

## CAPACITOR OUTLINE DRAWINGS

| CHIP DIMENSIONS                    | SOLDER COATED                                     | TIN PLATED                                        | SOLDER PLATED                                              |
|------------------------------------|---------------------------------------------------|---------------------------------------------------|------------------------------------------------------------|
|                                    |                                                   |                                                   |                                                            |
| Terminations (Metallization Bands) | Military Designation - S<br>KEMET Designation - H | Military Designation - Y<br>KEMET Designation - C | Military Designation - Z, U, or W<br>KEMET Designation - L |

## DIMENSIONS—MILLIMETERS AND (INCHES)

| STYLE | KEMET SIZE CODE | L                                                                                                  | W                                                                                                  | T          |             | BW                      |
|-------|-----------------|----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|------------|-------------|-------------------------|
|       |                 |                                                                                                    |                                                                                                    | MIN.       | MAX.        |                         |
| CDR01 | C0805           | 2.03 ±.38 (.080 ±.015)                                                                             | 1.27 ±.38 (.050 ±.015)                                                                             | .56 (.022) | 1.40 (.055) | .51 ± 0.25 (.020 ±.010) |
| CDR02 | C1805           | 4.57 ±.38 (.180 ±.015)                                                                             | 1.27 ±.38 (.050 ±.015)                                                                             | .56 (.022) | 1.40 (.055) | .51 ± 0.25 (.020 ±.010) |
| CDR03 | C1808           | 4.57 ±.38 (.180 ±.015)                                                                             | 2.03 ±.38 (.080 ±.015)                                                                             | .56 (.022) | 2.03 (.080) | .51 ± 0.25 (.020 ±.010) |
| CDR04 | C1812           | 4.57 ±.38 (.180 ±.015)                                                                             | 3.18 ±.38 (.125 ±.015)                                                                             | .56 (.022) | 2.03 (.080) | .51 ± 0.25 (.020 ±.010) |
| CDR05 | C1825           | 4.57 $\left( \begin{smallmatrix} +.51 & +.020 \\ .180 & \\ -.38 & -.015 \end{smallmatrix} \right)$ | 6.35 $\left( \begin{smallmatrix} +.51 & +.020 \\ .250 & \\ -.38 & -.015 \end{smallmatrix} \right)$ | .51 (.020) | 2.03 (.080) | .51 ± 0.25 (.020 ±.010) |
| CDR06 | C2225           | 5.72 ±.51 (.225 ±.020)                                                                             | 6.35 ±.51 (.250 ±.020)                                                                             | .51 (.020) | 2.03 (.080) | .51 ± 0.25 (.020 ±.010) |
| CDR31 | C0805           | 2.00 ±.20 (.078 ±.008)                                                                             | 1.25 ±.20 (.049 ±.008)                                                                             |            | 1.30 (.051) | .50 ± 0.20 (.020 ±.008) |
| CDR32 | C1206           | 3.20 ±.20 (.125 ±.008)                                                                             | 1.60 ±.20 (.062 ±.008)                                                                             |            | 1.30 (.051) | .50 ± 0.20 (.020 ±.008) |
| CDR33 | C1210           | 3.20 ±.25 (.125 ±.010)                                                                             | 2.50 ±.25 (.098 ±.010)                                                                             |            | 1.50 (.059) | .50 ± 0.25 (.020 ±.010) |
| CDR34 | C1812           | 4.50 ±.25 (.176 ±.010)                                                                             | 3.20 ±.25 (.125 ±.010)                                                                             |            | 1.50 (.059) | .50 ± 0.25 (.020 ±.010) |
| CDR35 | C1825           | 4.50 ±.30 (.176 ±.012)                                                                             | 6.40 ±.30 (.250 ±.012)                                                                             |            | 1.50 (.059) | .50 ± 0.30 (.020 ±.012) |

Note: For MIL-C55681 "S" Endmet, the length, width and thickness positive tolerances (including bandwidth) cited above are allowed to increase by the following amounts:

|          | Length        | Width         |
|----------|---------------|---------------|
| CDR01    | 0.51MM (.020) | 0.38MM (.015) |
| CDR02-06 | 0.64MM (.025) | 0.38MM (.015) |
| CDR31-35 | 0.60MM (.023) | 0.30MM (.012) |

## MIL-PRF-55681 PART NUMBER ORDERING INFORMATION

|                                                                                                                                                                                                                        |              |          |          |            |          |          |          |          |                                                                                                                                                                                                                      |   |   |   |   |   |   |   |        |         |        |     |     |      |      |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|----------|----------|------------|----------|----------|----------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|---|---|---|---|---|--------|---------|--------|-----|-----|------|------|
|                                                                                                                                                                                                                        | <b>CDR01</b> | <b>B</b> | <b>P</b> | <b>101</b> | <b>B</b> | <b>K</b> | <b>Z</b> | <b>M</b> |                                                                                                                                                                                                                      |   |   |   |   |   |   |   |        |         |        |     |     |      |      |
| <b>STYLE &amp; SIZE CODE</b><br>STYLE<br>C — Ceramic<br>D — Dielectric, Fixed Chip<br>R — Established Reliability                                                                                                      |              |          |          |            |          |          |          |          | <b>FAILURE RATE LEVEL (%/1000 hrs.)</b><br>M — 1.0    R — 0.01<br>P — 0.1    S — 0.001                                                                                                                               |   |   |   |   |   |   |   |        |         |        |     |     |      |      |
| <b>RATED TEMPERATURE</b><br>-55°C to +125°C                                                                                                                                                                            |              |          |          |            |          |          |          |          | <b>TERMINATION FINISH</b><br>S — Solder Coated, Final<br><br>U — Base Metalization—<br>Barrier Metal—Solder<br>Coated<br>Z — Base metalization -<br>barrier metal-tinned (tin/lead<br>alloy, with a min. of 4% lead) |   |   |   |   |   |   |   |        |         |        |     |     |      |      |
| <b>DIELECTRICS</b><br>P — ± 30 PPM/°C—WITH OR WITHOUT VOLTAGE<br>X — ± 15%—without voltage<br>+ 15%, -25%—with voltage                                                                                                 |              |          |          |            |          |          |          |          | W — Base Metalization—<br>Barrier Metal—Tinned<br>Tin or (Tin/Lead Alloy)<br><br>Y — Base Metalization<br>Barrier Metal—Tinned<br>(100% Tin)                                                                         |   |   |   |   |   |   |   |        |         |        |     |     |      |      |
| <b>CAPACITANCE</b><br>Expressed in picofarads (pF).<br>First 2 digits represent significant figures and the last digit specifies the number of zeros to follow.<br>(Use 9 for 1.0 through 9.9pF. Example: 2.2pF = 229) |              |          |          |            |          |          |          |          | <b>CAPACITANCE TOLERANCE</b>                                                                                                                                                                                         |   |   |   |   |   |   |   |        |         |        |     |     |      |      |
|                                                                                                                                                                                                                        |              |          |          |            |          |          |          |          | <table><tr><td>B</td><td>C</td><td>D</td><td>F</td><td>J</td><td>K</td><td>M</td></tr><tr><td>±.1 pF</td><td>±.25 pF</td><td>±.5 pF</td><td>±1%</td><td>±5%</td><td>±10%</td><td>±20%</td></tr></table>              | B | C | D | F | J | K | M | ±.1 pF | ±.25 pF | ±.5 pF | ±1% | ±5% | ±10% | ±20% |
| B                                                                                                                                                                                                                      | C            | D        | F        | J          | K        | M        |          |          |                                                                                                                                                                                                                      |   |   |   |   |   |   |   |        |         |        |     |     |      |      |
| ±.1 pF                                                                                                                                                                                                                 | ±.25 pF      | ±.5 pF   | ±1%      | ±5%        | ±10%     | ±20%     |          |          |                                                                                                                                                                                                                      |   |   |   |   |   |   |   |        |         |        |     |     |      |      |
|                                                                                                                                                                                                                        |              |          |          |            |          |          |          |          | <b>RATED VOLTAGE</b><br>A — 50; B — 100                                                                                                                                                                              |   |   |   |   |   |   |   |        |         |        |     |     |      |      |

## KEMET/MIL-PRF-55681 PART NUMBER EQUIVALENTS

|                                                                                                                                                                                                               |   |      |   |     |   |   |   |   |   |                                                                                                                                                                                                                                           |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|------|---|-----|---|---|---|---|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>CERAMIC</b> _____                                                                                                                                                                                          | C | 0805 | P | 101 | K | 1 | G | M | L | <b>END METALIZATION</b><br>L — 70Sn/30Pb Plated (Military codes Z,W,U)<br>C — 100% Tin Plated (Military code Y)<br>H — Sn60 Coated (Military code S)<br><b>FAILURE RATE (%/1,000 hrs.)</b><br>M — 1.0    R — 0.01<br>P — 0.1    S — 0.001 |
| <b>SIZE CODE</b> _____<br>See Table Above                                                                                                                                                                     |   |      |   |     |   |   |   |   |   |                                                                                                                                                                                                                                           |
| <b>SPECIFICATION</b> _____<br>P-MIL-PRF-55681 = CDR01-CDR06<br>N-MIL-PRF-55681 = CDR31-CDR35                                                                                                                  |   |      |   |     |   |   |   |   |   |                                                                                                                                                                                                                                           |
| <b>CAPACITANCE CODE</b> _____<br>Expressed in picofarads (pF).<br>First two digits represent significant figures.<br>Third digit specifies number of zeros. (Use 9 for 1.0 thru 9.9 pF. Example: 2.2 pF -229) |   |      |   |     |   |   |   |   |   |                                                                                                                                                                                                                                           |
| <b>CAPACITANCE TOLERANCE</b> _____                                                                                                                                                                            |   |      |   |     |   |   |   |   |   | <b>VOLTAGE TEMPERATURE CHARACTERISTIC</b><br>Designated by Capacitance<br>Change Over Temperature Range<br>G — BP (C0G/NP0) (±30 PPM/°C)<br>X — BX (±15% Without Voltage<br>+15% -25% With Voltage)                                       |
|                                                                                                                                                                                                               |   |      |   |     |   |   |   |   |   | <b>VOLTAGE</b><br>1 — 100V, 5 — 50V                                                                                                                                                                                                       |

|        |         |        |     |     |      |      |
|--------|---------|--------|-----|-----|------|------|
| B      | C       | D      | F   | J   | K    | M    |
| ±.1 pF | ±.25 pF | ±.5 pF | ±1% | ±5% | ±10% | ±20% |

Part Number Example: C0805P101K1GML (14 digits - no spaces)

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## RATINGS & PART NUMBER REFERENCE

| Charac-<br>teristics                          | Cap<br>pF                                     | Avail.<br>Tol. | KEMET<br>Part Number | MIL-PRF-55681<br>Part Number |
|-----------------------------------------------|-----------------------------------------------|----------------|----------------------|------------------------------|
| <b>100 Volt - C0805 Size (Military CDR01)</b> |                                               |                |                      |                              |
| BP                                            | 10                                            | J,K            | C0805P100(3)1G(4)L   | CDR01BP100B(3)Z(4)           |
|                                               | 12                                            | J              | C0805P120J1G(4)L     | CDR01BP120BJZ(4)             |
|                                               | 15                                            | J,K            | C0805P150(3)1G(4)L   | CDR01BP150B(3)Z(4)           |
|                                               | 18                                            | J              | C0805P180J1G(4)L     | CDR01BP180BJZ(4)             |
|                                               | 22                                            | J,K            | C0805P220(3)1G(4)L   | CDR01BP220B(3)Z(4)           |
|                                               | 27                                            | J              | C0805P270J1G(4)L     | CDR01BP270BJZ(4)             |
|                                               | 33                                            | J,K            | C0805P330(3)1G(4)L   | CDR01BP330B(3)Z(4)           |
|                                               | 39                                            | J              | C0805P390J1G(4)L     | CDR01BP390BJZ(4)             |
|                                               | 47                                            | J,K            | C0805P470(3)1G(4)L   | CDR01BP470B(3)Z(4)           |
|                                               | 56                                            | J              | C0805P560J1G(4)L     | CDR01BP560BJZ(4)             |
| BX                                            | 68                                            | J,K            | C0805P680(3)1G(4)L   | CDR01BP680B(3)Z(4)           |
|                                               | 82                                            | J              | C0805P820J1G(4)L     | CDR01BP820BJZ(4)             |
|                                               | 100                                           | J,K            | C0805P101(3)1G(4)L   | CDR01BP101B(3)Z(4)           |
|                                               | 120                                           | J,K            | C0805P121(3)1(2)(4)L | CDR01B(1)121B(3)Z(4)         |
|                                               | 150                                           | J,K            | C0805P151(3)1(2)(4)L | CDR01B(1)151B(3)Z(4)         |
|                                               | 180                                           | J,K            | C0805P181(3)1(2)(4)L | CDR01B(1)181B(3)Z(4)         |
|                                               | 220                                           | K,M            | C0805P221(3)1X(4)L   | CDR01BX221B(3)Z(4)           |
|                                               | 270                                           | K              | C0805P271K1X(4)L     | CDR01BX271BKZ(4)             |
|                                               | 330                                           | K,M            | C0805P331(3)1X(4)L   | CDR01BX331B(3)Z(4)           |
|                                               | 390                                           | K              | C0805P391K1X(4)L     | CDR01BX391BKZ(4)             |
| BX                                            | 470                                           | K,M            | C0805P471(3)1X(4)L   | CDR01BX471B(3)Z(4)           |
|                                               | 560                                           | K              | C0805P561K1X(4)L     | CDR01BX561BKZ(4)             |
|                                               | 680                                           | K,M            | C0805P681(3)1X(4)L   | CDR01BX681B(3)Z(4)           |
|                                               | 820                                           | K              | C0805P821K1X(4)L     | CDR01BX821BKZ(4)             |
|                                               | 1,000                                         | K,M            | C0805P1002(3)1X(4)L  | CDR01BX102B(3)Z(4)           |
|                                               | 1,200                                         | K              | C0805P122K1X(4)L     | CDR01BX122BKZ(4)             |
|                                               | 1,500                                         | K,M            | C0805P152(3)1X(4)L   | CDR01BX152B(3)Z(4)           |
|                                               | 1,800                                         | K              | C0805P182K1X(4)L     | CDR01BX182BKZ(4)             |
|                                               | 2,200                                         | K,M            | C0805P222(3)1X(4)L   | CDR01BX222B(3)Z(4)           |
|                                               | 2,700                                         | K              | C0805P272K1X(4)L     | CDR01BX272BKZ(4)             |
| BX                                            | 3,300                                         | K,M            | C0805P332(3)1X(4)L   | CDR01BX332B(3)Z(4)           |
|                                               | <b>50 Volt - C0805 Size (Military CDR01)</b>  |                |                      |                              |
|                                               | 3,900                                         | K              | C0805P392K5X(4)L     | CDR01BX392AKZ(4)             |
|                                               | 4,700                                         | K,M            | C0805P472(3)5X(4)L   | CDR01BX472A(3)Z(4)           |
|                                               | <b>100 Volt - C1805 Size (Military CDR02)</b> |                |                      |                              |
|                                               | 220                                           | J,K            | C1805P221(3)1G(4)L   | CDR02BP221B(3)Z(4)           |
|                                               | 270                                           | J              | C1805P271J1G(4)L     | CDR02BP271BJZ(4)             |
|                                               | 3,900                                         | K              | C1805P392K1X(4)L     | CDR02BX392BKZ(4)             |
|                                               | 4,700                                         | K,M            | C1805P472(3)1X(4)L   | CDR02BX472B(3)Z(4)           |
|                                               | 5,600                                         | K              | C1805P562K1X(4)L     | CDR02BX562BKZ(4)             |
| BX                                            | 6,800                                         | K,M            | C1805P682(3)1X(4)L   | CDR02BX682B(3)Z(4)           |
|                                               | 8,200                                         | K              | C1805P822K1X(4)L     | CDR02BX822BKZ(4)             |
|                                               | 10,000                                        | K,M            | C1805P103(3)1X(4)L   | CDR02BX103B(3)Z(4)           |
|                                               | <b>50 Volt - C1805 Size (Military CDR02)</b>  |                |                      |                              |
|                                               | 12,000                                        | K              | C1805P123K5X(4)L     | CDR02BX123AKZ(4)             |
|                                               | 15,000                                        | K,M            | C1805P153(3)5X(4)L   | CDR02BX153A(3)Z(4)           |
|                                               | 18,000                                        | K              | C1805P183K5X(4)L     | CDR02BX183AKZ(4)             |
|                                               | 22,000                                        | K,M            | C1805P223(3)5X(4)L   | CDR02BX223A(3)Z(4)           |
|                                               | <b>100 Volt - C1808 Size (Military CDR03)</b> |                |                      |                              |
|                                               | 330                                           | J,K            | C1808P331(3)1G(4)L   | CDR03BP331B(3)Z(4)           |
| BP                                            | 390                                           | J              | C1808P391J1G(4)L     | CDR03BP391BJZ(4)             |
|                                               | 470                                           | J,K            | C1808P471(3)1G(4)L   | CDR03BP471B(3)Z(4)           |

| Charac-<br>teristics                                | Cap<br>pF                                     | Avail.<br>Tol. | KEMET<br>Part Number | MIL-PRF-55681<br>Part Number |
|-----------------------------------------------------|-----------------------------------------------|----------------|----------------------|------------------------------|
| <b>100 Volt - C1808 Size (Military CDR03) cont.</b> |                                               |                |                      |                              |
| BP                                                  | 560                                           | J              | C1808P561J1G(4)L     | CDR03BP561BJZ(4)             |
|                                                     | 680                                           | J,K            | C1808P681(3)1G(4)L   | CDR03BP681B(3)Z(4)           |
|                                                     | 820                                           | J              | C1808P821J1G(4)L     | CDR03BP821BJZ(4)             |
|                                                     | 1,000                                         | J,K            | C1808P102(3)1G(4)L   | CDR03BP102B(3)Z(4)           |
| BX                                                  | 12,000                                        | K              | C1808P123K1X(4)L     | CDR03BX123BKZ(4)             |
|                                                     | 15,000                                        | K,M            | C1808P153(3)1X(4)L   | CDR03BX153B(3)Z(4)           |
|                                                     | 18,000                                        | K              | C1808P183K1X(4)L     | CDR03BX183BKZ(4)             |
|                                                     | 22,000                                        | K,M            | C1808P223(3)1X(4)L   | CDR03BX223B(3)Z(4)           |
|                                                     | 27,000                                        | K              | C1808P273K1X(4)L     | CDR03BX273BKZ(4)             |
|                                                     | 33,000                                        | K,M            | C1808P333(3)1X(4)L   | CDR03BX333B(3)Z(4)           |
| <b>50 Volt - C1808 Size (Military CDR03)</b>        |                                               |                |                      |                              |
| BX                                                  | 39,000                                        | K              | C1808P393K5X(4)L     | CDR03BX393AKZ(4)             |
|                                                     | 47,000                                        | K,M            | C1808P473(3)5X(4)L   | CDR03BX473A(3)Z(4)           |
|                                                     | 56,000                                        | K              | C1808P563K5X(4)L     | CDR03BX563AKZ(4)             |
|                                                     | 68,000                                        | K,M            | C1808P683(3)5X(4)L   | CDR03BX683A(3)Z(4)           |
| <b>100 Volt - C1812 Size (Military CDR04)</b>       |                                               |                |                      |                              |
| BP                                                  | 1,200                                         | J              | C1812P122J1G(4)L     | CDR04BP122BJZ(4)             |
|                                                     | 1,500                                         | J,K            | C1812P152(3)1G(4)L   | CDR04BP152B(3)Z(4)           |
|                                                     | 1,800                                         | J              | C1812P182J1G(4)L     | CDR04BP182BJZ(4)             |
|                                                     | 2,200                                         | J,K            | C1812P222(3)1G(4)L   | CDR04BP222B(3)Z(4)           |
|                                                     | 2,700                                         | J              | C1812P272J1G(4)L     | CDR04BP272BJZ(4)             |
|                                                     | 3,300                                         | J,K            | C1812P332(3)1G(4)L   | CDR04BP332B(3)Z(4)           |
| BX                                                  | 39,000                                        | K              | C1812P393K1X(4)L     | CDR04BX393BKZ(4)             |
|                                                     | 47,000                                        | K,M            | C1812P473(3)1X(4)L   | CDR04BX473B(3)Z(4)           |
|                                                     | 56,000                                        | K              | C1812P563K1X(4)L     | CDR04BX563BKZ(4)             |
| <b>50 Volt - C1812 Size (Military CDR04)</b>        |                                               |                |                      |                              |
| BX                                                  | 82,000                                        | K              | C1812P823K5X(4)L     | CDR04BX823AKZ(4)             |
|                                                     | 100,000                                       | K,M            | C1812P104(3)5X(4)L   | CDR04BX104A(3)Z(4)           |
|                                                     | 120,000                                       | K              | C1812P124K5X(4)L     | CDR04BX124AKZ(4)             |
|                                                     | 150,000                                       | K,M            | C1812P154(3)5X(4)L   | CDR04BX154A(3)Z(4)           |
|                                                     | 180,000                                       | K              | C1812P184K5X(4)L     | CDR04BX184AKZ(4)             |
|                                                     | <b>100 Volt - C1825 Size (Military CDR05)</b> |                |                      |                              |
| BP                                                  | 3,900                                         | J,K            | C1825P392(3)1G(4)L   | CDR05BP392B(3)Z(4)           |
|                                                     | 4,700                                         | J,K            | C1825P472(3)1G(4)L   | CDR05BP472B(3)Z(4)           |
|                                                     | 5,600                                         | J,K            | C1825P562(3)1G(4)L   | CDR05BP562B(3)Z(4)           |
| BX                                                  | 68,000                                        | K,M            | C1825P683(3)1X(4)L   | CDR05BX683B(3)Z(4)           |
|                                                     | 82,000                                        | K              | C1825P823K1X(4)L     | CDR05BX823BKZ(4)             |
|                                                     | 100,000                                       | K,M            | C1825P104(3)1X(4)L   | CDR05BX104B(3)Z(4)           |
|                                                     | 120,000                                       | K              | C1825P124K1X(4)L     | CDR05BX124BKZ(4)             |
|                                                     | 150,000                                       | K,M            | C1825P154(3)1X(4)L   | CDR05BX154B(3)Z(4)           |
| <b>50 Volt - C1825 Size (Military CDR05)</b>        |                                               |                |                      |                              |
| BX                                                  | 220,000                                       | K,M            | C1825P224(3)5X(4)L   | CDR05BX224A(3)Z(4)           |
|                                                     | 270,000                                       | K              | C1825P274K5X(4)L     | CDR05BX274AKZ(4)             |
|                                                     | 330,000                                       | K,M            | C1825P334(3)5X(4)L   | CDR05BX334A(3)Z(4)           |
| <b>100 Volt - C2225 Size (Military CDR06)</b>       |                                               |                |                      |                              |
| BP                                                  | 6,800                                         | J,K            | C2225P682(3)1G(4)L   | CDR06BP682B(3)Z(4)           |
|                                                     | 8,200                                         | J,K            | C2225P822(3)1G(4)L   | CDR06BP822B(3)Z(4)           |
|                                                     | 10,000                                        | J,K            | C2225P103(3)1G(4)L   | CDR06BP103B(3)Z(4)           |
| <b>50 Volt - C2225 Size (Military CDR06)</b>        |                                               |                |                      |                              |
| BX                                                  | 390,000                                       | K              | C2225P394K5X(4)L     | CDR06BX394AKZ(4)             |
|                                                     | 470,000                                       | K,M            | C2225P474(3)5X(4)L   | CDR06BX474A(3)Z(4)           |

- (1) To complete Part Number for Dielectric, insert P or X symbol – as defined by Military specification.
- (2) To complete Part number for Dielectric, insert G or X symbol. ("G" for Military "BP", or "X" for Military "BX.")
- (3) To complete Part Number, insert Capacitance Tolerance symbol (when applicable) as available in MIL-PRF-55681: B –  $\pm 0.1\text{pF}$ , C –  $\pm 0.25\text{pF}$ , D –  $\pm 0.5\text{pF}$ , F –  $\pm 1\%$ , J –  $\pm 5\%$ , K –  $\pm 10\%$ , M –  $\pm 20\%$ . **NOTE: Available tolerances are listed in columns above.**
- (4) To complete Part Number, insert Failure Rate symbol: M – 1.0%; P – 0.1%; R – 0.01%; S – 0.001%.

Note: All MIL-PRF-55681 and KEMET Part Numbers tabulated above assume the use of MIL-PRF-55681 "Z", KEMET "L" end metalization. If MIL-PRF-55681 "U", "W" (KEMET "L") or MIL-PRF-55681 "S" (KEMET "H") or MIL-PRF-55681 "Y" (KEMET "C") is required, please change designators accordingly.

### MARKING

See page 97 for MIL-PRF-55681 Marking.

## RATINGS &amp; PART NUMBER REFERENCE

| Cap<br>pF                                          | Avail.<br>Tol. | KEMET<br>Part Number | MIL-PRF-55681<br>Part Number |
|----------------------------------------------------|----------------|----------------------|------------------------------|
| <b>100 Volt - BP - C0805 Size (Military CDR31)</b> |                |                      |                              |
| 1.0                                                | B,C            | C0805N109(3)1G(4)L   | CDR31BP1R0B(3)Z(4)           |
| 1.1                                                | B,C            | C0805N119(3)1G(4)L   | CDR31BP1R1B(3)Z(4)           |
| 1.2                                                | B,C            | C0805C129(3)1G(4)L   | CDR31BP1R2B(3)Z(4)           |
| 1.3                                                | B,C            | C0805N139(3)1G(4)L   | CDR31BP1R3B(3)Z(4)           |
| 1.5                                                | B,C            | C0805N159(3)1G(4)L   | CDR31BP1R5B(3)Z(4)           |
| 1.6                                                | B,C            | C0805N169(3)1G(4)L   | CDR31BP1R6B(3)Z(4)           |
| 1.8                                                | B,C            | C0805N189(3)1G(4)L   | CDR31BP1R8B(3)Z(4)           |
| 2.0                                                | B,C            | C0805N209(3)1G(4)L   | CDR31BP2R0B(3)Z(4)           |
| 2.2                                                | B,C            | C0805N229(3)1G(4)L   | CDR31BP2R2B(3)Z(4)           |
| 2.4                                                | B,C            | C0805N249(3)1G(4)L   | CDR31BP2R4B(3)Z(4)           |
| 2.7                                                | B,C,D          | C0805N279(3)1G(4)L   | CDR31BP2R7B(3)Z(4)           |
| 3.0                                                | B,C,D          | C0805N309(3)1G(4)L   | CDR31BP3R0B(3)Z(4)           |
| 3.3                                                | B,C,D          | C0805N339(3)1G(4)L   | CDR31BP3R3B(3)Z(4)           |
| 3.6                                                | B,C,D          | C0805N369(3)1G(4)L   | CDR31BP3R6B(3)Z(4)           |
| 3.9                                                | B,C,D          | C0805N399(3)1G(4)L   | CDR31BP3R9B(3)Z(4)           |
| 4.3                                                | B,C,D          | C0805N439(3)1G(4)L   | CDR31BP4R3B(3)Z(4)           |
| 4.7                                                | B,C,D          | C0805N479(3)1G(4)L   | CDR31BP4R7B(3)Z(4)           |
| 5.1                                                | B,C,D          | C0805N519(3)1G(4)L   | CDR31BP5R1B(3)Z(4)           |
| 5.6                                                | B,C,D          | C0805N569(3)1G(4)L   | CDR31BP5R6B(3)Z(4)           |
| 6.2                                                | B,C,D          | C0805N629(3)1G(4)L   | CDR31BP6R2B(3)Z(4)           |
| 6.8                                                | B,C,D          | C0805N689(3)1G(4)L   | CDR31BP6R8B(3)Z(4)           |
| 7.5                                                | B,C,D          | C0805N759(3)1G(4)L   | CDR31BP7R5B(3)Z(4)           |
| 8.2                                                | B,C,D          | C0805N829(3)1G(4)L   | CDR31BP8R2B(3)Z(4)           |
| 9.1                                                | B,C,D          | C0805N919(3)1G(4)L   | CDR31BP9R1B(3)Z(4)           |
| 10                                                 | F,J,K          | C0805N100(3)1G(4)L   | CDR31BP100B(3)Z(4)           |
| 11                                                 | F,J,K          | C0805N110(3)1G(4)L   | CDR31BP110B(3)Z(4)           |
| 12                                                 | F,J,K          | C0805N120(3)1G(4)L   | CDR31BP120B(3)Z(4)           |
| 13                                                 | F,J,K          | C0805N130(3)1G(4)L   | CDR31BP130B(3)Z(4)           |
| 15                                                 | F,J,K          | C0805N150(3)1G(4)L   | CDR31BP150B(3)Z(4)           |
| 16                                                 | F,J,K          | C0805N160(3)1G(4)L   | CDR31BP160B(3)Z(4)           |
| 18                                                 | F,J,K          | C0805N180(3)1G(4)L   | CDR31BP180B(3)Z(4)           |
| 20                                                 | F,J,K          | C0805N200(3)1G(4)L   | CDR31BP200B(3)Z(4)           |
| 22                                                 | F,J,K          | C0805N220(3)1G(4)L   | CDR31BP220B(3)Z(4)           |
| 24                                                 | F,J,K          | C0805N240(3)1G(4)L   | CDR31BP240B(3)Z(4)           |
| 27                                                 | F,J,K          | C0805N270(3)1G(4)L   | CDR31BP270B(3)Z(4)           |
| 30                                                 | F,J,K          | C0805N300(3)1G(4)L   | CDR31BP300B(3)Z(4)           |
| 33                                                 | F,J,K          | C0805N330(3)1G(4)L   | CDR31BP330B(3)Z(4)           |
| 36                                                 | F,J,K          | C0805N360(3)1G(4)L   | CDR31BP360B(3)Z(4)           |
| 39                                                 | F,J,K          | C0805N390(3)1G(4)L   | CDR31BP390B(3)Z(4)           |
| 43                                                 | F,J,K          | C0805N430(3)1G(4)L   | CDR31BP430B(3)Z(4)           |
| 47                                                 | F,J,K          | C0805N470(3)1G(4)L   | CDR31BP470B(3)Z(4)           |
| 51                                                 | F,J,K          | C0805N510(3)1G(4)L   | CDR31BP510B(3)Z(4)           |
| 56                                                 | F,J,K          | C0805N560(3)1G(4)L   | CDR31BP560B(3)Z(4)           |
| 62                                                 | F,J,K          | C0805N620(3)1G(4)L   | CDR31BP620B(3)Z(4)           |
| 68                                                 | F,J,K          | C0805N680(3)1G(4)L   | CDR31BP680B(3)Z(4)           |
| 75                                                 | F,J,K          | C0805N750(3)1G(4)L   | CDR31BP750B(3)Z(4)           |
| 82                                                 | F,J,K          | C0805N820(3)1G(4)L   | CDR31BP820B(3)Z(4)           |

| Cap<br>pF                                          | Avail.<br>Tol. | KEMET<br>Part Number | MIL-PRF-55681<br>Part Number |
|----------------------------------------------------|----------------|----------------------|------------------------------|
| <b>100 Volt - BP - C0805 Size (Military CDR31)</b> |                |                      |                              |
| 91                                                 | F,J,K          | C0805N910(3)1G(4)L   | CDR31BP910B(3)Z(4)           |
| 100                                                | F,J,K          | C0805N101(3)1G(4)L   | CDR31BP101B(3)Z(4)           |
| 110                                                | F,J,K          | C0805N111(3)1G(4)L   | CDR31BP111B(3)Z(4)           |
| 120                                                | F,J,K          | C0805N121(3)1G(4)L   | CDR31BP121B(3)Z(4)           |
| 130                                                | F,J,K          | C0805N131(3)1G(4)L   | CDR31BP131B(3)Z(4)           |
| 150                                                | F,J,K          | C0805N151(3)1G(4)L   | CDR31BP151B(3)Z(4)           |
| 160                                                | F,J,K          | C0805N161(3)1G(4)L   | CDR31BP161B(3)Z(4)           |
| 180                                                | F,J,K          | C0805N181(3)1G(4)L   | CDR31BP181B(3)Z(4)           |
| 200                                                | F,J,K          | C0805N201(3)1G(4)L   | CDR31BP201B(3)Z(4)           |
| 220                                                | F,J,K          | C0805N221(3)1G(4)L   | CDR31BP221B(3)Z(4)           |
| 240                                                | F,J,K          | C0805N241(3)1G(4)L   | CDR31BP241B(3)Z(4)           |
| 270                                                | F,J,K          | C0805N271(3)1G(4)L   | CDR31BP271B(3)Z(4)           |
| 300                                                | F,J,K          | C0805N301(3)1G(4)L   | CDR31BP301B(3)Z(4)           |
| 330                                                | F,J,K          | C0805N331(3)1G(4)L   | CDR31BP331B(3)Z(4)           |
| 360                                                | F,J,K          | C0805N361(3)1G(4)L   | CDR31BP361B(3)Z(4)           |
| 390                                                | F,J,K          | C0805N391(3)1G(4)L   | CDR31BP391B(3)Z(4)           |
| 430                                                | F,J,K          | C0805N431(3)1G(4)L   | CDR31BP431B(3)Z(4)           |
| 470                                                | F,J,K          | C0805N471(3)1G(4)L   | CDR31BP471B(3)Z(4)           |
| <b>50 Volt - BP - C0805 Size (Military CDR31)</b>  |                |                      |                              |
| 510                                                | F,J,K          | C0805N511(3)5G(4)L   | CDR31BP511A(3)Z(4)           |
| 560                                                | F,J,K          | C0805N561(3)5G(4)L   | CDR31BP561A(3)Z(4)           |
| 620                                                | F,J,K          | C0805N621(3)5G(4)L   | CDR31BP621A(3)Z(4)           |
| 680                                                | F,J,K          | C0805N681(3)5G(4)L   | CDR31BP681A(3)Z(4)           |
| <b>100 Volt - BX - C0805 Size (Military CDR31)</b> |                |                      |                              |
| 470                                                | K,M            | C0805N471(3)1X(4)L   | CDR31BX471B(3)Z(4)           |
| 560                                                | K,M            | C0805N561(3)1X(4)L   | CDR31BX561B(3)Z(4)           |
| 680                                                | K,M            | C0805N681(3)1X(4)L   | CDR31BX681B(3)Z(4)           |
| 820                                                | K,M            | C0805N821(3)1X(4)L   | CDR31BX821B(3)Z(4)           |
| 1,000                                              | K,M            | C0805N102(3)1X(4)L   | CDR31BX102B(3)Z(4)           |
| 1,200                                              | K,M            | C0805N122(3)1X(4)L   | CDR31BX122B(3)Z(4)           |
| 1,500                                              | K,M            | C0805N152(3)1X(4)L   | CDR31BX152B(3)Z(4)           |
| 1,800                                              | K,M            | C0805N182(3)1X(4)L   | CDR31BX182B(3)Z(4)           |
| 2,200                                              | K,M            | C0805N222(3)1X(4)L   | CDR31BX222B(3)Z(4)           |
| 2,700                                              | K,M            | C0805N272(3)1X(4)L   | CDR31BX272B(3)Z(4)           |
| 3,300                                              | K,M            | C0805N332(3)1X(4)L   | CDR31BX332B(3)Z(4)           |
| 3,900                                              | K,M            | C0805N392(3)1X(4)L   | CDR31BX392B(3)Z(4)           |
| 4,700                                              | K,M            | C0805N472(3)1X(4)L   | CDR31BX472B(3)Z(4)           |
| <b>50 Volt - BX - C0805 Size (Military CDR31)</b>  |                |                      |                              |
| 5,600                                              | K,M            | C0805N562(3)5X(4)L   | CDR31BX562A(3)Z(4)           |
| 6,800                                              | K,M            | C0805N682(3)5X(4)L   | CDR31BX682A(3)Z(4)           |
| 8,200                                              | K,M            | C0805N822(3)5X(4)L   | CDR31BX822A(3)Z(4)           |
| 10,000                                             | K,M            | C0805N103(3)5X(4)L   | CDR31BX103A(3)Z(4)           |
| 12,000                                             | K,M            | C0805N123(3)5X(4)L   | CDR31BX123A(3)Z(4)           |
| 15,000                                             | K,M            | C0805N153(3)5X(4)L   | CDR31BX153A(3)Z(4)           |
| 18,000                                             | K,M            | C0805N183(3)5X(4)L   | CDR31BX183A(3)Z(4)           |

- (1) To complete Part Number for Dielectric, insert P or X symbol – as defined by Military specification.
- (2) To complete Part number for Dielectric, insert G or X symbol. ("G" for Military "BP", or "X" for Military "BX.")
- (3) To complete Part Number, insert Capacitance Tolerance symbol (when applicable) as available in MIL-PRF-55681: B –  $\pm 0.1\text{pF}$ , C –  $\pm 0.25\text{pF}$ , D –  $\pm 0.5\text{pF}$ , F –  $\pm 1\%$ , J –  $\pm 5\%$ , K –  $\pm 10\%$ , M –  $\pm 20\%$ . **NOTE: Available tolerances are listed in columns above.**
- (4) To complete Part Number, insert Failure Rate symbol: M – 1.0%; P – 0.1%; R – 0.01%; S – 0.001%.

Note: All MIL-PRF-55681 and KEMET Part Numbers tabulated above assume the use of MIL-PRF-55681 "Z", KEMET "L" end metalization. If MIL-PRF-55681 "U", "W" (KEMET "L") or MIL-PRF-55681 "S" (KEMET "H") or MIL-PRF-55681 "Y" (KEMET "C") is required, please change designators accordingly.

## MARKING

See page 97 for MIL-PRF-55681 Marking.

## RATINGS & PART NUMBER REFERENCE

| Cap<br>pF                                          | Avail.<br>Tol. | KEMET<br>Part Number | MIL-PRF-55681<br>Part Number | Cap<br>pF                                          | Avail.<br>Tol. | KEMET<br>Part Number | MIL-PRF-55681<br>Part Number |
|----------------------------------------------------|----------------|----------------------|------------------------------|----------------------------------------------------|----------------|----------------------|------------------------------|
| <b>100 Volt - BP - C1206 Size (Military CDR32)</b> |                |                      |                              | <b>100 Volt - BP - C1206 Size (Military CDR32)</b> |                |                      |                              |
| 1.0                                                | B,C            | C1206N109(3)1G(4)L   | CDR32BP1R0B(3)Z(4)           | 110                                                | F,J,K          | C1206N111(3)1G(4)L   | CDR32BP111B(3)Z(4)           |
| 1.1                                                | B,C            | C1206N119(3)1G(4)L   | CDR32BP1R1B(3)Z(4)           | 120                                                | F,J,K          | C1206N121(3)1G(4)L   | CDR32BP121B(3)Z(4)           |
| 1.2                                                | B,C            | C1206N129(3)1G(4)L   | CDR32BP1R2B(3)Z(4)           | 130                                                | F,J,K          | C1206N131(3)1G(4)L   | CDR32BP131B(3)Z(4)           |
| 1.3                                                | B,C            | C1206N139(3)1G(4)L   | CDR32BP1R3B(3)Z(4)           | 150                                                | F,J,K          | C1206N151(3)1G(4)L   | CDR32BP151B(3)Z(4)           |
| 1.5                                                | B,C            | C1206N159(3)1G(4)L   | CDR32BP1R5B(3)Z(4)           | 160                                                | F,J,K          | C1206N161(3)1G(4)L   | CDR32BP161B(3)Z(4)           |
| 1.6                                                | B,C            | C1206N169(3)1G(4)L   | CDR32BP1R6B(3)Z(4)           | 180                                                | F,J,K          | C1206N181(3)1G(4)L   | CDR32BP181B(3)Z(4)           |
| 1.8                                                | B,C            | C1206N189(3)1G(4)L   | CDR32BP1R8B(3)Z(4)           | 200                                                | F,J,K          | C1206N201(3)1G(4)L   | CDR32BP201B(3)Z(4)           |
| 2.0                                                | B,C            | C1206N209(3)1G(4)L   | CDR32BP2R0B(3)Z(4)           | 220                                                | F,J,K          | C1206N221(3)1G(4)L   | CDR32BP221B(3)Z(4)           |
| 2.2                                                | B,C            | C1206N229(3)1G(4)L   | CDR32BP2R2B(3)Z(4)           | 240                                                | F,J,K          | C1206N241(3)1G(4)L   | CDR32BP241B(3)Z(4)           |
| 2.4                                                | B,C            | C1206N249(3)1G(4)L   | CDR32BP2R4B(3)Z(4)           | 270                                                | F,J,K          | C1206N271(3)1G(4)L   | CDR32BP271B(3)Z(4)           |
| 2.7                                                | B,C,D          | C1206N279(3)1G(4)L   | CDR32BP2R7B(3)Z(4)           | 300                                                | F,J,K          | C1206N301(3)1G(4)L   | CDR32BP301B(3)Z(4)           |
| 3.0                                                | B,C,D          | C1206N309(3)1G(4)L   | CDR32BP3R0B(3)Z(4)           | 330                                                | F,J,K          | C1206N331(3)1G(4)L   | CDR32BP331B(3)Z(4)           |
| 3.3                                                | B,C,D          | C1206N339(3)1G(4)L   | CDR32BP3R3B(3)Z(4)           | 360                                                | F,J,K          | C1206N361(3)1G(4)L   | CDR32BP361B(3)Z(4)           |
| 3.6                                                | B,C,D          | C1206N369(3)1G(4)L   | CDR32BP3R6B(3)Z(4)           | 390                                                | F,J,K          | C1206N391(3)1G(4)L   | CDR32BP391B(3)Z(4)           |
| 3.9                                                | B,C,D          | C1206N399(3)1G(4)L   | CDR32BP3R9B(3)Z(4)           | 430                                                | F,J,K          | C1206N431(3)1G(4)L   | CDR32BP431B(3)Z(4)           |
| 4.3                                                | B,C,D          | C1206N439(3)1G(4)L   | CDR32BP4R3B(3)Z(4)           | 470                                                | F,J,K          | C1206N471(3)1G(4)L   | CDR32BP471B(3)Z(4)           |
| 4.7                                                | B,C,D          | C1206N479(3)1G(4)L   | CDR32BP4R7B(3)Z(4)           | 510                                                | F,J,K          | C1206N511(3)1G(4)L   | CDR32BP511B(3)Z(4)           |
| 5.1                                                | B,C,D          | C1206N519(3)1G(4)L   | CDR32BP5R1B(3)Z(4)           | 560                                                | F,J,K          | C1206N561(3)1G(4)L   | CDR32BP561B(3)Z(4)           |
| 5.6                                                | B,C,D          | C1206N569(3)1G(4)L   | CDR32BP5R6B(3)Z(4)           | 620                                                | F,J,K          | C1206N621(3)1G(4)L   | CDR32BP621B(3)Z(4)           |
| 6.2                                                | B,C,D          | C1206N629(3)1G(4)L   | CDR32BP6R2B(3)Z(4)           | 680                                                | F,J,K          | C1206N681(3)1G(4)L   | CDR32BP681B(3)Z(4)           |
| 6.8                                                | B,C,D          | C1206N689(3)1G(4)L   | CDR32BP6R8B(3)Z(4)           | 750                                                | F,J,K          | C1206N751(3)1G(4)L   | CDR32BP751B(3)Z(4)           |
| 7.5                                                | B,C,D          | C1206N759(3)1G(4)L   | CDR32BP7R5B(3)Z(4)           | 820                                                | F,J,K          | C1206N821(3)1G(4)L   | CDR32BP821B(3)Z(4)           |
| 8.2                                                | B,C,D          | C1206N829(3)1G(4)L   | CDR32BP8R2B(3)Z(4)           | 910                                                | F,J,K          | C1206N911(3)1G(4)L   | CDR32BP911B(3)Z(4)           |
| 9.1                                                | B,C,D          | C1206N919(3)1G(4)L   | CDR32BP9R1B(3)Z(4)           | 1,000                                              | F,J,K          | C1206N102(3)1G(4)L   | CDR32BP102B(3)Z(4)           |
| 10                                                 | F,J,K          | C1206N100(3)1G(4)L   | CDR32BP100B(3)Z(4)           | <b>50 Volt - BP - C1206 Size (Military CDR32)</b>  |                |                      |                              |
| 11                                                 | F,J,K          | C1206N110(3)1G(4)L   | CDR32BP110B(3)Z(4)           | 1,100                                              | F,J,K          | C1206N112(3)5G(4)L   | CDR32BP112A(3)Z(4)           |
| 12                                                 | F,J,K          | C1206N120(3)1G(4)L   | CDR32BP120B(3)Z(4)           | 1,200                                              | F,J,K          | C1206N122(3)5G(4)L   | CDR32BP122A(3)Z(4)           |
| 13                                                 | F,J,K          | C1206N130(3)1G(4)L   | CDR32BP130B(3)Z(4)           | 1,300                                              | F,J,K          | C1206N132(3)5G(4)L   | CDR32BP132A(3)Z(4)           |
| 15                                                 | F,J,K          | C1206N150(3)1G(4)L   | CDR32BP150B(3)Z(4)           | 1,500                                              | F,J,K          | C1206N152(3)5G(4)L   | CDR32BP152A(3)Z(4)           |
| 16                                                 | F,J,K          | C1206N160(3)1G(4)L   | CDR32BP160B(3)Z(4)           | 1,600                                              | F,J,K          | C1206N162(3)5G(4)L   | CDR32BP162A(3)Z(4)           |
| 18                                                 | F,J,K          | C1206N180(3)1G(4)L   | CDR32BP180B(3)Z(4)           | 1,800                                              | F,J,K          | C1206N182(3)5G(4)L   | CDR32BP182A(3)Z(4)           |
| 20                                                 | F,J,K          | C1206N200(3)1G(4)L   | CDR32BP200B(3)Z(4)           | 2,000                                              | F,J,K          | C1206N202(3)5G(4)L   | CDR32BP202A(3)Z(4)           |
| 22                                                 | F,J,K          | C1206N220(3)1G(4)L   | CDR32BP220B(3)Z(4)           | 2,200                                              | F,J,K          | C1206N222(3)5G(4)L   | CDR32BP222A(3)Z(4)           |
| 24                                                 | F,J,K          | C1206N240(3)1G(4)L   | CDR32BP240B(3)Z(4)           | <b>100 Volt - BX - C1206 Size (Military CDR32)</b> |                |                      |                              |
| 27                                                 | F,J,K          | C1206N270(3)1G(4)L   | CDR32BP270B(3)Z(4)           | 4,700                                              | K,M            | C1206N472(3)1X(4)L   | CDR32BX472B(3)Z(4)           |
| 30                                                 | F,J,K          | C1206N300(3)1G(4)L   | CDR32BP300B(3)Z(4)           | 5,600                                              | K,M            | C1206N562(3)1X(4)L   | CDR32BX562B(3)Z(4)           |
| 33                                                 | F,J,K          | C1206N330(3)1G(4)L   | CDR32BP330B(3)Z(4)           | 6,800                                              | K,M            | C1206N682(3)1X(4)L   | CDR32BX682B(3)Z(4)           |
| 36                                                 | F,J,K          | C1206N360(3)1G(4)L   | CDR32BP360B(3)Z(4)           | 8,200                                              | K,M            | C1206N822(3)1X(4)L   | CDR32BX822B(3)Z(4)           |
| 39                                                 | F,J,K          | C1206N390(3)1G(4)L   | CDR32BP390B(3)Z(4)           | 10,000                                             | K,M            | C1206N103(3)1X(4)L   | CDR32BX103B(3)Z(4)           |
| 43                                                 | F,J,K          | C1206N430(3)1G(4)L   | CDR32BP430B(3)Z(4)           | 12,000                                             | K,M            | C1206N123(3)1X(4)L   | CDR32BX123B(3)Z(4)           |
| 47                                                 | F,J,K          | C1206N470(3)1G(4)L   | CDR32BP470B(3)Z(4)           | 15,000                                             | K,M            | C1206N153(3)1X(4)L   | CDR32BX153B(3)Z(4)           |
| 51                                                 | F,J,K          | C1206N510(3)1G(4)L   | CDR32BP510B(3)Z(4)           | <b>50 Volt - BX - C1206 Size (Military CDR32)</b>  |                |                      |                              |
| 56                                                 | F,J,K          | C1206N560(3)1G(4)L   | CDR32BP560B(3)Z(4)           | 18,000                                             | K,M            | C1206N183(3)5X(4)L   | CDR32BX183A(3)Z(4)           |
| 62                                                 | F,J,K          | C1206N620(3)1G(4)L   | CDR32BP620B(3)Z(4)           | 22,000                                             | K,M            | C1206N223(3)5X(4)L   | CDR32BX223A(3)Z(4)           |
| 68                                                 | F,J,K          | C1206N680(3)1G(4)L   | CDR32BP680B(3)Z(4)           | 27,000                                             | K,M            | C1206N273(3)5X(4)L   | CDR32BX273A(3)Z(4)           |
| 75                                                 | F,J,K          | C1206N750(3)1G(4)L   | CDR32BP750B(3)Z(4)           | 33,000                                             | K,M            | C1206N333(3)5X(4)L   | CDR32BX333A(3)Z(4)           |
| 82                                                 | F,J,K          | C1206N820(3)1G(4)L   | CDR32BP820B(3)Z(4)           | 39,000                                             | K,M            | C1206N393(3)5X(4)L   | CDR32BX393A(3)Z(4)           |
| 91                                                 | F,J,K          | C1206N910(3)1G(4)L   | CDR32BP910B(3)Z(4)           |                                                    |                |                      |                              |
| 100                                                | F,J,K          | C1206N101(3)1G(4)L   | CDR32BP101B(3)Z(4)           |                                                    |                |                      |                              |

- (1) To complete Part Number for Dielectric, insert P or X symbol – as defined by Military specification.
- (2) To complete Part number for Dielectric, insert G or X symbol. ("G" for Military "BP", or "X" for Military "BX".)
- (3) To complete Part Number, insert Capacitance Tolerance symbol (when applicable) as available in MIL-PRF-55681: B =  $\pm 0.1\text{pF}$ , C =  $\pm 0.25\text{pF}$ , D =  $\pm 0.5\text{pF}$ , F =  $\pm 1\%$ , J =  $\pm 5\%$ , K =  $\pm 10\%$ , M =  $\pm 20\%$ . **NOTE: Available tolerances are listed in columns above.**
- (4) To complete Part Number, insert Failure Rate symbol: M – 1.0%; P – 0.1%; R – 0.01%; S – 0.001%.

Note: All MIL-PRF-55681 and KEMET Part Numbers tabulated above assume the use of MIL-PRF-55681 "Z", KEMET "L" end metalization. If MIL-PRF-55681 "U", "W" (KEMET "L") or MIL-PRF-55681 "S" (KEMET "H") or MIL-PRF-55681 "Y" (KEMET "C") is required, please change designators accordingly.

### MARKING

See page 97 for MIL-PRF-55681 Marking.



## RATINGS &amp; PART NUMBER REFERENCE

| Cap<br>pF                                          | Avail.<br>Tol. | KEMET<br>Part Number | MIL-PRF-55681<br>Part Number |
|----------------------------------------------------|----------------|----------------------|------------------------------|
| <b>100 Volt - BP - C1210 Size (Military CDR33)</b> |                |                      |                              |
| 1,000                                              | F,J,K          | C1210N102(3)1G(4)L   | CDR33BP102B(3)Z(4)           |
| 1,100                                              | F,J,K          | C1210N112(3)1G(4)L   | CDR33BP112B(3)Z(4)           |
| 1,200                                              | F,J,K          | C1210N122(3)1G(4)L   | CDR33BP122B(3)Z(4)           |
| 1,300                                              | F,J,K          | C1210N132(3)1G(4)L   | CDR33BP132B(3)Z(4)           |
| 1,500                                              | F,J,K          | C1210N152(3)1G(4)L   | CDR33BP152B(3)Z(4)           |
| 1,600                                              | F,J,K          | C1210N162(3)1G(4)L   | CDR33BP162B(3)Z(4)           |
| 1,800                                              | F,J,K          | C1210N182(3)1G(4)L   | CDR33BP182B(3)Z(4)           |
| 2,000                                              | F,J,K          | C1210N202(3)1G(4)L   | CDR33BP202B(3)Z(4)           |
| 2,200                                              | F,J,K          | C1210N222(3)1G(4)L   | CDR33BP222B(3)Z(4)           |
| <b>50 Volt - BP - C1210 Size (Military CDR33)</b>  |                |                      |                              |
| 2,400                                              | F,J,K          | C1210N242(3)5G(4)L   | CDR33BP242A(3)Z(4)           |
| 2,700                                              | F,J,K          | C1210N272(3)5G(4)L   | CDR33BP272A(3)Z(4)           |
| 3,000                                              | F,J,K          | C1210N302(3)5G(4)L   | CDR33BP302A(3)Z(4)           |
| 3,300                                              | F,J,K          | C1210N332(3)5G(4)L   | CDR33BP332A(3)Z(4)           |
| <b>100 Volt - BX - C1210 Size (Military CDR33)</b> |                |                      |                              |
| 15,000                                             | K,M            | C1210N153(3)1X(4)L   | CDR33BX153B(3)Z(4)           |
| 18,000                                             | K,M            | C1210N183(3)1X(4)L   | CDR33BX183B(3)Z(4)           |
| 22,000                                             | K,M            | C1210N223(3)1X(4)L   | CDR33BX223B(3)Z(4)           |
| 27,000                                             | K,M            | C1210N273(3)1X(4)L   | CDR33BX273B(3)Z(4)           |
| <b>50 Volt - BX - C1210 Size (Military CDR33)</b>  |                |                      |                              |
| 39,000                                             | K,M            | C1210N393(3)5X(4)L   | CDR33BX393A(3)Z(4)           |
| 47,000                                             | K,M            | C1210N473(3)5X(4)L   | CDR33BX473A(3)Z(4)           |
| 56,000                                             | K,M            | C1210N563(3)5X(4)L   | CDR33BX563A(3)Z(4)           |
| 68,000                                             | K,M            | C1210N683(3)5X(4)L   | CDR33BX683A(3)Z(4)           |
| 82,000                                             | K,M            | C1210N823(3)5X(4)L   | CDR33BX823A(3)Z(4)           |
| 100,000                                            | K,M            | C1210N104(3)5X(4)L   | CDR33BX104A(3)Z(4)           |
| <b>100 Volt - BP - C1812 Size (Military CDR34)</b> |                |                      |                              |
| 2,200                                              | F,J,K          | C1812N222(3)1G(4)L   | CDR34BP222B(3)Z(4)           |
| 2,400                                              | F,J,K          | C1812N242(3)1G(4)L   | CDR34BP242B(3)Z(4)           |
| 2,700                                              | F,J,K          | C1812N272(3)1G(4)L   | CDR34BP272B(3)Z(4)           |
| 3,000                                              | F,J,K          | C1812N322(3)1G(4)L   | CDR34BP302B(3)Z(4)           |
| 3,300                                              | F,J,K          | C1812N332(3)1G(4)L   | CDR34BP332B(3)Z(4)           |
| 3,600                                              | F,J,K          | C1812N362(3)1G(4)L   | CDR34BP362B(3)Z(4)           |
| 3,900                                              | F,J,K          | C1812N392(3)1G(4)L   | CDR34BP392B(3)Z(4)           |
| 4,300                                              | F,J,K          | C1812N432(3)1G(4)L   | CDR34BP432B(3)Z(4)           |
| 4,700                                              | F,J,K          | C1812N472(3)1G(4)L   | CDR34BP472B(3)Z(4)           |
| <b>50 Volt - BP - C1812 Size (Military CDR34)</b>  |                |                      |                              |
| 5,100                                              | F,J,K          | C1812N512(3)5G(4)L   | CDR34BP512A(3)Z(4)           |
| 5,600                                              | F,J,K          | C1812N562(3)5G(4)L   | CDR34BP562A(3)Z(4)           |
| 6,200                                              | F,J,K          | C1812N622(3)5G(4)L   | CDR34BP622A(3)Z(4)           |
| 6,800                                              | F,J,K          | C1812N682(3)5G(4)L   | CDR34BP682A(3)Z(4)           |
| 7,500                                              | F,J,K          | C1812N752(3)5G(4)L   | CDR34BP752A(3)Z(4)           |
| 8,200                                              | F,J,K          | C1812N822(3)5G(4)L   | CDR34BP822A(3)Z(4)           |
| 9,100                                              | F,J,K          | C1812N912(3)5G(4)L   | CDR34BP912A(3)Z(4)           |
| 10,000                                             | F,J,K          | C1812N103(3)5G(4)L   | CDR34BP103A(3)Z(4)           |

| Cap<br>pF                                          | Avail.<br>Tol. | KEMET<br>Part Number | MIL-PRF-55681<br>Part Number |
|----------------------------------------------------|----------------|----------------------|------------------------------|
| <b>100 Volt - BX - C1812 Size (Military CDR34)</b> |                |                      |                              |
| 27,000                                             | K,M            | C1812N273(3)1X(4)L   | CDR34BX273B(3)Z(4)           |
| 33,000                                             | K,M            | C1812N333(3)1X(4)L   | CDR34BX333B(3)Z(4)           |
| 39,000                                             | K,M            | C1812N393(3)1X(4)L   | CDR34BX393B(3)Z(4)           |
| 47,000                                             | K,M            | C1812N473(3)1X(4)L   | CDR34BX473B(3)Z(4)           |
| 56,000                                             | K,M            | C1812N563(3)1X(4)L   | CDR34BX563B(3)Z(4)           |
| <b>50 Volt - BX - C1812 Size (Military CDR34)</b>  |                |                      |                              |
| 100,000                                            | K,M            | C1812N104(3)5X(4)L   | CDR34BX104A(3)Z(4)           |
| 120,000                                            | K,M            | C1812N124(3)5X(4)L   | CDR34BX124A(3)Z(4)           |
| 150,000                                            | K,M            | C1812N154(3)5X(4)L   | CDR34BX154A(3)Z(4)           |
| 180,000                                            | K,M            | C1812N184(3)5X(4)L   | CDR34BX184A(3)Z(4)           |
| <b>100 Volt - BP - C1825 Size (Military CDR35)</b> |                |                      |                              |
| 4,700                                              | F,J,K          | C1825N472(3)1G(4)L   | CDR35BP472B(3)Z(4)           |
| 5,100                                              | F,J,K          | C1825N512(3)1G(4)L   | CDR35BP512B(3)Z(4)           |
| 5,600                                              | F,J,K          | C1825N562(3)1G(4)L   | CDR35BP562B(3)Z(4)           |
| 6,200                                              | F,J,K          | C1825N622(3)1G(4)L   | CDR35BP622B(3)Z(4)           |
| 6,800                                              | F,J,K          | C1825N682(3)1G(4)L   | CDR35BP682B(3)Z(4)           |
| 7,500                                              | F,J,K          | C1825N752(3)1G(4)L   | CDR35BP752B(3)Z(4)           |
| 8,200                                              | F,J,K          | C1825N822(3)1G(4)L   | CDR35BP822B(3)Z(4)           |
| 9,100                                              | F,J,K          | C1825N912(3)1G(4)L   | CDR35BP912B(3)Z(4)           |
| 10,000                                             | F,J,K          | C1825N103(3)1G(4)L   | CDR35BP103B(3)Z(4)           |
| <b>50 Volt - BP - C1825 Size (Military CDR35)</b>  |                |                      |                              |
| 11,000                                             | F,J,K          | C1825N113(3)5G(4)L   | CDR35BP113A(3)Z(4)           |
| 12,000                                             | F,J,K          | C1825N123(3)5G(4)L   | CDR35BP123A(3)Z(4)           |
| 13,000                                             | F,J,K          | C1825N133(3)5G(4)L   | CDR35BP133A(3)Z(4)           |
| 15,000                                             | F,J,K          | C1825N153(3)5G(4)L   | CDR35BP153A(3)Z(4)           |
| 16,000                                             | F,J,K          | C1825N163(3)5G(4)L   | CDR35BP163A(3)Z(4)           |
| 18,000                                             | F,J,K          | C1825N183(3)5G(4)L   | CDR35BP183A(3)Z(4)           |
| 20,000                                             | F,J,K          | C1825N203(3)5G(4)L   | CDR35BP203A(3)Z(4)           |
| 22,000                                             | F,J,K          | C1825N223(3)5G(4)L   | CDR35BP223A(3)Z(4)           |
| <b>100 Volt - BX - C1825 Size (Military CDR35)</b> |                |                      |                              |
| 56,000                                             | K,M            | C1825N563(3)1X(4)L   | CDR35BX563B(3)Z(4)           |
| 68,000                                             | K,M            | C1825N683(3)1X(4)L   | CDR35BX683B(3)Z(4)           |
| 82,000                                             | K,M            | C1825N823(3)1X(4)L   | CDR35BX823B(3)Z(4)           |
| 100,000                                            | K,M            | C1825N104(3)1X(4)L   | CDR35BX104B(3)Z(4)           |
| 120,000                                            | K,M            | C1825N124(3)1X(4)L   | CDR35BX124B(3)Z(4)           |
| 150,000                                            | K,M            | C1825N154(3)1X(4)L   | CDR35BX154B(3)Z(4)           |
| <b>50 Volt - BX - C1825 Size (Military CDR35)</b>  |                |                      |                              |
| 180,000                                            | K,M            | C1825N184(3)5X(4)L   | CDR35BX184A(3)Z(4)           |
| 220,000                                            | K,M            | C1825N224(3)5X(4)L   | CDR35BX224A(3)Z(4)           |
| 270,000                                            | K,M            | C1825N274(3)5X(4)L   | CDR35BX274A(3)Z(4)           |
| 330,000                                            | K,M            | C1825N334(3)5X(4)L   | CDR35BX334A(3)Z(4)           |
| 390,000                                            | K,M            | C1825N394(3)5X(4)L   | CDR35BX394A(3)Z(4)           |
| 470,000                                            | K,M            | C1825N474(3)5X(4)L   | CDR35BX474A(3)Z(4)           |

- To complete Part Number for Dielectric, insert P or X symbol – as defined by Military specification.
- To complete Part number for Dielectric, insert G or X symbol. ("G" for Military "BP", or "X" for Military "BX".)
- To complete Part Number, insert Capacitance Tolerance symbol (when applicable) as available in MIL-PRF-55682: B –  $\pm 0.1\text{pF}$ , C –  $\pm 0.25\text{pF}$ , D –  $\pm 0.5\text{pF}$ , F –  $\pm 1\%$ , J –  $\pm 5\%$ , K –  $\pm 10\%$ , M –  $\pm 20\%$ . **NOTE: Available tolerances are listed in columns above.**
- To complete Part Number, insert Failure Rate symbol: M – 1.0%; P – 0.1%; R – 0.01%; S – 0.001%.

Note: All MIL-PRF-55681 and KEMET Part Numbers tabulated above assume the use of MIL-PRF-55681 "Z", KEMET "L" end metalization. If MIL-PRF-55681 "U", "W" (KEMET "L") or MIL-PRF-55681 "S" (KEMET "H") or MIL-PRF-55681 "Y" (KEMET "C") is required, please change designators accordingly.

## MARKING

See page 97 for MIL-PRF-55681 Marking.

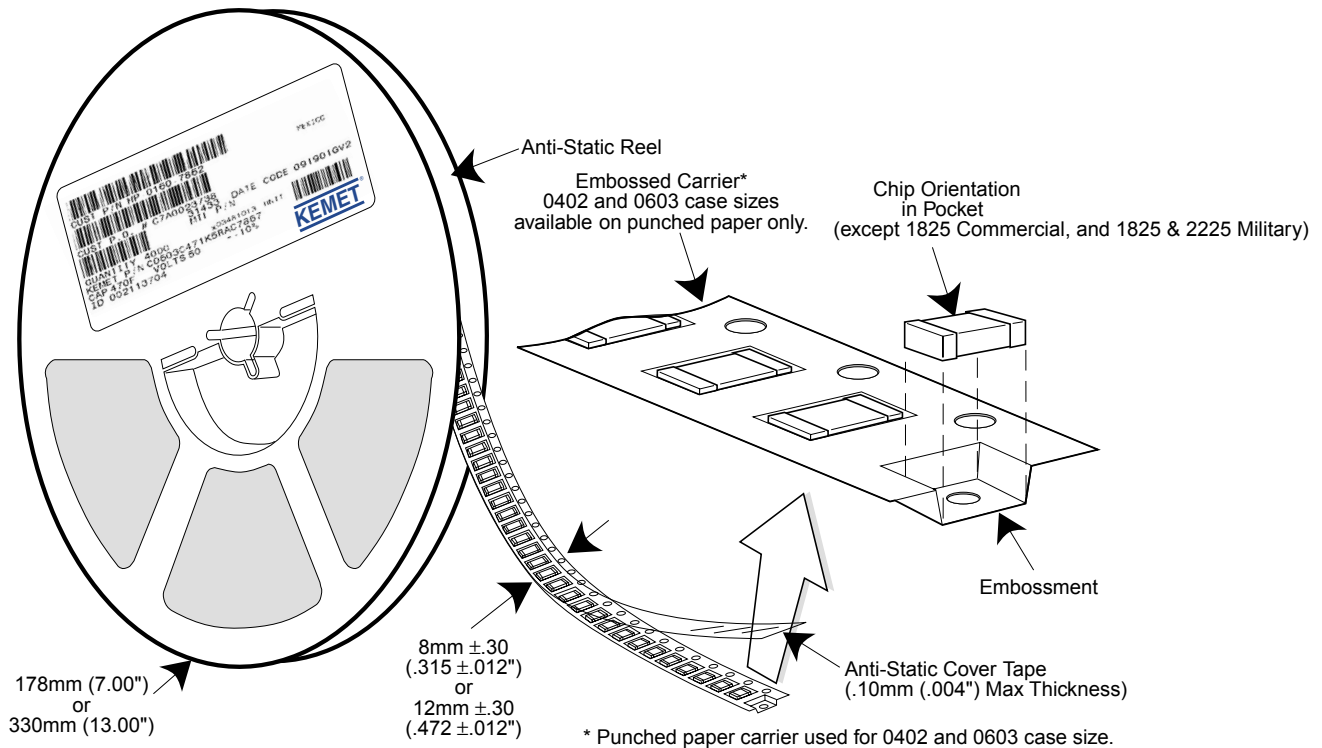
## MIL-PRF-55681 MAXIMUM INDIVIDUAL PACKAGING QUANTITIES

| CHIP<br>SIZE | REELED | BULK-<br>STD BAG | BULK -<br>ANTI-STATIC<br>BAG | CHIP<br>SIZE | REELED | BULK-<br>STD BAG | BULK -<br>ANTI-STATIC<br>BAG |
|--------------|--------|------------------|------------------------------|--------------|--------|------------------|------------------------------|
| C0805        | 2,500  | 25,000           | 10,000                       | C1808        | 2,500  | 7,500            | 3,000                        |
| C1206        | 2,500  | 25,000           | 10,000                       | C1812        | 1,100  | 7,500            | 3,000                        |
| C1210        | 2,500  | 25,000           | 10,000                       | C1825        | 1,100  | 7,500            | 1,000                        |
| C1805        | 2,500  | 7,500            | 3,000                        | C2225        | 1,100  | 5,000            | 1,000                        |

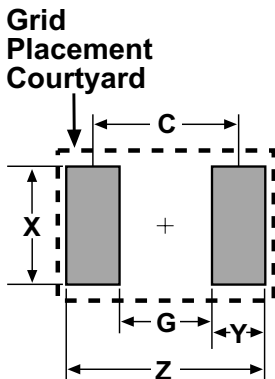
MIL-PRF-55681 chips available in 7" reels only.

### Tape & Reel Packaging

KEMET offers Multilayer Ceramic Chip Capacitors packaged in 8mm and 12mm plastic tape on 7" and 13" reels in accordance with EIA standard 481-1: Taping of surface mount components for automatic handling. This packaging system is compatible with all tape fed automatic pick and place systems. See page 78 for details on reeling quantities for commercial chips and page 87 for MIL-PRF-55681 chips.



### SURFACE MOUNT LAND DIMENSIONS - CERAMIC CHIP CAPACITORS - MM



| Dimension | Reflow Solder |      |      |        |        | Wave Solder     |      |      |        |      |
|-----------|---------------|------|------|--------|--------|-----------------|------|------|--------|------|
|           | Z             | G    | X    | Y(ref) | C(ref) | Z               | G    | X    | Y(ref) | Smin |
| 0402      | 2.14          | 0.28 | 0.74 | 0.93   | 1.21   | Not Recommended |      |      |        |      |
| 0603      | 2.78          | 0.68 | 1.08 | 1.05   | 1.73   | 3.18            | 0.68 | 0.80 | 1.25   | 1.93 |
| 0805      | 3.30          | 0.70 | 1.60 | 1.30   | 2.00   | 3.70            | 0.70 | 1.10 | 1.50   | 2.20 |
| 1206      | 4.50          | 1.50 | 2.00 | 1.50   | 3.00   | 4.90            | 1.50 | 1.40 | 1.70   | 3.20 |
| 1210      | 4.50          | 1.50 | 2.90 | 1.50   | 3.00   | 4.90            | 1.50 | 2.00 | 1.70   | 3.20 |
| 1812      | 5.90          | 2.30 | 3.70 | 1.80   | 4.10   | Not Recommended |      |      |        |      |
| 1825      | 5.90          | 2.30 | 6.90 | 1.80   | 4.10   |                 |      |      |        |      |
| 2220      | 7.00          | 3.30 | 5.50 | 1.85   | 5.15   |                 |      |      |        |      |
| 2225      | 7.00          | 3.30 | 6.80 | 1.85   | 5.15   |                 |      |      |        |      |

#### Calculation Formula

$Z = Lmin + 2Jt + Tt$   
 $G = Smax - 2Jh - Th$   
 $X = Wmin + 2Js + Ts$   
 $Tt, Th, Ts = \text{Combined tolerances}$

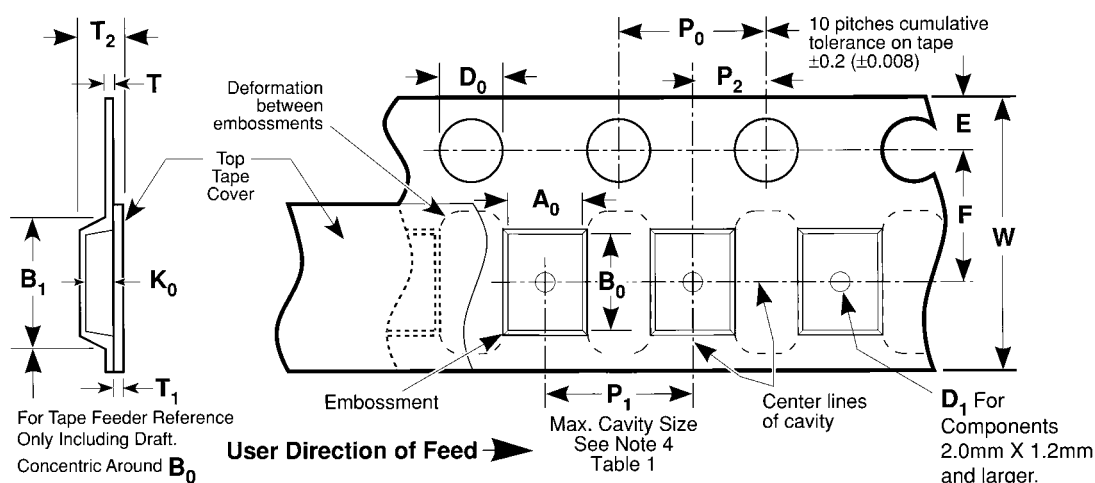
- Cover Tape Break Force:** 1.0 Kg Minimum.
- Cover Tape Peel Strength:** The total peel strength of the cover tape from the carrier tape shall be:

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

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

- Reel Sizes:** Molded tantalum capacitors are available on either 180 mm (7") reels (standard) or 330 mm (13") reels (with C-7280). Note that 13" reels are preferred.
- Labeling:** Bar code labeling (standard or custom) shall be on the side of the reel opposite the sprocket holes. Refer to EIA-556.

### Embossed Carrier Tape Configuration: Figure 1



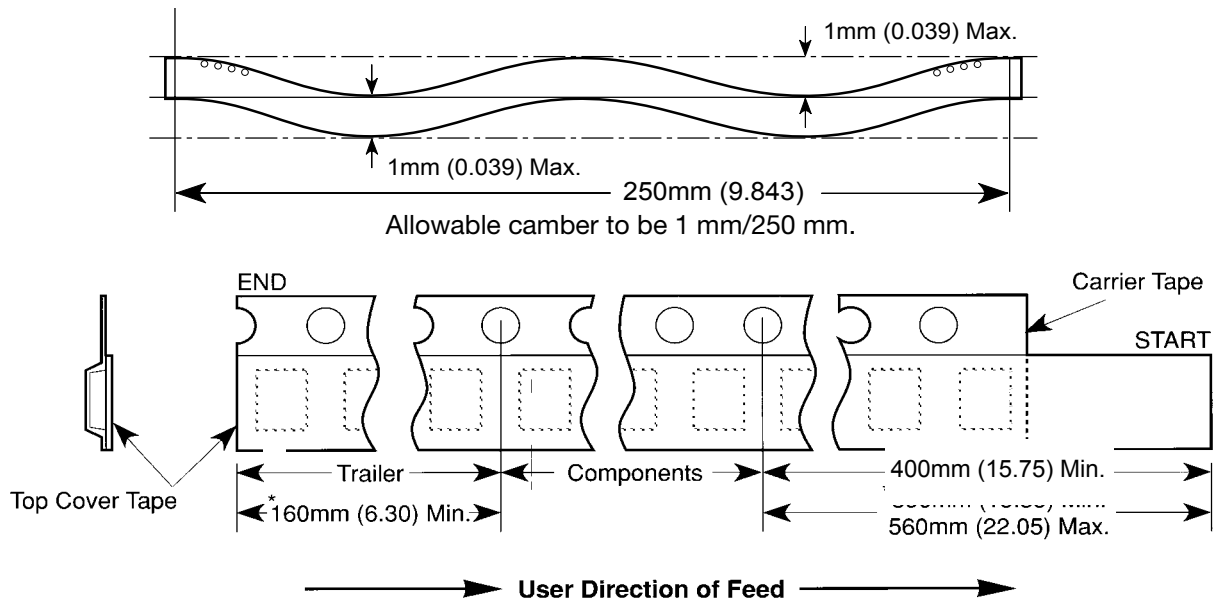
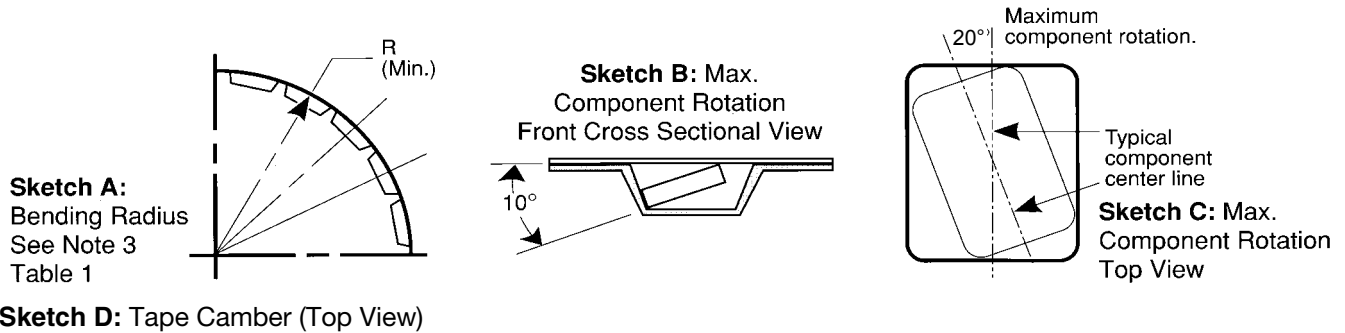
**Table 1 — EMBOSSED TAPE DIMENSIONS** (Metric will govern)

| Constant Dimensions — Millimeters (Inches) |                                              |                               |                               |                             |                             |                    |                    |                              |                                                        |
|--------------------------------------------|----------------------------------------------|-------------------------------|-------------------------------|-----------------------------|-----------------------------|--------------------|--------------------|------------------------------|--------------------------------------------------------|
| Tape Size                                  | D <sub>0</sub>                               | E                             | P <sub>0</sub>                | P <sub>2</sub>              | T Max                       | T <sub>1</sub> Max |                    |                              |                                                        |
| 8 mm<br>and<br>12 mm                       | 1.5<br>+0.10 -0.0<br>(0.059<br>+0.004, -0.0) | 1.75 ±0.10<br>(0.069 ±0.004)  | 4.0 ±0.10<br>(0.157 ±0.004)   | 2.0 ±0.05<br>(0.079 ±0.002) | 0.600<br>(0.024)            | 0.100<br>(0.004)   |                    |                              |                                                        |
| Variable Dimensions — Millimeters (Inches) |                                              |                               |                               |                             |                             |                    |                    |                              |                                                        |
| Tape Size                                  | Pitch                                        | B <sub>1</sub> Max.<br>Note 1 | D <sub>1</sub> Min.<br>Note 2 | F                           | P <sub>1</sub>              | R Min.<br>Note 3   | T <sub>2</sub> Max | W                            | A <sub>0</sub> B <sub>0</sub> K <sub>0</sub><br>Note 4 |
| 8 mm                                       | Single<br>(4 mm)                             | 4.4<br>(0.173)                | 1.0<br>(0.039)                | 3.5 ±0.05<br>(0.138 ±0.002) | 4.0 ±0.10<br>(0.157 ±0.004) | 25.0<br>(0.984)    | 2.5<br>(0.098)     | 8.0 ±0.30<br>(.315 ±0.012)   |                                                        |
| 12 mm                                      | Double<br>(8 mm)                             | 8.2<br>(0.323)                | 1.5<br>(0.059)                | 5.5 ±0.05<br>(0.217 ±0.002) | 8.0 ±0.10<br>(0.315 ±0.004) | 30.0<br>(1.181)    | 4.6<br>(0.181)     | 12.0 ±0.30<br>(0.472 ±0.012) |                                                        |

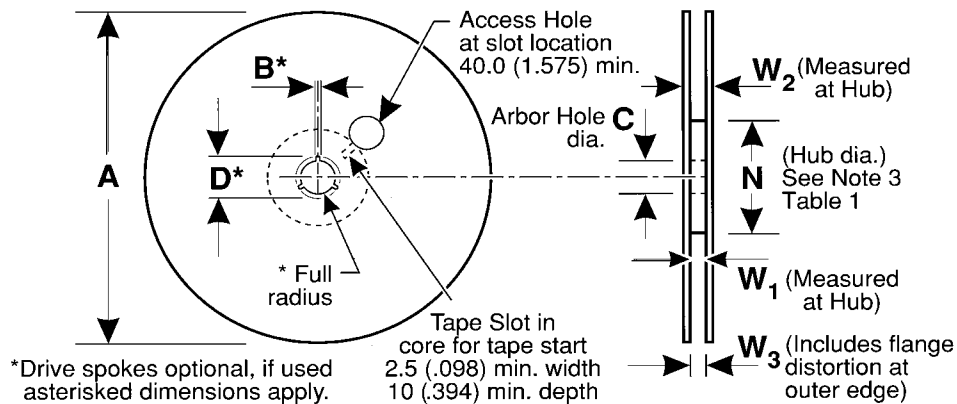
### NOTES

- B<sub>1</sub> dimension is a reference dimension for tape feeder clearance only.
- The embossment hole location shall be measured from the sprocket hole controlling the location of the embossment. Dimensions of embossment location and hole location shall be applied independent of each other.
- Tape with components shall pass around radius "R" without damage (see sketch A). The minimum trailer length (Fig. 2) may require additional length to provide R min. for 12 mm embossed tape for reels with hub diameters approaching N min. (Table 2)
- The cavity defined by A<sub>0</sub>, B<sub>0</sub>, and K<sub>0</sub> shall be configured to surround the part with sufficient clearance such that the chip does not protrude beyond the sealing plane of the cover tape, the chip can be removed from the cavity in a vertical direction without mechanical restriction, rotation of the chip is limited to 20 degrees maximum in all 3 planes, and lateral movement of the chip is restricted to 0.5 mm maximum in the pocket (not applicable to vertical clearance.)

### Embossed Carrier Tape Configuration (cont.)



**Figure 2:**  
Tape Leader  
& Trailer  
Dimensions  
(Metric  
Dimensions  
Will Govern)



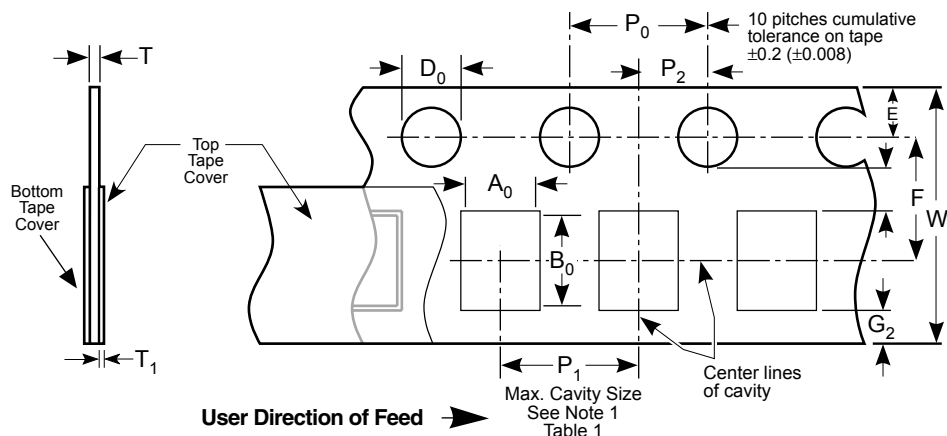
**Figure 3:** Reel Dimensions (Metric Dimensions will govern)

**Table 2 – REEL DIMENSIONS (Metric will govern)**

| Tape Size | A Max             | B* Min         | C                              | D* Min          | N Min                                       | W <sub>1</sub>                                | W <sub>2</sub> Max | W <sub>3</sub>                             |
|-----------|-------------------|----------------|--------------------------------|-----------------|---------------------------------------------|-----------------------------------------------|--------------------|--------------------------------------------|
| 8 mm      | 330.0<br>(12.992) | 1.5<br>(0.059) | 13.0 ± 0.20<br>(0.512 ± 0.008) | 20.2<br>(0.795) | 50.0<br>(1.969)<br>See<br>Note 3<br>Table 1 | 8.4<br>+1.5, -0.0<br>(0.331<br>+0.059, -0.0)  | 14.4<br>(0.567)    | 7.9 Min<br>(0.311)<br>10.9 Max<br>(0.429)  |
| 12 mm     | 330.0<br>(12.992) | 1.5<br>(0.059) | 13.0 ± 0.20<br>(0.512 ± 0.008) | 20.2<br>(0.795) |                                             | 12.4<br>+2.0, -0.0<br>(0.488<br>+0.078, -0.0) | 18.4<br>(0.724)    | 11.9 Min<br>(0.469)<br>15.4 Max<br>(0.606) |



### Punched Carrier (Paper Tape) Configuration (Ceramic Chips Only):



**Table 1: 8 & 12mm Punched Tape  
(Metric Dimensions Will Govern)**

### Constant Dimensions - Millimeters (Inches)

| Tap Size     | D <sub>0</sub>                               | E                           | P <sub>0</sub>               | P <sub>2</sub>               | T <sub>1</sub>         | G <sub>1</sub>         | G <sub>2</sub>         | R Min.                             |
|--------------|----------------------------------------------|-----------------------------|------------------------------|------------------------------|------------------------|------------------------|------------------------|------------------------------------|
| 8mm and 12mm | 1.5<br>+0.10, -0.0<br>(.059<br>+0.004, -0.0) | 1.75 ±0.10<br>(.069 ±0.004) | 4.0 ± 0.10<br>(.157 ± 0.004) | 2.0 ± 0.05<br>(.079 ± 0.002) | 0.10<br>(.004)<br>Max. | 0.75<br>(.030)<br>Min. | 0.75<br>(.030)<br>Min. | 25 (.984)<br>See Note 2<br>Table 1 |

**Table 1: 8 & 12mm Punched Tape  
(Metric Dimensions Will Govern)**

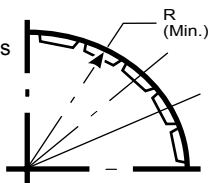
### Variable Dimensions - Millimeters (Inches)

| Tape Size               | P <sub>1</sub>                                                     | F                           | W                           | A <sub>0</sub> B <sub>0</sub> | T                                                                                                                              |
|-------------------------|--------------------------------------------------------------------|-----------------------------|-----------------------------|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| 8mm<br>1/2<br>Pitch     | 2.0 ± 0.10<br>(.079 ± .004)<br>See Requirements<br>Section 3.3 (d) | 3.5 ± 0.05<br>(.138 ± .002) | 8.0 ± 0.3<br>(.315 ± 0.012) | See Note 1<br>Table 1         | 1.1mm (.043)<br>Max. for Paper<br>Base Tape and<br>1.6mm (.063)<br>Max. for Non-<br>Paper Base<br>Compositions.<br>See Note 3. |
| 8mm                     | 4.0 ± 0.10<br>(0.157 ± .004)                                       |                             |                             |                               |                                                                                                                                |
| 12mm                    | 4.0 ± 0.10<br>(0.157 ± .004)                                       | 5.5 ± 0.05<br>(.217 ± .002) | 12.0 ± 0.3<br>(.472 ± .012) |                               |                                                                                                                                |
| 12mm<br>Double<br>Pitch | 8.0 ± 0.10<br>(0.315 ± .004)                                       |                             |                             |                               |                                                                                                                                |

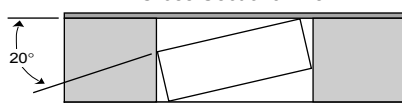
**Note:**

1.  $A_0$ ,  $B_0$  and  $T$  determined by the maximum dimensions to the ends of the terminals extending from the body and/or the body dimensions of the component. The clearance between the ends of the terminals or body of the component to the sides and depth of the cavity ( $A_0$ ,  $B_0$  and  $T$ ) must be within 0.05mm (.002) minimum and 0.50mm (.020) maximum. The clearance allowed must also prevent rotation of the component within the cavity of not more than 20 degrees (see sketches A and B).
2. Tape with components shall pass around radius "R" without damage.
3. KEMET nominal thicknesses are: 0402 = 0.6mm and all others 0.95mm minimum.

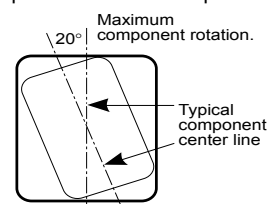
**Sketch A:**  
Bending Radius  
See Note 2  
Table 1



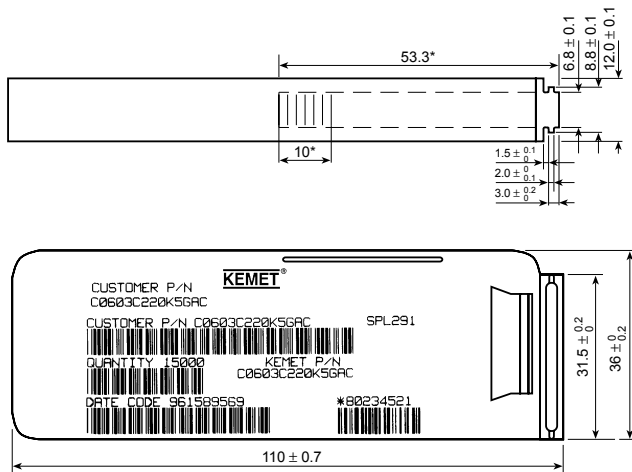
**Sketch B:**  
Max. Component  
Rotation - Front  
Cross Sectional View



**Sketch C:**  
Component Rotation - Top View



### Bulk Cassette Packaging (Ceramic Chips only) (Meets Dimensional Requirements IEC-286-6 and EIAJ 7201)



Unit: mm  
\* Reference

### Table 2 – Capacitance Values Available In Bulk Cassette Packaging

| Case Size | Dielectric | Voltage | Min. Cap Value | Max. Cap Value |
|-----------|------------|---------|----------------|----------------|
| 0402      | All        | All     | All            | All            |
| 0603      | All        | All     | All            | All            |
| 0805      | C0G        | 200     | 109            | 181            |
|           |            | 100     | 109            | 331            |
|           |            | 50      | 109            | 102            |
|           | X7R        | 200     | 221            | 392            |
|           |            | 100     | 221            | 103            |
|           |            | 50      | 221            | 273            |
|           |            | 25      | 221            | 104            |
|           |            | 16      | 221            | 104            |
|           | Y5V        | 25      | 104            | 224            |
|           |            | 16      | 104            | 224            |
|           |            |         |                |                |

### Table 1 – Capacitor Dimensions for Bulk Cassette Packaging – Millimeters

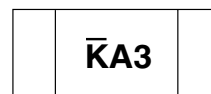
| Metric Size Code | EIA Size Code | Length L   | Width W     | Thickness T | Bandwidth B | Minimum Separation S | Number of Pcs/Cassette |
|------------------|---------------|------------|-------------|-------------|-------------|----------------------|------------------------|
| 1005             | 0402          | 1.0 ± 0.05 | 0.5 ± 0.05  | 0.5 ± .05   | 0.2 to 0.4  | 0.3                  | 50,000                 |
| 1608             | 0603          | 1.6 ± 0.07 | 0.8 ± 0.07  | 0.8 ± .07   | 0.2 to 0.5  | 0.7                  | 15,000                 |
| 2012             | 0805          | 2.0 ± 0.10 | 1.25 ± 0.10 | 0.6 ± .10   | 0.5 to 0.75 | 0.75                 | 10,000                 |

Terminations: KEMET nickel barrier layer with a tin overplate.

### CAPACITOR MARKING TABLE (Marking Optional - Not Available for 0402 Size or Y5V Dielectric)

| Alpha Character | Capacitance (pF) For Various Numeral Identifiers |     |    |     |      |        |         |           |            |  |
|-----------------|--------------------------------------------------|-----|----|-----|------|--------|---------|-----------|------------|--|
|                 | 9                                                | 0   | 1  | 2   | 3    | 4      | 5       | 6         | 7          |  |
| A               | 0.10                                             | 1.0 | 10 | 100 | 1000 | 10,000 | 100,000 | 1,000,000 | 10,000,000 |  |
| B               | 0.11                                             | 1.1 | 11 | 110 | 1100 | 11,000 | 110,000 | 1,100,000 | 11,000,000 |  |
| C               | 0.12                                             | 1.2 | 12 | 120 | 1200 | 12,000 | 120,000 | 1,200,000 | 12,000,000 |  |
| D               | 0.13                                             | 1.3 | 13 | 130 | 1300 | 13,000 | 130,000 | 1,300,000 | 13,000,000 |  |
| E               | 0.15                                             | 1.5 | 15 | 150 | 1500 | 15,000 | 150,000 | 1,500,000 | 15,000,000 |  |
| F               | 0.16                                             | 1.6 | 16 | 160 | 1600 | 16,000 | 160,000 | 1,600,000 | 16,000,000 |  |
| G               | 0.18                                             | 1.8 | 18 | 180 | 1800 | 18,000 | 180,000 | 1,800,000 | 18,000,000 |  |
| H               | 0.20                                             | 2.0 | 20 | 200 | 2000 | 20,000 | 200,000 | 2,000,000 | 20,000,000 |  |
| J               | 0.22                                             | 2.2 | 22 | 220 | 2200 | 22,000 | 220,000 | 2,200,000 | 22,000,000 |  |
| K               | 0.24                                             | 2.4 | 24 | 240 | 2400 | 24,000 | 240,000 | 2,400,000 | 24,000,000 |  |
| L               | 0.27                                             | 2.7 | 27 | 270 | 2700 | 27,000 | 270,000 | 2,700,000 | 27,000,000 |  |
| M               | 0.30                                             | 3.0 | 30 | 300 | 3000 | 30,000 | 300,000 | 3,000,000 | 30,000,000 |  |
| N               | 0.33                                             | 3.3 | 33 | 330 | 3300 | 33,000 | 330,000 | 3,300,000 | 33,000,000 |  |
| P               | 0.36                                             | 3.6 | 36 | 360 | 3600 | 36,000 | 360,000 | 3,600,000 | 36,000,000 |  |
| Q               | 0.39                                             | 3.9 | 39 | 390 | 3900 | 39,000 | 390,000 | 3,900,000 | 39,000,000 |  |
| R               | 0.43                                             | 4.3 | 43 | 430 | 4300 | 43,000 | 430,000 | 4,300,000 | 43,000,000 |  |
| S               | 0.47                                             | 4.7 | 47 | 470 | 4700 | 47,000 | 470,000 | 4,700,000 | 47,000,000 |  |
| T               | 0.51                                             | 5.1 | 51 | 510 | 5100 | 51,000 | 510,000 | 5,100,000 | 51,000,000 |  |
| U               | 0.56                                             | 5.6 | 56 | 560 | 5600 | 56,000 | 560,000 | 5,600,000 | 56,000,000 |  |
| V               | 0.62                                             | 6.2 | 62 | 620 | 6200 | 62,000 | 620,000 | 6,200,000 | 62,000,000 |  |
| W               | 0.68                                             | 6.8 | 68 | 680 | 6800 | 68,000 | 680,000 | 6,800,000 | 68,000,000 |  |
| X               | 0.75                                             | 7.5 | 75 | 750 | 7500 | 75,000 | 750,000 | 7,500,000 | 75,000,000 |  |
| Y               | 0.82                                             | 8.2 | 82 | 820 | 8200 | 82,000 | 820,000 | 8,200,000 | 82,000,000 |  |
| Z               | 0.91                                             | 9.1 | 91 | 910 | 9100 | 91,000 | 910,000 | 9,100,000 | 91,000,000 |  |
| a               | 0.25                                             | 2.5 | 25 | 250 | 2500 | 25,000 | 250,000 | 2,500,000 | 25,000,000 |  |
| b               | 0.35                                             | 3.5 | 35 | 350 | 3500 | 35,000 | 350,000 | 3,500,000 | 35,000,000 |  |
| d               | 0.40                                             | 4.0 | 40 | 400 | 4000 | 40,000 | 400,000 | 4,000,000 | 40,000,000 |  |
| e               | 0.45                                             | 4.5 | 45 | 450 | 4500 | 45,000 | 450,000 | 4,500,000 | 45,000,000 |  |
| f               | 0.50                                             | 5.0 | 50 | 500 | 5000 | 50,000 | 500,000 | 5,000,000 | 50,000,000 |  |
| m               | 0.60                                             | 6.0 | 60 | 600 | 6000 | 60,000 | 600,000 | 6,000,000 | 60,000,000 |  |
| n               | 0.70                                             | 7.0 | 70 | 700 | 7000 | 70,000 | 700,000 | 7,000,000 | 70,000,000 |  |
| t               | 0.80                                             | 8.0 | 80 | 800 | 8000 | 80,000 | 800,000 | 8,000,000 | 80,000,000 |  |
| y               | 0.90                                             | 9.0 | 90 | 900 | 9000 | 90,000 | 900,000 | 9,000,000 | 90,000,000 |  |

Laser marking is available as an extra-cost option for most KEMET ceramic chips. Such marking is two sided, and includes a  $\bar{K}$  to identify KEMET, followed by two characters (per EIA-198 - see table below) to identify the capacitance value. Note that marking is not available for size 0402 nor for any Y5V chip. In addition, the 0603 marking option is limited to the  $\bar{K}$  only.



Example shown is 1,000 pF capacitor.

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[C1206N103K1XRH7189](#) [C1206N103K1XSC7189](#) [C1206N102K1GSC7189](#) [C1206N103K1XMH7189](#)  
[C1812P104K5XSH7189](#) [C0805N102K1XSH7189](#) [C0805N103K5XSC7189](#) [C0805N103K5XSH7189](#)  
[C0805P471K1XMC7189](#) [C0805N201K1GPH7189](#) [C1805P103K1XRC7189](#) [C1805P103K1XRH7189](#)  
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[C1812N104K5XRH7189](#) [C1812N104K5XSH7189](#) [C1812N184K5XSH7189](#) [C1812P104K5XMC7189](#)  
[C1812P104K5XRH7189](#) [C1210N104K5XSH](#) [CDR34BX104AKZR](#) [C1206N103K1XRL7189](#)