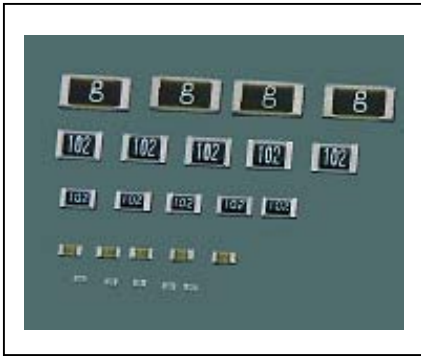


Precision 0.1% and 0.5%, tolerance
Thin Film Chip Resistor



FEATURES

- Excellent low noise, THIN FILM(NiCr) construction
- Low temperature coefficient and tight tolerance
- EIA standard case size(0201, 0402, 0603, 0805)
- RoHS Compliance and 100% Lead-Free (Matte Sn termination finished)

APPLICATIONS

- Telecommunications
- Test & Measurement
- Power Supplies
- Computer & Peripherals

Electrical Specification

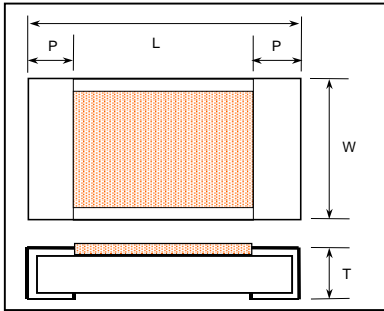
| Type | Size | Power Rating at 70 °C | Resistance Tolerance (Code) | Resistance Range (ohm) | Temperature Coefficient (Code) | | Max. operating Voltage | Resistance Values (E-series) |
|--------|------|--------------------------|-----------------------------------|------------------------------|--------------------------------|----------|---------------------------|------------------------------------|
| | | | | | (ohm) | (ppm/°C) | | |
| RR0306 | 0201 | 0.050W | ±1.0% (F) | 10-22K | 10-30 | 100(R) | 15V | E-24 |
| | | | ±0.5% (D) | | 33-22K | 25(P) | | |
| RR0510 | 0402 | 0.063W | ±0.5% (D) | 10-100K | 10-97.6 | 100(R) | 25V | E-24, E-96 |
| | | | | | 100-100K | 25(P) | | |
| RR0816 | 0603 | 0.063W | ±0.5% (D) | 10-360K | 10-97.6 | 50(Q) | 75V | E-24, E-96 |
| | | | ±0.1% (B) | 100-332K | 100-332K | 25(P) | | |
| RR1220 | 0805 | 0.100W | ±0.5% (D) | 10-1M | 10-97.6 | 50(Q) | 100V | E-24, E-96 |
| | | | ±0.1% (B) | 100-1M | 100-1M | 25(P) | | |
| RR1632 | 1206 | 0.125W | ±0.5% (D) | 10-1M | 10-49.9 | 50(Q) | 150V | E-24, E-96 |
| | | | ±0.1% (B) | 100-1M | 100-1M | 25(P) | | |
| RR2632 | 1210 | 0.250W | ±0.5% (D) | 10-2M | 10-49.9 | 50(Q) | 200V | E-24, E-96 |
| | | | ±0.1% (B) | 100-2M | 51-2M | 25(P) | | |

Performance

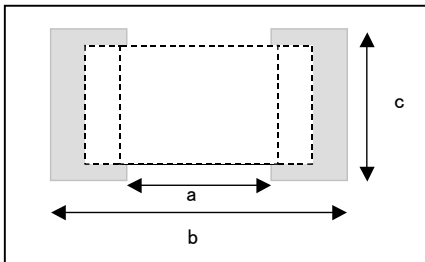
| Item | Test Methode | Performance of Reliability | |
|---------------------|--|----------------------------|----------|
| | | Max | Typical |
| Short Time Overload | 2.5 times of Rated Load X 5sec. | +/- 0.5% | +/- 0.1% |
| Load Life | 70°C Rated Load 90min. On/ 30min. Off per Cycle X1000 | +/- 0.5% | +/- 0.1% |
| Humidity | 60°C 95% RH rated voltage loaded 90min. On/ 30min. Off per Cycle X1000 | +/- 0.5% | +/- 0.1% |
| Temp. Cycling | -55°C (30min)/room temp.(2min) / +125°C(30min)/room temp.(2min) No Load per Cycle X1000 | +/- 0.5% | +/- 0.1% |
| High Temperature | 125°C No Load 1000h | +/- 0.5% | +/- 0.1% |

Precision 0.1% and 0.5%, tolerance
Thin Film Chip Resistor

Dimensions & Footprints



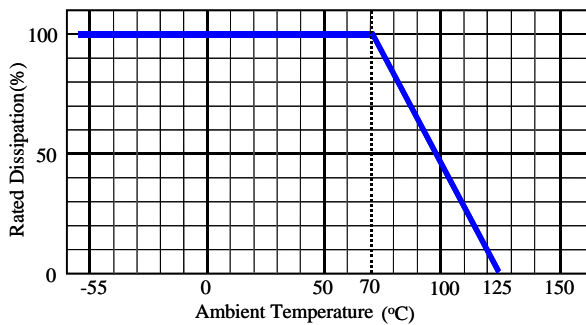
| | Dimensions inch (mm) | | | |
|--------|----------------------------|-----------------------------|----------------------------|-----------------------------|
| | L | W | P | T |
| RR0306 | .024±.002 (0.6 ± 0.05) | .012±.002 (0.3 ± 0.05) | .005±.002 (0.12 ± 0.05) | .009±.002 (0.23 ± 0.05) |
| RR0510 | .040±.002 (1.0 ± 0.05) | .020±.002 (0.5 ± 0.05) | .008±.004 (0.2 ± 0.1) | .014±.002 (0.35 ± 0.05) |
| RR0816 | .063 ± .008 (1.6 ± 0.2) | .031 ± .008 (0.8 ± 0.2) | .012 ± .008 (0.3 ± 0.2) | 0.016 ± .004 (0.4 ± 0.1) |
| RR1220 | .079 ± .008 (2.0 ± 0.2) | .049 ± .008 (1.25 ± 0.2) | .016 ± .008 (0.4 ± 0.2) | 0.016 ± .004 (0.4 ± 0.1) |
| RR1632 | .126 ± .008 (3.2 ± 0.2) | .063 ± .008 (1.6 ± 0.2) | .02 ± .01 (0.5 ± 0.25) | 0.016 ± .004 (0.4 ± 0.1) |
| RR2632 | .126 ± .008 (3.2 ± 0.2) | .10 ± .008 (2.6 ± 0.2) | .02 ± .01 (0.5 ± 0.25) | 0.016 ± .004 (0.4 ± 0.1) |



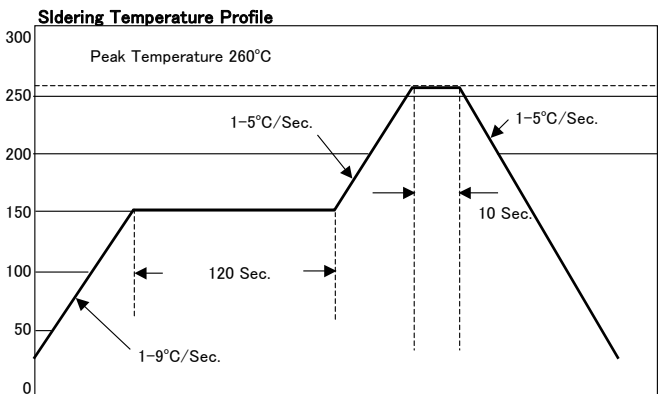
| | Dimensions (mm) | | |
|--------|-----------------|------|------|
| | a | b | c |
| RR0306 | 0.28 | 0.76 | 0.34 |
| RR0510 | 0.5 | 1.6 | 0.6 |
| RR0816 | 1.0 | 3.0 | 1.2 |
| RR1220 | 1.2 | 4.0 | 1.65 |
| RR1632 | 2.2 | 5.0 | 2.0 |
| RR3226 | 2.2 | 5.0 | 3.0 |

Power Derating Curve

:For operation above 70degC, power rating must be derated according to the following chart

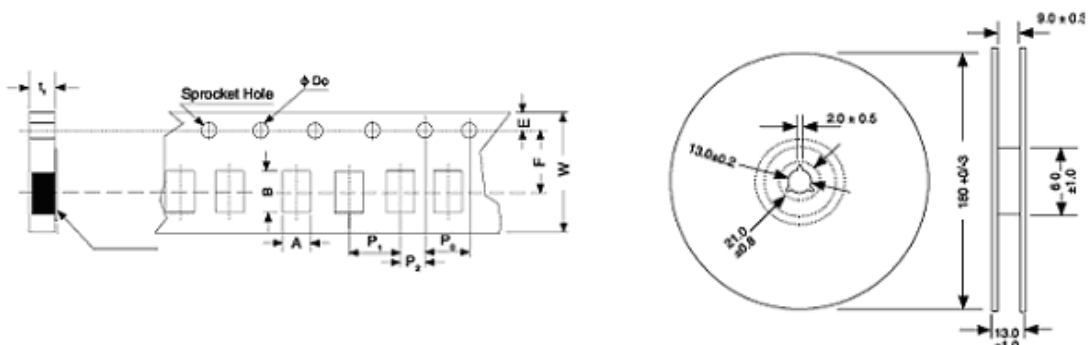


Recommended Reflow Curve



Tape & Reel Dimensions (mm)

| Type | A | B | E | F | W | P ₀ | P ₁ | P ₂ | t ₁ |
|--------|-------------|-------------|------------|------------|-----------|----------------|----------------|----------------|----------------|
| RR0306 | 0.38 ± 0.03 | 0.68 ± 0.03 | 1.75 ± 0.1 | 3.5 ± 0.05 | 8.0 ± 0.3 | 4.0 ± 0.1 | 4.0 ± 0.1 | 2.0 ± 0.05 | 0.31 ± 0.02 |
| RR0510 | 0.63 ± 0.05 | 1.13 ± 0.05 | | | | | | | 0.43 ± 0.05 |
| RR0816 | 1.1 ± 0.1 | 1.9 ± 0.1 | | | | | | | 0.6 ± 0.05 |
| RR1220 | 1.65 ± 0.2 | 2.4 ± 0.2 | | | | | | | 0.75 ± 0.05 |
| RR1632 | 1.9 ± 0.1 | 3.5 ± 0.1 | | | | | | | 1.0 ± 0.2 |
| RR2632 | 2.9 ± 0.2 | 3.6 ± 0.1 | 5.5 ± 0.05 | | | | | | |



Precision 0.1% and 0.5%, tolerance
Thin Film Chip Resistor

Ordering information



| | | | | | | | | | | | | |
|------|----------------------|------------|---|--|---|-----------|---|---|---|-----------------------|---|--|
| RR | 0816 | P | - | 104 | - | B | - | M | - | T5 | - | XXX |
| TYPE | Size | TCR | | R-Values | | Tolerance | | "M" code | | Package | | "3" digit code |
| | 0510 0816 1220 | P=25ppm/°C | | 3 digits for E24 series (Ex.104=100K ohm) 4 digits for E96 series (Ex.4992=49.9K ohm) | | B=0.1% | | To be added when E96 series of RR1220 | | Blank=1000 T5=5000 | | To be added when E96 series of RR0816 (Ex. 49.9K=68C) |

| | | | | | | | | | | |
|------|------------------------------|---|---|--|---|-----------|---|---|---|--|
| RR | 0816 | P | - | 104 | - | D | - | M | - | XXX |
| TYPE | Size | TCR | | R-Values | | Tolerance | | "M" code | | "3" digit code |
| | 0306 0510 0816 1220 | P=25ppm/°C Q=50ppm/°C R=100ppm/°C | | 3 digits for E24 series (Ex.104=100K ohm) 4 digits for E96 series (Ex.4992=49.9K ohm) | | D=0.5% | | To be added when E96 series of RR1220 | | To be added when E96 series of RR0816 (Ex. 49.9K=68C) |

| | | | | | | | | |
|------|--------------|--------------------------|---|--|---|------------------|---|--------------------|
| RR | 1632 | P | - | 1002 | - | D | - | T1 |
| TYPE | Size | TCR | | R-Values | | Tolerance | | Package |
| | 1632 2632 | P=25ppm/°C Q=50ppm/°C | | 4 digits for all values (Ex.1003=100K ohm) R=Decimal (Ex.49R9=49.9 ohm) | | B=0.1% D=0.5% | | T1=1000 T5=5000 |

RoHS Compliance and 100% Lead Free information

Our compliance parts will be differentiated by LABEL on the plastic reel.
Compliant Components: dotted line on the label. (Please see description)

| | |
|--|--|
| ===== RR1220P-1152- B - M - T5 Q.T.Y 5000pcs Inspected f SUSUMU CO.,LTD. Y331704-- K N:   ===== | Parts number (Type designation) |
| | Quantity per reel |
| | Manufacturing date code |
| | Identification showing RoHS Compliance & Lead-free (Matte Sn 100%) |

Precision 0.1% and 0.5%, tolerance
Thin Film Chip Resistor

3 digit of resistance code for E96 series

Table 1 shows the first two digits of the three-digit E96 part-marking scheme.

| Code | Value | Code | Value | Code | Value | Code | Value | Code | Value | Code | Value |
|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|
| 01 | 100* | 17 | 147 | 33 | 215 | 49 | 316 | 65 | 464 | 81 | 681 |
| 02 | 102 | 18 | 150* | 34 | 221 | 50 | 324 | 66 | 475 | 82 | 698 |
| 03 | 105 | 19 | 154 | 35 | 226 | 51 | 332 | 67 | 487 | 83 | 715 |
| 04 | 107 | 20 | 158 | 36 | 232 | 52 | 340 | 68 | 499 | 84 | 732 |
| 05 | 110* | 21 | 162 | 37 | 237 | 53 | 348 | 69 | 511 | 85 | 750* |
| 06 | 113 | 22 | 165 | 38 | 243 | 54 | 357 | 70 | 523 | 86 | 768 |
| 07 | 115 | 23 | 169 | 39 | 249 | 55 | 365 | 71 | 536 | 87 | 787 |
| 08 | 118 | 24 | 174 | 40 | 255 | 56 | 374 | 72 | 549 | 88 | 806 |
| 09 | 121 | 25 | 178 | 41 | 261 | 57 | 383 | 73 | 562 | 89 | 825 |
| 10 | 124 | 26 | 182 | 42 | 267 | 58 | 392 | 74 | 576 | 90 | 845 |
| 11 | 127 | 27 | 187 | 43 | 274 | 59 | 402 | 75 | 590 | 91 | 866 |
| 12 | 130* | 28 | 191 | 44 | 280 | 60 | 412 | 76 | 604 | 92 | 887 |
| 13 | 133 | 29 | 196 | 45 | 287 | 61 | 422 | 77 | 619 | 93 | 909 |
| 14 | 137 | 30 | 200* | 46 | 294 | 62 | 432 | 78 | 634 | 94 | 931 |
| 15 | 140 | 31 | 205 | 47 | 301 | 63 | 442 | 79 | 649 | 95 | 953 |
| 16 | 143 | 32 | 210 | 48 | 309 | 64 | 453 | 80 | 665 | 96 | 976 |

The third character is a letter multiplier:

| Code | A | H | C | D | E | F | | R | S |
|-------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|--|------------------|------------------|
| Multipliers | 10 ⁰ | 10 ¹ | 10 ² | 10 ³ | 10 ⁴ | 10 ⁵ | | 10 ⁻¹ | 10 ⁻² |

* The resistance value duplicated in E24 series and in E96 series shall be manufactured in E24 only