

# MNRS Series

Chip Shunt Resistor

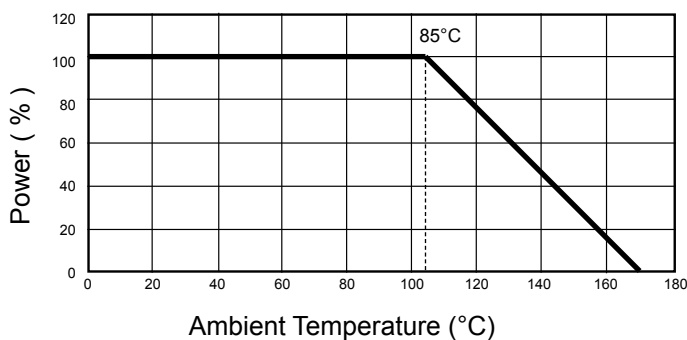


- Resistances from 1 mOhm to 4 mOhm
- Power Rating up to 6 Watts
- Resistance Tolerances to  $\pm 1\%$
- TCR's to  $\pm 100$  ppm/ $^{\circ}\text{C}$
- Excellent long-term stability and low inductance

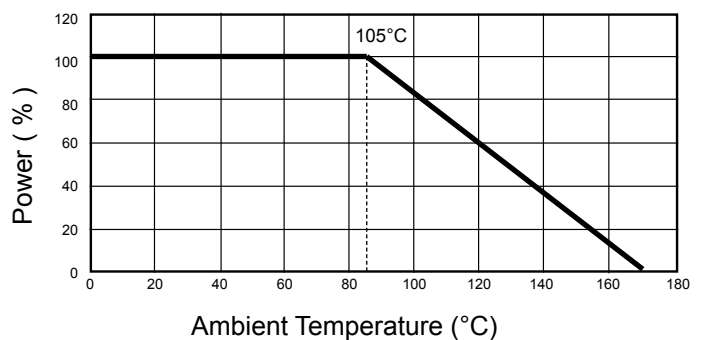
## SPECIFICATIONS

Type	MNRS1050	MNRS1575
Power Rating (W)	up to 4W (see table below)	up to 6W (see table below)
Resistance Range (m $\Omega$ )	2, 3, 4	1, 2, 3
TCR	$\pm 100$ ppm/ $^{\circ}\text{C}$	$\pm 120$ ppm/ $^{\circ}\text{C}$
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%	
Temperature Coefficient (depending on ohmic value)	$\pm 50 / 75 / 100$ ppm	

Power Derating 1050



Power Derating 1575

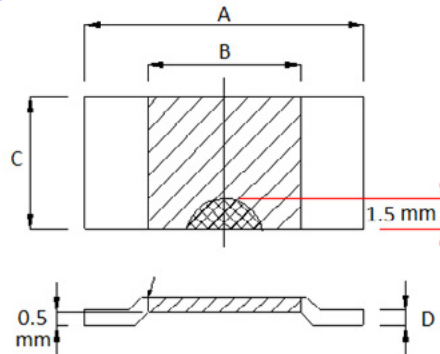


## Ordering Information

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

Example: MNRS1575 3mOhm 1% 100ppm

### Specifications



Type	Value	Power Rating	Material	A (in) [mm]	B (in) [mm]	C (in) [mm]	D (in) [mm]
MNRS1050	2mΩ	4W	NiCr Alloy	0.41 ± 0.01 [10.5 ± 0.3]	0.20 ± 0.01 [5.0 ± 0.3]	0.20 ± 0.01 [5.0 ± 0.3]	0.025 ± 0.002 [0.64 ± 0.05]
MNRS1050	3mΩ	3W	NiCr Alloy	0.41 ± 0.01 [10.5 ± 0.3]	0.20 ± 0.01 [5.0 ± 0.3]	0.20 ± 0.01 [5.0 ± 0.3]	0.017 ± 0.002 [0.43 ± 0.05]
MNRS1050	4mΩ	2.5W	NiCr Alloy	0.41 ± 0.01 [10.5 ± 0.3]	0.20 ± 0.01 [5.0 ± 0.3]	0.20 ± 0.01 [5.0 ± 0.3]	0.013 ± 0.002 [0.32 ± 0.05]
MNRS1575	1mΩ	6W	NiCr Alloy	0.60 ± 0.01 [15.2 ± 0.3]	0.20 ± 0.01 [5.0 ± 0.3]	0.30 ± 0.01 [7.5 ± 0.3]	0.035 ± 0.002 [0.90 ± 0.05]
MNRS1575	2mΩ	4W	NiCr Alloy	0.60 ± 0.01 [15.2 ± 0.3]	0.20 ± 0.01 [5.0 ± 0.3]	0.30 ± 0.01 [7.5 ± 0.3]	0.018 ± 0.002 [0.45 ± 0.05]
MNRS1575	3mΩ	3.5W	NiCr Alloy	0.60 ± 0.01 [15.2 ± 0.3]	0.20 ± 0.01 [5.0 ± 0.3]	0.30 ± 0.01 [7.5 ± 0.3]	0.012 ± 0.002 [0.30 ± 0.05]

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 EMF [μV/°C]	2μV/°C max.	0~100°C
Current Noise	±0.01%	MIL-STD-202 Method 308
Voltage Coefficient	Linearity error less than 120 dB	MIL-STD-202 Method 309
Shock	±0.2%	50g's 11ms
Thermal Shock	±0.1%	-65°C, 25°C, 125°C, 25°C, 25 cycles