

MNRS Series

Power Shunt Resistor



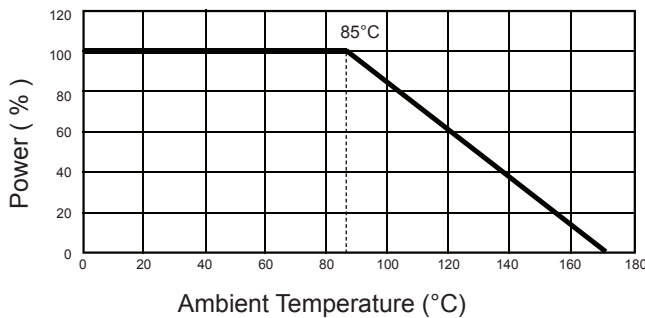
- Resistances from 0.2 mOhm to 4 mOhm
- Power Rating up to 7 Watts
- Resistance Tolerances to $\pm 1\%$
- TCR's to ± 50 ppm/ $^{\circ}\text{C}$
- Excellent long-term stability and low inductance
- Pulse Applications
- Power Modules
- Frequency Converters
- Engine Controls



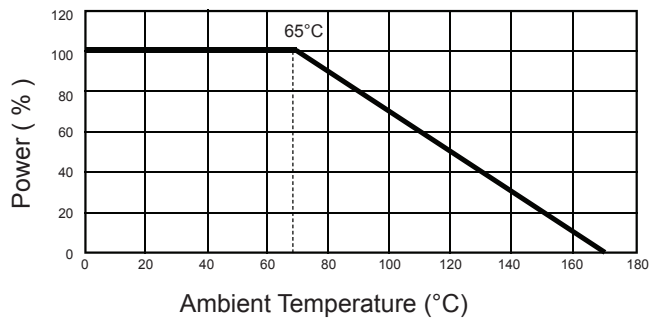
SPECIFICATIONS

| Type | MNRS1050 | MNRS1575 |
|--|--|----------------------------|
| Power Rating (W) | up to 5W (see table below) | up to 7W (see table below) |
| Resistance Range (m Ω) | 0.5, 1, 2, 3, 4 | 0.2, 0.5, 1, 2, 3 |
| Temperature Coefficient (depending on ohmic value) | $\pm 50 / 60 / 75 / 100 / 120$ ppm | |
| Max Current (A) | Must not exceed max power rating using Ohm's Law | |
| Operating Temperature Range | $-55^{\circ}\text{C} - +170^{\circ}\text{C}$ | |
| MAX Operating Voltage | $\sqrt{P \cdot R}$ | |
| Tolerances (depending on ohmic value) | 1% / 2% / 5% | |

Power Derating 1050



Power Derating 1575

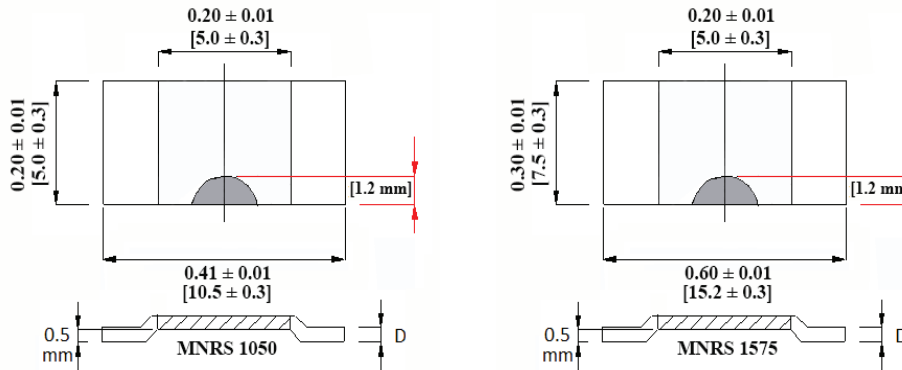


Ordering Information

Part Description: Part Type - Resistance - Tolerance - TCR - Packaging

Example: MNRS1575 3mOhm 1% 100ppm

Specifications



| Type | Value | Power Rating | Material | D (in) [mm] | TCR |
|----------|-------|--------------|------------|--------------------------------|---------|
| MNRS1050 | 0.5mΩ | 5W | Manganin | 0.034±0.002 [0.88 ± 0.05] | 75PPM |
| MNRS1050 | 1mΩ | 4W | Manganin | 0.017±0.002 [0.43 ± 0.05] | 60 PPM |
| MNRS1050 | 2mΩ | 4W | NiCr Alloy | 0.025±0.002 [0.64 ± 0.05] | 100 PPM |
| MNRS1050 | 3mΩ | 3W | NiCr Alloy | 0.017 ± 0.002 [0.43 ± 0.05] | 100 PPM |
| MNRS1050 | 4mΩ | 2.5W | NiCr Alloy | 0.013 ± 0.002 [0.32 ± 0.05] | 100 PPM |
| MNRS1575 | 0.2mΩ | 7W | Manganin | 0.059 ± 0.002 [1.50 ± 0.05] | 50 PPM |
| MNRS1575 | 0.5mΩ | 6W | Manganin | 0.022 ± 0.002 [0.56 ± 0.05] | 100 PPM |
| MNRS1575 | 1mΩ | 6W | NiCr Alloy | 0.035 ± 0.002 [0.90 ± 0.05] | 120 PPM |
| MNRS1575 | 2mΩ | 4W | NiCr Alloy | 0.018 ± 0.002 [0.45 ± 0.05] | 120 PPM |
| MNRS1575 | 3mΩ | 3.5W | NiCr Alloy | 0.012 ± 0.002 [0.30 ± 0.05] | 120 PPM |

| Test | Specification | Test Method |
|------------------------------|---------------|---|
| Short Time Overload | ±0.2% | 5x rated power for 5 seconds |
| Endurance | ±1.0% | Power rating 90 min. "ON", 30 min. "OFF" for 2000 hours |
| Moisture Resistance | ±0.2% | 90 ~ 98%RH, +25°C, +65°C, -10°C, 10 cycles |
| High Temperature Exposure | ±0.2% | 140°C for 250 hours |
| Resistance to Soldering Heat | ±0.2% | 350°C for 30 seconds or 250°C for 10 min. |
| Vibration, High Frequency | ±0.2% | 15g 10~2000Hz, 36 cycles |
| Inductance | <3nH | - |
| Thermal Shock | ±0.1% | -65°C, 25°C, 125°C, 25°C, 25 cycles |