

# METAL OXIDE RESISTORS

# MOR SERIES

## Feature

- Power rating: 1/4W to 5W at 70°C
- Superior electrical performance-commonly used in application with high endurance demands.
- Standard T.C. : ±250PPM
- Standard tolerance: ±1%, ±5%
- Standard Value: 1R-1Meg in E24 series
- Mini size available (As MOR-S type)
- Flameproof coating, silicone paint meet UL 94-V-0
- Operating temperature : -55°C ~+200°C

## Material

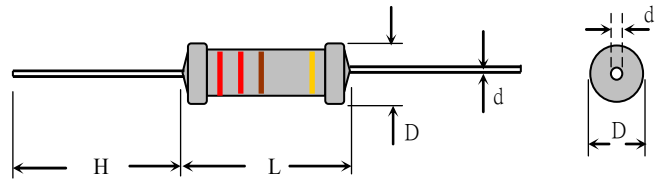
Element: deposited oxide film

Core: High purity ceramic Al<sub>2</sub>O<sub>3</sub>

Termination: Standard solder-plated copper lead

Coating: Silicone

## Dimension



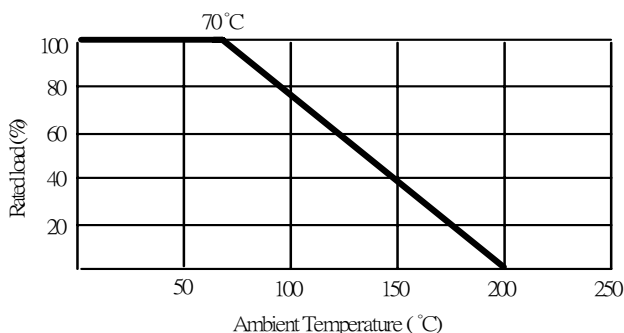
## General Specification

TYPE	DIMENSION(mm)				POWER RATING	MAXIMUM WORKING VOLTAGE	MAXIMUM OVERLOAD VOLTAGE	RESISTANCE	
	L	D	H	d±0.05				STANDARD	Available
MOR025	6.0±0.5	2.3±0.3	27 ±3.0	0.56	1/4W	250V	500V	10Ω-1MΩ	0R1-9R1 1MΩ-10MΩ
MOR050S	6.0±0.5	2.3±0.3	27 ±3.0	0.56	1/2WS	350V	500V	10Ω-1MΩ	
MOR050	9.0±0.5	3.2±0.5	27 ±3.0	0.66	1/2W	350V	700V	10Ω-1MΩ	
MOR100S	9.0±0.5	3.2±0.5	27 ±3.0	0.66	1WS	350V	700V	10Ω-1MΩ	
MOR100	11±1.0	4.0±0.5	33 ±3.0	0.76	1W	500V	1000V	10Ω-1MΩ	
MOR200S	11±1.0	4.0±0.5	33 ±3.0	0.76	2WS	500V	1000V	10Ω-1MΩ	
MOR200	15±1.0	5.0±0.5	33 ±3.0	0.76	2W	500V	1000V	10Ω-1MΩ	
MOR300S	15±1.0	5.0±0.5	33 ±3.0	0.76	3WS	500V	1000V	10Ω-1MΩ	
MOR300	17±1.0	6.0±1.0	33 ±3.0	0.76	3W	500V	1000V	10Ω-1MΩ	
MOR500S	17±1.0	6.0±1.0	33 ±3.0	0.76	5WS	500V	1000V	10Ω-1MΩ	
MOR500	24±1.0	8.0±1.0	33 ±3.0	0.76	5W	700V	1000V	10Ω-1MΩ	

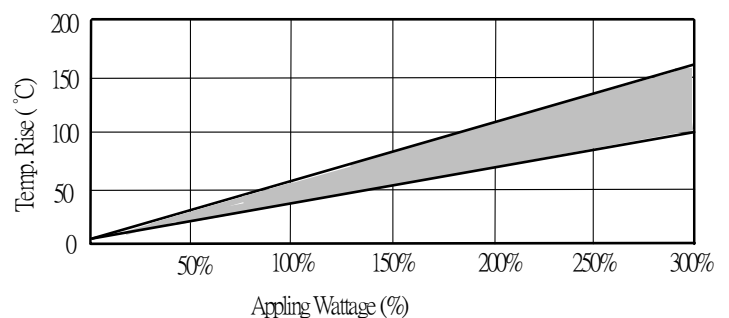
\* Maximum Working Voltage determined by  $E=\sqrt{P \cdot R}$ , where E should not exceed value listed in column above.

\*\*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	$\pm(0.25\%+0.05\Omega)$	JIS-C-5201-1 5.5 RCWV*2.5 or Max. overload voltage for 5 seconds
Insulation Resistance	$> 1000M\Omega$	JIS-C-5201-1 5.6 Apply 100VDC for 1 minute
Endurance	$\pm(1.5\%+0.05\Omega)$	JIS-C-5201-1 7.10 70 $\pm$ 2 $^{\circ}$ C, Max. RCWV for 1000 hrs with 1.5 hrs "ON" and 0.5hrs "OFF"
Damp Heat with Load	$\pm(1.5\%+0.05\Omega)$	JIS-C-5201-1 7.9 40 $\pm$ 2 $^{\circ}$ 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 $\pm$ 5 $^{\circ}$ C for 3 seconds
Dielectric Withstanding Voltage	By Type	JIS-C-5201-1 5.7 Apply Max. Overload Voltage for 1 minute
Temperature Coefficient	By Type	Resistance value at room temperature and room Temperature+100 $^{\circ}$ C
Pulse Overload	$\pm(1\%+0.05\Omega)$	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: $\geq 2.5$ kg	Direct Load for 10 seconds In the direction off the terminal leads
Shelf Life	$\Delta R=\pm 0.1\%$	12 months at room temperature 25 $\pm$ 3 $^{\circ}$ C, 80%RH Max.

\*Storage Temperature : 25 $\pm$ 3 $^{\circ}$ C ; Humidity < 80%RH

## Part Numbering

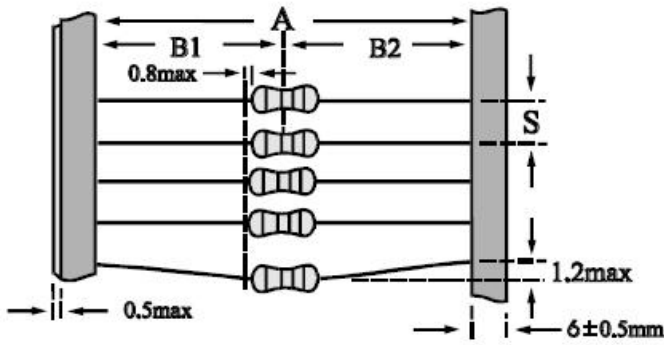
<b>MOR025</b>	<b>F</b>	<b>TB</b>	<b>=</b>	<b>10R</b>
↓	↓	↓	↓	↓
Type/Power	Tol.	Package	ppm	Resistance
MOR025	F= $\pm$ 1%	B=Bulk	- = Based on spec.	10R = 10 $\Omega$
MOR050	J= $\pm$ 5%	TB=Tape/box		1K2R = 1.2K $\Omega$
MOR100		TR=Tape/reel		1MR = 1M $\Omega$
MOR200		Lead forming		
MOR300		M		
MOR500		F		

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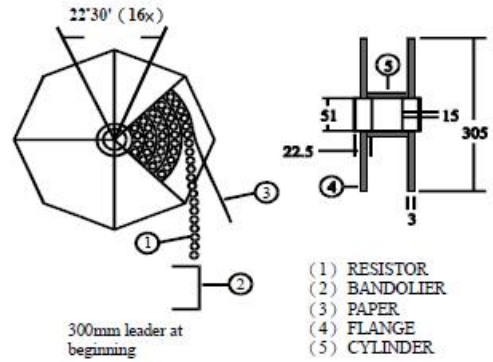
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## Taping/Packing Specification

Packing Methods

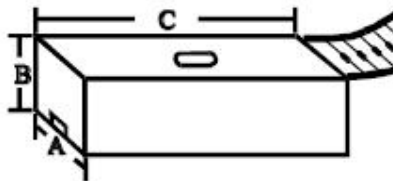


Reel Packing



TYPE	PACKING METHOD			REEL PACKING	
	A	B1-B2	S	Across Flange (A)	Q'TY
		Max			
MOR025/MOR050S	52+1/-0	1.2	5	72	5000
MOR050/MOR100S	52+1/-0	1.2	5	72	2000
MOR100/MOR200S	52+1/-0	1.2	5	72	1000
	73+1/-0	1.5	5	72	1000
MOR200/MOR300S	52+1/-0	1.2	5	72	1000
	73+1/-0	1.5	5	72	1000
MOR300/MOR500S	73+1/-0	1.5	10	95	1000
MOR500	88+1/-0	1.5	10	110	1000

Ammo Packing



TYPE	PACKING METHOD			AMMO PACKING			
	A	B1-B2	S	A	B	C	Q'TY
		Max					
MOR025/MOR050S	52+1/-0	1.2	5	85	103	263	5000
MOR050/MOR100S	52+1/-0	1.2	5	85	95	263	2000
MOR100/MOR200S	52+1/-0, 73+1/-0	1.2, 1.5	5	85,103	102,85	263	1000
MOR200/MOR300S	52+1/-0, 73+1/-0	1.2, 1.5	5	85,103	102,85	263	1000
MOR300/MOR500S	52+1/-0, 73+1/-0	1.2, 1.5	10	85,103	102,85	263	1000
MOR500	88+1/-0	1.5	10	120	75	270	250