

T111 Series Axial MIL-PRF-39003 Non-Polar and T213 (CSR91 Style)

Overview

The T111/T213 Series is primarily designed for use in tuned low frequency circuits, phasing low voltage AC motors, servo systems and other applications where reversal of polarity is a primary consideration. The T111 unit consists of two polar T110 Series hermetically sealed tantalum capacitors, electrically and mechanically connected back-to-back and supported by an outer corrosion-resistant

metal sleeve. They exhibit comparable electrical and performance characteristics of T110 Series. Available in capacitance values from 0.0023 μF to 160 μF in $\pm 20\%$ and $\pm 10\%$ tolerances, the T111 series is offered in working voltages of 6 VDC to 100 VDC at $+85^\circ\text{C}$.

Benefits

- Taped and reeled per EIA Specification RS-296
- Marking per MIL-STD-1285
- Qualified to MIL-PRF-39003 (CSR91 Style)
- Failure rate options: Graded – B, C, D, and G
Exponential – M, P, R, and S*
- Capacitance values of 0.0023 μF to 160 μF
- Tolerances of $\pm 10\%$ and $\pm 20\%$
- Voltage rating of 6 – 100 VDC
- Operating temperature range of -55°C to $+125^\circ\text{C}$
- Case sizes: A, B, C, D

**Failure rates apply to military products only*



Applications

Typical applications include use in tuned low frequency circuits, phasing low voltage AC motors, servo systems and other applications where reversal of polarity is a primary consideration.

Ordering Information – T111

| T | 111 | A | 105 | K | 050 | A | S | |
|-----------------|-------------------------------------|------------------|--|-----------------------|--|------------------------------------|----------------------|--|
| Capacitor Class | Series | Case Size | Capacitance Code (pF) | Capacitance Tolerance | Rated Voltage (VDC) | Failure Rate/Military Product Only | Termination Finish | Specification |
| T = Tantalum | Hermetically Sealed Axial capacitor | A B C D | First two digits represent significant figures. Third digit specifies number of zeros. | K = ±10% M = ±20% | 006 = 6 010 = 10 015 = 15 020 = 20 035 = 35 050 = 50 075 = 75 100 = 100 | A = N/A | S = Standard (Sn/Pb) | All capacitors are sleeved unless specified. |

Ordering Information – T213 (CSR91 Style)

MIL product

| T | 213 | A | 115 | K | 020 | B | S | 7200 |
|-----------------|--|------------------|--|-----------------------|--|--|----------------------|---|
| Capacitor Class | Series | Case Size | Capacitance Code (pF) | Capacitance Tolerance | Rated Voltage (VDC) | Failure Rate/Military Product Only | Termination Finish | Specification |
| T = Tantalum | Hermetically Sealed Axial Military grade capacitor | A B C D | First two digits represent significant figures. Third digit specifies number of zeros. | K = ±10% M = ±20% | 006 = 6 010 = 10 015 = 15 020 = 20 035 = 35 050 = 50 075 = 75 100 = 100 | Graded: B = 0.1%/k hours C = 0.01%/k hours D = 0.001%/k hours G = 1.0 %/k hours Exponential: M = 1%/k hours P = 0.1%/k hours R = 0.01%/k hours S = 0.001%/k hours | S = Standard (Sn/Pb) | All capacitors are sleeved unless specified. 0100 = Without sleeve 7200 = Tape & Reel 7293 & 7443 = Ammo 4250 = "A" surge current 4251 = "B" surge current 4252 = "C" surge current |

Ordering Information – MIL-PRF-39003

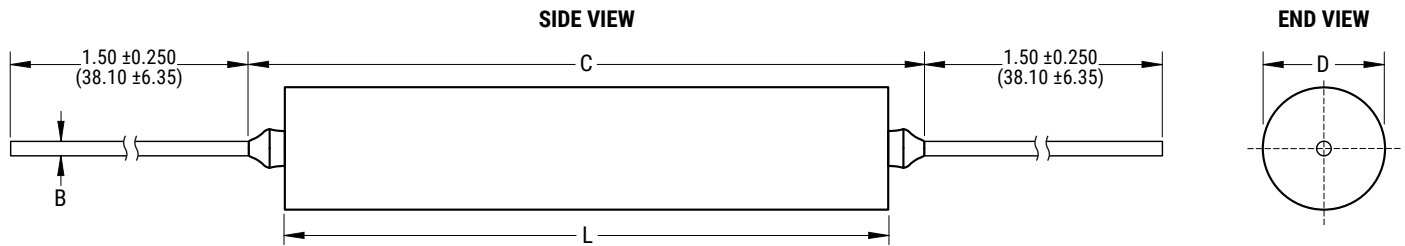
| M39003 | /04 | 3007 | A |
|-------------------------------|----------------------------|--------------------|--|
| Capacitor Class | Slash | Dash Number | Surge Option |
| Military Specification Number | Specification Sheet Number | Failure Rate Level | A = C-4250 B = C-4251 C = C-4252 Blank - No surge |

Orders should be entered by the military specification number, including the dash number and surge option letter (A, B or C).

Performance Characteristics

| Item | Performance Characteristics |
|---|---|
| Operating Temperature | -55°C to 125°C |
| Rated Capacitance Range | 0.0023 µF–160 µF at 120 Hz/25°C |
| Capacitance Tolerance | K Tolerance (10%), M Tolerance (20%) |
| Rated Voltage Range | 6 – 100 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) |
| Failure Rate (MIL-39003, CSR91 capacitors only) | Approved failure rate: S (0.001%/k hours) – Exponential, D (0.001%/k hours) – Graded |

Dimensions – Inches (Millimeters)



| Case Size | Uninsulated | | Insulated | | B ±0.002 (±0.05) | C Maximum |
|-----------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------|
| | D ±0.005 (±0.13) | L ±0.031 (±0.79) | D ±0.010 (±0.25) | L ±0.031 (±0.79) | | |
| A | 0.147 (3.73) | 0.565 (14.35) | 0.161 (4.09) | 0.575 (14.61) | 0.020 (0.51) | 0.750 (19.05) |
| B | 0.194 (4.93) | 0.916 (23.27) | 0.207 (5.26) | 0.955 (24.26) | 0.020 (0.51) | 1.130 (28.70) |
| C | 0.300 (7.62) | 1.340 (34.04) | 0.314 (7.98) | 1.350 (34.29) | 0.025 (0.64) | 1.525 (38.74) |
| D | 0.362 (9.19) | 1.540 (39.12) | 0.376 (9.55) | 1.550 (39.37) | 0.025 (0.64) | 1.725 (43.82) |

Table 1 – Ratings & Part Number Reference

| Rated Voltage | Rated Cap | Case Size Code | KEMET Part Number | DC Leakage | DF % at 25°C | MIL-PRF-39003 (CSR91) Capacitors | | | | | | | | | | KEMET Equivalent Military |
|---------------|-----------|----------------|------------------------------|--------------------------|----------------|------------------------------------|---------|----------|-----------|------------------|---------|----------|-----------|---------------------------|--|---------------------------|
| | | | | | | Dash Number Reference | | | | | | | | KEMET Equivalent Military | | |
| | | | | | | Failure Rate Level (%/1,000 hours) | | | | | | | | | | |
| | | | | | | MIL-PRF-39003/4C | | | | MIL-PRF-39003/4C | | | | | | |
| | | | | | | Exponential | | | | Graded | | | | | | |
| VDC | µF | | (See below for part options) | µA at 25°C Max/5 Minutes | 120 Hz Maximum | M (1.0) | P (0.1) | R (0.01) | S (0.001) | G (1.0) | B (0.1) | C (0.01) | D (0.001) | Part Number | | |
| 6 | 2.8 | A | T111A285K006AS | 0.3 | 4 | 0221 | 0441 | 0661 | 0881 | 6001 | 3001 | 4001 | 5001 | T213A285K006(1)S | | |
| 6 | 3.4 | A | T111A345K006AS | 0.3 | 6 | 0222 | 0442 | 0662 | 0882 | 6002 | 3002 | 4002 | 5002 | T213A345K006(1)S | | |
| 6 | 3.4 | A | T111A345M006AS | 0.3 | 6 | 0223 | 0443 | 0663 | 0883 | 6003 | 3003 | 4003 | 5003 | T213A345M006(1)S | | |
| 6 | 23.0 | B | T111B236K006AS | 1.5 | 6 | 0224 | 0444 | 0664 | 0884 | 6004 | 3004 | 4004 | 5004 | T213B236K006(1)S | | |
| 6 | 23.0 | B | T111A236M006AS | 1.5 | 6 | 0225 | 0445 | 0665 | 0885 | 6005 | 3005 | 4005 | 5005 | T213B236M006(1)S | | |
| 6 | 28.0 | B | T111A286K006AS | 1.5 | 6 | 0226 | 0446 | 0666 | 0886 | 6006 | 3006 | 4006 | 5006 | T213B286K006(1)S | | |
| 6 | 75.0 | C | T111C756K006AS | 4.5 | 6 | 0227 | 0447 | 0667 | 0887 | 6007 | 3007 | 4007 | 5007 | T213C756K006(1)S | | |
| 6 | 75.0 | C | T111C756M006AS | 4.5 | 6 | 0228 | 0448 | 0668 | 0888 | 6008 | 3008 | 4008 | 5008 | T213C756M006(1)S | | |
| 6 | 90.0 | C | T111C906K006AS | 4.5 | 6 | 0229 | 0449 | 0669 | 0889 | 6009 | 3009 | 4009 | 5009 | T213C906K006(1)S | | |
| 6 | 90.0 | C | T111C906M006AS | 5.5 | 6 | 0230 | 0450 | 0670 | 0890 | | | | | T213C906M006(1)S | | |
| 6 | 130.0 | D | T111D137K006AS | 6.0 | 8 | 0231 | 0451 | 0671 | 0891 | 6010 | 3010 | 4010 | 5010 | T213D137K006(1)S | | |
| 6 | 130.0 | D | T111D137M006AS | 6.0 | 8 | 0232 | 0452 | 0672 | 0892 | | | | | T213D137M006(1)S | | |
| 6 | 160.0 | D | T111D167K006AS | 7.5 | 8 | 0233 | 0453 | 0673 | 0893 | 6011 | 3011 | 4011 | 5011 | T213D167K006(1)S | | |
| 6 | 160.0 | D | T111D167M006AS | 7.5 | 8 | 0234 | 0454 | 0674 | 0894 | 6012 | 3012 | 4012 | 5012 | T213D167M006(1)S | | |
| 10 | 1.9 | A | T111A195K010AS | 0.3 | 4 | 0235 | 0455 | 0675 | 0895 | 6013 | 3013 | 4013 | 5013 | T213A195K010(1)S | | |
| 10 | 2.3 | A | T111A235K010AS | 0.4 | 4 | 0236 | 0456 | 0676 | 0896 | 6014 | 3014 | 4014 | 5014 | T213A235K010(1)S | | |
| 10 | 2.3 | A | T111A235M010AS | 0.4 | 4 | 0237 | 0457 | 0677 | 0897 | 6015 | 3015 | 4015 | 5015 | T213A235M010(1)S | | |
| 10 | 13.0 | B | T111B136K010AS | 2.0 | 6 | 0238 | 0458 | 0678 | 0898 | 6016 | 3016 | 4016 | 5016 | T213B136K010(1)S | | |
| 10 | 16.0 | B | T111B166K010AS | 2.0 | 6 | 0239 | 0459 | 0679 | 0899 | 6017 | 3017 | 4017 | 5017 | T213B166K010(1)S | | |
| 10 | 16.0 | B | T111B166M010AS | 2.0 | 6 | 0240 | 0460 | 0680 | 0900 | 6018 | 3018 | 4018 | 5018 | T213B166M010(1)S | | |
| 10 | 19.0 | B | T111B196K010AS | 2.0 | 6 | 0241 | 0461 | 0681 | 0901 | 6019 | 3019 | 4019 | 5019 | T213B196K010(1)S | | |
| 10 | 41.0 | C | T111C416K010AS | 3.0 | 6 | 0242 | 0462 | 0682 | 0902 | 6020 | 3020 | 4020 | 5020 | T213C416K010(1)S | | |
| 10 | 50.0 | C | T111C506K010AS | 5.0 | 6 | 0243 | 0463 | 0683 | 0903 | 6021 | 3021 | 4021 | 5021 | T213C506K010(1)S | | |
| 10 | 50.0 | C | T111C506M010AS | 5.0 | 6 | 0244 | 0464 | 0684 | 0904 | 6022 | 3022 | 4022 | 5022 | T213C506M010(1)S | | |
| 10 | 60.0 | C | T111C606K010AS | 6.0 | 6 | 0245 | 0465 | 0685 | 0905 | 6023 | 3023 | 4023 | 5023 | T213C606K010(1)S | | |
| 10 | 60.0 | C | T111C606M010AS | 6.0 | 6 | 0246 | 0466 | 0686 | 0906 | | | | | T213C606M010(1)S | | |
| 10 | 90.0 | D | T111D906K010AS | 9.0 | 6 | 0247 | 0467 | 0687 | 0907 | 6024 | 3024 | 4024 | 5024 | T213D906K010(1)S | | |
| 10 | 110.0 | D | T111D117K010AS | 10.0 | 8 | 0248 | 0468 | 0688 | 0908 | 6025 | 3025 | 4025 | 5025 | T213D117K010(1)S | | |
| 10 | 100.0 | D | T111D117M010AS | 10.0 | 8 | 0249 | 0469 | 0689 | 0909 | 6026 | 3026 | 4026 | 5026 | T213D117M010(1)S | | |
| 15 | 1.3 | A | T111A135K015AS | 0.3 | 4 | 0250 | 0470 | 0690 | 0910 | 6027 | 3027 | 4027 | 5027 | T213A135K015(1)S | | |
| 15 | 1.6 | A | T111A165K015AS | 0.4 | 4 | 0251 | 0471 | 0691 | 0911 | 6028 | 3028 | 4028 | 5028 | T213A165K015(1)S | | |
| 15 | 1.6 | A | T111A165M015AS | 0.4 | 4 | 0252 | 0472 | 0692 | 0912 | 6029 | 3029 | 4029 | 5029 | T213A165M015(1)S | | |
| 15 | 9.0 | B | T111B905K015AS | 2.0 | 6 | 0253 | 0473 | 0693 | 0913 | 6030 | 3030 | 4030 | 5030 | T213B905K015(1)S | | |
| 15 | 10.0 | B | T111B106K015AS | 1.5 | 6 | | | | | | | | | | | |
| 15 | 11.0 | B | T111B116K015AS | 2.0 | 6 | 0254 | 0474 | 0694 | 0914 | 6031 | 3031 | 4031 | 5031 | T213B116K015(1)S | | |
| 15 | 11.0 | B | T111B116M015AS | 2.0 | 6 | 0255 | 0475 | 0695 | 0915 | 6032 | 3032 | 4032 | 5032 | T213B116M015(1)S | | |
| 15 | 28.0 | C | T111C286K015AS | 4.0 | 6 | 0256 | 0476 | 0696 | 0916 | 6033 | 3033 | 4033 | 5033 | T213C286K015(1)S | | |
| 15 | 34.0 | C | T111C346K015AS | 5.0 | 6 | 0257 | 0477 | 0697 | 0917 | 6034 | 3034 | 4034 | 5034 | T213C346K015(1)S | | |
| 15 | 34.0 | C | T111C346M015AS | 5.0 | 6 | 0258 | 0478 | 0698 | 0918 | 6035 | 3035 | 4035 | 5035 | T213C346M015(1)S | | |
| 15 | 60.0 | D | T111D606K015AS | 6.0 | 6 | 0259 | 0479 | 0699 | 0919 | 6036 | 3036 | 4036 | 5036 | T213D606K015(1)S | | |
| 15 | 75.0 | D | T111D756K015AS | 10.0 | 6 | 0260 | 0480 | 0700 | 0920 | 6037 | 3037 | 4037 | 5037 | T213D756K015(1)S | | |
| 15 | 75.0 | D | T111D756M015AS | 10.0 | 6 | 0261 | 0481 | 0701 | 0921 | 6038 | 3038 | 4038 | 5038 | T213D756M015(1)S | | |
| 20 | 0.6 | A | T111A604K020AS | 0.3 | 4 | 0262 | 0482 | 0702 | 0922 | 6039 | 3039 | 4039 | 5039 | T213A604K020(1)S | | |
| 20 | 0.75 | A | T111A754K020AS | 0.3 | 4 | 0263 | 0483 | 0703 | 0923 | 6040 | 3040 | 4040 | 5040 | T213A754K020(1)S | | |
| 20 | 0.75 | A | T111A754M020AS | 0.3 | 4 | 0264 | 0484 | 0704 | 0924 | 6041 | 3041 | 4041 | 5041 | T213A754M020(1)S | | |
| 20 | 0.9 | A | T111A904K020AS | 0.3 | 4 | 0265 | 0485 | 0705 | 0925 | 6042 | 3042 | 4042 | 5042 | T213A904K020(1)S | | |
| 20 | 1.1 | A | T111A115K020AS | 0.4 | 4 | 0266 | 0486 | 0706 | 0926 | 6043 | 3043 | 4043 | 5043 | T213A115K020(1)S | | |
| 20 | 1.1 | A | T111A115M020AS | 0.4 | 4 | 0267 | 0487 | 0707 | 0927 | 6044 | 3044 | 4044 | 5044 | T213A115M020(1)S | | |
| 20 | 4.1 | B | T111B415K020AS | 1.0 | 6 | 0268 | 0488 | 0708 | 0928 | 6045 | 3045 | 4045 | 5045 | T213B415K020(1)S | | |
| 20 | 5.0 | B | T111B505K020AS | 1.0 | 6 | 0269 | 0489 | 0709 | 0929 | 6046 | 3046 | 4046 | 5046 | T213B505K020(1)S | | |
| VDC | µF | | (see below for part options) | µA at 25°C Max/5 Minimum | 120 Hz Maximum | M (1.0) | P (0.1) | R (0.01) | S (0.001) | G (1.0) | B (0.1) | C (0.01) | D (0.001) | Part Number | | |
| Rated Voltage | Rated Cap | Case Size Code | KEMET Part Number | DC Leakage | DF % at 25°C | MIL-PRF-39003 (CSR13) Capacitors | | | | | | | | | | |

(1) To complete KEMET part number, insert failure rate code from Ordering Information table.

Table 1 – Ratings & Part Number Reference cont'd

| Rated Voltage | Rated Cap | Case Size Code | KEMET Part Number | DC Leakage | DF % at 25°C | MIL-PRF-39003 (CSR91) Capacitors | | | | | | | | | | KEMET Equivalent Military | |
|---------------|-----------|----------------|------------------------------|--------------------------|----------------|------------------------------------|---------|----------|-----------|------------------|---------|----------|-----------|------------------|--|---------------------------|-------------|
| | | | | | | Dash Number Reference | | | | | | | | MIL-PRF-39003/4C | | | Part Number |
| | | | | | | Failure Rate Level (%/1,000 hours) | | | | | | | | | | | |
| | | | | | | MIL-PRF-39003/4C | | | | MIL-PRF-39003/4C | | | | | | | |
| | | | | | | Exponential | | | | Graded | | | | | | | |
| VDC | µF | | (See below for part options) | µA at 25°C Max/5 Minutes | 120 Hz Maximum | M (1.0) | P (0.1) | R (0.01) | S (0.001) | G (1.0) | B (0.1) | C (0.01) | D (0.001) | | | | |
| 20 | 5.0 | B | T111B505M020AS | 1.0 | 6 | 0270 | 0490 | 0710 | 0930 | 6047 | 3047 | 4047 | 5047 | T213B505M020(1)S | | | |
| 20 | 6.0 | B | T111B605K020AS | 1.0 | 6 | 0271 | 0491 | 0711 | 0931 | 6048 | 3048 | 4048 | 5048 | T213B605K020(1)S | | | |
| 20 | 7.5 | B | T111B755K020AS | 2.0 | 6 | 0272 | 0492 | 0712 | 0932 | 6049 | 3049 | 4049 | 5049 | T213B755K020(1)S | | | |
| 20 | 7.5 | B | T111B755M020AS | 2.0 | 6 | 0273 | 0493 | 0713 | 0933 | 6050 | 3050 | 4050 | 5050 | T213B755M020(1)S | | | |
| 20 | 13.0 | C | T111C136K020AS | 2.5 | 6 | 0274 | 0494 | 0714 | 0934 | 6051 | 3051 | 4051 | 5051 | T213C136K020(1)S | | | |
| 20 | 16.0 | C | T111C166K020AS | 3.0 | 6 | 0275 | 0495 | 0715 | 0935 | 6052 | 3052 | 4052 | 5052 | T213C166K020(1)S | | | |
| 20 | 16.0 | C | T111C166M020AS | 3.0 | 6 | 0276 | 0496 | 0716 | 0936 | 6053 | 3053 | 4053 | 5053 | T213C166M020(1)S | | | |
| 20 | 19.0 | C | T111C196K020AS | 3.0 | 6 | 0277 | 0497 | 0717 | 0937 | 6054 | 3054 | 4054 | 5054 | T213C196K020(1)S | | | |
| 20 | 23.0 | C | T111C236K020AS | 4.5 | 6 | 0278 | 0498 | 0718 | 0938 | 6055 | 3055 | 4055 | 5055 | T213C236K020(1)S | | | |
| 20 | 23.0 | C | T111C236M020AS | 4.5 | 6 | 0279 | 0499 | 0719 | 0939 | 6056 | 3056 | 4056 | 5056 | T213C236M020(1)S | | | |
| 20 | 28.0 | D | T111D286K020AS | 5.5 | 6 | 0280 | 0500 | 0720 | 0940 | 6057 | 3057 | 4057 | 5057 | T213D286K020(1)S | | | |
| 20 | 34.0 | D | T111D346K020AS | 6.0 | 6 | 0281 | 0501 | 0721 | 0941 | 6058 | 3058 | 4058 | 5058 | T213D346K020(1)S | | | |
| 20 | 34.0 | D | T111D346M020AS | 6.0 | 6 | 0282 | 0502 | 0722 | 0942 | 6059 | 3059 | 4059 | 5059 | T213D346M020(1)S | | | |
| 20 | 41.0 | D | T111D416K020AS | 6.0 | 6 | 0283 | 0503 | 0723 | 0943 | 6060 | 3060 | 4060 | 5060 | T213D416K020(1)S | | | |
| 20 | 50.0 | D | T111D506K020AS | 10.0 | 6 | 0284 | 0504 | 0724 | 0944 | 6061 | 3061 | 4061 | 5061 | T213D506K020(1)S | | | |
| 20 | 50.0 | D | T111D506M020AS | 10.0 | 6 | 0285 | 0505 | 0725 | 0945 | 6062 | 3062 | 4062 | 5062 | T213D506M020(1)S | | | |
| 35 | 2.8 | B | T111B285K035AS | 1.0 | 4 | 0289 | 0509 | 0729 | 0949 | 6063 | 3063 | 4063 | 5063 | T213B285K035(1)S | | | |
| 35 | 3.4 | B | T111B345K035AS | 1.5 | 4 | 0290 | 0510 | 0730 | 0950 | 6064 | 3064 | 4064 | 5064 | T213B345K035(1)S | | | |
| 35 | 3.4 | B | T111B345M035AS | 1.5 | 4 | 0291 | 0511 | 0731 | 0951 | 6065 | 3065 | 4065 | 5065 | T213B345M035(1)S | | | |
| 35 | 11.0 | C | T111C116K035AS | 4.0 | 4 | 0292 | 0512 | 0732 | 0952 | 6066 | 3066 | 4066 | 5066 | T213C116K035(1)S | | | |
| 35 | 11.0 | C | T111C116M035AS | 4.0 | 4 | 0293 | 0513 | 0733 | 0953 | 6067 | 3067 | 4067 | 5067 | T213C116M035(1)S | | | |
| 35 | 13.0 | D | T111D136K035AS | 4.5 | 4 | 0294 | 0514 | 0734 | 0954 | 6068 | 3068 | 4068 | 5068 | T213D136K035(1)S | | | |
| 35 | 16.0 | D | T111D166K035AS | 5.5 | 4 | 0295 | 0515 | 0735 | 0955 | 6069 | 3069 | 4069 | 5069 | T213D166K035(1)S | | | |
| 35 | 16.0 | D | T111D166M035AS | 5.5 | 4 | 0296 | 0516 | 0736 | 0956 | 6070 | 3070 | 4070 | 5070 | T213D166M035(1)S | | | |
| 35 | 19.0 | D | T111D196K035AS | 6.0 | 4 | 0297 | 0517 | 0737 | 0957 | 6071 | 3071 | 4071 | 5071 | T213D196K035(1)S | | | |
| 35 | 23.0 | D | T111D236K035AS | 8.0 | 4 | 0298 | 0518 | 0738 | 0958 | 6072 | 3072 | 4072 | 5072 | T213D236K035(1)S | | | |
| 35 | 23.0 | D | T111D236M035AS | 8.0 | 4 | 0299 | 0519 | 0739 | 0959 | 6073 | 3073 | 4073 | 5073 | T213D236M035(1)S | | | |
| 50 | 0.0023 | A | T111A232K050AS | 0.1 | 2 | 1171 | 1241 | 1311 | 1381 | 6074 | 3074 | 4074 | 5074 | T213A232K050(1)S | | | |
| 50 | 0.0023 | A | T111A232M050AS | 0.1 | 2 | 1172 | 1242 | 1312 | 1382 | 6075 | 3075 | 4075 | 5075 | T213A232M050(1)S | | | |
| 50 | 0.0028 | A | T111A282K050AS | 0.1 | 2 | 1173 | 1243 | 1313 | 1383 | 6076 | 3076 | 4076 | 5076 | T213A282K050(1)S | | | |
| 50 | 0.0034 | A | T111A342K050AS | 0.1 | 2 | 1174 | 1244 | 1314 | 1384 | 6077 | 3077 | 4077 | 5077 | T213A342K050(1)S | | | |
| 50 | 0.0034 | A | T111A342M050AS | 0.1 | 2 | 1175 | 1245 | 1315 | 1385 | 6078 | 3078 | 4078 | 5078 | T213A342M050(1)S | | | |
| 50 | 0.0041 | A | T111A412K050AS | 0.1 | 2 | 1176 | 1246 | 1316 | 1386 | 6079 | 3079 | 4079 | 5079 | T213A412K050(1)S | | | |
| 50 | 0.005 | A | T111A502K050AS | 0.1 | 2 | 1177 | 1247 | 1317 | 1387 | 6080 | 3080 | 4080 | 5080 | T213A502K050(1)S | | | |
| 50 | 0.005 | A | T111A502M050AS | 0.1 | 2 | 1178 | 1248 | 1318 | 1388 | 6081 | 3081 | 4081 | 5081 | T213A502M050(1)S | | | |
| 50 | 0.006 | A | T111A602K050AS | 0.1 | 2 | 1179 | 1249 | 1319 | 1389 | 6082 | 3082 | 4082 | 5082 | T213A602K050(1)S | | | |
| 50 | 0.0075 | A | T111A752K050AS | 0.1 | 2 | 1180 | 1250 | 1320 | 1390 | 6083 | 3083 | 4083 | 5083 | T213A752K050(1)S | | | |
| 50 | 0.0075 | A | T111A752M050AS | 0.1 | 2 | 1181 | 1251 | 1321 | 1391 | 6084 | 3084 | 4084 | 5084 | T213A752M050(1)S | | | |
| 50 | 0.009 | A | T111A902K050AS | 0.1 | 2 | 1182 | 1252 | 1322 | 1392 | 6085 | 3085 | 4085 | 5085 | T213A902K050(1)S | | | |
| 50 | 0.011 | A | T111A113K050AS | 0.1 | 2 | 1183 | 1253 | 1323 | 1393 | 6086 | 3086 | 4086 | 5086 | T213A113K050(1)S | | | |
| 50 | 0.011 | A | T111A113M050AS | 0.1 | 2 | 1184 | 1254 | 1324 | 1394 | 6087 | 3087 | 4087 | 5087 | T213A113M050(1)S | | | |
| 50 | 0.013 | A | T111A133K050AS | 0.1 | 2 | 1185 | 1255 | 1325 | 1395 | 6088 | 3088 | 4088 | 5088 | T213A133K050(1)S | | | |
| 50 | 0.016 | A | T111A163K050AS | 0.1 | 2 | 1186 | 1256 | 1326 | 1396 | 6089 | 3089 | 4089 | 5089 | T213A163K050(1)S | | | |
| 50 | 0.016 | A | T111A163M050AS | 0.1 | 2 | 1187 | 1257 | 1327 | 1397 | 6090 | 3090 | 4090 | 5090 | T213A163M050(1)S | | | |
| 50 | 0.019 | A | T111A193K050AS | 0.1 | 2 | 1188 | 1258 | 1328 | 1398 | 6091 | 3091 | 4091 | 5091 | T213A193K050(1)S | | | |
| 50 | 0.023 | A | T111A233K050AS | 0.1 | 2 | 1189 | 1259 | 1329 | 1399 | 6092 | 3092 | 4092 | 5092 | T213A233K050(1)S | | | |
| 50 | 0.023 | A | T111A233M050AS | 0.1 | 2 | 1190 | 1260 | 1330 | 1400 | 6093 | 3093 | 4093 | 5093 | T213A233M050(1)S | | | |
| 50 | 0.028 | A | T111A283K050AS | 0.1 | 2 | 1191 | 1261 | 1331 | 1401 | 6094 | 3094 | 4094 | 5094 | T213A283K050(1)S | | | |
| 50 | 0.034 | A | T111A343K050AS | 0.1 | 2 | 1192 | 1262 | 1332 | 1402 | 6095 | 3095 | 4095 | 5095 | T213A343K050(1)S | | | |
| VDC | µF | | (see below for part options) | µA at 25°C Max/5 Minimum | 120 Hz Maximum | M (1.0) | P (0.1) | R (0.01) | S (0.001) | G (1.0) | B (0.1) | C (0.01) | D (0.001) | Part Number | | | |
| Rated Voltage | Rated Cap | Case Size Code | KEMET Part Number | DC Leakage | DF % at 25°C | MIL-PRF-39003 (CSR13) Capacitors | | | | | | | | | | | |

(1) To complete KEMET part number, insert failure rate code from Ordering Information table.

Table 1 – Ratings & Part Number Reference cont'd

| Rated Voltage | Rated Cap | Case Size Code | KEMET Part Number | DC Leakage | DF % at 25°C | MIL-PRF-39003 (CSR91) Capacitors | | | | | | | | | | KEMET Equivalent Military |
|---------------|-----------|----------------|------------------------------|--------------------------|----------------|------------------------------------|---------|----------|-----------|------------------|---------|----------|-----------|---------------------------|--|---------------------------|
| | | | | | | Dash Number Reference | | | | | | | | KEMET Equivalent Military | | |
| | | | | | | Failure Rate Level (%/1,000 hours) | | | | | | | | | | |
| | | | | | | MIL-PRF-39003/4C | | | | MIL-PRF-39003/4C | | | | | | |
| | | | | | | Exponential | | | | Graded | | | | | | |
| VDC | µF | | (See below for part options) | µA at 25°C Max/5 Minutes | 120 Hz Maximum | M (1.0) | P (0.1) | R (0.01) | S (0.001) | G (1.0) | B (0.1) | C (0.01) | D (0.001) | Part Number | | |
| 50 | 0.034 | A | T111A343M050AS | 0.1 | 2 | 1193 | 1263 | 1333 | 1403 | 6096 | 3096 | 4096 | 5096 | T213A343M050(1)S | | |
| 50 | 0.041 | A | T111A413K050AS | 0.1 | 2 | 1194 | 1264 | 1334 | 1404 | 6097 | 3097 | 4097 | 5097 | T213A413K050(1)S | | |
| 50 | 0.05 | A | T111A503K050AS | 0.3 | 2 | 1195 | 1265 | 1335 | 1405 | 6098 | 3098 | 4098 | 5098 | T213A503K050(1)S | | |
| 50 | 0.05 | A | T111A503M050AS | 0.3 | 2 | 1196 | 1266 | 1336 | 1406 | 6099 | 3099 | 4099 | 5099 | T213A503M050(1)S | | |
| 50 | 0.06 | A | T111A603K050AS | 0.3 | 2 | 1197 | 1267 | 1337 | 1407 | 6100 | 3100 | 4100 | 5100 | T213A603K050(1)S | | |
| 50 | 0.075 | A | T111A753K050AS | 0.3 | 2 | 1198 | 1268 | 1338 | 1408 | 6101 | 3101 | 4101 | 5101 | T213A753K050(1)S | | |
| 50 | 0.075 | A | T111A753M050AS | 0.3 | 2 | 1199 | 1269 | 1339 | 1409 | 6102 | 3102 | 4102 | 5102 | T213A753M050(1)S | | |
| 50 | 0.09 | A | T111A903K050AS | 0.3 | 2 | 1200 | 1270 | 1340 | 1410 | 6103 | 3103 | 4103 | 5103 | T213A903K050(1)S | | |
| 50 | 0.11 | A | T111A114K050AS | 0.3 | 2 | 1201 | 1271 | 1341 | 1411 | 6104 | 3104 | 4104 | 5104 | T213A114K050(1)S | | |
| 50 | 0.11 | A | T111A114M050AS | 0.3 | 2 | 1202 | 1272 | 1342 | 1412 | 6105 | 3105 | 4105 | 5105 | T213A114M050(1)S | | |
| 50 | 0.13 | A | T111A134K050AS | 0.3 | 2 | 1203 | 1273 | 1343 | 1413 | 6106 | 3106 | 4106 | 5106 | T213A134K050(1)S | | |
| 50 | 0.16 | A | T111A164K050AS | 0.3 | 2 | 1204 | 1274 | 1344 | 1414 | 6107 | 3107 | 4107 | 5107 | T213A164K050(1)S | | |
| 50 | 0.16 | A | T111A164M050AS | 0.3 | 2 | 1205 | 1275 | 1345 | 1415 | 6108 | 3108 | 4108 | 5108 | T213A164M050(1)S | | |
| 50 | 0.19 | A | T111A194K050AS | 0.3 | 2 | 1206 | 1276 | 1346 | 1416 | 6109 | 3109 | 4109 | 5109 | T213A194K050(1)S | | |
| 50 | 0.23 | A | T111A234K050AS | 0.3 | 2 | 1207 | 1277 | 1347 | 1417 | 6110 | 3110 | 4110 | 5110 | T213A234K050(1)S | | |
| 50 | 0.23 | A | T111A234M050AS | 0.3 | 2 | 1208 | 1278 | 1348 | 1418 | 6111 | 3111 | 4111 | 5111 | T213A234M050(1)S | | |
| 50 | 0.28 | A | T111A284K050AS | 0.3 | 2 | 1209 | 1279 | 1349 | 1419 | 6112 | 3112 | 4112 | 5112 | T213A284K050(1)S | | |
| 50 | 0.34 | A | T111A344K050AS | 0.3 | 2 | 1210 | 1280 | 1350 | 1420 | 6113 | 3113 | 4113 | 5113 | T213A344K050(1)S | | |
| 50 | 0.34 | A | T111A344M050AS | 0.3 | 2 | 1211 | 1281 | 1351 | 1421 | 6114 | 3114 | 4114 | 5114 | T213A344M050(1)S | | |
| 50 | 0.41 | A | T111A414K050AS | 0.3 | 2 | 0300 | 0520 | 0740 | 0960 | 6115 | 3115 | 4115 | 5115 | T213A414K050(1)S | | |
| 50 | 0.5 | A | T111A504K050AS | 0.4 | 2 | 0301 | 0521 | 0741 | 0961 | 6116 | 3116 | 4116 | 5116 | T213A504K050(1)S | | |
| 50 | 0.5 | A | T111A504M050AS | 0.4 | 2 | 0302 | 0522 | 0742 | 0962 | 6117 | 3117 | 4117 | 5117 | T213A504M050(1)S | | |
| 50 | 0.6 | B | T111B604K050AS | 0.4 | 4 | 1212 | 1282 | 1352 | 1422 | 6118 | 3118 | 4118 | 5118 | T213B604K050(1)S | | |
| 50 | 0.6 | B | T111B604M050AS | 0.4 | 4 | | | | | | | | | | | |
| 50 | 0.75 | B | T111B754K050AS | 0.5 | 4 | 2001 | 2101 | 2201 | 2301 | 6119 | 3119 | 4119 | 5119 | T213B754K050(1)S | | |
| 50 | 0.75 | B | T111B754M050AS | 0.5 | 4 | 2002 | 2102 | 2202 | 2302 | 6120 | 3120 | 4120 | 5120 | T213B754M050(1)S | | |
| 50 | 0.9 | B | T111B904K050AS | 0.5 | 4 | 1215 | 1285 | 1355 | 1425 | 6121 | 3121 | 4121 | 5121 | T213B904K050(1)S | | |
| 50 | 0.9 | B | T111B904M050AS | 0.5 | 4 | | | | | | | | | | | |
| 50 | 1.1 | B | T111B115K050AS | 0.8 | 4 | 1216 | 1286 | 1356 | 1426 | 6122 | 3122 | 4122 | 5122 | T213B115K050(1)S | | |
| 50 | 1.1 | B | T111B115M050AS | 0.8 | 4 | 1217 | 1287 | 1357 | 1427 | 6123 | 3123 | 4123 | 5123 | T213B115M050(1)S | | |
| 50 | 1.3 | B | T111B135K050AS | 1.0 | 4 | 1218 | 1288 | 1358 | 1428 | 6124 | 3124 | 4124 | 5124 | T213B135K050(1)S | | |
| 50 | 1.3 | B | T111B135M050AS | 1.0 | 4 | | | | | | | | | | | |
| 50 | 1.6 | B | T111B165K050AS | 1.2 | 4 | 1219 | 1289 | 1359 | 1429 | 6125 | 3125 | 4125 | 5125 | T213B165K050(1)S | | |
| 50 | 1.6 | B | T111B165M050AS | 1.2 | 4 | 1220 | 1290 | 1360 | 1430 | 6126 | 3126 | 4126 | 5126 | T213B165M050(1)S | | |
| 50 | 1.9 | B | T111B195K050AS | 1.5 | 4 | 1221 | 1291 | 1361 | 1431 | 6127 | 3127 | 4127 | 5127 | T213B195K050(1)S | | |
| 50 | 1.9 | B | T111B195M050AS | 1.5 | 4 | | | | | | | | | | | |
| 50 | 2.3 | B | T111B235K050AS | 1.7 | 4 | 1222 | 1292 | 1362 | 1432 | 6128 | 3128 | 4128 | 5128 | T213B235K050(1)S | | |
| 50 | 2.3 | B | T111B235M050AS | 1.7 | 4 | 1223 | 1293 | 1363 | 1433 | 6129 | 3129 | 4129 | 5129 | T213B235M050(1)S | | |
| 50 | 2.8 | C | T111C285K050AS | 2.2 | 4 | 1224 | 1294 | 1364 | 1434 | 6130 | 3130 | 4130 | 5130 | T213C285K050(1)S | | |
| 50 | 2.8 | C | T111C285M050AS | 2.2 | 4 | | | | | | | | | | | |
| 50 | 3.4 | C | T111C345K050AS | 2.2 | 4 | 1225 | 1295 | 1365 | 1435 | 6131 | 3131 | 4131 | 5131 | T213C345K050(1)S | | |
| 50 | 3.4 | C | T111C345M050AS | 2.2 | 4 | 1226 | 1296 | 1366 | 1436 | 6132 | 3132 | 4132 | 5132 | T213C345M050(1)S | | |
| 50 | 4.1 | C | T111C415K050AS | 2.5 | 4 | 1227 | 1297 | 1367 | 1437 | 6133 | 3133 | 4133 | 5133 | T213C415K050(1)S | | |
| 50 | 4.1 | C | T111C415M050AS | 2.5 | 4 | | | | | | | | | | | |
| 50 | 5.0 | C | T111C505K050AS | 2.5 | 4 | 1228 | 1298 | 1368 | 1438 | 6134 | 3134 | 4134 | 5134 | T213C505K050(1)S | | |
| 50 | 5.0 | C | T111C505M050AS | 2.5 | 4 | 1229 | 1299 | 1369 | 1439 | 6135 | 3135 | 4135 | 5135 | T213C505M050(1)S | | |
| 50 | 6.0 | C | T111C605K050AS | 3.0 | 4 | 0303 | 0523 | 0743 | 0963 | 6136 | 3136 | 4136 | 5136 | T213C605K050(1)S | | |
| 50 | 6.0 | C | T111C605M050AS | 3.0 | 4 | | | | | | | | | | | |
| 50 | 7.5 | C | T111C755K050AS | 4.1 | 4 | 0304 | 0524 | 0744 | 0964 | 6137 | 3137 | 4137 | 5137 | T213C755K050(1)S | | |
| VDC | µF | Case Size Code | (see below for part options) | µA at 25°C Max/5 Minimum | 120 Hz Maximum | M (1.0) | P (0.1) | R (0.01) | S (0.001) | G (1.0) | B (0.1) | C (0.01) | D (0.001) | Part Number | | |
| Rated Voltage | Rated Cap | Case Size Code | KEMET Part Number | DC Leakage | DF % at 25°C | MIL-PRF-39003 (CSR13) Capacitors | | | | | | | | | | |

(1) To complete KEMET part number, insert failure rate code from Ordering Information table.

Table 1 – Ratings & Part Number Reference cont'd

| Rated Voltage | Rated Cap | Case Size Code | KEMET Part Number | DC Leakage | DF % at 25°C | MIL-PRF-39003 (CSR91) Capacitors | | | | | | | | | | KEMET Equivalent Military |
|---------------|-----------|----------------|------------------------------|--------------------------|----------------|------------------------------------|---------|----------|-----------|------------------|---------|----------|-----------|---------------------------|--|---------------------------|
| | | | | | | Dash Number Reference | | | | | | | | KEMET Equivalent Military | | |
| | | | | | | Failure Rate Level (%/1,000 hours) | | | | | | | | | | |
| | | | | | | MIL-PRF-39003/4C | | | | MIL-PRF-39003/4C | | | | | | |
| | | | | | | Exponential | | | | Graded | | | | | | |
| VDC | µF | | (See below for part options) | µA at 25°C Max/5 Minutes | 120 Hz Maximum | M (1.0) | P (0.1) | R (0.01) | S (0.001) | G (1.0) | B (0.1) | C (0.01) | D (0.001) | Part Number | | |
| 50 | 7.5 | C | T111C755M050AS | 4.1 | 4 | 0305 | 0525 | 0745 | 0965 | 6138 | 3138 | 4138 | 5138 | T213C755M050(1)S | | |
| 50 | 9.0 | C | T111C905K050AS | 4.5 | 4 | 0306 | 0526 | 0746 | 0966 | 6139 | 3139 | 4139 | 5139 | T213C905K050(1)S | | |
| 50 | 9.0 | C | T111C905M050AS | 4.5 | 4 | | | | | | | | | | | |
| 50 | 11.0 | D | T111D116K050AS | 5.5 | 4 | 0307 | 0527 | 0747 | 0967 | 6140 | 3140 | 4040 | 5140 | T213AD116K050(1)S | | |
| 50 | 11.0 | D | T111D116M050AS | 5.5 | 4 | 0308 | 0528 | 0748 | 0968 | 6141 | 3141 | 4041 | 5141 | T213D116M050(1)S | | |
| 75 | 0.34 | A | T111A344K075AS | 0.3 | 2 | 0309 | 0529 | 0749 | 0969 | 6142 | 3142 | 4142 | 5142 | T213A344K075(1)S | | |
| 75 | 0.34 | A | T111A344M075AS | 0.3 | 2 | 0310 | 0530 | 0750 | 0970 | 6143 | 3143 | 4143 | 5143 | T213A344M075(1)S | | |
| 75 | 0.41 | B | T111B414K075AS | 0.3 | 2 | 2008 | 2108 | 2208 | 2308 | 6144 | 3144 | 4144 | 5144 | T213B414K075(1)S | | |
| 75 | 0.5 | B | T111B504K075AS | 0.4 | 2 | 2009 | 2109 | 2209 | 2309 | 6145 | 3145 | 4145 | 5145 | T213B504K075(1)S | | |
| 75 | 0.5 | B | T111B504M075AS | 0.4 | 2 | 2010 | 2110 | 2210 | 2310 | 6146 | 3146 | 4146 | 5146 | T213B504M075(1)S | | |
| 75 | 0.6 | B | T111B604K075AS | 0.4 | 4 | 2011 | 2111 | 2211 | 2311 | 6147 | 3147 | 4147 | 5147 | T213B604K075(1)S | | |
| 75 | 0.75 | B | T111B754K075AS | 0.6 | 4 | 2012 | 2112 | 2212 | 2312 | 6148 | 3148 | 4148 | 5148 | T213B754K075(1)S | | |
| 75 | 0.75 | B | T111B754M075AS | 0.6 | 4 | 2013 | 2113 | 2213 | 2313 | 6149 | 3149 | 4149 | 5149 | T213B754M075(1)S | | |
| 75 | 0.9 | B | T111B904K075AS | 0.7 | 4 | 2014 | 2114 | 2214 | 2314 | 6150 | 3150 | 4150 | 5150 | T213B904K075(1)S | | |
| 75 | 1.1 | B | T111B115K075AS | 0.8 | 4 | 2015 | 2115 | 2215 | 2315 | 6151 | 3151 | 4151 | 5151 | T213B115K075(1)S | | |
| 75 | 1.1 | B | T111B115M075AS | 0.8 | 4 | 2016 | 2116 | 2216 | 2316 | 6152 | 3152 | 4152 | 5152 | T213B115M075(1)S | | |
| 75 | 1.3 | B | T111B135K075AS | 1.0 | 4 | 2017 | 2117 | 2217 | 2317 | 6153 | 3153 | 4153 | 5153 | T213B135K075(1)S | | |
| 75 | 1.6 | B | T111B165K075AS | 1.2 | 4 | 0311 | 0531 | 0751 | 0971 | 6154 | 3154 | 4154 | 5154 | T213B165K075(1)S | | |
| 75 | 1.6 | B | T111B165M075AS | 1.2 | 4 | 0312 | 0532 | 0752 | 0972 | 6155 | 3155 | 4155 | 5155 | T213B165M075(1)S | | |
| 75 | 1.9 | B | T111B195K075AS | 1.5 | 4 | 0313 | 0533 | 0753 | 0973 | 6156 | 3156 | 4156 | 5156 | T213B195K075(1)S | | |
| 75 | 2.3 | C | T111C235K075AS | 3.0 | 4 | 2003 | 2103 | 2203 | 2303 | 6157 | 3157 | 4157 | 5157 | T213C235K075(1)S | | |
| 75 | 2.3 | C | T111C235M075AS | 3.0 | 4 | 2004 | 2104 | 2204 | 2304 | 6158 | 3158 | 4158 | 5158 | T213C235M075(1)S | | |
| 75 | 2.8 | C | T111C285K075AS | 3.0 | 4 | 2005 | 2105 | 2205 | 2305 | 6159 | 3159 | 4159 | 5159 | T213C285K075(1)S | | |
| 75 | 3.4 | C | T111C345K075AS | 5.0 | 4 | 2006 | 2106 | 2206 | 2306 | 6160 | 3160 | 4160 | 5160 | T213C345K075(1)S | | |
| 75 | 3.4 | C | T111C345M075AS | 5.0 | 4 | 2007 | 2107 | 2207 | 2307 | 6161 | 3161 | 4161 | 5161 | T213C345M075(1)S | | |
| 75 | 4.1 | C | T111C415K075AS | 5.0 | 4 | 0314 | 0534 | 0754 | 0974 | 6162 | 3162 | 4162 | 5162 | T213C415K075(1)S | | |
| 75 | 5.0 | C | T111C505K075AS | 5.0 | 4 | 0315 | 0535 | 0755 | 0975 | 6163 | 3163 | 4163 | 5163 | T213C505K075(1)S | | |
| 75 | 5.0 | C | T111C505M075AS | 5.0 | 4 | 0316 | 0536 | 0756 | 0976 | 6164 | 3164 | 4164 | 5164 | T213C505M075(1)S | | |
| 75 | 6.0 | D | T111D605K075AS | 5.0 | 4 | 0317 | 0537 | 0757 | 0977 | 6165 | 3165 | 4165 | 5165 | T213D605K075(1)S | | |
| 75 | 7.5 | D | T111D755K075AS | 7.0 | 4 | 0318 | 0538 | 0758 | 0978 | 6166 | 3166 | 4166 | 5166 | T213D755K075(1)S | | |
| 75 | 7.5 | D | T111D755M075AS | 7.0 | 4 | 0319 | 0539 | 0759 | 0979 | 6167 | 3167 | 4167 | 5167 | T213D755M075(1)S | | |
| 100 | 0.0023 | A | T111A232K100AS | 0.3 | 2 | 0320 | 0540 | 0760 | 0980 | 6168 | 3168 | 4168 | * | T213A232K100(1)S | | |
| 100 | 0.0023 | A | T111A232M100AS | 0.3 | 2 | 0321 | 0541 | 0761 | 0981 | 6169 | 3169 | 4169 | * | T213A232M100(1)S | | |
| 100 | 0.0028 | A | T111A282K100AS | 0.3 | 2 | 0322 | 0542 | 0762 | 0982 | 6170 | 3170 | 4170 | * | T213A282K100(1)S | | |
| 100 | 0.0034 | A | T111A342K100AS | 0.3 | 2 | 0323 | 0543 | 0763 | 0983 | 6171 | 3171 | 4171 | * | T213A342K100(1)S | | |
| 100 | 0.0034 | A | T111A342M100AS | 0.3 | 2 | 0324 | 0544 | 0764 | 0984 | 6172 | 3172 | 4172 | * | T213A342M100(1)S | | |
| 100 | 0.0041 | A | T111A412K100AS | 0.3 | 2 | 0325 | 0545 | 0765 | 0985 | 6173 | 3173 | 4173 | * | T213A412K100(1)S | | |
| 100 | 0.005 | A | T111A502K100AS | 0.3 | 2 | 0326 | 0546 | 0766 | 0986 | 6174 | 3174 | 4174 | * | T213A502K100(1)S | | |
| 100 | 0.005 | A | T111A502M100AS | 0.3 | 2 | 0327 | 0547 | 0767 | 0987 | 6175 | 3175 | 4175 | * | T213A502M100(1)S | | |
| 100 | 0.006 | A | T111A602K100AS | 0.3 | 2 | 0328 | 0548 | 0768 | 0988 | 6176 | 3176 | 4176 | * | T213A602K100(1)S | | |
| 100 | 0.0075 | A | T111A752K100AS | 0.3 | 2 | 0329 | 0549 | 0769 | 0989 | 6177 | 3177 | 4177 | * | T213A752K100(1)S | | |
| 100 | 0.0075 | A | T111A752M100AS | 0.3 | 2 | 0330 | 0550 | 0770 | 0990 | 6178 | 3178 | 4178 | * | T213A752M100(1)S | | |
| 100 | 0.009 | A | T111A902K100AS | 0.3 | 2 | 0331 | 0551 | 0771 | 0991 | 6179 | 3179 | 4179 | * | T213A902K100(1)S | | |
| 100 | 0.011 | A | T111A113K100AS | 0.3 | 2 | 0332 | 0552 | 0772 | 0992 | 6180 | 3180 | 4180 | * | T213A113K100(1)S | | |
| 100 | 0.011 | A | T111A113M100AS | 0.3 | 2 | 0333 | 0553 | 0773 | 0993 | 6181 | 3181 | 4181 | * | T213A113M100(1)S | | |
| 100 | 0.013 | A | T111A133K100AS | 0.3 | 2 | 0334 | 0554 | 0774 | 0994 | 6182 | 3182 | 4182 | * | T213A133K100(1)S | | |
| 100 | 0.016 | A | T111A163K100AS | 0.3 | 2 | 0335 | 0555 | 0775 | 0995 | 6183 | 3183 | 4183 | * | T213A163K100(1)S | | |
| 100 | 0.016 | A | T111A163M100AS | 0.3 | 2 | 0336 | 0556 | 0776 | 0996 | 6184 | 3184 | 4184 | * | T213A163M100(1)S | | |
| 100 | 0.019 | A | T111A193K100AS | 0.3 | 2 | 0337 | 0557 | 0777 | 0997 | 6185 | 3185 | 4185 | * | T213A193K100(1)S | | |
| VDC | µF | Case Size Code | (see below for part options) | µA at 25°C Max/5 Minimum | 120 Hz Maximum | M (1.0) | P (0.1) | R (0.01) | S (0.001) | G (1.0) | B (0.1) | C (0.01) | D (0.001) | Part Number | | |
| Rated Voltage | Rated Cap | Case Size Code | KEMET Part Number | DC Leakage | DF % at 25°C | MIL-PRF-39003 (CSR13) Capacitors | | | | | | | | | | |

(1) To complete KEMET part number, insert failure rate code from Ordering Information table.

Table 1 – Ratings & Part Number Reference cont'd

| Rated Voltage | Rated Cap | Case Size Code | KEMET Part Number | DC Leakage | DF % at 25°C | MIL-PRF-39003 (CSR91) Capacitors | | | | | | | | | | KEMET Equivalent Military |
|---------------|-----------|----------------|------------------------------|--------------------------|----------------|------------------------------------|---------|----------|-----------|---------|------------------|----------|-----------|------------------|--|---------------------------|
| | | | | | | Dash Number Reference | | | | | | | | | | |
| | | | | | | Failure Rate Level (%/1,000 hours) | | | | | | | | | | |
| | | | | | | MIL-PRF-39003/4C | | | | | MIL-PRF-39003/4C | | | | | |
| | | | | | | Exponential | | | | | Graded | | | | | |
| VDC | µF | | (See below for part options) | µA at 25°C Max/5 Minutes | 120 Hz Maximum | M (1.0) | P (0.1) | R (0.01) | S (0.001) | G (1.0) | B (0.1) | C (0.01) | D (0.001) | Part Number | | |
| 100 | 0.023 | A | T111A233K100AS | 0.3 | 2 | 0338 | 0558 | 0778 | 0998 | 6186 | 3186 | 4186 | * | T213A223K100(1)S | | |
| 100 | 0.023 | A | T111A233M100AS | 0.3 | 2 | 0339 | 0559 | 0779 | 0999 | 6187 | 3187 | 4187 | * | T213A223M100(1)S | | |
| 100 | 0.028 | A | T111A283K100AS | 0.3 | 2 | 0340 | 0560 | 0780 | 1000 | 6188 | 3188 | 4188 | * | T213A283K100(1)S | | |
| 100 | 0.034 | A | T111A343K100AS | 0.3 | 2 | 0341 | 0561 | 0781 | 1001 | 6189 | 3189 | 4189 | * | T213A343K100(1)S | | |
| 100 | 0.034 | A | T111A343M100AS | 0.3 | 2 | 0342 | 0562 | 0782 | 1002 | 6190 | 3190 | 4190 | * | T213A343M100(1)S | | |
| 100 | 0.041 | A | T111A413K100AS | 0.3 | 2 | 0343 | 0563 | 0783 | 1003 | 6191 | 3191 | 4191 | * | T213A413K100(1)S | | |
| 100 | 0.050 | A | T111A503K100AS | 0.3 | 2 | 0344 | 0564 | 0784 | 1004 | 6192 | 3192 | 4192 | * | T213A503K100(1)S | | |
| 100 | 0.050 | A | T111A503M100AS | 0.3 | 2 | 0345 | 0565 | 0785 | 1005 | 6193 | 3193 | 4193 | * | T213A503M100(1)S | | |
| 100 | 0.060 | A | T111A603K100AS | 0.3 | 2 | 0346 | 0566 | 0786 | 1006 | 6194 | 3194 | 4194 | * | T213A603K100(1)S | | |
| 100 | 0.075 | A | T111A753K100AS | 0.3 | 2 | 0347 | 0567 | 0787 | 1007 | 6195 | 3195 | 4195 | * | T213A753K100(1)S | | |
| 100 | 0.075 | A | T111A753M100AS | 0.3 | 2 | 0348 | 0568 | 0788 | 1008 | 6196 | 3196 | 4196 | * | T213A753M100(1)S | | |
| 100 | 0.09 | A | T111A903K100AS | 0.3 | 2 | 0349 | 0569 | 0789 | 1009 | 6197 | 3197 | 4197 | * | T213A903K100(1)S | | |
| 100 | 0.11 | A | T111A114K100AS | 0.3 | 2 | 0350 | 0570 | 0790 | 1010 | 6198 | 3198 | 4198 | * | T213A114K100(1)S | | |
| 100 | 0.11 | A | T111A114M100AS | 0.3 | 2 | 0351 | 0571 | 0791 | 1011 | 6199 | 3199 | 4199 | * | T213A114M100(1)S | | |
| 100 | 0.13 | A | T111A134K100AS | 0.3 | 2 | 0352 | 0572 | 0792 | 1012 | 6200 | 3200 | 4200 | * | T213A134K100(1)S | | |
| 100 | 0.16 | A | T111A164K100AS | 0.3 | 2 | 0353 | 0573 | 0793 | 1013 | 6201 | 3201 | 4201 | * | T213A164K100(1)S | | |
| 100 | 0.16 | A | T111A164M100AS | 0.3 | 2 | 0354 | 0574 | 0794 | 1014 | 6202 | 3202 | 4202 | * | T213A164M100(1)S | | |
| 100 | 0.19 | A | T111A194K100AS | 0.3 | 2 | 0355 | 0575 | 0795 | 1015 | 6203 | 3203 | 4203 | * | T213A194K100(1)S | | |
| 100 | 0.23 | A | T111A234K100AS | 0.3 | 2 | 0356 | 0576 | 0796 | 1016 | 6204 | 3204 | 4204 | * | T213A234K100(1)S | | |
| 100 | 0.23 | A | T111A234M100AS | 0.3 | 2 | 0357 | 0577 | 0797 | 1017 | 6205 | 3205 | 4205 | * | T213A234M100(1)S | | |
| 100 | 0.28 | A | T111A284K100AS | 0.3 | 2 | 0358 | 0578 | 0798 | 1018 | 6206 | 3206 | 4206 | * | T213A284K100(1)S | | |
| 100 | 0.34 | B | T111B344K100AS | 0.3 | 2 | 0359 | 0579 | 0799 | 1019 | 6207 | 3207 | 4207 | * | T213B344K100(1)S | | |
| 100 | 0.34 | B | T111B344M100AS | 0.3 | 2 | 0360 | 0580 | 0800 | 1020 | 6208 | 3208 | 4208 | * | T213B344M100(1)S | | |
| 100 | 0.41 | B | T111B414K100AS | 0.4 | 2 | 0361 | 0581 | 0801 | 1021 | 6209 | 3209 | 4209 | * | T213B414K100(1)S | | |
| 100 | 0.5 | B | T111B504K100AS | 0.5 | 2 | 0362 | 0582 | 0802 | 1022 | 6210 | 3210 | 4210 | * | T213B504K100(1)S | | |
| 100 | 0.5 | B | T111B504M100AS | 0.5 | 2 | 0363 | 0583 | 0803 | 1023 | 6211 | 3211 | 4211 | * | T213B504M100(1)S | | |
| 100 | 0.6 | B | T111B604K100AS | 0.5 | 3 | 0364 | 0584 | 0804 | 1024 | 6212 | 3212 | 4212 | * | T213B604K100(1)S | | |
| 100 | 0.75 | B | T111B754K100AS | 0.7 | 3 | 0365 | 0585 | 0805 | 1025 | 6213 | 3213 | 4213 | * | T213B754K100(1)S | | |
| 100 | 0.8 | B | T111B754M100AS | 0.7 | 3 | 0366 | 0586 | 0806 | 1026 | 6214 | 3214 | 4214 | * | T213B754M100(1)S | | |
| 100 | 0.9 | B | T111B904K100AS | 0.7 | 3 | 0367 | 0587 | 0807 | 1027 | 6215 | 3215 | 4215 | * | T213B904K100(1)S | | |
| 100 | 1.1 | B | T111B115K100AS | 0.9 | 3 | 0368 | 0588 | 0808 | 1028 | 6216 | 3216 | 4216 | * | T213B115K100(1)S | | |
| 100 | 1.1 | B | T111B115M100AS | 0.9 | 3 | 0369 | 0589 | 0809 | 1029 | 6217 | 3217 | 4217 | * | T213B115M100(1)S | | |
| 100 | 1.3 | B | T111B135K100AS | 1.1 | 3 | 0370 | 0590 | 0810 | 1030 | 6218 | 3218 | 4218 | * | T213B135K100(1)S | | |
| VDC | µF | Case Size Code | (see below for part options) | µA at 25°C Max/5 Minimum | 120 Hz Maximum | M (1.0) | P (0.1) | R (0.01) | S (0.001) | G (1.0) | B (0.1) | C (0.01) | D (0.001) | Part Number | | |
| Rated Voltage | Rated Cap | Case Size Code | KEMET Part Number | DC Leakage | DF % at 25°C | MIL-PRF-39003 (CSR13) Capacitors | | | | | | | | | | |

(1) To complete KEMET part number, insert failure rate code from Ordering Information table.

Ripple Current/Ripple Voltage

Permissible AC ripple voltage is related to the ESR of the capacitor and the power dissipation capabilities of a particular case size.

Thermal capacities for the various case sizes have been determined empirically and are listed below.

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

T = Environmental Temperature

Permissible AC ripple current can be determined by the following:

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

P max = maximum watts

R = ESR at specified frequency (ohms)

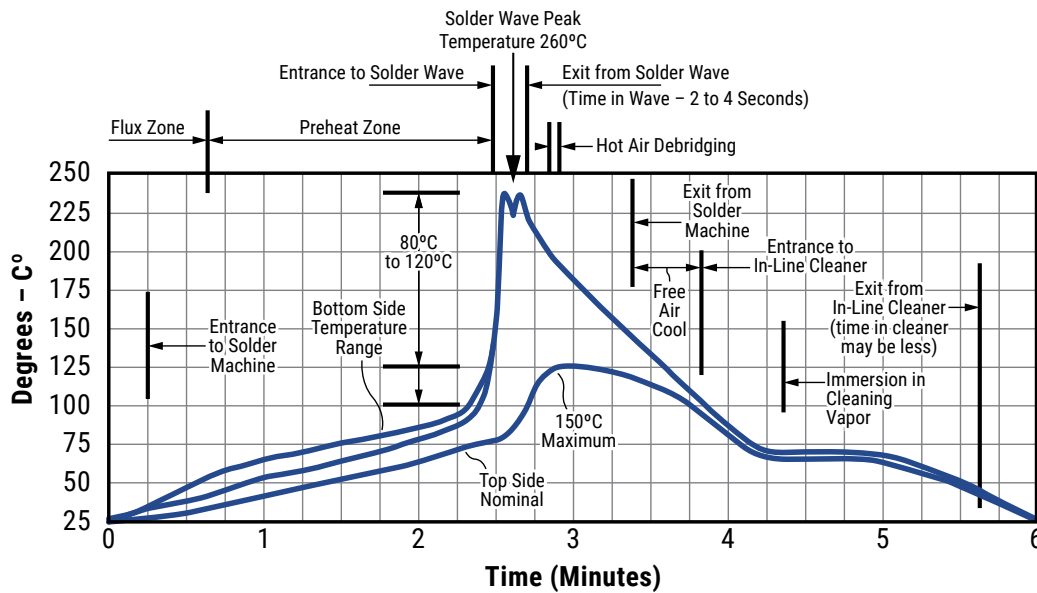
I = rms ripple current (amperes)

Z = capacitor impedance in ohms at the specified frequency

| Case Size | Maximum Power Dissipation (P max) | T2XX |
|-----------|-----------------------------------|-------|
| A | 0.09 | 0.070 |
| B | 0.100 | 0.090 |
| C | 0.125 | – |
| D | 0.180 | – |

Maximum Power Dissipation: 25°C Ambient

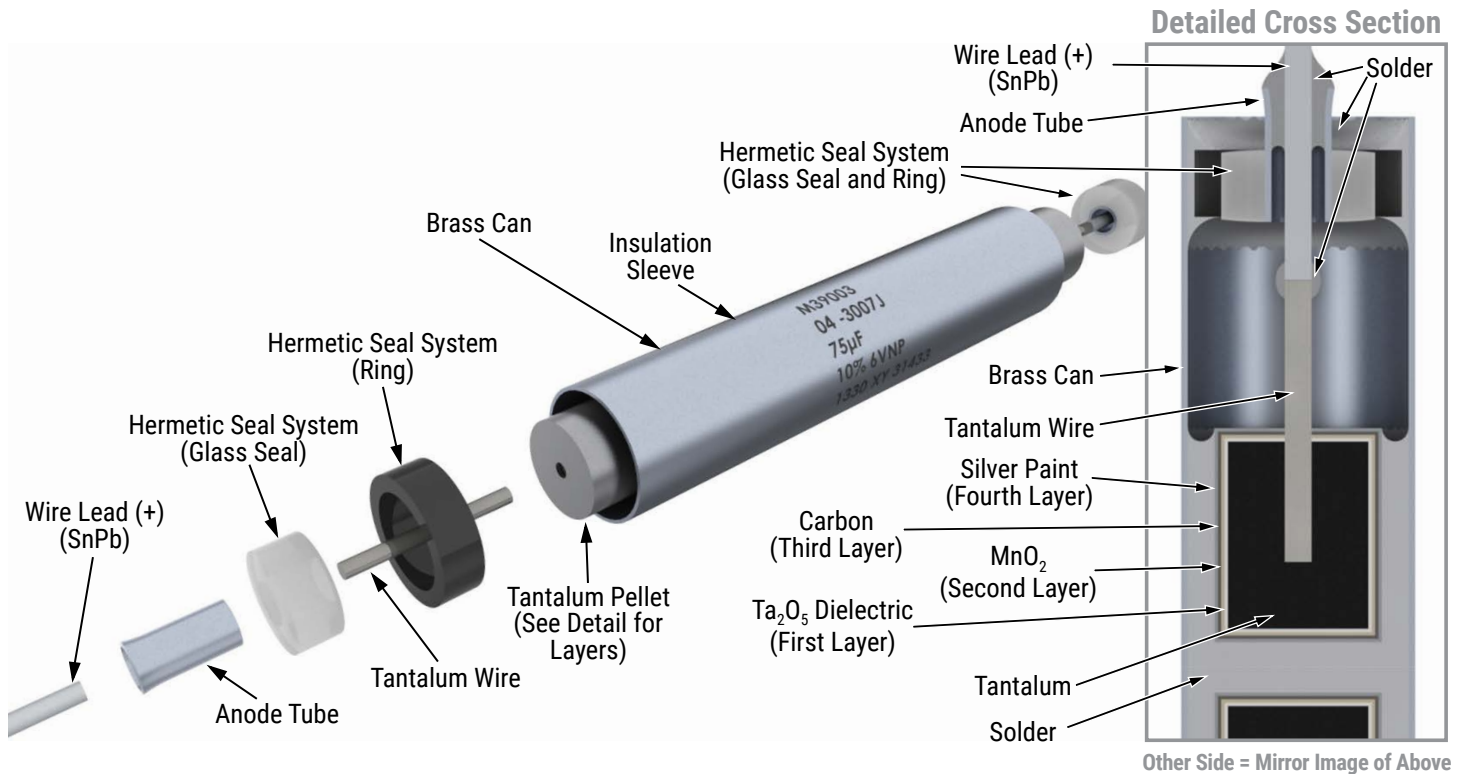
Optimum Solder Wave Profile



Mounting

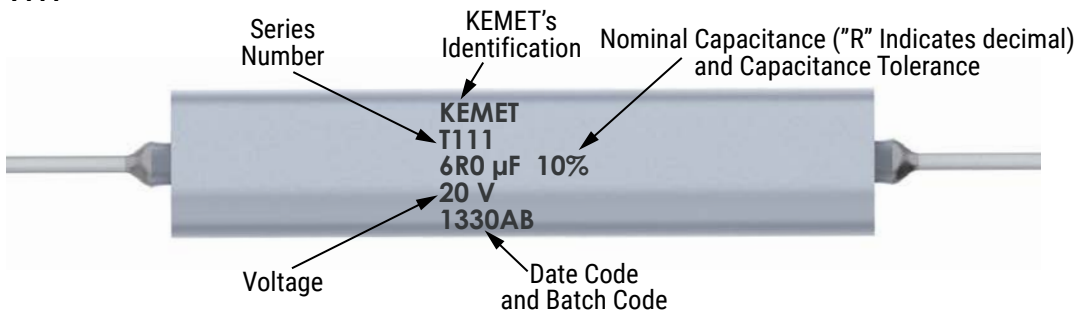
All encased capacitors will pass the Resistance to Soldering Heat Test of MIL-STD-202, Method 210, Condition C. This test simulates wave solder of topside board mount product. This demonstration of resistance to solder heat is in accordance with what is believed to be the industry standard. More severe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

Construction

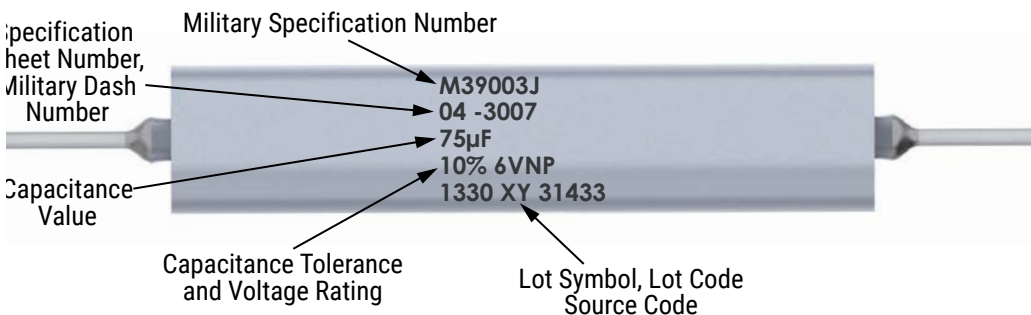


Capacitor Marking

T111



T213 – A, B, C, and D Case



| Date Code | 3 Digit | 4 Digit |
|-----------|--|-----------|
| Year | 5 = 2015 | 15 = 2015 |
| | 6 = 2016 | 16 = 2016 |
| | 7 = 2017 | 17 = 2017 |
| | 8 = 2018 | 18 = 2018 |
| | 9 = 2019 | 19 = 2019 |
| Week | 01 = 1 st week of the year to | |
| | 52 = 52 nd week of the year | |

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.

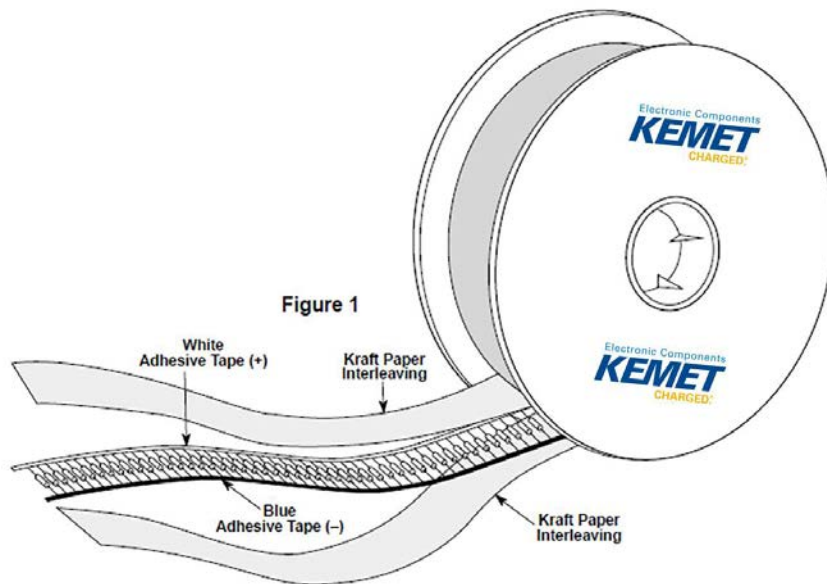


Table 2 – Packaging Quantity

| Case Size | Standard Bulk Quantity | Standard Reel Quantity | Reel C-Spec |
|-----------|------------------------|------------------------|-------------|
| A | 60/Box | 3,000 | C-7200 |
| B | 30/Box | 2,000 | C-7200 |
| C | 10/Card | N/A | N/A |
| D | 10/Card | N/A | N/A |

Figure 2

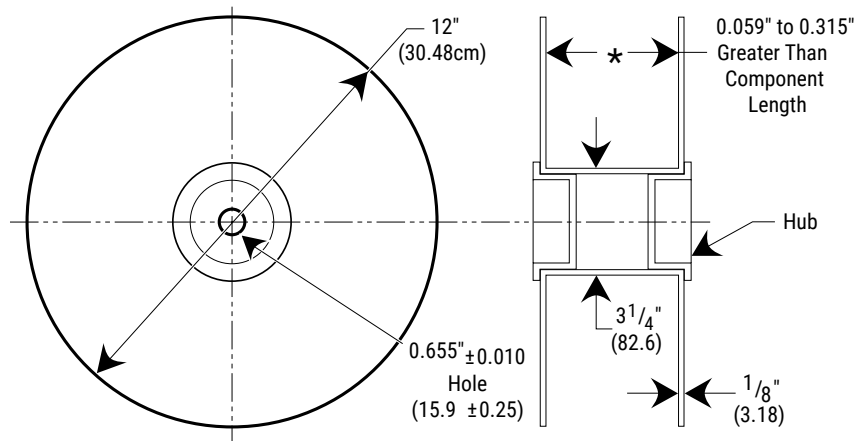


Figure 3

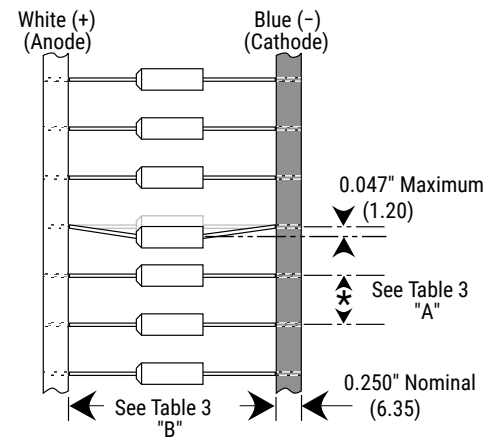


Table 3 – Tape Dimensions

| 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) | 0.020" or (±0.5 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 ≤ 0.200 " sizes and corrugated paper (70 lb. test minimum), single faced is inserted for component pitch ≥ 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 ± 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.

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[489D475X0035D6VE3](#) [489D105X0025A1VE3](#) [489D106X0010B1VE3](#) [489D225X0025B1VE3](#) [790D686X9016C2BE3](#)
[790D226X9040C2BE3](#) [790D105X9040A2BE3](#) [790D106X9025B2BE3](#) [T110A105K050AS](#) [T110D227K010AS](#)