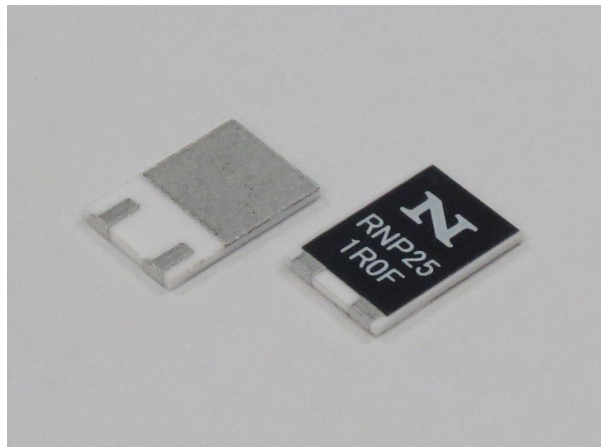


25W
SMD SURGE PROTECTION RESISTOR

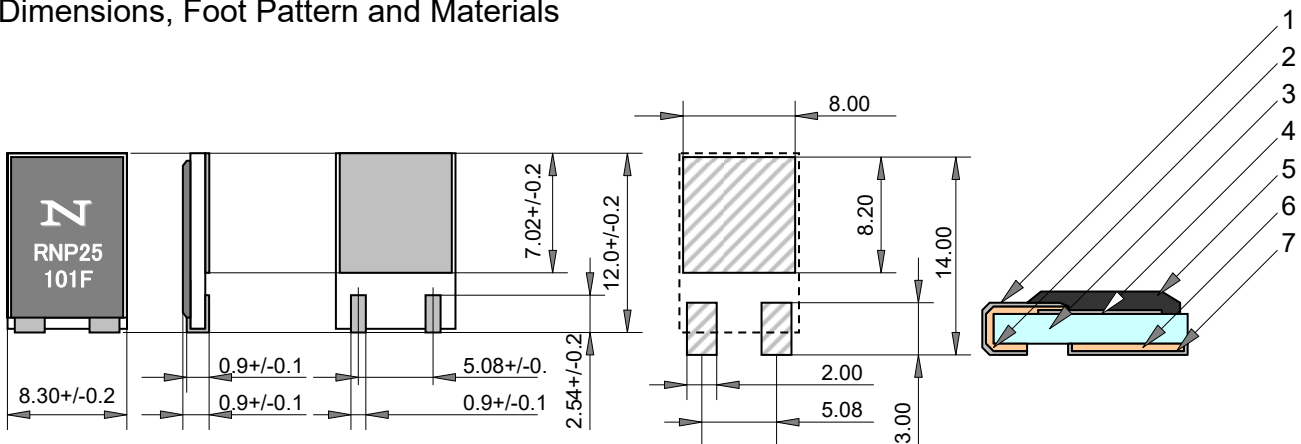
RNP-25



Features and Applications

- Very small size, low profile, right weight SMD surge protection power film resistors.
- Easy to replace D-PAK power resistor.
- Excellent rf characteristics advantage to high speed pulse operation.
- Applications include power electronics, power consumption meter, electronic load equipments, battery charger, automotive and etc.

Dimensions, Foot Pattern and Materials



| | substance | material |
|---|-----------|--------------------------------------|
| 1 | terminals | Pd-Ag film, Ni plating & Tin plating |
| 2 | terminals | Copper, Ni plating & Tin plating |
| 3 | substrate | ALO 1mm thickness |
| 4 | resistor | Ni-Cr alloy |
| 5 | molding | Epoxy resin, UL-94 V-0 |
| 6 | heat sink | Pd-Ag film, Ni plating & Tin plating |
| 7 | heat sink | Pd-Ag film, Ni plating & Tin plating |

Ordering Information

| | | | | | |
|----------------|------------|--------------------------|-----------------|-------------|-----------|
| Type RNP-25 | blank - | Resistance 100 ohm | Tolerance F* | Code Z01 | Remarks |
| RNP-25 | - | 0.02 ohm- 51kohm E24+ | F(1%)* | Z01 | Tape reel |

Recommend resistance E24+

| | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1.0 | 1.1 | 1.2 | 1.3 | 1.5 | 1.6 | 1.8 | 2.0 | 2.2 | 2.4 | 2.5 | 2.7 | 3.0 | 3.3 |
| 3.6 | 3.9 | 4.0 | 4.3 | 4.7 | 5.0 | 5.1 | 5.6 | 6.2 | 6.8 | 7.5 | 8.0 | 8.2 | 9.1 |

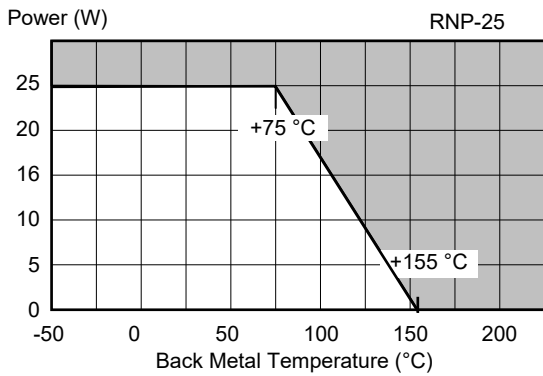
(*) Tolerance of 0.02ohm to 0.091ohm will be +/-5% only.

25W SMD POWER CHIP RESISTOR, RNP-25

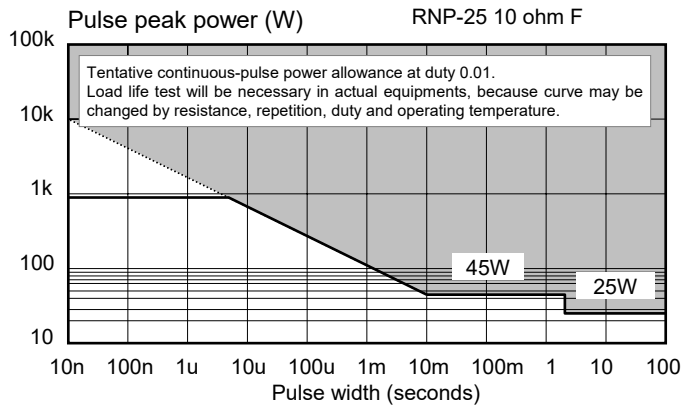
Specifications

| | RNP-25 | Test Conditions |
|-----------------------|--------------------------------------|---|
| Rating Power | 25 Watts | -55 °C to 75 °C backing metal temperature |
| Rating Power | 1.0Watts | Attached on simple foot print. |
| Short Time Overload | 50W | Rated power X 2.0 and 5 second at 25°C |
| Heat Resistance | 3.0 °C/W | Resistor hot spot to attached flange optionally |
| Resistance Range | 0.02 ohm – 51kohm | 0.02ohm-0.91ohm are at 5% tolerance only. |
| Nominal | E24+ | Include 2.5, 4.0, 5.0, 8.0 and 16 |
| TCR | 100 ppm/°C | 10ohm to 51kohm, around 100 ppm/°C under 9.1ohm |
| Tolerance | +/-1% (F) | |
| Capacitance | 2.65 pF | Equivalent parallel capacitance, typical |
| Inductance | 14.65 nH | Equivalent series inductance, typical |
| Operation Temp. | -55 °C to +155 °C | |
| Max Operating Current | 10A | |
| Max Operating Volt. | less than 500V or $\sqrt{P \cdot R}$ | P is rating power and R resistance |
| Withstanding Volt. | 1500 VAC | Terminal and back metal, 60 seconds. 1mA |
| Load Life | +/- 1.0 % | 25 °C, 90 min. ON, 30 min. OFF, 1000h. |
| Humidity | +/- 1.0 % | 40 °C, 90-95%RH, DC 0.1W, 1000 hours. |
| Temp. Cycle | +/- 0.25 % | -55 °C, 30 min., +155 °C, 30 min., 5cycle |
| Soldering Heat | +/- 0.1 % | 350+/-5 °C, 3seconds, |
| Lead Solder ability | Over 95% of surface | 230+/-5 °C, 3seconds. |
| Insulation Resistance | Over 1,000 Meg ohm | Between terminals and back metal. |
| Vibration | +/- 0.25 % | IEC60068-2-6, see note 4 |

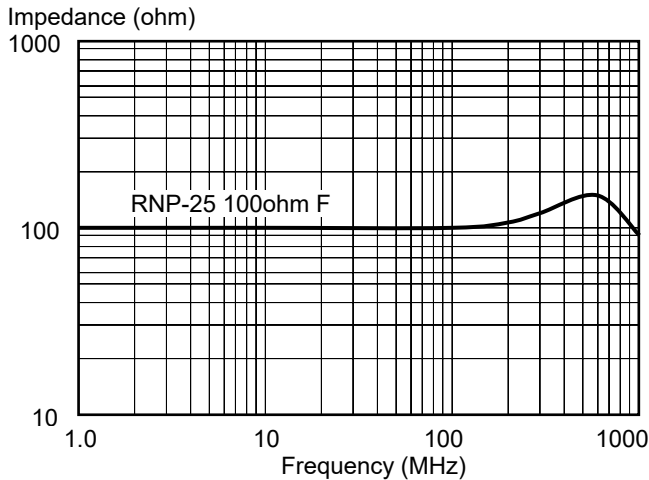
Power Derating



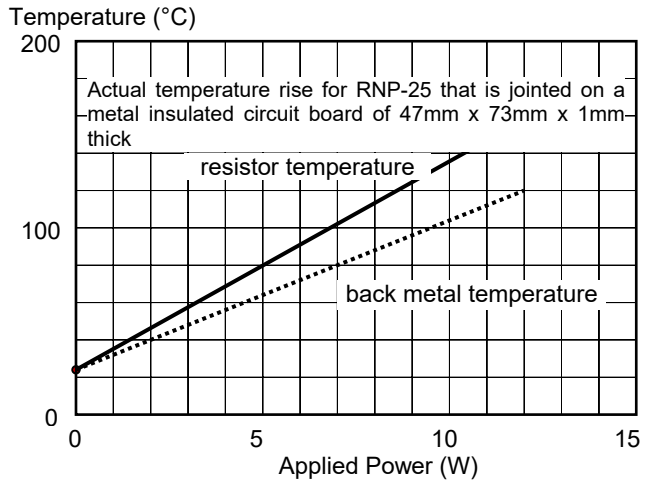
Pulse Energy Durability



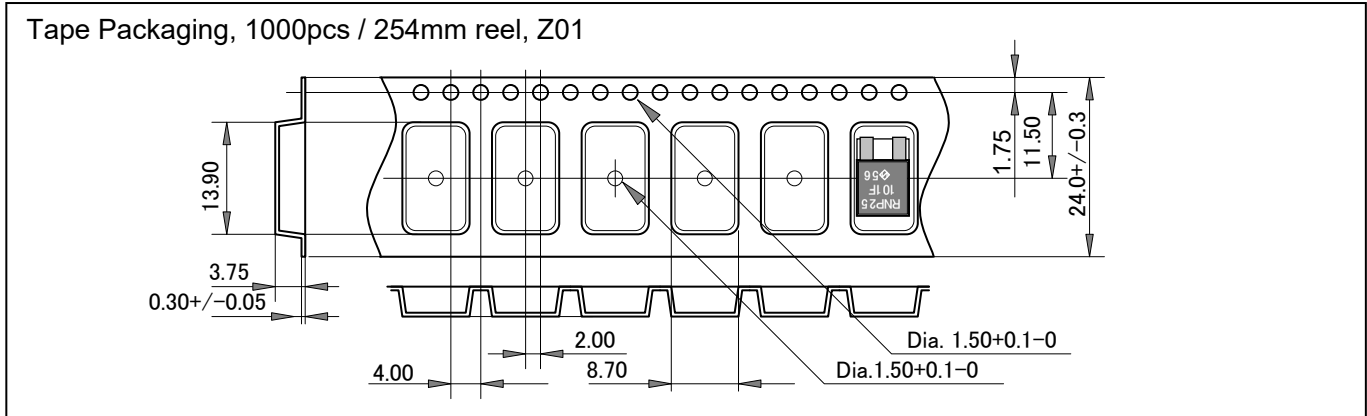
Frequency Characteristics



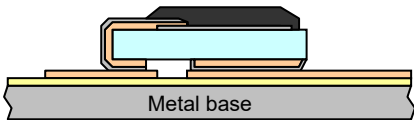
Temperature Rise



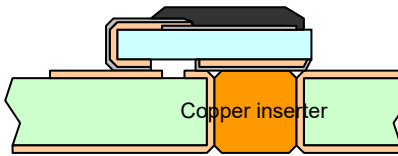
25W SMD POWER CHIP RESISTOR, RNP-25



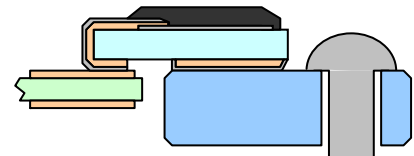
Applications



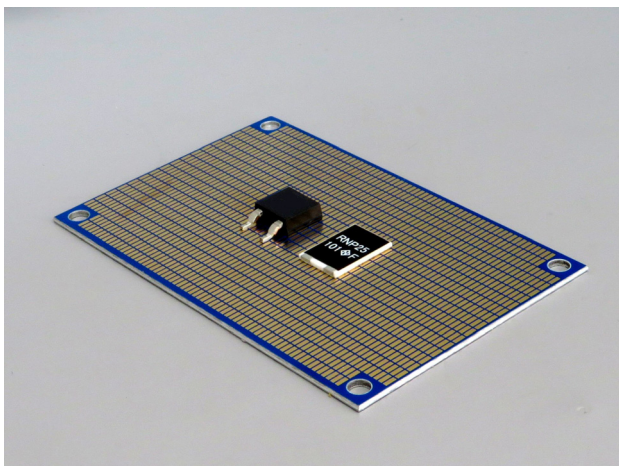
Metal insulated circuit board improves thermal absorption performance from resistor to heat-sink.



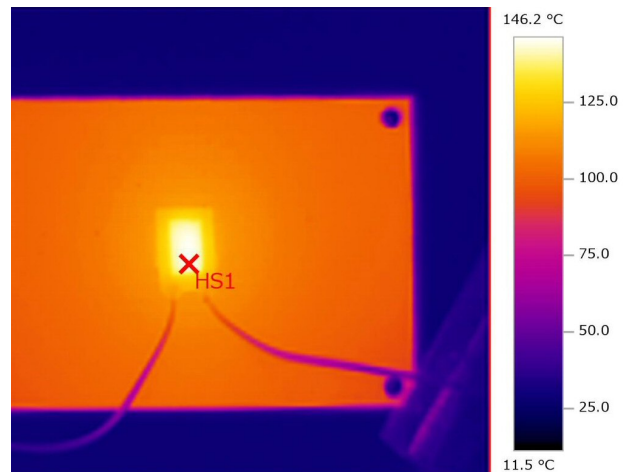
Copper inserter improves thermal absorption performance from resistor to heat-sink.



Mounting RNP-25 on a proper metal flange shows excellent heat absorption, please note to be connected the terminals with flexible joint.



DPAK and RNP-25 on metal insulated circuit board



Max 12W power application to RNP-25 and 47mm x 73mm aluminum insulated circuit board