

# Metal Film Resistors

## MFR-SS series (super mini-size)

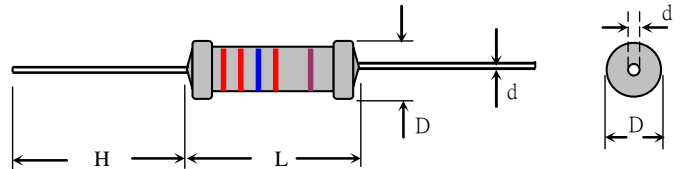
### FEATURES

- Space saving on PC board
- Cost comparable to conventional sizes
- Standard T.C.:  $\pm 100$ PPM
- Standard Tolerance:  $\pm 5\%$  (Available 1%~5%)
- Standard Value: 10R-1Meg in E24/E96 series
- Body Color: grey silicone
- Color band marking
- Flameproof coating
- Operating Temperature :  $-55^{\circ}\text{C} \sim +155^{\circ}\text{C}$

### MATERIAL

- Element: Vacuum-deposited Ni-Cr Alloy
- Core: High purity ceramic  $\text{Al}_2\text{O}_3$
- Termination: Standard solder-plated cooper lead
- Coating: grey silicone

### DIMENSION



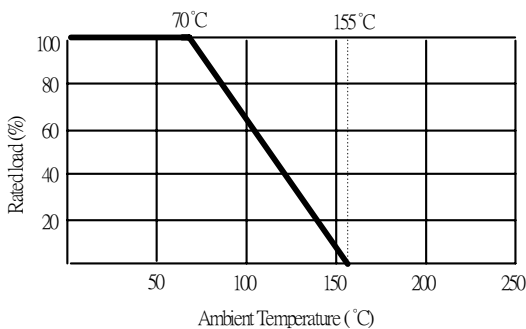
### GENERAL SPECIFICATION

TYPE	DIMENSION (mm)				POWER	MAXIMUM VOLTAGE		RANGE $\pm 5\%, \pm 2\%, \pm 1\%$
	L	D	H	$d \pm 0.05$		WORKING*	OVERLOAD**	
MFR050SS	3.2 $\pm$ 0.2	1.5 $\pm$ 0.2	28 $\pm$ 1.0	0.45	1/2W	200V	400V	10 $\Omega$ ~ 1M $\Omega$
MFR100SS	6.0 $\pm$ 0.5	2.3 $\pm$ 0.3	28 $\pm$ 1.0	0.55	1W	250V	500V	10 $\Omega$ ~ 1M $\Omega$
MFR200SS	9.0 $\pm$ 0.5	3.0 $\pm$ 0.5	28 $\pm$ 1.0	0.70	2W	350V	700V	10 $\Omega$ ~ 1M $\Omega$
MFR300SS	11 $\pm$ 1.0	4.0 $\pm$ 0.5	35 $\pm$ 3.0	0.80	3W	500V	1000V	10 $\Omega$ ~ 1M $\Omega$

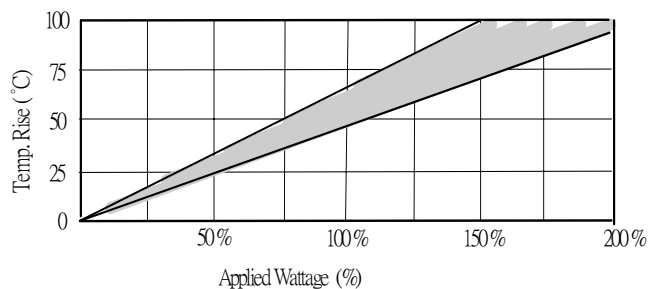
\* Maximum Working Voltage determined by  $E = \sqrt{P \times R}$ , where E should not exceed value listed in column above.

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

### DERATING CURVE



### TEMPERATURE RISE



### CHARACTERISTIC

Temperature Coefficient	$\pm 100$ ppm
Insulation Resistance	10,000M $\Omega$ Min.
Load Life (1000 hours)	$< \pm 3.5\%$
Shorttime Overload	$\pm 5\%$ Max.
Temperature Cycling	$\pm 2\%$ Max.
Moisture Resistance	$\pm 3\%$ Max.
Shock & Vibration	$\pm 1\%$ Max.
Effect of Soldering	$\pm 1\%$ Max.

\* Total maximum resistance change is  $\Delta R + 0.01R$

### HOW TO ORDER :

<b>MFR100SS</b>	<b>F</b>	<b>TB</b>	<b>=</b>	<b>10R</b>
↓	↓	↓	↓	↓
Type/Power	Tol.	Package	ppm	Resistance
MFR050SS	B= $\pm 0.1\%$	B=Bulk	= Based on spec.	10R = 10 $\Omega$
MFR100SS	C= $\pm 0.25\%$	TB=Tape/box	E=50ppm	1K2 = 1.2K $\Omega$
MFR200SS	D= $\pm 0.5\%$	TR=Tape/reel	D=25ppm	1M = 1M $\Omega$
MFR300SS	F= $\pm 1\%$	Lead forming		
	G= $\pm 2\%$	M		
	J= $\pm 5\%$	F		

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