

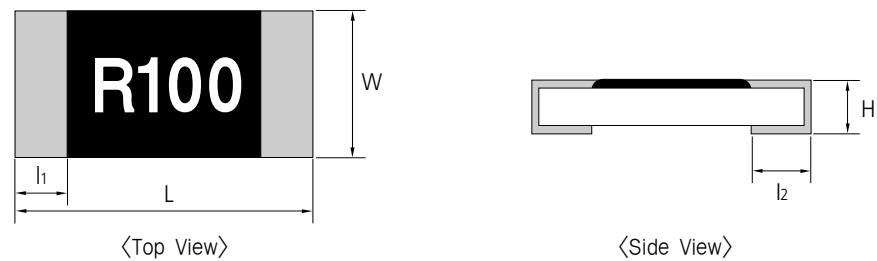
Feature

- Under 1 ohms, precision resistance.
- Both flow and reflow soldering are applicable.
- High Power with Low TCR.
- 100% Lead Free Products (PbO not used).
- RoHS Compliant.

Application

- Current Sensing.
- PCM of Battery Pack.
- Power supplying part, DC power charger, adapter.
- Mobile Phone, HDD, DSC, LCD.

Structure and Dimensions



(UNIT: mm)

| Type | Inch | L | W | H | l ₁ | l ₂ | Average Weight |
|---------|------|-----------|-----------|-----------|----------------|----------------|----------------|
| RUT1005 | 0402 | 1.00±0.05 | 0.50±0.05 | 0.35±0.05 | 0.20±0.10 | 0.25±0.10 | 0.6mg |
| RUT1608 | 0603 | 1.60±0.10 | 0.80±0.10 | 0.45±0.10 | 0.30±0.20 | 0.35±0.10 | 2.1mg |
| RUT2012 | 0805 | 2.00±0.15 | 1.25±0.15 | 0.50±0.10 | 0.40±0.20 | 0.35±0.20 | 4.9mg |
| RUT3216 | 1206 | 3.20±0.15 | 1.60±0.15 | 0.55±0.10 | 0.45±0.20 | 0.40±0.20 | 9.5mg |
| RUT3225 | 1210 | 3.20±0.20 | 2.55±0.20 | 0.55±0.10 | 0.45±0.20 | 0.40±0.20 | 16mg |
| RUT5025 | 2010 | 5.00±0.20 | 2.50±0.20 | 0.55±0.10 | 0.60±0.20 | 0.60±0.20 | 26mg |
| RUT6432 | 2512 | 6.30±0.20 | 3.20±0.20 | 0.55±0.10 | 0.60±0.20 | 0.60±0.20 | 41mg |

Parts Numbering System

• The part number system shall be in the following format

| RUT | 2012 | J | R100 | CS |
|--|--|----------------------------|-----------------------|--|
| Code Designation | Dimension & Size Code | Tolerance | Resistance Value | Packaging Code |
| RUT: Current Sensing Resistor Top Mounting (Face-up) | 1005: 1.0 × 0.5(mm) - 0402(inch) 1608: 1.6 × 0.8(mm) - 0603(inch) 2012: 2.0 × 1.2(mm) - 0805(inch) 3216: 3.2 × 1.6(mm) - 1206(inch) 3225: 3.2 × 2.5(mm) - 1210(inch) 5025: 5.0 × 2.5(mm) - 2010(inch) 6432: 6.4 × 3.2(mm) - 2512(inch) | F: ±1% G: ±2% J: ±5% | 4-digit coding system | CS: Tape & Reel 7" ES: Tape & Reel 10" AS: Tape & Reel 13" |

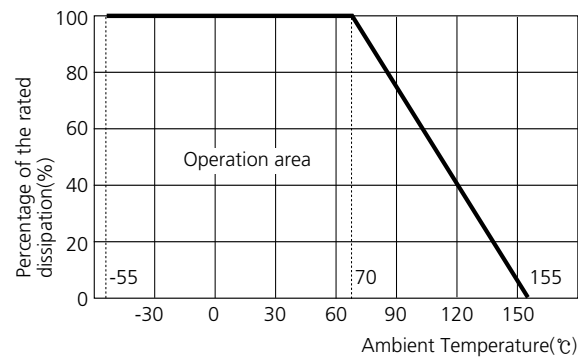
Specification

| Type | Power Rating (W) | Working Current (A, MAX) | TCR (ppm/°C) | Resistance Range (Ω) | Rated Ambient Temperature | Rated Working Temperature |
|---------|------------------|--------------------------|--------------|----------------------|---------------------------|---------------------------|
| RUT1005 | 1/10 (0.1) | $\sqrt{P/R}$ | ±150 | 0.1~0.98 | 70°C | -55~+155°C |
| RUT1608 | 1/8 (0.125) | | | | | |
| RUT2012 | 1/4 (0.25) | | | | | |
| RUT3216 | 1/3 (0.33) | | | | | |
| RUT3225 | 1/2 (0.50) | | | | | |
| RUT5025 | 2/3 (0.66) | | | | | |
| RUT6432 | 1 (1.0) | | | | | |

• Rated Current (A) = $\sqrt{\text{Rated power(W)}/\text{Nominal resistance value } (\Omega)}$
Rated Current should be lower than (MAX) working Current.

Power Derating Curve

The rated power is the maximum continuous loading power at 70°C ambient temperature. For ambient temperature above 70°C, the loading power follows the below power derating curve.



Marking

4 digits indication

- R means decimal point.
- Other digits represent the significant value.
- Example : R100
R100 = .100 = 0.100 Ω
= 0.1 Ω or 100 mΩ



Resistance Value Table

| Code | Value (Ω) | Tol (%) | Code | Value (Ω) | Tol (%) | Code | Value (Ω) | Tol (%) | Code | Value (Ω) | Tol (%) | Code | Value (Ω) | Tol (%) | Code | Value (Ω) | Tol (%) |
|------|-----------|---------|------|-----------|---------|------|-----------|---------|------|-----------|---------|------|-----------|---------|------|-----------|---------|
| R100 | 0.1 | ±1, ±5 | R154 | 0.154 | ±1 | R226 | 0.226 | ±1 | R330 | 0.33 | ±1, ±5 | R470 | 0.47 | ±1, ±5 | R680 | 0.68 | ±1, ±5 |
| R102 | 0.102 | ±1 | R158 | 0.158 | ±1 | R232 | 0.232 | ±1 | R332 | 0.332 | ±1 | R475 | 0.475 | ±1 | R681 | 0.681 | ±1 |
| R105 | 0.105 | ±1 | R160 | 0.16 | ±1, ±5 | R237 | 0.237 | ±1 | R340 | 0.34 | ±1 | R487 | 0.487 | ±1 | R698 | 0.698 | ±1 |
| R107 | 0.107 | ±1 | R162 | 0.162 | ±1 | R240 | 0.24 | ±1, ±5 | R348 | 0.348 | ±1 | R499 | 0.499 | ±1 | R715 | 0.715 | ±1 |
| R110 | 0.11 | ±1, ±5 | R165 | 0.165 | ±1 | R243 | 0.243 | ±1 | R357 | 0.357 | ±1 | R510 | 0.51 | ±1, ±5 | R732 | 0.732 | ±1 |
| R113 | 0.113 | ±1 | R169 | 0.169 | ±1 | R249 | 0.249 | ±1 | R360 | 0.36 | ±1, ±5 | R511 | 0.511 | ±1 | R750 | 0.75 | ±1, ±5 |
| R115 | 0.115 | ±1 | R174 | 0.174 | ±1 | R255 | 0.255 | ±1 | R365 | 0.365 | ±1 | R523 | 0.523 | ±1 | R768 | 0.768 | ±1 |
| R118 | 0.118 | ±1 | R178 | 0.178 | ±1 | R261 | 0.261 | ±1 | R374 | 0.374 | ±1 | R536 | 0.536 | ±1 | R787 | 0.787 | ±1 |
| R120 | 0.12 | ±1, ±5 | R180 | 0.180 | ±1, ±5 | R267 | 0.267 | ±1 | R383 | 0.383 | ±1 | R549 | 0.549 | ±1 | R806 | 0.806 | ±1 |
| R121 | 0.121 | ±1 | R182 | 0.182 | ±1 | R270 | 0.27 | ±1, ±5 | R390 | 0.39 | ±1, ±5 | R560 | 0.56 | ±1, ±5 | R820 | 0.82 | ±1, ±5 |
| R124 | 0.124 | ±1 | R187 | 0.187 | ±1 | R274 | 0.274 | ±1 | R392 | 0.392 | ±1 | R562 | 0.562 | ±1 | R825 | 0.825 | ±1 |
| R127 | 0.127 | ±1 | R191 | 0.191 | ±1 | R280 | 0.28 | ±1 | R402 | 0.402 | ±1 | R576 | 0.576 | ±1 | R845 | 0.845 | ±1 |
| R130 | 0.13 | ±1, ±5 | R196 | 0.196 | ±1 | R287 | 0.287 | ±1 | R412 | 0.412 | ±1 | R590 | 0.59 | ±1 | R866 | 0.866 | ±1 |
| R133 | 0.133 | ±1 | R200 | 0.200 | ±1, ±5 | R294 | 0.294 | ±1 | R422 | 0.422 | ±1 | R604 | 0.604 | ±1 | R887 | 0.887 | ±1 |
| R137 | 0.137 | ±1 | R205 | 0.205 | ±1 | R300 | 0.3 | ±1, ±5 | R430 | 0.43 | ±1, ±5 | R619 | 0.619 | ±1 | R909 | 0.909 | ±1 |
| R140 | 0.14 | ±1 | R210 | 0.21 | ±1 | R301 | 0.301 | ±1 | R432 | 0.432 | ±1 | R620 | 0.62 | ±1, ±5 | R910 | 0.91 | ±1, ±5 |
| R143 | 0.143 | ±1 | R215 | 0.215 | ±1 | R309 | 0.309 | ±1 | R442 | 0.442 | ±1 | R634 | 0.634 | ±1 | R931 | 0.931 | ±1 |
| R147 | 0.147 | ±1 | R220 | 0.22 | ±1, ±5 | R316 | 0.316 | ±1 | R453 | 0.453 | ±1 | R649 | 0.649 | ±1 | R953 | 0.953 | ±1 |
| R150 | 0.15 | ±1, ±5 | R221 | 0.221 | ±1 | R324 | 0.324 | ±1 | R464 | 0.464 | ±1 | R665 | 0.665 | ±1 | R976 | 0.976 | ±1 |

The specifications and designs contained herein may be subject to change without notice. Please contact our sales representatives or product engineers before order.

- Operation Notes
- Example of land Pattern Design
- Recommended Soldering Conditions
- General Structure
- General
- Precision
- Jumper
- Low ohms (RUT Series)
- Ultra Low ohms (RU Series)
- Ultra Low Ohms (RUK Series)
- Ultra Low Ohms (RJ Series)
- Arrays (CONVEX Type)
- Arrays (CONCAVE Type)
- Arrays (FLAT Type)
- Anti-Sulfur Resistors
- Attenuator
- Characteristics Performance
- Packaging
- Standard Resistance Value