

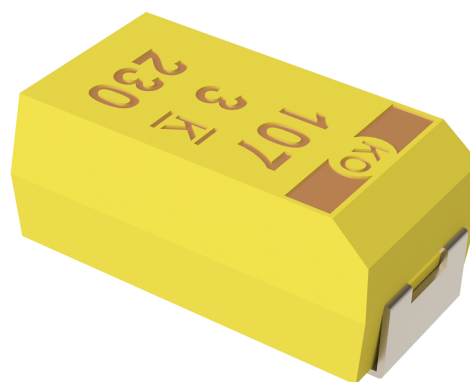
## Overview

The KEMET Organic Capacitor (KO-CAP) is a solid electrolytic capacitor with a conductive polymer cathode capable of delivering very low ESR and improved capacitance retention at high frequencies. KO-CAP combines the low ESR of multilayer ceramic, the high capacitance of aluminum electrolytic and the volumetric efficiency of tantalum into a single surface mount package. Unlike liquid electrolyte-based capacitors, KO-CAP has a very long operational life and high ripple current capabilities.

The T543 COTS Polymer Electrolytic capacitor is an upscreed version of the industrial T520 KO-CAP. The T543's upscreed option includes surge current testing of 10 cycles at +25°C and 10 cycles at -55°C/+85°C. In addition to 100% Tin (Sn) terminations a Tin-lead (SnPb) option is also available. The recommended application derating for these capacitors is 10 – 20%, rendering them suitable for application voltages from 2.25 to 50 VDC.

## Benefits

- Extremely low ESR
- High frequency capacitance retention
- 100% accelerated steady state aging
- 100% surge current tested
- Taped and reeled per EIA 481
- Volumetrically efficient
- Surge options at 25°C and -55°C/+85°C
- EIA standard case sizes
- Halogen-free Epoxy/RoHS Compliant



## Applications

Typical applications include DC/DC converters, switch mode and point of load power supply, radar pulse capacitor and telecommunications (mobile phone and base station). Other general applications include decoupling and filtering in applications requiring low ESR or a benign failure mode.

When extreme temperatures and humidity are taken into account, polymer tantalum capacitors offer a number of advantages over other types of capacitors. KEMET continues to investigate the behavior of polymer tantalum capacitors in extreme conditions. If you have questions about using these capacitors in a specific environment or application, we suggest you contact your local KEMET representative or Field Application Engineer. You may also refer to "Considerations for Polymer Capacitors in Extreme Environments" located at [www.kemet.com/ExtremePolymerPaper](http://www.kemet.com/ExtremePolymerPaper).

## Environmental Compliance

RoHS Compliant (6/6) according to Directive 2002/95/EC when ordered with 100% Sn solder.

## K-SIM

For a detailed analysis of specific part numbers, please visit [ksim.kemet.com](http://ksim.kemet.com) to access KEMET's K-SIM software. KEMET K-SIM is designed to simulate behavior of components with respect to frequency, ambient temperature, and DC bias levels.

## Ordering Information

| T               | 543                   | D                                    | 156                                                                                    | K                     | 035                                                                                                                                            | A                   | H                                                                    | E                                                              | 100       |                                                                                                        |
|-----------------|-----------------------|--------------------------------------|----------------------------------------------------------------------------------------|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|----------------------------------------------------------------------|----------------------------------------------------------------|-----------|--------------------------------------------------------------------------------------------------------|
| Capacitor Class | Series                | Case Size                            | Capacitance Code (pF)                                                                  | Capacitance Tolerance | Rated Voltage (VDC)                                                                                                                            | Failure Rate/Design | Termination Finish                                                   | Surge                                                          | ESR       | Packaging (C-Spec)                                                                                     |
| T = Tantalum    | Polymer Tantalum COTS | A,B, C, D, H, L, M, T, U, V, W, X, Y | First two digits represent significant figures. Third digit specifies number of zeros. | K = ±10%<br>M = ±20%  | 2R5 = 2.5<br>003 = 3<br>004 = 4<br>006 = 6.3<br>010 = 10<br>12R = 12.5<br>016 = 16<br>020 = 20<br>025 = 25<br>035 = 35<br>050 = 50<br>063 = 63 | A = N/A             | H = Standard Solder Coated (SnPb 5% Pb minimum)<br>T = 100% Tin (Sn) | E = None<br>S = 10 cycles 25°C<br>W = 10 cycles -55°C and 85°C | ESR in mΩ | Blank = 7" Reel<br>7280 = 13" Reel<br>7610 = Bulk Bag<br>7640 = Bluk plastic box<br>WAFL = Waffle Pack |

## Performance Characteristics

| Item                    | Performance Characteristics                         |
|-------------------------|-----------------------------------------------------|
| Operating Temperature   | -55°C to 105°C                                      |
| Rated Capacitance Range | 4.7 – 1,500 µF at 120 Hz/25°C                       |
| Capacitance Tolerance   | K Tolerance (10%), M Tolerance (20%)                |
| Rated Voltage Range     | 2.5 – 63 V                                          |
| DF (120 Hz)             | Refer to Part Number Electrical Specification Table |
| ESR (100 kHz)           | Refer to Part Number Electrical Specification Table |
| Leakage Current         | ≤ 0.1 CV (µA) at rated voltage after 5 minutes      |

## Qualification

| Test                           | Condition                                                                                                              |       | Characteristics |                                  |          |          |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------|-------|-----------------|----------------------------------|----------|----------|
| Endurance                      | 105°C at rated voltage, 2,000 hours                                                                                    |       | Δ C/C           | Within -20/+10 of initial value  |          |          |
|                                |                                                                                                                        |       | DF              | Within initial limits            |          |          |
|                                |                                                                                                                        |       | DCL             | Within 1.25 x initial limit      |          |          |
|                                |                                                                                                                        |       | ESR             | Within 2.0 x initial limit       |          |          |
| Storage Life                   | 105°C at 0 volts, 2,000 hours                                                                                          |       | Δ C/C           | Within -20/+10 of initial value  |          |          |
|                                |                                                                                                                        |       | DF              | Within initial limits            |          |          |
|                                |                                                                                                                        |       | DCL             | Within 1.25 x initial limit      |          |          |
|                                |                                                                                                                        |       | ESR             | Within 2.0 x initial limit       |          |          |
| Humidity                       | 60°C, 90% RH, 500 hours                                                                                                |       | Δ C/C           | Within -5%/+35% of initial value |          |          |
|                                |                                                                                                                        |       | DF              | Within initial limits            |          |          |
|                                |                                                                                                                        |       | DCL             | Within 5.0 x initial limit       |          |          |
|                                |                                                                                                                        |       | ESR             | Within 2.0 x initial limit       |          |          |
| Temperature Stability          | Extreme temperature exposure at a succession of continuous steps at +25°C, -55°C, +25°C, +85°C, +105°C, +25° C         | Δ C/C | +25°C           | -55°C                            | +85°C    | +105°C   |
|                                |                                                                                                                        | IL*   | +/-20%          | +/-20%                           | +/-30%   |          |
|                                |                                                                                                                        | DF    | IL              | IL                               | 1.2 x IL | 1.5 x IL |
|                                |                                                                                                                        | DCL   | IL              | N/A                              | 10 x IL  | 10 x IL  |
| Surge Voltage                  | 105°C, 1.32 x rated voltage, 1,000 cycles                                                                              |       | Δ C/C           | Within -20/+10 of initial value  |          |          |
|                                |                                                                                                                        |       | DF              | Within initial limits            |          |          |
|                                |                                                                                                                        |       | DCL             | Within initial limits            |          |          |
|                                |                                                                                                                        |       | ESR             | Within initial limits            |          |          |
| Mechanical Shock/<br>Vibration | MIL-STD-202, Method 213, Condition I, 100 G peak<br>MIL-STD-202, Method 204, Condition D, 10 Hz to 2,000 Hz, 20 G peak |       | Δ C/C           | Within ±10 of initial value      |          |          |
|                                |                                                                                                                        |       | DF              | Within initial limits            |          |          |
|                                |                                                                                                                        |       | DCL             | Within initial limits            |          |          |

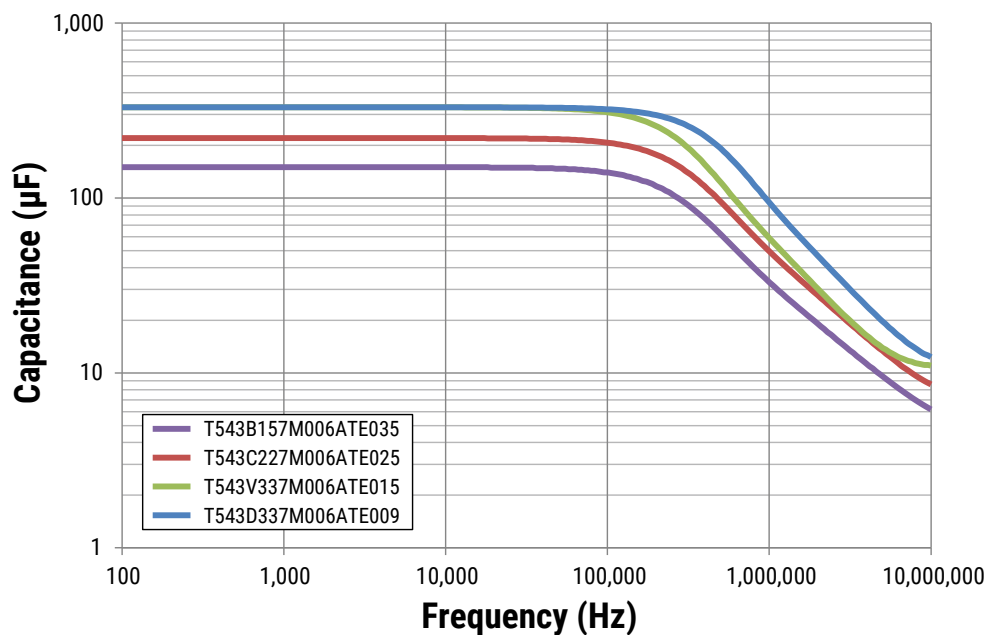
\*IL = Initial limit

## Electrical Characteristics

ESR vs. Frequency



Capacitance vs. Frequency



## Dimensions – Millimeters



| Case Size |         | Component Dimensions     |                          |                          |                    |                    |                            |                            |                |                |                 |                |                |                | Typical Weight |
|-----------|---------|--------------------------|--------------------------|--------------------------|--------------------|--------------------|----------------------------|----------------------------|----------------|----------------|-----------------|----------------|----------------|----------------|----------------|
| KEMET     | EIA     | L                        | W                        | H                        | F ±0.1<br>±(0.004) | S ±0.3<br>±(0.012) | B ±0.15<br>(Ref)<br>±0.006 | X<br>(Ref)                 | P<br>(Ref)     | R<br>(Ref)     | T<br>(Ref)      | A<br>(Min)     | G<br>(Ref)     | E<br>(Ref)     | (mg)           |
| A         | 3216-18 | 3.2±0.2<br>(0.126±0.008) | 1.6±0.2<br>(0.063±0.008) | 1.6±0.2<br>(0.063±0.008) | 1.2<br>(0.047)     | 0.8<br>(0.031)     | 0.4<br>(0.016)             | 0.10±0.10<br>(0.004±0.004) | 0.4<br>(0.016) | 0.4<br>(0.016) | 0.13<br>(0.005) | 1.2<br>(0.047) | 1.1<br>(0.043) | 1.3<br>(0.051) | 53.17          |
| B         | 3528-21 | 3.5±0.2<br>(0.138±0.008) | 2.8±0.2<br>(0.110±0.008) | 1.9±0.2<br>(0.075±0.004) | 2.2<br>(0.087)     | 0.8<br>(0.031)     | 0.4<br>(0.016)             | 0.10±0.10<br>(0.004±0.004) | 0.5<br>(0.020) | 1.0<br>(0.039) | 0.13<br>(0.005) | 1.9<br>(0.075) | 1.8<br>(0.071) | 2.2<br>(0.087) | 98.30          |
| C         | 6032-28 | 6.0±0.3<br>(0.236±0.012) | 3.2±0.3<br>(0.126±0.012) | 2.5±0.3<br>(0.098±0.012) | 2.2<br>(0.087)     | 1.3<br>(0.051)     | 0.5<br>(0.020)             | 0.10±0.10<br>(0.004±0.004) | 0.9<br>(0.035) | 1.0<br>(0.039) | 0.13<br>(0.005) | 3.1<br>(0.122) | 2.8<br>(0.110) | 2.4<br>(0.094) | 193.46         |
| D         | 7343-31 | 7.3±0.3<br>(0.287±0.012) | 4.3±0.3<br>(0.169±0.012) | 2.8±0.3<br>(0.110±0.012) | 2.4<br>(0.094)     | 1.3<br>(0.051)     | 0.5<br>(0.020)             | 0.10±0.10<br>(0.004±0.004) | 0.9<br>(0.035) | 1.0<br>(0.039) | 0.13<br>(0.005) | 3.8<br>(0.150) | 3.5<br>(0.138) | 3.5<br>(0.138) | 352.36         |
| H         | 7360-20 | 7.3±0.3<br>(0.287±0.012) | 6.0±0.3<br>(0.236±0.012) | 1.9±0.1<br>(0.075±0.004) | 4.1<br>(0.161)     | 1.3<br>(0.051)     | N/A                        | 0.10±0.10<br>(0.004±0.004) | N/A            | N/A            | 0.13<br>(0.005) | 3.8<br>(0.150) | 3.5<br>(0.138) | 3.5<br>(0.138) | 366.62         |
| L         | 6032-19 | 6.0±0.3<br>(0.236±0.012) | 3.2±0.2<br>(0.110±0.008) | 1.8±0.1<br>(0.071±0.004) | 2.2<br>(0.087)     | 1.3<br>(0.051)     | N/A                        | 0.05<br>(0.002)            | N/A            | N/A            | 0.13<br>(0.005) | 3.1<br>(0.122) | 2.8<br>(0.110) | 2.4<br>(0.094) | No data        |
| M         | 3528-15 | 3.5±0.2<br>(0.138±0.008) | 2.8±0.2<br>(0.110±0.008) | 1.4±0.1<br>(0.055±0.004) | 2.2<br>(0.087)     | 0.8<br>(0.031)     | N/A                        | 0.05<br>(0.002)            | N/A            | N/A            | 0.13<br>(0.005) | 1.9<br>(0.075) | 1.8<br>(0.071) | 2.2<br>(0.087) | 97.99          |
| T         | 3528-12 | 3.5±0.2<br>(0.138±0.008) | 2.8±0.2<br>(0.110±0.008) | 1.1±0.1<br>(0.043±0.004) | 2.2<br>(0.087)     | 0.8<br>(0.031)     | N/A                        | 0.05<br>(0.002)            | N/A            | N/A            | 0.13<br>(0.005) | 1.9<br>(0.075) | 1.8<br>(0.071) | 2.2<br>(0.087) | 59.38          |
| U         | 6032-15 | 6.0±0.3<br>(0.236±0.012) | 3.2±0.2<br>(0.110±0.008) | 1.4±0.1<br>(0.055±0.004) | 2.2<br>(0.087)     | 1.3<br>(0.051)     | N/A                        | 0.05<br>(0.002)            | N/A            | N/A            | 0.13<br>(0.005) | 3.1<br>(0.122) | 2.8<br>(0.110) | 2.4<br>(0.094) | No data        |
| V         | 7343-20 | 7.3±0.3<br>(0.287±0.012) | 4.3±0.3<br>(0.169±0.012) | 1.9±0.1<br>(0.075±0.004) | 2.4<br>(0.094)     | 1.3<br>(0.051)     | N/A                        | 0.05<br>(0.002)            | N/A            | N/A            | 0.13<br>(0.005) | 3.8<br>(0.150) | 3.5<br>(0.138) | 3.5<br>(0.138) | 262.90         |
| W         | 7343-15 | 7.3±0.3<br>(0.287±0.012) | 4.3±0.3<br>(0.169±0.012) | 1.4±0.1<br>(0.055±0.004) | 2.4<br>(0.094)     | 1.3<br>(0.051)     | N/A                        | 0.05<br>(0.002)            | N/A            | N/A            | 0.13<br>(0.005) | 3.8<br>(0.150) | 3.5<br>(0.138) | 3.5<br>(0.138) | 222.94         |
| X         | 7343-43 | 7.3±0.3<br>(0.287±0.012) | 4.3±0.3<br>(0.169±0.012) | 4.0±0.3<br>(0.157±0.012) | 2.4<br>(0.094)     | 1.3<br>(0.051)     | 0.5<br>(0.020)             | 0.10±0.10<br>(0.004±0.004) | 1.7<br>(0.067) | 1.0<br>(0.039) | 0.13<br>(0.005) | 3.8<br>(0.150) | 3.5<br>(0.138) | 3.5<br>(0.138) | 588.16         |
| Y         | 7343-40 | 7.3±0.3<br>(0.287±0.012) | 4.3±0.3<br>(0.169±0.012) | 3.8±0.2<br>(0.150±0.008) | 2.4<br>(0.094)     | 1.3<br>(0.051)     | 0.5<br>(0.020)             | 0.10±0.10<br>(0.004±0.004) | 1.7<br>(0.067) | 1.0<br>(0.039) | 0.13<br>(0.005) | 3.8<br>(0.150) | 3.5<br>(0.138) | 3.5<br>(0.138) | 481.55         |

Notes: (Ref) – Dimensions provided for reference only. For low profile cases, no dimensions are provided for B, P or R because these cases do not have a bevel or a notch.

These weights are provided as reference. If exact weights are needed, please contact your KEMET Sales Representative.

**Table 1 – Ratings & Part Number Reference**

| Rated Voltage | Rated Cap         | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                                           | DF                             | ESR                              | Maximum Allowable Ripple Current    | Maximum Operating Temp    | MSL                    |
|---------------|-------------------|-------------------------|------------------------------|------------------------------------------------------|--------------------------------|----------------------------------|-------------------------------------|---------------------------|------------------------|
| VDC at 105°C  | µF                | KEMET/EIA               | (See below for part options) | µA at V <sub>R</sub> , 25°C<br>Maximum/<br>5 Minutes | % at 25°C<br>120 Hz<br>Maximum | mΩ at 25°C<br>100 kHz<br>Maximum | mA at 45°C<br>100 kHz               | °C                        | Reflow Temp<br>≤ 260°C |
| 2.5           | 47                | A/3216-18               | T543A476(1)2R5A(2)(3)090     | 12                                                   | 8                              | 90                               | 1116                                | 105                       | 3                      |
| 2.5           | 56                | T/3528-12               | T543T566(1)2R5A(2)(3)040     | 14                                                   | 8                              | 40                               | 1620                                | 105                       | 3                      |
| 2.5           | 56                | T/3528-12               | T543T566(1)2R5A(2)(3)070     | 14                                                   | 8                              | 70                               | 1225                                | 105                       | 3                      |
| 2.5           | 68                | A/3216-18               | T543A686(1)2R5A(2)(3)070     | 17                                                   | 8                              | 70                               | 1265                                | 105                       | 3                      |
| 2.5           | 68                | A/3216-18               | T543A686(1)2R5A(2)(3)080     | 17                                                   | 8                              | 80                               | 1183                                | 105                       | 3                      |
| 2.5           | 100               | T/3528-12               | T543T107(1)2R5A(2)(3)040     | 25                                                   | 8                              | 40                               | 1620                                | 105                       | 3                      |
| 2.5           | 100               | T/3528-12               | T543T107(1)2R5A(2)(3)070     | 25                                                   | 8                              | 70                               | 1225                                | 105                       | 3                      |
| 2.5           | 100               | T/3528-12               | T543T107(1)2R5A(2)(3)080     | 25                                                   | 8                              | 80                               | 1146                                | 105                       | 3                      |
| 2.5           | 100               | B/3528-21               | T543B107(1)2R5A(2)(3)025     | 25                                                   | 8                              | 25                               | 2254                                | 105                       | 3                      |
| 2.5           | 100               | B/3528-21               | T543B107(1)2R5A(2)(3)035     | 25                                                   | 8                              | 35                               | 1905                                | 105                       | 3                      |
| 2.5           | 100               | B/3528-21               | T543B107(1)2R5A(2)(3)040     | 25                                                   | 8                              | 40                               | 1782                                | 105                       | 3                      |
| 2.5           | 100               | B/3528-21               | T543B107(1)2R5A(2)(3)070     | 25                                                   | 8                              | 70                               | 1347                                | 105                       | 3                      |
| 2.5           | 150               | U/6032-15               | T543U157(1)2R5A(2)(3)055     | 38                                                   | 8                              | 55                               | 1567                                | 105                       | 3                      |
| 2.5           | 220               | B/3528-21               | T543B227(1)2R5A(2)(3)025     | 55                                                   | 8                              | 25                               | 2254                                | 105                       | 3                      |
| 2.5           | 220               | B/3528-21               | T543B227(1)2R5A(2)(3)030     | 55                                                   | 8                              | 30                               | 2058                                | 105                       | 3                      |
| 2.5           | 220               | B/3528-21               | T543B227(1)2R5A(2)(3)035     | 55                                                   | 8                              | 35                               | 1905                                | 105                       | 3                      |
| 2.5           | 220               | B/3528-21               | T543B227(1)2R5A(2)(3)055     | 55                                                   | 8                              | 55                               | 1520                                | 105                       | 3                      |
| 2.5           | 220               | B/3528-21               | T543B227(1)2R5A(2)(3)070     | 55                                                   | 8                              | 70                               | 1347                                | 105                       | 3                      |
| 2.5           | 220               | U/6032-15               | T543U227(1)2R5A(2)(3)055     | 55                                                   | 8                              | 55                               | 1567                                | 105                       | 3                      |
| 2.5           | 220               | C/6032-25               | T543C227(1)2R5A(2)(3)025     | 55                                                   | 8                              | 25                               | 2569                                | 105                       | 3                      |
| 2.5           | 220               | C/6032-25               | T543C227(1)2R5A(2)(3)045     | 55                                                   | 8                              | 45                               | 1915                                | 105                       | 3                      |
| 2.5           | 220               | W/7343-15               | T543W227(1)2R5A(2)(3)025     | 55                                                   | 10                             | 25                               | 2683                                | 105                       | 3                      |
| 2.5           | 220               | V/7343-20               | T543V227(1)2R5A(2)(3)015     | 55                                                   | 10                             | 15                               | 3531                                | 105                       | 3                      |
| 2.5           | 220               | V/7343-20               | T543V227(1)2R5A(2)(3)025     | 55                                                   | 10                             | 25                               | 2735                                | 105                       | 3                      |
| 2.5           | 220               | V/7343-20               | T543V227(1)2R5A(2)(3)045     | 55                                                   | 10                             | 45                               | 2039                                | 105                       | 3                      |
| 2.5           | 220               | D-7343-31               | T543D227(1)2R5A(2)(3)040     | 55                                                   | 10                             | 40                               | 2372                                | 105                       | 3                      |
| 2.5           | 330               | B/3528-21               | T543B337(1)2R5A(2)(3)035     | 83                                                   | 8                              | 35                               | 1905                                | 105                       | 3                      |
| 2.5           | 330               | B/3528-21               | T543B337(1)2R5A(2)(3)045     | 83                                                   | 8                              | 45                               | 1680                                | 105                       | 3                      |
| 2.5           | 330               | B/3528-21               | T543B337(1)2R5A(2)(3)070     | 83                                                   | 8                              | 70                               | 1347                                | 105                       | 3                      |
| 2.5           | 330               | L/6032-19               | T543L337(1)2R5A(2)(3)012     | 83                                                   | 8                              | 12                               | 3536                                | 105                       | 3                      |
| 2.5           | 330               | L/6032-19               | T543L337(1)2R5A(2)(3)025     | 83                                                   | 8                              | 25                               | 2449                                | 105                       | 3                      |
| 2.5           | 330               | C/6032-25               | T543C337(1)2R5A(2)(3)015     | 83                                                   | 8                              | 15                               | 3317                                | 105                       | 3                      |
| 2.5           | 330               | C/6032-25               | T543C337(1)2R5A(2)(3)018     | 83                                                   | 8                              | 18                               | 3028                                | 105                       | 3                      |
| 2.5           | 330               | C/6032-25               | T543C337(1)2R5A(2)(3)025     | 83                                                   | 8                              | 25                               | 2569                                | 105                       | 3                      |
| 2.5           | 330               | C/6032-25               | T543C337(1)2R5A(2)(3)045     | 83                                                   | 8                              | 45                               | 1915                                | 105                       | 3                      |
| 2.5           | 330               | W/7343-15               | T543W337(1)2R5A(2)(3)015     | 83                                                   | 10                             | 15                               | 3464                                | 105                       | 3                      |
| 2.5           | 330               | W/7343-15               | T543W337(1)2R5A(2)(3)025     | 83                                                   | 10                             | 25                               | 2683                                | 105                       | 3                      |
| 2.5           | 330               | W/7343-15               | T543W337(1)2R5A(2)(3)040     | 83                                                   | 10                             | 40                               | 2121                                | 105                       | 3                      |
| 2.5           | 330               | V/7343-20               | T543V337(1)2R5A(2)(3)015     | 83                                                   | 10                             | 15                               | 3531                                | 105                       | 3                      |
| 2.5           | 330               | V/7343-20               | T543V337(1)2R5A(2)(3)018     | 83                                                   | 10                             | 18                               | 3223                                | 105                       | 3                      |
| 2.5           | 330               | V/7343-20               | T543V337(1)2R5A(2)(3)025     | 83                                                   | 10                             | 25                               | 2735                                | 105                       | 3                      |
| 2.5           | 330               | V/7343-20               | T543V337(1)2R5A(2)(3)040     | 83                                                   | 10                             | 40                               | 2162                                | 105                       | 3                      |
| 2.5           | 330               | D-7343-31               | T543D337(1)2R5A(2)(3)006     | 83                                                   | 10                             | 6                                | 6124                                | 105                       | 3                      |
| 2.5           | 330               | D-7343-31               | T543D337(1)2R5A(2)(3)007     | 83                                                   | 10                             | 7                                | 5669                                | 105                       | 3                      |
| 2.5           | 330               | D-7343-31               | T543D337(1)2R5A(2)(3)025     | 83                                                   | 10                             | 25                               | 3000                                | 105                       | 3                      |
| 2.5           | 470               | C/6032-25               | T543C477(1)2R5A(2)(3)025     | 118                                                  | 8                              | 25                               | 2569                                | 105                       | 3                      |
| 2.5           | 470               | C/6032-25               | T543C477(1)2R5A(2)(3)045     | 118                                                  | 8                              | 45                               | 1915                                | 105                       | 3                      |
| 2.5           | 470               | V/7343-20               | T543V477(1)2R5A(2)(3)018     | 118                                                  | 10                             | 18                               | 3223                                | 105                       | 3                      |
| 2.5           | 470               | D-7343-31               | T543D477(1)2R5A(2)(3)005     | 118                                                  | 10                             | 5                                | 6708                                | 105                       | 3                      |
| 2.5           | 470               | D-7343-31               | T543D477(1)2R5A(2)(3)006     | 118                                                  | 10                             | 6                                | 6124                                | 105                       | 3                      |
| VDC at 105°C  | µF                | KEMET/EIA               | (See below for part options) | µA at V <sub>R</sub> , 25°C<br>Maximum/<br>5 Minutes | % at 25°C<br>120 Hz<br>Maximum | mΩ at 25°C<br>100 kHz<br>Maximum | mA at 45°C<br>100 kHz               | °C                        | Reflow Temp<br>≤ 260°C |
| Rated Voltage | Rated Capacitance | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                                           | DF                             | ESR                              | Maximum Allowable<br>Ripple Current | Maximum<br>Operating Temp | MSL                    |

(1) To complete KEMET part number, insert M for ±20%, K for ±10%. Designates capacitance tolerance.

(2) To complete KEMET part number, H = Solder Plated, T = 100% Tin (Sn). Designates termination finish.

(3) To complete KEMET part number, insert E = None, S = 10 cycles +25°C, W = 10 cycles -55°C +85°C. Designates surge current option.

Refer to Ordering Information for additional detail.

**Table 1 – Ratings & Part Number Reference cont'd**

| Rated Voltage | Rated Cap         | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                                           | DF                             | ESR                              | Maximum Allowable Ripple Current    | Maximum Operating Temp    | MSL                    |
|---------------|-------------------|-------------------------|------------------------------|------------------------------------------------------|--------------------------------|----------------------------------|-------------------------------------|---------------------------|------------------------|
| VDC at 105°C  | µF                | KEMET/EIA               | (See below for part options) | µA at V <sub>R</sub> , 25°C<br>Maximum/<br>5 Minutes | % at 25°C<br>120 Hz<br>Maximum | mΩ at 25°C<br>100 kHz<br>Maximum | mA at 45°C<br>100 kHz               | °C                        | Reflow Temp<br>≤ 260°C |
| 2.5           | 470               | D-7343-31               | T543D477(1)2R5A(2)(3)007     | 118                                                  | 10                             | 7                                | 5669                                | 105                       | 3                      |
| 2.5           | 470               | D-7343-31               | T543D477(1)2R5A(2)(3)009     | 118                                                  | 10                             | 9                                | 5000                                | 105                       | 3                      |
| 2.5           | 470               | D-7343-31               | T543D477(1)2R5A(2)(3)010     | 118                                                  | 10                             | 10                               | 4743                                | 105                       | 3                      |
| 2.5           | 470               | D-7343-31               | T543D477(1)2R5A(2)(3)025     | 118                                                  | 10                             | 25                               | 3000                                | 105                       | 3                      |
| 2.5           | 560               | D-7343-31               | T543D567(1)2R5A(2)(3)005     | 140                                                  | 10                             | 5                                | 6708                                | 105                       | 3                      |
| 2.5           | 680               | D-7343-31               | T543D687(1)2R5A(2)(3)006     | 170                                                  | 10                             | 6                                | 6124                                | 105                       | 3                      |
| 2.5           | 680               | D-7343-31               | T543D687(1)2R5A(2)(3)010     | 170                                                  | 10                             | 10                               | 4743                                | 105                       | 3                      |
| 2.5           | 680               | D-7343-31               | T543D687(1)2R5A(2)(3)015     | 170                                                  | 10                             | 15                               | 3873                                | 105                       | 3                      |
| 2.5           | 680               | D-7343-31               | T543D687(1)2R5A(2)(3)040     | 170                                                  | 10                             | 40                               | 2372                                | 105                       | 3                      |
| 2.5           | 680               | Y/7343-40               | T543Y687(1)2R5A(2)(3)005     | 170                                                  | 10                             | 5                                | 6943                                | 105                       | 3                      |
| 2.5           | 680               | Y/7343-40               | T543Y687(1)2R5A(2)(3)006     | 170                                                  | 10                             | 6                                | 6338                                | 105                       | 3                      |
| 2.5           | 680               | Y/7343-40               | T543Y687(1)2R5A(2)(3)010     | 170                                                  | 10                             | 10                               | 4909                                | 105                       | 3                      |
| 2.5           | 680               | Y/7343-40               | T543Y687(1)2R5A(2)(3)015     | 170                                                  | 10                             | 15                               | 4008                                | 105                       | 3                      |
| 2.5           | 680               | Y/7343-40               | T543Y687(1)2R5A(2)(3)025     | 170                                                  | 10                             | 25                               | 3105                                | 105                       | 3                      |
| 2.5           | 680               | X/7343-43               | T543X687(1)2R5A(2)(3)006     | 170                                                  | 10                             | 6                                | 6416                                | 105                       | 3                      |
| 2.5           | 1000              | Y/7343-40               | T543Y108(1)2R5A(2)(3)005     | 250                                                  | 10                             | 5                                | 6943                                | 105                       | 3                      |
| 2.5           | 1000              | Y/7343-40               | T543Y108(1)2R5A(2)(3)006     | 250                                                  | 10                             | 6                                | 6338                                | 105                       | 3                      |
| 2.5           | 1000              | Y/7343-40               | T543Y108(1)2R5A(2)(3)010     | 250                                                  | 10                             | 10                               | 4909                                | 105                       | 3                      |
| 2.5           | 1000              | Y/7343-40               | T543Y108(1)2R5A(2)(3)015     | 250                                                  | 10                             | 15                               | 4008                                | 105                       | 3                      |
| 2.5           | 1000              | Y/7343-40               | T543Y108(1)2R5A(2)(3)025     | 250                                                  | 10                             | 25                               | 3105                                | 105                       | 3                      |
| 2.5           | 1000              | X/7343-43               | T543X108(1)2R5A(2)(3)005     | 250                                                  | 10                             | 5                                | 7029                                | 105                       | 3                      |
| 2.5           | 1000              | X/7343-43               | T543X108(1)2R5A(2)(3)006     | 250                                                  | 10                             | 6                                | 6416                                | 105                       | 3                      |
| 2.5           | 1000              | X/7343-43               | T543X108(1)2R5A(2)(3)010     | 250                                                  | 10                             | 10                               | 4970                                | 105                       | 3                      |
| 2.5           | 1500              | X/7343-43               | T543X158(1)2R5A(2)(3)005     | 375                                                  | 10                             | 5                                | 7029                                | 105                       | 3                      |
| 2.5           | 1500              | X/7343-43               | T543X158(1)2R5A(2)(3)010     | 375                                                  | 10                             | 10                               | 4970                                | 105                       | 3                      |
| 3             | 100               | B/3528-21               | T543B107(1)003A(2)(3)035     | 30                                                   | 8                              | 35                               | 1905                                | 105                       | 3                      |
| 3             | 100               | B/3528-21               | T543B107(1)003A(2)(3)040     | 30                                                   | 8                              | 40                               | 1782                                | 105                       | 3                      |
| 3             | 100               | B/3528-21               | T543B107(1)003A(2)(3)070     | 30                                                   | 8                              | 70                               | 1347                                | 105                       | 3                      |
| 3             | 100               | B/3528-21               | T543B107(1)003A(2)(3)080     | 30                                                   | 8                              | 80                               | 1260                                | 105                       | 3                      |
| 3             | 150               | B/3528-21               | T543B157(1)003A(2)(3)035     | 45                                                   | 8                              | 35                               | 1905                                | 105                       | 3                      |
| 3             | 150               | B/3528-21               | T543B157(1)003A(2)(3)040     | 45                                                   | 8                              | 40                               | 1782                                | 105                       | 3                      |
| 3             | 150               | B/3528-21               | T543B157(1)003A(2)(3)070     | 45                                                   | 8                              | 70                               | 1347                                | 105                       | 3                      |
| 3             | 150               | B/3528-21               | T543B157(1)003A(2)(3)080     | 45                                                   | 8                              | 80                               | 1260                                | 105                       | 3                      |
| 3             | 330               | V/7343-20               | T543V337(1)003A(2)(3)015     | 99                                                   | 10                             | 15                               | 3531                                | 105                       | 3                      |
| 3             | 330               | V/7343-20               | T543V337(1)003A(2)(3)025     | 99                                                   | 10                             | 25                               | 2735                                | 105                       | 3                      |
| 3             | 330               | D-7343-31               | T543D337(1)003A(2)(3)025     | 99                                                   | 10                             | 25                               | 3000                                | 105                       | 3                      |
| 3             | 470               | D-7343-31               | T543D477(1)003A(2)(3)010     | 141                                                  | 10                             | 10                               | 4743                                | 105                       | 3                      |
| 3             | 470               | D-7343-31               | T543D477(1)003A(2)(3)025     | 141                                                  | 10                             | 25                               | 3000                                | 105                       | 3                      |
| 3             | 680               | D-7343-31               | T543D687(1)003A(2)(3)010     | 204                                                  | 10                             | 10                               | 4743                                | 105                       | 3                      |
| 3             | 680               | D-7343-31               | T543D687(1)003A(2)(3)015     | 204                                                  | 10                             | 15                               | 3873                                | 105                       | 3                      |
| 3             | 680               | D-7343-31               | T543D687(1)003A(2)(3)025     | 204                                                  | 10                             | 25                               | 3000                                | 105                       | 3                      |
| 3             | 680               | D-7343-31               | T543D687(1)003A(2)(3)040     | 204                                                  | 10                             | 40                               | 2372                                | 105                       | 3                      |
| 3             | 1000              | X/7343-43               | T543X108(1)003A(2)(3)010     | 300                                                  | 10                             | 10                               | 4970                                | 105                       | 3                      |
| 3             | 1000              | X/7343-43               | T543X108(1)003A(2)(3)015     | 300                                                  | 10                             | 15                               | 4058                                | 105                       | 3                      |
| 3             | 1000              | X/7343-43               | T543X108(1)003A(2)(3)030     | 300                                                  | 10                             | 30                               | 2869                                | 105                       | 3                      |
| 3             | 1500              | X/7343-43               | T543X158(1)003A(2)(3)008     | 450                                                  | 10                             | 8                                | 5557                                | 105                       | 3                      |
| 4             | 15                | T/3528-12               | T543T156(1)004A(2)(3)100     | 6                                                    | 8                              | 100                              | 1025                                | 105                       | 3                      |
| 4             | 33                | A/3216-18               | T543A336(1)004A(2)(3)070     | 13                                                   | 8                              | 70                               | 1265                                | 105                       | 3                      |
| 4             | 33                | A/3216-18               | T543A336(1)004A(2)(3)080     | 13                                                   | 8                              | 80                               | 1183                                | 105                       | 3                      |
| 4             | 47                | A/3216-18               | T543A476(1)004A(2)(3)070     | 19                                                   | 8                              | 70                               | 1265                                | 105                       | 3                      |
| VDC at 105°C  | µF                | KEMET/EIA               | (See below for part options) | µA at V <sub>R</sub> , 25°C<br>Maximum/<br>5 Minutes | % at 25°C<br>120 Hz<br>Maximum | mΩ at 25°C<br>100 kHz<br>Maximum | mA at 45°C<br>100 kHz               | °C                        | Reflow Temp<br>≤ 260°C |
| Rated Voltage | Rated Capacitance | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                                           | DF                             | ESR                              | Maximum Allowable<br>Ripple Current | Maximum<br>Operating Temp | MSL                    |

(1) To complete KEMET part number, insert M for ±20%, K for ±10%. Designates capacitance tolerance.

(2) To complete KEMET part number, H = Solder Plated, T = 100% Tin (Sn). Designates termination finish.

(3) To complete KEMET part number, insert E = None, S = 10 cycles +25°C, W = 10 cycles -55°C +85°C. Designates surge current option.

Refer to Ordering Information for additional detail.

**Table 1 – Ratings & Part Number Reference cont'd**

| Rated Voltage | Rated Cap         | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                                           | DF                             | ESR                              | Maximum Allowable Ripple Current    | Maximum Operating Temp    | MSL                    |
|---------------|-------------------|-------------------------|------------------------------|------------------------------------------------------|--------------------------------|----------------------------------|-------------------------------------|---------------------------|------------------------|
| VDC at 105°C  | µF                | KEMET/EIA               | (See below for part options) | µA at V <sub>R</sub> , 25°C<br>Maximum/<br>5 Minutes | % at 25°C<br>120 Hz<br>Maximum | mΩ at 25°C<br>100 kHz<br>Maximum | mA at 45°C<br>100 kHz               | °C                        | Reflow Temp<br>≤ 260°C |
| 4             | 47                | A/3216-18               | T543A476(1)004A(2)(3)080     | 19                                                   | 8                              | 80                               | 1183                                | 105                       | 3                      |
| 4             | 47                | T/3528-12               | T543T476(1)004A(2)(3)070     | 19                                                   | 8                              | 70                               | 1225                                | 105                       | 3                      |
| 4             | 68                | T/3528-12               | T543T686(1)004A(2)(3)070     | 27                                                   | 8                              | 70                               | 1225                                | 105                       | 3                      |
| 4             | 68                | T/3528-12               | T543T686(1)004A(2)(3)080     | 27                                                   | 8                              | 80                               | 1146                                | 105                       | 3                      |
| 4             | 68                | B/3528-21               | T543B686(1)004A(2)(3)035     | 27                                                   | 8                              | 35                               | 1905                                | 105                       | 3                      |
| 4             | 68                | B/3528-21               | T543B686(1)004A(2)(3)040     | 27                                                   | 8                              | 40                               | 1782                                | 105                       | 3                      |
| 4             | 68                | B/3528-21               | T543B686(1)004A(2)(3)070     | 27                                                   | 8                              | 70                               | 1347                                | 105                       | 3                      |
| 4             | 68                | B/3528-21               | T543B686(1)004A(2)(3)080     | 27                                                   | 8                              | 80                               | 1260                                | 105                       | 3                      |
| 4             | 68                | U/6032-15               | T543U686(1)004A(2)(3)055     | 27                                                   | 8                              | 55                               | 1567                                | 105                       | 3                      |
| 4             | 100               | A/3216-18               | T543A107(1)004A(2)(3)150     | 40                                                   | 8                              | 150                              | 864                                 | 105                       | 3                      |
| 4             | 100               | A/3216-18               | T543A107(1)004A(2)(3)200     | 40                                                   | 8                              | 200                              | 748                                 | 105                       | 3                      |
| 4             | 100               | T/3528-12               | T543T107(1)004A(2)(3)070     | 40                                                   | 8                              | 70                               | 1225                                | 105                       | 3                      |
| 4             | 100               | T/3528-12               | T543T107(1)004A(2)(3)150     | 40                                                   | 8                              | 150                              | 837                                 | 105                       | 3                      |
| 4             | 100               | B/3528-21               | T543B107(1)004A(2)(3)035     | 40                                                   | 8                              | 35                               | 1905                                | 105                       | 3                      |
| 4             | 100               | B/3528-21               | T543B107(1)004A(2)(3)040     | 40                                                   | 8                              | 40                               | 1782                                | 105                       | 3                      |
| 4             | 100               | B/3528-21               | T543B107(1)004A(2)(3)070     | 40                                                   | 8                              | 70                               | 1347                                | 105                       | 3                      |
| 4             | 100               | B/3528-21               | T543B107(1)004A(2)(3)080     | 40                                                   | 8                              | 80                               | 1260                                | 105                       | 3                      |
| 4             | 100               | U/6032-15               | T543U107(1)004A(2)(3)055     | 40                                                   | 8                              | 55                               | 1567                                | 105                       | 3                      |
| 4             | 150               | B/3528-21               | T543B157(1)004A(2)(3)035     | 60                                                   | 8                              | 35                               | 1905                                | 105                       | 3                      |
| 4             | 150               | B/3528-21               | T543B157(1)004A(2)(3)040     | 60                                                   | 8                              | 40                               | 1782                                | 105                       | 3                      |
| 4             | 150               | B/3528-21               | T543B157(1)004A(2)(3)070     | 60                                                   | 8                              | 70                               | 1347                                | 105                       | 3                      |
| 4             | 150               | U/6032-15               | T543U157(1)004A(2)(3)055     | 60                                                   | 8                              | 55                               | 1567                                | 105                       | 3                      |
| 4             | 150               | C/6032-25               | T543C157(1)004A(2)(3)015     | 60                                                   | 8                              | 15                               | 3317                                | 105                       | 3                      |
| 4             | 150               | C/6032-25               | T543C157(1)004A(2)(3)025     | 60                                                   | 8                              | 25                               | 2569                                | 105                       | 3                      |
| 4             | 150               | C/6032-25               | T543C157(1)004A(2)(3)045     | 60                                                   | 8                              | 45                               | 1915                                | 105                       | 3                      |
| 4             | 150               | C/6032-25               | T543C157(1)004A(2)(3)100     | 60                                                   | 8                              | 100                              | 1285                                | 105                       | 3                      |
| 4             | 150               | V/7343-20               | T543V157(1)004A(2)(3)015     | 60                                                   | 10                             | 15                               | 3531                                | 105                       | 3                      |
| 4             | 150               | V/7343-20               | T543V157(1)004A(2)(3)025     | 60                                                   | 10                             | 25                               | 2735                                | 105                       | 3                      |
| 4             | 220               | B/3528-21               | T543B227(1)004A(2)(3)035     | 88                                                   | 8                              | 35                               | 1905                                | 105                       | 3                      |
| 4             | 220               | B/3528-21               | T543B227(1)004A(2)(3)045     | 88                                                   | 8                              | 45                               | 1680                                | 105                       | 3                      |
| 4             | 220               | B/3528-21               | T543B227(1)004A(2)(3)070     | 88                                                   | 8                              | 70                               | 1347                                | 105                       | 3                      |
| 4             | 220               | L/6032-19               | T543L227(1)004A(2)(3)012     | 88                                                   | 8                              | 12                               | 3536                                | 105                       | 3                      |
| 4             | 220               | L/6032-19               | T543L227(1)004A(2)(3)025     | 88                                                   | 8                              | 25                               | 2449                                | 105                       | 3                      |
| 4             | 220               | C/6032-25               | T543C227(1)004A(2)(3)015     | 88                                                   | 8                              | 15                               | 3317                                | 105                       | 3                      |
| 4             | 220               | C/6032-25               | T543C227(1)004A(2)(3)018     | 88                                                   | 8                              | 18                               | 3028                                | 105                       | 3                      |
| 4             | 220               | C/6032-25               | T543C227(1)004A(2)(3)025     | 88                                                   | 8                              | 25                               | 2569                                | 105                       | 3                      |
| 4             | 220               | C/6032-25               | T543C227(1)004A(2)(3)045     | 88                                                   | 8                              | 45                               | 1915                                | 105                       | 3                      |
| 4             | 220               | C/6032-25               | T543C227(1)004A(2)(3)055     | 88                                                   | 8                              | 55                               | 1732                                | 105                       | 3                      |
| 4             | 220               | W/7343-15               | T543W227(1)004A(2)(3)025     | 88                                                   | 10                             | 25                               | 2683                                | 105                       | 3                      |
| 4             | 220               | W/7343-15               | T543W227(1)004A(2)(3)040     | 88                                                   | 10                             | 40                               | 2121                                | 105                       | 3                      |
| 4             | 220               | V/7343-20               | T543V227(1)004A(2)(3)015     | 88                                                   | 10                             | 15                               | 3531                                | 105                       | 3                      |
| 4             | 220               | V/7343-20               | T543V227(1)004A(2)(3)018     | 88                                                   | 10                             | 18                               | 3223                                | 105                       | 3                      |
| 4             | 220               | V/7343-20               | T543V227(1)004A(2)(3)025     | 88                                                   | 10                             | 25                               | 2735                                | 105                       | 3                      |
| 4             | 220               | V/7343-20               | T543V227(1)004A(2)(3)040     | 88                                                   | 10                             | 40                               | 2162                                | 105                       | 3                      |
| 4             | 220               | V/7343-20               | T543V227(1)004A(2)(3)045     | 88                                                   | 10                             | 45                               | 2039                                | 105                       | 3                      |
| 4             | 220               | D-7343-31               | T543D227(1)004A(2)(3)025     | 88                                                   | 10                             | 25                               | 3000                                | 105                       | 3                      |
| 4             | 220               | D-7343-31               | T543D227(1)004A(2)(3)065     | 88                                                   | 10                             | 65                               | 1861                                | 105                       | 3                      |
| 4             | 330               | C/6032-25               | T543C337(1)004A(2)(3)025     | 132                                                  | 8                              | 25                               | 2569                                | 105                       | 3                      |
| 4             | 330               | C/6032-25               | T543C337(1)004A(2)(3)045     | 132                                                  | 8                              | 45                               | 1915                                | 105                       | 3                      |
| 4             | 330               | V/7343-20               | T543V337(1)004A(2)(3)018     | 132                                                  | 10                             | 18                               | 3223                                | 105                       | 3                      |
| VDC at 105°C  | µF                | KEMET/EIA               | (See below for part options) | µA at V <sub>R</sub> , 25°C<br>Maximum/<br>5 Minutes | % at 25°C<br>120 Hz<br>Maximum | mΩ at 25°C<br>100 kHz<br>Maximum | mA at 45°C<br>100 kHz               | °C                        | Reflow Temp<br>≤ 260°C |
| Rated Voltage | Rated Capacitance | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                                           | DF                             | ESR                              | Maximum Allowable<br>Ripple Current | Maximum<br>Operating Temp | MSL                    |

(1) To complete KEMET part number, insert M for ±20%, K for ±10%. Designates capacitance tolerance.

(2) To complete KEMET part number, H = Solder Plated, T = 100% Tin (Sn). Designates termination finish.

(3) To complete KEMET part number, insert E = None, S = 10 cycles +25°C, W = 10 cycles -55°C +85°C. Designates surge current option.

Refer to Ordering Information for additional detail.

**Table 1 – Ratings & Part Number Reference cont'd**

| Rated Voltage | Rated Cap         | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                                           | DF                             | ESR                              | Maximum Allowable Ripple Current    | Maximum Operating Temp    | MSL                    |
|---------------|-------------------|-------------------------|------------------------------|------------------------------------------------------|--------------------------------|----------------------------------|-------------------------------------|---------------------------|------------------------|
| VDC at 105°C  | µF                | KEMET/EIA               | (See below for part options) | µA at V <sub>R</sub> , 25°C<br>Maximum/<br>5 Minutes | % at 25°C<br>120 Hz<br>Maximum | mΩ at 25°C<br>100 kHz<br>Maximum | mA at 45°C<br>100 kHz               | °C                        | Reflow Temp<br>≤ 260°C |
| 4             | 330               | V/7343-20               | T543V337(1)004A(2)(3)025     | 132                                                  | 10                             | 25                               | 2735                                | 105                       | 3                      |
| 4             | 330               | V/7343-20               | T543V337(1)004A(2)(3)040     | 132                                                  | 10                             | 40                               | 2162                                | 105                       | 3                      |
| 4             | 330               | D-7343-31               | T543D337(1)004A(2)(3)005     | 132                                                  | 10                             | 5                                | 6708                                | 105                       | 3                      |
| 4             | 330               | D-7343-31               | T543D337(1)004A(2)(3)006     | 132                                                  | 10                             | 6                                | 6124                                | 105                       | 3                      |
| 4             | 330               | D-7343-31               | T543D337(1)004A(2)(3)007     | 132                                                  | 10                             | 7                                | 5669                                | 105                       | 3                      |
| 4             | 330               | D-7343-31               | T543D337(1)004A(2)(3)009     | 132                                                  | 10                             | 9                                | 5000                                | 105                       | 3                      |
| 4             | 330               | D-7343-31               | T543D337(1)004A(2)(3)010     | 132                                                  | 10                             | 10                               | 4743                                | 105                       | 3                      |
| 4             | 330               | D-7343-31               | T543D337(1)004A(2)(3)012     | 132                                                  | 10                             | 12                               | 4330                                | 105                       | 3                      |
| 4             | 330               | D-7343-31               | T543D337(1)004A(2)(3)015     | 132                                                  | 10                             | 15                               | 3873                                | 105                       | 3                      |
| 4             | 330               | D-7343-31               | T543D337(1)004A(2)(3)025     | 132                                                  | 10                             | 25                               | 3000                                | 105                       | 3                      |
| 4             | 330               | D-7343-31               | T543D337(1)004A(2)(3)040     | 132                                                  | 10                             | 40                               | 2372                                | 105                       | 3                      |
| 4             | 330               | D-7343-31               | T543D337(1)004A(2)(3)045     | 132                                                  | 10                             | 45                               | 2236                                | 105                       | 3                      |
| 4             | 470               | D-7343-31               | T543D477(1)004A(2)(3)006     | 188                                                  | 10                             | 6                                | 6124                                | 105                       | 3                      |
| 4             | 470               | D-7343-31               | T543D477(1)004A(2)(3)010     | 188                                                  | 10                             | 10                               | 4743                                | 105                       | 3                      |
| 4             | 470               | D-7343-31               | T543D477(1)004A(2)(3)012     | 188                                                  | 10                             | 12                               | 4330                                | 105                       | 3                      |
| 4             | 470               | D-7343-31               | T543D477(1)004A(2)(3)015     | 188                                                  | 10                             | 15                               | 3873                                | 105                       | 3                      |
| 4             | 470               | D-7343-31               | T543D477(1)004A(2)(3)018     | 188                                                  | 10                             | 18                               | 3536                                | 105                       | 3                      |
| 4             | 470               | D-7343-31               | T543D477(1)004A(2)(3)025     | 188                                                  | 10                             | 25                               | 3000                                | 105                       | 3                      |
| 4             | 470               | D-7343-31               | T543D477(1)004A(2)(3)040     | 188                                                  | 10                             | 40                               | 2372                                | 105                       | 3                      |
| 4             | 470               | Y/7343-40               | T543Y477(1)004A(2)(3)005     | 188                                                  | 10                             | 5                                | 6943                                | 105                       | 3                      |
| 4             | 470               | Y/7343-40               | T543Y477(1)004A(2)(3)006     | 188                                                  | 10                             | 6                                | 6338                                | 105                       | 3                      |
| 4             | 470               | Y/7343-40               | T543Y477(1)004A(2)(3)010     | 188                                                  | 10                             | 10                               | 4909                                | 105                       | 3                      |
| 4             | 470               | Y/7343-40               | T543Y477(1)004A(2)(3)025     | 188                                                  | 10                             | 25                               | 3105                                | 105                       | 3                      |
| 4             | 470               | Y/7343-40               | T543Y477(1)004A(2)(3)040     | 188                                                  | 10                             | 40                               | 2455                                | 105                       | 3                      |
| 4             | 680               | D-7343-31               | T543D687(1)004A(2)(3)025     | 272                                                  | 10                             | 25                               | 3000                                | 105                       | 3                      |
| 4             | 680               | Y/7343-40               | T543Y687(1)004A(2)(3)005     | 272                                                  | 10                             | 5                                | 6943                                | 105                       | 3                      |
| 4             | 680               | Y/7343-40               | T543Y687(1)004A(2)(3)010     | 272                                                  | 10                             | 10                               | 4909                                | 105                       | 3                      |
| 4             | 680               | Y/7343-40               | T543Y687(1)004A(2)(3)015     | 272                                                  | 10                             | 15                               | 4008                                | 105                       | 3                      |
| 4             | 680               | Y/7343-40               | T543Y687(1)004A(2)(3)025     | 272                                                  | 10                             | 25                               | 3105                                | 105                       | 3                      |
| 4             | 680               | X/7343-43               | T543X687(1)004A(2)(3)005     | 272                                                  | 10                             | 5                                | 7029                                | 105                       | 3                      |
| 4             | 680               | X/7343-43               | T543X687(1)004A(2)(3)006     | 272                                                  | 10                             | 6                                | 6416                                | 105                       | 3                      |
| 4             | 680               | X/7343-43               | T543X687(1)004A(2)(3)010     | 272                                                  | 10                             | 10                               | 4970                                | 105                       | 3                      |
| 4             | 680               | X/7343-43               | T543X687(1)004A(2)(3)015     | 272                                                  | 10                             | 15                               | 4058                                | 105                       | 3                      |
| 4             | 680               | X/7343-43               | T543X687(1)004A(2)(3)035     | 272                                                  | 10                             | 35                               | 2657                                | 105                       | 3                      |
| 4             | 1000              | X/7343-43               | T543X108(1)004A(2)(3)006     | 400                                                  | 10                             | 6                                | 6416                                | 105                       | 3                      |
| 4             | 1000              | X/7343-43               | T543X108(1)004A(2)(3)010     | 400                                                  | 10                             | 10                               | 4970                                | 105                       | 3                      |
| 6.3           | 15                | T/3528-12               | T543T156(1)006A(2)(3)100     | 9                                                    | 8                              | 100                              | 1025                                | 105                       | 3                      |
| 6.3           | 22                | A/3216-18               | T543A226(1)006A(2)(3)090     | 14                                                   | 8                              | 90                               | 1116                                | 105                       | 3                      |
| 6.3           | 22                | A/3216-18               | T543A226(1)006A(2)(3)100     | 14                                                   | 8                              | 100                              | 1058                                | 105                       | 3                      |
| 6.3           | 33                | A/3216-18               | T543A336(1)006A(2)(3)070     | 21                                                   | 8                              | 70                               | 1265                                | 105                       | 3                      |
| 6.3           | 33                | A/3216-18               | T543A336(1)006A(2)(3)080     | 21                                                   | 8                              | 80                               | 1183                                | 105                       | 3                      |
| 6.3           | 33                | A/3216-18               | T543A336(1)006A(2)(3)120     | 21                                                   | 8                              | 120                              | 966                                 | 105                       | 3                      |
| 6.3           | 33                | T/3528-12               | T543T336(1)006A(2)(3)070     | 21                                                   | 8                              | 70                               | 1225                                | 105                       | 3                      |
| 6.3           | 33                | B/3528-21               | T543B336(1)006A(2)(3)025     | 21                                                   | 8                              | 25                               | 2254                                | 105                       | 3                      |
| 6.3           | 33                | B/3528-21               | T543B336(1)006A(2)(3)035     | 21                                                   | 8                              | 35                               | 1905                                | 105                       | 3                      |
| 6.3           | 33                | B/3528-21               | T543B336(1)006A(2)(3)040     | 21                                                   | 8                              | 40                               | 1782                                | 105                       | 3                      |
| 6.3           | 33                | B/3528-21               | T543B336(1)006A(2)(3)070     | 21                                                   | 8                              | 70                               | 1347                                | 105                       | 3                      |
| 6.3           | 33                | B/3528-21               | T543B336(1)006A(2)(3)080     | 21                                                   | 8                              | 80                               | 1260                                | 105                       | 3                      |
| 6.3           | 33                | C/6032-25               | T543C336(1)006A(2)(3)100     | 21                                                   | 8                              | 100                              | 1285                                | 105                       | 3                      |
| 6.3           | 47                | A/3216-18               | T543A476(1)006A(2)(3)150     | 30                                                   | 8                              | 150                              | 864                                 | 105                       | 3                      |
| VDC at 105°C  | µF                | KEMET/EIA               | (See below for part options) | µA at V <sub>R</sub> , 25°C<br>Maximum/<br>5 Minutes | % at 25°C<br>120 Hz<br>Maximum | mΩ at 25°C<br>100 kHz<br>Maximum | mA at 45°C<br>100 kHz               | °C                        | Reflow Temp<br>≤ 260°C |
| Rated Voltage | Rated Capacitance | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                                           | DF                             | ESR                              | Maximum Allowable<br>Ripple Current | Maximum<br>Operating Temp | MSL                    |

(1) To complete KEMET part number, insert M for ±20%, K for ±10%. Designates capacitance tolerance.

(2) To complete KEMET part number, H = Solder Plated, T = 100% Tin (Sn). Designates termination finish.

(3) To complete KEMET part number, insert E = None, S = 10 cycles +25°C, W = 10 cycles -55°C +85°C. Designates surge current option.

Refer to Ordering Information for additional detail.

**Table 1 – Ratings & Part Number Reference cont'd**

| Rated Voltage | Rated Cap         | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                                           | DF                             | ESR                              | Maximum Allowable Ripple Current    | Maximum Operating Temp    | MSL                    |
|---------------|-------------------|-------------------------|------------------------------|------------------------------------------------------|--------------------------------|----------------------------------|-------------------------------------|---------------------------|------------------------|
| VDC at 105°C  | µF                | KEMET/EIA               | (See below for part options) | µA at V <sub>R</sub> , 25°C<br>Maximum/<br>5 Minutes | % at 25°C<br>120 Hz<br>Maximum | mΩ at 25°C<br>100 kHz<br>Maximum | mA at 45°C<br>100 kHz               | °C                        | Reflow Temp<br>≤ 260°C |
| 6.3           | 47                | T/3528-12               | T543T476(1)006A(2)(3)070     | 30                                                   | 8                              | 70                               | 1225                                | 105                       | 3                      |
| 6.3           | 47                | T/3528-12               | T543T476(1)006A(2)(3)080     | 30                                                   | 8                              | 80                               | 1146                                | 105                       | 3                      |
| 6.3           | 47                | B/3528-21               | T543B476(1)006A(2)(3)025     | 30                                                   | 8                              | 25                               | 2254                                | 105                       | 3                      |
| 6.3           | 47                | B/3528-21               | T543B476(1)006A(2)(3)035     | 30                                                   | 8                              | 35                               | 1905                                | 105                       | 3                      |
| 6.3           | 47                | B/3528-21               | T543B476(1)006A(2)(3)040     | 30                                                   | 8                              | 40                               | 1782                                | 105                       | 3                      |
| 6.3           | 47                | B/3528-21               | T543B476(1)006A(2)(3)070     | 30                                                   | 8                              | 70                               | 1347                                | 105                       | 3                      |
| 6.3           | 47                | B/3528-21               | T543B476(1)006A(2)(3)080     | 30                                                   | 8                              | 80                               | 1260                                | 105                       | 3                      |
| 6.3           | 68                | A/3216-18               | T543A686(1)006A(2)(3)150     | 43                                                   | 8                              | 150                              | 864                                 | 105                       | 3                      |
| 6.3           | 68                | T/3528-12               | T543T686(1)006A(2)(3)070     | 43                                                   | 8                              | 70                               | 1225                                | 105                       | 3                      |
| 6.3           | 68                | T/3528-12               | T543T686(1)006A(2)(3)150     | 43                                                   | 8                              | 150                              | 837                                 | 105                       | 3                      |
| 6.3           | 68                | B/3528-21               | T543B686(1)006A(2)(3)025     | 43                                                   | 8                              | 25                               | 2254                                | 105                       | 3                      |
| 6.3           | 68                | B/3528-21               | T543B686(1)006A(2)(3)035     | 43                                                   | 8                              | 35                               | 1905                                | 105                       | 3                      |
| 6.3           | 68                | B/3528-21               | T543B686(1)006A(2)(3)040     | 43                                                   | 8                              | 40                               | 1782                                | 105                       | 3                      |
| 6.3           | 68                | B/3528-21               | T543B686(1)006A(2)(3)070     | 43                                                   | 8                              | 70                               | 1347                                | 105                       | 3                      |
| 6.3           | 68                | B/3528-21               | T543B686(1)006A(2)(3)080     | 43                                                   | 8                              | 80                               | 1260                                | 105                       | 3                      |
| 6.3           | 68                | U/6032-15               | T543U686(1)006A(2)(3)055     | 43                                                   | 8                              | 55                               | 1567                                | 105                       | 3                      |
| 6.3           | 68                | U/6032-15               | T543U686(1)006A(2)(3)070     | 43                                                   | 8                              | 70                               | 1389                                | 105                       | 3                      |
| 6.3           | 68                | C/6032-25               | T543C686(1)006A(2)(3)100     | 43                                                   | 8                              | 100                              | 1285                                | 105                       | 3                      |
| 6.3           | 100               | T/3528-12               | T543T107(1)006A(2)(3)070     | 63                                                   | 8                              | 70                               | 1225                                | 105                       | 3                      |
| 6.3           | 100               | B/3528-21               | T543B107(1)006A(2)(3)025     | 63                                                   | 8                              | 25                               | 2254                                | 105                       | 3                      |
| 6.3           | 100               | B/3528-21               | T543B107(1)006A(2)(3)035     | 63                                                   | 8                              | 35                               | 1905                                | 105                       | 3                      |
| 6.3           | 100               | B/3528-21               | T543B107(1)006A(2)(3)040     | 63                                                   | 8                              | 40                               | 1782                                | 105                       | 3                      |
| 6.3           | 100               | B/3528-21               | T543B107(1)006A(2)(3)045     | 63                                                   | 8                              | 45                               | 1680                                | 105                       | 3                      |
| 6.3           | 100               | B/3528-21               | T543B107(1)006A(2)(3)070     | 63                                                   | 8                              | 70                               | 1347                                | 105                       | 3                      |
| 6.3           | 100               | U/6032-15               | T543U107(1)006A(2)(3)055     | 63                                                   | 8                              | 55                               | 1567                                | 105                       | 3                      |
| 6.3           | 100               | C/6032-25               | T543C107(1)006A(2)(3)025     | 63                                                   | 8                              | 25                               | 2569                                | 105                       | 3                      |
| 6.3           | 100               | C/6032-25               | T543C107(1)006A(2)(3)045     | 63                                                   | 8                              | 45                               | 1915                                | 105                       | 3                      |
| 6.3           | 100               | W/7343-15               | T543W107(1)006A(2)(3)040     | 63                                                   | 10                             | 40                               | 2121                                | 105                       | 3                      |
| 6.3           | 100               | V/7343-20               | T543V107(1)006A(2)(3)015     | 63                                                   | 10                             | 15                               | 3531                                | 105                       | 3                      |
| 6.3           | 100               | V/7343-20               | T543V107(1)006A(2)(3)045     | 63                                                   | 10                             | 45                               | 2039                                | 105                       | 3                      |
| 6.3           | 120               | B/3528-21               | T543B127(1)006A(2)(3)035     | 76                                                   | 8                              | 35                               | 1905                                | 105                       | 3                      |
| 6.3           | 150               | M/3528-15               | T543M157(1)006A(2)(3)070     | 95                                                   | 8                              | 70                               | 1309                                | 105                       | 3                      |
| 6.3           | 150               | M/3528-15               | T543M157(1)006A(2)(3)150     | 95                                                   | 8                              | 150                              | 894                                 | 105                       | 3                      |
| 6.3           | 150               | B/3528-21               | T543B157(1)006A(2)(3)025     | 95                                                   | 8                              | 25                               | 2254                                | 105                       | 3                      |
| 6.3           | 150               | B/3528-21               | T543B157(1)006A(2)(3)035     | 95                                                   | 8                              | 35                               | 1905                                | 105                       | 3                      |
| 6.3           | 150               | B/3528-21               | T543B157(1)006A(2)(3)045     | 95                                                   | 8                              | 45                               | 1680                                | 105                       | 3                      |
| 6.3           | 150               | B/3528-21               | T543B157(1)006A(2)(3)070     | 95                                                   | 8                              | 70                               | 1347                                | 105                       | 3                      |
| 6.3           | 150               | U/6032-15               | T543U157(1)006A(2)(3)045     | 95                                                   | 8                              | 45                               | 1732                                | 105                       | 3                      |
| 6.3           | 150               | U/6032-15               | T543U157(1)006A(2)(3)055     | 95                                                   | 8                              | 55                               | 1567                                | 105                       | 3                      |
| 6.3           | 150               | L/6032-19               | T543L157(1)006A(2)(3)012     | 95                                                   | 8                              | 12                               | 3536                                | 105                       | 3                      |
| 6.3           | 150               | L/6032-19               | T543L157(1)006A(2)(3)025     | 95                                                   | 8                              | 25                               | 2449                                | 105                       | 3                      |
| 6.3           | 150               | C/6032-25               | T543C157(1)006A(2)(3)015     | 95                                                   | 8                              | 15                               | 3317                                | 105                       | 3                      |
| 6.3           | 150               | C/6032-25               | T543C157(1)006A(2)(3)025     | 95                                                   | 8                              | 25                               | 2569                                | 105                       | 3                      |
| 6.3           | 150               | C/6032-25               | T543C157(1)006A(2)(3)045     | 95                                                   | 8                              | 45                               | 1915                                | 105                       | 3                      |
| 6.3           | 150               | C/6032-25               | T543C157(1)006A(2)(3)055     | 95                                                   | 8                              | 55                               | 1732                                | 105                       | 3                      |
| 6.3           | 150               | W/7343-15               | T543W157(1)006A(2)(3)025     | 95                                                   | 10                             | 25                               | 2683                                | 105                       | 3                      |
| 6.3           | 150               | W/7343-15               | T543W157(1)006A(2)(3)040     | 95                                                   | 10                             | 40                               | 2121                                | 105                       | 3                      |
| 6.3           | 150               | V/7343-20               | T543V157(1)006A(2)(3)015     | 95                                                   | 10                             | 15                               | 3531                                | 105                       | 3                      |
| 6.3           | 150               | V/7343-20               | T543V157(1)006A(2)(3)018     | 95                                                   | 10                             | 18                               | 3223                                | 105                       | 3                      |
| 6.3           | 150               | V/7343-20               | T543V157(1)006A(2)(3)025     | 95                                                   | 10                             | 25                               | 2735                                | 105                       | 3                      |
| VDC at 105°C  | µF                | KEMET/EIA               | (See below for part options) | µA at V <sub>R</sub> , 25°C<br>Maximum/<br>5 Minutes | % at 25°C<br>120 Hz<br>Maximum | mΩ at 25°C<br>100 kHz<br>Maximum | mA at 45°C<br>100 kHz               | °C                        | Reflow Temp<br>≤ 260°C |
| Rated Voltage | Rated Capacitance | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                                           | DF                             | ESR                              | Maximum Allowable<br>Ripple Current | Maximum<br>Operating Temp | MSL                    |

(1) To complete KEMET part number, insert M for ±20%, K for ±10%. Designates capacitance tolerance.

(2) To complete KEMET part number, H = Solder Plated, T = 100% Tin (Sn). Designates termination finish.

(3) To complete KEMET part number, insert E = None, S = 10 cycles +25°C, W = 10 cycles -55°C +85°C. Designates surge current option.

Refer to Ordering Information for additional detail.

**Table 1 – Ratings & Part Number Reference cont'd**

| Rated Voltage | Rated Cap         | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                                           | DF                             | ESR                              | Maximum Allowable Ripple Current    | Maximum Operating Temp    | MSL                    |
|---------------|-------------------|-------------------------|------------------------------|------------------------------------------------------|--------------------------------|----------------------------------|-------------------------------------|---------------------------|------------------------|
| VDC at 105°C  | µF                | KEMET/EIA               | (See below for part options) | µA at V <sub>R</sub> , 25°C<br>Maximum/<br>5 Minutes | % at 25°C<br>120 Hz<br>Maximum | mΩ at 25°C<br>100 kHz<br>Maximum | mA at 45°C<br>100 kHz               | °C                        | Reflow Temp<br>≤ 260°C |
| 6.3           | 150               | V/7343-20               | T543V157(1)006A(2)(3)040     | 95                                                   | 10                             | 40                               | 2162                                | 105                       | 3                      |
| 6.3           | 150               | V/7343-20               | T543V157(1)006A(2)(3)045     | 95                                                   | 10                             | 45                               | 2039                                | 105                       | 3                      |
| 6.3           | 150               | D-7343-31               | T543D157(1)006A(2)(3)015     | 95                                                   | 10                             | 15                               | 3873                                | 105                       | 3                      |
| 6.3           | 150               | D-7343-31               | T543D157(1)006A(2)(3)025     | 95                                                   | 10                             | 25                               | 3000                                | 105                       | 3                      |
| 6.3           | 150               | D-7343-31               | T543D157(1)006A(2)(3)055     | 95                                                   | 10                             | 55                               | 2023                                | 105                       | 3                      |
| 6.3           | 220               | B/3528-21               | T543B227(1)006A(2)(3)035     | 139                                                  | 8                              | 35                               | 1905                                | 105                       | 3                      |
| 6.3           | 220               | B/3528-21               | T543B227(1)006A(2)(3)045     | 139                                                  | 8                              | 45                               | 1680                                | 105                       | 3                      |
| 6.3           | 220               | B/3528-21               | T543B227(1)006A(2)(3)070     | 139                                                  | 8                              | 70                               | 1347                                | 105                       | 3                      |
| 6.3           | 220               | C/6032-25               | T543C227(1)006A(2)(3)015     | 139                                                  | 8                              | 15                               | 3317                                | 105                       | 3                      |
| 6.3           | 220               | C/6032-25               | T543C227(1)006A(2)(3)018     | 139                                                  | 8                              | 18                               | 3028                                | 105                       | 3                      |
| 6.3           | 220               | C/6032-25               | T543C227(1)006A(2)(3)025     | 139                                                  | 8                              | 25                               | 2569                                | 105                       | 3                      |
| 6.3           | 220               | C/6032-25               | T543C227(1)006A(2)(3)045     | 139                                                  | 8                              | 45                               | 1915                                | 105                       | 3                      |
| 6.3           | 220               | V/7343-20               | T543V227(1)006A(2)(3)018     | 139                                                  | 10                             | 18                               | 3223                                | 105                       | 3                      |
| 6.3           | 220               | V/7343-20               | T543V227(1)006A(2)(3)025     | 139                                                  | 10                             | 25                               | 2735                                | 105                       | 3                      |
| 6.3           | 220               | V/7343-20               | T543V227(1)006A(2)(3)040     | 139                                                  | 10                             | 40                               | 2162                                | 105                       | 3                      |
| 6.3           | 220               | D-7343-31               | T543D227(1)006A(2)(3)005     | 139                                                  | 10                             | 5                                | 6708                                | 105                       | 3                      |
| 6.3           | 220               | D-7343-31               | T543D227(1)006A(2)(3)006     | 139                                                  | 10                             | 6                                | 6124                                | 105                       | 3                      |
| 6.3           | 220               | D-7343-31               | T543D227(1)006A(2)(3)007     | 139                                                  | 10                             | 7                                | 5669                                | 105                       | 3                      |
| 6.3           | 220               | D-7343-31               | T543D227(1)006A(2)(3)009     | 139                                                  | 10                             | 9                                | 5000                                | 105                       | 3                      |
| 6.3           | 220               | D-7343-31               | T543D227(1)006A(2)(3)010     | 139                                                  | 10                             | 10                               | 4743                                | 105                       | 3                      |
| 6.3           | 220               | D-7343-31               | T543D227(1)006A(2)(3)015     | 139                                                  | 10                             | 15                               | 3873                                | 105                       | 3                      |
| 6.3           | 220               | D-7343-31               | T543D227(1)006A(2)(3)018     | 139                                                  | 10                             | 18                               | 3536                                | 105                       | 3                      |
| 6.3           | 220               | D-7343-31               | T543D227(1)006A(2)(3)025     | 139                                                  | 10                             | 25                               | 3000                                | 105                       | 3                      |
| 6.3           | 220               | D-7343-31               | T543D227(1)006A(2)(3)040     | 139                                                  | 10                             | 40                               | 2372                                | 105                       | 3                      |
| 6.3           | 220               | D-7343-31               | T543D227(1)006A(2)(3)050     | 139                                                  | 10                             | 50                               | 2121                                | 105                       | 3                      |
| 6.3           | 330               | V/7343-20               | T543V337(1)006A(2)(3)015     | 208                                                  | 10                             | 15                               | 3531                                | 105                       | 3                      |
| 6.3           | 330               | V/7343-20               | T543V337(1)006A(2)(3)018     | 208                                                  | 10                             | 18                               | 3223                                | 105                       | 3                      |
| 6.3           | 330               | V/7343-20               | T543V337(1)006A(2)(3)025     | 208                                                  | 10                             | 25                               | 2735                                | 105                       | 3                      |
| 6.3           | 330               | V/7343-20               | T543V337(1)006A(2)(3)040     | 208                                                  | 10                             | 40                               | 2162                                | 105                       | 3                      |
| 6.3           | 330               | V/7343-20               | T543V337(1)006A(2)(3)045     | 208                                                  | 10                             | 45                               | 2039                                | 105                       | 3                      |
| 6.3           | 330               | D-7343-31               | T543D337(1)006A(2)(3)006     | 208                                                  | 10                             | 6                                | 6124                                | 105                       | 3                      |
| 6.3           | 330               | D-7343-31               | T543D337(1)006A(2)(3)009     | 208                                                  | 10                             | 9                                | 5000                                | 105                       | 3                      |
| 6.3           | 330               | D-7343-31               | T543D337(1)006A(2)(3)010     | 208                                                  | 10                             | 10                               | 4743                                | 105                       | 3                      |
| 6.3           | 330               | D-7343-31               | T543D337(1)006A(2)(3)015     | 208                                                  | 10                             | 15                               | 3873                                | 105                       | 3                      |
| 6.3           | 330               | D-7343-31               | T543D337(1)006A(2)(3)018     | 208                                                  | 10                             | 18                               | 3536                                | 105                       | 3                      |
| 6.3           | 330               | D-7343-31               | T543D337(1)006A(2)(3)025     | 208                                                  | 10                             | 25                               | 3000                                | 105                       | 3                      |
| 6.3           | 330               | D-7343-31               | T543D337(1)006A(2)(3)040     | 208                                                  | 10                             | 40                               | 2372                                | 105                       | 3                      |
| 6.3           | 330               | D-7343-31               | T543D337(1)006A(2)(3)045     | 208                                                  | 10                             | 45                               | 2236                                | 105                       | 3                      |
| 6.3           | 330               | Y/7343-40               | T543Y337(1)006A(2)(3)005     | 208                                                  | 10                             | 5                                | 6943                                | 105                       | 3                      |
| 6.3           | 330               | Y/7343-40               | T543Y337(1)006A(2)(3)006     | 208                                                  | 10                             | 6                                | 6338                                | 105                       | 3                      |
| 6.3           | 330               | Y/7343-40               | T543Y337(1)006A(2)(3)010     | 208                                                  | 10                             | 10                               | 4909                                | 105                       | 3                      |
| 6.3           | 330               | Y/7343-40               | T543Y337(1)006A(2)(3)015     | 208                                                  | 10                             | 15                               | 4008                                | 105                       | 3                      |
| 6.3           | 330               | Y/7343-40               | T543Y337(1)006A(2)(3)025     | 208                                                  | 10                             | 25                               | 3105                                | 105                       | 3                      |
| 6.3           | 330               | Y/7343-40               | T543Y337(1)006A(2)(3)040     | 208                                                  | 10                             | 40                               | 2455                                | 105                       | 3                      |
| 6.3           | 470               | W/7343-15               | T543W477(1)006A(2)(3)055     | 296                                                  | 10                             | 55                               | 1809                                | 85                        | 3                      |
| 6.3           | 470               | W/7343-15               | T543W477(1)006A(2)(3)035     | 296                                                  | 10                             | 35                               | 2268                                | 85                        | 3                      |
| 6.3           | 470               | V/7343-20               | T543V477(1)006A(2)(3)055     | 296                                                  | 10                             | 55                               | 1844                                | 85                        | 3                      |
| 6.3           | 470               | D-7343-31               | T543D477(1)006A(2)(3)015     | 296                                                  | 10                             | 15                               | 3873                                | 105                       | 3                      |
| 6.3           | 470               | D-7343-31               | T543D477(1)006A(2)(3)025     | 296                                                  | 10                             | 25                               | 3000                                | 105                       | 3                      |
| 6.3           | 470               | D-7343-31               | T543D477(1)006A(2)(3)030     | 296                                                  | 10                             | 30                               | 2739                                | 105                       | 3                      |
| VDC at 105°C  | µF                | KEMET/EIA               | (See below for part options) | µA at V <sub>R</sub> , 25°C<br>Maximum/<br>5 Minutes | % at 25°C<br>120 Hz<br>Maximum | mΩ at 25°C<br>100 kHz<br>Maximum | mA at 45°C<br>100 kHz               | °C                        | Reflow Temp<br>≤ 260°C |
| Rated Voltage | Rated Capacitance | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                                           | DF                             | ESR                              | Maximum Allowable<br>Ripple Current | Maximum<br>Operating Temp | MSL                    |

(1) To complete KEMET part number, insert M for ±20%, K for ±10%. Designates capacitance tolerance.

(2) To complete KEMET part number, H = Solder Plated, T = 100% Tin (Sn). Designates termination finish.

(3) To complete KEMET part number, insert E = None, S = 10 cycles +25°C, W = 10 cycles -55°C +85°C. Designates surge current option.

Refer to Ordering Information for additional detail.

**Table 1 – Ratings & Part Number Reference cont'd**

| Rated Voltage | Rated Cap         | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                                           | DF                             | ESR                              | Maximum Allowable Ripple Current    | Maximum Operating Temp    | MSL                    |
|---------------|-------------------|-------------------------|------------------------------|------------------------------------------------------|--------------------------------|----------------------------------|-------------------------------------|---------------------------|------------------------|
| VDC at 105°C  | µF                | KEMET/EIA               | (See below for part options) | µA at V <sub>R</sub> , 25°C<br>Maximum/<br>5 Minutes | % at 25°C<br>120 Hz<br>Maximum | mΩ at 25°C<br>100 kHz<br>Maximum | mA at 45°C<br>100 kHz               | °C                        | Reflow Temp<br>≤ 260°C |
| 6.3           | 470               | Y/7343-40               | T543Y477(1)006A(2)(3)005     | 296                                                  | 10                             | 5                                | 6943                                | 105                       | 3                      |
| 6.3           | 470               | Y/7343-40               | T543Y477(1)006A(2)(3)010     | 296                                                  | 10                             | 10                               | 4909                                | 105                       | 3                      |
| 6.3           | 470               | Y/7343-40               | T543Y477(1)006A(2)(3)015     | 296                                                  | 10                             | 15                               | 4008                                | 105                       | 3                      |
| 6.3           | 470               | Y/7343-40               | T543Y477(1)006A(2)(3)018     | 296                                                  | 10                             | 18                               | 3659                                | 105                       | 3                      |
| 6.3           | 470               | Y/7343-40               | T543Y477(1)006A(2)(3)025     | 296                                                  | 10                             | 25                               | 3105                                | 105                       | 3                      |
| 6.3           | 470               | Y/7343-40               | T543Y477(1)006A(2)(3)035     | 296                                                  | 10                             | 35                               | 2624                                | 105                       | 3                      |
| 6.3           | 470               | X/7343-43               | T543X477(1)006A(2)(3)005     | 296                                                  | 10                             | 5                                | 7029                                | 105                       | 3                      |
| 6.3           | 470               | X/7343-43               | T543X477(1)006A(2)(3)006     | 296                                                  | 10                             | 6                                | 6416                                | 105                       | 3                      |
| 6.3           | 470               | X/7343-43               | T543X477(1)006A(2)(3)010     | 296                                                  | 10                             | 10                               | 4970                                | 105                       | 3                      |
| 6.3           | 470               | X/7343-43               | T543X477(1)006A(2)(3)018     | 296                                                  | 10                             | 18                               | 3704                                | 105                       | 3                      |
| 6.3           | 470               | X/7343-43               | T543X477(1)006A(2)(3)035     | 296                                                  | 10                             | 35                               | 2657                                | 105                       | 3                      |
| 6.3           | 470               | X/7343-43               | T543X477(1)006A(2)(3)040     | 296                                                  | 10                             | 40                               | 2485                                | 105                       | 3                      |
| 6.3           | 680               | X/7343-43               | T543X687(1)006A(2)(3)010     | 428                                                  | 10                             | 10                               | 4970                                | 105                       | 3                      |
| 6.3           | 680               | X/7343-43               | T543X687(1)006A(2)(3)018     | 428                                                  | 10                             | 18                               | 3704                                | 105                       | 3                      |
| 6.3           | 1000              | H/7360-20               | T543H108(1)006A(2)(3)055     | 630                                                  | 20                             | 55                               | 1844                                | 85                        | 4                      |
| 6.3           | 1500              | H/7360-20               | T543H158(1)006A(2)(3)055     | 945                                                  | 20                             | 55                               | 1844                                | 85                        | 4                      |
| 8             | 33                | T/3528-12               | T543T336(1)008A(2)(3)070     | 26                                                   | 8                              | 70                               | 1225                                | 105                       | 3                      |
| 8             | 33                | T/3528-12               | T543T336(1)008A(2)(3)080     | 26                                                   | 8                              | 80                               | 1146                                | 105                       | 3                      |
| 8             | 33                | B/3528-21               | T543B336(1)008A(2)(3)025     | 26                                                   | 8                              | 25                               | 2254                                | 105                       | 3                      |
| 8             | 33                | B/3528-21               | T543B336(1)008A(2)(3)035     | 26                                                   | 8                              | 35                               | 1905                                | 105                       | 3                      |
| 8             | 33                | B/3528-21               | T543B336(1)008A(2)(3)040     | 26                                                   | 8                              | 40                               | 1782                                | 105                       | 3                      |
| 8             | 33                | B/3528-21               | T543B336(1)008A(2)(3)070     | 26                                                   | 8                              | 70                               | 1347                                | 105                       | 3                      |
| 8             | 33                | U/6032-15               | T543U336(1)008A(2)(3)070     | 26                                                   | 8                              | 70                               | 1389                                | 105                       | 3                      |
| 8             | 47                | B/3528-21               | T543B476(1)008A(2)(3)035     | 38                                                   | 8                              | 35                               | 1905                                | 105                       | 3                      |
| 8             | 47                | B/3528-21               | T543B476(1)008A(2)(3)070     | 38                                                   | 8                              | 70                               | 1347                                | 105                       | 3                      |
| 8             | 150               | V/7343-20               | T543V157(1)008A(2)(3)040     | 120                                                  | 10                             | 40                               | 2162                                | 105                       | 3                      |
| 8             | 150               | D-7343-31               | T543D157(1)008A(2)(3)025     | 120                                                  | 10                             | 25                               | 3000                                | 105                       | 3                      |
| 8             | 150               | D-7343-31               | T543D157(1)008A(2)(3)040     | 120                                                  | 10                             | 40                               | 2372                                | 105                       | 3                      |
| 8             | 150               | D-7343-31               | T543D157(1)008A(2)(3)055     | 120                                                  | 10                             | 55                               | 2023                                | 105                       | 3                      |
| 10            | 10                | A/3216-18               | T543A106(1)010A(2)(3)080     | 10                                                   | 8                              | 80                               | 1183                                | 105                       | 3                      |
| 10            | 15                | A/3216-18               | T543A156(1)010A(2)(3)080     | 15                                                   | 8                              | 80                               | 1183                                | 105                       | 3                      |
| 10            | 22                | A/3216-18               | T543A226(1)010A(2)(3)080     | 22                                                   | 8                              | 80                               | 1183                                | 105                       | 3                      |
| 10            | 22                | B/3528-21               | T543B226(1)010A(2)(3)080     | 22                                                   | 8                              | 80                               | 1260                                | 105                       | 3                      |
| 10            | 33                | T/3528-12               | T543T336(1)010A(2)(3)070     | 33                                                   | 8                              | 70                               | 1225                                | 105                       | 3                      |
| 10            | 33                | T/3528-12               | T543T336(1)010A(2)(3)080     | 33                                                   | 8                              | 80                               | 1146                                | 105                       | 3                      |
| 10            | 33                | B/3528-21               | T543B336(1)010A(2)(3)025     | 33                                                   | 8                              | 25                               | 2254                                | 105                       | 3                      |
| 10            | 33                | B/3528-21               | T543B336(1)010A(2)(3)035     | 33                                                   | 8                              | 35                               | 1905                                | 105                       | 3                      |
| 10            | 33                | B/3528-21               | T543B336(1)010A(2)(3)040     | 33                                                   | 8                              | 40                               | 1782                                | 105                       | 3                      |
| 10            | 33                | B/3528-21               | T543B336(1)010A(2)(3)070     | 33                                                   | 8                              | 70                               | 1347                                | 105                       | 3                      |
| 10            | 33                | B/3528-21               | T543B336(1)010A(2)(3)080     | 33                                                   | 8                              | 80                               | 1260                                | 105                       | 3                      |
| 10            | 33                | U/6032-15               | T543U336(1)010A(2)(3)070     | 33                                                   | 8                              | 70                               | 1389                                | 105                       | 3                      |
| 10            | 47                | B/3528-21               | T543B476(1)010A(2)(3)035     | 47                                                   | 8                              | 35                               | 1905                                | 105                       | 3                      |
| 10            | 47                | B/3528-21               | T543B476(1)010A(2)(3)070     | 47                                                   | 8                              | 70                               | 1347                                | 105                       | 3                      |
| 10            | 47                | U/6032-15               | T543U476(1)010A(2)(3)055     | 47                                                   | 8                              | 55                               | 1567                                | 105                       | 3                      |
| 10            | 47                | C/6032-25               | T543C476(1)010A(2)(3)100     | 47                                                   | 8                              | 100                              | 1285                                | 105                       | 3                      |
| 10            | 68                | U/6032-15               | T543U686(1)010A(2)(3)055     | 68                                                   | 8                              | 55                               | 1567                                | 105                       | 3                      |
| 10            | 68                | C/6032-25               | T543C686(1)010A(2)(3)045     | 68                                                   | 8                              | 45                               | 1915                                | 105                       | 3                      |
| 10            | 68                | W/7343-15               | T543W686(1)010A(2)(3)025     | 68                                                   | 10                             | 25                               | 2683                                | 105                       | 3                      |
| 10            | 68                | W/7343-15               | T543W686(1)010A(2)(3)040     | 68                                                   | 10                             | 40                               | 2121                                | 105                       | 3                      |
| 10            | 68                | V/7343-20               | T543V686(1)010A(2)(3)025     | 68                                                   | 10                             | 25                               | 2735                                | 105                       | 3                      |
| VDC at 105°C  | µF                | KEMET/EIA               | (See below for part options) | µA at V <sub>R</sub> , 25°C<br>Maximum/<br>5 Minutes | % at 25°C<br>120 Hz<br>Maximum | mΩ at 25°C<br>100 kHz<br>Maximum | mA at 45°C<br>100 kHz               | °C                        | Reflow Temp<br>≤ 260°C |
| Rated Voltage | Rated Capacitance | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                                           | DF                             | ESR                              | Maximum Allowable<br>Ripple Current | Maximum<br>Operating Temp | MSL                    |

(1) To complete KEMET part number, insert M for ±20%, K for ±10%. Designates capacitance tolerance.

(2) To complete KEMET part number, H = Solder Plated, T = 100% Tin (Sn). Designates termination finish.

(3) To complete KEMET part number, insert E = None, S = 10 cycles +25°C, W = 10 cycles -55°C +85°C. Designates surge current option.

Refer to Ordering Information for additional detail.

**Table 1 – Ratings & Part Number Reference cont'd**

| Rated Voltage | Rated Cap         | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                                           | DF                             | ESR                              | Maximum Allowable Ripple Current    | Maximum Operating Temp    | MSL                    |
|---------------|-------------------|-------------------------|------------------------------|------------------------------------------------------|--------------------------------|----------------------------------|-------------------------------------|---------------------------|------------------------|
| VDC at 105°C  | µF                | KEMET/EIA               | (See below for part options) | µA at V <sub>R</sub> , 25°C<br>Maximum/<br>5 Minutes | % at 25°C<br>120 Hz<br>Maximum | mΩ at 25°C<br>100 kHz<br>Maximum | mA at 45°C<br>100 kHz               | °C                        | Reflow Temp<br>≤ 260°C |
| 10            | 68                | V/7343-20               | T543V686(1)010A(2)(3)040     | 68                                                   | 10                             | 40                               | 2162                                | 105                       | 3                      |
| 10            | 68                | V/7343-20               | T543V686(1)010A(2)(3)045     | 68                                                   | 10                             | 45                               | 2039                                | 105                       | 3                      |
| 10            | 68                | V/7343-20               | T543V686(1)010A(2)(3)060     | 68                                                   | 10                             | 60                               | 1765                                | 105                       | 3                      |
| 10            | 68                | V/7343-20               | T543V686(1)010A(2)(3)100     | 68                                                   | 10                             | 100                              | 1367                                | 105                       | 3                      |
| 10            | 68                | D-7343-31               | T543D686(1)010A(2)(3)100     | 68                                                   | 10                             | 100                              | 1500                                | 105                       | 3                      |
| 10            | 100               | B/3528-21               | T543B107(1)010A(2)(3)150     | 100                                                  | 10                             | 150                              | 920                                 | 105                       | 3                      |
| 10            | 100               | L/6032-19               | T543L107(1)010A(2)(3)025     | 100                                                  | 8                              | 25                               | 2449                                | 105                       | 3                      |
| 10            | 100               | C/6032-25               | T543C107(1)010A(2)(3)025     | 100                                                  | 8                              | 25                               | 2569                                | 105                       | 3                      |
| 10            | 100               | C/6032-25               | T543C107(1)010A(2)(3)045     | 100                                                  | 8                              | 45                               | 1915                                | 105                       | 3                      |
| 10            | 100               | W/7343-15               | T543W107(1)010A(2)(3)040     | 100                                                  | 10                             | 40                               | 2121                                | 105                       | 3                      |
| 10            | 100               | V/7343-20               | T543V107(1)010A(2)(3)018     | 100                                                  | 10                             | 18                               | 3223                                | 105                       | 3                      |
| 10            | 100               | V/7343-20               | T543V107(1)010A(2)(3)025     | 100                                                  | 10                             | 25                               | 2735                                | 105                       | 3                      |
| 10            | 100               | V/7343-20               | T543V107(1)010A(2)(3)045     | 100                                                  | 10                             | 45                               | 2039                                | 105                       | 3                      |
| 10            | 100               | V/7343-20               | T543V107(1)010A(2)(3)050     | 100                                                  | 10                             | 50                               | 1934                                | 105                       | 3                      |
| 10            | 100               | D-7343-31               | T543D107(1)010A(2)(3)018     | 100                                                  | 10                             | 18                               | 3536                                | 105                       | 3                      |
| 10            | 100               | D-7343-31               | T543D107(1)010A(2)(3)025     | 100                                                  | 10                             | 25                               | 3000                                | 105                       | 3                      |
| 10            | 100               | D-7343-31               | T543D107(1)010A(2)(3)055     | 100                                                  | 10                             | 55                               | 2023                                | 105                       | 3                      |
| 10            | 100               | D-7343-31               | T543D107(1)010A(2)(3)080     | 100                                                  | 10                             | 80                               | 1677                                | 105                       | 3                      |
| 10            | 150               | C/6032-25               | T543C157(1)010A(2)(3)055     | 150                                                  | 8                              | 55                               | 1732                                | 105                       | 3                      |
| 10            | 150               | V/7343-20               | T543V157(1)010A(2)(3)025     | 150                                                  | 10                             | 25                               | 2735                                | 105                       | 3                      |
| 10            | 150               | V/7343-20               | T543V157(1)010A(2)(3)040     | 150                                                  | 10                             | 40                               | 2162                                | 105                       | 3                      |
| 10            | 150               | D-7343-31               | T543D157(1)010A(2)(3)005     | 150                                                  | 10                             | 5                                | 6708                                | 105                       | 3                      |
| 10            | 150               | D-7343-31               | T543D157(1)010A(2)(3)006     | 150                                                  | 10                             | 6                                | 6124                                | 105                       | 3                      |
| 10            | 150               | D-7343-31               | T543D157(1)010A(2)(3)010     | 150                                                  | 10                             | 10                               | 4743                                | 105                       | 3                      |
| 10            | 150               | D-7343-31               | T543D157(1)010A(2)(3)015     | 150                                                  | 10                             | 15                               | 3873                                | 105                       | 3                      |
| 10            | 150               | D-7343-31               | T543D157(1)010A(2)(3)018     | 150                                                  | 10                             | 18                               | 3536                                | 105                       | 3                      |
| 10            | 150               | D-7343-31               | T543D157(1)010A(2)(3)025     | 150                                                  | 10                             | 25                               | 3000                                | 105                       | 3                      |
| 10            | 150               | D-7343-31               | T543D157(1)010A(2)(3)040     | 150                                                  | 10                             | 40                               | 2372                                | 105                       | 3                      |
| 10            | 150               | D-7343-31               | T543D157(1)010A(2)(3)055     | 150                                                  | 10                             | 55                               | 2023                                | 105                       | 3                      |
| 10            | 150               | Y/7343-40               | T543Y157(1)010A(2)(3)018     | 150                                                  | 10                             | 18                               | 3659                                | 105                       | 3                      |
| 10            | 150               | Y/7343-40               | T543Y157(1)010A(2)(3)025     | 150                                                  | 10                             | 25                               | 3105                                | 105                       | 3                      |
| 10            | 220               | V/7343-20               | T543V227(1)010A(2)(3)025     | 220                                                  | 10                             | 25                               | 2735                                | 105                       | 3                      |
| 10            | 220               | V/7343-20               | T543V227(1)010A(2)(3)045     | 220                                                  | 10                             | 45                               | 2039                                | 105                       | 3                      |
| 10            | 220               | D-7343-31               | T543D227(1)010A(2)(3)006     | 220                                                  | 10                             | 6                                | 6124                                | 105                       | 3                      |
| 10            | 220               | D-7343-31               | T543D227(1)010A(2)(3)010     | 220                                                  | 10                             | 10                               | 4743                                | 105                       | 3                      |
| 10            | 220               | D-7343-31               | T543D227(1)010A(2)(3)018     | 220                                                  | 10                             | 18                               | 3536                                | 105                       | 3                      |
| 10            | 220               | D-7343-31               | T543D227(1)010A(2)(3)025     | 220                                                  | 10                             | 25                               | 3000                                | 105                       | 3                      |
| 10            | 220               | D-7343-31               | T543D227(1)010A(2)(3)040     | 220                                                  | 10                             | 40                               | 2372                                | 105                       | 3                      |
| 10            | 220               | Y/7343-40               | T543Y227(1)010A(2)(3)006     | 220                                                  | 10                             | 6                                | 6338                                | 105                       | 3                      |
| 10            | 220               | Y/7343-40               | T543Y227(1)010A(2)(3)010     | 220                                                  | 10                             | 10                               | 4909                                | 105                       | 3                      |
| 10            | 220               | Y/7343-40               | T543Y227(1)010A(2)(3)040     | 220                                                  | 10                             | 40                               | 2455                                | 105                       | 3                      |
| 10            | 330               | Y/7343-40               | T543Y337(1)010A(2)(3)015     | 330                                                  | 10                             | 15                               | 4008                                | 105                       | 3                      |
| 10            | 330               | Y/7343-40               | T543Y337(1)010A(2)(3)035     | 330                                                  | 10                             | 35                               | 2624                                | 105                       | 3                      |
| 10            | 330               | X/7343-43               | T543X337(1)010A(2)(3)005     | 330                                                  | 10                             | 5                                | 7029                                | 105                       | 3                      |
| 10            | 330               | X/7343-43               | T543X337(1)010A(2)(3)006     | 330                                                  | 10                             | 6                                | 6416                                | 105                       | 3                      |
| 10            | 330               | X/7343-43               | T543X337(1)010A(2)(3)010     | 330                                                  | 10                             | 10                               | 4970                                | 105                       | 3                      |
| 10            | 330               | X/7343-43               | T543X337(1)010A(2)(3)025     | 330                                                  | 10                             | 25                               | 3143                                | 105                       | 3                      |
| 10            | 330               | X/7343-43               | T543X337(1)010A(2)(3)040     | 330                                                  | 10                             | 40                               | 2485                                | 105                       | 3                      |
| 12.5          | 10                | T/3528-12               | T543T106(1)12RA(2)(3)150     | 13                                                   | 8                              | 150                              | 837                                 | 105                       | 3                      |
| 12.5          | 15                | T/3528-12               | T543T156(1)12RA(2)(3)080     | 19                                                   | 8                              | 80                               | 1146                                | 105                       | 3                      |
| VDC at 105°C  | µF                | KEMET/EIA               | (See below for part options) | µA at V <sub>R</sub> , 25°C<br>Maximum/<br>5 Minutes | % at 25°C<br>120 Hz<br>Maximum | mΩ at 25°C<br>100 kHz<br>Maximum | mA at 45°C<br>100 kHz               | °C                        | Reflow Temp<br>≤ 260°C |
| Rated Voltage | Rated Capacitance | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                                           | DF                             | ESR                              | Maximum Allowable<br>Ripple Current | Maximum<br>Operating Temp | MSL                    |

(1) To complete KEMET part number, insert M for ±20%, K for ±10%. Designates capacitance tolerance.

(2) To complete KEMET part number, H = Solder Plated, T = 100% Tin (Sn). Designates termination finish.

(3) To complete KEMET part number, insert E = None, S = 10 cycles +25°C, W = 10 cycles -55°C +85°C. Designates surge current option.

Refer to Ordering Information for additional detail.

**Table 1 – Ratings & Part Number Reference cont'd**

| Rated Voltage | Rated Cap         | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                                           | DF                             | ESR                              | Maximum Allowable Ripple Current    | Maximum Operating Temp    | MSL                    |
|---------------|-------------------|-------------------------|------------------------------|------------------------------------------------------|--------------------------------|----------------------------------|-------------------------------------|---------------------------|------------------------|
| VDC at 105°C  | µF                | KEMET/EIA               | (See below for part options) | µA at V <sub>R</sub> , 25°C<br>Maximum/<br>5 Minutes | % at 25°C<br>120 Hz<br>Maximum | mΩ at 25°C<br>100 kHz<br>Maximum | mA at 45°C<br>100 kHz               | °C                        | Reflow Temp<br>≤ 260°C |
| 12.5          | 330               | X/7343-43               | T543X337(1)12RA(2)(3)015     | 413                                                  | 10                             | 15                               | 4058                                | 105                       | 3                      |
| 16            | 10                | B/3528-21               | T543B106(1)016A(2)(3)100     | 16                                                   | 8                              | 100                              | 1127                                | 105                       | 3                      |
| 16            | 22                | C/6032-25               | T543C226(1)016A(2)(3)080     | 35                                                   | 8                              | 80                               | 1436                                | 105                       | 3                      |
| 16            | 33                | W/7343-15               | T543W336(1)016A(2)(3)045     | 53                                                   | 10                             | 45                               | 2000                                | 105                       | 3                      |
| 16            | 33                | V/7343-20               | T543V336(1)016A(2)(3)045     | 53                                                   | 10                             | 45                               | 2039                                | 105                       | 3                      |
| 16            | 33                | V/7343-20               | T543V336(1)016A(2)(3)060     | 53                                                   | 10                             | 60                               | 1765                                | 105                       | 3                      |
| 16            | 33                | V/7343-20               | T543V336(1)016A(2)(3)070     | 53                                                   | 10                             | 70                               | 1634                                | 105                       | 3                      |
| 16            | 47                | W/7343-15               | T543W476(1)016A(2)(3)045     | 75                                                   | 10                             | 45                               | 2000                                | 105                       | 3                      |
| 16            | 47                | V/7343-20               | T543V476(1)016A(2)(3)045     | 75                                                   | 10                             | 45                               | 2039                                | 105                       | 3                      |
| 16            | 47                | V/7343-20               | T543V476(1)016A(2)(3)070     | 75                                                   | 10                             | 70                               | 1634                                | 105                       | 3                      |
| 16            | 47                | V/7343-20               | T543V476(1)016A(2)(3)080     | 75                                                   | 10                             | 80                               | 1529                                | 105                       | 3                      |
| 16            | 47                | D-7343-31               | T543D476(1)016A(2)(3)035     | 75                                                   | 10                             | 35                               | 2535                                | 105                       | 3                      |
| 16            | 47                | D-7343-31               | T543D476(1)016A(2)(3)065     | 75                                                   | 10                             | 65                               | 1861                                | 105                       | 3                      |
| 16            | 47                | D-7343-31               | T543D476(1)016A(2)(3)070     | 75                                                   | 10                             | 70                               | 1793                                | 105                       | 3                      |
| 16            | 68                | V/7343-20               | T543V686(1)016A(2)(3)050     | 109                                                  | 10                             | 50                               | 1934                                | 105                       | 3                      |
| 16            | 68                | V/7343-20               | T543V686(1)016A(2)(3)090     | 109                                                  | 10                             | 90                               | 1441                                | 105                       | 3                      |
| 16            | 100               | V/7343-20               | T543V107(1)016A(2)(3)050     | 160                                                  | 10                             | 50                               | 1934                                | 105                       | 3                      |
| 16            | 100               | D-7343-31               | T543D107(1)016A(2)(3)035     | 160                                                  | 10                             | 35                               | 2535                                | 105                       | 3                      |
| 16            | 100               | D-7343-31               | T543D107(1)016A(2)(3)050     | 160                                                  | 10                             | 50                               | 2121                                | 105                       | 3                      |
| 16            | 150               | X/7343-43               | T543X157(1)016A(2)(3)015     | 240                                                  | 10                             | 15                               | 4058                                | 105                       | 3                      |
| 16            | 150               | X/7343-43               | T543X157(1)016A(2)(3)025     | 240                                                  | 10                             | 25                               | 3143                                | 105                       | 3                      |
| 16            | 150               | X/7343-43               | T543X157(1)016A(2)(3)040     | 240                                                  | 10                             | 40                               | 2485                                | 105                       | 3                      |
| 16            | 150               | X/7343-43               | T543X157(1)016A(2)(3)080     | 240                                                  | 10                             | 80                               | 1757                                | 105                       | 3                      |
| 16            | 220               | X/7343-43               | T543X227(1)016A(2)(3)035     | 352                                                  | 10                             | 35                               | 2657                                | 105                       | 3                      |
| 16            | 220               | X/7343-43               | T543X227(1)016A(2)(3)080     | 352                                                  | 10                             | 80                               | 1757                                | 105                       | 3                      |
| 16            | 330               | X/7343-43               | T543X337(1)016A(2)(3)025     | 528                                                  | 10                             | 25                               | 3143                                | 105                       | 3                      |
| 16            | 330               | X/7343-43               | T543X337(1)016A(2)(3)050     | 528                                                  | 10                             | 50                               | 2223                                | 105                       | 3                      |
| 20            | 22                | V/7343-20               | T543V226(1)020A(2)(3)040     | 44                                                   | 10                             | 40                               | 2162                                | 105                       | 3                      |
| 20            | 22                | V/7343-20               | T543V226(1)020A(2)(3)045     | 44                                                   | 10                             | 45                               | 2039                                | 105                       | 3                      |
| 20            | 22                | V/7343-20               | T543V226(1)020A(2)(3)090     | 44                                                   | 10                             | 90                               | 1441                                | 105                       | 3                      |
| 20            | 22                | D-7343-31               | T543D226(1)020A(2)(3)040     | 44                                                   | 10                             | 40                               | 2372                                | 105                       | 3                      |
| 20            | 22                | D-7343-31               | T543D226(1)020A(2)(3)045     | 44                                                   | 10                             | 45                               | 2236                                | 105                       | 3                      |
| 20            | 22                | D-7343-31               | T543D226(1)020A(2)(3)090     | 44                                                   | 10                             | 90                               | 1581                                | 105                       | 3                      |
| 20            | 33                | D-7343-31               | T543D336(1)020A(2)(3)060     | 66                                                   | 10                             | 60                               | 1936                                | 105                       | 3                      |
| 20            | 47                | V/7343-20               | T543V476(1)020A(2)(3)055     | 94                                                   | 10                             | 55                               | 1844                                | 105                       | 3                      |
| 20            | 47                | V/7343-20               | T543V476(1)020A(2)(3)090     | 94                                                   | 10                             | 90                               | 1441                                | 105                       | 3                      |
| 20            | 47                | D-7343-31               | T543D476(1)020A(2)(3)055     | 94                                                   | 10                             | 55                               | 2023                                | 105                       | 3                      |
| 20            | 100               | X/7343-43               | T543X107(1)020A(2)(3)035     | 200                                                  | 10                             | 35                               | 2657                                | 105                       | 3                      |
| 20            | 100               | X/7343-43               | T543X107(1)020A(2)(3)050     | 200                                                  | 10                             | 50                               | 2223                                | 105                       | 3                      |
| 25            | 10                | B/3528-21               | T543B106(1)025A(2)(3)100     | 25                                                   | 10                             | 100                              | 1127                                | 105                       | 3                      |
| 25            | 15                | V/7343-20               | T543V156(1)025A(2)(3)090     | 38                                                   | 10                             | 90                               | 1441                                | 105                       | 3                      |
| 25            | 15                | D-7343-31               | T543D156(1)025A(2)(3)060     | 38                                                   | 10                             | 60                               | 1936                                | 105                       | 3                      |
| 25            | 15                | D-7343-31               | T543D156(1)025A(2)(3)080     | 38                                                   | 10                             | 80                               | 1677                                | 105                       | 3                      |
| 25            | 22                | C/6032-25               | T543C226(1)025A(2)(3)080     | 55                                                   | 8                              | 80                               | 1436                                | 105                       | 3                      |
| 25            | 22                | D-7343-31               | T543D226(1)025A(2)(3)075     | 55                                                   | 10                             | 75                               | 1732                                | 105                       | 3                      |
| 25            | 22                | V/7343-20               | T543V226(1)025A(2)(3)060     | 55                                                   | 10                             | 60                               | 1765                                | 105                       | 3                      |
| 25            | 22                | V/7343-20               | T543V226(1)025A(2)(3)090     | 55                                                   | 10                             | 90                               | 1441                                | 105                       | 3                      |
| 25            | 33                | V/7343-20               | T543V336(1)025A(2)(3)060     | 83                                                   | 10                             | 60                               | 1765                                | 105                       | 3                      |
| 25            | 33                | D-7343-31               | T543D336(1)025A(2)(3)060     | 83                                                   | 10                             | 60                               | 1936                                | 105                       | 3                      |
| 25            | 68                | X/7343-43               | T543X686(1)025A(2)(3)035     | 170                                                  | 10                             | 35                               | 2657                                | 105                       | 3                      |
| VDC at 105°C  | µF                | KEMET/EIA               | (See below for part options) | µA at V <sub>R</sub> , 25°C<br>Maximum/<br>5 Minutes | % at 25°C<br>120 Hz<br>Maximum | mΩ at 25°C<br>100 kHz<br>Maximum | mA at 45°C<br>100 kHz               | °C                        | Reflow Temp<br>≤ 260°C |
| Rated Voltage | Rated Capacitance | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                                           | DF                             | ESR                              | Maximum Allowable<br>Ripple Current | Maximum<br>Operating Temp | MSL                    |

(1) To complete KEMET part number, insert M for ±20%, K for ±10%. Designates capacitance tolerance.

(2) To complete KEMET part number, H = Solder Plated, T = 100% Tin (Sn). Designates termination finish.

(3) To complete KEMET part number, insert E = None, S = 10 cycles +25°C, W = 10 cycles -55°C +85°C. Designates surge current option.

Refer to Ordering Information for additional detail.

Table 1 – Ratings &amp; Part Number Reference cont'd

| Rated Voltage | Rated Cap         | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                                           | DF                             | ESR                              | Maximum Allowable Ripple Current | Maximum Operating Temp | MSL                    |
|---------------|-------------------|-------------------------|------------------------------|------------------------------------------------------|--------------------------------|----------------------------------|----------------------------------|------------------------|------------------------|
| VDC at 105°C  | µF                | KEMET/EIA               | (See below for part options) | µA at V <sub>R</sub> , 25°C<br>Maximum/<br>5 Minutes | % at 25°C<br>120 Hz<br>Maximum | mΩ at 25°C<br>100 kHz<br>Maximum | mA at 45°C<br>100 kHz            | °C                     | Reflow Temp<br>≤ 260°C |
| 25            | 68                | X/7343-43               | T543X686(1)025A(2)(3)050     | 170                                                  | 10                             | 50                               | 2223                             | 105                    | 3                      |
| 25            | 100               | X/7343-43               | T543X107(1)025A(2)(3)060     | 250                                                  | 10                             | 60                               | 2029                             | 105                    | 3                      |
| 30            | 22                | D-7343-31               | T543D226(1)030A(2)(3)075     | 66                                                   | 10                             | 75                               | 1732                             | 105                    | 3                      |
| 30            | 33                | D-7343-31               | T543D336(1)030A(2)(3)100     | 99                                                   | 10                             | 100                              | 1500                             | 105                    | 3                      |
| 30            | 47                | X/7343-43               | T543X476(1)030A(2)(3)050     | 141                                                  | 10                             | 50                               | 2223                             | 105                    | 3                      |
| 30            | 68                | X/7343-43               | T543X686(1)030A(2)(3)035     | 204                                                  | 10                             | 35                               | 2657                             | 105                    | 3                      |
| 30            | 68                | X/7343-43               | T543X686(1)030A(2)(3)050     | 204                                                  | 10                             | 50                               | 2223                             | 105                    | 3                      |
| 30            | 100               | X/7343-43               | T543X107(1)030A(2)(3)035     | 300                                                  | 10                             | 35                               | 2657                             | 105                    | 3                      |
| 30            | 100               | X/7343-43               | T543X107(1)030A(2)(3)060     | 300                                                  | 10                             | 60                               | 2029                             | 105                    | 3                      |
| 30            | 100               | X/7343-43               | T543X107(1)030A(2)(3)070     | 300                                                  | 10                             | 70                               | 1878                             | 105                    | 3                      |
| 35            | 15                | V/7343-20               | T543V156(1)035A(2)(3)100     | 53                                                   | 10                             | 100                              | 1367                             | 105                    | 3                      |
| 35            | 15                | V/7343-20               | T543V156(1)035A(2)(3)125     | 53                                                   | 10                             | 125                              | 1223                             | 105                    | 3                      |
| 35            | 15                | D-7343-31               | T543D156(1)035A(2)(3)100     | 53                                                   | 10                             | 100                              | 1500                             | 105                    | 3                      |
| 35            | 15                | D-7343-31               | T543D156(1)035A(2)(3)125     | 53                                                   | 10                             | 125                              | 1342                             | 105                    | 3                      |
| 35            | 33                | X/7343-43               | T543X336(1)035A(2)(3)065     | 116                                                  | 10                             | 65                               | 1949                             | 105                    | 3                      |
| 35            | 47                | X/7343-43               | T543X476(1)035A(2)(3)030     | 165                                                  | 10                             | 30                               | 2869                             | 105                    | 3                      |
| 35            | 47                | X/7343-43               | T543X476(1)035A(2)(3)060     | 165                                                  | 10                             | 60                               | 2029                             | 105                    | 3                      |
| 50            | 5.6               | D-7343-31               | T543D565(1)050A(2)(3)070     | 28                                                   | 10                             | 70                               | 1793                             | 105                    | 3                      |
| 50            | 5.6               | D-7343-31               | T543D565(1)050A(2)(3)090     | 28                                                   | 10                             | 90                               | 1581                             | 105                    | 3                      |
| 50            | 6.8               | V/7343-20               | T543V685(1)050A(2)(3)065     | 34                                                   | 10                             | 65                               | 1934                             | 105                    | 3                      |
| 50            | 10                | D-7343-31               | T543D106(1)050A(2)(3)090     | 50                                                   | 10                             | 90                               | 1581                             | 105                    | 3                      |
| 50            | 10                | D-7343-31               | T543D106(1)050A(2)(3)100     | 50                                                   | 10                             | 100                              | 1500                             | 105                    | 3                      |
| 50            | 10                | D-7343-31               | T543D106(1)050A(2)(3)120     | 50                                                   | 10                             | 120                              | 1369                             | 105                    | 3                      |
| 50            | 18                | X/7343-43               | T543X186(1)050A(2)(3)035     | 90                                                   | 10                             | 35                               | 2657                             | 105                    | 3                      |
| 50            | 18                | X/7343-43               | T543X186(1)050A(2)(3)070     | 90                                                   | 10                             | 70                               | 1878                             | 105                    | 3                      |
| 50            | 22                | X/7343-43               | T543X226(1)050A(2)(3)040     | 110                                                  | 10                             | 40                               | 2485                             | 105                    | 3                      |
| 50            | 22                | X/7343-43               | T543X226(1)050A(2)(3)075     | 110                                                  | 10                             | 75                               | 1815                             | 105                    | 3                      |
| 50            | 33                | X/7343-43               | T543X336(1)050A(2)(3)040     | 165                                                  | 10                             | 40                               | 2485                             | 105                    | 3                      |
| 50            | 33                | X/7343-43               | T543X336(1)050A(2)(3)075     | 165                                                  | 10                             | 75                               | 1815                             | 105                    | 3                      |
| 63            | 4.7               | D-7343-31               | T543D475(1)063A(2)(3)075     | 30                                                   | 10                             | 75                               | 1732                             | 105                    | 3                      |
| 63            | 4.7               | D-7343-31               | T543D475(1)063A(2)(3)100     | 30                                                   | 10                             | 100                              | 1500                             | 105                    | 3                      |
| 63            | 4.7               | D-7343-31               | T543D475(1)063A(2)(3)120     | 30                                                   | 10                             | 120                              | 1369                             | 105                    | 3                      |
| 63            | 6.8               | D-7343-31               | T543D685(1)063A(2)(3)075     | 43                                                   | 10                             | 75                               | 1700                             | 105                    | 3                      |
| 63            | 10                | X/7343-43               | T543X106(1)063A(2)(3)050     | 63                                                   | 10                             | 50                               | 2223                             | 105                    | 3                      |
| 63            | 10                | X/7343-43               | T543X106(1)063A(2)(3)075     | 63                                                   | 10                             | 75                               | 1815                             | 105                    | 3                      |
| 63            | 10                | X/7343-43               | T543X106(1)063A(2)(3)100     | 63                                                   | 10                             | 100                              | 1572                             | 105                    | 3                      |
| 63            | 10                | X/7343-43               | T543X106(1)063A(2)(3)150     | 63                                                   | 10                             | 150                              | 1283                             | 105                    | 3                      |
| 63            | 15                | X/7343-43               | T543X156(1)063A(2)(3)035     | 95                                                   | 10                             | 35                               | 2657                             | 105                    | 3                      |
| 63            | 15                | X/7343-43               | T543X156(1)063A(2)(3)050     | 95                                                   | 10                             | 50                               | 2223                             | 105                    | 3                      |
| 63            | 22                | X/7343-43               | T543X226(1)063A(2)(3)075     | 138.6                                                | 10                             | 75                               | 1815                             | 105                    | 3                      |
| VDC at 105°C  | µF                | KEMET/EIA               | (See below for part options) | µA at V <sub>R</sub> , 25°C<br>Maximum/<br>5 Minutes | % at 25°C<br>120 Hz<br>Maximum | mΩ at 25°C<br>100 kHz<br>Maximum | mA at 45°C<br>100 kHz            | °C                     | Reflow Temp<br>≤ 260°C |
| Rated Voltage | Rated Capacitance | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                                           | DF                             | ESR                              | Maximum Allowable Ripple Current | Maximum Operating Temp | MSL                    |

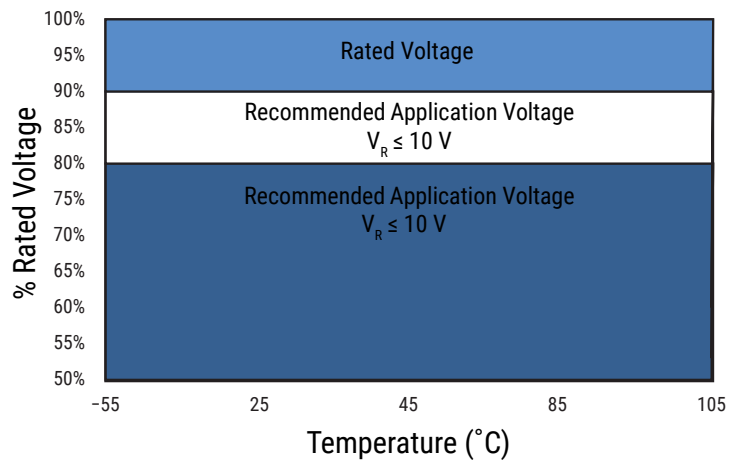
(1) To complete KEMET part number, insert M for ±20%, K for ±10%. Designates capacitance tolerance.

(2) To complete KEMET part number, H = Solder Plated, T = 100% Tin (Sn). Designates termination finish.

(3) To complete KEMET part number, insert E = None, S = 10 cycles +25°C, W = 10 cycles -55°C +85°C. Designates surge current option.

Refer to Ordering Information for additional detail.

## Derating Guidelines



### Recommended Application Voltage

KOCAP's are solid state capacitors that demonstrate no wearout mechanism when operated within their recommended guidelines. While the KOCAP can be operated at full rated voltage, most circuit designers seek a minimum level of assurance in long term reliability which should be demonstrated with data.

A voltage derating can provide the desired level of demonstrated reliability based on industry accepted acceleration models. Since most applications do require long term reliability, KEMET recommends that designers consider a 10% voltage derating, according to the graphic above, for the maximum steady state voltage.

| Voltage Rating                            | Maximum Recommended Steady State Voltage |
|-------------------------------------------|------------------------------------------|
| -55°C to 105°C                            |                                          |
| $2.5\text{ V} \leq V_R \leq 10\text{ V}$  | 90% of $V_R$                             |
| $12.5\text{ V} \leq V_R \leq 63\text{ V}$ | 80% of $V_R$                             |

$V_R$  = Rated Voltage

## 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 which may be applied is limited by two criteria:

1. The positive peak AC voltage plus the DC bias voltage, if any, must not exceed the DC voltage rating of the capacitor.
2. The negative peak AC voltage in combination with bias voltage, if any, must not exceed the allowable limits specified for reverse voltage. See the Reverse Voltage section for allowable limits.

The maximum power dissipation by case size can be determined using the table at right. The maximum power dissipation rating stated in the table must be reduced with increasing environmental operating temperatures. Refer to the table below for temperature compensation requirements.

| Case Code | EIA Case Code | Maximum Power Dissipation (P max) mWatts at 45°C with +30°C Rise |
|-----------|---------------|------------------------------------------------------------------|
| A         | 3216-18       | 112                                                              |
| B         | 3528-21       | 127                                                              |
| C         | 6032-28       | 165                                                              |
| D         | 7343-31       | 225                                                              |
| H         | 7360-20       | 187                                                              |
| L         | 6032-19       | 150                                                              |
| M         | 3528-15       | 120                                                              |
| T         | 3528-12       | 105                                                              |
| U         | 6032-15       | 135                                                              |
| V         | 7343-20       | 187                                                              |
| W         | 7343-15       | 180                                                              |
| X         | 7343-43       | 247                                                              |
| Y         | 7343-40       | 241                                                              |

| Temperature Compensation Multipliers for Maximum Ripple Current |                  |                  |
|-----------------------------------------------------------------|------------------|------------------|
| T ≤ 45°C                                                        | 45° C < T ≤ 85°C | 85°C < T ≤ 105°C |
| 1.00                                                            | 0.70             | 0.25             |

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.

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)

## Surge Voltage

Surge voltage is the maximum voltage (peak value) which may be applied to the capacitor.

The surge voltage must not be applied for periodic charging and discharging in the course of normal operation and cannot be part of the application voltage.

Surge voltage capability is demonstrated by application of 1,000cycles at relevant voltage at 105°C and 125°C.

The parts are charged through a 33 Ohm resistor for 30 seconds and then discharged through a 33 Ohm resistor for each cycle.

| Rated Voltage (V) | Surge Voltage (V) | Derated Voltage (V) | Derated Surge Voltage (V) |
|-------------------|-------------------|---------------------|---------------------------|
| –55°C to 105°C    |                   | Up to 125°C         |                           |
| 2, 5              | 3, 3              | 1, 7                | 2, 2                      |
| 6, 3              | 8, 2              | 4, 2                | 5, 5                      |
| 10                | 13, 0             | 6, 7                | 8, 7                      |
| 16                | 20, 8             | 10, 7               | 13, 9                     |
| 20                | 26, 0             | 13, 4               | 17, 4                     |
| 25                | 32, 5             | 16, 8               | 21, 8                     |
| 35                | 45, 5             | 23, 5               | 30, 5                     |
| 50                | 65,               | 33, 5               | 43, 6                     |

## Reverse Voltage

Polymer electrolytic capacitors are polar devices and may be permanently damaged or destroyed if connected in the wrong polarity. These devices will withstand a small degree of transient voltage reversal for short periods as shown in the below table.

| Temperature | Permissible Transient Reverse Voltage |
|-------------|---------------------------------------|
| 25°C        | 15% of rated voltage                  |
| 55°C        | 10% of rated voltage                  |
| 85°C        | 5% of rated voltage                   |
| 105°C       | 3% of rated voltage                   |
| 125°C*      | 1% of rated voltage                   |

\*For series rated to 125°C

**Table 2 – Land Dimensions/Courtyard**

| KEMET          | Metric Size Code | Density Level A:<br>Maximum (Most) Land<br>Protrusion (mm) |      |      |       |      | Density Level B:<br>Median (Nominal) Land<br>Protrusion (mm) |      |      |      |      | Density Level C:<br>Minimum (Least) Land<br>Protrusion (mm) |      |      |      |      |
|----------------|------------------|------------------------------------------------------------|------|------|-------|------|--------------------------------------------------------------|------|------|------|------|-------------------------------------------------------------|------|------|------|------|
|                |                  | W                                                          | L    | S    | V1    | V2   | W                                                            | L    | S    | V1   | V2   | W                                                           | L    | S    | V1   | V2   |
| A              | 3216-18          | 1.35                                                       | 2.20 | 0.62 | 6.02  | 2.80 | 1.23                                                         | 1.80 | 0.82 | 4.92 | 2.30 | 1.13                                                        | 1.42 | 0.98 | 4.06 | 2.04 |
| B              | 3528-21          | 2.35                                                       | 2.21 | 0.92 | 6.32  | 4.00 | 2.23                                                         | 1.80 | 1.12 | 5.22 | 3.50 | 2.13                                                        | 1.42 | 1.28 | 4.36 | 3.24 |
| C              | 6032-25          | 2.35                                                       | 2.77 | 2.37 | 8.92  | 4.50 | 2.23                                                         | 2.37 | 2.57 | 7.82 | 4.00 | 2.13                                                        | 1.99 | 2.73 | 6.96 | 3.74 |
| D              | 7343-31          | 2.55                                                       | 2.77 | 3.67 | 10.22 | 5.60 | 2.43                                                         | 2.37 | 3.87 | 9.12 | 5.10 | 2.33                                                        | 1.99 | 4.03 | 8.26 | 4.84 |
| L              | 6032-19          | 2.35                                                       | 2.77 | 2.37 | 8.92  | 4.50 | 2.23                                                         | 2.37 | 2.57 | 7.82 | 4.00 | 2.13                                                        | 1.99 | 2.73 | 6.96 | 3.74 |
| M              | 3528-15          | 2.35                                                       | 2.20 | 0.92 | 6.32  | 4.00 | 2.23                                                         | 1.80 | 1.12 | 5.22 | 3.50 | 2.13                                                        | 1.42 | 1.28 | 4.36 | 3.24 |
| H              | 7360-20          | 4.25                                                       | 2.77 | 3.67 | 10.22 | 7.30 | 4.13                                                         | 2.37 | 3.87 | 9.12 | 6.80 | 4.03                                                        | 1.99 | 4.03 | 8.26 | 6.54 |
| T              | 3528-12          | 2.35                                                       | 2.20 | 0.92 | 6.32  | 4.00 | 2.23                                                         | 1.80 | 1.12 | 5.22 | 3.50 | 2.13                                                        | 1.42 | 1.28 | 4.36 | 3.24 |
| U              | 6032-15          | 2.35                                                       | 2.77 | 2.37 | 8.92  | 4.50 | 2.23                                                         | 2.37 | 2.57 | 7.82 | 4.00 | 2.13                                                        | 1.99 | 2.73 | 6.96 | 3.74 |
| V              | 7343-20          | 2.55                                                       | 2.77 | 3.67 | 10.22 | 5.60 | 2.43                                                         | 2.37 | 3.87 | 9.12 | 5.10 | 2.33                                                        | 1.99 | 4.03 | 8.26 | 4.84 |
| W              | 7343-15          | 2.55                                                       | 2.77 | 3.67 | 10.22 | 5.60 | 2.43                                                         | 2.37 | 3.87 | 9.12 | 5.10 | 2.33                                                        | 1.99 | 4.03 | 8.26 | 4.84 |
| X <sup>1</sup> | 7343-43          | 2.55                                                       | 2.77 | 3.67 | 10.22 | 5.60 | 2.43                                                         | 2.37 | 3.87 | 9.12 | 5.10 | 2.33                                                        | 1.99 | 4.03 | 8.26 | 4.84 |
| Y <sup>1</sup> | 7343-40          | 2.55                                                       | 2.77 | 3.67 | 10.22 | 5.60 | 2.43                                                         | 2.37 | 3.87 | 9.12 | 5.10 | 2.33                                                        | 1.99 | 4.03 | 8.26 | 4.84 |

**Density Level A:** For low-density product applications. Recommended for wave solder applications and provides a wider process window for reflow solder processes.

**Density Level B:** For products with a moderate level of component density. Provides a robust solder attachment condition for reflow solder processes.

**Density Level C:** For high component density product applications. Before adapting the minimum land pattern variations the user should perform qualification testing based on the conditions outlined in IPC standard 7351 (IPC-7351).

<sup>1</sup> Height of these chips may create problems in wave soldering.

<sup>2</sup> Land pattern geometry is too small for silkscreen outline.



## Soldering Process

KEMET's families of surface mount capacitors are compatible with wave (single or dual), convection, IR, or vapor phase reflow techniques. Preheating of these components is recommended to avoid extreme thermal stress. KEMET's recommended profile conditions for convection and IR reflow reflect the profile conditions of the IPC/J-STD-020D standard for moisture sensitivity testing. The devices can safely withstand a maximum of three reflow passes at these conditions.

Please note that although the X/7343-43 case size can withstand wave soldering, the tall profile (4.3 mm maximum) dictates care in wave process development.

Hand soldering should be performed with care due to the difficulty in process control. If performed, care should be taken to avoid contact of the soldering iron to the molded case. The iron should be used to heat the solder pad, applying solder between the pad and the termination, until reflow occurs. Once reflow occurs, the iron should be removed immediately. "Wiping" the edges of a chip and heating the top surface is not recommended.

During typical reflow operations, a slight darkening of the gold-colored epoxy may be observed. This slight darkening is normal and not harmful to the product. Marking permanency is not affected by this change.

| Profile Feature                                       | SnPb Assembly       | Pb-Free Assembly    |
|-------------------------------------------------------|---------------------|---------------------|
| Preheat/Soak                                          |                     |                     |
| Temperature Minimum ( $T_{smin}$ )                    | 100°C               | 150°C               |
| Temperature Maximum ( $T_{smax}$ )                    | 150°C               | 200°C               |
| Time ( $t_s$ ) from $T_{smin}$ to $T_{smax}$          | 60 – 120 seconds    | 60 – 120 seconds    |
| Ramp-up Rate ( $T_L$ to $T_P$ )                       | 3°C/seconds maximum | 3°C/seconds maximum |
| Liquidous Temperature ( $T_L$ )                       | 183°C               | 217°C               |
| Time Above Liquidous ( $t_L$ )                        | 60 – 150 seconds    | 60 – 150 seconds    |
| Peak Temperature ( $T_P$ )                            | 220°C*<br>235°C**   | 250°C*<br>260°C**   |
| Time within 5°C of Maximum Peak Temperature ( $t_p$ ) | 20 seconds maximum  | 30 seconds maximum  |
| Ramp-down Rate ( $T_P$ to $T_L$ )                     | 6°C/seconds maximum | 6°C/seconds maximum |
| Time 25°C to Peak Temperature                         | 6 minutes maximum   | 8 minutes maximum   |

*Note: All temperatures refer to the center of the package, measured on the package body surface that is facing up during assembly reflow.*

\*Case Size D, E, P, Y, and X

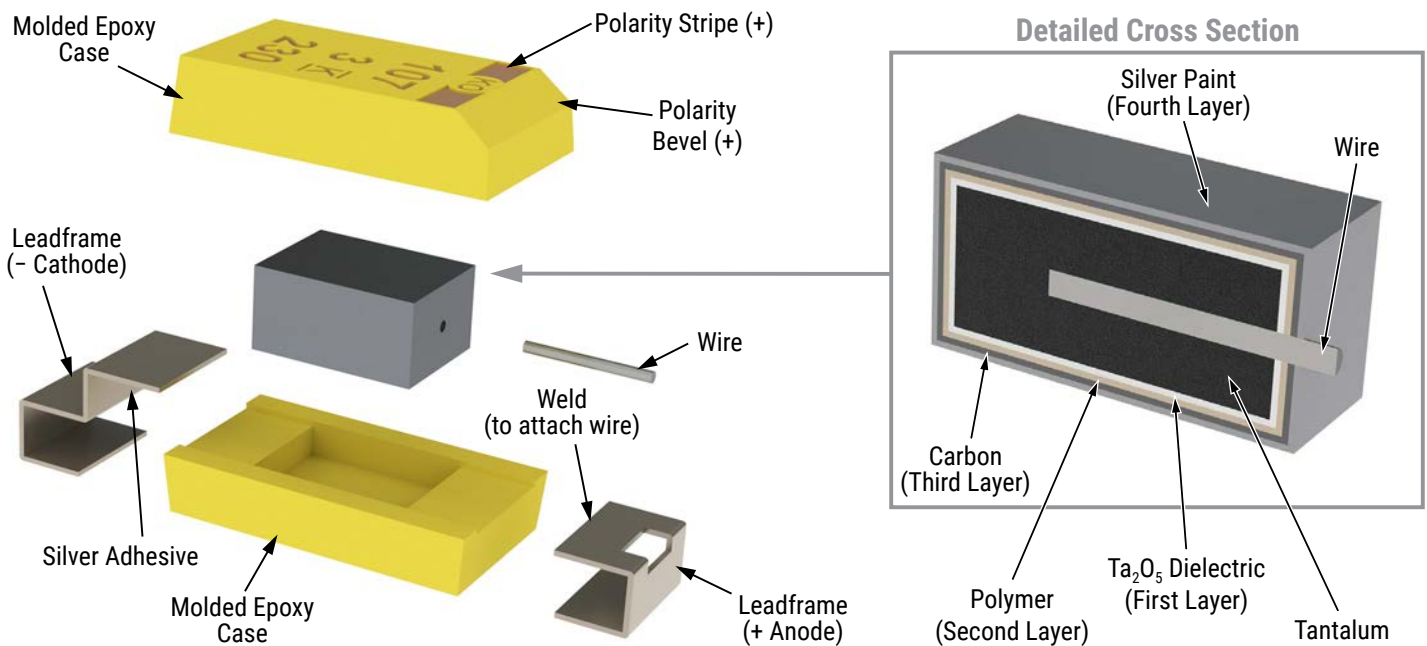
\*\*Case Size A, B, C, H, I, K, M, R, S, T, U, V, W, and Z



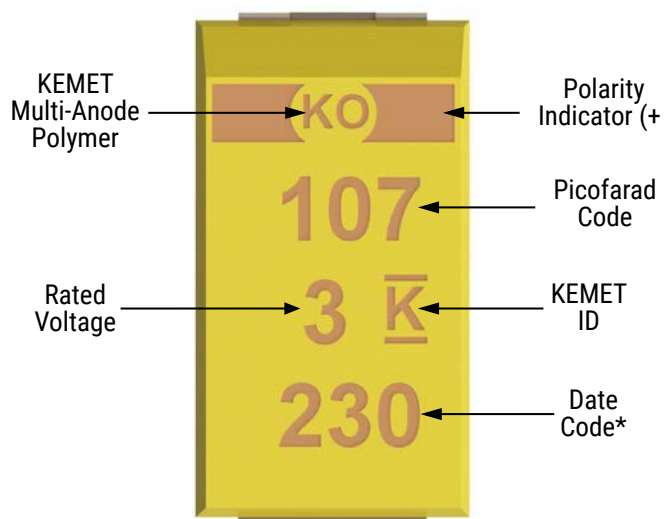
## Storage

All KO-CAP Series are shipped in moisture barrier bags with a desiccant and moisture indicator card. These series are classified as MSL3 (Moisture Sensitivity Level 3). Product contained within the moisture barrier bags should be stored in normal working environments with temperatures not to exceed 40°C and humidity not in excess of 90% RH.

## Construction



## Capacitor Marking



\* 230 = 30<sup>th</sup> week of 2012

| Date Code *                                                  |                                                                                    |
|--------------------------------------------------------------|------------------------------------------------------------------------------------|
| 1 <sup>st</sup> digit = Last number of Year                  | 2 = 2012<br>3 = 2013<br>4 = 2014<br>5 = 2015<br>6 = 2016<br>7 = 2017               |
| 2 <sup>nd</sup> and 3 <sup>rd</sup> digit = Week of the Year | 01 = 1 <sup>st</sup> week of the Year to<br>52 = 52 <sup>nd</sup> week of the Year |

## Tape & Reel Packaging Information

KEMET's molded chip capacitor families are packaged in 8 and 12 mm plastic tape on 7" and 13" reels in accordance with *EIA Standard 481: Embossed Carrier Taping of Surface Mount Components for Automatic Handling*. This packaging system is compatible with all tape-fed automatic pick-and-place systems.

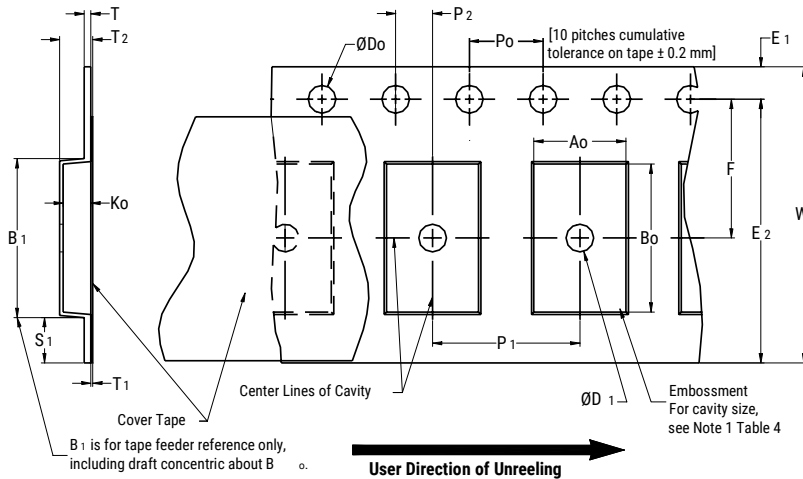


**Table 3 – Packaging Quantity**

| Case Code |         | Tape Width (mm) | 7" Reel* | 13" Reel* |
|-----------|---------|-----------------|----------|-----------|
| KEMET     | EIA     |                 |          |           |
| S         | 3216-12 | 8               | 2,500    | 10,000    |
| T         | 3528-12 | 8               | 2,500    | 10,000    |
| M         | 3528-15 | 8               | 2,000    | 8,000     |
| U         | 6032-15 | 12              | 1,000    | 5,000     |
| L         | 6032-19 | 12              | 1,000    | 3,000     |
| W         | 7343-15 | 12              | 1,000    | 3,000     |
| Z         | 7343-17 | 12              | 1,000    | 3,000     |
| V         | 7343-20 | 12              | 1,000    | 3,000     |
| A         | 3216-18 | 8               | 2,000    | 9,000     |
| B         | 3528-21 | 8               | 2,000    | 8,000     |
| C         | 6032-28 | 12              | 500      | 3,000     |
| D         | 7343-31 | 12              | 500      | 2,500     |
| Q         | 7343-12 | 12              | 1,000    | 3,000     |
| Y         | 7343-40 | 12              | 500      | 2,000     |
| X         | 7343-43 | 12              | 500      | 2,000     |
| E/T428P   | 7360-38 | 12              | 500      | 2,000     |
| H         | 7360-20 | 12              | 1,000    | 2,500     |

\* No C-Spec required for 7" reel packaging. C-7280 required for 13" reel packaging.

**Figure 1 – Embossed (Plastic) Carrier Tape Dimensions**



**Table 4 – Embossed (Plastic) Carrier Tape Dimensions**

Metric will govern

| Constant Dimensions – Millimeters (Inches) |                                     |                                  |                            |                           |                           |                       |                                  |                  |                           |
|--------------------------------------------|-------------------------------------|----------------------------------|----------------------------|---------------------------|---------------------------|-----------------------|----------------------------------|------------------|---------------------------|
| Tape Size                                  | D <sub>0</sub>                      | D <sub>1</sub> Minimum<br>Note 1 | E <sub>1</sub>             | P <sub>0</sub>            | P <sub>2</sub>            | R Reference<br>Note 2 | S <sub>1</sub> Minimum<br>Note 3 | T Maximum        | T <sub>1</sub><br>Maximum |
| 8 mm                                       | 1.5±0.10/-0.0<br>(0.059±0.004/-0.0) | 1.0<br>(0.039)                   | 1.75±0.10<br>(0.069±0.004) | 4.0±0.10<br>(0.157±0.004) | 2.0±0.05<br>(0.079±0.002) | 25.0<br>(0.984)       | 0.600<br>(0.024)                 | 0.600<br>(0.024) | 0.100<br>(0.004)          |
| 12 mm                                      |                                     | 1.5<br>(0.059)                   |                            |                           | 2.0±0.1<br>(0.079±0.059)  | 30<br>(1.181)         |                                  |                  |                           |
| 16 mm                                      |                                     |                                  |                            |                           |                           |                       |                                  |                  |                           |

| Variable Dimensions – Millimeters (Inches) |                                  |                                  |                        |                           |                                                                                   |                        |                 |                                                  |  |
|--------------------------------------------|----------------------------------|----------------------------------|------------------------|---------------------------|-----------------------------------------------------------------------------------|------------------------|-----------------|--------------------------------------------------|--|
| Tape Size                                  | Pitch                            | B <sub>1</sub> Maximum<br>Note 4 | E <sub>2</sub> Minimum | F                         | P <sub>1</sub>                                                                    | T <sub>2</sub> Maximum | W Maximum       | A <sub>0</sub> , B <sub>0</sub> & K <sub>0</sub> |  |
| 8 mm                                       | Single (4 mm)                    | 4.35<br>(0.171)                  | 6.25<br>(0.246)        | 3.5±0.05<br>(0.138±0.002) | 2.0±0.05 or 4.0±0.10<br>(0.079±0.002 or 0.157±0.004)                              | 2.5<br>(0.098)         | 8.3<br>(0.327)  | Note 5                                           |  |
| 12 mm                                      | Single (4 mm)<br>& Double (8 mm) | 8.2<br>(0.323)                   | 10.25<br>(0.404)       | 5.5±0.05<br>(0.217±0.002) | 2.0±0.05 (0.079±0.002) or<br>4.0±0.10 (0.157±0.004) or<br>8.0±0.10 (0.315 ±0.004) | 4.6<br>(0.181)         | 12.3<br>(0.484) |                                                  |  |
| 16 mm                                      | Triple (12 mm)                   | 12.1<br>(0.476)                  | 14.25<br>(0.561)       | 7.5±0.10<br>(0.295±0.004) | 4.0±0.10 (0.157±0.004)<br>to 12.0±0.10 (0.472±0.004)                              | 8.0 (0.315)            | 16.3<br>(0.642) |                                                  |  |

1. The embossment hole location shall be measured from the sprocket hole controlling the location of the embossment. Dimensions of embossment location and hole location shall be applied independent of each other.
2. The tape, with or without components, shall pass around R without damage (see Figure 4).
3. If  $S_1 < 1.0$  mm, there may not be enough area for cover tape to be properly applied (see EIA Standard 481–D, paragraph 4.3, section b).
4.  $B_1$  dimension is a reference dimension for tape feeder clearance only.
5. The cavity defined by  $A_0$ ,  $B_0$  and  $K_0$  shall surround the component with sufficient clearance that:
  - (a) the component does not protrude above the top surface of the carrier tape.
  - (b) the component can be removed from the cavity in a vertical direction without mechanical restriction, after the top cover tape has been removed.
  - (c) rotation of the component is limited to 20° maximum for 8 and 12 mm tapes and 10° maximum for 16 mm tapes (see Figure 2).
  - (d) lateral movement of the component is restricted to 0.5 mm maximum for 8 mm and 12 mm wide tape and to 1.0 mm maximum for 16 mm tape (see Figure 3).
  - (e) see Addendum in EIA Standard 481–D for standards relating to more precise taping requirements.

## Packaging Information Performance Notes

- 1. Cover Tape Break Force:** 1.0 Kg minimum.
- 2. Cover Tape Peel Strength:** The total peel strength of the cover tape from the carrier tape shall be:

| Tape Width   | Peel Strength                    |
|--------------|----------------------------------|
| 8 mm         | 0.1 to 1.0 Newton (10 to 100 gf) |
| 12 and 16 mm | 0.1 to 1.3 Newton (10 to 130 gf) |

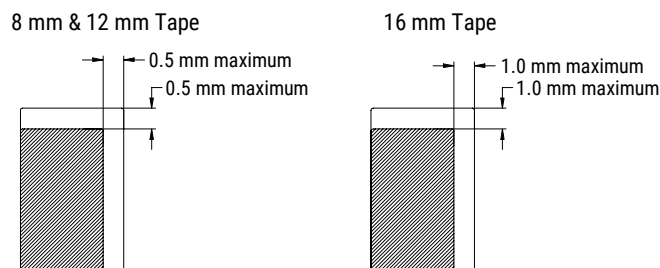
The direction of the pull shall be opposite the direction of the carrier tape travel. The pull angle of the carrier tape shall be 165° to 180° from the plane of the carrier tape. During peeling, the carrier and/or cover tape shall be pulled at a velocity of 300 ±10 mm/minute.

- 3. Labeling:** Bar code labeling (standard or custom) shall be on the side of the reel opposite the sprocket holes. Refer to EIA Standards 556 and 624.

## Figure 2 – Maximum Component Rotation



## Figure 3 – Maximum Lateral Movement



## Figure 4 – Bending Radius



**Figure 5 – Reel Dimensions**



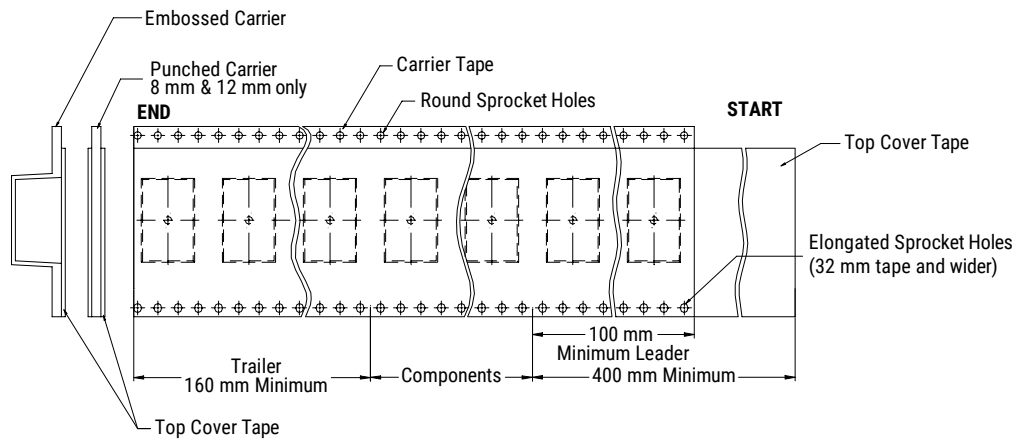
Note: Drive spokes optional; if used, dimensions B and D shall apply.

**Table 5 – Reel Dimensions**

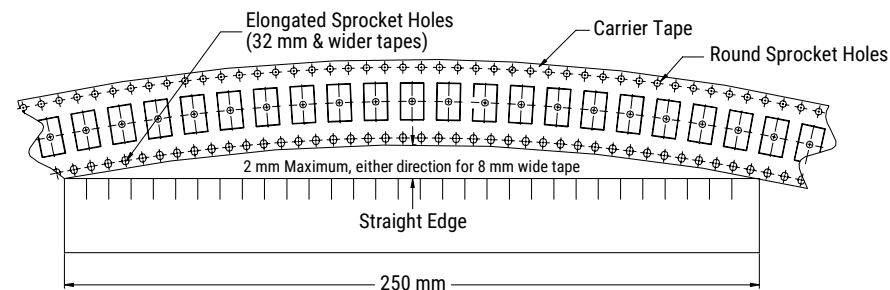
Metric will govern

| Constant Dimensions – Millimeters (Inches) |                                                               |                                     |                                      |                                                   |
|--------------------------------------------|---------------------------------------------------------------|-------------------------------------|--------------------------------------|---------------------------------------------------|
| Tape Size                                  | A                                                             | B Minimum                           | C                                    | D Minimum                                         |
| 8 mm                                       | 178±0.20<br>(7.008±0.008)<br>or<br>330±0.20<br>(13.000±0.008) | 1.5<br>(0.059)                      | 13.0+0.5/-0.2<br>(0.521+0.02/-0.008) | 20.2<br>(0.795)                                   |
| 12 mm                                      |                                                               |                                     |                                      |                                                   |
| 16 mm                                      |                                                               |                                     |                                      |                                                   |
| Variable Dimensions – Millimeters (Inches) |                                                               |                                     |                                      |                                                   |
| Tape Size                                  | N Minimum                                                     | W <sub>1</sub>                      | W <sub>2</sub> Maximum               | W <sub>3</sub>                                    |
| 8 mm                                       | 50<br>(1.969)                                                 | 8.4+1.5/-0.0<br>(0.331+0.059/-0.0)  | 14.4<br>(0.567)                      | Shall accommodate tape width without interference |
| 12 mm                                      |                                                               | 12.4+2.0/-0.0<br>(0.488+0.078/-0.0) | 18.4<br>(0.724)                      |                                                   |
| 16 mm                                      |                                                               | 16.4+2.0/-0.0<br>(0.646+0.078/-0.0) | 22.4<br>(0.882)                      |                                                   |

**Figure 6 – Tape Leader & Trailer Dimensions**



**Figure 7 – Maximum Camber**



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