TL3D476(1)010(2)0700 | 2.35   | 6                                      | 0.700   | 0.46                                       |
| 47  | D         | TL3D476(1)010(2)0200 | 2.35   | 6                                      | 0.200   | 0.87                                       |
| 68  | D         | TL3D686(1)010(2)0700 | 3.40   | 6                                      | 0.700   | 0.46                                       |
| 68  | D         | TL3D686(1)010(2)0150 | 3.40   | 6                                      | 0.150   | 1.00                                       |
| 100   | C         | TL3C107(1)010(2)0900 | 5.00   | 8                                      | 0.900   | 0.35                                       |
| 100   | C         | TL3C107(1)010(2)0200 | 5.00   | 8                                      | 0.200   | 0.74                                       |
| 100   | D         | TL3D107(1)010(2)0600 | 5.00   | 8                                      | 0.600   | 0.50                                       |
| 100   | D         | TL3D107(1)010(2)0100 | 5.00   | 8                                      | 0.100   | 1.22                                       |
| 150   | D         | TL3D157(1)010(2)0600 | 7.50   | 8                                      | 0.600   | 0.50                                       |
| 150   | D         | TL3D157(1)010(2)0100 | 7.50   | 8                                      | 0.100   | 1.22                                       |
| 220   | D         | TL3D227(1)010(2)0600 | 11.00  | 8                                      | 0.600   | 0.50                                       |
| 220   | D         | TL3D227(1)010(2)0360 | 11.00  | 8                                      | 0.360   | 0.65                                       |
| 220   | E         | TL3E227(1)010(2)0500 | 11.00  | 8                                      | 0.500   | 0.57                                       |
| 220   | E         | TL3E227(1)010(2)0100 | 11.00  | 8                                      | 0.100   | 1.28                                       |
| 330   | E         | TL3E337(1)010(2)0500 | 16.50  | 10                                     | 0.500   | 0.57                                       |
| 330   | E         | TL3E337(1)010(2)0100 | 16.50  | 10                                     | 0.100   | 1.28                                       |
| 470   | E         | TL3E477(1)010(2)0500 | 23.50  | 15                                     | 0.500   | 0.57                                       |
| 470   | E         | TL3E477(1)010(2)0200 | 23.50  | 15                                     | 0.200   | 0.91                                       |

Note

- Part number definitions:
  - (1) Capacitance tolerance: K, M
  - (2) Termination and packaging: 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>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>16 V<sub>DC</sub> AT + 85 °C; 10 V<sub>DC</sub> AT + 125 °C</b> |           |                      |  |  |   |  |
| 0.68   | A         | TL3A684(1)016(2)11R0 | 0.25   | 4                                      | 11.000  | 0.08                                       |
| 0.68   | A         | TL3A684(1)016(2)8000 | 0.25   | 4                                      | 8.000   | 0.10                                       |
| 1.0  | A         | TL3A105(1)016(2)9300 | 0.25   | 4                                      | 9.300   | 0.09                                       |
| 1.0  | A         | TL3A105(1)016(2)6000 | 0.25   | 4                                      | 6.000   | 0.11                                       |
| 1.5  | A         | TL3A155(1)016(2)8000 | 0.25   | 6                                      | 8.000   | 0.10                                       |
| 1.5  | A         | TL3A155(1)016(2)6000 | 0.25   | 6                                      | 6.000   | 0.11                                       |
| 2.2  | B         | TL3B225(1)016(2)4600 | 0.25   | 6                                      | 4.600   | 0.14                                       |
| 2.2  | B         | TL3B225(1)016(2)2500 | 0.25   | 6                                      | 2.500   | 0.18                                       |
| 3.3  | B         | TL3B335(1)016(2)3500 | 0.26   | 6                                      | 3.500   | 0.16                                       |
| 3.3  | B         | TL3B335(1)016(2)2000 | 0.26   | 6                                      | 2.000   | 0.21                                       |
| 4.7  | A         | TL3A475(1)016(2)5000 | 0.38   | 6                                      | 5.000   | 0.12                                       |
| 4.7  | A         | TL3A475(1)016(2)3500 | 0.38   | 6                                      | 3.500   | 0.15                                       |
| 4.7  | B         | TL3B475(1)016(2)2900 | 0.38   | 6                                      | 2.900   | 0.17                                       |
| 4.7  | B         | TL3B475(1)016(2)1500 | 0.38   | 6                                      | 1.500   | 0.24                                       |
| 6.8  | C         | TL3C685(1)016(2)1900 | 0.54   | 6                                      | 1.900   | 0.24                                       |
| 6.8  | C         | TL3C685(1)016(2)0600 | 0.54   | 6                                      | 0.600   | 0.43                                       |
| 10   | A         | TL3A106(1)016(2)3000 | 0.80   | 6                                      | 3.000   | 0.16                                       |
| 10   | A         | TL3A106(1)016(2)1700 | 0.80   | 6                                      | 1.700   | 0.21                                       |
| 10   | B         | TL3B106(1)016(2)2800 | 0.80   | 6                                      | 2.800   | 0.17                                       |
| 10   | B         | TL3B106(1)016(2)0800 | 0.80   | 6                                      | 0.800   | 0.33                                       |
| 10   | C         | TL3C106(1)016(2)1800 | 0.80   | 6                                      | 1.800   | 0.25                                       |
| 10   | C         | TL3C106(1)016(2)0450 | 0.80   | 6                                      | 0.450   | 0.49                                       |
| 15   | B         | TL3B156(1)016(2)2000 | 1.20   | 6                                      | 2.000   | 0.21                                       |
| 15   | B         | TL3B156(1)016(2)0800 | 1.20   | 6                                      | 0.800   | 0.33                                       |
| 22   | B         | TL3B226(1)016(2)1900 | 1.76   | 6                                      | 1.900   | 0.21                                       |
| 22   | B         | TL3B226(1)016(2)1000 | 1.76   | 6                                      | 1.000   | 0.29                                       |
| 22   | D         | TL3D226(1)016(2)0800 | 1.76   | 6                                      | 0.800   | 0.43                                       |
| 22   | D         | TL3D226(1)016(2)0250 | 1.76   | 6                                      | 0.250   | 0.77                                       |
| 33   | B         | TL3B336(1)016(2)1800 | 2.64   | 6                                      | 1.800   | 0.22                                       |
| 33   | B         | TL3B336(1)016(2)0500 | 2.64   | 6                                      | 0.500   | 0.41                                       |
| 33   | C         | TL3C336(1)016(2)1100 | 2.64   | 6                                      | 1.100   | 1.05                                       |
| 33   | C         | TL3C336(1)016(2)0300 | 2.64   | 6                                      | 0.300   | 0.61                                       |
| 33   | D         | TL3D336(1)016(2)0700 | 2.64   | 6                                      | 0.700   | 0.46                                       |
| 33   | D         | TL3D336(1)016(2)0225 | 2.64   | 6                                      | 0.225   | 0.82                                       |
| 47   | C         | TL3C476(1)016(2)1000 | 3.76   | 6                                      | 1.000   | 0.33                                       |
| 47   | C         | TL3C476(1)016(2)0300 | 3.76   | 6                                      | 0.300   | 0.61                                       |
| 47   | D         | TL3D476(1)016(2)0700 | 3.76   | 6                                      | 0.700   | 0.46                                       |
| 47   | D         | TL3D476(1)016(2)0150 | 3.76   | 6                                      | 0.150   | 1.00                                       |
| 68   | D         | TL3D686(1)016(2)0600 | 5.44   | 6                                      | 0.600   | 0.50                                       |
| 68   | D         | TL3D686(1)016(2)0150 | 5.44   | 6                                      | 0.150   | 1.00                                       |
| 100  | D         | TL3D107(1)016(2)0600 | 8.00   | 8                                      | 0.600   | 0.50                                       |
| 100  | D         | TL3D107(1)016(2)0125 | 8.00   | 8                                      | 0.125   | 1.10                                       |
| 100  | E         | TL3E107(1)016(2)0600 | 8.00   | 8                                      | 0.600   | 0.52                                       |
| 100  | E         | TL3E107(1)016(2)0100 | 8.00   | 8                                      | 0.100   | 1.28                                       |
| 150  | E         | TL3E157(1)016(2)0500 | 12.00  | 8                                      | 0.500   | 0.57                                       |
| 150  | E         | TL3E157(1)016(2)0150 | 12.00  | 8                                      | 0.150   | 1.28                                       |

Note

- Part number definitions:
  - (1) Capacitance tolerance: K, M
  - (2) Termination and packaging: 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>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>20 V<sub>DC</sub> AT + 85 °C; 13 V<sub>DC</sub> AT + 125 °C</b> |           |                      |  |  |   |  |
| 0.47   | A         | TL3A474(1)020(2)12R0 | 0.25   | 4                                      | 12.000  | 0.08                                       |
| 0.47   | A         | TL3A474(1)020(2)9000 | 0.25   | 4                                      | 9.000   | 0.09                                       |
| 0.68   | A         | TL3A684(1)020(2)10R0 | 0.25   | 4                                      | 10.000  | 0.09                                       |
| 0.68   | A         | TL3A684(1)020(2)8000 | 0.25   | 4                                      | 8.000   | 0.10                                       |
| 1.0  | A         | TL3A105(1)020(2)8400 | 0.25   | 4                                      | 8.400   | 0.09                                       |
| 1.0  | A         | TL3A105(1)020(2)5500 | 0.25   | 4                                      | 5.500   | 0.12                                       |
| 1.5  | B         | TL3B155(1)020(2)4600 | 0.25   | 6                                      | 4.600   | 0.14                                       |
| 1.5  | B         | TL3B155(1)020(2)2500 | 0.25   | 6                                      | 2.500   | 0.18                                       |
| 2.2  | A         | TL3A225(1)020(2)5900 | 0.25   | 6                                      | 5.900   | 0.11                                       |
| 2.2  | A         | TL3A225(1)020(2)4000 | 0.25   | 6                                      | 4.000   | 0.14                                       |
| 2.2  | B         | TL3B225(1)020(2)3500 | 0.25   | 6                                      | 3.500   | 0.16                                       |
| 2.2  | B         | TL3B225(1)020(2)1500 | 0.25   | 6                                      | 1.500   | 0.24                                       |
| 3.3  | B         | TL3B335(1)020(2)3000 | 0.33   | 6                                      | 3.000   | 0.17                                       |
| 3.3  | B         | TL3B335(1)020(2)1300 | 0.33   | 6                                      | 1.300   | 0.26                                       |
| 4.7  | A         | TL3A475(1)020(2)5500 | 0.47   | 6                                      | 5.500   | 0.12                                       |
| 4.7  | A         | TL3A475(1)020(2)3500 | 0.47   | 6                                      | 3.500   | 0.15                                       |
| 4.7  | B         | TL3B475(1)020(2)2900 | 0.47   | 6                                      | 2.900   | 0.17                                       |
| 4.7  | B         | TL3B475(1)020(2)1000 | 0.47   | 6                                      | 1.000   | 0.29                                       |
| 4.7  | C         | TL3C475(1)020(2)2300 | 0.47   | 6                                      | 2.300   | 0.22                                       |
| 4.7  | C         | TL3C475(1)020(2)0600 | 0.47   | 6                                      | 0.600   | 0.43                                       |
| 6.8  | C         | TL3C685(1)020(2)1900 | 0.68   | 6                                      | 1.900   | 0.24                                       |
| 6.8  | C         | TL3C685(1)020(2)0550 | 0.68   | 6                                      | 0.550   | 0.45                                       |
| 10   | B         | TL3B106(1)020(2)2500 | 1.00   | 6                                      | 2.500   | 0.18                                       |
| 10   | B         | TL3B106(1)020(2)1000 | 1.00   | 6                                      | 1.000   | 0.29                                       |
| 10   | C         | TL3C106(1)020(2)1700 | 1.00   | 6                                      | 1.700   | 0.25                                       |
| 10   | C         | TL3C106(1)020(2)0450 | 1.00   | 6                                      | 0.450   | 0.49                                       |
| 15   | D         | TL3D156(1)020(2)0900 | 1.50   | 6                                      | 0.900   | 0.41                                       |
| 15   | D         | TL3D156(1)020(2)0300 | 1.50   | 6                                      | 0.300   | 0.71                                       |
| 22   | C         | TL3C226(1)020(2)1200 | 2.20   | 6                                      | 1.200   | 0.30                                       |
| 22   | C         | TL3C226(1)020(2)0375 | 2.20   | 6                                      | 0.375   | 0.54                                       |
| 22   | D         | TL3D226(1)020(2)0700 | 2.20   | 6                                      | 0.700   | 0.46                                       |
| 22   | D         | TL3D226(1)020(2)0225 | 2.20   | 6                                      | 0.225   | 0.82                                       |
| 33   | D         | TL3D336(1)020(2)0700 | 3.30   | 6                                      | 0.700   | 0.46                                       |
| 33   | D         | TL3D336(1)020(2)0200 | 3.30   | 6                                      | 0.200   | 0.87                                       |
| 47   | D         | TL3D476(1)020(2)0700 | 4.70   | 6                                      | 0.700   | 0.46                                       |
| 47   | D         | TL3D476(1)020(2)0200 | 4.70   | 6                                      | 0.200   | 0.87                                       |
| 47   | E         | TL3E476(1)020(2)0600 | 4.70   | 6                                      | 0.600   | 0.52                                       |
| 47   | E         | TL3E476(1)020(2)0150 | 4.70   | 6                                      | 0.150   | 1.05                                       |
| 68   | D         | TL3D686(1)020(2)0700 | 6.80   | 6                                      | 0.700   | 0.46                                       |
| 68   | D         | TL3D686(1)020(2)0175 | 6.80   | 6                                      | 0.175   | 0.93                                       |
| 68   | E         | TL3E686(1)020(2)0600 | 6.80   | 6                                      | 0.600   | 0.52                                       |
| 68   | E         | TL3E686(1)020(2)0150 | 6.80   | 6                                      | 0.150   | 1.05                                       |
| 100  | E         | TL3E107(1)020(2)0500 | 10.00  | 8                                      | 0.500   | 0.57                                       |
| 100  | E         | TL3E107(1)020(2)0150 | 10.00  | 8                                      | 0.150   | 1.05                                       |

**Note**

- Part number definitions:
  - Capacitance tolerance: K, M
  - Termination and packaging: 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>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>25 V<sub>DC</sub> AT + 85 °C; 17 V<sub>DC</sub> AT + 125 °C</b> |           |                      |  |  |   |  |
| 0.33   | A         | TL3A334(1)025(2)14R0 | 0.25   | 4                                      | 14.000  | 0.07                                       |
| 0.33   | A         | TL3A334(1)025(2)10R0 | 0.25   | 4                                      | 10.000  | 0.09                                       |
| 0.47   | A         | TL3A474(1)025(2)12R0 | 0.25   | 4                                      | 12.000  | 0.08                                       |
| 0.47   | A         | TL3A474(1)025(2)9000 | 0.25   | 4                                      | 9.000   | 0.09                                       |
| 0.68   | B         | TL3B684(1)025(2)7000 | 0.25   | 4                                      | 7.000   | 0.11                                       |
| 0.68   | B         | TL3B684(1)025(2)5000 | 0.25   | 4                                      | 5.000   | 0.13                                       |
| 1.0  | A         | TL3A105(1)025(2)7600 | 0.25   | 4                                      | 7.600   | 0.10                                       |
| 1.0  | A         | TL3A105(1)025(2)4000 | 0.25   | 4                                      | 4.000   | 0.14                                       |
| 1.0  | B         | TL3B105(1)025(2)5000 | 0.25   | 4                                      | 5.000   | 0.13                                       |
| 1.0  | B         | TL3B105(1)025(2)2000 | 0.25   | 4                                      | 2.000   | 0.21                                       |
| 1.5  | B         | TL3B155(1)025(2)4600 | 0.25   | 6                                      | 4.600   | 0.14                                       |
| 1.5  | B         | TL3B155(1)025(2)2000 | 0.25   | 6                                      | 2.000   | 0.21                                       |
| 2.2  | A         | TL3A225(1)025(2)6300 | 0.28   | 6                                      | 6.300   | 0.11                                       |
| 2.2  | A         | TL3A225(1)025(2)4000 | 0.28   | 6                                      | 4.000   | 0.14                                       |
| 2.2  | B         | TL3B225(1)025(2)3800 | 0.28   | 6                                      | 3.800   | 0.15                                       |
| 2.2  | B         | TL3B225(1)025(2)2300 | 0.28   | 6                                      | 2.300   | 0.19                                       |
| 2.2  | C         | TL3C225(1)025(2)2900 | 0.28   | 6                                      | 2.900   | 0.19                                       |
| 2.2  | C         | TL3C225(1)025(2)1000 | 0.28   | 6                                      | 1.000   | 0.33                                       |
| 3.3  | B         | TL3B335(1)025(2)3100 | 0.41   | 6                                      | 3.100   | 0.17                                       |
| 3.3  | B         | TL3B335(1)025(2)1500 | 0.41   | 6                                      | 1.500   | 0.24                                       |
| 3.3  | C         | TL3C335(1)025(2)2300 | 0.41   | 6                                      | 2.300   | 0.22                                       |
| 3.3  | C         | TL3C335(1)025(2)1000 | 0.41   | 6                                      | 1.000   | 0.33                                       |
| 4.7  | B         | TL3B475(1)025(2)2800 | 0.59   | 6                                      | 2.800   | 0.17                                       |
| 4.7  | B         | TL3B475(1)025(2)1500 | 0.59   | 6                                      | 1.500   | 0.24                                       |
| 4.7  | C         | TL3C475(1)025(2)2000 | 0.59   | 6                                      | 2.000   | 0.23                                       |
| 4.7  | C         | TL3C475(1)025(2)0525 | 0.59   | 6                                      | 0.525   | 0.46                                       |
| 6.8  | C         | TL3C685(1)025(2)1700 | 0.85   | 6                                      | 1.700   | 0.25                                       |
| 6.8  | C         | TL3C685(1)025(2)0500 | 0.85   | 6                                      | 0.500   | 0.47                                       |
| 6.8  | D         | TL3D685(1)025(2)1200 | 0.85   | 6                                      | 1.200   | 0.35                                       |
| 6.8  | D         | TL3D685(1)025(2)0350 | 0.85   | 6                                      | 0.350   | 0.65                                       |
| 10   | B         | TL3B106(1)025(2)2300 | 1.25   | 6                                      | 2.300   | 0.19                                       |
| 10   | B         | TL3B106(1)025(2)1300 | 1.25   | 6                                      | 1.300   | 0.26                                       |
| 10   | C         | TL3C106(1)025(2)1500 | 1.25   | 6                                      | 1.500   | 0.27                                       |
| 10   | C         | TL3C106(1)025(2)0450 | 1.25   | 6                                      | 0.450   | 0.49                                       |
| 10   | D         | TL3D106(1)025(2)1000 | 1.25   | 6                                      | 1.000   | 0.39                                       |
| 10   | D         | TL3D106(1)025(2)0300 | 1.25   | 6                                      | 0.300   | 0.71                                       |
| 15   | C         | TL3C156(1)025(2)1200 | 1.88   | 6                                      | 1.200   | 0.30                                       |
| 15   | C         | TL3C156(1)025(2)0425 | 1.88   | 6                                      | 0.425   | 0.51                                       |
| 15   | D         | TL3D156(1)025(2)0800 | 1.88   | 6                                      | 0.800   | 0.43                                       |
| 15   | D         | TL3D156(1)025(2)0250 | 1.88   | 6                                      | 0.250   | 0.77                                       |
| 22   | D         | TL3D226(1)025(2)0700 | 2.75   | 6                                      | 0.700   | 0.46                                       |
| 22   | D         | TL3D226(1)025(2)0200 | 2.75   | 6                                      | 0.200   | 0.87                                       |
| 33   | D         | TL3D336(1)025(2)0700 | 4.13   | 6                                      | 0.700   | 0.46                                       |
| 33   | D         | TL3D336(1)025(2)0300 | 4.13   | 6                                      | 0.300   | 0.71                                       |
| 33   | E         | TL3E336(1)025(2)0600 | 4.13   | 6                                      | 0.600   | 0.52                                       |
| 33   | E         | TL3E336(1)025(2)0200 | 4.13   | 6                                      | 0.200   | 0.91                                       |
| 47   | D         | TL3D476(1)025(2)0700 | 5.88   | 8                                      | 0.700   | 0.46                                       |
| 47   | D         | TL3D476(1)025(2)0350 | 5.88   | 8                                      | 0.350   | 0.65                                       |
| 47   | E         | TL3E476(1)025(2)0600 | 5.88   | 6                                      | 0.600   | 0.52                                       |
| 47   | E         | TL3E476(1)025(2)0300 | 5.88   | 6                                      | 0.300   | 0.74                                       |

**Note**

- Part number definitions:
  - Capacitance tolerance: K, M
  - Termination and packaging: 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>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>35 V<sub>DC</sub> AT + 85 °C; 23 V<sub>DC</sub> AT + 125 °C</b> |           |                      |  |  |   |  |
| 0.10   | A         | TL3A104(1)035(2)20R0 | 0.25   | 4                                      | 20.000  | 0.06                                       |
| 0.10   | A         | TL3A104(1)035(2)10R0 | 0.25   | 4                                      | 10.000  | 0.09                                       |
| 0.15   | A         | TL3A154(1)035(2)18R0 | 0.25   | 4                                      | 18.000  | 0.06                                       |
| 0.15   | A         | TL3A154(1)035(2)6000 | 0.25   | 4                                      | 6.000   | 0.11                                       |
| 0.22   | A         | TL3A224(1)035(2)15R0 | 0.25   | 4                                      | 15.000  | 0.07                                       |
| 0.22   | A         | TL3A224(1)035(2)6000 | 0.25   | 4                                      | 6.000   | 0.11                                       |
| 0.33   | A         | TL3A334(1)035(2)13R0 | 0.25   | 4                                      | 13.000  | 0.08                                       |
| 0.33   | A         | TL3A334(1)035(2)6000 | 0.25   | 4                                      | 6.000   | 0.11                                       |
| 0.47   | A         | TL3A474(1)035(2)10R0 | 0.25   | 4                                      | 10.000  | 0.09                                       |
| 0.47   | A         | TL3A474(1)035(2)4000 | 0.25   | 4                                      | 4.000   | 0.14                                       |
| 0.47   | B         | TL3B474(1)035(2)8000 | 0.25   | 4                                      | 8.000   | 0.10                                       |
| 0.47   | B         | TL3B474(1)035(2)2500 | 0.25   | 4                                      | 2.500   | 0.33                                       |
| 0.68   | B         | TL3B684(1)035(2)6500 | 0.25   | 4                                      | 6.500   | 0.11                                       |
| 0.68   | B         | TL3B684(1)035(2)2500 | 0.25   | 4                                      | 2.500   | 0.18                                       |
| 1.0  | A         | TL3A105(1)035(2)7500 | 0.25   | 4                                      | 7.500   | 0.10                                       |
| 1.0  | A         | TL3A105(1)035(2)6000 | 0.25   | 4                                      | 6.000   | 0.11                                       |
| 1.0  | B         | TL3B105(1)035(2)5000 | 0.25   | 4                                      | 5.000   | 0.13                                       |
| 1.0  | B         | TL3B105(1)035(2)2000 | 0.25   | 4                                      | 2.000   | 0.21                                       |
| 1.5  | B         | TL3B155(1)035(2)4200 | 0.26   | 6                                      | 4.200   | 0.14                                       |
| 1.5  | B         | TL3B155(1)035(2)3000 | 0.26   | 6                                      | 3.000   | 0.17                                       |
| 1.5  | C         | TL3C155(1)035(2)3800 | 0.26   | 6                                      | 3.800   | 0.17                                       |
| 1.5  | C         | TL3C155(1)035(2)1500 | 0.26   | 6                                      | 1.500   | 0.27                                       |
| 2.2  | B         | TL3B225(1)035(2)3800 | 0.39   | 6                                      | 3.800   | 0.15                                       |
| 2.2  | B         | TL3B225(1)035(2)2300 | 0.39   | 6                                      | 2.300   | 0.19                                       |
| 2.2  | C         | TL3C225(1)035(2)2900 | 0.39   | 6                                      | 2.900   | 0.19                                       |
| 2.2  | C         | TL3C225(1)035(2)0900 | 0.39   | 6                                      | 0.900   | 0.35                                       |
| 3.3  | B         | TL3B335(1)035(2)3500 | 0.58   | 6                                      | 3.500   | 0.16                                       |
| 3.3  | B         | TL3B335(1)035(2)1500 | 0.58   | 6                                      | 1.500   | 0.24                                       |
| 3.3  | C         | TL3C335(1)035(2)2100 | 0.58   | 6                                      | 2.100   | 0.23                                       |
| 3.3  | C         | TL3C335(1)035(2)0700 | 0.58   | 6                                      | 0.700   | 0.40                                       |
| 4.7  | C         | TL3C475(1)035(2)1900 | 0.82   | 6                                      | 1.900   | 0.24                                       |
| 4.7  | C         | TL3C475(1)035(2)0600 | 0.82   | 6                                      | 0.600   | 0.43                                       |
| 4.7  | D         | TL3D475(1)035(2)1300 | 0.82   | 6                                      | 1.300   | 0.34                                       |
| 4.7  | D         | TL3D475(1)035(2)0600 | 0.82   | 6                                      | 0.600   | 0.50                                       |
| 6.8  | C         | TL3C685(1)035(2)1800 | 1.19   | 6                                      | 1.800   | 0.25                                       |
| 6.8  | C         | TL3C685(1)035(2)0900 | 1.19   | 6                                      | 0.900   | 0.35                                       |
| 6.8  | D         | TL3D685(1)035(2)1100 | 1.19   | 6                                      | 1.100   | 0.37                                       |
| 6.8  | D         | TL3D685(1)035(2)0300 | 1.19   | 6                                      | 0.300   | 0.71                                       |
| 10   | C         | TL3C106(1)035(2)1600 | 1.75   | 6                                      | 1.600   | 0.26                                       |
| 10   | C         | TL3C106(1)035(2)0850 | 1.75   | 6                                      | 0.850   | 0.36                                       |
| 10   | D         | TL3D106(1)035(2)0800 | 1.75   | 6                                      | 0.800   | 0.43                                       |
| 10   | D         | TL3D106(1)035(2)0300 | 1.75   | 6                                      | 0.300   | 0.71                                       |
| 15   | D         | TL3D156(1)035(2)0800 | 2.63   | 6                                      | 0.800   | 0.43                                       |
| 15   | D         | TL3D156(1)035(2)0400 | 2.63   | 6                                      | 0.400   | 0.61                                       |
| 22   | D         | TL3D226(1)035(2)0600 | 3.85   | 6                                      | 0.600   | 0.50                                       |
| 22   | D         | TL3D226(1)035(2)0400 | 3.85   | 6                                      | 0.400   | 0.61                                       |
| 22   | E         | TL3E226(1)035(2)0600 | 3.85   | 6                                      | 0.600   | 0.52                                       |
| 22   | E         | TL3E226(1)035(2)0300 | 3.85   | 6                                      | 0.300   | 0.74                                       |

**Note**

- Part number definitions:
  - Capacitance tolerance: K, M
  - Termination and packaging: 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>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>50 V<sub>DC</sub> AT + 85 °C; 33 V<sub>DC</sub> AT + 125 °C</b> |           |                      |  |  |   |  |
| 0.10   | A         | TL3A104(1)050(2)19R0 | 0.25   | 4                                      | 19.000  | 0.06                                       |
| 0.10   | A         | TL3A104(1)050(2)10R0 | 0.25   | 4                                      | 10.000  | 0.09                                       |
| 0.15   | A         | TL3A154(1)050(2)17R0 | 0.25   | 4                                      | 17.000  | 0.07                                       |
| 0.15   | A         | TL3A154(1)050(2)10R0 | 0.25   | 4                                      | 10.000  | 0.09                                       |
| 0.15   | B         | TL3B154(1)050(2)14R0 | 0.25   | 4                                      | 14.000  | 0.08                                       |
| 0.15   | B         | TL3B154(1)050(2)9000 | 0.25   | 4                                      | 9.000   | 0.10                                       |
| 0.22   | B         | TL3B224(1)050(2)12R0 | 0.25   | 4                                      | 12.000  | 0.08                                       |
| 0.22   | B         | TL3B224(1)050(2)8500 | 0.25   | 4                                      | 8.500   | 0.10                                       |
| 0.33   | B         | TL3B334(1)050(2)10R0 | 0.25   | 4                                      | 10.000  | 0.09                                       |
| 0.33   | B         | TL3B334(1)050(2)4500 | 0.25   | 4                                      | 4.500   | 0.14                                       |
| 0.47   | B         | TL3B474(1)050(2)8400 | 0.25   | 4                                      | 8.400   | 0.10                                       |
| 0.47   | B         | TL3B474(1)050(2)4000 | 0.25   | 4                                      | 4.000   | 0.15                                       |
| 0.47   | C         | TL3C474(1)050(2)6700 | 0.25   | 4                                      | 6.700   | 0.13                                       |
| 0.47   | C         | TL3C474(1)050(2)1800 | 0.25   | 4                                      | 1.800   | 0.25                                       |
| 0.68   | C         | TL3C684(1)050(2)5900 | 0.25   | 4                                      | 5.900   | 0.14                                       |
| 0.68   | C         | TL3C684(1)050(2)1600 | 0.25   | 4                                      | 1.600   | 0.26                                       |
| 1.0  | B         | TL3B105(1)050(2)6700 | 0.25   | 4                                      | 6.700   | 0.11                                       |
| 1.0  | B         | TL3B105(1)050(2)2000 | 0.25   | 4                                      | 2.000   | 0.21                                       |
| 1.0  | C         | TL3C105(1)050(2)4600 | 0.25   | 4                                      | 4.600   | 0.15                                       |
| 1.0  | C         | TL3C105(1)050(2)1600 | 0.25   | 4                                      | 1.600   | 0.26                                       |
| 1.5  | C         | TL3C155(1)050(2)3400 | 0.38   | 6                                      | 3.400   | 0.18                                       |
| 1.5  | C         | TL3C155(1)050(2)1500 | 0.38   | 6                                      | 1.500   | 0.27                                       |
| 1.5  | D         | TL3D155(1)050(2)2900 | 0.38   | 6                                      | 2.900   | 0.23                                       |
| 1.5  | D         | TL3D155(1)050(2)1000 | 0.375  | 6                                      | 1.000   | 0.39                                       |
| 2.2  | C         | TL3C225(1)050(2)2900 | 0.55   | 6                                      | 2.900   | 0.19                                       |
| 2.2  | C         | TL3C225(1)050(2)1500 | 0.55   | 6                                      | 1.500   | 0.27                                       |
| 2.2  | D         | TL3D225(1)050(2)2100 | 0.55   | 6                                      | 2.100   | 0.27                                       |
| 2.2  | D         | TL3D225(1)050(2)0800 | 0.55   | 6                                      | 0.800   | 0.43                                       |
| 3.3  | D         | TL3D335(1)050(2)1700 | 0.83   | 6                                      | 1.700   | 0.30                                       |
| 3.3  | D         | TL3D335(1)050(2)0800 | 0.83   | 6                                      | 0.800   | 0.43                                       |
| 4.7  | D         | TL3D475(1)050(2)1200 | 1.18   | 6                                      | 1.200   | 0.35                                       |
| 4.7  | D         | TL3D475(1)050(2)0600 | 1.18   | 6                                      | 0.600   | 0.50                                       |
| 6.8  | E         | TL3E685(1)050(2)0900 | 1.70   | 6                                      | 0.900   | 0.43                                       |
| 6.8  | E         | TL3E685(1)050(2)0540 | 1.70   | 6                                      | 0.540   | 0.55                                       |
| 10   | E         | TL3E106(1)050(2)0800 | 2.50   | 6                                      | 0.800   | 0.45                                       |
| 10   | E         | TL3E106(1)050(2)0550 | 2.50   | 6                                      | 0.550   | 0.55                                       |

**Note**

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



| <b>RECOMMENDED VOLTAGE DERATING GUIDELINES</b> (for temperatures below + 85 °C) |                   |
|---|-------------------|
| <b>STANDARD CONDITIONS. FOR EXAMPLE: OUTPUT FILTERS</b>                         |                   |
| Capacitor Voltage Rating  | Operating Voltage |
| 4.0   | 2.5               |
| 6.3   | 3.3               |
| 10  | 5.0               |
| 16  | 8.0               |
| 20  | 10                |
| 25  | 12                |
| 35  | 15                |
| 50  | 24                |
| 63  | 32                |
| <b>SEVERE CONDITIONS. FOR EXAMPLE: INPUT FILTERS</b>                            |                   |
| Capacitor Voltage Rating  | Operating Voltage |
| 4.0   | 2.5               |
| 6.3   | 3.6               |
| 10  | 6.0               |
| 16  | 10                |
| 20  | 12                |
| 25  | 15                |
| 35  | 24                |
| 50  | 28                |
| 63  | 38                |

| <b>POWER DISSIPATION</b> |  |
|--------------------------|--|
| 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  |

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

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



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## Material Category Policy

**Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as RoHS-Compliant fulfill the definitions and restrictions defined under Directive 2011/65/EU of The European Parliament and of the Council of June 8, 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (EEE) - recast, unless otherwise specified as non-compliant.**

**Please note that some Vishay documentation may still make reference to RoHS Directive 2002/95/EC. We confirm that all the products identified as being compliant to Directive 2002/95/EC conform to Directive 2011/65/EU.**

**Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as Halogen-Free follow Halogen-Free requirements as per JEDEC JS709A standards. Please note that some Vishay documentation may still make reference to the IEC 61249-2-21 definition. We confirm that all the products identified as being compliant to IEC 61249-2-21 conform to JEDEC JS709A standards.**



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

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

**Телефон:** 8 (812) 309 58 32 (многоканальный)

**Факс:** 8 (812) 320-02-42

**Электронная почта:** [org@eplast1.ru](mailto:org@eplast1.ru)

**Адрес:** 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.