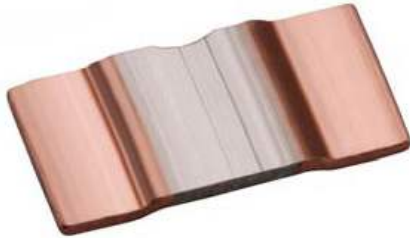


MNRS Series

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
- Non-Inductive Metal Element
- Flame Resistant all metal construction
- Suitable for Pulse Applications

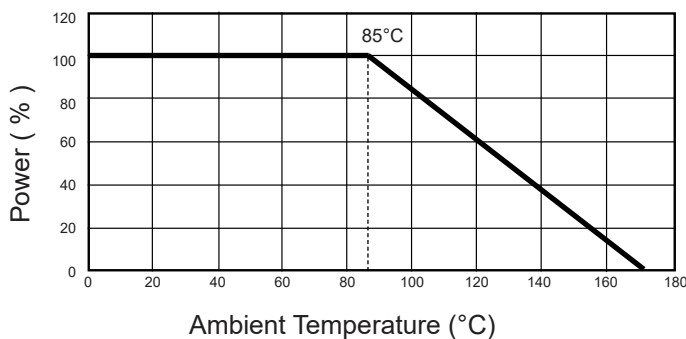


*Power Modules
Frequency Converters
Engine Controls*

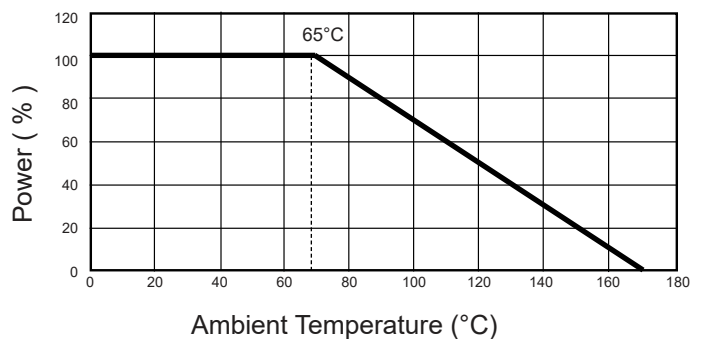
SPECIFICATIONS

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%	
Moisture Sensitivity	MSL-2a	

Power Derating 1050



Power Derating 1575



Ordering Information

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

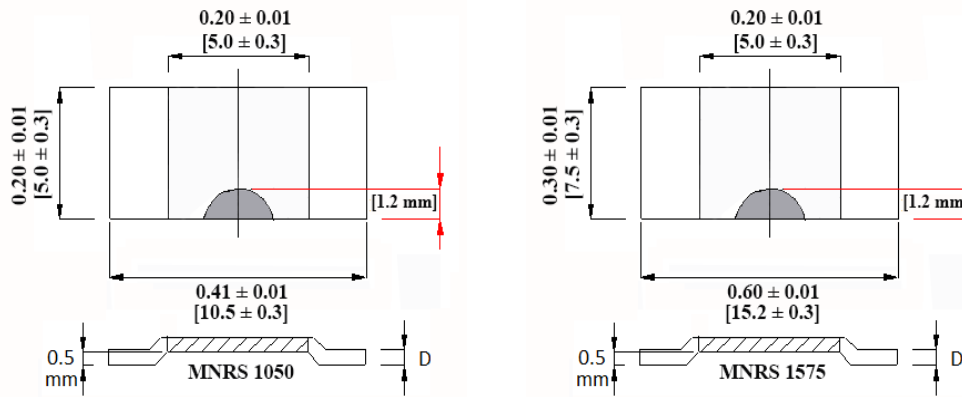
Example: MNRS1575 3mOhm 1% 100ppm

MNRS Series

Power Shunt Resistor



Specifications



Type	Value	Power Rating	Material	D (in) [mm]	TCR	Mass
MNRS1050	0.5mΩ	4W	Manganin	0.034± 0.002 [0.88 ± 0.05]	75PPM	360mg
MNRS1050	1mΩ	4W	Manganin	0.017± 0.002 [0.43 ± 0.05]	60 PPM	200mg
MNRS1050	2mΩ	4W	NiCr Alloy	0.025± 0.002 [0.64 ± 0.05]	100 PPM	190mg
MNRS1050	3mΩ	3W	NiCr Alloy	0.017 ± 0.002 [0.43 ± 0.05]	100 PPM	180mg
MNRS1050	4mΩ	2.5W	NiCr Alloy	0.013 ± 0.002 [0.32 ± 0.05]	100 PPM	160mg
MNRS1575	0.2mΩ	7W	Manganin	0.059 ± 0.002 [1.50 ± 0.05]	50 PPM	1430mg
MNRS1575	0.5mΩ	6W	Manganin	0.022 ± 0.002 [0.56 ± 0.05]	100 PPM	610mg
MNRS1575	1mΩ	6W	Manganin	0.035 ± 0.002 [0.90 ± 0.05]	100 PPM	330mg
MNRS1575	2mΩ	4W	NiCr Alloy	0.018 ± 0.002 [0.45 ± 0.05]	100 PPM	410mg
MNRS1575	3mΩ	3.5W	NiCr Alloy	0.012 ± 0.002 [0.30 ± 0.05]	100 PPM	320mg

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