

## T322 and T323 Series MIL-PRF-49137/1 and 5 (CX01 and CX05 Style)

### Overview

The KEMET T322 and T323 Series (CX01 and CX05 Style) offers a complete line of extended range molded solid tantalum capacitors designed specifically for high speed automatic insertion applications. These capacitors offer an extremely high capacitance-to-volume ratio while still maintaining excellent performance characteristics. Supplied in six axial lead tubular case sizes, these capacitors are ideally suited for use in printed wiring boards and all applications requiring a high degree of packaging density and can be supplied in bulk packaging or lead-taped on reels. The 322/T323 Series dimensions and tight lead wire-to-body concentricity permit installation by the same automatic insertion equipment used for diodes and

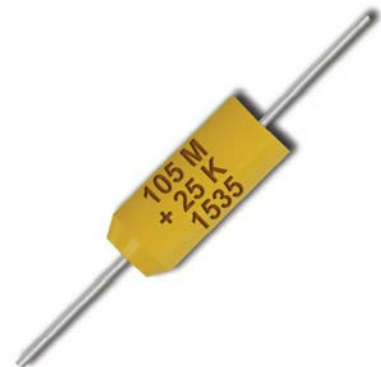
resistors. These capacitors are available in working voltages of 2, 4, 6, 10, 15, 20, 25, 35 and 50 volts. The operating temperature range -55°C to +85°C at full rated voltage and with 2/3 85°C rated voltage at 125°C. The gold color epoxy permits laser marking with outstanding permanency and legibility. T323 Series capacitors are qualified under MIL-PRF-49137/1 and 5 as Military Style CX01 and CX05. Typical applications include decoupling, blocking, bypassing and filtering in commercial computers, data processing, communications, and other electronic equipment. This product is well-suited for decoupling required by high speed computers due to its low ESR/impedance at high frequencies.

### Benefits

- Taped and reeled per EIA Specification RS-296
- Laser-marked case
- Qualified to MIL-PRF-49137/1 and 5 (CX01 and CX05 Style)
- Capacitance values of 0.1  $\mu$ F to 330  $\mu$ F
- Tolerances of  $\pm 5\%$ ,  $\pm 10\%$  and  $\pm 20\%$  (M and K only tolerances available for T323 Series)
- Voltage rating of 2 – 50 VDC
- Operating temperature range of -55°C to +85°C
- Case sizes: A, B, C, D, E, F

### Applications

Typical applications include decoupling, blocking, bypassing and filtering in commercial computers, data processing, communications, and other electronic equipment. This product is well-suited for decoupling required by high speed computers due to its low ESR/impedance at high frequencies.



## Ordering Information

| T               | 32X                                                                                                             | A                          | 474                                                                                              | M                               | 035                                                                                                   | A                             | T                                                   |                                                                                         |
|-----------------|-----------------------------------------------------------------------------------------------------------------|----------------------------|--------------------------------------------------------------------------------------------------|---------------------------------|-------------------------------------------------------------------------------------------------------|-------------------------------|-----------------------------------------------------|-----------------------------------------------------------------------------------------|
| Capacitor Class | Series                                                                                                          | Case Size                  | Capacitance Code (pF)                                                                            | Capacitance Tolerance           | Rated Voltage (VDC)                                                                                   | Failure Rate/Military Product | Termination Finish                                  | Packaging                                                                               |
| T = Tantalum    | Axial molded polar solid tantalum. Insert appropriate number to replace letter "X" = 322 or 323 (CX01 or CX05). | A<br>B<br>C<br>D<br>E<br>F | First two digits represent significant figures. Third digit specifies number of zeros to follow. | J = ±5%<br>K = ±10%<br>M = ±20% | 002 = 2<br>004 = 4<br>006 = 6<br>010 = 10<br>015 = 15<br>020 = 20<br>025 = 25<br>035 = 35<br>050 = 50 | Not Applicable                | T = 100% Tin<br>S = Standard (solder-coated nickel) | (When necessary)<br>Reeling per EIA specification RS-296<br>Blank = Bulk<br>7200 = Reel |

## MIL-PRF-49137/1/5 (CX01 and CX05 Style)

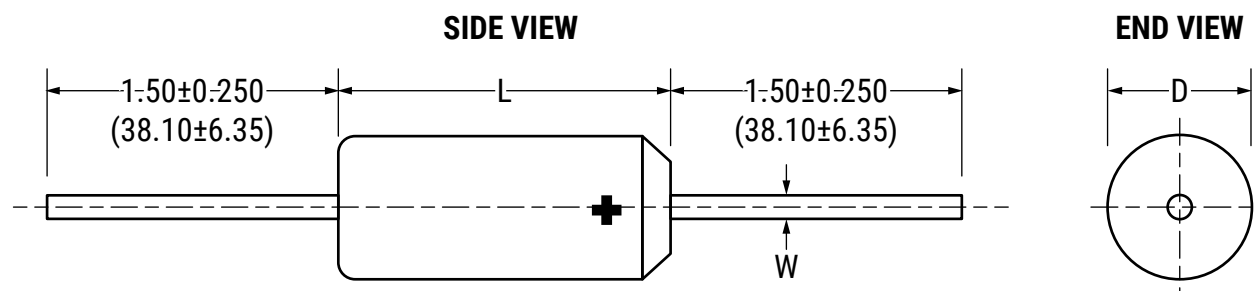
| CX              | 05                     | D                                                                 | 225                                                                                              | K                     |
|-----------------|------------------------|-------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|-----------------------|
| Capacitor Class | Series                 | Rated Voltage (VDC)                                               | Capacitance Code (pF)                                                                            | Capacitance Tolerance |
| CX = MIL-PRF    | 01 = T322<br>05 = T323 | D = 6<br>F = 10<br>H = 15<br>J = 20<br>K = 25<br>M = 35<br>N = 50 | First two digits represent significant figures. Third digit specifies number of zeros to follow. | K = ±10%<br>M = ±20%  |

## Performance Characteristics

| Item                                | Performance Characteristics                                                                                                  |
|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| Operating Temperature               | -55°C to 125°C                                                                                                               |
| Rated Capacitance Range             | 0.1 – 330 µF at 120 Hz/25°C                                                                                                  |
| Capacitance Tolerance               | J Tolerance (5%), K Tolerance (10%), M Tolerance (20%)                                                                       |
| Rated Voltage Range                 | 2 – 50 V                                                                                                                     |
| DF (120 Hz at 25°C)                 | Refer to Part Number Electrical Specification Table                                                                          |
| ESR and Impedance (100 kHz at 25°C) | Refer to Part Number Electrical Specification Table (for reference only)                                                     |
| Leakage Current                     | Refer to Part Number Electrical Specification Table (at rated voltage up to +85°C and 2/3 of rated voltage applied at 125°C) |

## Dimensions – Millimeters (Inches)

Metric will govern



| Case Size | D Maximum    | L Maximum     | W           |
|-----------|--------------|---------------|-------------|
| A         | 0.095 (2.41) | 0.260 (6.6)   | 0.020 (.51) |
| B         | 0.110 (2.79) | 0.290 (7.37)  | 0.020 (.51) |
| C         | 0.180 (4.57) | 0.345 (8.76)  | 0.020 (.51) |
| D         | 0.180 (4.57) | 0.420 (10.67) | 0.020 (.51) |
| E         | 0.280 (7.11) | 0.530 (13.46) | 0.025 (.64) |
| F         | 0.300 (7.62) | 0.710 (18.03) | 0.025 (.64) |

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

| Rated Voltage | Rated Cap | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                 | DF                         | CX01 & CX05 Capacitors per MIL-PRF-49137/1 & 5 |                   |
|---------------|-----------|-------------------------|------------------------------|----------------------------|----------------------------|------------------------------------------------|-------------------|
| (V) 85°C      | µF        |                         | (See below for part options) | µA @ 25°C<br>Max/5 Minimum | % @ 25°C<br>120 Hz Maximum | Military Part Number                           | KEMET Part Number |
| 2             | 6.8       | A                       | T322A685(1)002A(2)           | 0.5                        | 10                         |                                                |                   |
| 2             | 8.2       | A                       | T322A825(1)002A(2)           | 0.5                        | 10                         |                                                |                   |
| 2             | 10.0      | A                       | T322A106(1)002A(2)           | 0.5                        | 10                         |                                                |                   |
| 2             | 12.0      | B                       | T322B126(1)002A(2)           | 0.5                        | 10                         |                                                |                   |
| 2             | 15.0      | B                       | T322B156(1)002A(2)           | 0.5                        | 10                         |                                                |                   |
| 2             | 18.0      | B                       | T322B186(1)002A(2)           | 0.5                        | 10                         |                                                |                   |
| 2             | 22.0      | B                       | T322B226(1)002A(2)           | 0.5                        | 10                         |                                                |                   |
| 2             | 27.0      | B                       | T322B276(1)002A(2)           | 0.5                        | 10                         |                                                |                   |
| 2             | 33.0      | B                       | T322B336(1)002A(2)           | 0.5                        | 10                         |                                                |                   |
| 2             | 39.0      | C                       | T322C396(1)002A(2)           | 0.6                        | 10                         |                                                |                   |
| 2             | 47.0      | C                       | T322C476(1)002A(2)           | 0.8                        | 10                         |                                                |                   |
| 2             | 56.0      | C                       | T322C566(1)002A(2)           | 0.9                        | 10                         |                                                |                   |
| 2             | 68.0      | C                       | T322C686(1)002A(2)           | 1.1                        | 10                         |                                                |                   |
| 4             | 4.7       | A                       | T322A475(1)004A(2)           | 0.5                        | 8                          |                                                |                   |
| 4             | 5.6       | A                       | T322A565(1)004A(2)           | 0.5                        | 8                          |                                                |                   |
| 4             | 6.8       | A                       | T322A685(1)004A(2)           | 0.5                        | 8                          |                                                |                   |
| 4             | 8.2       | B                       | T322B825(1)004A(2)           | 0.5                        | 8                          |                                                |                   |
| 4             | 10.0      | B                       | T322B106(1)004A(2)           | 0.5                        | 8                          |                                                |                   |
| 4             | 12.0      | B                       | T322B126(1)004A(2)           | 0.5                        | 8                          |                                                |                   |
| 4             | 15.0      | B                       | T322B156(1)004A(2)           | 0.5                        | 8                          |                                                |                   |
| 4             | 18.0      | B                       | T322B186(1)004A(2)           | 0.6                        | 8                          |                                                |                   |
| 4             | 22.0      | B                       | T322B226(1)004A(2)           | 0.7                        | 8                          |                                                |                   |
| 4             | 27.0      | C                       | T322C276(1)004A(2)           | 0.9                        | 8                          |                                                |                   |
| 4             | 33.0      | C                       | T322C336(1)004A(2)           | 1.1                        | 8                          |                                                |                   |
| 4             | 39.0      | C                       | T322C396(1)004A(2)           | 1.2                        | 8                          |                                                |                   |
| 4             | 47.0      | C                       | T322C476(1)004A(2)           | 1.5                        | 8                          |                                                |                   |
| 4             | 56.0      | D                       | T322D566(1)004A(2)           | 1.8                        | 8                          |                                                |                   |
| 4             | 68.0      | D                       | T322D686(1)004A(2)           | 2.2                        | 8                          |                                                |                   |
| 6             | 3.3       | A                       | T322A335(1)006A(2)           | 0.5                        | 4                          |                                                |                   |
| 6             | 3.9       | A                       | T322A395(1)006A(2)           | 0.5                        | 4                          |                                                |                   |
| 6             | 4.7       | A                       | T322A475J006A(2)             | 0.5                        | 4                          |                                                |                   |
| 6             | 4.7       | A                       | T322A475K006A(2)             | 0.5                        | 4                          | CX05D475K                                      | T323A475K006A(2)  |
| 6             | 4.7       | A                       | T322A475M006A(2)             | 0.5                        | 4                          | CX05D475M                                      | T323A475M006A(2)  |
| 6             | 5.6       | B                       | T322B565J006A(2)             | 0.5                        | 4                          |                                                |                   |
| 6             | 5.6       | B                       | T322B565K006A(2)             | 0.5                        | 4                          | CX01D565K                                      | T323B565K006A(2)  |
| 6             | 5.6       | B                       | T322B565M006A(2)             | 0.5                        | 4                          | CX01D565M                                      | T323B565M006A(2)  |
| 6             | 6.8       | B                       | T322B685J006A(2)             | 0.5                        | 6                          |                                                |                   |
| 6             | 6.8       | B                       | T322B685K006A(2)             | 0.5                        | 6                          | CX01D685K                                      | T323B685K006A(2)  |
| 6             | 6.8       | B                       | T322B685M006A(2)             | 0.5                        | 6                          | CX01D685M                                      | T323B685M006A(2)  |
| 6             | 8.2       | B                       | T322B825J006A(2)             | 0.5                        | 6                          |                                                |                   |
| 6             | 8.2       | B                       | T322B825K006A(2)             | 0.5                        | 6                          | CX01D825K                                      | T323B825K006A(2)  |
| 6             | 8.2       | B                       | T322B825M006A(2)             | 0.5                        | 6                          | CX01D825M                                      | T323B825M006A(2)  |
| 6             | 10.0      | B                       | T322B106J006A(2)             | 0.5                        | 6                          |                                                |                   |
| 6             | 10.0      | B                       | T322B106K006A(2)             | 0.5                        | 6                          | CX01D106K                                      | T323B106K006A(2)  |
| 6             | 10.0      | B                       | T322B106M006A(2)             | 0.5                        | 6                          | CX01D106M                                      | T323B106M006A(2)  |
| 6             | 12.0      | B                       | T322B126J006A(2)             | 0.6                        | 6                          |                                                |                   |
| 6             | 12.0      | B                       | T322B126K006A(2)             | 0.6                        | 6                          | CX01D126K                                      | T323B126K006A(2)  |
| 6             | 12.0      | B                       | T322B126M006A(2)             | 0.6                        | 6                          | CX01D126M                                      | T323B126M006A(2)  |
| 6             | 15.0      | B                       | T322B156J006A(2)             | 0.7                        | 6                          |                                                |                   |
| 6             | 15.0      | B                       | T322B156K006A(2)             | 0.7                        | 6                          | CX05D156K                                      | T323B156K006A(2)  |
| 6             | 15.0      | B                       | T322B156M006A(2)             | 0.7                        | 6                          | CX05D156M                                      | T323B156M006A(2)  |
| 6             | 18.0      | C                       | T322C186(1)006A(2)           | 0.9                        | 6                          |                                                |                   |
| 6             | 22.0      | C                       | T322C226(1)006A(2)           | 1.1                        | 6                          |                                                |                   |
| 6             | 27.0      | C                       | T322C276(1)006A(2)           | 1.3                        | 6                          |                                                |                   |
| 6             | 33.0      | C                       | T322C336J006A(2)             | 1.5                        | 6                          |                                                |                   |
| (V) 85°C      | µF        | Case Code/ Case Size    | (see below for part options) | µA @ 25°C<br>Max/5 Minimum | % @ 25°C<br>120 Hz Maximum | Military Part Number                           | KEMET Part Number |
| Rated Voltage | Rated Cap | Case Code/ Case Size    | KEMET Part Number            | DC Leakage                 | DF                         | CX01 & CX05 Capacitors per MIL-PRF-49137/1 & 5 |                   |

(1) To complete KEMET part number, insert M for ±20%, K for ±10% or J for 5%. Designates capacitance tolerance.

(2) To complete KEMET part number, insert T = 100% Matte Tin (Sn) Plated, S = Standard Solder coated (SnPb 5% Pb minimum). Designates termination finish.

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

| Rated Voltage | Rated Cap | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                 | DF                         | CX01 & CX05 Capacitors per MIL-PRF-49137/1 & 5 |                   |
|---------------|-----------|-------------------------|------------------------------|----------------------------|----------------------------|------------------------------------------------|-------------------|
| (V) 85°C      | µF        |                         | (See below for part options) | µA @ 25°C<br>Max/5 Minimum | % @ 25°C<br>120 Hz Maximum | Military Part Number                           | KEMET Part Number |
| 6             | 33.0      | C                       | T322C336K006A(2)             | 1.5                        | 6                          | CX05D336K                                      | T323C336K006A(2)  |
| 6             | 33.0      | C                       | T322C336M006A(2)             | 1.5                        | 6                          | CX05D336M                                      | T323C336M006A(2)  |
| 6             | 39.0      | D                       | T322D396(1)006A(2)           | 1.9                        | 6                          |                                                |                   |
| 6             | 47.0      | D                       | T322D476J006A(2)             | 2.3                        | 6                          |                                                |                   |
| 6             | 47.0      | D                       | T322D476K006A(2)             | 2.3                        | 6                          | CX05D476K                                      | T323D476K006A(2)  |
| 6             | 47.0      | D                       | T322D476M006A(2)             | 2.3                        | 6                          | CX05D476M                                      | T323D476M006A(2)  |
| 6             | 56.0      | D                       | T322D566(1)006A(2)           | 2.7                        | 6                          |                                                |                   |
| 6             | 68.0      | D                       | T322D686(1)006A(2)           | 3.3                        | 6                          |                                                |                   |
| 6             | 82.0      | E                       | T322E826(1)006A(2)           | 3.9                        | 8                          |                                                |                   |
| 6             | 100.0     | E                       | T322E107(1)006A(2)           | 4.8                        | 8                          |                                                |                   |
| 6             | 120.0     | E                       | T322E127(1)006A(2)           | 5.0                        | 8                          |                                                |                   |
| 6             | 150.0     | E                       | T322E157(1)006A(2)           | 5.0                        | 8                          |                                                |                   |
| 6             | 180.0     | E                       | T322E187(1)006A(2)           | 8.6                        | 8                          |                                                |                   |
| 6             | 220.0     | E                       | T322E227(1)006A(2)           | 10.0                       | 8                          |                                                |                   |
| 6             | 270.0     | F                       | T322F277(1)006A(2)           | 10.0                       | 8                          |                                                |                   |
| 6             | 330.0     | F                       | T322F337(1)006A(2)           | 10.0                       | 8                          |                                                |                   |
| 10            | 2.2       | A                       | T322A225(1)010A(2)           | 0.5                        | 4                          |                                                |                   |
| 10            | 2.7       | A                       | T322A275(1)010A(2)           | 0.5                        | 4                          |                                                |                   |
| 10            | 3.3       | A                       | T322A335J010A(2)             | 0.5                        | 4                          |                                                |                   |
| 10            | 3.3       | A                       | T322A335K010A(2)             | 0.5                        | 4                          | CX05F335K                                      | T323A335K010A(2)  |
| 10            | 3.3       | A                       | T322A335M010A(2)             | 0.5                        | 4                          | CX05F335M                                      | T323A335M010A(2)  |
| 10            | 3.9       | B                       | T322B395(1)010A(2)           | 0.5                        | 4                          |                                                |                   |
| 10            | 4.7       | B                       | T322B475(1)010A(2)           | 0.5                        | 4                          |                                                |                   |
| 10            | 5.6       | B                       | T322B565(1)010A(2)           | 0.5                        | 4                          |                                                |                   |
| 10            | 6.8       | B                       | T322B685(1)010A(2)           | 0.5                        | 6                          |                                                |                   |
| 10            | 8.2       | B                       | T322B825(1)010A(2)           | 0.7                        | 6                          |                                                |                   |
| 10            | 10.0      | B                       | T322B106J010A(2)             | 0.8                        | 6                          |                                                |                   |
| 10            | 10.0      | B                       | T322B106K010A(2)             | 0.8                        | 6                          | CX05F106K                                      | T323B106K010A(2)  |
| 10            | 10.0      | B                       | T322B106M010A(2)             | 0.8                        | 6                          | CX05F106M                                      | T323B106M010A(2)  |
| 10            | 12.0      | C                       | T322C126(1)010A(2)           | 1.0                        | 6                          |                                                |                   |
| 10            | 15.0      | C                       | T322C156(1)010A(2)           | 1.2                        | 6                          |                                                |                   |
| 10            | 18.0      | C                       | T322C186(1)010A(2)           | 1.4                        | 6                          |                                                |                   |
| 10            | 22.0      | C                       | T322C226J010A(2)             | 1.5                        | 6                          |                                                |                   |
| 10            | 22.0      | C                       | T322C226K010A(2)             | 1.5                        | 6                          | CX05F226K                                      | T323C226K010A(2)  |
| 10            | 22.0      | C                       | T322C226M010A(2)             | 1.5                        | 6                          | CX05F226M                                      | T323C226M010A(2)  |
| 10            | 27.0      | D                       | T322D276J010A(2)             | 2.2                        | 6                          |                                                |                   |
| 10            | 27.0      | D                       | T322D276K010A(2)             | 2.2                        | 6                          | CX05F276K                                      | T323D276K010A(2)  |
| 10            | 27.0      | D                       | T322D276M010A(2)             | 2.2                        | 6                          | CX05F276M                                      | T323D276M010A(2)  |
| 10            | 33.0      | D                       | T322D336J010A(2)             | 2.6                        | 6                          |                                                |                   |
| 10            | 33.0      | D                       | T322D336K010A(2)             | 2.6                        | 6                          | CX05F336K                                      | T323D336K010A(2)  |
| 10            | 33.0      | D                       | T322D336M010A(2)             | 2.6                        | 4                          | CX05F336M                                      | T323D336M010A(2)  |
| 10            | 39.0      | D                       | T322D396J010A(2)             | 3.1                        | 6                          |                                                |                   |
| 10            | 39.0      | D                       | T322D396K010A(2)             | 3.1                        | 6                          | CX05F396K                                      | T323D396K010A(2)  |
| 10            | 39.0      | D                       | T322D396M010A(2)             | 3.1                        | 6                          | CX05F396M                                      | T323D396M010A(2)  |
| 10            | 47.0      | D                       | T322D476J010A(2)             | 3.8                        | 6                          |                                                |                   |
| 10            | 47.0      | D                       | T322D476K010A(2)             | 3.8                        | 6                          | CX05F476K                                      | T323D476K010A(2)  |
| 10            | 47.0      | D                       | T322D476M010A(2)             | 3.8                        | 6                          | CX05F476M                                      | T323D476M010A(2)  |
| 10            | 56.0      | E                       | T322E566(1)010A(2)           | 4.4                        | 6                          |                                                |                   |
| 10            | 68.0      | E                       | T322E686(1)010A(2)           | 5.0                        | 6                          |                                                |                   |
| 10            | 82.0      | E                       | T322E826(1)010A(2)           | 5.0                        | 8                          |                                                |                   |
| 10            | 100.0     | E                       | T322E107(1)010A(2)           | 8.0                        | 8                          |                                                |                   |
| 10            | 120.0     | E                       | T322E127(1)010A(2)           | 9.6                        | 8                          |                                                |                   |
| 10            | 150.0     | E                       | T322E157(1)010A(2)           | 10.0                       | 8                          |                                                |                   |
| 10            | 180.0     | F                       | T322F187(1)010A(2)           | 10.0                       | 8                          |                                                |                   |
| 10            | 220.0     | F                       | T322F227(1)010A(2)           | 10.0                       | 8                          |                                                |                   |
| (V) 85°C      | µF        | Case Code/ Case Size    | (see below for part options) | µA @ 25°C<br>Max/5 Minimum | % @ 25°C<br>120 Hz Maximum | Military Part Number                           | KEMET Part Number |
| Rated Voltage | Rated Cap | Case Code/ Case Size    | KEMET Part Number            | DC Leakage                 | DF                         | CX01 & CX05 Capacitors per MIL-PRF-49137/1 & 5 |                   |

(1) To complete KEMET part number, insert M for ±20%, K for ±10% or J for 5%. Designates capacitance tolerance.

(2) To complete KEMET part number, insert T = 100% Matte Tin (Sn) Plated, S = Standard Solder coated (SnPb 5% Pb minimum). Designates termination finish.

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

| Rated Voltage | Rated Cap | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                 | DF                         | CX01 & CX05 Capacitors per MIL-PRF-49137/1 & 5 |                   |
|---------------|-----------|-------------------------|------------------------------|----------------------------|----------------------------|------------------------------------------------|-------------------|
| (V) 85°C      | µF        |                         | (See below for part options) | µA @ 25°C<br>Max/5 Minimum | % @ 25°C<br>120 Hz Maximum | Military Part Number                           | KEMET Part Number |
| 15            | 1.5       | A                       | T322A155(1)015A(2)           | 0.5                        | 4                          |                                                |                   |
| 15            | 1.8       | A                       | T322A185(1)015A(2)           | 0.5                        | 4                          |                                                |                   |
| 15            | 2.2       | A                       | T322A225J015A(2)             | 0.5                        | 4                          |                                                |                   |
| 15            | 2.2       | A                       | T322A225K015A(2)             | 0.5                        | 4                          | CX05H225K                                      | T323A225K015A(2)  |
| 15            | 2.2       | A                       | T322A225M015A(2)             | 0.5                        | 4                          | CX05H225M                                      | T323A225M015A(2)  |
| 15            | 2.7       | B                       | T322B275(1)015A(2)           | 0.5                        | 4                          |                                                |                   |
| 15            | 3.3       | B                       | T322B335(1)015A(2)           | 0.5                        | 4                          |                                                |                   |
| 15            | 3.9       | B                       | T322B395(1)015A(2)           | 0.5                        | 4                          |                                                |                   |
| 15            | 4.7       | B                       | T322B475(1)015A(2)           | 0.6                        | 4                          |                                                |                   |
| 15            | 5.6       | B                       | T322B565(1)015A(2)           | 0.7                        | 4                          |                                                |                   |
| 15            | 6.8       | B                       | T322B685J015A(2)             | 0.8                        | 6                          |                                                |                   |
| 15            | 6.8       | B                       | T322B685K015A(2)             | 0.8                        | 6                          | CX05H685K                                      | T323B685K015A(2)  |
| 15            | 6.8       | B                       | T322B685M015A(2)             | 0.8                        | 6                          | CX05H685M                                      | T323B685M015A(2)  |
| 15            | 8.2       | C                       | T322C825(1)015A(2)           | 1.0                        | 6                          |                                                |                   |
| 15            | 10.0      | C                       | T322C106(1)015A(2)           | 1.2                        | 6                          |                                                |                   |
| 15            | 12.0      | C                       | T322C126(1)015A(2)           | 1.4                        | 6                          |                                                |                   |
| 15            | 15.0      | C                       | T322C156J015A(2)             | 1.5                        | 6                          |                                                |                   |
| 15            | 15.0      | C                       | T322C156K015A(2)             | 1.5                        | 6                          | CX05H156K                                      | T323C156K015A(2)  |
| 15            | 15.0      | C                       | T322C156M015A(2)             | 1.5                        | 6                          | CX05H156M                                      | T323C156M015A(2)  |
| 15            | 18.0      | D                       | T322D186(1)015A(2)           | 2.2                        | 6                          |                                                |                   |
| 15            | 22.0      | D                       | T322D226J015A(2)             | 2.6                        | 6                          |                                                |                   |
| 15            | 22.0      | D                       | T322D226K015A(2)             | 2.6                        | 6                          | CX06H226K                                      | T323D226K015A(2)  |
| 15            | 22.0      | D                       | T322D226M015A(2)             | 2.6                        | 6                          | CX06H226M                                      | T323D226M015A(2)  |
| 15            | 27.0      | D                       | T322D276(1)015A(2)           | 3.2                        | 6                          |                                                |                   |
| 15            | 33.0      | D                       | T322D336J015A(2)             | 4.0                        | 6                          |                                                |                   |
| 15            | 33.0      | D                       | T322D336K015A(2)             | 4.0                        | 6                          | CX05H336K                                      | T323D336K015A(2)  |
| 15            | 33.0      | D                       | T322D336M015A(2)             | 4.0                        | 6                          | CX05H336M                                      | T323D336M015A(2)  |
| 15            | 39.0      | E                       | T322E396(1)015A(2)           | 4.7                        | 6                          |                                                |                   |
| 15            | 47.0      | E                       | T322E476(1)015A(2)           | 5.0                        | 6                          |                                                |                   |
| 15            | 56.0      | E                       | T322E566(1)015A(2)           | 6.7                        | 6                          |                                                |                   |
| 15            | 68.0      | E                       | T322E686(1)015A(2)           | 8.2                        | 6                          |                                                |                   |
| 15            | 82.0      | E                       | T322E826(1)015A(2)           | 9.8                        | 8                          |                                                |                   |
| 15            | 100.0     | E                       | T322E107(1)015A(2)           | 10.0                       | 8                          |                                                |                   |
| 15            | 120.0     | F                       | T322F127(1)015A(2)           | 10.0                       | 8                          |                                                |                   |
| 15            | 150.0     | F                       | T322F157(1)015A(2)           | 10.0                       | 8                          |                                                |                   |
| 20            | 1.0       | A                       | T322A105(1)020A(2)           | 0.5                        | 4                          |                                                |                   |
| 20            | 1.2       | A                       | T322A125(1)020A(2)           | 0.5                        | 4                          |                                                |                   |
| 20            | 1.5       | A                       | T322A155J020A(2)             | 0.5                        | 4                          |                                                |                   |
| 20            | 1.5       | A                       | T322A155K020A(2)             | 0.5                        | 4                          | CX05J155K                                      | T323A155K020A(2)  |
| 20            | 1.5       | A                       | T322A155M020A(2)             | 0.5                        | 4                          | CX05J155M                                      | T323A155M020A(2)  |
| 20            | 1.8       | B                       | T322B185(1)020A(2)           | 0.5                        | 4                          |                                                |                   |
| 20            | 2.2       | B                       | T322B225(1)020A(2)           | 0.5                        | 4                          |                                                |                   |
| 20            | 2.7       | B                       | T322B275(1)020A(2)           | 0.5                        | 4                          |                                                |                   |
| 20            | 3.3       | B                       | T322B335(1)020A(2)           | 0.5                        | 4                          |                                                |                   |
| 20            | 3.9       | B                       | T322B395(1)020A(2)           | 0.6                        | 4                          |                                                |                   |
| 20            | 4.7       | B                       | T322B475J020A(2)             | 0.8                        | 4                          |                                                |                   |
| 20            | 4.7       | B                       | T322B475K020A(2)             | 0.8                        | 4                          | CX05J475K                                      | T323B475K020A(2)  |
| 20            | 4.7       | B                       | T322B475M020A(2)             | 0.8                        | 4                          | CX05J475M                                      | T323B475M020A(2)  |
| 20            | 5.6       | C                       | T322C565(1)020A(2)           | 0.9                        | 4                          |                                                |                   |
| 20            | 6.8       | C                       | T322C685(1)020A(2)           | 1.1                        | 6                          |                                                |                   |
| 20            | 8.2       | C                       | T322C825(1)020A(2)           | 1.3                        | 6                          |                                                |                   |
| 20            | 10.0      | C                       | T322C106(1)020A(2)           | 1.6                        | 6                          |                                                |                   |
| 20            | 12.0      | D                       | T322D126J020A(2)             | 1.9                        | 6                          |                                                |                   |
| 20            | 12.0      | D                       | T322D126K020A(2)             | 1.9                        | 6                          | CX05J126K                                      | T323D126K020A(2)  |
| 20            | 12.0      | D                       | T322D126M020A(2)             | 1.9                        | 6                          | CX05J126M                                      | T323D126M020A(2)  |
| (V) 85°C      | µF        | Case Code/ Case Size    | (see below for part options) | µA @ 25°C<br>Max/5 Minimum | % @ 25°C<br>120 Hz Maximum | Military Part Number                           | KEMET Part Number |
| Rated Voltage | Rated Cap | Case Code/ Case Size    | KEMET Part Number            | DC Leakage                 | DF                         | CX01 & CX05 Capacitors per MIL-PRF-49137/1 & 5 |                   |

(1) To complete KEMET part number, insert M for ±20%, K for ±10% or J for 5%. Designates capacitance tolerance.

(2) To complete KEMET part number, insert T = 100% Matte Tin (Sn) Plated, S = Standard Solder coated (SnPb 5% Pb minimum). Designates termination finish.

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

| Rated Voltage | Rated Cap | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                 | DF                         | CX01 & CX05 Capacitors per MIL–PRF–49137/1 & 5 |                                      |
|---------------|-----------|-------------------------|------------------------------|----------------------------|----------------------------|------------------------------------------------|--------------------------------------|
| (V) 85°C      | µF        |                         | (See below for part options) | µA @ 25°C<br>Max/5 Minimum | % @ 25°C<br>120 Hz Maximum | Military Part Number                           | KEMET Part Number                    |
| 20            | 15.0      | D                       | T322D156J020A(2)             | 2.4                        | 6                          | CX05J156K<br>CX05J156M                         | T323D156K020A(2)<br>T323D156M020A(2) |
| 20            | 15.0      | D                       | T322D156K020A(2)             | 2.4                        | 6                          |                                                |                                      |
| 20            | 15.0      | D                       | T322D156M020A(2)             | 2.4                        | 6                          |                                                |                                      |
| 20            | 18.0      | D                       | T322D186(1)020A(2)           | 2.9                        | 6                          |                                                |                                      |
| 20            | 22.0      | D                       | T322D226(1)020A(2)           | 3.5                        | 6                          |                                                |                                      |
| 20            | 27.0      | E                       | T322E276(1)20A(2)            | 4.3                        | 6                          |                                                |                                      |
| 20            | 33.0      | E                       | T322E336(1)020A(2)           | 5.0                        | 6                          |                                                |                                      |
| 20            | 39.0      | E                       | T322E396(1)020A(2)           | 6.2                        | 6                          |                                                |                                      |
| 20            | 47.0      | E                       | T322E476(1)20A(2)            | 7.5                        | 6                          |                                                |                                      |
| 20            | 56.0      | E                       | T322E566(1)020A(2)           | 8.9                        | 6                          |                                                |                                      |
| 20            | 68.0      | E                       | T322E686(1)020A(2)           | 10.0                       | 6                          |                                                |                                      |
| 20            | 82.0      | F                       | T322F826(1)020A(2)           | 10.0                       | 8                          |                                                |                                      |
| 20            | 100.0     | F                       | T322F107(1)020A(2)           | 10.0                       | 8                          |                                                |                                      |
| 25            | 0.47      | A                       | T322A474(1)025A(2)           | 0.5                        | 3                          |                                                |                                      |
| 25            | 0.56      | A                       | T322A564(1)025A(2)           | 0.5                        | 3                          |                                                |                                      |
| 25            | 0.68      | A                       | T322A684(1)025A(2)           | 0.5                        | 3                          | CX05K105K<br>CX05K105M                         | T323A105K025A(2)<br>T323A105M025A(2) |
| 25            | 0.82      | A                       | T322A824(1)025A(2)           | 0.5                        | 3                          |                                                |                                      |
| 25            | 1.0       | A                       | T322A105J025A(2)             | 0.5                        | 3                          |                                                |                                      |
| 25            | 1.0       | A                       | T322A105K025A(2)             | 0.5                        | 3                          |                                                |                                      |
| 25            | 1.0       | A                       | T322A105M025A(2)             | 0.5                        | 3                          |                                                |                                      |
| 25            | 1.2       | B                       | T322B125(1)025A(2)           | 0.5                        | 3                          | CX05K155K<br>CX05K155M                         | T323B155K025A(2)<br>T323B155M025A(2) |
| 25            | 1.5       | B                       | T322B155J025A(2)             | 0.5                        | 3                          |                                                |                                      |
| 25            | 1.5       | B                       | T322B155K025A(2)             | 0.5                        | 3                          |                                                |                                      |
| 25            | 1.5       | B                       | T322B155M025A(2)             | 0.5                        | 3                          |                                                |                                      |
| 25            | 1.8       | B                       | T322B185J025A(2)             | 0.5                        | 3                          |                                                |                                      |
| 25            | 1.8       | B                       | T322B185K025A(2)             | 0.5                        | 3                          | CX05K185K<br>CX05K185M                         | T323B185K025A(2)<br>T323B185M025A(2) |
| 25            | 1.8       | B                       | T322B185M025A(2)             | 0.5                        | 3                          |                                                |                                      |
| 25            | 2.2       | B                       | T322B225J025A(2)             | 0.5                        | 3                          | CK05K225K<br>CK05K225M                         | T323B225K025A(2)<br>T323B225M025A(2) |
| 25            | 2.2       | B                       | T322B225K025A(2)             | 0.5                        | 3                          |                                                |                                      |
| 25            | 2.2       | B                       | T322B225M025A(2)             | 0.5                        | 3                          |                                                |                                      |
| 25            | 2.7       | B                       | T322B275(1)025A(2)           | 0.5                        | 3                          | CX05K335K<br>CX05K335M                         | T323B335K025A(2)<br>T323B335M025A(2) |
| 25            | 3.3       | B                       | T322B335J025A(2)             | 0.7                        | 3                          |                                                |                                      |
| 25            | 3.3       | B                       | T322B335K025A(2)             | 0.7                        | 3                          |                                                |                                      |
| 25            | 3.3       | B                       | T322B335M025A(2)             | 0.7                        | 3                          |                                                |                                      |
| 25            | 3.9       | C                       | T322C395(1)025A(2)           | 0.8                        | 3                          |                                                |                                      |
| 25            | 4.7       | C                       | T322C475(1)025A(2)           | 0.9                        | 4                          | CX05K685K<br>CX05K685M                         | T323C685K025A(2)<br>T323C685M025A(2) |
| 25            | 5.6       | C                       | T322C565(1)025A(2)           | 1.1                        | 4                          |                                                |                                      |
| 25            | 6.8       | C                       | T322C685J025A(2)             | 1.4                        | 4                          |                                                |                                      |
| 25            | 6.8       | C                       | T322C685K025A(2)             | 1.4                        | 4                          |                                                |                                      |
| 25            | 6.8       | C                       | T322C685M025A(2)             | 1.4                        | 4                          |                                                |                                      |
| 25            | 8.2       | C                       | T322C825(1)025A(2)           | 1.4                        | 4                          | CX05K106K<br>CX05K106M                         | T323C106K025A(2)<br>T323C106M025A(2) |
| 25            | 10.0      | C                       | T322C106J025A(2)             | 1.5                        | 4                          |                                                |                                      |
| 25            | 10.0      | C                       | T322C106K025A(2)             | 1.5                        | 4                          |                                                |                                      |
| 25            | 10.0      | C                       | T322C106M025A(2)             | 1.5                        | 4                          |                                                |                                      |
| 25            | 12.0      | D                       | T322D126(1)025A(2)           | 2.4                        | 4                          |                                                |                                      |
| 25            | 15.0      | D                       | T322D156(1)025A(2)           | 3.0                        | 4                          |                                                |                                      |
| 25            | 18.0      | E                       | T322E186(1)025A(2)           | 3.6                        | 6                          |                                                |                                      |
| 25            | 22.0      | E                       | T322E226(1)025A(2)           | 4.4                        | 6                          |                                                |                                      |
| 25            | 27.0      | E                       | T322E276(1)025A(2)           | 5.4                        | 6                          |                                                |                                      |
| 25            | 33.0      | E                       | T322E336(1)025A(2)           | 6.6                        | 6                          |                                                |                                      |
| 25            | 39.0      | E                       | T322E396(1)025A(2)           | 7.9                        | 6                          |                                                |                                      |
| 25            | 47.0      | E                       | T322E476(1)025A(2)           | 9.4                        | 6                          |                                                |                                      |
| 25            | 56.0      | F                       | T322F566(1)025A(2)           | 10.0                       | 6                          |                                                |                                      |
| 25            | 68.0      | F                       | T322F686(1)025A(2)           | 10.0                       | 6                          |                                                |                                      |
| 35            | 0.1       | A                       | T322A104(10035A(2)           | 0.5                        | 3                          |                                                |                                      |
| (V) 85°C      | µF        | Case Code/ Case Size    | (see below for part options) | µA @ 25°C<br>Max/5 Minimum | % @ 25°C<br>120 Hz Maximum | Military Part Number                           | KEMET Part Number                    |
| Rated Voltage | Rated Cap | Case Code/ Case Size    | KEMET Part Number            | DC Leakage                 | DF                         | CX01 & CX05 Capacitors per MIL–PRF–49137/1 & 5 |                                      |

(1) To complete KEMET part number, insert M for ±20%, K for ±10% or J for 5%. Designates capacitance tolerance.

(2) To complete KEMET part number, insert T = 100% Matte Tin (Sn) Plated, S = Standard Solder coated (SnPb 5% Pb minimum). Designates termination finish.

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

| Rated Voltage | Rated Cap | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                 | DF                         | CX01 & CX05 Capacitors per MIL–PRF–49137/1 & 5 |                   |
|---------------|-----------|-------------------------|------------------------------|----------------------------|----------------------------|------------------------------------------------|-------------------|
| (V) 85°C      | µF        |                         | (See below for part options) | µA @ 25°C<br>Max/5 Minimum | % @ 25°C<br>120 Hz Maximum | Military Part Number                           | KEMET Part Number |
| 35            | 0.12      | A                       | T322A124(1)035A(2)           | 0.5                        | 3                          |                                                |                   |
| 35            | 0.15      | A                       | T322A154(1)035A(2)           | 0.5                        | 3                          |                                                |                   |
| 35            | 0.18      | A                       | T322A184(1)035A(2)           | 0.5                        | 3                          |                                                |                   |
| 35            | 0.22      | A                       | T322A224(1)035A(2)           | 0.5                        | 3                          |                                                |                   |
| 35            | 0.27      | A                       | T322A274(1)035A(2)           | 0.5                        | 3                          |                                                |                   |
| 35            | 0.33      | A                       | T322A334J035A(2)             | 0.5                        | 3                          |                                                |                   |
| 35            | 0.33      | A                       | T322A334K035A(2)             | 0.5                        | 3                          | CX05M334K                                      | T323A334K035A(2)  |
| 35            | 0.33      | A                       | T322A334M035A(2)             | 0.5                        | 3                          | CX05M334M                                      | T323A334M035A(2)  |
| 35            | 0.39      | A                       | T322A394(1)035A(2)           | 0.5                        | 3                          |                                                |                   |
| 35            | 0.47      | A                       | T322A474J035A(2)             | 0.5                        | 3                          |                                                |                   |
| 35            | 0.47      | A                       | T322A474K035A(2)             | 0.5                        | 3                          | CX05M474K                                      | T323A474K035A(2)  |
| 35            | 0.47      | A                       | T322A474M035A(2)             | 0.5                        | 3                          | CX05M474M                                      | T323A474M035A(2)  |
| 35            | 0.56      | B                       | T322B564J035A(2)             | 0.5                        | 3                          |                                                |                   |
| 35            | 0.56      | B                       | T322B564K035A(2)             | 0.5                        | 3                          | CX01M564K                                      | T323B564K035A(2)  |
| 35            | 0.56      | B                       | T322B564M035A(2)             | 0.5                        | 3                          | CX01M564M                                      | T323B564M035A(2)  |
| 35            | 0.68      | B                       | T322B684J035A(2)             | 0.5                        | 3                          |                                                |                   |
| 35            | 0.68      | B                       | T322B684K035A(2)             | 0.5                        | 3                          | CX01M684K                                      | T323B684K035A(2)  |
| 35            | 0.68      | B                       | T322B684M035A(2)             | 0.5                        | 3                          | CX01M684M                                      | T323B684M035A(2)  |
| 35            | 0.82      | B                       | T322B824J035A(2)             | 0.5                        | 3                          |                                                |                   |
| 35            | 0.82      | B                       | T322B824K035A(2)             | 0.5                        | 3                          | CX01M824K                                      | T323B824K035A(2)  |
| 35            | 0.82      | B                       | T322B824M035A(2)             | 0.5                        | 3                          | CX01M824M                                      | T323B824M035A(2)  |
| 35            | 1.0       | B                       | T322B105J035A(2)             | 0.5                        | 3                          |                                                |                   |
| 35            | 1.0       | B                       | T322B105K035A(2)             | 0.5                        | 3                          | CX01M105K                                      | T323B105K035A(2)  |
| 35            | 1.0       | B                       | T322B105M035A(2)             | 0.5                        | 3                          | CX01M105M                                      | T323B105M035A(2)  |
| 35            | 1.2       | B                       | T322B125J035A(2)             | 0.5                        | 3                          |                                                |                   |
| 35            | 1.2       | B                       | T322B125K035A(2)             | 0.5                        | 3                          | CX01M125K                                      | T323B125K035A(2)  |
| 35            | 1.2       | B                       | T322B125M035A(2)             | 0.5                        | 3                          | CX01M125M                                      | T323B125M035A(2)  |
| 35            | 1.5       | B                       | T322B155J035A(2)             | 0.5                        | 3                          |                                                |                   |
| 35            | 1.5       | B                       | T322B155K035A(2)             | 0.5                        | 3                          | CX05M155K                                      | T323B155K035A(2)  |
| 35            | 1.5       | B                       | T322B155M035A(2)             | 0.5                        | 3                          | CX05M155M                                      | T323B155M035A(2)  |
| 35            | 1.8       | C                       | T322C185(1)035A(2)           | 0.5                        | 3                          |                                                |                   |
| 35            | 2.2       | C                       | T322C225(1)035A(2)           | 0.6                        | 3                          |                                                |                   |
| 35            | 2.7       | C                       | T322C275(1)035A(2)           | 0.8                        | 3                          |                                                |                   |
| 35            | 3.3       | C                       | T322C335J035A(2)             | 0.9                        | 4                          |                                                |                   |
| 35            | 3.3       | C                       | T322C335K035A(2)             | 0.9                        | 4                          | CX05M335K                                      | T323C335K035A(2)  |
| 35            | 3.3       | C                       | T322C335M035A(2)             | 0.9                        | 4                          | CX05M335M                                      | T323C335M035A(2)  |
| 35            | 3.9       | C                       | T322C395J035A(2)             | 1.1                        | 4                          |                                                |                   |
| 35            | 3.9       | C                       | T322C395K035A(2)             | 1.1                        | 4                          | CX05M395K                                      | T323C395K035A(2)  |
| 35            | 3.9       | C                       | T322C395M035A(2)             | 1.1                        | 4                          | CX05M395M                                      | T323C395M035A(2)  |
| 35            | 4.7       | C                       | T322C475J035A(2)             | 1.3                        | 4                          |                                                |                   |
| 35            | 4.7       | C                       | T322C475K035A(2)             | 1.3                        | 4                          | CX05M475K                                      | T323C475K035A(2)  |
| 35            | 4.7       | C                       | T322C475M035A(2)             | 1.3                        | 4                          | CX05M475M                                      | T323C475M035A(2)  |
| 35            | 5.6       | D                       | T322C565M035A(2)             | 1.6                        | 4                          |                                                |                   |
| 35            | 6.8       | D                       | T322D685J035A(2)             | 1.9                        | 4                          |                                                |                   |
| 35            | 6.8       | D                       | T322D685K035A(2)             | 1.9                        | 4                          | CX05M685K                                      | T323D685K035A(2)  |
| 35            | 6.8       | D                       | T322D685M035A(2)             | 1.9                        | 4                          | CX05M685M                                      | T323D685M035A(2)  |
| 35            | 8.2       | D                       | T322D825(1)035A(2)           | 2.3                        | 4                          |                                                |                   |
| 35            | 10.0      | D                       | T322D106J035A(2)             | 2.8                        | 4                          |                                                |                   |
| 35            | 10.0      | D                       | T322D106K035A(2)             | 2.8                        | 4                          | CX05M106K                                      | T323D106K035A(2)  |
| 35            | 10.0      | D                       | T322D106M035A(2)             | 2.8                        | 4                          | CX05M106M                                      | T323D106M035A(2)  |
| 35            | 12.0      | E                       | T322E126(1)035A(2)           | 3.3                        | 4                          |                                                |                   |
| 35            | 15.0      | E                       | T322E156(1)035A(2)           | 4.2                        | 6                          |                                                |                   |
| 35            | 18.0      | E                       | T322E186(1)035A(2)           | 5.0                        | 6                          |                                                |                   |
| 35            | 22.0      | E                       | T322E226(1)035A(2)           | 6.2                        | 6                          |                                                |                   |
| 35            | 27.0      | E                       | T322E276(1)035A(2)           | 7.5                        | 6                          |                                                |                   |
| (V) 85°C      | µF        | Case Code/ Case Size    | (see below for part options) | µA @ 25°C<br>Max/5 Minimum | % @ 25°C<br>120 Hz Maximum | Military Part Number                           | KEMET Part Number |
| Rated Voltage | Rated Cap | Case Code/ Case Size    | KEMET Part Number            | DC Leakage                 | DF                         | CX01 & CX05 Capacitors per MIL–PRF–49137/1 & 5 |                   |

(1) To complete KEMET part number, insert M for ±20%, K for ±10% or J for 5%. Designates capacitance tolerance.

(2) To complete KEMET part number, insert T = 100% Matte Tin (Sn) Plated, S = Standard Solder coated (SnPb 5% Pb minimum). Designates termination finish.



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

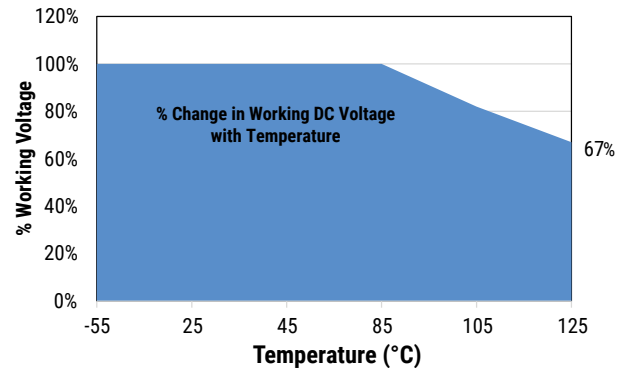
| Rated Voltage | Rated Cap | Case Code/<br>Case Size | KEMET Part Number            | DC Leakage                 | DF                         | CX01 & CX05 Capacitors per MIL-PRF-49137/1 & 5 |                   |
|---------------|-----------|-------------------------|------------------------------|----------------------------|----------------------------|------------------------------------------------|-------------------|
| (V) 85°C      | µF        |                         | (See below for part options) | µA @ 25°C<br>Max/5 Minimum | % @ 25°C<br>120 Hz Maximum | Military Part Number                           | KEMET Part Number |
| 35            | 33.0      | E                       | T322E336(1)035A(2)           | 9.2                        | 6                          |                                                |                   |
| 35            | 39.0      | F                       | T322F396(1)035A(2)           | 10.0                       | 6                          |                                                |                   |
| 35            | 47.0      | F                       | T322F476(1)035A(2)           | 10.0                       | 6                          |                                                |                   |
| 50            | 0.1       | A                       | T322A104J050A(2)             | 0.5                        | 3                          |                                                |                   |
| 50            | 0.1       | A                       | T322A104K050A(2)             | 0.5                        | 3                          | CX05N104K                                      | T323A104K050A(2)  |
| 50            | 0.1       | A                       | T322A104M050A(2)             | 0.5                        | 3                          | CX05N104M                                      | T323A104M050A(2)  |
| 50            | 0.12      | A                       | T322A124(1)050A(2)           | 0.5                        | 3                          |                                                |                   |
| 50            | 0.15      | A                       | T322A154J050A(2)             | 0.5                        | 3                          |                                                |                   |
| 50            | 0.15      | A                       | T322A154K050A(2)             | 0.5                        | 3                          | CX05N154K                                      | T323A154K050A(2)  |
| 50            | 0.15      | A                       | T322A154M050A(2)             | 0.5                        | 3                          | CX05N154M                                      | T323A154M050A(2)  |
| 50            | 0.18      | A                       | T322A184(1)050A(2)           | 0.5                        | 3                          |                                                |                   |
| 50            | 0.22      | A                       | T322A224J050A(2)             | 0.5                        | 3                          |                                                |                   |
| 50            | 0.22      | A                       | T322A224K050A(2)             | 0.5                        | 3                          | CX05N224K                                      | T323A224K050A(2)  |
| 50            | 0.22      | A                       | T322A224M050A(2)             | 0.5                        | 3                          | CX05N224M                                      | T323A224M050A(2)  |
| 50            | 0.27      | A                       | T322A274(1)050A(2)           | 0.5                        | 3                          |                                                |                   |
| 50            | 0.33      | B                       | T322B334J050A(2)             | 0.5                        | 3                          |                                                |                   |
| 50            | 0.33      | B                       | T322B334K050A(2)             | 0.5                        | 3                          | CX05N334K                                      | T323B334K050A(2)  |
| 50            | 0.33      | B                       | T322B334M050A(2)             | 0.5                        | 3                          | CX05N334M                                      | T323B334M050A(2)  |
| 50            | 0.39      | B                       | T322B394J050(2)              | 0.5                        | 3                          |                                                |                   |
| 50            | 0.39      | B                       | T322B394K050A(2)             | 0.5                        | 3                          | CX05N394K                                      | T323B394K050A(2)  |
| 50            | 0.39      | B                       | T322B394M050A(2)             | 0.5                        | 3                          | CX05N394M                                      | T323B394M050A(2)  |
| 50            | 0.47      | B                       | T322B474J050A(2)             | 0.5                        | 3                          |                                                |                   |
| 50            | 0.47      | B                       | T322B474K050A(2)             | 0.5                        | 3                          | CX05N474K                                      | T323B474K050A(2)  |
| 50            | 0.47      | B                       | T322B474M050A(2)             | 0.5                        | 3                          | CX05N474M                                      | T323B474M050A(2)  |
| 50            | 0.56      | B                       | T322B564(1)050A(2)           | 0.5                        | 3                          |                                                |                   |
| 50            | 0.68      | B                       | T322B684J050A(2)             | 0.5                        | 3                          |                                                |                   |
| 50            | 0.68      | B                       | T322B684K050A(2)             | 0.5                        | 3                          | CX05N684K                                      | T323B684K050A(2)  |
| 50            | 0.68      | B                       | T322B684M050A(2)             | 0.5                        | 3                          | CX05N684M                                      | T323B684M050A(2)  |
| 50            | 0.82      | B                       | T322B824(1)050A(2)           | 0.5                        | 3                          |                                                |                   |
| 50            | 1.0       | B                       | T322B105J050A(2)             | 0.5                        | 3                          |                                                |                   |
| 50            | 1.0       | B                       | T322B105K050A(2)             | 0.5                        | 3                          | CX05N105K                                      | T323B105K050A(2)  |
| 50            | 1.0       | B                       | T322B105M050A(2)             | 0.5                        | 3                          | CX05N105M                                      | T323B105M050A(2)  |
| 50            | 1.2       | C                       | T322C125(1)050A(2)           | 0.5                        | 3                          |                                                |                   |
| 50            | 1.5       | C                       | T322C155J050A(2)             | 0.6                        | 4                          |                                                |                   |
| 50            | 1.5       | C                       | T322C155K050A(2)             | 0.6                        | 4                          | CX05N155K                                      | T323C155K050A(2)  |
| 50            | 1.5       | C                       | T322C155M050A(2)             | 0.6                        | 4                          | CX05N155M                                      | T323C155M050A(2)  |
| 50            | 1.8       | C                       | T322C185(1)050A(2)           | 0.7                        | 4                          |                                                |                   |
| 50            | 2.2       | C                       | T322C225J050A(2)             | 0.9                        | 4                          |                                                |                   |
| 50            | 2.2       | C                       | T322C225K050A(2)             | 0.9                        | 4                          | CX05N225K                                      | T323C225K050A(2)  |
| 50            | 2.2       | C                       | T322C225M050A(2)             | 0.9                        | 4                          | CX05N225M                                      | T323C225M050A(2)  |
| 50            | 2.7       | D                       | T322D275(1)050A(2)           | 1.1                        | 4                          |                                                |                   |
| 50            | 3.3       | D                       | T322D335J050A(2)             | 1.3                        | 4                          |                                                |                   |
| 50            | 3.3       | D                       | T322D335K050A(2)             | 1.3                        | 4                          | CX05N335K                                      | T323D335K050A(2)  |
| 50            | 3.3       | D                       | T322D335M050A(2)             | 1.3                        | 4                          | CX05N335M                                      | T323D335M050A(2)  |
| 50            | 3.9       | D                       | T322D395(1)050A(2)           | 1.6                        | 4                          |                                                |                   |
| 50            | 4.7       | D                       | T322D475J050A(2)             | 1.9                        | 4                          |                                                |                   |
| 50            | 4.7       | D                       | T322D475K050A(2)             | 1.9                        | 4                          | CX05N475K                                      | T323D475K050A(2)  |
| 50            | 4.7       | D                       | T322D475M050A(2)             | 1.9                        | 4                          | CX05N475M                                      | T323D475M050A(2)  |
| 50            | 5.6       | E                       | T322E565(1)050A(2)           | 2.2                        | 4                          |                                                |                   |
| 50            | 6.8       | E                       | T322E685(1)050A(2)           | 2.7                        | 4                          |                                                |                   |
| 50            | 8.2       | E                       | T322E825(1)050A(2)           | 3.2                        | 4                          |                                                |                   |
| 50            | 10.0      | E                       | T322E106(1)050A(2)           | 4.0                        | 6                          |                                                |                   |
| 50            | 12.0      | F                       | T322F126(1)050A(2)           | 4.8                        | 6                          |                                                |                   |
| 50            | 15.0      | F                       | T322F156(1)050A(2)           | 6.0                        | 6                          |                                                |                   |
| 50            | 18.0      | F                       | T322F186(1)050A(2)           | 7.2                        | 6                          |                                                |                   |
| 50            | 22.0      | F                       | T322F226(1)050A(2)           | 8.8                        | 6                          |                                                |                   |
| (V) 85°C      | µF        | Case Code/ Case Size    | (see below for part options) | µA @ 25°C<br>Max/5 Minimum | % @ 25°C<br>120 Hz Maximum | Military Part Number                           | KEMET Part Number |
| Rated Voltage | Rated Cap |                         | KEMET Part Number            | DC Leakage                 | DF                         | CX01 & CX05 Capacitors per MIL-PRF-49137/1 & 5 |                   |

(1) To complete KEMET part number, insert M for ±20%, K for ±10% or J for 5%. Designates capacitance tolerance.

(2) To complete KEMET part number, insert T = 100% Matte Tin (Sn) Plated, S = Standard Solder coated (SnPb 5% Pb minimum). Designates termination finish.

## Recommended Voltage Derating Guidelines

|                                                 | -55°C to 85°C | 85°C to 125°C |
|-------------------------------------------------|---------------|---------------|
| % Change in Working DC Voltage with Temperature | $V_R$         | 66% of $V_R$  |



## Ripple Current/Ripple Voltage

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

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

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

| Temperature Compensation Multipliers<br>for Maximum Power Dissipation |                           |                            |
|-----------------------------------------------------------------------|---------------------------|----------------------------|
| $T \leq 25^\circ\text{C}$                                             | $T \leq 85^\circ\text{C}$ | $T \leq 125^\circ\text{C}$ |
| 1.00                                                                  | 0.90                      | 0.40                       |

$T$  = Environmental Temperature

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

| Case Size | Maximum Power Dissipation<br>( $P_{max}$ ) Watts at 25°C |
|-----------|----------------------------------------------------------|
| A         | 0.060                                                    |
| B         | 0.070                                                    |
| C         | 0.080                                                    |
| D         | 0.090                                                    |
| E         | 0.100                                                    |
| F         | 0.110                                                    |

Using the  $P_{max}$  of the device, the maximum allowable rms ripple current or voltage may be determined.

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

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

$I$  = rms ripple current (amperes)

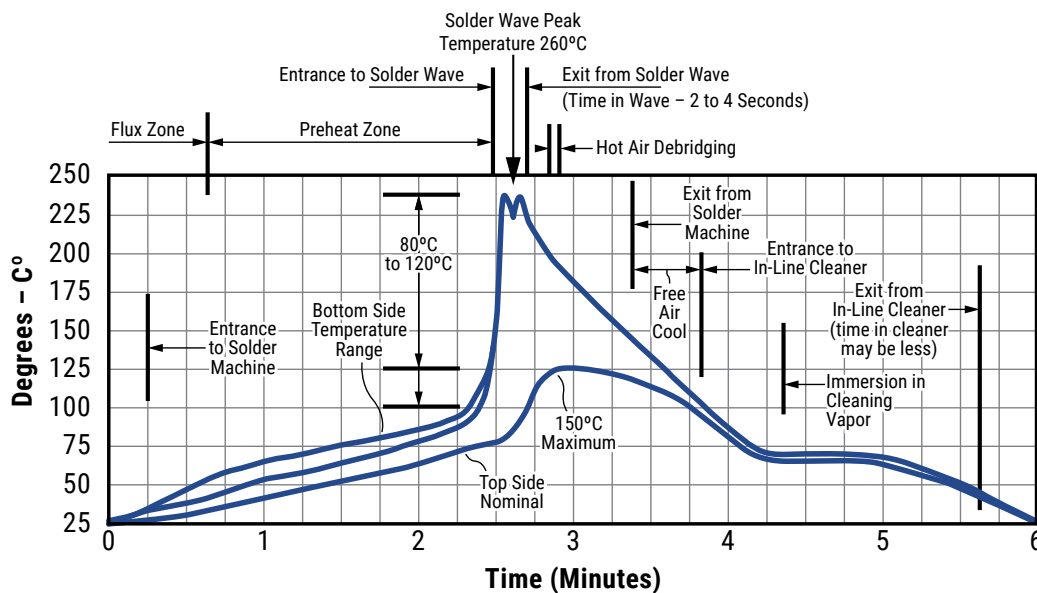
$E$  = rms ripple voltage (volts)

$P_{max}$  = maximum power dissipation (watts)

$R$  = ESR at specified frequency (ohms)

$Z$  = Impedance at specified frequency (ohms)

## Optimum Solder Wave Profile



## Capacitor Marking

105 M  
+ 25 K  
1535

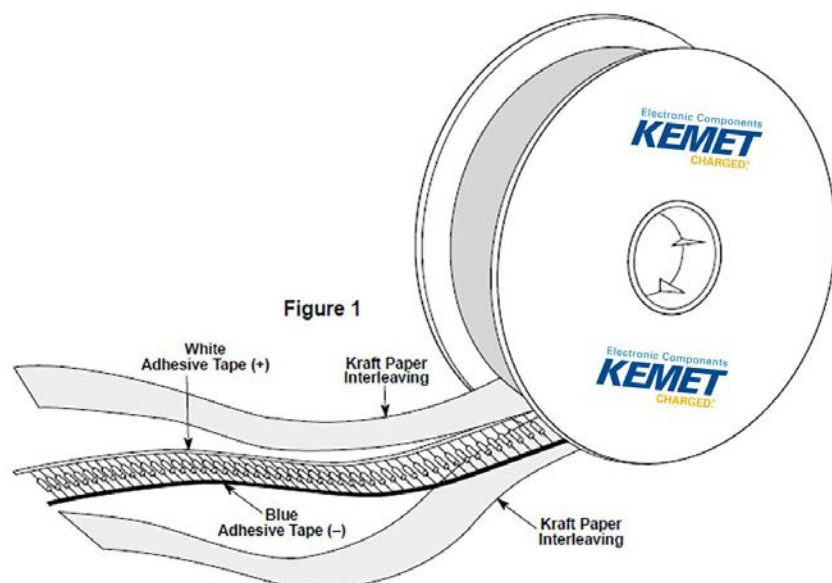
- ← Capacitance Code, Tolerance
- ← Polarity, Voltage & KEMET trademark
- ← Date Code (YY/WW)

## Storage

Tantalum hermetically sealed capacitors should be stored in normal working environments. While the capacitors themselves are quite robust in other environments, solderability will be degraded by exposure to high temperatures, high humidity, corrosive atmospheres, and long term storage. In addition, packaging materials will be degraded by high temperature – reels may soften or warp and tape peel force may increase. KEMET recommends that maximum storage temperature not exceed 40°C and maximum storage humidity not exceed 60% relative humidity. Temperature fluctuations should be minimized to avoid condensation on the parts and atmospheres should be free of chlorine and sulphur bearing compounds. For optimized solderability capacitors stock should be used promptly, preferably within three years of receipt.

## Tape & Reel Packaging Information

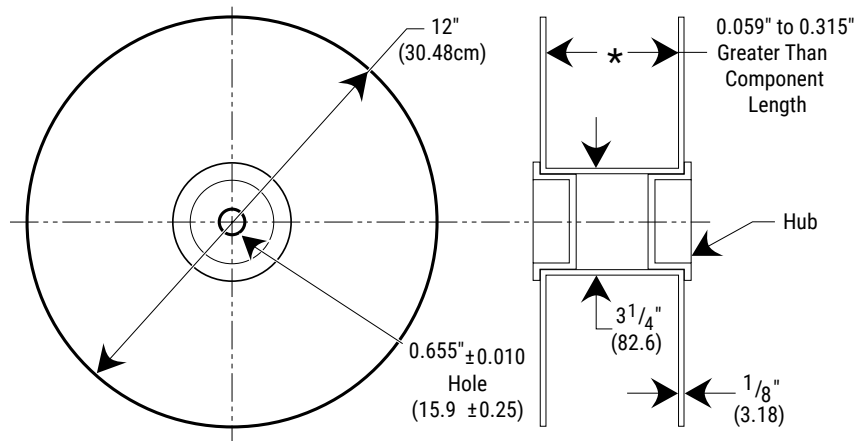
KEMET offers standard reeling of Solid Tantalum Capacitors for automatic insertion or lead forming machines per EIA Specification RS-296E.



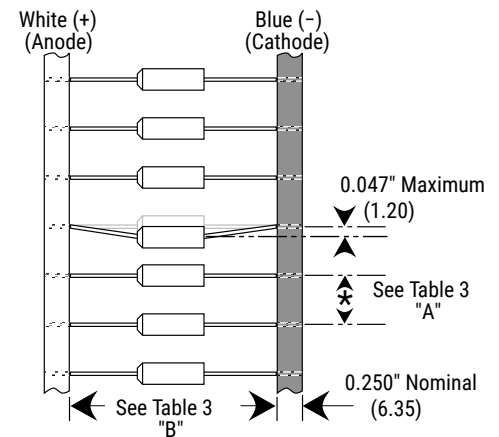
**Table 2 – Packaging Quantity**

| Case Size | Standard Bulk Quantity | Standard Reel Quantity | Reel C-Spec | Ammo Pack Quantity | Ammo Pack C-Spec |
|-----------|------------------------|------------------------|-------------|--------------------|------------------|
| A         | 300                    | 4,500                  | C-7200      | 2,000              | C-7293           |
| B         | 250                    | 4,000                  |             | 2,000              | Class I          |
| C         | 100                    | 2,500                  |             | 1,000              | C-7442           |
| D         | 100                    | 2,500                  |             | 1,000              | Class II         |
| E         | 100                    | 500                    |             | 250                | C-7443           |
| F         | 100                    | 500                    |             | 250                | Class III        |

**Figure 2**



**Figure 3**



**Table 3 – Tape Dimensions**

| Component Body Diameter            | Component Pitch "A" | Inside Tape Spacing "B" ±1.5 mm (0.059") |           |         |
|------------------------------------|---------------------|------------------------------------------|-----------|---------|
|                                    |                     | I                                        | II        | III     |
| 0" (0 mm) to 0.197" (5 mm)         | 0.200" or (5 mm)    | 2.062"                                   | 2.500"    | 2.874"  |
| 0.197" (5.01 mm) to 0.394" (10 mm) | 0.400 or (10 mm)    | (52.4 mm)                                | (63.5 mm) | (73 mm) |

Capacitors are reeled so that positive leads are oriented as shown in Figure 3. Kraft paper (50lb. test minimum) is inserted between the layers of capacitors wound on reels for component pitch  $\leq 0.200$ " sizes and corrugated paper (70 lb. test minimum), single faced is inserted for component pitch  $\geq 0.400$ " sizes. Capacitor lead length may extend only a maximum of 0.031" (0.8 mm) beyond the tape's edges. Capacitors are centered in a row between the two tapes and will deviate only  $\pm 0.031$ " (0.79 mm) from the row center. Figures 1 and 2 show the KEMET standard chipboard tape reel. A minimum of 36" (91.5 cm) leader tape is provided at each end of the reeled capacitors. Universal splicing clips are used to connect the tape.

## KEMET Electronics Corporation Sales Offices

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## Disclaimer

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