

HIGH TEMPERATURE CERAMIC CHIP CAPACITORS

HIGH TEMPERATURE DESIGNATION

Code “HT”: This code signifies that the parts are designed for high temperature use, and have followed the Group A testing program of the “HR” type listed in our catalog. Temperatures of 250°C are acceptable for these capacitors, in terms of the inherent capability of the ceramic and depending on the voltage applied. Presidio’s HT product line features many proprietary design elements, in both materials and construction, that have been shown to work well in the down-hole environment. Consult factory for higher temperature requirements.

ROHS COMPLIANCE

Code “R” This code signifies that the parts are made in compliance with the RoHS Directive.

SOLDERING/TERMINATION OPTIONS

| Code | Description | Application Solder | Summary |
|------------|----------------------------|--------------------------------------|---|
| NT9 | Standard Ni + 90%Sn 10%Pb | HMP or Sn63 (for use up to 150°C) | This is our traditional 90/10 SnPb termination. |
| Q | Ni + 100% Sn | Sn96 (for use up to 180°C) | Ni barrier with 100% matte Sn |
| T | Standard Ni + 100%Sn | Sn96 (for use up to 150°C) | Our standard Ni barrier with 100% matte Sn |
| NP8 | Standard Ni + 15%Sn 85%Pb | HMP Solder (for use up to 200°C) | This is our high temperature termination for HMP soldering. |
| NG | Standard Ni + Gold | Wirebond (for use up to 200°C) | This is our Ni/Au termination for wirebond applications. |
| P | Pd/Ag Termination | HMP (for use up to 240°C) | This is our standard Pd/Ag termination. |
| F | Polished Pd/Ag Termination | HMP (for use up to 240°C) | This is our standard Pd/Ag termination that has been polished for easier soldering. |

HOW TO ORDER

| HT | 0805 | XHT | 104 | K | 1 | Q | 5 | R |
|--------|--|---------------------------|--|---|--|--|---|--|
| PREFIX | SIZE | DIELECTRIC | CAPACITANCE CODE | TOLERANCE CODE | VOLTAGE CODE | TERMINATION CODE | MARKING & PACKAGING | RoHS |
| HT | 0402 0403 0504 0603 0805 1206 1209 1712 | NPQ* NPO XHT X7R | Two significant figures followed by the number of zeros. Example: 100 = 10 pF 101 = 100 pF 102 = 1000 pF 104 = .01 μF 105 = 1.0 μF | B = ± .10pF <10pF C = ± .25pF <10pF D = ± .50pF <10pF F = ± 1% G = ± 2% J = ± 5% K = ± 10% M = ± 20% | 10V = 10 VDC 12V = 12 VDC 16V = 16 VDC 1 = 25 VDC 2 = 50 VDC 3 = 100 VDC 4 = 200 VDC 5 = 300 VDC 6 = 500 VDC 7 = 600 VDC 8 = 750 VDC 9 = 1000 VDC | NG = Au over Ni NP8 = 15/85 Sn/Pb over Ni NT9 = 90/10 Sn/Pb over Ni Q = 100% Sn over Ni P = Pd/Ag F = Polished Pd/Ag T = 100% Sn over Std. Ni. | 1. Reel, 7", plastic tape, unmarked 2. Reel, 7", plastic tape, marked 3. Bulk, unmarked 4. Bulk, marked 5. Waffle, unmarked 6. Waffle, marked A. Reel, 13", plastic tape, unmarked B. Reel, 13", plastic tape, marked C. Reel, 7", paper, unmarked (0402 & 0603 only) D. Reel, 13", paper, marked (0402 & 0603 only) | R = RoHS Compliant Note: Only compatible with Q, P, F termination |

* Consult Factory regarding NPQ Dielectric
** B, C, D, F and G tolerances are available for NPO parts only



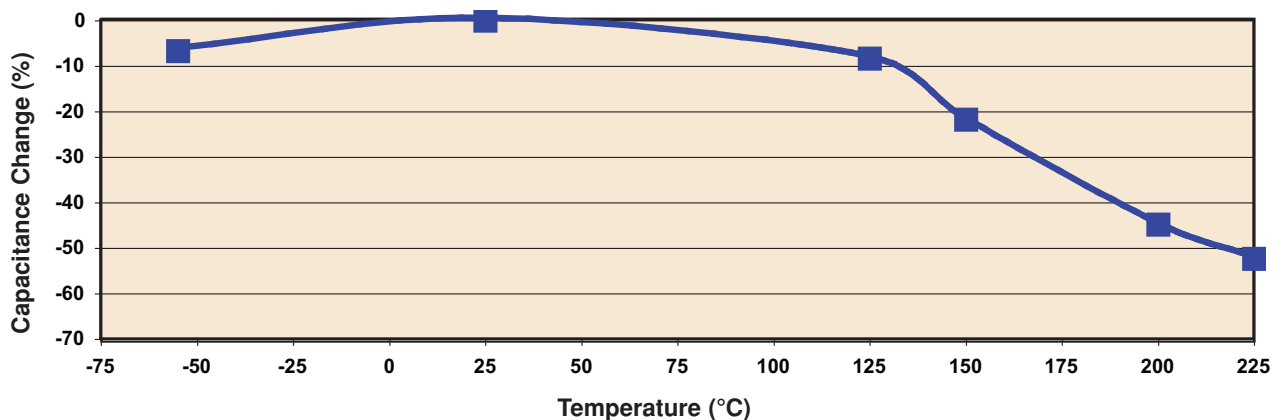
HIGH TEMPERATURE (225°C) CERAMIC CHIP CAPACITORS

Consult factory for requirements above 225°C

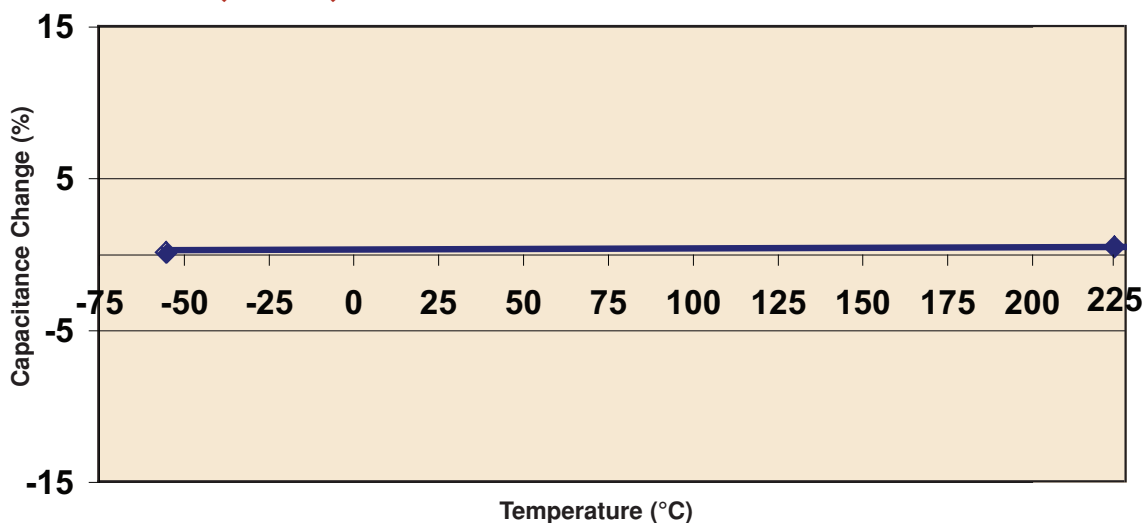
DIELECTRIC CHARACTERISTICS

| CHARACTERISTICS | NPO DIELECTRIC | XHT (225°C) DIELECTRIC |
|--------------------------------------|--|--|
| Operating Temperature Range | -55°C to 200°C | -55°C to 225°C |
| Temperature Coefficient up to 225°C | 0 ± 30 ppm/°C | +15 - 65% Δ °C Max |
| Dissipation Factor @ 25°C | .001(0.1%) Max | .025 (2.5%) Max |
| Insulation Resistance, 25°C 200°C | >100GΩ or >1000ΩF >1GΩ or >10 ΩF | >100 GΩ or >1000 ΩF >1 GΩ or >10 ΩF |
| Dielectric Withstanding Voltage: | DWV will be tested at 250% of rated voltage except for 500V rated parts which will be tested at 150% of rated voltage. | DWV will be tested at 250% of rated voltage except for 500V rated parts which will be tested at 150% of rated voltage. |

TYPICAL (225°C) XHT DIELECTRIC TEMPERATURE COEFFICIENT



TYPICAL (200°C) NPO DIELECTRIC TEMPERATURE COEFFICIENT



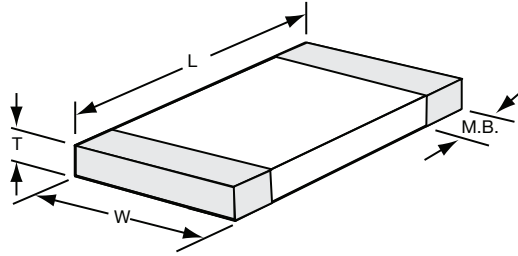
PRESIDIO COMPONENTS, INC.

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HIGH TEMPERATURE (225°C) CERAMIC CHIP CAPACITORS

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DIMENSIONS



AVAILABLE CAPACITANCE VALUES

The following values are the traditional designs that Presidio has supplied to the downhole industry for over 10 years.

| SIZE | L (Inches) | W (Inches) | Thickness Max (T) (Inches) | Metalization Band (M.B.) (Inches) | WVDC | DIELECTRIC (Maximum Capacitance) | | |
|------|------------------|------------------|----------------------------------|--------------------------------------|------|-------------------------------------|----------|----------|
| | | | | | | NPO | XHT | X7R |
| 0402 | 0.040 ± 0.004 | 0.020 ± 0.004 | 0.024 | 0.004 min. band 0.015 min. space | 25V | 120 pF | 2200 pF | 4700 pF |
| | | | | | 50V | 100 pF | 1800 pF | 3900 pF |
| | | | | | 100V | 39 pF | 680 pF | 1200 pF |
| 0403 | 0.040 ± 0.010 | 0.030 ± 0.010 | 0.030 | 0.004 min. band 0.015 min. space | 25V | 390 pF | 6800 pF | 0.015 µF |
| | | | | | 50V | 330 pF | 5600 pF | 0.012 µF |
| | | | | | 100V | 68 pF | 1000 pF | 2200 pF |
| 0504 | 0.050 ± 0.010 | 0.040 ± 0.010 | 0.040 | 0.005 min. band 0.015 min. space | 25V | 1500 pF | 0.027 µF | 0.047 µF |
| | | | | | 50V | 1200 pF | 0.020 µF | 0.039 µF |
| | | | | | 100V | 180 pF | 2700 pF | 6800 pF |
| 0603 | 0.063 ± 0.006 | 0.032 ± 0.006 | 0.035 | 0.005 min. band 0.025 min. space | 25V | 680 pF | 0.015 µF | 0.027 µF |
| | | | | | 50V | 560 pF | 0.010 µF | 0.022 µF |
| | | | | | 100V | 100 pF | 1800 pF | 3300 pF |
| 0805 | 0.080 ± 0.010 | 0.050 ± 0.010 | 0.050 | 0.020 ± 0.010 | 25V | 2700 pF | 0.047 µF | 0.10 µF |
| | | | | | 50V | 2200 pF | 0.039 µF | 0.10 µF |
| | | | | | 100V | 560 pF | 8200 pF | 0.022 µF |
| 1206 | 0.126 ± 0.008 | 0.063 ± 0.008 | 0.059 | 0.020 ± 0.010 | 25V | 6800 pF | 0.15 µF | 0.27 µF |
| | | | | | 50V | 5600 pF | 0.1 µF | 0.22 µF |
| | | | | | 100V | 1500 pF | 0.027 µF | 0.068 µF |
| | | | | | 200V | 820 pF | 0.012 µF | 0.027 µF |
| 1209 | 0.125 ± 0.010 | 0.095 ± 0.010 | 0.065 | 0.020 ± 0.010 | 25V | 0.010 µF | 0.22 µF | 0.47 µF |
| | | | | | 50V | 8200 pF | 0.18 µF | 0.39 µF |
| | | | | | 100V | 3900 pF | 0.068 µF | 0.15 µF |
| | | | | | 200V | 1800 pF | 0.033 µF | 0.068 µF |
| 1712 | 0.175 ± 0.013 | 0.125 ± 0.010 | 0.065 | 0.020 ± 0.010 | 25V | 0.022 µF | 0.47 µF | 1.0 µF |
| | | | | | 50V | 0.015 µF | 0.27 µF | 0.68 µF |
| | | | | | 100V | 6800 pF | 0.12 µF | 0.27 µF |
| | | | | | 200V | 3300 pF | 0.056 µF | 0.12 µF |



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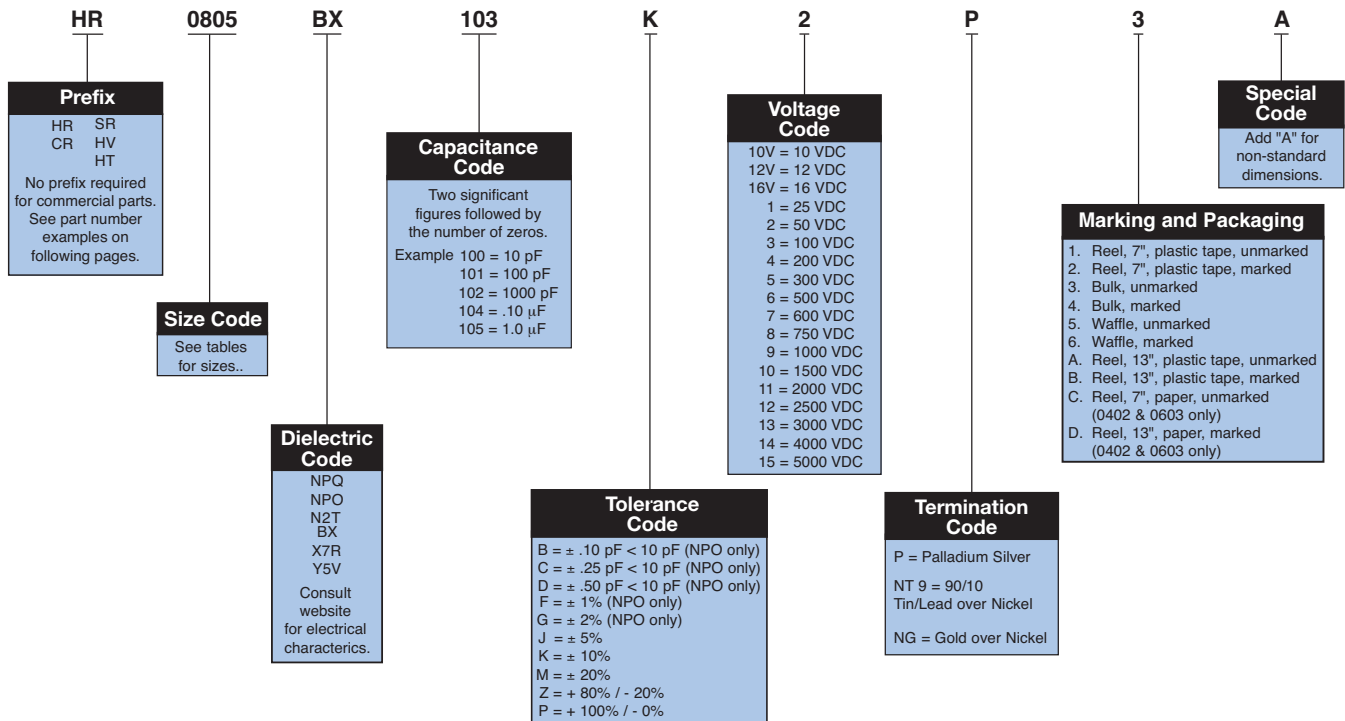
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HOW TO ORDER A STANDARD PART

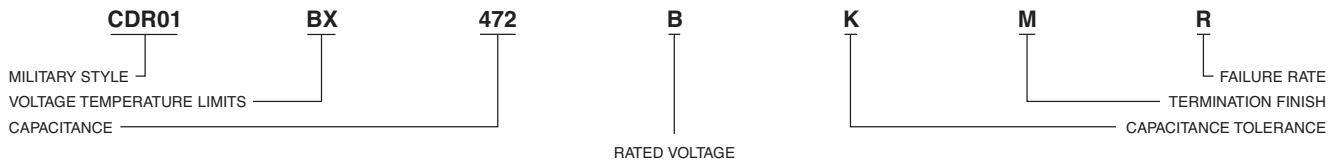
EXAMPLE: HR0805BX103K2P3A



Consult factory for other voltages, capacitance options and parts outside a given range.

HOW TO ORDER A MILITARY PART

EXAMPLE: CDR01BX472BKMR



See MIL-PRF-55681 on pages 14-15 for details.



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