

## FLAME-PROOF TYPE

### Normal & Miniature Style [NRN Series]

#### FEATURES

Flame-Proof Coating	UL-1412
Power Rating	1/4W, 1/2W, 1W, 2W
Resistance Tolerance	±1%
T.C.R.	±50ppm/°C, ±100ppm/°C

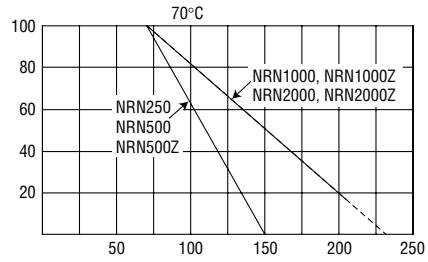
#### INTRODUCTION

The NRN series flame-proof type Metal Film Resistors are manufactured by vacuum deposit metal film on high thermal conductivity ceramic rods, and are coated with layers of gray color flame-proof lacquer:

These NRN flame-proof metal film resistors are designed to replace the metal oxide resistors and low power wire wound resistors, when flame-proof and small size is needed.

#### DERATING CURVE

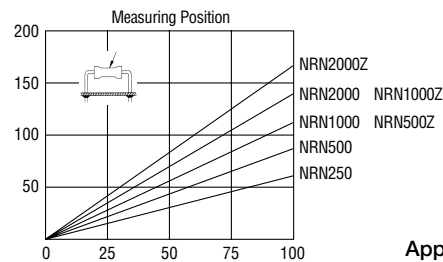
Rated Load (%)



Ambient Temperature (°C)

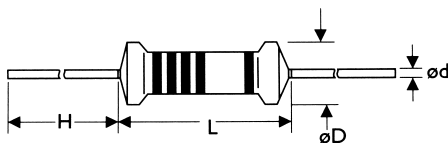
#### HOT-SPOT TEMPERATURE

Surface Temp. Rise (°C)



Applied Load, % of RCWV

#### DIMENSIONS



Unit : mm

STYLE		DIMENSION			
Normal	Miniature	L	øD	H	ød
NRN250	NRN500Z	6.3±0.5	2.3±0.3	28±2.0	0.6±0.05
NRN500	NRN1000Z	9.0±0.5	3.2±0.3	26±2.0	0.6±0.05
NRN1000	NRN2000Z	11.5±1.0	4.5±0.5	35±2.0	0.8±0.05
NRN2000	-	15.5±1.0	5.0±0.5	33±2.0	0.8±0.05



# NRN Series

## ELECTRICAL CHARACTERISTICS

STYLE	NRN250	NRN500Z	NRN500	NRN1000Z	NRN1000	NRN2000Z	NRN2000
Power Rating at 70°C	1/4W	1/2W		1W		2W	
Operating Temp. Range	-55°C to +155°C						
Maximum Working Voltage	250V	300V	350V	400V	500V	500V	500V
Maximum Overload Voltage	500V	600V	700V	800V	1000V	1000V	1000V
Dielectric Withstanding Voltage	400V	400V	500V	600V	750V	750V	750V
Value Range ±1%	10Ω-1MΩ						
Temperature Coefficient (by Type)	±50ppm/°C, ±100ppm/°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	by Type
Temperature Coefficient of Resistance	JIS-C-5202 5.2	-55°C to +155°C	by Type
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