

MOULDED RESISTORS

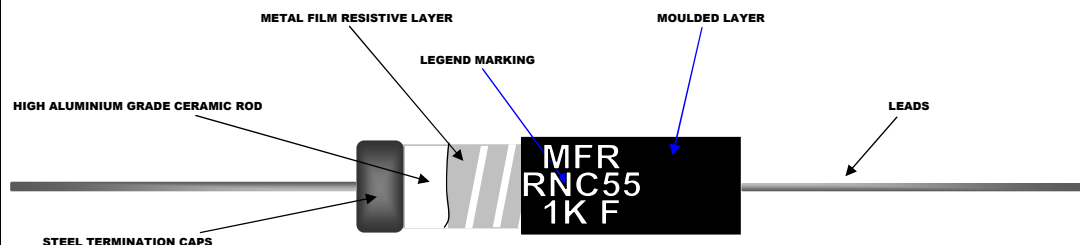
Series : **RNC / RNR**

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
Climatic category	55/155/56	
Stability, R max.	$\Delta R \pm (0.5\% + 0.01\Omega)$ $\Delta R \pm (0.5\% + 0.01\Omega)$ $\Delta R \pm (0.1\% + 0.01\Omega)$ $\Delta R \pm (0.2\% + 0.01\Omega)$	
Load		
Climatic test		
Soldering		
Short time overload		

MFR reserves the right to make changes in product specification without notice or liability.

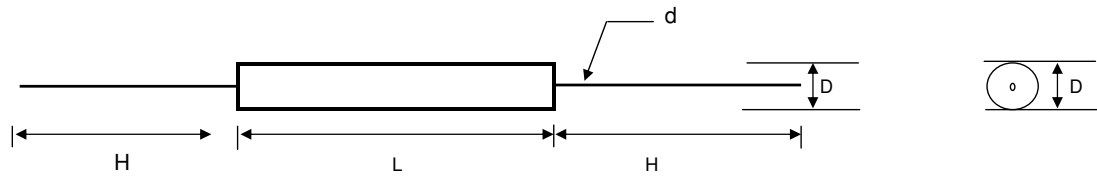
All information is subject to MFR's own data & is considered accurate at the time of going to print.

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Dimensions :



Physical Data:

1.0 SPECIFICATION :

TYPE	WATT.		TOL.	TCR	DIMENSIONS (mm)				RESISTANCE	MAX. WORKING	MAX. OVERLOAD
	@ 70°C	@ 125°C			L	D	d ± 0.05	H			
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 : 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 marking

e.g MFR

RNC55

1K, F

2812

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

Material Specifications:

Element : Vacuum-deposited nickel-chrome alloy

Core : Fire cleaned high purity ceramic

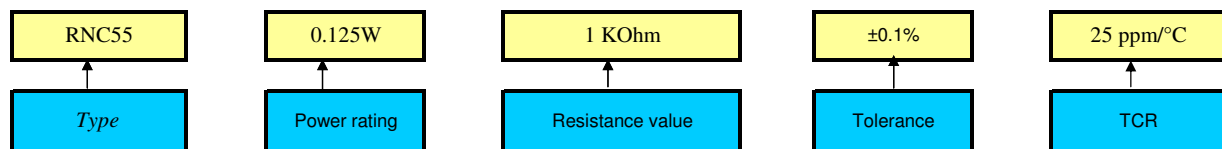
End caps : Steel caps

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.



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 2. Bend Test 3. Torsion Test	Load 10 N for 10 sec. Load 5 N 90°, 180°, 90° 3 X 360° in opposite directions	No visual damage No visual damage No visual damage $\Delta R/R$ max.: $\pm(0.2\% + 0.01 \Omega)$
Solderability Test	16 hrs steam or 16 hrs. at 155°C 2 sec. ± 0.5 sec. in solder at 235° $\pm 5^\circ\text{C}$ Using flux	>95% coverage covered (good tinning) & no damage
Resistance To Soldering Heat	at 350°C for 3 sec., 2.5mm from the body	$\Delta R/R$ max.: $\pm(0.1\% + 0.01 \Omega)$
Temperature Cycling	30 minutes at -55°C & 30 minutes at 150°C Total 5 number of cycles.	No visual damage $\Delta R/R$ max.: $\pm(0.2\% + 0.01 \Omega)$
Dry Heat Test	16 hrs at 150°C	$\Delta R/R$ max.: $\pm(0.5\% + 0.01 \Omega)$
Cold Test	2 hrs at -55°C	$\Delta R/R$ max.: $\pm(0.2\% + 0.01 \Omega)$
Short Time Overload	2.5 X Rated voltage for 5 sec. @ 25°C	$\Delta R/R$ max.: $\pm(0.2 + 0.01 \Omega)$
Endurance @ 70°C	1000 hrs. load with Pn (power nominal) 1.5 hr. ON & 0.5 hr. OFF	No visual damage $\Delta R/R$ max.: $\pm(0.5\% + 0.01 \Omega)$
Endurance @ 125°C	1000 hrs. load 1.5 hr. ON & 0.5 hr. OFF	No visual damage $\Delta R/R$ max.: $\pm(0.5\% + 0.01 \Omega)$
Endurance @ Upper Category Temperature	1000 hrs. at 150°C with no load	No visual damage $\Delta R/R$ max.: $\pm(0.5\% + 0.01 \Omega)$
Shock (Medium Impact)	1Km/S ²	$\Delta R/R$ max.: $\pm(0.20\% + 0.01 \Omega)$
Vibration (High Frequency)	10 to 2000 Hz: m/S ²	$\Delta R/R$ max.: $\pm(0.20\% + 0.01 \Omega)$
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 $\leq 0.01\text{Pn}$	No visual damage $\Delta R/R$ max.: $\pm(0.5\% + 0.01 \Omega)$
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	$> 10^4 \text{M}\Omega$
Voltage proof test	V- Block method for 1 minute duration At 500 V	No flash over or break down should observed

Derating Curve: