

Solid Tantalum Surface Mount Chip Capacitors TANTAMOUNT[®], Molded Case, for Medical Instruments



PERFORMANCE / ELECTRICAL CHARACTERISTICS

www.vishay.com/doc?40209

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

Capacitance Range: 1 μF to 220 μF

Capacitance Tolerance: ± 10 %, ± 20 % standard

Voltage Rating: 4 V_{DC} to 20 V_{DC}

FEATURES

- **For non-life support medical applications**
- High reliability
- Weibull grading options
- DC leakage at 0.005 CV
- 100 % surge current tested (B, C, D, E cases)
- Terminations: 100 % matte tin and tin / lead
- Standard EIA 535BAAC case sizes (A through E)
- Manufacturing location is certified to medical standard ISO 13485
- Compliant terminations
- Dry pack as per IPC / JEDEC[®] J-STD-033 standard
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



RoHS*
Available

HALOGEN FREE
GREEN
(5-2008)
Available

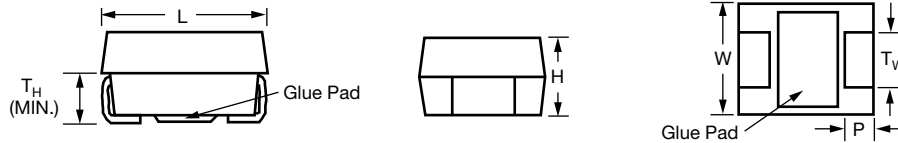
Note

* This datasheet provides information about parts that are RoHS-compliant and / or parts that are non-RoHS-compliant. For example, parts with lead (Pb) terminations are not RoHS-compliant. Please see the information / tables in this datasheet for details.

| ORDERING INFORMATION | | | | | | | |
|----------------------|-----------------------------------|--|--------------------------|--|---|--|---|
| TM3 | C | 226 | K | 6R3 | C | B | A |
| TYPE | CASE CODE | CAPACITANCE | CAPACITANCE TOLERANCE | DC VOLTAGE RATING AT +85 °C | TERMINATION AND PACKAGING | RELIABILITY LEVEL | SURGE CURRENT |
| | 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 = ± 10 % 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) reel H: matte tin, 7" (178 mm) ½ reel E: tin / lead, 7" (178 mm) reel L: tin / lead, 7" (178 mm) ½ reel V: matte tin, 7" (178 mm) reel, dry pack T: tin / lead, 7" (178 mm) reel, dry pack | B = 0.1 % Weibull FRL S = hi-rel std. (40 h burn-in) Z = non-established reliability | A = 10 cycles at +25 °C, 1.1 RV Z = no surge (for A case only) |

Note

- Dry pack as specified in J-STD-033 for MSL3. Applicable for D and E cases only.

DIMENSIONS in inches (millimeters)


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

Note

- Glue pad (non-conductive, part of molded case) is dedicated for glue attachment (as user option).

RATINGS AND CASE CODES

| μF | 4 V | 6.3 V | 10 V | 16 V | 20 V |
|-----|-----|-------|-------|-------|------|
| 1.0 | | | | A | |
| 1.5 | | | A | A | |
| 2.2 | | A | A | A/B | B |
| 3.3 | | A | A | A/B | B |
| 4.7 | | | A/B | A/B | C |
| 6.8 | | B | B | B | B/C |
| 10 | | A/B | A/B | B/C | C |
| 15 | | | B/C | B/C | |
| 22 | | A/B/C | B/C | B/C/D | C/D |
| 33 | | B | B/C/D | D | D |
| 47 | | B/C/D | C/D | C/D | E |
| 68 | B | D | D | D | |
| 100 | D | D | D | D/E | |
| 150 | D | D | | | |
| 220 | D/E | D/E | E | | |

MARKING

| | "A" CASE VOLTAGE CODE | | |
|--|-----------------------|------|--|
| | VOLTS | CODE | |
| | 4.0 | G | |
| | 6.3 | J | |
| | 10 | A | |
| | 16 | C | |
| | 20 | D | |
| | 25 | E | |
| | 35 | V | |
| | 50 | T | |

Marking

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

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

A manufacturing date code is marked on all capacitors.

Call the factory for further explanation.



| STANDARD RATINGS | | | | | | |
|--|-----------|----------------------|-------------------------------------|---------------------------------------|--|--|
| CAPACITANCE (μ F) | CASE CODE | PART NUMBER | MAX. DCL AT +25 °C (μ A) | MAX. DF AT +25 °C 120 Hz (%) | MAX. ESR AT +25 °C 100 kHz (Ω) | MAX. RIPPLE 100 kHz I_{RMS} (A) |
| 4 V_{DC} AT +85 °C; 2.7 V_{DC} AT +125 °C | | | | | | |
| 68 | B | TM3B686(1)004(2)(3)A | 1.36 | 6 | 1.90 | 0.21 |
| 100 | D | TM3D107(1)004(4)(3)A | 2.00 | 6 | 0.70 | 0.46 |
| 150 | D | TM3D157(1)004(4)(3)A | 3.00 | 8 | 0.60 | 0.50 |
| 220 | D | TM3D227(1)004(4)(3)A | 4.40 | 8 | 0.60 | 0.50 |
| 220 | E | TM3E227(1)004(4)(3)A | 4.40 | 8 | 0.50 | 0.57 |
| 6.3 V_{DC} AT +85 °C; 4 V_{DC} AT +125 °C | | | | | | |
| 2.2 | A | TM3A225(1)6R3(2)(3)Z | 0.25 | 6 | 7.60 | 0.10 |
| 3.3 | A | TM3A335(1)6R3(2)(3)Z | 0.25 | 6 | 6.30 | 0.11 |
| 6.8 | B | TM3B685(1)6R3(2)(3)A | 0.25 | 6 | 3.40 | 0.16 |
| 10 | A | TM3A106(1)6R3(2)(3)Z | 0.32 | 6 | 3.40 | 0.15 |
| 10 | B | TM3B106(1)6R3(2)(3)A | 0.30 | 6 | 2.90 | 0.17 |
| 22 | A | TM3A226(1)6R3(2)(3)Z | 0.66 | 6 | 2.90 | 0.16 |
| 22 | B | TM3B226(1)6R3(2)(3)A | 0.69 | 6 | 2.00 | 0.21 |
| 22 | C | TM3C226(1)6R3(2)(3)A | 0.66 | 6 | 1.80 | 0.25 |
| 33 | B | TM3B336(1)6R3(2)(3)A | 0.99 | 6 | 1.90 | 0.21 |
| 47 | B | TM3B476(1)6R3(2)(3)A | 1.41 | 6 | 1.90 | 0.21 |
| 47 | C | TM3C476(1)6R3(2)(3)A | 1.41 | 6 | 1.40 | 0.28 |
| 47 | D | TM3D476(1)6R3(4)(3)A | 1.41 | 6 | 0.80 | 0.43 |
| 68 | D | TM3D686(1)6R3(4)(3)A | 2.04 | 6 | 0.70 | 0.46 |
| 100 | D | TM3D107(1)6R3(4)(3)A | 3.00 | 6 | 0.14 | 1.04 |
| 150 | D | TM3D157(1)6R3(4)(3)A | 4.50 | 8 | 0.60 | 0.50 |
| 220 | D | TM3D227(1)6R3(4)(3)A | 6.60 | 8 | 0.60 | 0.50 |
| 220 | E | TM3E227(1)6R3(4)(3)A | 6.60 | 8 | 0.50 | 0.57 |
| 10 V_{DC} AT +85 °C; 7 V_{DC} AT +125 °C | | | | | | |
| 1.5 | A | TM3A155(1)010(2)(3)Z | 0.25 | 6 | 8.00 | 0.10 |
| 2.2 | A | TM3A225(1)010(2)(3)Z | 0.25 | 6 | 6.30 | 0.11 |
| 3.3 | A | TM3A335(1)010(2)(3)Z | 0.25 | 6 | 5.50 | 0.12 |
| 4.7 | A | TM3A475(1)010(2)(3)Z | 0.25 | 6 | 5.00 | 0.12 |
| 4.7 | B | TM3B475(1)010(2)(3)A | 0.25 | 6 | 3.40 | 0.16 |
| 6.8 | B | TM3B685(1)010(2)(3)A | 0.34 | 6 | 2.90 | 0.17 |
| 10 | A | TM3A106(1)010(2)(3)Z | 0.50 | 6 | 3.40 | 0.15 |
| 10 | B | TM3B106(1)010(2)(3)A | 0.50 | 6 | 2.50 | 0.18 |
| 15 | B | TM3B156(1)010(2)(3)A | 0.75 | 6 | 2.00 | 0.21 |
| 15 | C | TM3C156(1)010(2)(3)A | 0.75 | 6 | 1.80 | 0.25 |
| 22 | B | TM3B226(1)010(2)(3)A | 1.10 | 6 | 1.90 | 0.21 |
| 22 | C | TM3C226(1)010(2)(3)A | 1.10 | 6 | 0.35 | 0.56 |
| 33 | B | TM3B336(1)010(2)(3)A | 1.65 | 6 | 1.90 | 0.21 |
| 33 | C | TM3C336(1)010(2)(3)A | 1.65 | 6 | 1.40 | 0.28 |
| 33 | D | TM3D336(1)010(4)(3)A | 1.65 | 6 | 0.80 | 0.43 |
| 47 | C | TM3C476(1)010(2)(3)A | 2.35 | 6 | 1.10 | 0.32 |
| 47 | D | TM3D476(1)010(4)(3)A | 2.35 | 6 | 0.70 | 0.46 |
| 68 | D | TM3D686(1)010(4)(3)A | 3.40 | 6 | 0.70 | 0.46 |
| 100 | D | TM3D107(1)010(4)(3)A | 5.00 | 6 | 0.60 | 0.50 |
| 220 | E | TM3E227(1)010(4)(3)A | 11.00 | 8 | 0.50 | 0.57 |

Note

- Part number definitions:
 - Capacitance tolerance: K, M
 - Termination and packaging: C, E, H, L
 - Reliability level: B, S, Z
 - Termination and packaging: C, E, H, L, V, T



| STANDARD RATINGS | | | | | | |
|--|-----------|----------------------|-------------------------------------|---------------------------------------|--|--|
| CAPACITANCE (μ F) | CASE CODE | PART NUMBER | MAX. DCL AT +25 °C (μ A) | MAX. DF AT +25 °C 120 Hz (%) | MAX. ESR AT +25 °C 100 kHz (Ω) | MAX. RIPPLE 100 kHz I_{RMS} (A) |
| 16 V_{DC} AT +85 °C; 10 V_{DC} AT +125 °C | | | | | | |
| 1.0 | A | TM3A105(1)016(2)(3)Z | 0.25 | 4 | 9.30 | 0.09 |
| 1.5 | A | TM3A155(1)016(2)(3)Z | 0.25 | 6 | 6.70 | 0.11 |
| 2.2 | A | TM3A225(1)016(2)(3)Z | 0.25 | 6 | 4.00 | 11.00 |
| 2.2 | B | TM3B225(1)016(2)(3)A | 0.25 | 6 | 4.60 | 0.14 |
| 3.3 | A | TM3A335(1)016(2)(3)Z | 0.26 | 6 | 3.50 | 0.15 |
| 3.3 | B | TM3B335(1)016(2)(3)A | 0.26 | 6 | 3.50 | 0.16 |
| 4.7 | A | TM3A475(1)016(2)(3)Z | 0.38 | 6 | 5.00 | 0.12 |
| 4.7 | B | TM3B475(1)016(2)(3)A | 0.38 | 6 | 2.90 | 0.17 |
| 6.8 | B | TM3B685(1)016(2)(3)A | 0.54 | 6 | 2.50 | 0.18 |
| 10 | B | TM3B106(1)016(2)(3)A | 0.80 | 6 | 2.00 | 0.21 |
| 10 | C | TM3C106(1)016(2)(3)A | 0.80 | 6 | 1.80 | 0.25 |
| 15 | B | TM3B156(1)016(2)(3)A | 1.20 | 6 | 2.00 | 0.21 |
| 15 | C | TM3C156(1)016(2)(3)A | 1.20 | 6 | 0.40 | 0.52 |
| 22 | B | TM3B226(1)016(2)(3)A | 1.76 | 6 | 1.90 | 0.21 |
| 22 | C | TM3C226(1)016(2)(3)A | 1.76 | 6 | 1.40 | 0.28 |
| 22 | D | TM3D226(1)016(4)(3)A | 1.76 | 6 | 0.80 | 0.43 |
| 33 | D | TM3D336(1)016(4)(3)A | 2.64 | 6 | 0.70 | 0.46 |
| 47 | C | TM3C476(1)016(2)(3)A | 3.76 | 6 | 1.00 | 0.33 |
| 47 | D | TM3D476(1)016(4)(3)A | 3.76 | 6 | 0.70 | 0.46 |
| 68 | D | TM3D686(1)016(4)(3)A | 5.44 | 6 | 0.60 | 0.50 |
| 100 | D | TM3D107(1)016(4)(3)A | 8.00 | 8 | 0.60 | 0.50 |
| 100 | E | TM3E107(1)016(4)(3)A | 8.00 | 8 | 0.60 | 0.52 |
| 20 V_{DC} AT +85 °C; 13 V_{DC} AT +125 °C | | | | | | |
| 2.2 | B | TM3B225(1)020(2)(3)A | 0.25 | 6 | 3.50 | 0.16 |
| 3.3 | B | TM3B335(1)020(2)(3)A | 0.33 | 6 | 3.00 | 0.17 |
| 4.7 | C | TM3C475(1)020(2)(3)A | 0.47 | 6 | 2.30 | 0.22 |
| 6.8 | B | TM3B685(1)020(2)(3)A | 0.68 | 6 | 2.50 | 0.18 |
| 6.8 | C | TM3C685(1)020(2)(3)A | 0.68 | 6 | 1.90 | 0.24 |
| 10 | C | TM3C106(1)020(2)(3)A | 1.00 | 6 | 1.70 | 0.25 |
| 22 | C | TM3C226(1)020(2)(3)A | 2.20 | 6 | 1.10 | 0.32 |
| 22 | D | TM3D226(1)020(4)(3)A | 2.20 | 6 | 0.70 | 0.46 |
| 33 | D | TM3D336(1)020(4)(3)A | 3.30 | 6 | 0.70 | 0.46 |
| 47 | E | TM3E476(1)020(4)(3)A | 4.70 | 6 | 0.60 | 0.52 |

Note

- Part number definitions:
 - Capacitance tolerance: K, M
 - Termination and packaging: C, E, H, L
 - Reliability level: B, S, Z
 - Termination and packaging: C, E, H, L, V, T



| RECOMMENDED VOLTAGE DERATING GUIDELINES (for temperatures below +85 °C) | |
|--|-------------------|
| STANDARD CONDITIONS. FOR EXAMPLE: OUTPUT FILTERS | |
| Capacitor Voltage Rating | Operating Voltage |
| 4.0 | 2.5 |
| 6.3 | 3.3 |
| 10 | 5.0 |
| 16 | 8.0 |
| 20 | 10 |
| SEVERE CONDITIONS. FOR EXAMPLE: INPUT FILTERS | |
| Capacitor Voltage Rating | Operating Voltage |
| 4.0 | 2.5 |
| 6.3 | 3.6 |
| 10 | 6.0 |
| 16 | 10 |
| 20 | 12 |

| 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" FULL REEL | 7" HALF REEL |
| A | 2000 | 1000 |
| B | 2000 | 1000 |
| C | 500 | 250 |
| D | 500 | 250 |
| E | 400 | 200 |

| PRODUCT INFORMATION | |
|--------------------------------------|--|
| Guide for Molded Tantalum Capacitors | www.vishay.com/doc?40074 |
| Pad Dimensions | |
| Packaging Dimensions | |
| Moisture Sensitivity | www.vishay.com/doc?40135 |
| SELECTOR GUIDES | |
| Solid Tantalum Selector Guide | www.vishay.com/doc?49053 |
| Solid Tantalum Chip Capacitors | www.vishay.com/doc?40091 |
| FAQ | |
| Frequently Asked Questions | www.vishay.com/doc?40110 |

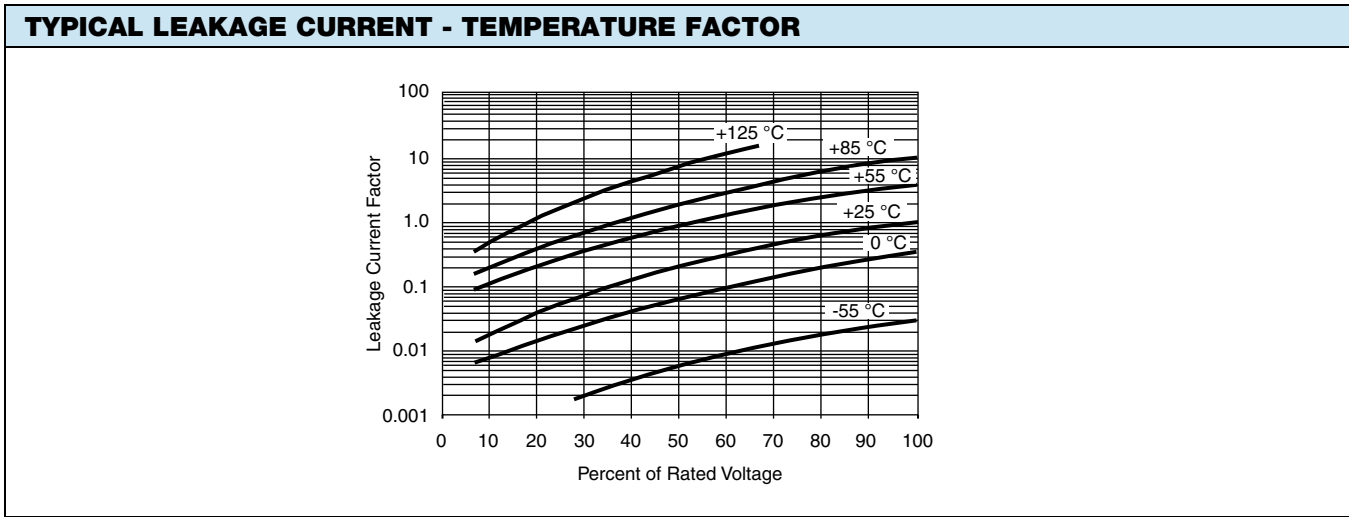


COTS Tantalum Capacitors

| ELECTRICAL PERFORMANCE CHARACTERISTICS | | | | |
|--|---|--------------------------|-----------------------------|--------------------------|
| ITEM | PERFORMANCE CHARACTERISTICS | | | |
| Category temperature range | -55 °C to +85 °C (to +125 °C with voltage derating) | | | |
| Capacitance tolerance | ± 20 %, ± 10 %, tested via bridge method, at 25 °C, 120 Hz | | | |
| Dissipation factor | Limit per Standard Ratings table. Tested via bridge method, at 25 °C, 120 Hz | | | |
| ESR | Limit per Standard Ratings table. Tested via bridge method, at 25 °C, 100 kHz | | | |
| Leakage current | After application of rated voltage applied to capacitors for 5 min using a steady source of power with 1 kΩ resistor in series with the capacitor under test, leakage current at 25 °C is not more than 0.01 CV or 0.5 μA, whichever is greater. <i>Note that the leakage current varies with temperature and applied voltage. See graph below for the appropriate adjustment factor.</i> | | | |
| Capacitance change by temperature | +15 % max. (at +125 °C) +10 % max. (at +85 °C) -10 % max. (at -55 °C) | | | |
| Reverse voltage | Capacitors are capable of withstanding peak voltages in the reverse direction equal to: 10 % of the DC rating at +25 °C 5 % of the DC rating at +85 °C 1 % of the DC rating at +125 °C Vishay does not recommend intentional or repetitive application of reverse voltage. | | | |
| Ripple current | For maximum ripple current values (at 25 °C) refer to relevant datasheet. If capacitors are to be used at temperatures above +25 °C, the permissible RMS ripple current (or voltage) shall be calculated using the derating factors: 1.0 at +25 °C 0.9 at +85 °C 0.4 at +125 °C | | | |
| Maximum operating and surge voltages vs. temperature | +85 °C | | +125 °C | |
| | RATED VOLTAGE (V) | SURGE VOLTAGE (V) | CATEGORY VOLTAGE (V) | SURGE VOLTAGE (V) |
| | 4.0 | 5.2 | 2.7 | 3.4 |
| | 6.3 | 8.0 | 4.0 | 5.0 |
| | 10 | 13 | 7.0 | 8.0 |
| | 16 | 20 | 10 | 12 |
| | 20 | 26 | 13 | 16 |
| | 25 | 32 | 17 | 20 |
| | 35 | 46 | 23 | 28 |
| | 40 | 52 | 26 | 31 |
| | 50 | 65 | 33 | 40 |
| | 50 ⁽¹⁾ | 60 | 33 | 40 |
| | 63 | 75 | 42 | 50 |
| 75 | 75 | 50 | 50 | |

Notes

- All information presented in this document reflects typical performance characteristics
- ⁽¹⁾ Capacitance value 15 μF and higher



Notes

- 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.

| ENVIRONMENTAL PERFORMANCE CHARACTERISTICS | | | |
|---|---|---|--|
| ITEM | CONDITION | POST TEST PERFORMANCE | |
| Surge voltage | MIL-PRF-55365 1000 successive test cycles at 85 °C of surge voltage (as specified in the table above), in series with a 33 Ω resistor at the rate of 30 s ON, 30 s OFF | Capacitance change Dissipation factor Leakage current | Within ± 10 % of initial value Initial specified limit Initial specified limit |
| Life test at +85 °C | MIL-STD-202, method 108 1000 h application of rated voltage at 85 °C | Capacitance change Dissipation factor Leakage current | Within ± 10 % of initial value Initial specified limit Shall not exceed 125 % of initial limit |
| Life test at +125 °C | MIL-STD-202, method 108 1000 h application 2/3 of rated voltage at 125 °C | Capacitance change Dissipation factor Leakage current | Within ± 10 % of initial value Initial specified limit Shall not exceed 125 % of initial limit |
| Moisture resistance | MIL-STD-202, method 106 at rated voltage, 20 cycles | Capacitance change Dissipation factor Leakage current | Within ± 15 % of initial value Shall not exceed 150 % of initial limit Shall not exceed 200 % of initial limit |
| Stability at low and high temperatures | MIL-PRF-55365 | Delta cap limit at -55 °C, 85 °C is ± 10 % of initial value Delta cap limit at 125 °C is ± 15 % of initial value Delta cap at step 3 and final step 25 °C is ± 10 % DCL at 85 °C: 10 x initial specified value DCL at 125 °C: 12 x initial specified value DCL at 25 °C: initial specified value at RV | |
| Thermal shock | MIL-STD-202, method 107 At -55 °C / +125 °C, for 5 cycles, 30 min at each temperature | Capacitance change Dissipation factor Leakage current | Within ± 10 % of initial value Initial specified limit Initial specified limit |



| MECHANICAL PERFORMANCE CHARACTERISTICS | | |
|--|---|---|
| ITEM | CONDITION | POST TEST PERFORMANCE |
| Terminal strength / Shear force test | Apply a pressure load of 5 N for 10 s ± 1 s horizontally to the center of capacitor side body | Capacitance change Within ± 10 % of initial value Dissipation factor Initial specified limit Leakage current Initial specified limit There shall be no mechanical or visual damage to capacitors post-conditioning. |
| Vibration | MIL-STD-202, method 204, condition D, 10 Hz to 2000 Hz, 20 g peak, 8 h, at rated voltage | Electrical measurements are not applicable, since the same parts are used for shock (specified pulse) test. There shall be no mechanical or visual damage to capacitors post-conditioning. |
| Shock (specified pulse) | MIL-STD-202, method 213, condition I, 100 g peak | Capacitance change Within ± 10 % of initial value Dissipation factor Initial specified limit Leakage current Initial specified limit There shall be no mechanical or visual damage to capacitors post-conditioning. |
| Resistance to soldering heat | MIL-STD-202, method 210, condition J (leadbearing capacitors) and K (lead (Pb)-free capacitors), one heat cycle | Capacitance change Within ± 10 % of initial value Dissipation factor Initial specified limit Leakage current Initial specified limit |
| Solderability | MIL-STD-202, method 208, ANSI/J-STD-002, test B (leadbearing) and B1 (lead (Pb)-free). Preconditioning per category C (category E - optional). Does not apply to gold terminations. Lead (Pb)-free and leadbearing capacitors are backward and forward compatible | Solder coating of all capacitors shall meet specified requirements. There shall be no mechanical or visual damage to capacitors post-conditioning. |
| Resistance to solvents | MIL-STD-202, method 215 | There shall be no mechanical or visual damage to capacitors post-conditioning. Body marking shall remain legible. |
| Flammability | Encapsulation materials meet UL 94 V-0 with an oxygen index of 32 % | |



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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

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