

POWER RADIAL TYPE WIREWOUND RESISTORS

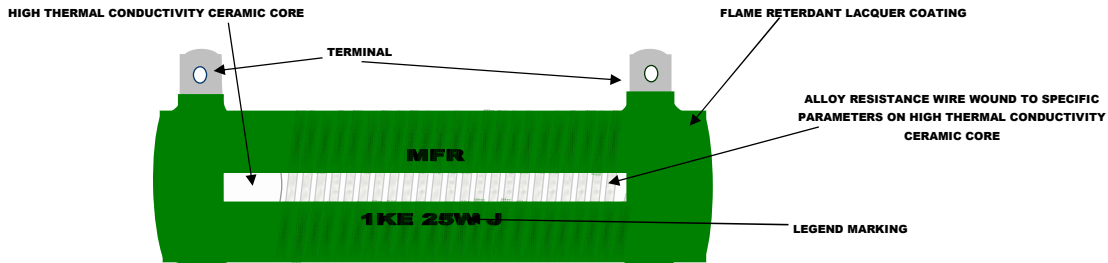
Series : **MSR**

Features:

- Widest range in the industry.
- High performance for low cost.
- High-temperature flame proof silicon coating.
- Tolerance to **± 5, ±10%.**
- Better tolerance available on request.
- Custom sizes and terminations available.
- Low Tolerance upto ±0.25% on request can be provided
- **RoHS** Compliant directive 2002/95/EC
- Lead (Pb)-free solder contacts.



Construction :

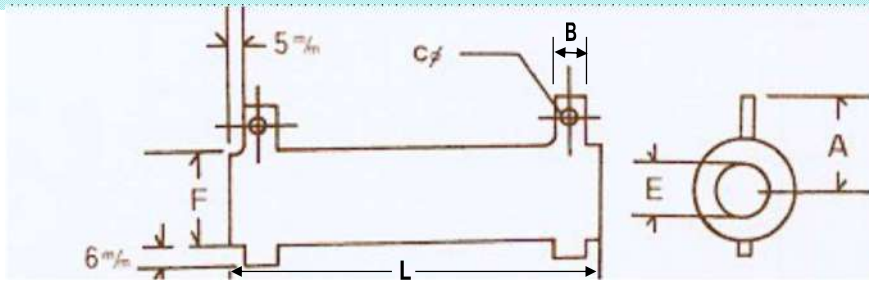


Technical specification:

DESCRIPTION	SERIES
Resistance tolerance*	±1% ~ ±10%
Temperature coefficient	≤ 200 ppm/°C
Maximum dissipation	10W ~ 1200W
Maximum permissible voltage	$\sqrt{P \times R}$
Operating temperature range	-55° ~ 350°C
Stability, R max.	
Load	△ R±(5.0% +0.10Ω)
Climatic test	△ R±(5.0% +0.10Ω)
Soldering	△ R±(1.0% +0.05Ω)
Short time overload	△ R±(2.0% +0.10Ω)

***Note :** Lower resistance tolerance other than specified above are available on request

Dimensions :



Physical Data:

1.0 GENERAL SPECIFICATION :

TYPE	WATT. @ 25°C	TOL.	TCR PPM/°C	D TYPE DIMENSIONS (mm)					RESISTANCE RANGE
				L	F	E	A	B	
MSR10	10W	±1% ~ ±10%	≤ ±200	45	12.0	6	15	4	0.1Ω ~ 10KΩ
MSR20	20W	±1% ~ ±10%	≤ ±200	60	17.0	8	20	5	0.1Ω ~ 15KΩ
MSR30	30W	±1% ~ ±10%	≤ ±200	80	17.0	8	20	5	0.1Ω ~ 20KΩ
MSR40	40W	±1% ~ ±10%	≤ ±200	110	17.0	8	20	5	0.1Ω ~ 40KΩ
MSR50	50W	±1% ~ ±10%	≤ ±200	110	25.0	16	30	8	0.1Ω ~ 40KΩ
MSR60	60W	±1% ~ ±10%	≤ ±200	90	28.0	18	32	8	0.1Ω ~ 50KΩ
MSR80	80W	±1% ~ ±10%	≤ ±200	110	28.0	18	32	8	0.1Ω ~ 60KΩ
MSR100	100W	±1% ~ ±10%	≤ ±200	140	28.0	18	32	8	0.1Ω ~ 100KΩ
MSR120	120W	±1% ~ ±10%	≤ ±200	160	28.0	18	32	8	0.1Ω ~ 100KΩ
MSR150	150W	±1% ~ ±10%	≤ ±200	195	28.0	18	32	8	0.1Ω ~ 130KΩ
MSR160	160W	±1% ~ ±10%	≤ ±200	185	35.0	24	36	8	0.1Ω ~ 150KΩ
MSR200	200W	±1% ~ ±10%	≤ ±200	210	35.0	24	36	8	0.15Ω ~ 150KΩ
MSR250	250W	±1% ~ ±10%	≤ ±200	210	40.0	25	38	10	0.15Ω ~ 165KΩ
MSR300	300W	±1% ~ ±10%	≤ ±200	260	40.0	25	38	10	0.5Ω ~ 220KΩ
MSR400	400W	±1% ~ ±10%	≤ ±200	330	40.0	25	38	10	0.5Ω ~ 220KΩ
MSR500	500W	±1% ~ ±10%	≤ ±200	330	50.0	35	50	15	0.5Ω ~ 250KΩ
MSR600	600W	±1% ~ ±10%	≤ ±200	400	50.0	35	50	15	1Ω ~ 300KΩ
MSR800	800W	±1% ~ ±10%	≤ ±200	460	60.0	40	60	15	1Ω ~ 400KΩ
MSR1000	1000W	±1% ~ ±10%	≤ ±200	540	60.0	40	60	15	1Ω ~ 500KΩ
MSR1200	1200W	±1% ~ ±10%	≤ ±200	650	65.0	42	62	15	1Ω ~ 750KΩ

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

Flammability:

The resistor coating will not burn or emit incandescent particles under any condition of applied temperature or power overload.

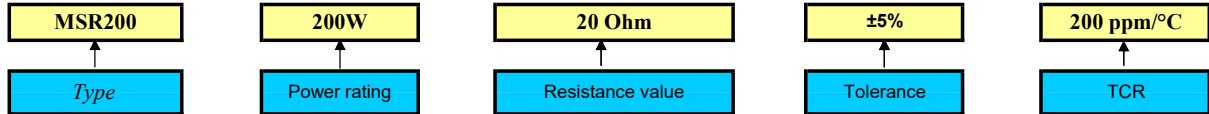
Marking:

The MSR type the nominal resistance & tolerance are marked on the resistor body using LEGENT marking; for e.g. : MFR

0E1 5W J

Part Numbering Information:

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

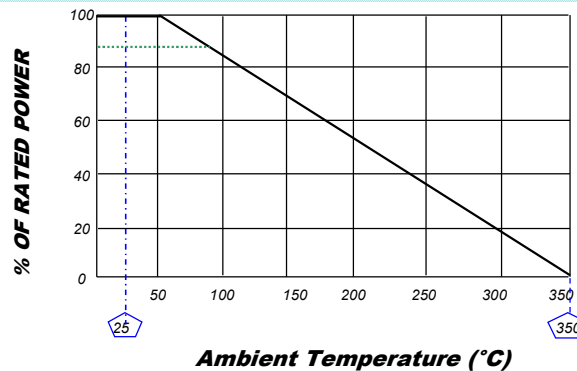


Examples: PART NO. : MSR200, 200W, 20 Ohm, ±5%, 200ppm/°C

Performance Data (Procedure & Requirements):

TEST	PROCEDURE	REQUIREMENTS
Short Time Overload	10 X Rated power for 5 sec.	$\Delta R/R$ max.: $\pm(2.0 + 0.05 \Omega)$
Dielectric Withstanding Voltage	1000 VAC, from terminal to mounting hardware.	No flash over or breakdown should be observed
Endurance @ 25°C	1000 hrs. load with Pn (power nominal) 1.5 hr. ON & 0.5 hr. OFF	No visual damage $\Delta R/R$ max.: $\pm(5.0\% + 0.1 \Omega)$
Endurance @ Upper Category Temperature	1000 hrs. at 350°C with no load	No visual damage $\Delta R/R$ max.: $\pm(5.0\% + 0.1 \Omega)$
Temperature Rise Test	Horizontally mounted, loaded with Pn	Hot spot temperature less than maximum body temperature
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	$> 10^3 M\Omega$

Derating Curve:



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.

Document no. : MSR12

Page : 3 of 3

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