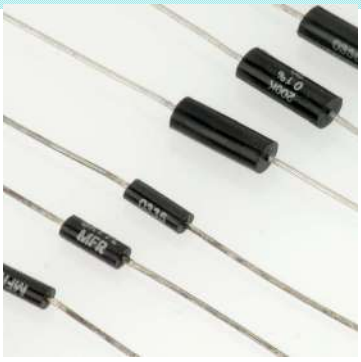
MFR — Electronic Components Pvt. Ltd.

MOULDED RESISTORS

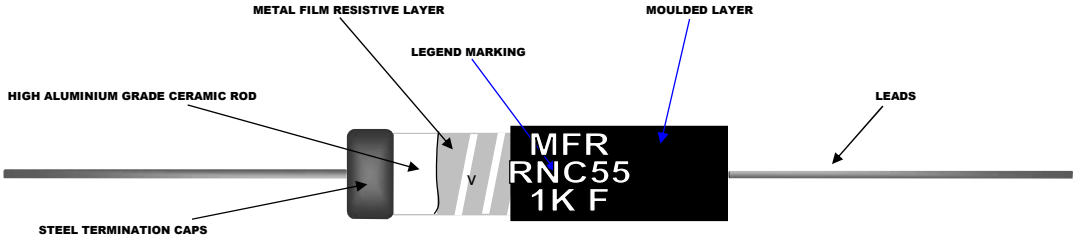
Series : RNC / RNR

Features:

- High grade alumina core.
- Encapsulated with compression moulded phenolic plastic material.
- Flame resistance.
- TCR Available **5,10, 15, 25, 50,100 ppm/° C.**
- Available ranges from **10 Ohm ~ 1 M Ohms.**
- Tolerance **±0.02% ~ ±1%**
- **RoHS** Compliant directive 2002/95/EC
- Lead (Pb)-free solder contacts.



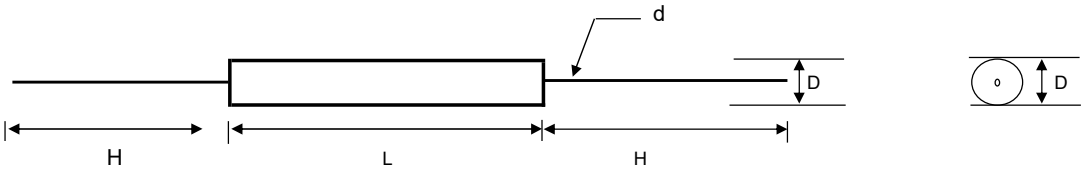
Construction :



Technical specification:

DESCRIPTION	SERIES	
	RNC55 / RNR55	**RNC60 / RNR60**
Resistance range	10Ω ~ 1MΩ	
Resistance tolerance	±0.02% ~ 1%	
Temperature coefficient	5 ppm/°C ~ 100 ppm/°C	
Maximum dissipation @ 70°C	0.125W	0.25W
Maximum dissipation @ 125°C	0.1W	0.125W
Maximum permissible voltage	200 V	250 V
Failure rate	**0.001% / 1000 hr.**	
Operating temperature range	**-65 °~ +175°C**	
Stability, R max.		
Load	△ R±(0.5% +0.01Ω)	
Climatic test	△ R±(0.5% +0.01Ω)	
Soldering	△ R±(0.1% +0.01Ω)	
Short time overload	△ R±(0.2% +0.01Ω)	

Dimensions :



Physical Data:

1.0 SPECIFICATION :

TYPE	WATT.		TOL.	TCR	DIMENSIONS (mm)				RESISTANCE	MAX. WORKING	MAX. OVERLOAD
	@ 70°C	@ 125°C		PPM/°C	L	D	d ± 0.05	H	RANGE	VOLTAGE	VOLTAGE
RNC55/ RNR55	0.125W	0.1W	±0.02% ~ ±1%	10 ~ 100	6.35 ± 0.8	2.39 ±0.8	0.6	25 min	10 Ω ~ 1MΩ	200V	400 V
RNC60/ RNR60	0.25W	0.125W	±0.02% ~ ±1%	10 ~ 100	9.5 ± 1.5	3.15 ±1	0.6	25 min	10 Ω ~ 1MΩ	250V	500 V

Note :1.0 Lower & higher resistance value other than spcified above are available on request.

2.0 Working voltage is $\sqrt{P \times R}$ where P is power & R is resistance in Ohms

Marking:

The RNC55 / RNR55 type the nominal resistance & tolerance are marked on the resistor body with legend markning

e.g MFR

RNC55

1K, F

1223

i.e Logo, type number, resistance value, tolerance & manufacture date code (weak & year)

Material Specifications:

Element : Vacuum-deposited nickel-chrome alloy

Core : Fire cleaned high purity ceramic

End caps : Steel caps

Encapsulation : Specially formulated epoxy compound

Standard Lead Terminals : Solderable - solder coated copper

Part Numbering Information:

Part Number : Type number, power rating, resistance value, tolerance, tcr.

RNC55	0.125W	1 KOhm	±0.1%	25 ppm/°C
Type	Power rating	Resistance value	Tolerance	TCR

Examples: **PART NO. : RNC55, 0.125W, 1 KOhm, ±0.1%, 25ppm/°C**

Packing Information:

TYPE	Pcs Per Poly Bag	Pcs Per Box		Pcs Per Real
		Blue box	Brown box	
RNC55 / RNR55	500	1,000	5,000	5000
RNC60 / RNR60	200	500	2,500	2500

Performance Data (Procedure & Requirements):

TEST	PROCEDURE	REQUIREMENTS
Robustness Of Termination		
1. Tensile Test	Load 10 N for 10 sec.	No visual damage
2. Bend Test	Load 5 N 90° , 180°, 90°	No visual damage
3. Torsion Test	3 X 360° in opposite directions	No visual damage △R/R max.: ±(0.2% +0.01 Ω)
Solderability Test	16 hrs steam or 16 hrs. at 155°C 2 sec. ±0.5 sec. in solder at 235° ±5°C Using flux	>95% coverage covered (good tinning) & no damage
Resistance To Soldering Heat	at 350°C for 3 sec., 2.5mm from the body	△R/R max.: ±(0.1% +0.01 Ω)
Temperature Cycling	30 minutes at -55°C & 30 minutes at 150°C Total 5 number of cycles.	No visual damage △R/R max.: ±(0.2% +0.01 Ω)
Dry Heat Test	16 hrs at 150°C	△R/R max.: ±(0.5% +0.01 Ω)
Cold Test	2 hrs at -55°C	△R/R max.: ±(0.2% +0.01 Ω)
Short Time Overload	2.5 X Rated voltage for 5 sec. @ 25°C	△R/R max.: ±(0.2 +0.01 Ω)
Endurance @ 70°C	1000 hrs. load with Pn (power nominal) 1.5 hr. ON & 0.5 hr. OFF	No visual damage △R/R max.: ±(0.5% +0.01 Ω)
Endurance @ 125°C	1000 hrs. load 1.5 hr. ON & 0.5 hr. OFF	No visual damage △R/R max.: ±(0.5% +0.01 Ω)
Endurance @ Upper Category Temperature	1000 hrs. at 150°C with no load	No visual damage △R/R max.: ±(0.5% +0.01 Ω)
Shock (Medium Impact)	1Km/S^2	△ R/R max.: ±(0.20% +0.01 Ω)
Vibration (High Frequency)	10 to 2000 Hz: m/S^2	△R/R max.: ±(0.20% +0.01 Ω)
Temperature Rise Test	Horizontally mounted, loaded with Pn	Hot spot temperature less than maximum body temperature
Damp Heat Steady State	56 days, 40°C; 90 to 95% Rh; dissipation ≤ 0.01Pn	No visual damage △R/R max.: ±(0.5% +0.01 Ω)
Temperature Coefficient	At 25/-55/25 °C & 25/150/25 °C	Within specified limits
Insulation Resistance	V- Block method for 1 minute duration At 500 V dc	> 10^4 MΩ
Voltage proof test	V- Block method for 1 minute duration At 500 V	No flash over or break down should observed

Derating Curve: