



PROFESSIONAL AND FLAME-PROOF TYPE

Miniature Style [MNRN Series]

INTRODUCTION

The MNRN Series are manufactured by high vacuum sputtering deposit metal film on high thermal conductivity and specific gravity ROSENTHAL ceramic or same grade rods. The MNRN are coated with multilayers of light-green color flame-proof lacquer.

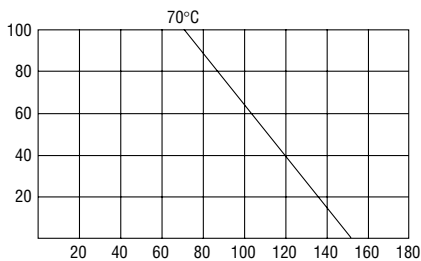
The MNRN meets severe overload test in accordance with UL specification # 1412 without fire hazard.

FEATURES

DIN	44061, 45921 part 107
CECC	40101-039, 40101-017
Flameproof Coating	UL-1412
Resistance Tolerance	±1%
T.C.R.	±50ppm/°C

DERATING CURVE

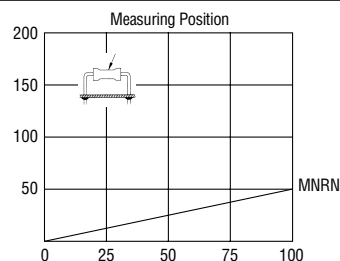
Rated Load (%)



Ambient Temperature (°C)

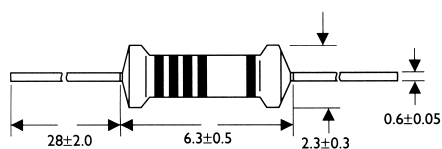
HOT-SPOT TEMPERATURE

Surface Temp. Rise (°C)



Applied Load, % of RCWV

DIMENSIONS



MNRN Series

ELECTRICAL CHARACTERISTICS

STYLE	MNRN
Power Rating at 70°C	0.6W
Operating Temp. Range	-55°C to +155°C
Maximum Working Voltage	300V
Maximum Overload Voltage	600V
Dielectric Withstanding Voltage	500V
Value Range ±1%	10Ω~1MΩ
Temperature Coefficient	±50ppm/°C

* Standard resistance is 10Ω~1MΩ, below or over this resistance on request.

ENVIRONMENTAL CHARACTERISTICS

PERFORMANCE TEST	TEST METHOD	APPRAISE	
Short Time Overload	JIS-C-5202 5.5	2.5 Times RCWV for 5 Seconds	±(0.25%+0.05Ω)
Dielectric Withstanding Voltage	JIS-C-5202 5.7	in V-Block for 60 Seconds	500V
Temperature Coefficient of Resistance	JIS-C-5202 5.2	-55°C to +155°C	±50ppm/°C
Insulation Resistance	JIS-C-5202 5.6	in V-Block	>1000MΩ
Solderability	JIS-C-5202 6.5	235°C for 5±0.5 Seconds	95% Min. Coverage
Resistance to Solvent	JIS-C-5202 6.9	Trichroethane for 1 Min. with Ultrasonic	No Deterioration of Coatings and Markings
Terminal Strength	Direct load for 10 Sec. in The Direction of The Terminal Leads		≥2.5kg (24.5N)
Pulse Overload	JIS-C-5202 5.8	4 Times RCWV 10000 Cycles (1 Sec. on , 25 Sec. off)	±(2%+0.05Ω)
Load Life in Humidity	JIS-C-5202 7.9	40±2°C, 90~95% RH at RCWV for 1000 Hrs. (1.5 Hrs. on , 0.5 Hrs. off)	±(1.5%+0.05Ω)
Load Life	JIS-C-5202 7.10	70°C at RCWV for 1000 Hrs. (1.5 Hrs. on , 0.5 Hrs. off)	±(1.5%+0.05Ω)
Temperature Cycling	JIS-C-5202 7.4	-65°C·Room Temp.·150°C·Room Temp. for 5 Cycles	±(0.25%+0.05Ω)
Resistance to Soldering Heat	JIS-C-5202 6.4	350°C±10°C for 3±0.5 Seconds	±(0.25%+0.05Ω)

* Rated Continuous Working Voltage (RCWV)=√Power Rating x Resistance Value