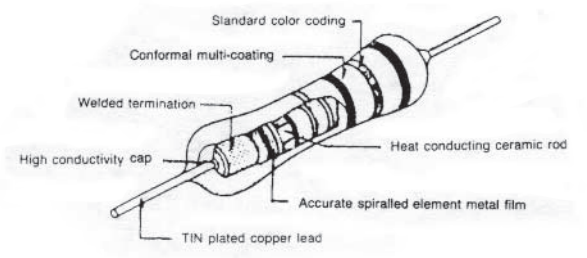
LEAD FREE
RoHS Compliant

Standard (RN) & Miniature (RNM)

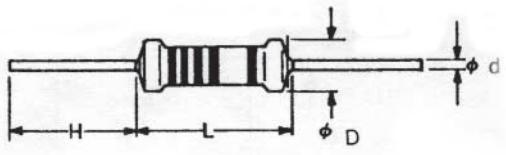
INTRODUCTION

The MEGASTAR-OHM RN series Metal Film Resistors are manufactured using a vacuum sputtering system to deposit multiple layers of mixed metals and passivative materials onto a carefully treated high grade ceramic subsrtate, the resistors are coated with layers of light-blue lacquer.

The MEGASTAR-OHM resistors, RN series encompasses an unusually broad selection of power ratings (1/8W, 1/4W, 1/2W, 1W, 2W, at 70°C), tolerance (±0.1%, 0.25%, 0.5%, 1%) and temperature coefficient (±15ppm/°C, 25ppm/°C, 50ppm/°C, 100ppm/°C) in all their combinations with full MIL-R-10509 performance.



DIMENSIONS: (mm)



General Specifications

Type	MIL Style	Power Rating (W)		Max Working Voltage		Max Overload Voltage		Dimension (mm)			
		70%	125°C	70%	125°C	70%	125°C	L	D	H	d±0.02
RN 1/8	RN-50	0.125W	0.05W	200	150	400	300	3.2±0.2	1.5±0.2	28±1.0	0.48
RN 1/6	RN-50	0.125W	0.05W	200	150	400	300	3.2±0.2	1.5±0.2	28±1.0	0.48
RNM 1/4	RN-55	0.25W	0.125W	250	200	500	400	3.2±0.2	1.5±0.2	28±1.0	0.48
RN 1/4	RN-55	0.25W	0.1W	250	200	500	400	6.0±0.3	2.3±0.3	28±1.0	0.60
RNM 1/2	RN-60	0.5W	0.25W	350	250	700	500	6.0±0.5	2.3±0.3	28±1.0	0.60
RN 1/2	RN-60	0.5W	0.125W	350	250	700	500	9.0±0.5	3.0±0.5	28±1.0	0.70
RN 1	RN-65	1W	0.25W	500	300	1000	600	11±1.0	4.0±0.5	35±3.0	0.80
RN 2	RN-70	2W	0.5W	500	350	1000	700	15±1.0	5.0±0.5	35±3.0	0.80
RNM 2	RN-70	2W	0.5W	500	350	1000	700	11±1.0	4.0±0.5	35±3.0	0.80

Part Numbering system

RN

Type
RN RNM

1/4

Rated Power
1/8W ↓ 2W

1%

Resistance tolerance
±0.1%
±0.25%
±0.5%
±1%
± 2%
± 5%

2K2

Nominal Resistance		
Code	Description	
2R21	2.21	OHMs
22R0	22.0	OHMs
2K21	$2.21X10^3$	OHMs
22K1	$22.1X10^3$	OHMs
22M1	$22.1X10^6$	OHMs

TR

Packaging	
Code	Description
B	Bulk
TR	Tape & Reel
TB	Tape & Box
PATR	Avisert T/R
PNTR	Panasert T/R

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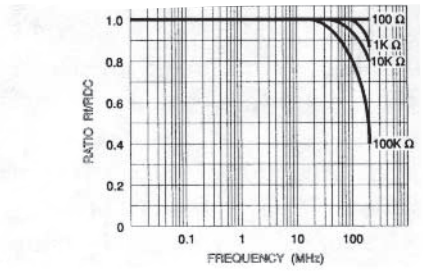
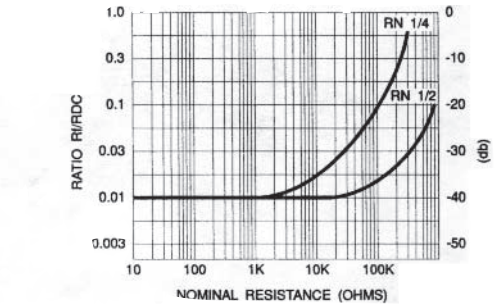
Resistance Range

Style	MIL Style	Tolerance	TC ±225ppm/°C	TC ±50ppm 100ppm	Remarks
RN1/8	RN-50	±1% ±0.5% ±0.25 ±0.1, 0.01%	49.9Ω -499KΩ 49.9Ω -499KΩ 100Ω -100KΩ 100Ω -100KΩ	1Ω -22M1Ω	Other resistance values available upon request. (up to 34MΩ)
RN1/4 RNM1/4	RN-55	±1% ±0.5% ±0.25 ±0.1, 0.01%	10Ω -511KΩ 30Ω -511KΩ 30Ω -330KΩ 30Ω -300KΩ	1Ω -22M1Ω	
RN1/2 RNM1/2	RN-60	±1% ±0.5% ±0.25 ±0.1, 0.01%	10Ω -1MΩ 49.9Ω -1MΩ 100Ω -511KΩ 100Ω -330KΩ	1Ω -22M1Ω	
RN1	RN-65	±1% ±0.5% ±0.25 ±0.1, 0.01%	51.1Ω -1MΩ 51.1Ω -1MΩ 100Ω -511KΩ 100Ω -330KΩ	1Ω -22M1Ω	
RN2 RNM2	RN-70	±1% ±0.5% ±0.25 ±0.1, 0.01%	51.1Ω -1MΩ 51.1Ω -1MΩ 100Ω -511KΩ 100Ω -330KΩ	1Ω -22M1Ω	

High Frequency Characteristics (Typical)



Current Noise (Typical)



FEATURES

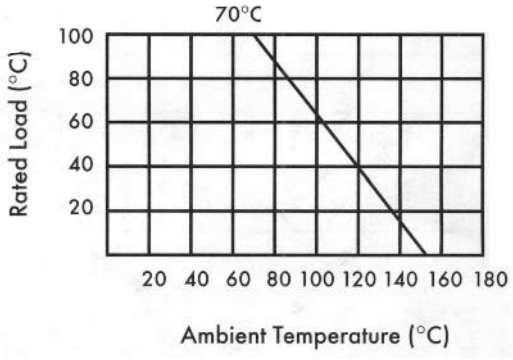
DIN Style:
DIN-44061
0204, 0207, 0309, 0411, 0617

MIL Style:
MIL-R-10509F (Char. D&C)
RN-50, RN-55, RN-60, RN-65, RN-70

Power Rating:
1/8W, 1/4W, 1/2W, 1W, 2W (at 70°C)
1/20W, 1/10W, 1/8W, 1/4W, 1/2W
(at 125°C)

Resistance Tolerance:
±0.01%, ±0.1%, ±0.25%, ±0.5%, ±1%

Temperature Coefficient
±15ppm/°C, ±25ppm/°C, ±50ppm/°C,
±100ppm/°C,



Power Derating Curve

For resistor operated in ambient temperature above 70°C, power rating must be derated in accordance with the curve below.

Performance Specifications Comparison

Test		RN series % change in resistance (3)					MIL-R-22684 Style RL Requirement	MIL-R-10509 Chart C,E Requirement
		RN1/8	RN1/4	RN1/2	RN1	RN2 RNM2		
1. Temperature cycling, -65°C to +150°C	(%)	±0.25	±0.25	±0.25	±0.25	±0.25	<=1.00	<=0.25
2. Low temperature operation , -65°C	(%)	±0.25	±0.25	±0.25	±0.25	±0.25	<=0.50	<=0.25
3. Short time overload	(%)	±0.25	±0.20	±0.20	±0.25	±0.20	<=0.50	<=0.25
4. Terminal strength, 5lb. pull	(%)	±0.20	±0.20	±0.20	±0.15	±0.15	<=0.50	<=0.20
5. Reisitance to soldering heat, +350°C	(%)	±0.10	±0.10	±0.10	±0.10	±0.10	<=0.50	<=0.10
6. Moisture resistance, MIL STD 202	(%)	±0.50	±0.50	±0.50	±0.50	±0.50	<=0.50	<=0.50
7. Life 1000 hrs (rated power)	(%)	±0.50	±0.50	±0.50	±0.50	±0.50	<=2.00	<=0.50
8. Shock, 50G, 11ms	(%)	±0.25	±0.20	±0.20	±0.15	±0.15	<=0.50	<=0.25
9. Vibration-high frequency, 10-2000Hz	(%)	±0.25	±0.20	±0.20	±0.20	±0.20	<=0.50	<=0.25
10. Insulation resistance		>=10^{10}Ω	>=10^{10}Ω	>=10^{10}Ω	>=10^{10}Ω	>=10^{10}Ω	>=10^{9}Ω	>=10^{9}Ω
11. Failure rate		<10^{-8}/h	<10^{-8}/h	<10^{-8}/h	<10^{-8}/h	<10^{-8}/h		