# T350, T351, T352, T353, T354, T355 & T356
# UltraDip II Polar

## Overview

The KEMET UltraDip II offers quality instrument and entertainment system designs that are widely recognized and advantages inherent to solid tantalum capacitors at competitive prices. These capacitors are miniature, dipped, solid tantalum capacitors that provide the designer with the advantages of compactness, low leakage and low DF performance characteristics for filtering, bypassing, coupling, blocking and RC timing circuits. This series features a capacitance range from 0.1 to 680 µF at voltages from 3 to 50 VDC.

UltraDip II capacitors utilize the same sophisticated materials and processes that have positioned KEMET as the leading manufacturer of solid tantalum capacitors. The plastic case provides a tough barrier coating and maintains precision of lead wire spacing within ±0.015 inch. The gold color epoxy utilized permits laser marking with outstanding permanency and legibility. All case sizes are printed with capacitance, voltage, polarity and vendor identification. Solid tantalum devices exhibit no degradation failure mode during shelf storage and show a constantly decreasing failure rate (i.e., absence of wearout mechanism) during life tests. Self-insulating cases are resistant to shock and vibration. T35X also exhibits low DC leakage, ESR and impedance, and maintains excellent temperature stability.

## Benefits

- Taped and reeled per EIA Specification RS-468
- Laser-marked case
- Capacitance values of 0.1 to 680 µF
- Tolerances of ± 5% (special order), ±10% and ±20%
- Voltage rating of 3 – 50 VDC
- Case sizes: A, B, C, D, E, F, G, H, J, K, L, and M

## Applications

Typical applications include filtering, bypassing, coupling, blocking and RC timing circuits or other applications that can benefit from compactness.




Click image above for interactive 3D content

*Open PDF in Adobe Reader for full functionality*



© KEMET Electronics Corporation • KEMET Tower • One East Broward Boulevard
Fort Lauderdale, FL 33301 USA • 954-766-2800 • www.kemet.com

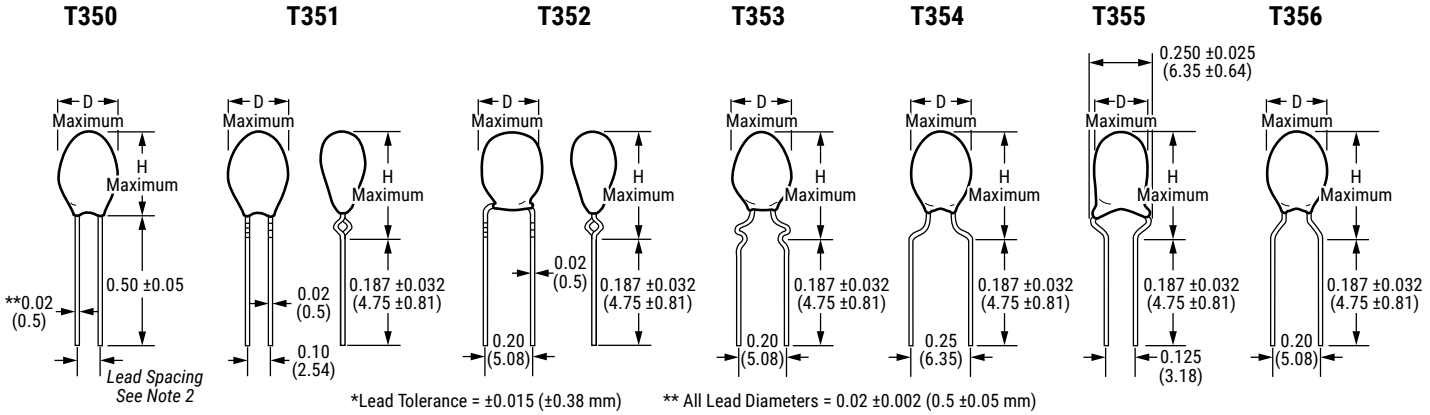
## Ordering Information

| T | 35X | A | 105 | M | 035 | A | S | |
|---|---|---|---|---|---|---|---|---|
| Capacitor Class | Series | Case Size | Capacitance Code (pF) | Capacitance Tolerance | Rated Voltage (VDC) | Failure Rate | Termination Finish | Packaging |
| T = Tantalum | 350<br>351<br>352<br>353<br>354<br>355<br>356 | A, B, C, D, E, F, G, H, J, K, L, M | First two digits represent significant figures. Third digit specifies number of zeros to follow. | M = ±20%<br>K = ±10%<br>J = ±5%<br>(Available on special order) | 003 = 3<br>006 = 6<br>010 = 10<br>016 = 16<br>020 = 20<br>025 = 25<br>035 = 35<br>050 = 50 | Not Applicable | S = Standard<br>T =100% Sn (tin) | Blank = Bulk<br>7301 = Tape & Reel<br>7303 = Tape & Reel<br>7305 = Ammo<br>7317 = Ammo |

## Performance Characteristics

| Item | Performance Characteristics |
|---|---|
| Operating Temperature | −55°C to 125°C |
| Rated Capacitance Range | 0.1 – 680 µF at 120 Hz/25°C |
| Capacitance Tolerance | M tolerance ±20%, K tolerance ±10% |
| Rated Voltage Range | 3 – 50 V |
| DF (120 Hz at 25°C) | Refer to Part Number Electrical Specification Table |
| Leakage Current | Refer to Part Number Electrical Specification Table (at rated voltage up to +85°C and 2/3 of rated voltage applied at 125°C) |

## Dimensions – Millimeters (Inches)




| Case Size | All | T350 | T351 | T352 | T353 | T354 | T355 | T356 |
|---|---|---|---|---|---|---|---|---|
| | D Maximum Diamenter | H* Maximum Height | H* Maximum Height | H* Maximum Height | H* Maximum Height | H* Maximum Height | H* Maximum Height | H* Maximum Height |
| A | 0.175 (4.5) | 0.280 (7.1) | 0.380 (9.6) | 0.400 (10.2) | 0.400 (10.2) | 0.340 (8.6) | 0.340 (8.6) | 0.340 (8.6) |
| B | 0.175 (4.5) | 0.300 (7/6) | 0.390 (9.9) | 0.410 (10.4) | 0.410 (10.4) | 0.350 (8.9) | 0.350 (8.9) | 0.350 (8.9) |
| C | 0.196 (5.0) | 0.330 (8.4) | 0.420 (10.7) | 0.440 (11.2) | 0.440 (11.2) | 0.380 (9.6) | 0.380 (9.6) | 0.380 (9.6) |
| D | 0.196 (5.0) | 0.340 (8.6) | 0.430 (10.7) | 0.450 (11.4) | 0.450 (11.4) | 0.390 (9.9) | 0.390 (9.9) | 0.390 (9.9) |
| E | 0.216 (5.5) | 0.350 (8.9) | 0.440 (11.2) | 0.460 (11.7) | 0.460 (11.7 | 0.400 (10.2) | 0.400 (10.2) | 0.400 (10.2) |
| F | 0.236 (6.0) | 0.390 (9.9) | 0.480 (12.2) | 0.500 (12.7) | 0.500 (12.7) | 0.440 (11.2) | 0.440 (11.2) | 0.440 (11.2) |
| G | 0.250 (6.3) | 0.400 (10.2) | 0.490 (12.4) | 0.510 (13.0) | 0.510 (13.0) | 0.450 (11.4) | 0.450 (11.4) | 0.450 (11.4) |
| H | 0.300 (7.6) | 0.400 (10.2) | 0.500 (12.7) | 0.520 (13.2) | 0.520 (13.2) | 0.470 (11.9) | 0.470 (11.9) | 0.470 (11.9) |
| J** | 0.330 (8.4) | 0.500 (12.7) | *** | *** | 0.580 (14.7) | 0.550 (14.0) | *** | 0.550 (14.0) |
| K** | 0.350 (8.9) | 0.530 (13.5) | *** | *** | 0.630 (16.0) | 0.610 (15.5) | *** | 0.610 (15.5) |
| L** | 0.350 (8.9) | 0.630 (16.0) | *** | *** | 0.730 (18.5) | 0.710 (18.1) | *** | 0.710 (18.1) |
| M** | 0.400 (10.2) | 0.670 (17.0) | *** | *** | 0.760 (19.3) | 0.740 (18.8) | *** | 0.740 (18.8) |

**All "H" Dimensions are from Capacitor seating plane to top of Capacitor.*
***On T350, case sizes A-H are supplied with 0.100" (2.54) lead spacing and case sizes J-M are supplied with 0.200" (5.08) lead spacing.*
****These case sizes are not available for T351, T352 and T355 capacitors.*

## Table 1 - Ratings and Part Number Reference

| Rated Voltage | Rated Capacitance | Case Code Case Size | KEMET Part Number | DC Leakage | DF % at 25°C |
|---|---|---|---|---|---|
| (V) 85°C | µF | | | µA at 25°C Maximum/5 Minutes | 120 Hz Maximum |
| 3 | 4.7 | A | T35(1)A475(3)003A(4) | 0.5 | 5 |
| 3 | 5.6 | A | T35(1)A565(3)003A(4) | 0.5 | 5 |
| 3 | 6.8 | A | T35(1)A685(3)003A(4) | 0.5 | 5 |
| 3 | 8.2 | A | T35(1)A825(3)003A(4) | 0.5 | 6 |
| 3 | 10.0 | A | T35(1)A106(3)003A(4) | 0.5 | 6 |
| 3 | 12.0 | B | T35(1)B126(3)003A(4) | 0.5 | 6 |
| 3 | 15.0 | B | T35(1)B156(3)003A(4) | 0.5 | 6 |
| 3 | 18.0 | C | T35(1)C186(3)003A(4) | 0.5 | 6 |
| 3 | 22.0 | C | T35(1)C226(3)003A(4) | 0.5 | 6 |
| 3 | 27.0 | D | T35(1)D276(3)003A(4) | 0.6 | 6 |
| 3 | 33.0 | D | T35(1)C336(3)003A(4) | 0.8 | 6 |
| 3 | 39.0 | E | T35(1)E396(3)003A(4) | 0.9 | 6 |
| 3 | 47.0 | E | T35(1)E476(3)003A(4) | 1.1 | 6 |
| 3 | 56.0 | F | T35(1)F566(3)003A(4) | 1.3 | 6 |
| 3 | 68.0 | F | T35(1)F686(3)003A(4) | 1.6 | 6 |
| 3 | 82.0 | G | T35(1)G826(3)003A(4) | 2.0 | 8 |
| 3 | 100.0 | G | T35(1)G107(3)003A(4) | 2.4 | 8 |
| 3 | 120.0 | H | T35(1)H127(3)003A(4) | 2.9 | 8 |
| 3 | 150.0 | H | T35(1)H157(3)003A(4) | 3.6 | 8 |
| 3 | 180.0 | J | T35(2)J187(3)003A(4) | 4.3 | 8 |
| 3 | 220.0 | J | T35(2)J227(3)003A(4) | 5.3 | 8 |
| 3 | 270.0 | K | T35(2)K277(3)003A(4) | 6.5 | 8 |
| 3 | 330.0 | K | T35(2)K337(3)003A(4) | 7.9 | 8 |
| 3 | 390.0 | L | T35(2)L397(3)003A(4) | 9.4 | 9 |
| 3 | 470.0 | L | T35(2)L477(3)003A(4) | 10.0 | 9 |
| 3 | 560.0 | M | T35(2)M567(3)003A(4) | 10.0 | 9 |
| 3 | 680.0 | M | T35(2)M687(3)003A(4) | 10.0 | 9 |
| 6 | 3.3 | A | T35(1)A335(3)006A(4) | 0.5 | 5 |
| 6 | 3.9 | A | T35(1)A395(3)006A(4) | 0.5 | 5 |
| 6 | 4.7 | A | T35(1)A475(3)006A(4) | 0.5 | 5 |
| 6 | 5.6 | A | T35(1)A565(3)006A(4) | 0.5 | 5 |
| 6 | 6.8 | A | T35(1)A685(3)006A(4) | 0.5 | 5 |
| 6 | 8.2 | B | T35(1)B825(3)006A(4) | 0.5 | 6 |
| 6 | 10.0 | B | T35(1)B106(3)006A(4) | 0.5 | 6 |
| 6 | 12.0 | C | T35(1)C126(3)006A(4) | 0.6 | 6 |
| 6 | 15.0 | C | T35(1)C156(3)006A(4) | 0.7 | 6 |
| 6 | 18.0 | D | T35(1)D186(3)006A(4) | 0.9 | 6 |
| 6 | 22.0 | D | T35(1)D226(3)006A(4) | 1.1 | 6 |
| 6 | 27.0 | E | T35(1)E276(3)006A(4) | 1.3 | 6 |
| 6 | 33.0 | E | T35(1)E336(3)006A(4) | 1.6 | 6 |
| 6 | 39.0 | F | T35(1)F396(3)006A(4) | 1.9 | 6 |
| 6 | 47.0 | F | T35(1)F476(3)006A(4) | 2.3 | 6 |
| 6 | 56.0 | G | T35(1)G566(3)006A(4) | 2.7 | 6 |
| 6 | 68.0 | G | T35(1)G686(3)006A(4) | 3.3 | 6 |
| 6 | 82.0 | H | T35(1)H826(3)006A(4) | 3.9 | 8 |
| 6 | 100.0 | H | T35(1)H107(3)006A(4) | 4.8 | 8 |
| 6 | 120.0 | J | T35(2)J127(3)006A(4) | 5.8 | 8 |
| (V) 85°C | µF | Case Code Case Size | KEMET Part Number | µA at 25°C Maximum/5 Minutes | 120 Hz Maximum |
| Rated Voltage | Rated Capacitance | | | DC Leakage | DF % at 25°C |

*(1) To complete KEMET Part Number, insert Series Designation as follows: "0 = T350, "1" = T351, "2" = T352, "3" = T353, "4" = T354, "5" = T355, "6" = T356.*

*(2) To complete KEMET Part Number, insert only Series Designation as follows: "0 = T350, "3" = T353, "4" = T354, "6" = T356.*

*(3) To complete KEMET part number, insert M - 20%, K - ±10%, J - ± 5%. Designates Capacitance tolerance.*

*(4) To complete KEMET part number, insert S = Standard coated or T=100% Sn (tin). Designates termination finish.*

*Higher voltage and better capacitance tolerance products may be substitued for an order within the same case size at KEMET's option.*

## Table 1 - Ratings and Part Number Reference cont.

| Rated Voltage | Rated Capacitance | Case Code Case Size | KEMET Part Number | DC Leakage | DF % at 25°C |
|---|---|---|---|---|---|
| (V) 85°C | µF | | | µA at 25°C Maximum/5 Minutes | 120 Hz Maximum |
| 6 | 150.0 | J | T35(2)J157(3)006A(4) | 7.2 | 8 |
| 6 | 180.0 | K | T35(2)K187(3)006A(4) | 8.6 | 8 |
| 6 | 220.0 | K | T35(2)K227(3)006A(4) | 10.0 | 8 |
| 6 | 270.0 | L | T35(2)L227(3)006A(4) | 10.0 | 8 |
| 6 | 330.0 | L | T35(2)L337(3)006A(4) | 10.0 | 8 |
| 10 | 2.2 | A | T35(1)A225(3)010A(4) | 0.5 | 5 |
| 10 | 2.7 | A | T35(1)A275(3)010A(4) | 0.5 | 5 |
| 10 | 3.3 | A | T35(1)A335(3)010A(4) | 0.5 | 5 |
| 10 | 3.9 | A | T35(1)A395(3)010A(4) | 0.5 | 5 |
| 10 | 4.7 | A | T35(1)A475(3)010A(4) | 0.5 | 5 |
| 10 | 5.6 | B | T35(1)B565(3)010A(4) | 0.5 | 5 |
| 10 | 6.8 | B | T35(1)B685(3)010A(4) | 0.5 | 5 |
| 10 | 8.2 | C | T35(1)C825(3)010A(4) | 0.7 | 6 |
| 10 | 10.0 | C | T35(1)C106(3)010A(4) | 0.8 | 6 |
| 10 | 12.0 | E | T35(1)E126(3)010A(4) | 1.0 | 6 |
| 10 | 15.0 | E | T35(1)E156(3)010A(4) | 1.2 | 6 |
| 10 | 18.0 | E | T35(1)E186(3)010A(4) | 1.4 | 6 |
| 10 | 22.0 | E | T35(1)E226(3)010A(4) | 1.8 | 6 |
| 10 | 27.0 | F | T35(1)F276(3)010A(4) | 2.2 | 6 |
| 10 | 33.0 | F | T35(1)F336(3)010A(4) | 2.6 | 6 |
| 10 | 39.0 | G | T35(1)G396(3)010A(4) | 3.1 | 6 |
| 10 | 47.0 | H | T35(1)H476(3)010A(4) | 3.8 | 6 |
| 10 | 56.0 | H | T35(1)H566(3)010A(4) | 4.5 | 6 |
| 10 | 68.0 | H | T35(1)H686(3)010A(4) | 5.4 | 6 |
| 10 | 82.0 | J | T35(1)J826(3)010A(4) | 6.6 | 8 |
| 10 | 100.0 | J | T35(1)J107(3)010A(4) | 8.0 | 8 |
| 10 | 120.0 | K | T35(2)K127(3)010A(4) | 9.6 | 8 |
| 10 | 150.0 | K | T35(2)K157(3)010A(4) | 10.0 | 8 |
| 10 | 180.0 | L | T35(2)L187(3)010A(4) | 10.0 | 8 |
| 10 | 220.0 | L | T35(2)L227(3)010A(4) | 10.0 | 8 |
| 16 | 1.5 | A | T35(1)A155(3)016A(4) | 0.5 | 5 |
| 16 | 1.8 | A | T35(1)A185(3)016A(4) | 0.5 | 5 |
| 16 | 2.2 | A | T35(1)A225(3)016A(4) | 0.5 | 5 |
| 16 | 2.7 | A | T35(1)A275(3)016A(4) | 0.5 | 5 |
| 16 | 3.3 | A | T35(1)A335(3)016A(4) | 0.5 | 5 |
| 16 | 3.9 | B | T35(1)B395(3)016A(4) | 0.5 | 5 |
| 16 | 4.7 | B | T35(1)B475(3)016A(4) | 0.6 | 5 |
| 16 | 5.6 | C | T35(1)C565(3)016A(4) | 0.7 | 5 |
| 16 | 6.8 | C | T35(1)C685(3)016A(4) | 0.9 | 5 |
| 16 | 8.2 | E | T35(1)E825(3)016A(4) | 1.0 | 6 |
| 16 | 10.0 | E | T35(1)E106(3)016A(4) | 1.3 | 6 |
| 16 | 12.0 | E | T35(1)E126(3)016A(4) | 1.5 | 6 |
| 16 | 15.0 | E | T35(1)E156(3)016A(4) | 1.8 | 6 |
| 16 | 18.0 | F | T35(1)F186(3)016A(4) | 2.2 | 6 |
| 16 | 22.0 | F | T35(1)F226(3)016A(4) | 2.6 | 6 |
| 16 | 27.0 | H | T35(1)H276(3)016A(4) | 3.2 | 6 |
| 16 | 33.0 | H | T35(1)H336(3)016A(4) | 4.0 | 6 |
| (V) 85°C | µF | Case Code Case Size | KEMET Part Number | µA at 25°C Maximum/5 Minutes | 120 Hz Maximum |
| Rated Voltage | Rated Capacitance | | | DC Leakage | DF % at 25°C |

*(1) To complete KEMET Part Number, insert Series Designation as follows: "0 = T350, "1" = T351, "2" = T352, "3" = T353, "4" = T354, "5" = T355, "6" = T356.*

*(2) To complete KEMET Part Number, insert only Series Designation as follows: "0 = T350, "3" = T353, "4" = T354, "6" = T356.*

*(3) To complete KEMET part number, insert M - 20%, K - ±10%, J - ± 5%. Designates Capacitance tolerance.*

*(4) To complete KEMET part number, insert S = Standard coated or T=100% Sn (tin). Designates termination finish.*

*Higher voltage and better capacitance tolerance products may be substitued for an order within the same case size at KEMET's option.*

## Table 1 - Ratings and Part Number Reference cont.

| Rated Voltage | Rated Capacitance | Case Code Case Size | KEMET Part Number | DC Leakage | DF % at 25°C |
|---|---|---|---|---|---|
| (V) 85°C | µF | | | µA at 25°C Maximum/5 Minutes | 120 Hz Maximum |
| 16 | 39.0 | J | T35(2)J396(3)016A(4) | 4.7 | 6 |
| 16 | 47.0 | J | T35(2)J476(3)016A(4) | 5.6 | 6 |
| 16 | 56.0 | K | T35(2)K566(3)016A(4) | 6.8 | 6 |
| 16 | 68.0 | K | T35(2)K686(3)016A(4) | 8.2 | 6 |
| 16 | 82.0 | L | T35(2)L826(3)016A(4) | 9.8 | 8 |
| 16 | 100.0 | L | T35(2)L107(3)016A(4) | 10.0 | 8 |
| 16 | 120.0 | M | T35(2)M127(3)016A(4) | 10.0 | 8 |
| 16 | 150.0 | M | T35(2)M157(3)016A(4) | 10.0 | 8 |
| 20 | 1.0 | A | T35(1)A105(3)020A(4) | 0.5 | 3 |
| 20 | 1.2 | A | T35(1)A125(3)020A(4) | 0.5 | 5 |
| 20 | 1.5 | A | T35(1)A155(3)020A(4) | 0.5 | 5 |
| 20 | 1.8 | A | T35(1)A185(3)020A(4) | 0.5 | 5 |
| 20 | 2.2 | A | T35(1)A225(3)020A(4) | 0.5 | 5 |
| 20 | 2.7 | B | T35(1)B275(3)020A(4) | 0.5 | 5 |
| 20 | 3.3 | B | T35(1)B335(3)020A(4) | 0.5 | 5 |
| 20 | 3.9 | C | T35(1)C395(3)020A(4) | 0.6 | 5 |
| 20 | 4.7 | C | T35(1)C475(3)020A(4) | 0.8 | 5 |
| 20 | 5.6 | D | T35(1)D565(3)020A(4) | 0.9 | 5 |
| 20 | 6.8 | D | T35(1)D685(3)020A(4) | 1.1 | 5 |
| 20 | 8.2 | E | T35(1)E825(3)020A(4) | 1.3 | 6 |
| 20 | 10.0 | E | T35(1)E106(3)020A(4) | 1.6 | 6 |
| 20 | 12.0 | F | T35(1)F126(3)020A(4) | 1.9 | 6 |
| 20 | 15.0 | F | T35(1)F156(3)020A(4) | 2.4 | 6 |
| 25 | 1.0 | A | T35(1)A105(3)025A(4) | 0.5 | 3 |
| 25 | 1.2 | A | T35(1)A125(3)025A(4) | 0.5 | 5 |
| 25 | 1.5 | A | T35(1)A155(3)025A(4) | 0.5 | 5 |
| 25 | 1.8 | A | T35(1)A185(3)025A(4) | 0.5 | 5 |
| 25 | 2.2 | B | T35(1)B225(3)025A(4) | 0.5 | 5 |
| 25 | 2.7 | B | T35(1)B275(3)025A(4) | 0.5 | 5 |
| 25 | 3.3 | B | T35(1)B335(3)025A(4) | 0.7 | 5 |
| 25 | 3.9 | C | T35(1)C395(3)025A(4) | 0.8 | 5 |
| 25 | 4.7 | C | T35(1)C475(3)025A(4) | 0.9 | 5 |
| 25 | 5.6 | E | T35(1)E565(3)025A(4) | 1.1 | 5 |
| 25 | 6.8 | E | T35(1)E685(3)025A(4) | 1.4 | 5 |
| 25 | 8.2 | E | T35(1)E825(3)025A(4) | 1.6 | 6 |
| 25 | 10.0 | E | T35(1)E106(3)025A(4) | 2.0 | 6 |
| 25 | 12.0 | G | T35(1)G126(3)025A(4) | 2.4 | 6 |
| 25 | 15.0 | G | T35(1)G156(3)025A(4) | 3.0 | 6 |
| 25 | 18.0 | H | T35(1)H186(3)025A(4) | 3.6 | 6 |
| 25 | 22.0 | H | T35(1)H226(3)025A(4) | 4.4 | 6 |
| 25 | 27.0 | J | T35(2)J276(3)025A(4) | 5.4 | 6 |
| 25 | 33.0 | J | T35(2)J336(3)025A(4) | 6.6 | 6 |
| 25 | 39.0 | K | T35(2)K396(3)025A(4) | 7.8 | 6 |
| 25 | 47.0 | K | T35(2)K476(3)025A(4) | 9.4 | 6 |
| 25 | 56.0 | L | T35(2)L566(3)025A(4) | 10.0 | 6 |
| 25 | 68.0 | L | T35(2)L686(3)025A(4) | 10.0 | 6 |
| 35 | 0.10 | A | T35(1)A104(3)035A(4) | 0.5 | 3 |
| (V) 85°C | µF | Case Code Case Size | KEMET Part Number | µA at 25°C Maximum/5 Minutes | 120 Hz Maximum |
| Rated Voltage | Rated Capacitance | | | DC Leakage | DF % at 25°C |

*(1) To complete KEMET Part Number, insert Series Designation as follows: "0 = T350, "1" = T351, "2" = T352, "3" = T353, "4" = T354, "5" = T355, "6" = T356.*

*(2) To complete KEMET Part Number, insert only Series Designation as follows: "0 = T350, "3" = T353, "4" = T354, "6" = T356.*

*(3) To complete KEMET part number, insert M - 20%, K - ±10%, J - ± 5%. Designates Capacitance tolerance.*

*(4) To complete KEMET part number, insert S = Standard coated or T=100% Sn (tin). Designates termination finish.*

*Higher voltage and better capacitance tolerance products may be substitued for an order within the same case size at KEMET's option.*

## Table 1 - Ratings and Part Number Reference cont.

| Rated Voltage | Rated Capacitance | Case Code Case Size | KEMET Part Number | DC Leakage | DF % at 25°C |
|---|---|---|---|---|---|
| (V) 85°C | µF | | | µA at 25°C Maximum/5 Minutes | 120 Hz Maximum |
| 35 | 0.12 | A | T35(1)A124(3)035A(4) | 0.5 | 3 |
| 35 | 0.15 | A | T35(1)A154(3)035A(4) | 0.5 | 3 |
| 35 | 0.18 | A | T35(1)A184(3)035A(4) | 0.5 | 3 |
| 35 | 0.22 | A | T35(1)A224(3)035A(4) | 0.5 | 3 |
| 35 | 0.27 | A | T35(1)A274(3)035A(4) | 0.5 | 3 |
| 35 | 0.33 | A | T35(1)A334(3)035A(4) | 0.5 | 3 |
| 35 | 0.39 | A | T35(1)A394(3)035A(4) | 0.5 | 3 |
| 35 | 0.47 | A | T35(1)A474(3)035A(4) | 0.5 | 3 |
| 35 | 0.56 | A | T35(1)A564(3)035A(4) | 0.5 | 3 |
| 35 | 0.68 | A | T35(1)A684(3)035A(4) | 0.5 | 3 |
| 35 | 0.82 | A | T35(1)A824(3)035A(4) | 0.5 | 3 |
| 35 | 1.0 | A | T35(1)A105(3)035A(4) | 0.5 | 3 |
| 35 | 1.2 | B | T35(1)B125(3)035A(4) | 0.5 | 5 |
| 35 | 1.5 | B | T35(1)B155(3)035A(4) | 0.5 | 5 |
| 35 | 1.8 | C | T35(1)C185(3)035A(4) | 0.5 | 5 |
| 35 | 2.2 | C | T35(1)C225(3)035A(4) | 0.6 | 5 |
| 35 | 2.7 | D | T35(1)D275(3)035A(4) | 0.7 | 5 |
| 35 | 3.3 | D | T35(1)D335(3)035A(4) | 0.9 | 5 |
| 35 | 3.9 | E | T35(1)E395(3)035A(4) | 1.0 | 5 |
| 35 | 4.7 | E | T35(1)E475(3)035A(4) | 1.3 | 5 |
| 35 | 5.6 | F | T35(1)F565(3)035A(4) | 1.6 | 5 |
| 35 | 6.8 | F | T35(1)F685(3)035A(4) | 1.9 | 5 |
| 35 | 8.2 | G | T35(1)G825(3)035A(4) | 2.3 | 6 |
| 35 | 10.0 | G | T35(1)G106(3)035A(4) | 2.8 | 6 |
| 35 | 12.0 | J | T35(2)J126(3)035A(4) | 3.4 | 6 |
| 35 | 15.0 | J | T35(2)J156(3)035A(4) | 4.2 | 6 |
| 35 | 18.0 | K | T35(2)K186(3)035A(4) | 5.0 | 6 |
| 35 | 22.0 | K | T35(2)K226(3)035A(4) | 6.2 | 6 |
| 35 | 27.0 | L | T35(2)L276(3)035A(4) | 7.6 | 6 |
| 35 | 33.0 | L | T35(2)L336(3)035A(4) | 9.2 | 6 |
| 35 | 39.0 | M | T35(2)M396(3)035A(4) | 10.0 | 6 |
| 35 | 47.0 | M | T35(2)M476(3)035A(4) | 10.0 | 6 |
| 50 | 0.10 | A | T35(1)A104(3)050A(4) | 0.5 | 3 |
| 50 | 0.12 | A | T35(1)A124(3)050A(4) | 0.5 | 3 |
| 50 | 0.15 | A | T35(1)A154(3)050A(4) | 0.5 | 3 |
| 50 | 0.18 | A | T35(1)A184(3)050A(4) | 0.5 | 3 |
| 50 | 0.22 | A | T35(1)A224(3)050A(4) | 0.5 | 3 |
| 50 | 0.27 | A | T35(1)A274(3)050A(4) | 0.5 | 3 |
| 50 | 0.33 | A | T35(1)A334(3)050A(4) | 0.5 | 3 |
| 50 | 0.39 | B | T35(1)B394(3)050A(4) | 0.5 | 3 |
| 50 | 0.47 | B | T35(1)B474(3)050A(4) | 0.5 | 3 |
| 50 | 0.56 | B | T35(1)B564(3)050A(4) | 0.5 | 3 |
| 50 | 0.68 | B | T35(1)B684(3)050A(4) | 0.5 | 3 |
| 50 | 0.82 | B | T35(1)B824(3)050A(4) | 0.5 | 3 |
| 50 | 1.0 | B | T35(1)B105(3)050A(4) | 0.5 | 3 |
| 50 | 1.2 | D | T35(1)D125(3)050A(4) | 0.5 | 5 |
| 50 | 1.5 | E | T35(1)E155(3)050A(4) | 0.6 | 5 |
| (V) 85°C | µF | Case Code Case Size | KEMET Part Number | µA at 25°C Maximum/5 Minutes | 120 Hz Maximum |
| Rated Voltage | Rated Capacitance | | | DC Leakage | DF % at 25°C |

*(1) To complete KEMET Part Number, insert Series Designation as follows: "0 = T350, "1" = T351, "2" = T352, "3" = T353, "4" = T354, "5" = T355, "6" = T356.*

*(2) To complete KEMET Part Number, insert only Series Designation as follows: "0 = T350, "3" = T353, "4" = T354, "6" = T356.*

*(3) To complete KEMET part number, insert M - 20%, K - ±10%, J - ± 5%. Designates Capacitance tolerance.*

*(4) To complete KEMET part number, insert S = Standard coated or T=100% Sn (tin). Designates termination finish.*

*Higher voltage and better capacitance tolerance products may be substitued for an order within the same case size at KEMET's option.*

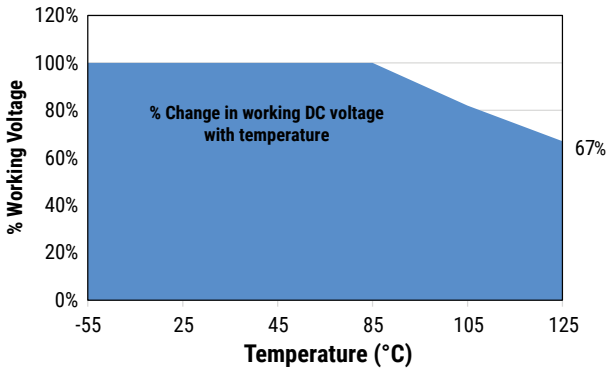
## Table 1 - Ratings and Part Number Reference cont.

| Rated Voltage | Rated Capacitance | Case Code Case Size | KEMET Part Number | DC Leakage | DF % at 25°C |
|---|---|---|---|---|---|
| (V) 85°C | µF | | | µA at 25°C Maximum/5 Minutes | 120 Hz Maximum |
| 50 | 1.8 | E | T35(1)E185(3)050A(4) | 0.7 | 5 |
| 50 | 2.2 | E | T35(1)E225(3)050A(4) | 0.9 | 5 |
| 50 | 2.7 | F | T35(1)F275(3)050A(4) | 1.1 | 5 |
| 50 | 3.3 | F | T35(1)F335(3)050A(4) | 1.3 | 5 |
| 50 | 3.9 | G | T35(1)G395(3)050A(4) | 1.6 | 5 |
| 50 | 4.7 | G | T35(1)G475(3)050A(4) | 1.9 | 5 |
| 50 | 5.6 | H | T35(1)H565(3)050A(4) | 2.2 | 5 |
| 50 | 6.8 | J | T35(2)J685(3)050A(4) | 2.7 | 5 |
| 50 | 8.2 | J | T35(2)J825(3)050A(4) | 3.3 | 6 |
| 50 | 10.0 | K | T35(2)K106(3)050A(4) | 4.0 | 6 |
| 50 | 12.0 | K | T35(2)K126(3)050A(4) | 4.8 | 6 |
| 50 | 15.0 | L | T35(2)L156(3)050A(4) | 6.0 | 6 |
| 50 | 18.0 | L | T35(2)L186(3)050A(4) | 7.2 | 6 |
| 50 | 22.0 | M | T35(2)M226(3)050A(4) | 8.8 | 0 |
| (V) 85°C | µF | Case Code Case Size | KEMET Part Number | µA at 25°C Maximum/5 Minutes | 120 Hz Maximum |
| Rated Voltage | Rated Capacitance | | | DC Leakage | DF % at 25°C |

*(1) To complete KEMET Part Number, insert Series Designation as follows: "0 = T350, "1" = T351, "2" = T352, "3" = T353, "4" = T354, "5" = T355, "6" = T356.*
*(2) To complete KEMET Part Number, insert only Series Designation as follows: "0 = T350, "3" = T353, "4" = T354, "6" = T356.*
*(3) To complete KEMET part number, insert M - 20%, K - ±10%, J - ± 5%. Designates Capacitance tolerance.*
*(4) To complete KEMET part number, insert S = Standard coated or T=100% Sn (tin). Designates termination finish.*
*Higher voltage and better capacitance tolerance products may be substituted for an order within the same case size at KEMET's option.*

## Recommended Voltage Derating Guidelines

| | −55°C to 85°C | 85°C to 125°C |
|---|---|---|
| % Change in working DC voltage with temperature | $V_R$ | 66% of $V_R$ |




## Ripple Current/Ripple Voltage

Permissible AC ripple voltage and current are related to equivalent series resistance (ESR) and the power dissipation capabilities of the device. Permissible AC ripple voltage that may be applied is limited by following criteria:

1. Dissipated power must not exceed the limits specified for the Series.
2. The positive peak AC voltage plus the DC bias voltage, if any, must not exceed the DC voltage rating of the capacitor.
3. The negative peak AC voltage in combination with bias voltage, if any, must not exceed the allowable limits specified for reverse voltage.

Thermal capacities for the various case sizes have been determined empirically and are listed below. The "ripple voltage" permissible may be calculated from the impedance and ESR data shown in the respective product section.

| Temperature Compensation Multipliers for Maximum Power Dissipation | | |
|---|---|---|
| T ≤ 25°C | T ≤ 85°C | T ≤ 125°C |
| 1.00 | 0.90 | 0.40 |

*T= Environmental Temperature*

*The maximum power dissipation rating must be reduced with increasing environmental operating temperatures. Refer to the Temperature Compensation Multiplier table for details.*

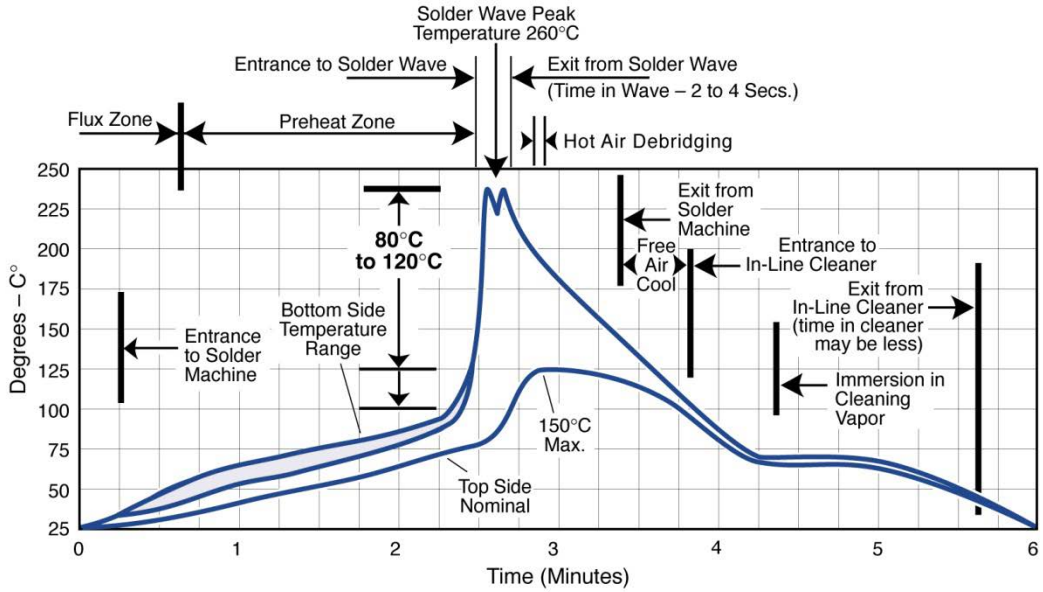
| Case Size | Maximum Power Dissipation (Pmax) Watts at 25°C |
|---|---|
| A | 0.040 |
| B | 0.050 |
| C | 0.060 |
| D | 0.065 |
| E | 0.070 |
| F | 0.080 |
| G | 0.090 |
| H | 0.100 |
| J | 0.110 |
| K | 0.120 |
| L | 0.130 |
| M | 0.140 |

Using the P max of the device, the maximum allowable rms ripple current or voltage may be determined.

$I(max) = \sqrt{P\ max/R}$
$E(max) = Z\sqrt{P\ max/R}$

*I = rms ripple current (amperes)*
*E = rms ripple voltage (volts)*
*P max = maximum power dissipation (watts)*
*R = ESR at specified frequency (ohms)*
*Z = Impedance at specified frequency (ohms)*

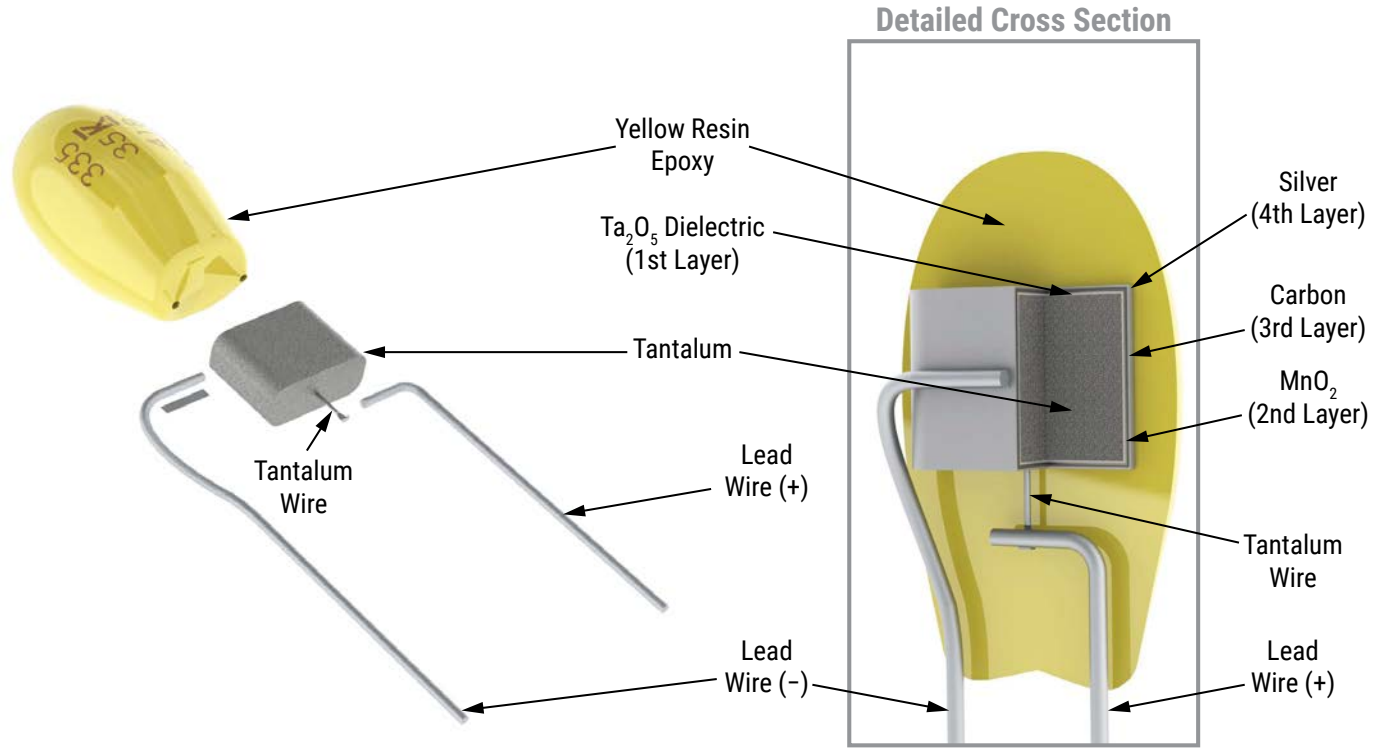
## Optimum Solder Wave Profile



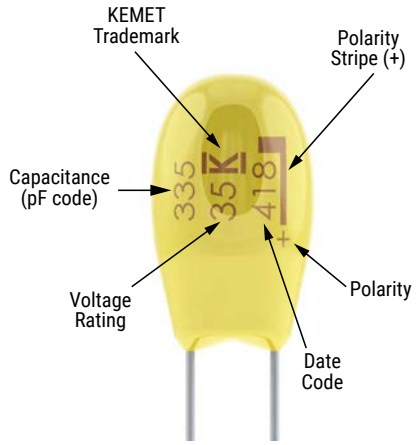

## Mounting

All encased capacitors will pass the Resistance to Soldering Heat Test of MIL–STD–202, Method 210, Condition C. This test simulates wave solder of topside board mount product. This demonstration of resistance to solder heat is in accordance with what is believed to be the industry standard. More severe treatment must be considered reflective of an improper soldering process. The above figure is a recommended solder wave profile for both axial and radial leaded solid tantalum capacitors.

## Construction




## Capacitor Marking



## Storage

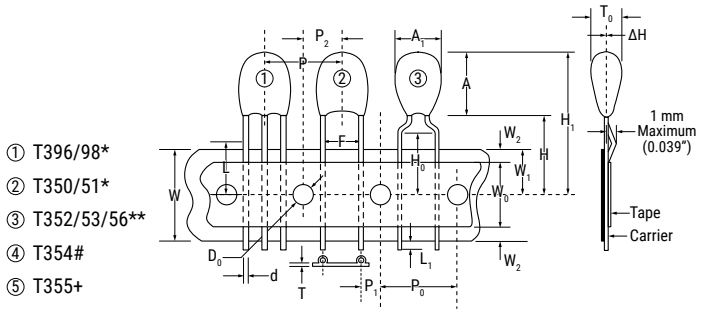
Tantalum molded radial/axial capacitors should be stored in normal working environments. KEMET recommends that maximum storage temperature not exceed 40°C and maximum storage humidity not exceed 60°C RH. Storage at high temperature may cause a small, temporary increase in leakage current (measured under standard conditions), but the original value is usually restored within a few minutes after application of rated voltage. Storage at high humidity may increase capacitance and dissipation factor. Solderability will be degraded by exposure to high temperatures, high humidity, corrosive atmospheres, and long term storage. For optimized solderability capacitors stock should be used promptly, preferably within three years of receipt.

## Tape & Reel Packaging Information

## Table 2 – Packaging Quantity

| Case Size | Standard Bulk Quantity | Standard Reel Quantity | Reel C-Spec | Ammo Pack Quantity |
|---|---|---|---|---|
| A | 1,000 | 1,500 | C-7301/7303 | 2,500 |
| B | 1,000 | 1,500 | | 2,500 |
| C | 1,000 | 1,500 | | 2,500 |
| D | 1,000 | 1,000 | | 2,000 |
| E | 1,000 | 1,000 | | 2,000 |
| F | 500 | 1,000 | | 1,500 |
| G | 500 | 1,000 | | 1,500 |
| H | 500 | 800 | | 1,500 |
| J | 100 | 800 | | 800 |
| K | 100 | 500 | | 800 |
| L, M | 100 | 500 | Pending | 500 |

## Figure 1




| Dimension | Symbol | Nominal mm (inch) | | Tolerance mm (inch) | |
|---|---|---|---|---|---|
| Body Height (1) | A | 17.0 (0.67) | | Maximum | |
| Body Width (1) | $A_1$ | 15.24 (0.600) | | Maximum | |
| Sprocket Hole Diameter | $D_0$ | 4.0 (0.157) | | ±0.3 (±0.012) | |
| Lead Diameter | d | 0.51 (0.020) | 0.64 (0.025) | ±0.05 (±0.002) | |
| Lead Center (4) | F | See Note Below | | | |
| Component Base to Tape Center (4) | H | C-7301 16.0 (0.630) | C-7303 18.0 (0.709) | C-7301 ±0.5 (±0.02) | C-7303 Minimum |
| Lead Standoff Height | $H_0$ | C-7301 16.0 (0.630) | C-7303 18.0 (0.709) | C-7301 ±0.5 (±0.02) | C-7303 Minimum |
| Component Height Above Tape Center | $H_1$ | 32.25 (1.270) | | Maximum | |
| Component Alignment Front to Rear | ΔH | 0 | | 1.0 (0.039) | |
| Cut Out Length | L | 11.0 (0.433) | | Maximum | |
| Lead Protrusion | $L_1$ | 1.0 (0.039) | | Maximum | |
| Component Pitch (5) | P | 12.7 (0.500) | | ±1.0 (±0.039) | |
| Sprocket Hole Pitch (2) | $P_0$ | 12.7 (0.500) | | ±0.03 (±0.012) | |
| Sprocket Hole Center to Lead Center (3) (4) | $P_1$ | See Note Below | | ±0.7 (±0.028) | |
| Sprocket Hole Center to Component Center (5) | $P_2$ | See Note Below | | | |
| Body Thickness | $T_0$ | 10.2 (0.400) | | Maximum | |
| Total Tape Thickness | T | 0.7 (0.28) | | ±0.02 (±0.008) | |
| Carrier Tape Width | W | 18.0 (0.709) | | +1.0/−0.5 (+0.039/−0.020) | |
| Hold-Down Tape Width | $W_0$ | 15 mm (0.561) | 6 mm (0.236) | +1.0/−0.8 (+0.039/−0.031 | |
| Sprocket Hole Location | $W_1$ | 9.0 (0.354) | | +0.075/−0.5 (+0.030/−0.020) | |
| Hold-Down Tape Location | $W_2$ | 12.0 (0.472) | | Maximum | |

*Notes:*

*(1) See Dimensions table for specific values per case size.*
*(2) Cumulative pitch error ± 1.0 mm (0.039) maximum in 20 consecutive sprocket hole locations.*
*(3) Measured at bottom of standoff.*
*(4) $P_1$ and F measured at egress from carrier tape.*
*(5) P and P2 measured at egress from carrier tape.*

** Lead spacings are 2.5 mm (0.098") center to center (T350 A-H)*
*** Lead spacings are 5.0 mm (0.197") center to center*
*# Lead spacings are 6.35 mm (0.25") center to center*
*+ Lead spacings are 3.18 mm (0.125") center to center*

| F Dimensions: | $P_1$ Dimensions: |
|---|---|
| 0.100" ±0.015 | Lead Spacing |
| 0.125" ±0.015 | 0.100" – 0.200 ±0.028" |
| 0.200" ±0.015 | 0.125" – 0.187 ±0.028" |
| 0.250" ±0.015" | 0.200" – 0.150 ±0.028" |
| 0.100" ±0.015 (3 leaded) | 0.250" – 0.125 ±0.028" |
| | 0.100" – 0.100 ±0.028" ( 3 leaded) |

## KEMET Electronics Corporation Sales Offices

For a complete list of our global sales offices, please visit www.kemet.com/sales.

## Disclaimer

All product specifications, statements, information and data (collectively, the "Information") in this datasheet are subject to change. The customer is responsible for checking and verifying the extent to which the Information contained in this publication is applicable to an order at the time the order is placed. All Information given herein is believed to be accurate and reliable, but it is presented without guarantee, warranty, or responsibility of any kind, expressed or implied.

Statements of suitability for certain applications are based on KEMET Electronics Corporation's ("KEMET") knowledge of typical operating conditions for such applications, but are not intended to constitute – and KEMET specifically disclaims – any warranty concerning suitability for a specific customer application or use. The Information is intended for use only by customers who have the requisite experience and capability to determine the correct products for their application. Any technical advice inferred from this Information or otherwise provided by KEMET with reference to the use of KEMET's products is given gratis, and KEMET assumes no obligation or liability for the advice given or results obtained.

Although KEMET designs and manufactures its products to the most stringent quality and safety standards, given the current state of the art, isolated component failures may still occur. Accordingly, customer applications which require a high degree of reliability or safety should employ suitable designs or other safeguards (such as installation of protective circuitry or redundancies) in order to ensure that the failure of an electrical component does not result in a risk of personal injury or property damage.

Although all product–related warnings, cautions and notes must be observed, the customer should not assume that all safety measures are indicted or that other measures may not be required.

*KEMET is a registered trademark of KEMET Electronics Corporation.*