

## T543 Up-Screen Commercial Polymer Electrolytic, 2.5 – 63 VDC

### 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.

**KO-CAP** Polymer Capacitors

The T543 COTS Polymer Electrolytic capacitor is an upscreened version of the industrial T520 KO-CAP. The T543's upscreened 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
- Tape & Reel standard packaging per EIA 481
- Volumetrically efficient
- Surge options at 25°C and -55°C/+85°C
- EIA standard case sizes
- Halogen-free epoxy and RoHS compliant



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### 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, when used in extreme environments. 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 representative or field application engineer to discuss the specific details of your application (see "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, O, T, U, V, W, X, Y | First two digits represent significant figures. Third digit specifies number of zeros. | K = $\pm 10\%$<br>M = $\pm 20\%$ | 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 = Bulk plastic box<br>WAFL = Waffle pack |

## Performance Characteristics

| Item                    | Performance Characteristics                                                |
|-------------------------|----------------------------------------------------------------------------|
| Operating Temperature   | -55°C to 105°C/125°C (refer to part number for maximum temperature rating) |
| Rated Capacitance Range | 4.7 – 2,000 $\mu\text{F}$ 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         | $\leq 0.1 \text{ CV } (\mu\text{A})$ at rated voltage after 5 minutes      |

## Qualification

| Test                           | Condition                                                                                                               | Characteristics |                                  |       |          |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------|-----------------|----------------------------------|-------|----------|
| Endurance                      | 105°C at rated voltage, 2,000 hours<br>125°C at 2/3 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<br>125°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/+125°C**, +25° C |                 | +25°C                            | -55°C | +85°C    |
|                                |                                                                                                                         | Δ C/C           | IL*                              | ±20%  | ±20%     |
|                                |                                                                                                                         | DF              | IL                               | IL    | 1.2 x IL |
|                                |                                                                                                                         | DCL             | IL                               | N/A   | 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

\*\*Refer to part number specifications for individual temperature classification

## Reliability

KO-CAP capacitors have an average failure rate of 0.5 %/1,000 hours at category voltage,  $U_C$ , and category temperature,  $T_C$ . These capacitors are qualified using industry test standards at  $U_C$  and  $T_C$ . The minimum test time (1,000 hours or 2,000 hours) is dependent on the product.

The actual life expectancy of KO-CAP capacitors increases when application voltage,  $U_A$ , and application temperature,  $T_A$ , are lower than  $U_C$  and  $T_C$ . As a general guideline, when  $U_A < 0.9 * U_C$  and  $T_A < 85^\circ\text{C}$ , the life expectancy will typically exceed the useful lifetime of most hardware (> 10 years).

The lifetime of a KO-CAP capacitor at a specific application voltage and temperature can be modeled using the equations below. A failure is defined as passing enough current to blow a 1-amp fuse. The calculation is an estimation based on empirical results and is not a guarantee.

$$VAF = \left( \frac{U_C}{U_A} \right)^n$$

where:

VAF = acceleration factor due to voltage, unitless

$U_C$  = category voltage, volt

$U_A$  = application voltage, volt

n = exponent, 16

$$TAF = e^{\left[ \frac{E_a}{k} \left( \frac{1}{273+T_A} - \frac{1}{273+T_C} \right) \right]}$$

where:

TAF = acceleration factor due to temperature, unitless

$E_a$  = activation energy, 1.4 eV

k = Boltzmann's constant, 8.617E-5 eV/K

$T_A$  = application temperature,  $^\circ\text{C}$

$T_C$  = category temperature,  $^\circ\text{C}$

$$AF = VAF * TAF$$

where:

AF = acceleration factor, unitless

TAF = acceleration factor due to temperature, unitless

VAF = acceleration factor due to voltage, unitless

$$Life_{U_A, T_A} = Life_{U_C, T_C} * AF$$

where:

$Life_{U_A, T_A}$  = guaranteed life application voltage and temperature, years

$Life_{U_C, T_C}$  = guaranteed life category voltage and temperature, years

AF = acceleration factor, unitless

### Terms:

Category voltage,  $U_C$ : maximum recommended peak DC operating voltage for continuous operation at the category temperature,  $T_C$

Rated voltage,  $U_R$ : maximum recommended peak DC operating voltage for continuous operation up to the rated temperature,  $T_R$

Category temperature,  $T_C$ : maximum recommended operating temperature. Voltage derating may be required at  $T_C$

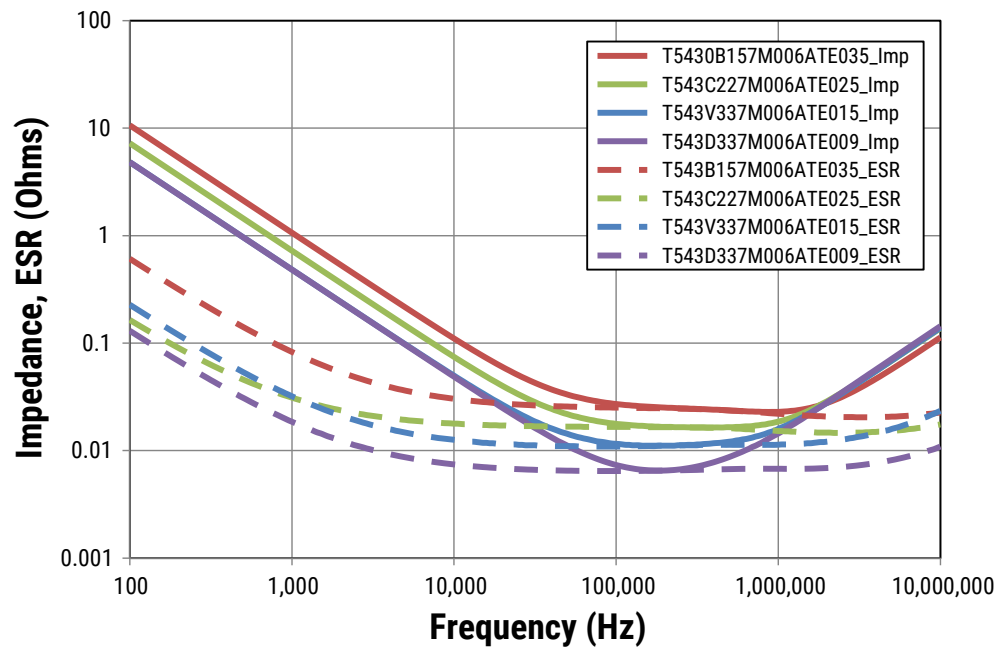
Rated temperature,  $T_R$ : maximum recommended operating temperature without voltage derating.  $T_R$  is equal to or lower than  $T_C$

**Reliability Table 1 – Common temperature range classifications**

| 85°C ( $T_R$ ) /<br>85°C ( $T_C$ )   | Rated Voltage ( $U_R$ )    | 2.5 | 4.0 | 6.3 | 8.0 | 10.0 | 12.5 | 16.0 | 20.0 | 25.0 | 35.0 | 50.0 | 63.0 | 75.0 |
|--------------------------------------|----------------------------|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|
|                                      | Category Voltage ( $U_C$ ) | 2.5 | 4.0 | 6.3 | 8.0 | 10.0 | 12.5 | 16.0 | 20.0 | 25.0 | 35.0 | 50.0 | 63.0 | 75.0 |
| 105°C ( $T_R$ ) /<br>105°C ( $T_C$ ) | Rated Voltage ( $U_R$ )    | 2.5 | 4.0 | 6.3 | 8.0 | 10.0 | 12.5 | 16.0 | 20.0 | 25.0 | 35.0 | 50.0 | 63.0 | 75.0 |
|                                      | Category Voltage ( $U_C$ ) | 2.5 | 4.0 | 6.3 | 8.0 | 10.0 | 12.5 | 16.0 | 20.0 | 25.0 | 35.0 | 50.0 | 63.0 | 75.0 |
| 105°C ( $T_R$ ) /<br>125°C ( $T_C$ ) | Rated Voltage ( $U_R$ )    | 2.5 | 4.0 | 6.3 | 8.0 | 10.0 | 12.5 | 16.0 | 20.0 | 25.0 | 35.0 | 50.0 | 63.0 | 75.0 |
|                                      | Category Voltage ( $U_C$ ) | 1.7 | 2.7 | 4.2 | 5.4 | 6.7  | 8.4  | 10.7 | 13.4 | 16.8 | 23.5 | 33.5 | 42.2 | 50.3 |

## 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±0.008)  | 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±0.2<br>(0.126±0.008) | 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          |
| O         | 7360-43 | 7.3±0.3<br>(0.287±0.012) | 6.0±0.3<br>(0.236±0.012) | 4.0±0.3<br>(0.157±0.012)  | 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) | 696.00         |
| 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<br>VDC at 105°C | Rated Cap         | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                                           | DF                             | ESR                              | Maximum Allowable<br>Ripple Current | Maximum Operating Temp.    | MSL                    |
|-------------------------------|-------------------|-------------------------|------------------------------|------------------------------------------------------|--------------------------------|----------------------------------|-------------------------------------|----------------------------|------------------------|
| Not all parts are 105°C rated | 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 | (rms)<br>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                               | 1,116                               | 105                        | 3                      |
| 2.5                           | 56                | T/3528-12               | T543T566(1)2R5A(2)(3)040     | 14                                                   | 8                              | 40                               | 1,620                               | 105                        | 3                      |
| 2.5                           | 56                | T/3528-12               | T543T566(1)2R5A(2)(3)070     | 14                                                   | 8                              | 70                               | 1,225                               | 105                        | 3                      |
| 2.5                           | 68                | A/3216-18               | T543A686(1)2R5A(2)(3)070     | 17                                                   | 8                              | 70                               | 1,265                               | 105                        | 3                      |
| 2.5                           | 68                | A/3216-18               | T543A686(1)2R5A(2)(3)080     | 17                                                   | 8                              | 80                               | 1,183                               | 105                        | 3                      |
| 2.5                           | 100               | T/3528-12               | T543T107(1)2R5A(2)(3)040     | 25                                                   | 8                              | 40                               | 1,620                               | 105                        | 3                      |
| 2.5                           | 100               | T/3528-12               | T543T107(1)2R5A(2)(3)070     | 25                                                   | 8                              | 70                               | 1,225                               | 105                        | 3                      |
| 2.5                           | 100               | T/3528-12               | T543T107(1)2R5A(2)(3)080     | 25                                                   | 8                              | 80                               | 1,146                               | 105                        | 3                      |
| 2.5                           | 100               | B/3528-21               | T543B107(1)2R5A(2)(3)025     | 25                                                   | 8                              | 25                               | 2,254                               | 105                        | 3                      |
| 2.5                           | 100               | B/3528-21               | T543B107(1)2R5A(2)(3)035     | 25                                                   | 8                              | 35                               | 1,905                               | 105                        | 3                      |
| 2.5                           | 100               | B/3528-21               | T543B107(1)2R5A(2)(3)040     | 25                                                   | 8                              | 40                               | 1,782                               | 105                        | 3                      |
| 2.5                           | 100               | B/3528-21               | T543B107(1)2R5A(2)(3)070     | 25                                                   | 8                              | 70                               | 1,347                               | 105                        | 3                      |
| 2.5                           | 150               | U/6032-15               | T543U157(1)2R5A(2)(3)055     | 38                                                   | 8                              | 55                               | 1,567                               | 105                        | 3                      |
| 2.5                           | 220               | B/3528-21               | T543B227(1)2R5A(2)(3)025     | 55                                                   | 8                              | 25                               | 2,254                               | 105                        | 3                      |
| 2.5                           | 220               | B/3528-21               | T543B227(1)2R5A(2)(3)030     | 55                                                   | 8                              | 30                               | 2,058                               | 105                        | 3                      |
| 2.5                           | 220               | B/3528-21               | T543B227(1)2R5A(2)(3)035     | 55                                                   | 8                              | 35                               | 1,905                               | 105                        | 3                      |
| 2.5                           | 220               | B/3528-21               | T543B227(1)2R5A(2)(3)055     | 55                                                   | 8                              | 55                               | 1,520                               | 105                        | 3                      |
| 2.5                           | 220               | B/3528-21               | T543B227(1)2R5A(2)(3)070     | 55                                                   | 8                              | 70                               | 1,347                               | 105                        | 3                      |
| 2.5                           | 220               | U/6032-15               | T543U227(1)2R5A(2)(3)055     | 55                                                   | 8                              | 55                               | 1,567                               | 105                        | 3                      |
| 2.5                           | 220               | C/6032-28               | T543C227(1)2R5A(2)(3)025     | 55                                                   | 8                              | 25                               | 2,569                               | 105                        | 3                      |
| 2.5                           | 220               | C/6032-28               | T543C227(1)2R5A(2)(3)045     | 55                                                   | 8                              | 45                               | 1,915                               | 105                        | 3                      |
| 2.5                           | 220               | W/7343-15               | T543W227(1)2R5A(2)(3)025     | 55                                                   | 10                             | 25                               | 2,683                               | 105                        | 3                      |
| 2.5                           | 220               | V/7343-20               | T543V227(1)2R5A(2)(3)015     | 55                                                   | 10                             | 15                               | 3,531                               | 105                        | 3                      |
| 2.5                           | 220               | V/7343-20               | T543V227(1)2R5A(2)(3)025     | 55                                                   | 10                             | 25                               | 2,735                               | 105                        | 3                      |
| 2.5                           | 220               | V/7343-20               | T543V227(1)2R5A(2)(3)045     | 55                                                   | 10                             | 45                               | 2,039                               | 105                        | 3                      |
| 2.5                           | 220               | D-7343-31               | T543D227(1)2R5A(2)(3)040     | 55                                                   | 10                             | 40                               | 2,372                               | 105                        | 3                      |
| 2.5                           | 330               | B/3528-21               | T543B337(1)2R5A(2)(3)035     | 83                                                   | 8                              | 35                               | 1,905                               | 105                        | 3                      |
| 2.5                           | 330               | B/3528-21               | T543B337(1)2R5A(2)(3)045     | 83                                                   | 8                              | 45                               | 1,680                               | 105                        | 3                      |
| 2.5                           | 330               | B/3528-21               | T543B337(1)2R5A(2)(3)070     | 83                                                   | 8                              | 70                               | 1,347                               | 105                        | 3                      |
| 2.5                           | 330               | L/6032-19               | T543L337(1)2R5A(2)(3)012     | 83                                                   | 8                              | 12                               | 3,536                               | 105                        | 3                      |
| 2.5                           | 330               | L/6032-19               | T543L337(1)2R5A(2)(3)025     | 83                                                   | 8                              | 25                               | 2,449                               | 105                        | 3                      |
| 2.5                           | 330               | C/6032-28               | T543C337(1)2R5A(2)(3)015     | 83                                                   | 8                              | 15                               | 3,317                               | 105                        | 3                      |
| 2.5                           | 330               | C/6032-28               | T543C337(1)2R5A(2)(3)018     | 83                                                   | 8                              | 18                               | 3,028                               | 105                        | 3                      |
| 2.5                           | 330               | C/6032-28               | T543C337(1)2R5A(2)(3)025     | 83                                                   | 8                              | 25                               | 2,569                               | 105                        | 3                      |
| 2.5                           | 330               | C/6032-28               | T543C337(1)2R5A(2)(3)045     | 83                                                   | 8                              | 45                               | 1,915                               | 105                        | 3                      |
| 2.5                           | 330               | W/7343-15               | T543W337(1)2R5A(2)(3)015     | 83                                                   | 10                             | 15                               | 3,464                               | 105                        | 3                      |
| 2.5                           | 330               | W/7343-15               | T543W337(1)2R5A(2)(3)025     | 83                                                   | 10                             | 25                               | 2,683                               | 105                        | 3                      |
| 2.5                           | 330               | W/7343-15               | T543W337(1)2R5A(2)(3)040     | 83                                                   | 10                             | 40                               | 2,121                               | 105                        | 3                      |
| 2.5                           | 330               | V/7343-20               | T543V337(1)2R5A(2)(3)015     | 83                                                   | 10                             | 15                               | 3,531                               | 105                        | 3                      |
| 2.5                           | 330               | V/7343-20               | T543V337(1)2R5A(2)(3)018     | 83                                                   | 10                             | 18                               | 3,223                               | 105                        | 3                      |
| 2.5                           | 330               | V/7343-20               | T543V337(1)2R5A(2)(3)025     | 83                                                   | 10                             | 25                               | 2,735                               | 105                        | 3                      |
| 2.5                           | 330               | V/7343-20               | T543V337(1)2R5A(2)(3)040     | 83                                                   | 10                             | 40                               | 2,162                               | 105                        | 3                      |
| 2.5                           | 330               | D-7343-31               | T543D337(1)2R5A(2)(3)006     | 83                                                   | 10                             | 6                                | 6,124                               | 105                        | 3                      |
| 2.5                           | 330               | D-7343-31               | T543D337(1)2R5A(2)(3)007     | 83                                                   | 10                             | 7                                | 5,669                               | 105                        | 3                      |
| 2.5                           | 330               | D-7343-31               | T543D337(1)2R5A(2)(3)025     | 83                                                   | 10                             | 25                               | 3,000                               | 105                        | 3                      |
| 2.5                           | 470               | C/6032-28               | T543C477(1)2R5A(2)(3)025     | 118                                                  | 8                              | 25                               | 2,569                               | 105                        | 3                      |
| 2.5                           | 470               | C/6032-28               | T543C477(1)2R5A(2)(3)045     | 118                                                  | 8                              | 45                               | 1,915                               | 105                        | 3                      |
| 2.5                           | 470               | V/7343-20               | T543V477(1)2R5A(2)(3)018     | 118                                                  | 10                             | 18                               | 3,223                               | 105                        | 3                      |
| 2.5                           | 470               | D-7343-31               | T543D477(1)2R5A(2)(3)005     | 118                                                  | 10                             | 5                                | 6,708                               | 105                        | 3                      |
| 2.5                           | 470               | D-7343-31               | T543D477(1)2R5A(2)(3)006     | 118                                                  | 10                             | 6                                | 6,124                               | 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 | (rms)<br>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.

Part Numbers marked in blue font are "Under Development." Engineering samples available upon request.

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

| Rated Voltage<br>VDC at 105°C | Rated Cap         | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                                           | DF                             | ESR                              | Maximum Allowable<br>Ripple Current | Maximum Operating Temp. | MSL                    |
|-------------------------------|-------------------|-------------------------|------------------------------|------------------------------------------------------|--------------------------------|----------------------------------|-------------------------------------|-------------------------|------------------------|
| Not all parts are 105°C rated | 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 | (rms)<br>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                                | 5,669                               | 105                     | 3                      |
| 2.5                           | 470               | D-7343-31               | T543D477(1)2R5A(2)(3)009     | 118                                                  | 10                             | 9                                | 5,000                               | 105                     | 3                      |
| 2.5                           | 470               | D-7343-31               | T543D477(1)2R5A(2)(3)010     | 118                                                  | 10                             | 10                               | 4,743                               | 105                     | 3                      |
| 2.5                           | 470               | D-7343-31               | T543D477(1)2R5A(2)(3)025     | 118                                                  | 10                             | 25                               | 3,000                               | 105                     | 3                      |
| 2.5                           | 560               | D-7343-31               | T543D567(1)2R5A(2)(3)005     | 140                                                  | 10                             | 5                                | 6,708                               | 105                     | 3                      |
| 2.5                           | 680               | D-7343-31               | T543D687(1)2R5A(2)(3)006     | 170                                                  | 10                             | 6                                | 6,124                               | 125                     | 3                      |
| 2.5                           | 680               | D-7343-31               | T543D687(1)2R5A(2)(3)010     | 170                                                  | 10                             | 10                               | 4,743                               | 125                     | 3                      |
| 2.5                           | 680               | D-7343-31               | T543D687(1)2R5A(2)(3)015     | 170                                                  | 10                             | 15                               | 3,873                               | 125                     | 3                      |
| 2.5                           | 680               | D-7343-31               | T543D687(1)2R5A(2)(3)040     | 170                                                  | 10                             | 40                               | 2,372                               | 125                     | 3                      |
| 2.5                           | 680               | Y/7343-40               | T543Y687(1)2R5A(2)(3)005     | 170                                                  | 10                             | 5                                | 6,943                               | 105                     | 3                      |
| 2.5                           | 680               | Y/7343-40               | T543Y687(1)2R5A(2)(3)006     | 170                                                  | 10                             | 6                                | 6,338                               | 105                     | 3                      |
| 2.5                           | 680               | Y/7343-40               | T543Y687(1)2R5A(2)(3)010     | 170                                                  | 10                             | 10                               | 4,909                               | 105                     | 3                      |
| 2.5                           | 680               | Y/7343-40               | T543Y687(1)2R5A(2)(3)015     | 170                                                  | 10                             | 15                               | 4,008                               | 105                     | 3                      |
| 2.5                           | 680               | Y/7343-40               | T543Y687(1)2R5A(2)(3)025     | 170                                                  | 10                             | 25                               | 3,105                               | 105                     | 3                      |
| 2.5                           | 680               | X/7343-43               | T543X687(1)2R5A(2)(3)006     | 170                                                  | 10                             | 6                                | 6,416                               | 105                     | 3                      |
| 2.5                           | 1000              | Y/7343-40               | T543Y108(1)2R5A(2)(3)005     | 250                                                  | 10                             | 5                                | 6,943                               | 105                     | 3                      |
| 2.5                           | 1000              | Y/7343-40               | T543Y108(1)2R5A(2)(3)006     | 250                                                  | 10                             | 6                                | 6,338                               | 105                     | 3                      |
| 2.5                           | 1000              | Y/7343-40               | T543Y108(1)2R5A(2)(3)010     | 250                                                  | 10                             | 10                               | 4,909                               | 105                     | 3                      |
| 2.5                           | 1000              | Y/7343-40               | T543Y108(1)2R5A(2)(3)015     | 250                                                  | 10                             | 15                               | 4,008                               | 105                     | 3                      |
| 2.5                           | 1000              | Y/7343-40               | T543Y108(1)2R5A(2)(3)025     | 250                                                  | 10                             | 25                               | 3,105                               | 105                     | 3                      |
| 2.5                           | 1000              | X/7343-43               | T543X108(1)2R5A(2)(3)005     | 250                                                  | 10                             | 5                                | 7,029                               | 105                     | 3                      |
| 2.5                           | 1000              | X/7343-43               | T543X108(1)2R5A(2)(3)006     | 250                                                  | 10                             | 6                                | 6,416                               | 105                     | 3                      |
| 2.5                           | 1000              | X/7343-43               | T543X108(1)2R5A(2)(3)010     | 250                                                  | 10                             | 10                               | 4,970                               | 105                     | 3                      |
| 2.5                           | 1500              | X/7343-43               | T543X158(1)2R5A(2)(3)005     | 375                                                  | 10                             | 5                                | 7,029                               | 105                     | 3                      |
| 2.5                           | 1500              | X/7343-43               | T543X158(1)2R5A(2)(3)010     | 375                                                  | 10                             | 10                               | 4,970                               | 105                     | 3                      |
| 3                             | 100               | B/3528-21               | T543B107(1)003A(2)(3)035     | 30                                                   | 8                              | 35                               | 1,905                               | 105                     | 3                      |
| 3                             | 100               | B/3528-21               | T543B107(1)003A(2)(3)040     | 30                                                   | 8                              | 40                               | 1,782                               | 105                     | 3                      |
| 3                             | 100               | B/3528-21               | T543B107(1)003A(2)(3)070     | 30                                                   | 8                              | 70                               | 1,347                               | 105                     | 3                      |
| 3                             | 100               | B/3528-21               | T543B107(1)003A(2)(3)080     | 30                                                   | 8                              | 80                               | 1,260                               | 105                     | 3                      |
| 3                             | 150               | B/3528-21               | T543B157(1)003A(2)(3)035     | 45                                                   | 8                              | 35                               | 1,905                               | 105                     | 3                      |
| 3                             | 150               | B/3528-21               | T543B157(1)003A(2)(3)040     | 45                                                   | 8                              | 40                               | 1,782                               | 105                     | 3                      |
| 3                             | 150               | B/3528-21               | T543B157(1)003A(2)(3)070     | 45                                                   | 8                              | 70                               | 1,347                               | 105                     | 3                      |
| 3                             | 150               | B/3528-21               | T543B157(1)003A(2)(3)080     | 45                                                   | 8                              | 80                               | 1,260                               | 105                     | 3                      |
| 3                             | 330               | V/7343-20               | T543V337(1)003A(2)(3)015     | 99                                                   | 10                             | 15                               | 3,531                               | 105                     | 3                      |
| 3                             | 330               | V/7343-20               | T543V337(1)003A(2)(3)025     | 99                                                   | 10                             | 25                               | 2,735                               | 105                     | 3                      |
| 3                             | 330               | D-7343-31               | T543D337(1)003A(2)(3)025     | 99                                                   | 10                             | 25                               | 3,000                               | 105                     | 3                      |
| 3                             | 470               | D-7343-31               | T543D477(1)003A(2)(3)010     | 141                                                  | 10                             | 10                               | 4,743                               | 105                     | 3                      |
| 3                             | 470               | D-7343-31               | T543D477(1)003A(2)(3)025     | 141                                                  | 10                             | 25                               | 3,000                               | 105                     | 3                      |
| 3                             | 680               | D-7343-31               | T543D687(1)003A(2)(3)010     | 204                                                  | 10                             | 10                               | 4,743                               | 125                     | 3                      |
| 3                             | 680               | D-7343-31               | T543D687(1)003A(2)(3)015     | 204                                                  | 10                             | 15                               | 3,873                               | 125                     | 3                      |
| 3                             | 680               | D-7343-31               | T543D687(1)003A(2)(3)025     | 204                                                  | 10                             | 25                               | 3,000                               | 125                     | 3                      |
| 3                             | 680               | D-7343-31               | T543D687(1)003A(2)(3)040     | 204                                                  | 10                             | 40                               | 2,372                               | 125                     | 3                      |
| 3                             | 1000              | X/7343-43               | T543X108(1)003A(2)(3)010     | 300                                                  | 10                             | 10                               | 4,970                               | 105                     | 3                      |
| 3                             | 1000              | X/7343-43               | T543X108(1)003A(2)(3)015     | 300                                                  | 10                             | 15                               | 4,058                               | 105                     | 3                      |
| 3                             | 1000              | X/7343-43               | T543X108(1)003A(2)(3)030     | 300                                                  | 10                             | 30                               | 2,869                               | 105                     | 3                      |
| 3                             | 1500              | X/7343-43               | T543X158(1)003A(2)(3)008     | 450                                                  | 10                             | 8                                | 5,557                               | 125                     | 3                      |
| 3                             | 2000              | O/7360-43               | T543O208M003A(2)(3)010       | 600                                                  | 10                             | 10                               | 5,480                               | 105                     | 3                      |
| 4                             | 15                | T/3528-12               | T543T156(1)004A(2)(3)100     | 6                                                    | 8                              | 100                              | 1,025                               | 105                     | 3                      |
| 4                             | 33                | A/3216-18               | T543A336(1)004A(2)(3)070     | 13                                                   | 8                              | 70                               | 1,265                               | 105                     | 3                      |
| 4                             | 33                | A/3216-18               | T543A336(1)004A(2)(3)080     | 13                                                   | 8                              | 80                               | 1,183                               | 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 | (rms)<br>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 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.

Part Numbers marked in blue font are "Under Development." Engineering samples available upon request.

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

| Rated Voltage<br>VDC at 105°C | Rated Cap         | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                                           | DF                             | ESR                              | Maximum Allowable<br>Ripple Current | Maximum Operating Temp. | MSL                    |
|-------------------------------|-------------------|-------------------------|------------------------------|------------------------------------------------------|--------------------------------|----------------------------------|-------------------------------------|-------------------------|------------------------|
| Not all parts are 105°C rated | 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 | (rms)<br>mA at 45°C<br>100 kHz      | °C                      | Reflow Temp<br>≤ 260°C |
| 4                             | 47                | A/3216-18               | T543A476(1)004A(2)(3)070     | 19                                                   | 8                              | 70                               | 1,265                               | 105                     | 3                      |
| 4                             | 47                | A/3216-18               | T543A476(1)004A(2)(3)080     | 19                                                   | 8                              | 80                               | 1,183                               | 105                     | 3                      |
| 4                             | 47                | T/3528-12               | T543T476(1)004A(2)(3)070     | 19                                                   | 8                              | 70                               | 1,225                               | 105                     | 3                      |
| 4                             | 68                | T/3528-12               | T543T686(1)004A(2)(3)070     | 27                                                   | 8                              | 70                               | 1,225                               | 105                     | 3                      |
| 4                             | 68                | T/3528-12               | T543T686(1)004A(2)(3)080     | 27                                                   | 8                              | 80                               | 1,146                               | 105                     | 3                      |
| 4                             | 68                | B/3528-21               | T543B686(1)004A(2)(3)035     | 27                                                   | 8                              | 35                               | 1,905                               | 105                     | 3                      |
| 4                             | 68                | B/3528-21               | T543B686(1)004A(2)(3)040     | 27                                                   | 8                              | 40                               | 1,782                               | 105                     | 3                      |
| 4                             | 68                | B/3528-21               | T543B686(1)004A(2)(3)070     | 27                                                   | 8                              | 70                               | 1,347                               | 105                     | 3                      |
| 4                             | 68                | B/3528-21               | T543B686(1)004A(2)(3)080     | 27                                                   | 8                              | 80                               | 1,260                               | 105                     | 3                      |
| 4                             | 68                | U/6032-15               | T543U686(1)004A(2)(3)055     | 27                                                   | 8                              | 55                               | 1,567                               | 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                               | 1,225                               | 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                               | 1,905                               | 105                     | 3                      |
| 4                             | 100               | B/3528-21               | T543B107(1)004A(2)(3)040     | 40                                                   | 8                              | 40                               | 1,782                               | 105                     | 3                      |
| 4                             | 100               | B/3528-21               | T543B107(1)004A(2)(3)070     | 40                                                   | 8                              | 70                               | 1,347                               | 105                     | 3                      |
| 4                             | 100               | B/3528-21               | T543B107(1)004A(2)(3)080     | 40                                                   | 8                              | 80                               | 1,260                               | 105                     | 3                      |
| 4                             | 100               | U/6032-15               | T543U107(1)004A(2)(3)055     | 40                                                   | 8                              | 55                               | 1,567                               | 105                     | 3                      |
| 4                             | 150               | B/3528-21               | T543B157(1)004A(2)(3)035     | 60                                                   | 8                              | 35                               | 1,905                               | 105                     | 3                      |
| 4                             | 150               | B/3528-21               | T543B157(1)004A(2)(3)040     | 60                                                   | 8                              | 40                               | 1,782                               | 105                     | 3                      |
| 4                             | 150               | B/3528-21               | T543B157(1)004A(2)(3)070     | 60                                                   | 8                              | 70                               | 1,347                               | 105                     | 3                      |
| 4                             | 150               | U/6032-15               | T543U157(1)004A(2)(3)055     | 60                                                   | 8                              | 55                               | 1,567                               | 105                     | 3                      |
| 4                             | 150               | C/6032-28               | T543C157(1)004A(2)(3)015     | 60                                                   | 8                              | 15                               | 3,317                               | 105                     | 3                      |
| 4                             | 150               | C/6032-28               | T543C157(1)004A(2)(3)025     | 60                                                   | 8                              | 25                               | 2,569                               | 105                     | 3                      |
| 4                             | 150               | C/6032-28               | T543C157(1)004A(2)(3)045     | 60                                                   | 8                              | 45                               | 1,915                               | 105                     | 3                      |
| 4                             | 150               | C/6032-28               | T543C157(1)004A(2)(3)100     | 60                                                   | 8                              | 100                              | 1,285                               | 105                     | 3                      |
| 4                             | 150               | V/7343-20               | T543V157(1)004A(2)(3)015     | 60                                                   | 10                             | 15                               | 3,531                               | 105                     | 3                      |
| 4                             | 150               | V/7343-20               | T543V157(1)004A(2)(3)025     | 60                                                   | 10                             | 25                               | 2,735                               | 105                     | 3                      |
| 4                             | 220               | B/3528-21               | T543B227(1)004A(2)(3)035     | 88                                                   | 8                              | 35                               | 1,905                               | 105                     | 3                      |
| 4                             | 220               | B/3528-21               | T543B227(1)004A(2)(3)045     | 88                                                   | 8                              | 45                               | 1,680                               | 105                     | 3                      |
| 4                             | 220               | B/3528-21               | T543B227(1)004A(2)(3)070     | 88                                                   | 8                              | 70                               | 1,347                               | 105                     | 3                      |
| 4                             | 220               | L/6032-19               | T543L227(1)004A(2)(3)012     | 88                                                   | 8                              | 12                               | 3,536                               | 105                     | 3                      |
| 4                             | 220               | L/6032-19               | T543L227(1)004A(2)(3)025     | 88                                                   | 8                              | 25                               | 2,449                               | 105                     | 3                      |
| 4                             | 220               | C/6032-28               | T543C227(1)004A(2)(3)015     | 88                                                   | 8                              | 15                               | 3,317                               | 105                     | 3                      |
| 4                             | 220               | C/6032-28               | T543C227(1)004A(2)(3)018     | 88                                                   | 8                              | 18                               | 3,028                               | 105                     | 3                      |
| 4                             | 220               | C/6032-28               | T543C227(1)004A(2)(3)025     | 88                                                   | 8                              | 25                               | 2,569                               | 105                     | 3                      |
| 4                             | 220               | C/6032-28               | T543C227(1)004A(2)(3)045     | 88                                                   | 8                              | 45                               | 1,915                               | 105                     | 3                      |
| 4                             | 220               | C/6032-28               | T543C227(1)004A(2)(3)055     | 88                                                   | 8                              | 55                               | 1,732                               | 105                     | 3                      |
| 4                             | 220               | W/7343-15               | T543W227(1)004A(2)(3)025     | 88                                                   | 10                             | 25                               | 2,683                               | 105                     | 3                      |
| 4                             | 220               | W/7343-15               | T543W227(1)004A(2)(3)040     | 88                                                   | 10                             | 40                               | 2,121                               | 105                     | 3                      |
| 4                             | 220               | V/7343-20               | T543V227(1)004A(2)(3)015     | 88                                                   | 10                             | 15                               | 3,531                               | 105                     | 3                      |
| 4                             | 220               | V/7343-20               | T543V227(1)004A(2)(3)018     | 88                                                   | 10                             | 18                               | 3,223                               | 105                     | 3                      |
| 4                             | 220               | V/7343-20               | T543V227(1)004A(2)(3)025     | 88                                                   | 10                             | 25                               | 2,735                               | 105                     | 3                      |
| 4                             | 220               | V/7343-20               | T543V227(1)004A(2)(3)040     | 88                                                   | 10                             | 40                               | 2,162                               | 105                     | 3                      |
| 4                             | 220               | V/7343-20               | T543V227(1)004A(2)(3)045     | 88                                                   | 10                             | 45                               | 2,039                               | 105                     | 3                      |
| 4                             | 220               | D-7343-31               | T543D227(1)004A(2)(3)025     | 88                                                   | 10                             | 25                               | 3,000                               | 105                     | 3                      |
| 4                             | 220               | D-7343-31               | T543D227(1)004A(2)(3)065     | 88                                                   | 10                             | 65                               | 1,861                               | 105                     | 3                      |
| 4                             | 330               | C/6032-28               | T543C337(1)004A(2)(3)025     | 132                                                  | 8                              | 25                               | 2,569                               | 105                     | 3                      |
| 4                             | 330               | C/6032-28               | T543C337(1)004A(2)(3)045     | 132                                                  | 8                              | 45                               | 1,915                               | 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 | (rms)<br>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 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.

Part Numbers marked in blue font are "Under Development." Engineering samples available upon request.

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

| Rated Voltage<br>VDC at<br>105°C | Rated Cap         | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                                           | DF                             | ESR                              | Maximum Allowable<br>Ripple Current | Maximum Operating Temp. | MSL                    |
|----------------------------------|-------------------|-------------------------|------------------------------|------------------------------------------------------|--------------------------------|----------------------------------|-------------------------------------|-------------------------|------------------------|
| Not all parts are 105°C rated    | 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 | (rms)<br>mA at 45°C<br>100 kHz      | °C                      | Reflow Temp<br>≤ 260°C |
| 4                                | 330               | V/7343-20               | T543V337(1)004A(2)(3)018     | 132                                                  | 10                             | 18                               | 3,223                               | 105                     | 3                      |
| 4                                | 330               | V/7343-20               | T543V337(1)004A(2)(3)025     | 132                                                  | 10                             | 25                               | 2,735                               | 105                     | 3                      |
| 4                                | 330               | V/7343-20               | T543V337(1)004A(2)(3)040     | 132                                                  | 10                             | 40                               | 2,162                               | 105                     | 3                      |
| 4                                | 330               | D-7343-31               | T543D337(1)004A(2)(3)005     | 132                                                  | 10                             | 5                                | 6,708                               | 105                     | 3                      |
| 4                                | 330               | D-7343-31               | T543D337(1)004A(2)(3)006     | 132                                                  | 10                             | 6                                | 6,124                               | 105                     | 3                      |
| 4                                | 330               | D-7343-31               | T543D337(1)004A(2)(3)007     | 132                                                  | 10                             | 7                                | 5,669                               | 105                     | 3                      |
| 4                                | 330               | D-7343-31               | T543D337(1)004A(2)(3)009     | 132                                                  | 10                             | 9                                | 5,000                               | 105                     | 3                      |
| 4                                | 330               | D-7343-31               | T543D337(1)004A(2)(3)010     | 132                                                  | 10                             | 10                               | 4,743                               | 105                     | 3                      |
| 4                                | 330               | D-7343-31               | T543D337(1)004A(2)(3)012     | 132                                                  | 10                             | 12                               | 4,330                               | 105                     | 3                      |
| 4                                | 330               | D-7343-31               | T543D337(1)004A(2)(3)015     | 132                                                  | 10                             | 15                               | 3,873                               | 105                     | 3                      |
| 4                                | 330               | D-7343-31               | T543D337(1)004A(2)(3)025     | 132                                                  | 10                             | 25                               | 3,000                               | 105                     | 3                      |
| 4                                | 330               | D-7343-31               | T543D337(1)004A(2)(3)040     | 132                                                  | 10                             | 40                               | 2,372                               | 105                     | 3                      |
| 4                                | 330               | D-7343-31               | T543D337(1)004A(2)(3)045     | 132                                                  | 10                             | 45                               | 2,236                               | 105                     | 3                      |
| 4                                | 470               | D-7343-31               | T543D477(1)004A(2)(3)006     | 188                                                  | 10                             | 6                                | 6,124                               | 105                     | 3                      |
| 4                                | 470               | D-7343-31               | T543D477(1)004A(2)(3)010     | 188                                                  | 10                             | 10                               | 4,743                               | 105                     | 3                      |
| 4                                | 470               | D-7343-31               | T543D477(1)004A(2)(3)012     | 188                                                  | 10                             | 12                               | 4,330                               | 105                     | 3                      |
| 4                                | 470               | D-7343-31               | T543D477(1)004A(2)(3)015     | 188                                                  | 10                             | 15                               | 3,873                               | 105                     | 3                      |
| 4                                | 470               | D-7343-31               | T543D477(1)004A(2)(3)018     | 188                                                  | 10                             | 18                               | 3,536                               | 105                     | 3                      |
| 4                                | 470               | D-7343-31               | T543D477(1)004A(2)(3)025     | 188                                                  | 10                             | 25                               | 3,000                               | 105                     | 3                      |
| 4                                | 470               | D-7343-31               | T543D477(1)004A(2)(3)040     | 188                                                  | 10                             | 40                               | 2,372                               | 105                     | 3                      |
| 4                                | 470               | Y/7343-40               | T543Y477(1)004A(2)(3)005     | 188                                                  | 10                             | 5                                | 6,943                               | 125                     | 3                      |
| 4                                | 470               | Y/7343-40               | T543Y477(1)004A(2)(3)006     | 188                                                  | 10                             | 6                                | 6,338                               | 125                     | 3                      |
| 4                                | 470               | Y/7343-40               | T543Y477(1)004A(2)(3)010     | 188                                                  | 10                             | 10                               | 4,909                               | 125                     | 3                      |
| 4                                | 470               | Y/7343-40               | T543Y477(1)004A(2)(3)015     | 188                                                  | 10                             | 15                               | 4,008                               | 105                     | 3                      |
| 4                                | 470               | Y/7343-40               | T543Y477(1)004A(2)(3)025     | 188                                                  | 10                             | 25                               | 3,105                               | 105                     | 3                      |
| 4                                | 470               | Y/7343-40               | T543Y477(1)004A(2)(3)040     | 188                                                  | 10                             | 40                               | 2,455                               | 125                     | 3                      |
| 4                                | 680               | D-7343-31               | T543D687(1)004A(2)(3)025     | 272                                                  | 10                             | 25                               | 3,000                               | 125                     | 3                      |
| 4                                | 680               | Y/7343-40               | T543Y687(1)004A(2)(3)005     | 272                                                  | 10                             | 5                                | 6,943                               | 105                     | 3                      |
| 4                                | 680               | Y/7343-40               | T543Y687(1)004A(2)(3)010     | 272                                                  | 10                             | 10                               | 4,909                               | 105                     | 3                      |
| 4                                | 680               | Y/7343-40               | T543Y687(1)004A(2)(3)015     | 272                                                  | 10                             | 15                               | 4,008                               | 105                     | 3                      |
| 4                                | 680               | Y/7343-40               | T543Y687(1)004A(2)(3)025     | 272                                                  | 10                             | 25                               | 3,105                               | 105                     | 3                      |
| 4                                | 680               | X/7343-43               | T543X687(1)004A(2)(3)005     | 272                                                  | 10                             | 5                                | 7,029                               | 125                     | 3                      |
| 4                                | 680               | X/7343-43               | T543X687(1)004A(2)(3)006     | 272                                                  | 10                             | 6                                | 6,416                               | 125                     | 3                      |
| 4                                | 680               | X/7343-43               | T543X687(1)004A(2)(3)010     | 272                                                  | 10                             | 10                               | 4,970                               | 125                     | 3                      |
| 4                                | 680               | X/7343-43               | T543X687(1)004A(2)(3)015     | 272                                                  | 10                             | 15                               | 4,058                               | 125                     | 3                      |
| 4                                | 680               | X/7343-43               | T543X687(1)004A(2)(3)035     | 272                                                  | 10                             | 35                               | 2,657                               | 125                     | 3                      |
| 4                                | 1000              | X/7343-43               | T543X108(1)004A(2)(3)006     | 400                                                  | 10                             | 6                                | 6,416                               | 105                     | 3                      |
| 4                                | 1000              | X/7343-43               | T543X108(1)004A(2)(3)010     | 400                                                  | 10                             | 10                               | 4,970                               | 105                     | 3                      |
| 4                                | 1500              | O/7360-43               | T543O158M004A(2)(3)010       | 600                                                  | 10                             | 10                               | 5,480                               | 105                     | 3                      |
| 6.3                              | 15                | T/3528-12               | T543T156(1)006A(2)(3)100     | 9                                                    | 8                              | 100                              | 1,025                               | 105                     | 3                      |
| 6.3                              | 22                | A/3216-18               | T543A226(1)006A(2)(3)090     | 14                                                   | 8                              | 90                               | 1,116                               | 105                     | 3                      |
| 6.3                              | 22                | A/3216-18               | T543A226(1)006A(2)(3)100     | 14                                                   | 8                              | 100                              | 1,058                               | 105                     | 3                      |
| 6.3                              | 33                | A/3216-18               | T543A336(1)006A(2)(3)070     | 21                                                   | 8                              | 70                               | 1,265                               | 105                     | 3                      |
| 6.3                              | 33                | A/3216-18               | T543A336(1)006A(2)(3)080     | 21                                                   | 8                              | 80                               | 1,183                               | 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                               | 1,225                               | 105                     | 3                      |
| 6.3                              | 33                | B/3528-21               | T543B336(1)006A(2)(3)025     | 21                                                   | 8                              | 25                               | 2,254                               | 105                     | 3                      |
| 6.3                              | 33                | B/3528-21               | T543B336(1)006A(2)(3)035     | 21                                                   | 8                              | 35                               | 1,905                               | 105                     | 3                      |
| 6.3                              | 33                | B/3528-21               | T543B336(1)006A(2)(3)040     | 21                                                   | 8                              | 40                               | 1,782                               | 105                     | 3                      |
| 6.3                              | 33                | B/3528-21               | T543B336(1)006A(2)(3)070     | 21                                                   | 8                              | 70                               | 1,347                               | 105                     | 3                      |
| 6.3                              | 33                | B/3528-21               | T543B336(1)006A(2)(3)080     | 21                                                   | 8                              | 80                               | 1,260                               | 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 | (rms)<br>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 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.

Part Numbers marked in blue font are "Under Development." Engineering samples available upon request.

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

| Rated Voltage<br>VDC at 105°C | Rated Cap         | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                                           | DF                             | ESR                              | Maximum Allowable<br>Ripple Current | Maximum Operating Temp. | MSL                    |
|-------------------------------|-------------------|-------------------------|------------------------------|------------------------------------------------------|--------------------------------|----------------------------------|-------------------------------------|-------------------------|------------------------|
| Not all parts are 105°C rated | 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 | (rms)<br>mA at 45°C<br>100 kHz      | °C                      | Reflow Temp<br>≤ 260°C |
| 6.3                           | 33                | C/6032-28               | T543C336(1)006A(2)(3)100     | 21                                                   | 8                              | 100                              | 1,285                               | 105                     | 3                      |
| 6.3                           | 47                | A/3216-18               | T543A476(1)006A(2)(3)150     | 30                                                   | 8                              | 150                              | 864                                 | 105                     | 3                      |
| 6.3                           | 47                | T/3528-12               | T543T476(1)006A(2)(3)070     | 30                                                   | 8                              | 70                               | 1,225                               | 105                     | 3                      |
| 6.3                           | 47                | T/3528-12               | T543T476(1)006A(2)(3)080     | 30                                                   | 8                              | 80                               | 1,146                               | 105                     | 3                      |
| 6.3                           | 47                | B/3528-21               | T543B476(1)006A(2)(3)025     | 30                                                   | 8                              | 25                               | 2,254                               | 125                     | 3                      |
| 6.3                           | 47                | B/3528-21               | T543B476(1)006A(2)(3)035     | 30                                                   | 8                              | 35                               | 1,905                               | 105                     | 3                      |
| 6.3                           | 47                | B/3528-21               | T543B476(1)006A(2)(3)040     | 30                                                   | 8                              | 40                               | 1,782                               | 105                     | 3                      |
| 6.3                           | 47                | B/3528-21               | T543B476(1)006A(2)(3)070     | 30                                                   | 8                              | 70                               | 1,347                               | 105                     | 3                      |
| 6.3                           | 47                | B/3528-21               | T543B476(1)006A(2)(3)080     | 30                                                   | 8                              | 80                               | 1,260                               | 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                               | 1,225                               | 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                               | 2,254                               | 105                     | 3                      |
| 6.3                           | 68                | B/3528-21               | T543B686(1)006A(2)(3)035     | 43                                                   | 8                              | 35                               | 1,905                               | 105                     | 3                      |
| 6.3                           | 68                | B/3528-21               | T543B686(1)006A(2)(3)040     | 43                                                   | 8                              | 40                               | 1,782                               | 105                     | 3                      |
| 6.3                           | 68                | B/3528-21               | T543B686(1)006A(2)(3)070     | 43                                                   | 8                              | 70                               | 1,347                               | 105                     | 3                      |
| 6.3                           | 68                | B/3528-21               | T543B686(1)006A(2)(3)080     | 43                                                   | 8                              | 80                               | 1,260                               | 105                     | 3                      |
| 6.3                           | 68                | U/6032-15               | T543U686(1)006A(2)(3)055     | 43                                                   | 8                              | 55                               | 1,567                               | 105                     | 3                      |
| 6.3                           | 68                | U/6032-15               | T543U686(1)006A(2)(3)070     | 43                                                   | 8                              | 70                               | 1,389                               | 105                     | 3                      |
| 6.3                           | 68                | C/6032-28               | T543C686(1)006A(2)(3)100     | 43                                                   | 8                              | 100                              | 1,285                               | 105                     | 3                      |
| 6.3                           | 100               | T/3528-12               | T543T107(1)006A(2)(3)070     | 63                                                   | 8                              | 70                               | 1,225                               | 105                     | 3                      |
| 6.3                           | 100               | B/3528-21               | T543B107(1)006A(2)(3)025     | 63                                                   | 8                              | 25                               | 2,254                               | 105                     | 3                      |
| 6.3                           | 100               | B/3528-21               | T543B107(1)006A(2)(3)035     | 63                                                   | 8                              | 35                               | 1,905                               | 105                     | 3                      |
| 6.3                           | 100               | B/3528-21               | T543B107(1)006A(2)(3)040     | 63                                                   | 8                              | 40                               | 1,782                               | 105                     | 3                      |
| 6.3                           | 100               | B/3528-21               | T543B107(1)006A(2)(3)045     | 63                                                   | 8                              | 45                               | 1,680                               | 105                     | 3                      |
| 6.3                           | 100               | B/3528-21               | T543B107(1)006A(2)(3)070     | 63                                                   | 8                              | 70                               | 1,347                               | 105                     | 3                      |
| 6.3                           | 100               | U/6032-15               | T543U107(1)006A(2)(3)055     | 63                                                   | 8                              | 55                               | 1,567                               | 105                     | 3                      |
| 6.3                           | 100               | C/6032-28               | T543C107(1)006A(2)(3)025     | 63                                                   | 8                              | 25                               | 2,569                               | 105                     | 3                      |
| 6.3                           | 100               | C/6032-28               | T543C107(1)006A(2)(3)045     | 63                                                   | 8                              | 45                               | 1,915                               | 105                     | 3                      |
| 6.3                           | 100               | W/7343-15               | T543W107(1)006A(2)(3)040     | 63                                                   | 10                             | 40                               | 2,121                               | 105                     | 3                      |
| 6.3                           | 100               | V/7343-20               | T543V107(1)006A(2)(3)015     | 63                                                   | 10                             | 15                               | 3,531                               | 105                     | 3                      |
| 6.3                           | 100               | V/7343-20               | T543V107(1)006A(2)(3)045     | 63                                                   | 10                             | 45                               | 2,039                               | 105                     | 3                      |
| 6.3                           | 120               | B/3528-21               | T543B127(1)006A(2)(3)035     | 76                                                   | 8                              | 35                               | 1,905                               | 105                     | 3                      |
| 6.3                           | 150               | M/3528-15               | T543M157(1)006A(2)(3)070     | 95                                                   | 8                              | 70                               | 1,309                               | 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                               | 2,254                               | 105                     | 3                      |
| 6.3                           | 150               | B/3528-21               | T543B157(1)006A(2)(3)035     | 95                                                   | 8                              | 35                               | 1,905                               | 105                     | 3                      |
| 6.3                           | 150               | B/3528-21               | T543B157(1)006A(2)(3)045     | 95                                                   | 8                              | 45                               | 1,680                               | 105                     | 3                      |
| 6.3                           | 150               | B/3528-21               | T543B157(1)006A(2)(3)070     | 95                                                   | 8                              | 70                               | 1,347                               | 105                     | 3                      |
| 6.3                           | 150               | U/6032-15               | T543U157(1)006A(2)(3)045     | 95                                                   | 8                              | 45                               | 1,732                               | 105                     | 3                      |
| 6.3                           | 150               | U/6032-15               | T543U157(1)006A(2)(3)055     | 95                                                   | 8                              | 55                               | 1,567                               | 105                     | 3                      |
| 6.3                           | 150               | L/6032-19               | T543L157(1)006A(2)(3)012     | 95                                                   | 8                              | 12                               | 3,536                               | 105                     | 3                      |
| 6.3                           | 150               | L/6032-19               | T543L157(1)006A(2)(3)025     | 95                                                   | 8                              | 25                               | 2,449                               | 105                     | 3                      |
| 6.3                           | 150               | C/6032-28               | T543C157(1)006A(2)(3)015     | 95                                                   | 8                              | 15                               | 3,317                               | 105                     | 3                      |
| 6.3                           | 150               | C/6032-28               | T543C157(1)006A(2)(3)025     | 95                                                   | 8                              | 25                               | 2,569                               | 105                     | 3                      |
| 6.3                           | 150               | C/6032-28               | T543C157(1)006A(2)(3)045     | 95                                                   | 8                              | 45                               | 1,915                               | 105                     | 3                      |
| 6.3                           | 150               | C/6032-28               | T543C157(1)006A(2)(3)055     | 95                                                   | 8                              | 55                               | 1,732                               | 105                     | 3                      |
| 6.3                           | 150               | W/7343-15               | T543W157(1)006A(2)(3)025     | 95                                                   | 10                             | 25                               | 2,683                               | 105                     | 3                      |
| 6.3                           | 150               | W/7343-15               | T543W157(1)006A(2)(3)040     | 95                                                   | 10                             | 40                               | 2,121                               | 105                     | 3                      |
| 6.3                           | 150               | V/7343-20               | T543V157(1)006A(2)(3)015     | 95                                                   | 10                             | 15                               | 3,531                               | 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 | (rms)<br>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 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.

Part Numbers marked in blue font are "Under Development." Engineering samples available upon request.

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

| Rated Voltage<br>VDC at 105°C | Rated Cap         | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                                           | DF                             | ESR                              | Maximum Allowable<br>Ripple Current | Maximum Operating Temp. | MSL                    |
|-------------------------------|-------------------|-------------------------|------------------------------|------------------------------------------------------|--------------------------------|----------------------------------|-------------------------------------|-------------------------|------------------------|
| Not all parts are 105°C rated | 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 | (rms)<br>mA at 45°C<br>100 kHz      | °C                      | Reflow Temp<br>≤ 260°C |
| 6.3                           | 150               | V/7343-20               | T543V157(1)006A(2)(3)018     | 95                                                   | 10                             | 18                               | 3,223                               | 105                     | 3                      |
| 6.3                           | 150               | V/7343-20               | T543V157(1)006A(2)(3)025     | 95                                                   | 10                             | 25                               | 2,735                               | 105                     | 3                      |
| 6.3                           | 150               | V/7343-20               | T543V157(1)006A(2)(3)040     | 95                                                   | 10                             | 40                               | 2,162                               | 105                     | 3                      |
| 6.3                           | 150               | V/7343-20               | T543V157(1)006A(2)(3)045     | 95                                                   | 10                             | 45                               | 2,039                               | 105                     | 3                      |
| 6.3                           | 150               | D-7343-31               | T543D157(1)006A(2)(3)015     | 95                                                   | 10                             | 15                               | 3,873                               | 105                     | 3                      |
| 6.3                           | 150               | D-7343-31               | T543D157(1)006A(2)(3)025     | 95                                                   | 10                             | 25                               | 3,000                               | 105                     | 3                      |
| 6.3                           | 150               | D-7343-31               | T543D157(1)006A(2)(3)055     | 95                                                   | 10                             | 55                               | 2,023                               | 105                     | 3                      |
| 6.3                           | 220               | B/3528-21               | T543B227(1)006A(2)(3)035     | 139                                                  | 8                              | 35                               | 1,905                               | 105                     | 3                      |
| 6.3                           | 220               | B/3528-21               | T543B227(1)006A(2)(3)045     | 139                                                  | 8                              | 45                               | 1,680                               | 105                     | 3                      |
| 6.3                           | 220               | B/3528-21               | T543B227(1)006A(2)(3)070     | 139                                                  | 8                              | 70                               | 1,347                               | 105                     | 3                      |
| 6.3                           | 220               | C/6032-28               | T543C227(1)006A(2)(3)015     | 139                                                  | 8                              | 15                               | 3,317                               | 105                     | 3                      |
| 6.3                           | 220               | C/6032-28               | T543C227(1)006A(2)(3)018     | 139                                                  | 8                              | 18                               | 3,028                               | 105                     | 3                      |
| 6.3                           | 220               | C/6032-28               | T543C227(1)006A(2)(3)025     | 139                                                  | 8                              | 25                               | 2,569                               | 105                     | 3                      |
| 6.3                           | 220               | C/6032-28               | T543C227(1)006A(2)(3)045     | 139                                                  | 8                              | 45                               | 1,915                               | 105                     | 3                      |
| 6.3                           | 220               | V/7343-20               | T543V227(1)006A(2)(3)018     | 139                                                  | 10                             | 18                               | 3,223                               | 105                     | 3                      |
| 6.3                           | 220               | V/7343-20               | T543V227(1)006A(2)(3)025     | 139                                                  | 10                             | 25                               | 2,735                               | 105                     | 3                      |
| 6.3                           | 220               | V/7343-20               | T543V227(1)006A(2)(3)040     | 139                                                  | 10                             | 40                               | 2,162                               | 105                     | 3                      |
| 6.3                           | 220               | D-7343-31               | T543D227(1)006A(2)(3)005     | 139                                                  | 10                             | 5                                | 6,708                               | 125                     | 3                      |
| 6.3                           | 220               | D-7343-31               | T543D227(1)006A(2)(3)006     | 139                                                  | 10                             | 6                                | 6,124                               | 125                     | 3                      |
| 6.3                           | 220               | D-7343-31               | T543D227(1)006A(2)(3)007     | 139                                                  | 10                             | 7                                | 5,669                               | 125                     | 3                      |
| 6.3                           | 220               | D-7343-31               | T543D227(1)006A(2)(3)009     | 139                                                  | 10                             | 9                                | 5,000                               | 125                     | 3                      |
| 6.3                           | 220               | D-7343-31               | T543D227(1)006A(2)(3)010     | 139                                                  | 10                             | 10                               | 4,743                               | 125                     | 3                      |
| 6.3                           | 220               | D-7343-31               | T543D227(1)006A(2)(3)015     | 139                                                  | 10                             | 15                               | 3,873                               | 125                     | 3                      |
| 6.3                           | 220               | D-7343-31               | T543D227(1)006A(2)(3)018     | 139                                                  | 10                             | 18                               | 3,536                               | 125                     | 3                      |
| 6.3                           | 220               | D-7343-31               | T543D227(1)006A(2)(3)025     | 139                                                  | 10                             | 25                               | 3,000                               | 125                     | 3                      |
| 6.3                           | 220               | D-7343-31               | T543D227(1)006A(2)(3)040     | 139                                                  | 10                             | 40                               | 2,372                               | 125                     | 3                      |
| 6.3                           | 220               | D-7343-31               | T543D227(1)006A(2)(3)050     | 139                                                  | 10                             | 50                               | 2,121                               | 125                     | 3                      |
| 6.3                           | 330               | V/7343-20               | T543V337(1)006A(2)(3)015     | 208                                                  | 10                             | 15                               | 3,531                               | 105                     | 3                      |
| 6.3                           | 330               | V/7343-20               | T543V337(1)006A(2)(3)018     | 208                                                  | 10                             | 18                               | 3,223                               | 105                     | 3                      |
| 6.3                           | 330               | V/7343-20               | T543V337(1)006A(2)(3)025     | 208                                                  | 10                             | 25                               | 2,735                               | 105                     | 3                      |
| 6.3                           | 330               | V/7343-20               | T543V337(1)006A(2)(3)040     | 208                                                  | 10                             | 40                               | 2,162                               | 105                     | 3                      |
| 6.3                           | 330               | V/7343-20               | T543V337(1)006A(2)(3)045     | 208                                                  | 10                             | 45                               | 2,039                               | 105                     | 3                      |
| 6.3                           | 330               | D-7343-31               | T543D337(1)006A(2)(3)006     | 208                                                  | 10                             | 6                                | 6,124                               | 125                     | 3                      |
| 6.3                           | 330               | D-7343-31               | T543D337(1)006A(2)(3)009     | 208                                                  | 10                             | 9                                | 5,000                               | 125                     | 3                      |
| 6.3                           | 330               | D-7343-31               | T543D337(1)006A(2)(3)010     | 208                                                  | 10                             | 10                               | 4,743                               | 125                     | 3                      |
| 6.3                           | 330               | D-7343-31               | T543D337(1)006A(2)(3)015     | 208                                                  | 10                             | 15                               | 3,873                               | 125                     | 3                      |
| 6.3                           | 330               | D-7343-31               | T543D337(1)006A(2)(3)018     | 208                                                  | 10                             | 18                               | 3,536                               | 125                     | 3                      |
| 6.3                           | 330               | D-7343-31               | T543D337(1)006A(2)(3)025     | 208                                                  | 10                             | 25                               | 3,000                               | 125                     | 3                      |
| 6.3                           | 330               | D-7343-31               | T543D337(1)006A(2)(3)040     | 208                                                  | 10                             | 40                               | 2,372                               | 125                     | 3                      |
| 6.3                           | 330               | D-7343-31               | T543D337(1)006A(2)(3)045     | 208                                                  | 10                             | 45                               | 2,236                               | 125                     | 3                      |
| 6.3                           | 330               | Y/7343-40               | T543Y337(1)006A(2)(3)005     | 208                                                  | 10                             | 5                                | 6,943                               | 125                     | 3                      |
| 6.3                           | 330               | Y/7343-40               | T543Y337(1)006A(2)(3)006     | 208                                                  | 10                             | 6                                | 6,338                               | 125                     | 3                      |
| 6.3                           | 330               | Y/7343-40               | T543Y337(1)006A(2)(3)010     | 208                                                  | 10                             | 10                               | 4,909                               | 125                     | 3                      |
| 6.3                           | 330               | Y/7343-40               | T543Y337(1)006A(2)(3)015     | 208                                                  | 10                             | 15                               | 4,008                               | 125                     | 3                      |
| 6.3                           | 330               | Y/7343-40               | T543Y337(1)006A(2)(3)025     | 208                                                  | 10                             | 25                               | 3,105                               | 125                     | 3                      |
| 6.3                           | 330               | Y/7343-40               | T543Y337(1)006A(2)(3)040     | 208                                                  | 10                             | 40                               | 2,455                               | 125                     | 3                      |
| 6.3                           | 470               | W/7343-15               | T543W477(1)006A(2)(3)055     | 296                                                  | 10                             | 55                               | 1,809                               | 85                      | 3                      |
| 6.3                           | 470               | W/7343-15               | T543W477(1)006A(2)(3)035     | 296                                                  | 10                             | 35                               | 2,268                               | 85                      | 3                      |
| 6.3                           | 470               | V/7343-20               | T543V477(1)006A(2)(3)055     | 296                                                  | 10                             | 55                               | 1,844                               | 85                      | 3                      |
| 6.3                           | 470               | D-7343-31               | T543D477(1)006A(2)(3)015     | 296                                                  | 10                             | 15                               | 3,873                               | 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 | (rms)<br>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 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.

Part Numbers marked in blue font are "Under Development." Engineering samples available upon request.

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

| Rated Voltage<br>VDC at 105°C | Rated Cap         | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                                           | DF                             | ESR                              | Maximum Allowable<br>Ripple Current | Maximum Operating Temp. | MSL                    |
|-------------------------------|-------------------|-------------------------|------------------------------|------------------------------------------------------|--------------------------------|----------------------------------|-------------------------------------|-------------------------|------------------------|
| Not all parts are 105°C rated | 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 | (rms)<br>mA at 45°C<br>100 kHz      | °C                      | Reflow Temp<br>≤ 260°C |
| 6.3                           | 470               | D-7343-31               | T543D477(1)006A(2)(3)025     | 296                                                  | 10                             | 25                               | 3,000                               | 105                     | 3                      |
| 6.3                           | 470               | D-7343-31               | T543D477(1)006A(2)(3)030     | 296                                                  | 10                             | 30                               | 2,739                               | 105                     | 3                      |
| 6.3                           | 470               | Y/7343-40               | T543Y477(1)006A(2)(3)005     | 296                                                  | 10                             | 5                                | 6,943                               | 105                     | 3                      |
| 6.3                           | 470               | Y/7343-40               | T543Y477(1)006A(2)(3)010     | 296                                                  | 10                             | 10                               | 4,909                               | 105                     | 3                      |
| 6.3                           | 470               | Y/7343-40               | T543Y477(1)006A(2)(3)015     | 296                                                  | 10                             | 15                               | 4,008                               | 105                     | 3                      |
| 6.3                           | 470               | Y/7343-40               | T543Y477(1)006A(2)(3)018     | 296                                                  | 10                             | 18                               | 3,659                               | 105                     | 3                      |
| 6.3                           | 470               | Y/7343-40               | T543Y477(1)006A(2)(3)025     | 296                                                  | 10                             | 25                               | 3,105                               | 105                     | 3                      |
| 6.3                           | 470               | Y/7343-40               | T543Y477(1)006A(2)(3)035     | 296                                                  | 10                             | 35                               | 2,624                               | 105                     | 3                      |
| 6.3                           | 470               | X/7343-43               | T543X477(1)006A(2)(3)005     | 296                                                  | 10                             | 5                                | 7,029                               | 125                     | 3                      |
| 6.3                           | 470               | X/7343-43               | T543X477(1)006A(2)(3)006     | 296                                                  | 10                             | 6                                | 6,416                               | 125                     | 3                      |
| 6.3                           | 470               | X/7343-43               | T543X477(1)006A(2)(3)010     | 296                                                  | 10                             | 10                               | 4,970                               | 125                     | 3                      |
| 6.3                           | 470               | X/7343-43               | T543X477(1)006A(2)(3)018     | 296                                                  | 10                             | 18                               | 3,704                               | 125                     | 3                      |
| 6.3                           | 470               | X/7343-43               | T543X477(1)006A(2)(3)035     | 296                                                  | 10                             | 35                               | 2,657                               | 125                     | 3                      |
| 6.3                           | 470               | X/7343-43               | T543X477(1)006A(2)(3)040     | 296                                                  | 10                             | 40                               | 2,485                               | 125                     | 3                      |
| 6.3                           | 680               | X/7343-43               | T543X687(1)006A(2)(3)010     | 428                                                  | 10                             | 10                               | 4,970                               | 125                     | 3                      |
| 6.3                           | 680               | X/7343-43               | T543X687(1)006A(2)(3)018     | 428                                                  | 10                             | 18                               | 3,704                               | 125                     | 3                      |
| 6.3                           | 1000              | H/7360-20               | T543H108(1)006A(2)(3)055     | 630                                                  | 20                             | 55                               | 1,844                               | 85                      | 4                      |
| 6.3                           | 1000              | O/7360-43               | T543O108M006A(2)(3)010       | 630                                                  | 10                             | 10                               | 5,480                               | 105                     | 3                      |
| 6.3                           | 1000              | O/7360-43               | T543O108M006A(2)(3)015       | 630                                                  | 10                             | 15                               | 4,470                               | 105                     | 3                      |
| 6.3                           | 1500              | H/7360-20               | T543H158(1)006A(2)(3)055     | 945                                                  | 20                             | 55                               | 1,844                               | 85                      | 4                      |
| 8                             | 33                | T/3528-12               | T543T336(1)008A(2)(3)070     | 26                                                   | 8                              | 70                               | 1,225                               | 105                     | 3                      |
| 8                             | 33                | T/3528-12               | T543T336(1)008A(2)(3)080     | 26                                                   | 8                              | 80                               | 1,146                               | 105                     | 3                      |
| 8                             | 33                | B/3528-21               | T543B336(1)008A(2)(3)025     | 26                                                   | 8                              | 25                               | 2,254                               | 105                     | 3                      |
| 8                             | 33                | B/3528-21               | T543B336(1)008A(2)(3)035     | 26                                                   | 8                              | 35                               | 1,905                               | 105                     | 3                      |
| 8                             | 33                | B/3528-21               | T543B336(1)008A(2)(3)040     | 26                                                   | 8                              | 40                               | 1,782                               | 105                     | 3                      |
| 8                             | 33                | B/3528-21               | T543B336(1)008A(2)(3)070     | 26                                                   | 8                              | 70                               | 1,347                               | 105                     | 3                      |
| 8                             | 33                | U/6032-15               | T543U336(1)008A(2)(3)070     | 26                                                   | 8                              | 70                               | 1,389                               | 105                     | 3                      |
| 8                             | 47                | B/3528-21               | T543B476(1)008A(2)(3)035     | 38                                                   | 8                              | 35                               | 1,905                               | 105                     | 3                      |
| 8                             | 47                | B/3528-21               | T543B476(1)008A(2)(3)070     | 38                                                   | 8                              | 70                               | 1,347                               | 105                     | 3                      |
| 8                             | 150               | V/7343-20               | T543V157(1)008A(2)(3)040     | 120                                                  | 10                             | 40                               | 2,162                               | 105                     | 3                      |
| 8                             | 150               | D-7343-31               | T543D157(1)008A(2)(3)025     | 120                                                  | 10                             | 25                               | 3,000                               | 105                     | 3                      |
| 8                             | 150               | D-7343-31               | T543D157(1)008A(2)(3)040     | 120                                                  | 10                             | 40                               | 2,372                               | 105                     | 3                      |
| 8                             | 150               | D-7343-31               | T543D157(1)008A(2)(3)055     | 120                                                  | 10                             | 55                               | 2,023                               | 105                     | 3                      |
| 10                            | 10                | A/3216-18               | T543A106(1)010A(2)(3)080     | 10                                                   | 8                              | 80                               | 1,183                               | 105                     | 3                      |
| 10                            | 15                | A/3216-18               | T543A156(1)010A(2)(3)080     | 15                                                   | 8                              | 80                               | 1,183                               | 105                     | 3                      |
| 10                            | 22                | A/3216-18               | T543A226(1)010A(2)(3)080     | 22                                                   | 8                              | 80                               | 1,183                               | 105                     | 3                      |
| 10                            | 22                | B/3528-21               | T543B226(1)010A(2)(3)080     | 22                                                   | 8                              | 80                               | 1,260                               | 105                     | 3                      |
| 10                            | 33                | T/3528-12               | T543T336(1)010A(2)(3)070     | 33                                                   | 8                              | 70                               | 1,225                               | 105                     | 3                      |
| 10                            | 33                | T/3528-12               | T543T336(1)010A(2)(3)080     | 33                                                   | 8                              | 80                               | 1,146                               | 105                     | 3                      |
| 10                            | 33                | B/3528-21               | T543B336(1)010A(2)(3)025     | 33                                                   | 8                              | 25                               | 2,254                               | 105                     | 3                      |
| 10                            | 33                | B/3528-21               | T543B336(1)010A(2)(3)035     | 33                                                   | 8                              | 35                               | 1,905                               | 105                     | 3                      |
| 10                            | 33                | B/3528-21               | T543B336(1)010A(2)(3)040     | 33                                                   | 8                              | 40                               | 1,782                               | 105                     | 3                      |
| 10                            | 33                | B/3528-21               | T543B336(1)010A(2)(3)070     | 33                                                   | 8                              | 70                               | 1,347                               | 105                     | 3                      |
| 10                            | 33                | B/3528-21               | T543B336(1)010A(2)(3)080     | 33                                                   | 8                              | 80                               | 1,260                               | 105                     | 3                      |
| 10                            | 33                | U/6032-15               | T543U336(1)010A(2)(3)070     | 33                                                   | 8                              | 70                               | 1,389                               | 105                     | 3                      |
| 10                            | 47                | B/3528-21               | T543B476(1)010A(2)(3)035     | 47                                                   | 8                              | 35                               | 1,905                               | 105                     | 3                      |
| 10                            | 47                | B/3528-21               | T543B476(1)010A(2)(3)070     | 47                                                   | 8                              | 70                               | 1,347                               | 105                     | 3                      |
| 10                            | 47                | U/6032-15               | T543U476(1)010A(2)(3)055     | 47                                                   | 8                              | 55                               | 1,567                               | 105                     | 3                      |
| 10                            | 47                | C/6032-28               | T543C476(1)010A(2)(3)100     | 47                                                   | 8                              | 100                              | 1,285                               | 105                     | 3                      |
| 10                            | 68                | U/6032-15               | T543U686(1)010A(2)(3)055     | 68                                                   | 8                              | 55                               | 1,567                               | 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 | (rms)<br>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 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.

Part Numbers marked in blue font are "Under Development." Engineering samples available upon request.

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

| Rated Voltage<br>VDC at 105°C | Rated Cap         | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                                           | DF                             | ESR                              | Maximum Allowable<br>Ripple Current | Maximum Operating Temp. | MSL                    |
|-------------------------------|-------------------|-------------------------|------------------------------|------------------------------------------------------|--------------------------------|----------------------------------|-------------------------------------|-------------------------|------------------------|
| Not all parts are 105°C rated | 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 | (rms)<br>mA at 45°C<br>100 kHz      | °C                      | Reflow Temp<br>≤ 260°C |
| 10                            | 68                | C/6032-28               | T543C686(1)010A(2)(3)045     | 68                                                   | 8                              | 45                               | 1,915                               | 105                     | 3                      |
| 10                            | 68                | W/7343-15               | T543W686(1)010A(2)(3)025     | 68                                                   | 10                             | 25                               | 2,683                               | 105                     | 3                      |
| 10                            | 68                | W/7343-15               | T543W686(1)010A(2)(3)040     | 68                                                   | 10                             | 40                               | 2,121                               | 105                     | 3                      |
| 10                            | 68                | V/7343-20               | T543V686(1)010A(2)(3)025     | 68                                                   | 10                             | 25                               | 2,735                               | 105                     | 3                      |
| 10                            | 68                | V/7343-20               | T543V686(1)010A(2)(3)040     | 68                                                   | 10                             | 40                               | 2,162                               | 105                     | 3                      |
| 10                            | 68                | V/7343-20               | T543V686(1)010A(2)(3)045     | 68                                                   | 10                             | 45                               | 2,039                               | 105                     | 3                      |
| 10                            | 68                | V/7343-20               | T543V686(1)010A(2)(3)060     | 68                                                   | 10                             | 60                               | 1,765                               | 105                     | 3                      |
| 10                            | 68                | V/7343-20               | T543V686(1)010A(2)(3)100     | 68                                                   | 10                             | 100                              | 1,367                               | 105                     | 3                      |
| 10                            | 68                | D-7343-31               | T543D686(1)010A(2)(3)100     | 68                                                   | 10                             | 100                              | 1,500                               | 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                               | 2,449                               | 105                     | 3                      |
| 10                            | 100               | C/6032-28               | T543C107(1)010A(2)(3)025     | 100                                                  | 8                              | 25                               | 2,569                               | 105                     | 3                      |
| 10                            | 100               | C/6032-28               | T543C107(1)010A(2)(3)045     | 100                                                  | 8                              | 45                               | 1,915                               | 105                     | 3                      |
| 10                            | 100               | W/7343-15               | T543W107(1)010A(2)(3)040     | 100                                                  | 10                             | 40                               | 2,121                               | 105                     | 3                      |
| 10                            | 100               | V/7343-20               | T543V107(1)010A(2)(3)018     | 100                                                  | 10                             | 18                               | 3,223                               | 105                     | 3                      |
| 10                            | 100               | V/7343-20               | T543V107(1)010A(2)(3)025     | 100                                                  | 10                             | 25                               | 2,735                               | 105                     | 3                      |
| 10                            | 100               | V/7343-20               | T543V107(1)010A(2)(3)045     | 100                                                  | 10                             | 45                               | 2,039                               | 105                     | 3                      |
| 10                            | 100               | V/7343-20               | T543V107(1)010A(2)(3)050     | 100                                                  | 10                             | 50                               | 1,934                               | 105                     | 3                      |
| 10                            | 100               | D-7343-31               | T543D107(1)010A(2)(3)018     | 100                                                  | 10                             | 18                               | 3,536                               | 125                     | 3                      |
| 10                            | 100               | D-7343-31               | T543D107(1)010A(2)(3)025     | 100                                                  | 10                             | 25                               | 3,000                               | 125                     | 3                      |
| 10                            | 100               | D-7343-31               | T543D107(1)010A(2)(3)055     | 100                                                  | 10                             | 55                               | 2,023                               | 125                     | 3                      |
| 10                            | 100               | D-7343-31               | T543D107(1)010A(2)(3)080     | 100                                                  | 10                             | 80                               | 1,677                               | 125                     | 3                      |
| 10                            | 150               | C/6032-28               | T543C157(1)010A(2)(3)055     | 150                                                  | 8                              | 55                               | 1,732                               | 105                     | 3                      |
| 10                            | 150               | V/7343-20               | T543V157(1)010A(2)(3)025     | 150                                                  | 10                             | 25                               | 2,735                               | 105                     | 3                      |
| 10                            | 150               | V/7343-20               | T543V157(1)010A(2)(3)040     | 150                                                  | 10                             | 40                               | 2,162                               | 105                     | 3                      |
| 10                            | 150               | D-7343-31               | T543D157(1)010A(2)(3)005     | 150                                                  | 10                             | 5                                | 6,708                               | 125                     | 3                      |
| 10                            | 150               | D-7343-31               | T543D157(1)010A(2)(3)006     | 150                                                  | 10                             | 6                                | 6,124                               | 125                     | 3                      |
| 10                            | 150               | D-7343-31               | T543D157(1)010A(2)(3)010     | 150                                                  | 10                             | 10                               | 4,743                               | 125                     | 3                      |
| 10                            | 150               | D-7343-31               | T543D157(1)010A(2)(3)015     | 150                                                  | 10                             | 15                               | 3,873                               | 125                     | 3                      |
| 10                            | 150               | D-7343-31               | T543D157(1)010A(2)(3)018     | 150                                                  | 10                             | 18                               | 3,536                               | 125                     | 3                      |
| 10                            | 150               | D-7343-31               | T543D157(1)010A(2)(3)025     | 150                                                  | 10                             | 25                               | 3,000                               | 125                     | 3                      |
| 10                            | 150               | D-7343-31               | T543D157(1)010A(2)(3)040     | 150                                                  | 10                             | 40                               | 2,372                               | 125                     | 3                      |
| 10                            | 150               | D-7343-31               | T543D157(1)010A(2)(3)055     | 150                                                  | 10                             | 55                               | 2,023                               | 125                     | 3                      |
| 10                            | 150               | Y/7343-40               | T543Y157(1)010A(2)(3)018     | 150                                                  | 10                             | 18                               | 3,659                               | 105                     | 3                      |
| 10                            | 150               | Y/7343-40               | T543Y157(1)010A(2)(3)025     | 150                                                  | 10                             | 25                               | 3,105                               | 105                     | 3                      |
| 10                            | 220               | V/7343-20               | T543V227(1)010A(2)(3)025     | 220                                                  | 10                             | 25                               | 2,735                               | 105                     | 3                      |
| 10                            | 220               | V/7343-20               | T543V227(1)010A(2)(3)045     | 220                                                  | 10                             | 45                               | 2,039                               | 105                     | 3                      |
| 10                            | 220               | D-7343-31               | T543D227(1)010A(2)(3)006     | 220                                                  | 10                             | 6                                | 6,124                               | 125                     | 3                      |
| 10                            | 220               | D-7343-31               | T543D227(1)010A(2)(3)010     | 220                                                  | 10                             | 10                               | 4,743                               | 125                     | 3                      |
| 10                            | 220               | D-7343-31               | T543D227(1)010A(2)(3)018     | 220                                                  | 10                             | 18                               | 3,536                               | 125                     | 3                      |
| 10                            | 220               | D-7343-31               | T543D227(1)010A(2)(3)025     | 220                                                  | 10                             | 25                               | 3,000                               | 125                     | 3                      |
| 10                            | 220               | D-7343-31               | T543D227(1)010A(2)(3)040     | 220                                                  | 10                             | 40                               | 2,372                               | 125                     | 3                      |
| 10                            | 220               | Y/7343-40               | T543Y227(1)010A(2)(3)006     | 220                                                  | 10                             | 6                                | 6,338                               | 125                     | 3                      |
| 10                            | 220               | Y/7343-40               | T543Y227(1)010A(2)(3)010     | 220                                                  | 10                             | 10                               | 4,909                               | 125                     | 3                      |
| 10                            | 220               | Y/7343-40               | T543Y227(1)010A(2)(3)040     | 220                                                  | 10                             | 40                               | 2,455                               | 125                     | 3                      |
| 10                            | 330               | Y/7343-40               | T543Y337(1)010A(2)(3)015     | 330                                                  | 10                             | 15                               | 4,008                               | 105                     | 3                      |
| 10                            | 330               | Y/7343-40               | T543Y337(1)010A(2)(3)035     | 330                                                  | 10                             | 35                               | 2,624                               | 105                     | 3                      |
| 10                            | 330               | X/7343-43               | T543X337(1)010A(2)(3)005     | 330                                                  | 10                             | 5                                | 7,029                               | 125                     | 3                      |
| 10                            | 330               | X/7343-43               | T543X337(1)010A(2)(3)006     | 330                                                  | 10                             | 6                                | 6,416                               | 125                     | 3                      |
| 10                            | 330               | X/7343-43               | T543X337(1)010A(2)(3)010     | 330                                                  | 10                             | 10                               | 4,970                               | 125                     | 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 | (rms)<br>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 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.

Part Numbers marked in blue font are "Under Development." Engineering samples available upon request.

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

| Rated Voltage<br>VDC at 105°C | Rated Cap         | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                                           | DF                             | ESR                              | Maximum Allowable<br>Ripple Current | Maximum Operating Temp. | MSL                    |
|-------------------------------|-------------------|-------------------------|------------------------------|------------------------------------------------------|--------------------------------|----------------------------------|-------------------------------------|-------------------------|------------------------|
| Not all parts are 105°C rated | 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 | (rms)<br>mA at 45°C<br>100 kHz      | °C                      | Reflow Temp<br>≤ 260°C |
| 10                            | 330               | X/7343-43               | T543X337(1)010A(2)(3)025     | 330                                                  | 10                             | 25                               | 3,143                               | 125                     | 3                      |
| 10                            | 330               | X/7343-43               | T543X337(1)010A(2)(3)040     | 330                                                  | 10                             | 40                               | 2,485                               | 125                     | 3                      |
| 10                            | 470               | X/7343-43               | T543X477(1)010A(2)(3)020     | 470                                                  | 10                             | 20                               | 3,674                               | 105                     | 3                      |
| 10                            | 680               | O/7360-43               | T5430687M010A(2)(3)015       | 680                                                  | 10                             | 15                               | 4,470                               | 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                               | 1,146                               | 105                     | 3                      |
| 12.5                          | 330               | X/7343-43               | T543X337(1)12RA(2)(3)015     | 413                                                  | 10                             | 15                               | 4,058                               | 105                     | 3                      |
| 16                            | 10                | B/3528-21               | T543B106(1)016A(2)(3)100     | 16                                                   | 8                              | 100                              | 1,127                               | 105                     | 3                      |
| 16                            | 22                | C/6032-28               | T543C226(1)016A(2)(3)080     | 35                                                   | 8                              | 80                               | 1,436                               | 105                     | 3                      |
| 16                            | 33                | W/7343-15               | T543W336(1)016A(2)(3)045     | 53                                                   | 10                             | 45                               | 2,000                               | 105                     | 3                      |
| 16                            | 33                | V/7343-20               | T543V336(1)016A(2)(3)045     | 53                                                   | 10                             | 45                               | 2,039                               | 105                     | 3                      |
| 16                            | 33                | V/7343-20               | T543V336(1)016A(2)(3)060     | 53                                                   | 10                             | 60                               | 1,765                               | 105                     | 3                      |
| 16                            | 33                | V/7343-20               | T543V336(1)016A(2)(3)070     | 53                                                   | 10                             | 70                               | 1,634                               | 105                     | 3                      |
| 16                            | 47                | W/7343-15               | T543W476(1)016A(2)(3)045     | 75                                                   | 10                             | 45                               | 2,000                               | 105                     | 3                      |
| 16                            | 47                | V/7343-20               | T543V476(1)016A(2)(3)045     | 75                                                   | 10                             | 45                               | 2,039                               | 105                     | 3                      |
| 16                            | 47                | V/7343-20               | T543V476(1)016A(2)(3)070     | 75                                                   | 10                             | 70                               | 1,634                               | 105                     | 3                      |
| 16                            | 47                | V/7343-20               | T543V476(1)016A(2)(3)080     | 75                                                   | 10                             | 80                               | 1,529                               | 105                     | 3                      |
| 16                            | 47                | D-7343-31               | T543D476(1)016A(2)(3)035     | 75                                                   | 10                             | 35                               | 2,535                               | 125                     | 3                      |
| 16                            | 47                | D-7343-31               | T543D476(1)016A(2)(3)065     | 75                                                   | 10                             | 65                               | 1,861                               | 125                     | 3                      |
| 16                            | 47                | D-7343-31               | T543D476(1)016A(2)(3)070     | 75                                                   | 10                             | 70                               | 1,793                               | 125                     | 3                      |
| 16                            | 68                | V/7343-20               | T543V686(1)016A(2)(3)050     | 109                                                  | 10                             | 50                               | 1,934                               | 105                     | 3                      |
| 16                            | 68                | V/7343-20               | T543V686(1)016A(2)(3)090     | 109                                                  | 10                             | 90                               | 1,441                               | 105                     | 3                      |
| 16                            | 100               | V/7343-20               | T543V107(1)016A(2)(3)050     | 160                                                  | 10                             | 50                               | 1,934                               | 105                     | 3                      |
| 16                            | 100               | D-7343-31               | T543D107(1)016A(2)(3)035     | 160                                                  | 10                             | 35                               | 2,535                               | 125                     | 3                      |
| 16                            | 100               | D-7343-31               | T543D107(1)016A(2)(3)050     | 160                                                  | 10                             | 50                               | 2,121                               | 125                     | 3                      |
| 16                            | 150               | X/7343-43               | T543X157(1)016A(2)(3)015     | 240                                                  | 10                             | 15                               | 4,058                               | 125                     | 3                      |
| 16                            | 150               | X/7343-43               | T543X157(1)016A(2)(3)025     | 240                                                  | 10                             | 25                               | 3,143                               | 125                     | 3                      |
| 16                            | 150               | X/7343-43               | T543X157(1)016A(2)(3)040     | 240                                                  | 10                             | 40                               | 2,485                               | 125                     | 3                      |
| 16                            | 150               | X/7343-43               | T543X157(1)016A(2)(3)080     | 240                                                  | 10                             | 80                               | 1,757                               | 125                     | 3                      |
| 16                            | 220               | X/7343-43               | T543X227(1)016A(2)(3)035     | 352                                                  | 10                             | 35                               | 2,657                               | 125                     | 3                      |
| 16                            | 220               | X/7343-43               | T543X227(1)016A(2)(3)080     | 352                                                  | 10                             | 80                               | 1,757                               | 125                     | 3                      |
| 16                            | 330               | X/7343-43               | T543X337(1)016A(2)(3)025     | 528                                                  | 10                             | 25                               | 3,143                               | 125                     | 3                      |
| 16                            | 330               | X/7343-43               | T543X337(1)016A(2)(3)050     | 528                                                  | 10                             | 50                               | 2,223                               | 125                     | 3                      |
| 16                            | 470               | O/7360-43               | T5430477M016A(2)(3)020       | 752                                                  | 10                             | 20                               | 3,870                               | 105                     | 3                      |
| 16                            | 470               | O/7360-43               | T5430477M016A(2)(3)040       | 752                                                  | 10                             | 40                               | 2,740                               | 105                     | 3                      |
| 20                            | 22                | V/7343-20               | T543V226(1)020A(2)(3)040     | 44                                                   | 10                             | 40                               | 2,162                               | 105                     | 3                      |
| 20                            | 22                | V/7343-20               | T543V226(1)020A(2)(3)045     | 44                                                   | 10                             | 45                               | 2,039                               | 105                     | 3                      |
| 20                            | 22                | V/7343-20               | T543V226(1)020A(2)(3)090     | 44                                                   | 10                             | 90                               | 1,441                               | 105                     | 3                      |
| 20                            | 22                | D-7343-31               | T543D226(1)020A(2)(3)040     | 44                                                   | 10                             | 40                               | 2,372                               | 105                     | 3                      |
| 20                            | 22                | D-7343-31               | T543D226(1)020A(2)(3)045     | 44                                                   | 10                             | 45                               | 2,236                               | 105                     | 3                      |
| 20                            | 22                | D-7343-31               | T543D226(1)020A(2)(3)090     | 44                                                   | 10                             | 90                               | 1,581                               | 105                     | 3                      |
| 20                            | 33                | D-7343-31               | T543D336(1)020A(2)(3)060     | 66                                                   | 10                             | 60                               | 1,936                               | 125                     | 3                      |
| 20                            | 47                | V/7343-20               | T543V476(1)020A(2)(3)055     | 94                                                   | 10                             | 55                               | 1,844                               | 105                     | 3                      |
| 20                            | 47                | V/7343-20               | T543V476(1)020A(2)(3)090     | 94                                                   | 10                             | 90                               | 1,441                               | 105                     | 3                      |
| 20                            | 47                | D-7343-31               | T543D476(1)020A(2)(3)055     | 94                                                   | 10                             | 55                               | 2,023                               | 105                     | 3                      |
| 20                            | 100               | X/7343-43               | T543X107(1)020A(2)(3)035     | 200                                                  | 10                             | 35                               | 2,657                               | 125                     | 3                      |
| 20                            | 100               | X/7343-43               | T543X107(1)020A(2)(3)050     | 200                                                  | 10                             | 50                               | 2,223                               | 125                     | 3                      |
| 25                            | 10                | B/3528-21               | T543B106(1)025A(2)(3)100     | 25                                                   | 10                             | 100                              | 1,127                               | 105                     | 3                      |
| 25                            | 15                | V/7343-20               | T543V156(1)025A(2)(3)090     | 38                                                   | 10                             | 90                               | 1,441                               | 105                     | 3                      |
| 25                            | 15                | D-7343-31               | T543D156(1)025A(2)(3)060     | 38                                                   | 10                             | 60                               | 1,936                               | 125                     | 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 | (rms)<br>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 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.

Part Numbers marked in blue font are "Under Development." Engineering samples available upon request.

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

| Rated Voltage<br>VDC at 105°C | Rated Cap         | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                                           | DF                             | ESR                              | Maximum Allowable<br>Ripple Current | Maximum Operating Temp. | MSL                    |
|-------------------------------|-------------------|-------------------------|------------------------------|------------------------------------------------------|--------------------------------|----------------------------------|-------------------------------------|-------------------------|------------------------|
| Not all parts are 105°C rated | 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 | (rms)<br>mA at 45°C<br>100 kHz      | °C                      | Reflow Temp<br>≤ 260°C |
| 25                            | 15                | D-7343-31               | T543D156(1)025A(2)(3)080     | 38                                                   | 10                             | 80                               | 1,677                               | 125                     | 3                      |
| 25                            | 22                | C/6032-28               | T543C226(1)025A(2)(3)080     | 55                                                   | 8                              | 80                               | 1,436                               | 105                     | 3                      |
| 25                            | 22                | D-7343-31               | T543D226(1)025A(2)(3)075     | 55                                                   | 10                             | 75                               | 1,732                               | 125                     | 3                      |
| 25                            | 22                | V/7343-20               | T543V226(1)025A(2)(3)060     | 55                                                   | 10                             | 60                               | 1,765                               | 105                     | 3                      |
| 25                            | 22                | V/7343-20               | T543V226(1)025A(2)(3)090     | 55                                                   | 10                             | 90                               | 1,441                               | 105                     | 3                      |
| 25                            | 33                | V/7343-20               | T543V336(1)025A(2)(3)060     | 83                                                   | 10                             | 60                               | 1,765                               | 105                     | 3                      |
| 25                            | 33                | D-7343-31               | T543D336(1)025A(2)(3)060     | 83                                                   | 10                             | 60                               | 1,936                               | 105                     | 3                      |
| 25                            | 68                | X/7343-43               | T543X686(1)025A(2)(3)035     | 170                                                  | 10                             | 35                               | 2,657                               | 125                     | 3                      |
| 25                            | 68                | X/7343-43               | T543X686(1)025A(2)(3)050     | 170                                                  | 10                             | 50                               | 2,223                               | 125                     | 3                      |
| 25                            | 100               | X/7343-43               | T543X107(1)025A(2)(3)060     | 250                                                  | 10                             | 60                               | 2,029                               | 125                     | 3                      |
| 25                            | 150               | O/7360-43               | T543O157M025A(2)(3)045       | 375                                                  | 10                             | 45                               | 2,580                               | 105                     | 3                      |
| 30                            | 22                | D-7343-31               | T543D226(1)030A(2)(3)075     | 66                                                   | 10                             | 75                               | 1,732                               | 105                     | 3                      |
| 30                            | 33                | D-7343-31               | T543D336(1)030A(2)(3)100     | 99                                                   | 10                             | 100                              | 1,500                               | 105                     | 3                      |
| 30                            | 47                | X/7343-43               | T543X476(1)030A(2)(3)050     | 141                                                  | 10                             | 50                               | 2,223                               | 105                     | 3                      |
| 30                            | 68                | X/7343-43               | T543X686(1)030A(2)(3)035     | 204                                                  | 10                             | 35                               | 2,657                               | 125                     | 3                      |
| 30                            | 68                | X/7343-43               | T543X686(1)030A(2)(3)050     | 204                                                  | 10                             | 50                               | 2,223                               | 125                     | 3                      |
| 30                            | 100               | X/7343-43               | T543X107(1)030A(2)(3)035     | 300                                                  | 10                             | 35                               | 2,657                               | 105                     | 3                      |
| 30                            | 100               | X/7343-43               | T543X107(1)030A(2)(3)060     | 300                                                  | 10                             | 60                               | 2,029                               | 105                     | 3                      |
| 30                            | 100               | X/7343-43               | T543X107(1)030A(2)(3)070     | 300                                                  | 10                             | 70                               | 1,878                               | 105                     | 3                      |
| 30                            | 150               | O/7360-43               | T543O157M030A(2)(3)030       | 450                                                  | 10                             | 30                               | 3,160                               | 105                     | 3                      |
| 30                            | 150               | O/7360-43               | T543O157M030A(2)(3)045       | 450                                                  | 10                             | 45                               | 2,580                               | 105                     | 3                      |
| 30                            | 150               | O/7360-43               | T543O157M030A(2)(3)055       | 450                                                  | 10                             | 55                               | 2,340                               | 105                     | 3                      |
| 35                            | 15                | V/7343-20               | T543V156(1)035A(2)(3)100     | 53                                                   | 10                             | 100                              | 1,367                               | 105                     | 3                      |
| 35                            | 15                | V/7343-20               | T543V156(1)035A(2)(3)125     | 53                                                   | 10                             | 125                              | 1,223                               | 105                     | 3                      |
| 35                            | 15                | D-7343-31               | T543D156(1)035A(2)(3)100     | 53                                                   | 10                             | 100                              | 1,500                               | 125                     | 3                      |
| 35                            | 15                | D-7343-31               | T543D156(1)035A(2)(3)125     | 53                                                   | 10                             | 125                              | 1,342                               | 125                     | 3                      |
| 35                            | 33                | X/7343-43               | T543X336(1)035A(2)(3)065     | 116                                                  | 10                             | 65                               | 1,949                               | 105                     | 3                      |
| 35                            | 47                | X/7343-43               | T543X476(1)035A(2)(3)030     | 165                                                  | 10                             | 30                               | 2,869                               | 125                     | 3                      |
| 35                            | 47                | X/7343-43               | T543X476(1)035A(2)(3)060     | 165                                                  | 10                             | 60                               | 2,029                               | 125                     | 3                      |
| 35                            | 68                | O/7360-43               | T543O686M035A(2)(3)025       | 238                                                  | 10                             | 25                               | 3,460                               | 105                     | 3                      |
| 35                            | 68                | O/7360-43               | T543O686M035A(2)(3)045       | 238                                                  | 10                             | 45                               | 2,580                               | 105                     | 3                      |
| 50                            | 5.6               | D-7343-31               | T543D565(1)050A(2)(3)070     | 28                                                   | 10                             | 70                               | 1,793                               | 105                     | 3                      |
| 50                            | 5.6               | D-7343-31               | T543D565(1)050A(2)(3)090     | 28                                                   | 10                             | 90                               | 1,581                               | 105                     | 3                      |
| 50                            | 6.8               | V/7343-20               | T543V685(1)050A(2)(3)065     | 34                                                   | 10                             | 65                               | 1,934                               | 125                     | 3                      |
| 50                            | 10                | D-7343-31               | T543D106(1)050A(2)(3)090     | 50                                                   | 10                             | 90                               | 1,581                               | 125                     | 3                      |
| 50                            | 10                | D-7343-31               | T543D106(1)050A(2)(3)100     | 50                                                   | 10                             | 100                              | 1,500                               | 125                     | 3                      |
| 50                            | 10                | D-7343-31               | T543D106(1)050A(2)(3)120     | 50                                                   | 10                             | 120                              | 1,369                               | 125                     | 3                      |
| 50                            | 15                | X/7343-43               | T543X156(1)050A(2)(3)035     | 75                                                   | 10                             | 35                               | 2,657                               | 105                     | 3                      |
| 50                            | 15                | X/7343-43               | T543X156(1)050A(2)(3)070     | 75                                                   | 10                             | 70                               | 1,878                               | 105                     | 3                      |
| 50                            | 18                | X/7343-43               | T543X186(1)050A(2)(3)035     | 90                                                   | 10                             | 35                               | 2,657                               | 125                     | 3                      |
| 50                            | 18                | X/7343-43               | T543X186(1)050A(2)(3)070     | 90                                                   | 10                             | 70                               | 1,878                               | 125                     | 3                      |
| 50                            | 22                | X/7343-43               | T543X226(1)050A(2)(3)040     | 110                                                  | 10                             | 40                               | 2,485                               | 125                     | 3                      |
| 50                            | 22                | X/7343-43               | T543X226(1)050A(2)(3)075     | 110                                                  | 10                             | 75                               | 1,815                               | 125                     | 3                      |
| 50                            | 33                | X/7343-43               | T543X336(1)050A(2)(3)040     | 165                                                  | 10                             | 40                               | 2,485                               | 125                     | 3                      |
| 50                            | 33                | X/7343-43               | T543X336(1)050A(2)(3)075     | 165                                                  | 10                             | 75                               | 1,815                               | 125                     | 3                      |
| 50                            | 47                | O/7360-43               | T543O476M050A(2)(3)060       | 235                                                  | 10                             | 60                               | 2,240                               | 105                     | 3                      |
| 63                            | 4.7               | D-7343-31               | T543D475(1)063A(2)(3)075     | 30                                                   | 10                             | 75                               | 1,732                               | 125                     | 3                      |
| 63                            | 4.7               | D-7343-31               | T543D475(1)063A(2)(3)100     | 30                                                   | 10                             | 100                              | 1,500                               | 125                     | 3                      |
| 63                            | 4.7               | D-7343-31               | T543D475(1)063A(2)(3)120     | 30                                                   | 10                             | 120                              | 1,369                               | 125                     | 3                      |
| 63                            | 6.8               | D-7343-31               | T543D685(1)063A(2)(3)075     | 43                                                   | 10                             | 75                               | 1,700                               | 125                     | 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 | (rms)<br>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 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.

Part Numbers marked in blue font are "Under Development." Engineering samples available upon request.

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

| Rated Voltage<br>VDC at<br>105°C | Rated Cap         | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                                           | DF                             | ESR                              | Maximum Allowable<br>Ripple Current | Maximum Operating Temp. | MSL                    |
|----------------------------------|-------------------|-------------------------|------------------------------|------------------------------------------------------|--------------------------------|----------------------------------|-------------------------------------|-------------------------|------------------------|
| Not all parts are 105°C rated    | 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 | (rms)<br>mA at 45°C<br>100 kHz      | °C                      | Reflow Temp<br>≤ 260°C |
| 63                               | 10                | X/7343-43               | T543X106(1)063A(2)(3)050     | 63                                                   | 10                             | 50                               | 2,223                               | 125                     | 3                      |
| 63                               | 10                | X/7343-43               | T543X106(1)063A(2)(3)075     | 63                                                   | 10                             | 75                               | 1,815                               | 125                     | 3                      |
| 63                               | 10                | X/7343-43               | T543X106(1)063A(2)(3)100     | 63                                                   | 10                             | 100                              | 1,572                               | 125                     | 3                      |
| 63                               | 10                | X/7343-43               | T543X106(1)063A(2)(3)150     | 63                                                   | 10                             | 150                              | 1,283                               | 125                     | 3                      |
| 63                               | 15                | X/7343-43               | T543X156(1)063A(2)(3)035     | 95                                                   | 10                             | 35                               | 2,657                               | 125                     | 3                      |
| 63                               | 15                | X/7343-43               | T543X156(1)063A(2)(3)050     | 95                                                   | 10                             | 50                               | 2,223                               | 125                     | 3                      |
| 63                               | 22                | X/7343-43               | T543X226(1)063A(2)(3)075     | 138.6                                                | 10                             | 75                               | 1,815                               | 125                     | 3                      |
| 63                               | 22                | O/7360-43               | T543O226M063A(2)(3)030       | 139                                                  | 10                             | 30                               | 3,160                               | 105                     | 3                      |
| 63                               | 22                | O/7360-43               | T543O226M063A(2)(3)040       | 139                                                  | 10                             | 40                               | 2,740                               | 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 | (rms)<br>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 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.

Part Numbers marked in blue font are "Under Development." Engineering samples available upon request.

Derating Guidelines



Recommended Application Voltage

KO-CAPs are solid state capacitors that demonstrate no wearout mechanism when operated within their recommended guidelines. While the KO-CAP 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 voltage derating, according 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.

| Temperature Compensation Multipliers<br>for Maximum Ripple Current |                                                  |                                                   |
|--------------------------------------------------------------------|--------------------------------------------------|---------------------------------------------------|
| $T \leq 45^{\circ}\text{C}$                                        | $45^{\circ}\text{C} < T \leq 85^{\circ}\text{C}$ | $85^{\circ}\text{C} < T \leq 125^{\circ}\text{C}$ |
| 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.

| Case Code | EIA Case Code | Maximum Power Dissipation (Pmax)<br>mWatts at 45°C<br>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                                                                   |
| O         | 7360-43       | 300                                                                   |
| T         | 3528-12       | 105                                                                   |
| U         | 6032-15       | 135                                                                   |
| V         | 7343-20       | 187                                                                   |
| W         | 7343-15       | 180                                                                   |
| X         | 7343-43       | 247                                                                   |
| Y         | 7343-40       | 241                                                                   |

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

$$I(\text{max}) = \sqrt{P_{\text{max}}/R}$$

$$E(\text{max}) = Z \sqrt{P_{\text{max}}/R}$$

$I$  = rms ripple current (amperes)

$E$  = rms ripple voltage (volts)

$P_{\text{max}}$  = 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) | Category Voltage (V) | Category 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                | 6.7                  | 8.7                        |
| 16                | 20.8              | 10.7                 | 13.9                       |
| 20                | 26                | 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              | 6032-28          | 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 |
| O              | 7360-43          | 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 |
| 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              | 7343-21          | 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

The KEMET 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/second maximum | 3°C/second 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/second maximum | 6°C/second 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.

\* For Case Size height > 2.5 mm

\*\* For Case Size height ≤ 2.5 mm



## Storage

All KO-Cap are shipped in moisture barrier bags (MBBs) with desiccant and humidity indicator card (HIC). These parts are classified as moisture sensitivity level 3 (MSL3) or moisture sensitivity level 4 (MSL4) per IPC/JEDEC J-STD-020 and packaged per IPC/JEDEC J-STD-033. Refer to Table 1 for part type specification. MSL3 specifies a floor time of 168H at 30°C maximum temperature and 60% relative humidity. MSL4 specifies a floor time of 72H at 30°C maximum temperature and 60% relative humidity. Unused capacitors should be sealed in a MBB with fresh desiccant.

Calculated shelf life in sealed bag:

- 12 months from bag seal date in a storage environment of < 40°C and humidity < 90% RH
- 24 months from bag seal date in a storage environment of < 30°C and humidity < 70% RH

If baking is required, refer to IPC/JEDEC J-STD-033 for bake procedure

## Construction



## Capacitor Marking



| Date Code *                                                  |                                                                                    |
|--------------------------------------------------------------|------------------------------------------------------------------------------------|
| 1 <sup>st</sup> digit = last number of year                  | 5 = 2015<br>6 = 2016<br>7 = 2017<br>8 = 2018<br>9 = 2019                           |
| 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     |                 |          |           |
| P         | 2012-10 | 8               | 3,000    | N/A       |
| R         | 2012-12 | 8               | 2,500    | 10,000    |
| I         | 3216-10 | 8               | 3,000    | N/A       |
| S         | 3216-12 | 8               | 2,500    | 10,000    |
| A         | 3216-18 | 8               | 2,000    | N/A       |
| T         | 3528-12 | 8               | 3,000    | 10,000    |
| M         | 3528-15 | 8               | 2,500    | 8,000     |
| B         | 3528-21 | 8               | 2,000    | 8,000     |
| U         | 6032-15 | 12              | 1,000    | 5,000     |
| L         | 6032-19 | 12              | 1,000    | 3,000     |
| C         | 6032-28 | 12              | 500      | 3,000     |
| Q         | 7343-12 | 12              | 1,000    | 3,000     |
| W         | 7343-15 | 12              | 1,000    | 3,000     |
| Z         | 7343-17 | 12              | 1,000    | 3,000     |
| V         | 7343-19 | 12              | 1,000    | 3,000     |
| D         | 7343-31 | 12              | 500      | 2,500     |
| Y         | 7343-40 | 12              | 500      | 2,000     |
| X         | 7343-43 | 12              | 500      | 2,000     |
| J         | 7360-15 | 12              | 1,000    | 3,000     |
| H         | 7360-20 | 12              | 1,000    | 3,000     |
| O         | 7360-43 | 12              | 250      | 1,000     |

\* 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> 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)                   |                              |                             |                             | 30<br>(1.181)         |                                  |                  |                        |

| 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>and Double<br>(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) |                                                  |

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<sub>1</sub> < 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<sub>1</sub> dimension is a reference dimension for tape feeder clearance only.
5. The cavity defined by A<sub>0</sub>, B<sub>0</sub> and K<sub>0</sub> 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 (see Figure 2).
  - (d) lateral movement of the component is restricted to 0.5 mm maximum for 8 mm and 12 mm wide tape (see Figure 3).
  - (e) see Addendum in EIA Standard 481-D for standards relating to more precise taping requirements.

## Packaging Information Performance Notes

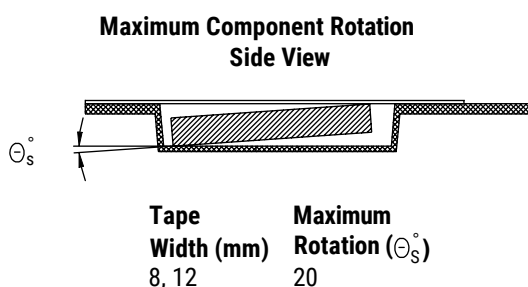
- Cover tape break force:** 1.0 kg minimum.
- Cover tape peel strength:** The total peel strength of the cover tape from the carrier tape shall be:

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

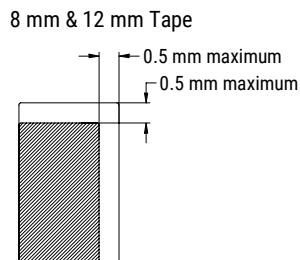
The direction of the pull shall be opposite the direction of the carrier tape travel. The pull angle of the carrier tape shall be 165° to 180° from the plane of the carrier tape. During peeling, the carrier and/or cover tape shall be pulled at a velocity of 300 ±10 mm/minute.

- 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                                      |                                                                   |                                       |                                        |                                                   |
| 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)                        |                                                   |

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

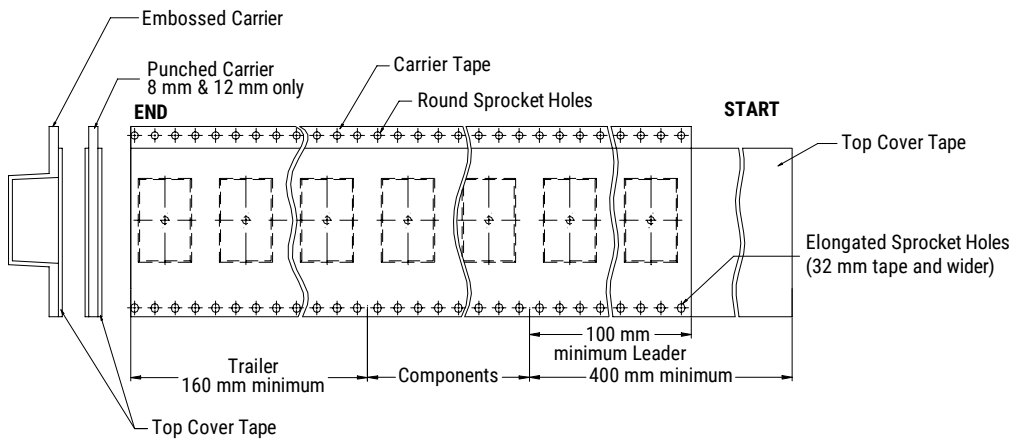


**Figure 7 – Maximum Camber**



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