

Thin Film Resistor Chips

Resistor Ordering System

Example

1 2 3 4 5 6 7 8

MTR - 2R2K - SR2 - K - NA - G - 1 - T

1) Is the three letter device type designation

| | |
|-----|---|
| MTR | Single Value through Chip Resistor (Resistance top to bottom) |
| MIR | Single Value Pad to Pad Chip Resistor (Resistance Top pad to Top pad) |
| MCR | Dual Value Center Tap Ratio Chip Resistor (Res. #1 = Prime Value / Res. #2 = Ratio Value) |
| MMR | MultiTap Chip Resistor. |
| XXX | as needed. |

2) Is the resistance value in ohms

| | |
|-------|----------------|
| 2R2K | 2,200 Ohms |
| 200R | 200 Ohms |
| 20R | 20 Ohms |
| 2R2M | 2,200,000 Ohms |
| 20R2K | 20,200 Ohms |
| 200RK | 200,000 Ohms |
| 2R | 2.0 Ohms |

3) Is the chip substrate material and chip outline dimensions (case style) R1 thru R8

| | | | | |
|----|-------------------------|------|------------------|------------------|
| S | Silicon Body | R1 | 20 Tap Multi Tap | .038"X.038" SR1 |
| C | Ceramic (99.6% Alumina) | R2 | Dual Value | .030"X.030" CR2 |
| B | Berilium Oxide | R3 | Single Value | .020"X.020" BR3 |
| Q | Quartz | R3A* | Single Low Value | .020"X.020" QR3A |
| N | Aluminum Nitride | R4 | Six Value Ladder | .020"X.060" NR4 |
| SP | Special Material | R5 | 12 Tap Multi Tap | .030"X.030" SPR5 |
| | | R6 | Single Low Value | .030"X.030" XR6 |
| | | R7 | Single Value | .020"X.040" XR7 |
| | | R8 | | XR8 |

Please consult factory for special substrate materials (SP)
*R3A outline for resistances < 250 Ohms

4) Is the resistor value total % + tolerance See chart below

5) Is the 2nd resistor value total % ±tolerance (if applicable)

| | | | |
|----|----------------|---|-------|
| A | + 0.5 Ohm | F | + 1% |
| B | + 1.0 Ohm | G | + 2% |
| C | + 2.5 Ohm | J | + 5% |
| D | + .01% | K | + 10% |
| E | + .1% | M | + 20% |
| NA | Not applicable | | |

A) On Dual Value Resistors, (MCR), this is the res. ratio of the 2nd resistor (Ratio Res.) To value of the 1st resistor (Prime Res.).
B) On Multi Tap Resistors (MMR). This is the tolerance of each of the small value Resistor Taps. The large value Resistor Taps are called out on (4)

6) Backing

| | |
|----|----------------------------------|
| G | Solderable Gold |
| GS | Gold Silicon eutectic attachment |
| B | Bare |

7) The temperature coefficient (TCR) of the resistor, in PPM

| | |
|---|-----------|
| 0 | + 150 PPM |
| 1 | + 100 PPM |
| 2 | + 50 PPM |
| 3 | + 10 PPM |

8) Resistor Material

| | |
|---|---|
| T | Tantalum Nitride TaN (Self Passivating) |
| N | NiChrome NiCr |

Example: Aeroflex / Metelics part no. MTR-200RK-SR3-F-NA-G-0-T

This would be a silicon body .020" x .020" x .010" single value through chip resistor with a total resistance tolerance of + 1%, a Solderable gold back, and Tantalum Nitride as the resistor layer and a TCR of + 150PPM.

Example: Aeroflex / Metelics part no. MCR-10RK-SR2-F-E-B-1-T

This would be a silicon body .030" x .030" x .010" two value ratio resistor with the first value resistance tolerance of + 1%, and the second, ratio resistor, tolerance being + .1% of the first value. Resistance would be the total value of the two resistor. A Bare lapped silicon back, and Tantalum Nitride as the resistor layer and a TCR of + 100PPM.

Example: Aeroflex / Metelics part no. MIR-2R5K-SR3-J-NA-B-2-N

This would be a silicon body .020" x .020" x .010" single value Top pad to Top pad chip resistor with a total resistance tolerance of + 5%, a bare silicon back, with NiChrome as the resistor layer and a TCR of + 50PPM.

Example: Aeroflex / Metelics part no. MMR-11RK-SR1-F-K-G-1-T

This would be a silicon substrate device .038" x .038" x .010". It would have a total resistance of 11KOhms + 1%. It would have ten large tops of 1KOhm + 1% each and ten small tops of 100 Ohms + 10% each. It would have a solderable gold back with a TCR of + 100ppm and a Tantalum Nitride resistive layer.