

## Features

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## Applications

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## PART NUMBER

Example: RND 155MF11-104J

|             |   |   |
|-------------|---|---|
| RND 155MF11 | 104   | J   |
| Type        | Zero Power Resistance @ 25 °C<br>104 = 100 kΩ | Tolerance<br>F = ± 1%<br>G = ± 2%<br>H = ± 3%<br>J = ± 5% |

## Electrical Characteristics

|     | Item                            | Symbol | Test conditions                                | Unit  | Specification   |
|-----|---------------------------------|--------|--|-------|-----------------|
| 1.1 | Zero Power Resistance at 25 °C  | R25    | Ta=25±0.1 °C<br>Test Power≤0.1mW               | KΩ    | 100±5%          |
| 1.2 | B-value                         | B25/50 | $B=[(Ta \times Tb)/(Tb-Ta)] \times \ln(Ra/Rb)$ | K     | 4400±10%        |
| 1.3 | Thermal dissipation Coefficient | δ      | In still air                                   | mW/°C | about 4.5       |
| 1.4 | Thermal time constant           | τ      | In still air                                   | sec   | about 20        |
| 1.5 | Insulation resistance           | /      | 1000V/DC 1min                                  | MΩ    | ≥500            |
| 1.6 | Operating temperature           | /      | /  | °C    | -30 °C ~ 125 °C |
| 1.7 | Maximum rated power             | Pmax   | /  | mW    | 450             |

## Reliability

|     | Item                         | Test conditions and methods  | Technical requirements                     |
|-----|------------------------------|--|--|
| 2.1 | Terminal strength            | Pull: wire diameter(mm)<br>pulling force (N)<br>0.35<d≤0.5 5,0.5<d≤0.8 10<br>time: 10±1 sec                      | No obvious damage,<br>R25 ΔR/R≤±3%         |
| 2.2 | Solderability                | Temperature : 245±5 °C<br>for 2-3sec   | the coverage area should be more than 95%. |
| 2.3 | Welding heat resistant       | Tin pan temperature: 260 °C<br>±5 °C, immersion depth is<br>apart from the body resistance<br>6 mm, time 5±1 sec | R25 ΔR/R≤±3%,                              |
| 2.4 | Steady humidity and heat     | Temp: 40 °C±2 °C,<br>Humidity: 93±2%,<br>Time : 500hrs   | R25 ΔR/R≤±3%,                              |
| 2.5 | Rapid changes in temperature | -30 °C 30min→25 °C 5min→1<br>25 °C 30min→25 °C 5min ,<br>5 cycles  | R25 ΔR/R≤±3%                               |
| 2.6 | High temperature storage     | Temp : 125 °C±5 °C,<br>Time :1000hrs   | R25 ΔR/R≤±5%                               |
| 2.7 | Low temperature storage      | Temp : -30 °C,<br>Time :1000hrs  | R25 ΔR/R≤±5%                               |

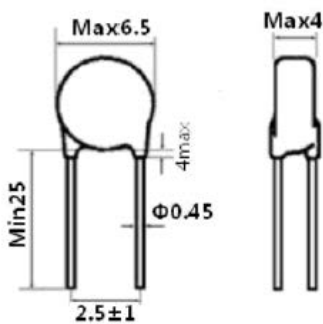
## Caution

- 3.1 This product USES: Temperature measurement and control;
- 3.2 When the soldering iron welding, the welding place at least 2 mm space from coating layer and the welding temperature should be lower than 360 °C, welding time < 3 sec.
- 3.3 Storage temp : - 10 ... 40°C; storage humidity :≤75% RH;
- 3.4 Avoid air corrosion or sunlight;
- 3.5 Remake sealed storage after package opening

## Certificate

- 4.1 Quality Control System Certification  
ISO9001 : 2008 (01115Q20270R5M)  
ISOTS16949 : 2009(0192416)
- 4.2 Environment Management System Certification  
ISO14001 : 2004 (01113E20060R2M)
- 4.3 Environment Test Report RoHS
- 4.4 CQC Safe Certification (CQC13001089724) 4.5 TUV Certificate (R50245892)

## Dimensions



| Coating material | Wire material | Body color | Logo color |
|------------------|---------------|------------|------------|
| Epoxy resin      | CP wire       | Green      | Black      |

## R&T Table

| R25=100K $\Omega$ |         |    |         | B25/50=4400K |         |    |        |    |        |     |       |
|-------------------|---------|----|---------|--------------|---------|----|--------|----|--------|-----|-------|
| T                 | R       | T  | R       | T            | R       | T  | R      | T  | R      | T   | R     |
| -30               | 2362    | -4 | 458.366 | 22           | 115.946 | 48 | 34.124 | 74 | 11.77  | 100 | 5     |
| -29               | 2204.67 | -3 | 433.069 | 23           | 110.344 | 49 | 32.647 | 75 | 11.344 | 101 | 4.961 |
| -28               | 2058.57 | -2 | 409.327 | 24           | 105.034 | 50 | 31.242 | 76 | 10.937 | 102 | 4.833 |
| -27               | 1922.91 | -1 | 387.033 | 25           | 100     | 51 | 29.904 | 77 | 10.548 | 103 | 4.709 |
| -26               | 1796.95 | 0  | 369     | 26           | 95.225  | 52 | 28.63  | 78 | 10.177 | 104 | 4.591 |
| -25               | 1680    | 1  | 346.399 | 27           | 90.696  | 53 | 27.417 | 79 | 9.822  | 105 | 4.478 |
| -24               | 1571.39 | 2  | 327.882 | 28           | 86.4    | 54 | 26.262 | 80 | 9.483  | 106 | 4.37  |
| -23               | 1470.51 | 3  | 310.46  | 29           | 82.323  | 55 | 25.162 | 81 | 9.159  | 107 | 4.266 |
| -22               | 1376.8  | 4  | 294.059 | 30           | 78.453  | 56 | 24.115 | 82 | 8.849  | 108 | 4.167 |
| -21               | 1289.71 | 5  | 278.612 | 31           | 74.78   | 57 | 23.116 | 83 | 8.553  | 109 | 4.072 |
| -20               | 1208.75 | 6  | 264.058 | 32           | 71.293  | 58 | 22.165 | 84 | 8.27   | 110 | 3.981 |
| -19               | 1133.45 | 7  | 250.338 | 33           | 67.982  | 59 | 21.259 | 85 | 8      | 111 | 3.893 |
| -18               | 1063.4  | 8  | 237.4   | 34           | 64.837  | 60 | 20.395 | 86 | 7.741  | 112 | 3.81  |
| -17               | 998.195 | 9  | 225.193 | 35           | 61.849  | 61 | 19.572 | 87 | 7.493  | 113 | 3.729 |
| -16               | 937.467 | 10 | 214     | 36           | 59.011  | 62 | 18.787 | 88 | 7.256  | 114 | 3.653 |
| -15               | 880.884 | 11 | 202.794 | 37           | 56.314  | 63 | 18.039 | 89 | 7.03   | 115 | 3.579 |
| -14               | 828.135 | 12 | 192.52  | 38           | 53.751  | 64 | 17.326 | 90 | 6.813  | 116 | 3.509 |
| -13               | 778.933 | 13 | 182.812 | 39           | 51.315  | 65 | 16.646 | 91 | 6.606  | 117 | 3.442 |
| -12               | 733.014 | 14 | 173.635 | 40           | 49      | 66 | 15.997 | 92 | 6.407  | 118 | 3.377 |
| -11               | 690.136 | 15 | 164.959 | 41           | 46.798  | 67 | 15.378 | 93 | 6.217  | 119 | 3.316 |
| -10               | 650.075 | 16 | 156.753 | 42           | 44.705  | 68 | 14.788 | 94 | 6.035  | 120 | 3.257 |
| -9                | 612.623 | 17 | 148.989 | 43           | 42.714  | 69 | 14.224 | 95 | 5.861  | 121 | 3.201 |
| -8                | 577.592 | 18 | 141.641 | 44           | 40.82   | 70 | 13.687 | 96 | 5.694  | 122 | 3.147 |
| -7                | 544.806 | 19 | 134.684 | 45           | 39.019  | 71 | 13.174 | 97 | 5.535  | 123 | 3.095 |
| -6                | 514.103 | 20 | 128.097 | 46           | 37.306  | 72 | 12.684 | 98 | 5.382  | 124 | 3.046 |
| -5                | 485.336 | 21 | 121.858 | 47           | 35.675  | 73 | 12.217 | 99 | 5.236  | 125 | 3     |

