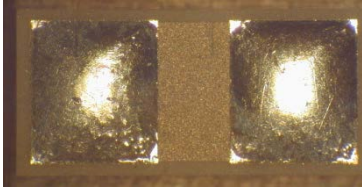


Thin Film Single-Tap Chip Resistors (.050 x .100 Series)

Chip resistors provide variations in resistor material, temperature coefficient of resistance, resistance and tolerance.



Features

- Chip Size: .050" x .100"
- Alumina Substrate
- Wire bond or solder pads

Available Options Include:

- Resistor Tolerance to 0.5%
- Nickel Chrome or Tantalum Nitride Resistor Materials
- Back Gold Option00

API Technologies **thin film single-tap chip resistors .050 x .100 series** are available in a wide range of resistances and tolerances with values available from 10 ohms to 1500 ohms. The thin film resistor layer is made of Nickel-Chromium or Tantalum Nitride (TaN), with a gold or nickel-gold conductor layer. The nickel-gold resistors are solder dipped.

Applications for thin film center-Tap chip resistors include military and industrial hybrids, and medical, aerospace and communications equipment.

Single-tap chip resistors are available with either passivated nickel chrome or tantalum-nitride resistor metalization.

- Nickel chrome provides excellent stability and temperature coefficient in hermetic applications
- Tantalum-nitride provides superior moisture-resistance for non-hermetic applications.

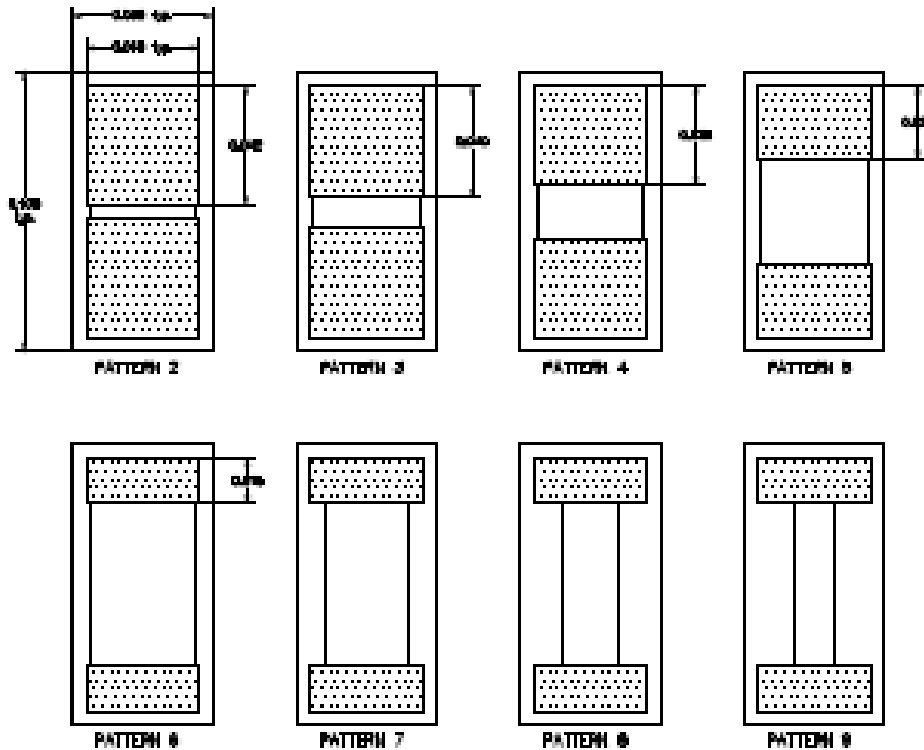
Electrical Specifications

| Parameter | Limit | Test conditions |
|-------------------------------|-----------------|--|
| Power Rating | 400 mW | (70 C derated to 0 mW @ 150 C) |
| Life | +/-0.2% max | 1000 hours @ 125 degrees C |
| Noise | -35 dB typ | MIL-STD-202 method 308 |
| High Temp Exposure | +/-0.2% max | 100 hours at 150 degrees C |
| TCR (Nickel Chrome) | +/-50 ppm/C | -55 to 125 degrees C |
| TCR (Tantalum Nitride) | 0 to -120 ppm/C | -55 to 125 degrees C |
| Operating voltage | 100 VDC max | |
| Moisture resistance | +/-0.5% max | MIL-STD-202 method 106 |
| Thermal shock | +/-0.5% max | MIL-STD-202 method 107 |
| VSWR (alumina substrate only) | <1.2 <1.4 | From DC to 8 GHz From 8 GHz to 18 GHz |

Mechanical Specifications

| | |
|-----------------------------------|---|
| Substrate | 99.6% as-fired alumina |
| Bond pad metalization | Bondable Gold or solderable Nickel Gold |
| Size | .050 x .100 typical (1.27 x 1.27 mm typical) |
| Thickness | .012 +/- .003 " for silicon, .010 +/- 0.001 for alumina |
| Bond pad dimensions | Varies – 0.016 x 0.040 minimum |
| Protective overcoat (passivation) | Silox glass on NiCr versions only is option |
| Back side | AF alumina or gold. |

Typical Configuration



Packaging Options

- Waffle Pack (170 resistors per pack) - standard
- Waffle Pack (50 resistors per pack)
- Waffle Pack (100 resistors per pack)
- Tape and reel

Single-Tap .050 x .100 Series

Ordering Information

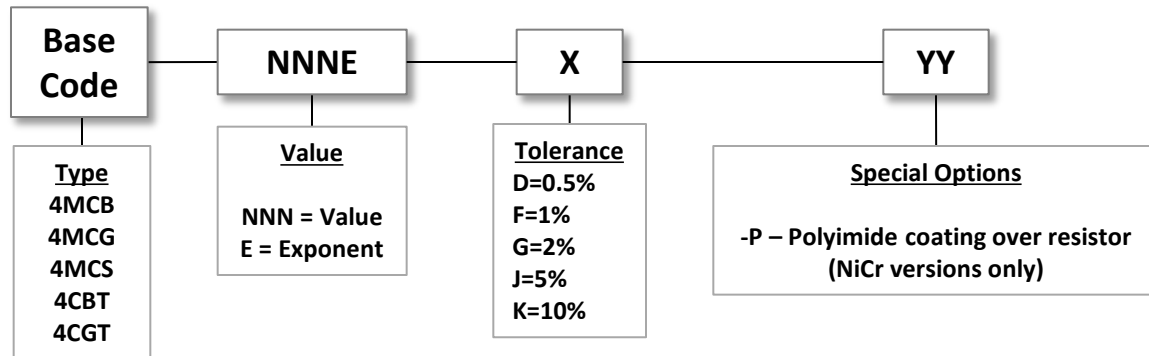
All parts are 100% electrically tested, sample tested per MIL-STD-38534 section 3.4, and visually inspected to MIL-STD-883 requirements. Chips are supplied in standard 2" x 2" matrix tray packaging.

| Base part code | Ohm value (total of both halves) | Tolerance letter |
|-----------------------------|----------------------------------|------------------|
| 4MCB- (NiCr, no back metal) | NNNE | X |
| 4MCG- (NiCr, gold backed) | NNNE | X |
| 4MCS- (NiCr, solder dipped) | NNNE | X |
| 4CBT – (TaN, no back metal) | NNNE | X |
| 4CGT – (TaN, gold backed) | NNNE | X |

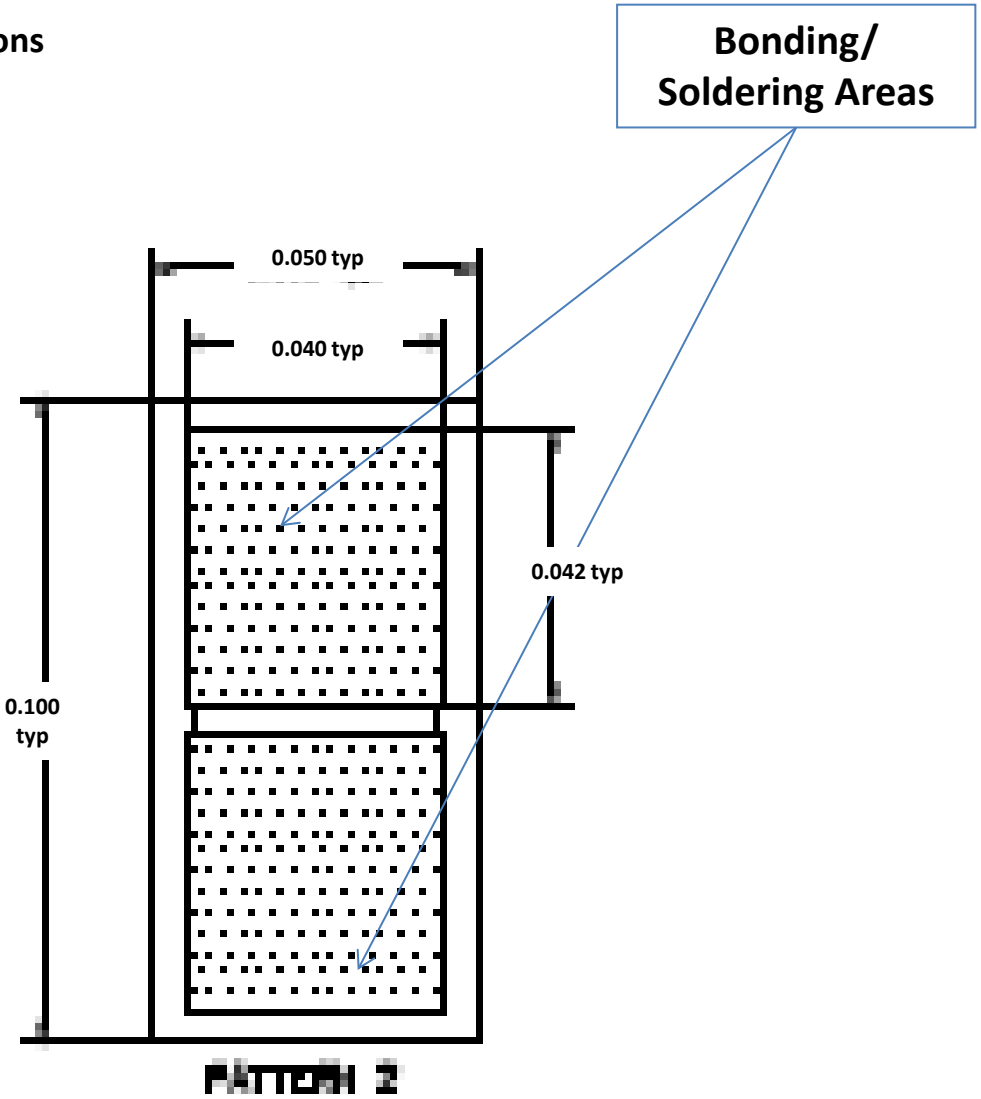
Availability

- NiCr series is available from 10 ohms to 1500 ohms
- TaN series is available from 10 ohms to 1500 ohms

Part Number Breakout/Designation



Bonding Areas and Dimensions



Factory Information

API Technologies, 400 Nickerson Road, Marlborough, MA 01752
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FAX: 508-251-6401
http://micro.apitech.com/thin_film.aspx