

METAL FILM RESISTORS MFR-SS SERIES

(Super mini size)

Feature

- Space saving on PC board
- Cost comparable to conventional sizes
- Standard T.C.: $\pm 250\text{PPM}$
- Standard Value: 10R-1Meg in E24/E96 series
- Standard Tolerance: $\pm 5\%$ (Available 1%~5%)
- Flameproof coating
- Operating Temperature : $-55^{\circ}\text{C} \sim +155^{\circ}\text{C}$

Material

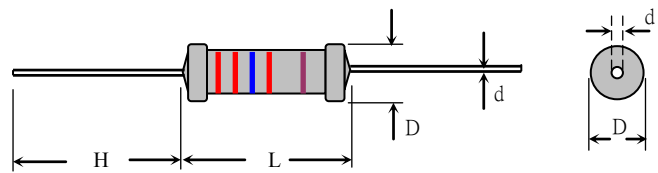
Element: Vacuum-deposited Ni-Cr Alloy

Core: High purity ceramic Al_2O_3

Termination: Standard solder-plated copper lead

Coating: Grey silicone

Dimension



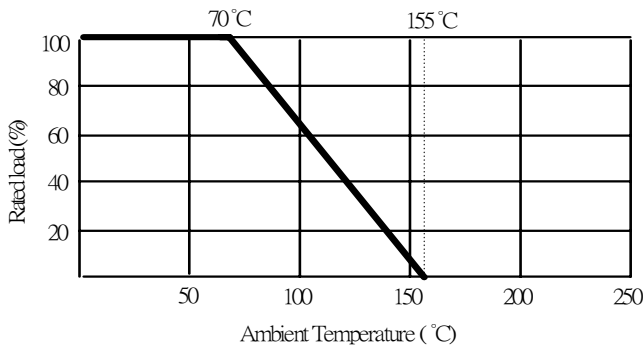
General Specification

TYPE	DIMENSION(mm)				POWER RATING	MAXIMUM WORKING VOLTAGE	MAXIMUM OVERLOAD VOLTAGE	RESISTANCE RANGE $\pm 1\%, \pm 2\%, \pm 5\%$
	L	D	H	$d \pm 0.05$				
MFR050SS	3.2 ± 0.2	1.6 ± 0.2	22 ± 2.0	0.45	1/2W	200V	400V	$10\Omega - 1\text{M}\Omega$
MFR100SS	6.0 ± 0.5	2.3 ± 0.3	28 ± 2.0	0.55	1W	250V	500V	$10\Omega - 1\text{M}\Omega$
MFR200SS	9.0 ± 0.5	3.0 ± 0.5	28 ± 2.0	0.70	2W	350V	700V	$10\Omega - 1\text{M}\Omega$
MFR300SS	11 ± 1.0	4.0 ± 0.5	35 ± 3.0	0.80	3W	500V	1000V	$10\Omega - 1\text{M}\Omega$

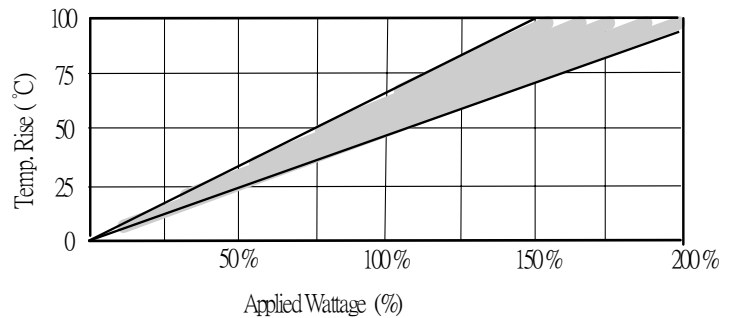
* Maximum Working Voltage determined by $E = \sqrt{P \cdot R}$, where E should not exceed value listed in column above.

**Maximum Overload Voltage equals to 2.5XE, but should not exceed value listed in column above.

Derating Curve



Temperature Rise



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Characteristics

Item	Requirement	Test Method
Short Time Overload	±2%	JIS-C-5201-1 5.5 RCWV*2.5 or Max. overload voltage for 5 seconds
Insulation Resistance	> 10,000MΩ	JIS-C-5201-1 5.6 Apply 100VDC for 1 minute
Endurance	±3.5%	JIS-C-5201-1 7.10 70±2°C, Max. RCWV for 1000 hrs with 1.5 hrs "ON" and 0.5hrs "OFF"
Damp Heat with Load	±3%	JIS-C-5201-1 7.9 40±2°C, 90~95% R.H. RCWV for 1000 hrs with 1.5 hrs "ON" and 0.5hrs "OFF"
Solderability	90% min. Coverage	JIS-C-5201-1 6.5 245±5°C for 3 seconds
Dielectric Withstanding Voltage	By Type	JIS-C-5201-1 5.7 Apply Max. Overload Voltage for 1 minute
Temperature Coefficient	±250PPM	Resistance value at room temperature and room Temperature+100°C
Pulse Overload	±0.75%	JIS-C-5201-1 5.8 4 times RCWV for 10000 cycles with 1 second "ON" and 25 seconds "OFF"
Resistance To Solvent	No deterioration of coatings and markings	JIS-C-5201-1 6.9 Trichroethane for 1 min. with ultrasonic
Terminal Strength	Tensile: ≥ 2.5 kg	Direct Load for 10 seconds In the direction off the terminal leads
Shelf Life	Δ R=±0.1%	12 months at room temperature 25±3°C, 80%RH Max.

*Storage Temperature : 25±3°C ; Humidity < 80%RH

Part Numbering

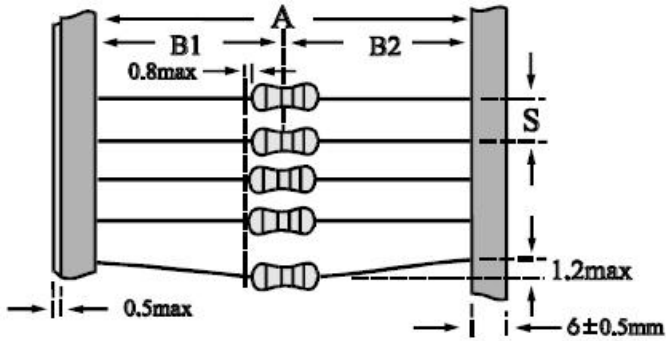
<u>MFR50SS</u>	<u>F</u>	<u>TB</u>	<u>=</u>	<u>10R</u>
↓	↓	↓	↓	↓
Type/Power	Tol.	Package	ppm	Resistance
MFR050SS	F=±1%	B=Bulk	- = Based on spec.	10R = 10Ω
MFR100SS	G=±2%	TB=Tape/box	D=25ppm	1K2R = 1.2KΩ
MFR200SS	J=±5%	TR=Tape/reel	E=50ppm	1MR = 1MΩ
MFR300SS		Lead forming		
		M		
		F		

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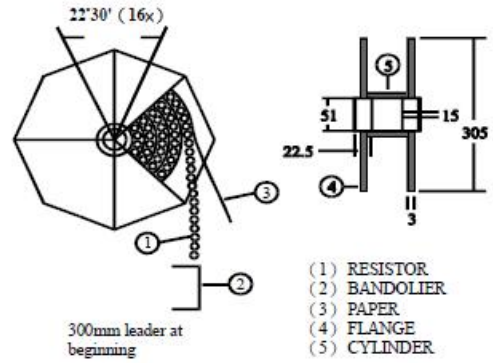
(Super mini-size)

Taping/Packing Specification

Packing Methods

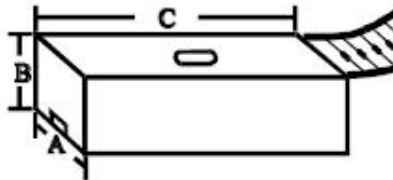


Reel Packing



TYPE	PACKING METHOD			REEL PACKING	
	A	B1-B2 Max	S	Across Flange (A)	Q'TY
MFRSS050	52+1/-0	1.2	5	72	5000
MFRSS100	52+1/-0	1.2	5	72	5000
MFRSS200	52+1/-0	1.2	5	72	2000
MFRSS300	52+1/-0	1.2	5	72	1000
	73+1/-0	1.5	5	72	1000

Ammo Packing



TYPE	PACKING METHOD			AMMO PACKING			
	A	B1-B2 Max	S	A	B	C	Q'TY
MFRSS050	52+1/-0	1.2	5	80	68	255	5000
MFRSS100	52+1/-0	1.2	5	75	22	267	1000
		1.2	5	85	103	263	5000
MFRSS200	52+1/-0	1.2	5	85	95	263	2000
MFRSS300	52+1/-0, 73+1/-0	1.2, 1.5	5	85,103	102,85	263	1000