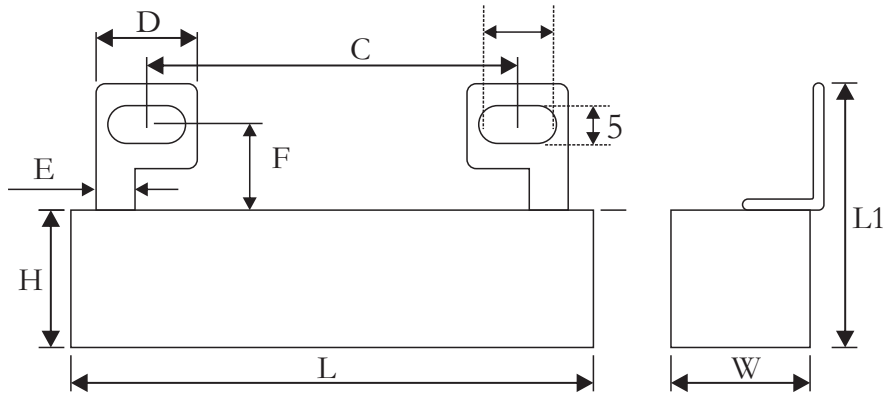


## ● Features

- I Good heat-durability, low temperature coefficient, low noise, high load power, high insulating capacity.
- II Operating ambient temperature:  $-55^{\circ}\text{C}$  to  $+275^{\circ}\text{C}$

## ● Dimensions, Applications And Ratings



Type	Power (W)	Resistance Range( $\Omega$ )	Tolerance Range	Dimensions(mm)							
				$L \pm 1$	$W \pm 1$	$H \pm 1$	$C \pm 2$	$D \pm 0.5$	$L1 \pm 1.0$	E	F
MS	7	1R~100KR	J $\pm 5\%$ K $\pm 10\%$	48	12.5	12.5	31	14	28	7	9
MS	10			48	12.5	12.5	31	14	28	7	9
MS	15			48	12.5	12.5	31	14	28	7	9
MS	20			63	12.5	12.5	35	14	28	7	9

## ● Ordering Information

Example:

MS	10	J	10R00
(1)	(2)	(3)	(4)
Series Name	Power Rating	Resistance Tolerance	Resistance

(1) Type: MS SERIES

(2) Power Rating: 5=5W, 10=10W, 15=15W, 20=20W

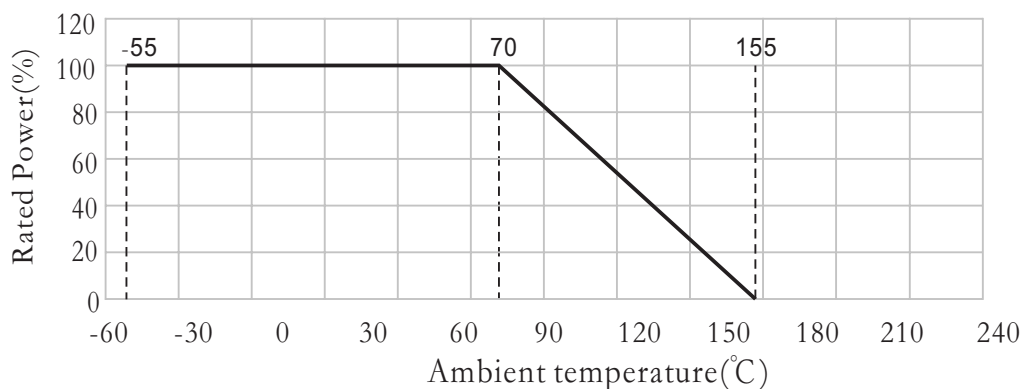
(3) Tolerance: F=  $\pm 1\%$ , G=  $\pm 2\%$ , J=  $\pm 5\%$ , K=  $\pm 10\%$

(4) Resistance Value: 0R100=0.1 $\Omega$ , 1R000=1 $\Omega$ , 4R700=4.7 $\Omega$ , 10K00=10K $\Omega$

## ● Reference Standards

JISC 5201-1

## Derating Curve



## Performance

Test Items	Performance	Test Methods(JIS C 5201-1)
Temperature coefficient	$\pm 300\text{ppm}/^{\circ}\text{C}$	Test resistance value at normal temperature and normal temperature added 100°C, calculate 70°C resistance value change rate.
Short time overload	$\Delta R \leq \pm (2\%R_0 + 0.05\Omega)$	1~4W: According 5 times rated power to account the voltage, 5~10W: According 10 times rated power to account the voltage or max. overload voltage (get the lower) for 5 seconds.
Resistance to soldering heat	$\Delta R \leq \pm (1\%R_0 + 0.05\Omega)$	Immerge into the $350 \pm 10^{\circ}\text{C}$ tin stove for 2~3 seconds
Solderability	Tth soldering area is over 95%	Immerge into the $245 \pm 3^{\circ}\text{C}$ tin stove for 2~3 seconds
Temperature cycle	$\Delta R \leq \pm (1\%R_0 + 0.05\Omega)$	At $-55^{\circ}\text{C}$ for 30min, then at $+25^{\circ}\text{C}$ for 10~15min, then at $+275^{\circ}\text{C}$ for 30min, then at $+25^{\circ}\text{C}$ for 10~5, min, total 5cycles.
Load life in humidity	$\Delta R \leq \pm (5\%R_0 + 0.05\Omega)$	Overload rated voltage or Max. working voltage (get the lower) for 1000hours (1.5hours on and half-hour off) at the $40 \pm 2^{\circ}\text{C}$ and 90~95% relative humidity.
Nonflammability	No visible flame	Respectively load AC voltage by 5,10,16 times rated power for 5 minutes.