

# Metal Oxide Resistors

## MO Series



### Features:

- Flameproof
- Only available in RoHS compliant version
- Meets overload test of UL#1412
- Meets solvent test of method 215 of MIL-STD-202
- Low cost alternative for power carbon composition and wirewounds
- TCR  $\pm 200$  ppm
- Coating meets UL-94V-0

## NOT RECOMMENDED FOR NEW DESIGNS

### PERFORMANCE CHARACTERISTICS (Tested Per MIL-R-22684 Rev. C):

ELECTRICAL	MO 1/2	MO 1	MO 2	MO 3	MO 5
Power Ratings @ 70°C (watts)	1/2	1	2	3	5
Derated to 0 Load at	200°C	200°C	200°C	200°C	200°C
Maximum Working Voltage (volts)	250	350	350	500	750
Operating Temperature Range	-55°C to +200°C	-55°C to +200°C	-55°C to +200°C	-55°C to +200°C	-55°C to +200°C
Resistance Range (ohms)	0.1 - 75K ( $\pm 5\%$ ) 0.1 - 75K ( $\pm 1\%$ )	0.1 - 120K ( $\pm 5\%$ ) 0.1 - 100K ( $\pm 1\%$ )	0.1 - 150K ( $\pm 5\%$ ) 0.1 - 120K ( $\pm 1\%$ )	1 - 150K ( $\pm 5\%$ ) 10 - 10K ( $\pm 1\%$ )	1 - 180K ( $\pm 5\%$ ) 10 - 10K ( $\pm 1\%$ )
<b>Environmental</b> (Operating Temperature Range: -55°C to +200°C)					
Moisture Resistance	$\pm 1.5\%$	$\pm 1.5\%$	$\pm 1.5\%$	$\pm 1.5\%$	$\pm 1.5\%$
Thermal Shock	$\pm 1\%$	$\pm 1\%$	$\pm 1\%$	$\pm 1\%$	$\pm 1\%$
Load Life @ 70°C - 1000 hrs.	$\pm 2\%$	$\pm 2\%$	$\pm 2\%$	$\pm 2\%$	$\pm 2\%$
Shock and Vibration	$\pm 0.5\%$	$\pm 0.5\%$	$\pm 0.5\%$	$\pm 0.5\%$	$\pm 0.5\%$
Resistance to Soldering Heat	$\pm 0.55+0.05\Omega$	$\pm 0.55+0.05\Omega$	$\pm 0.55+0.05\Omega$	$\pm 0.55+0.05\Omega$	$\pm 0.55+0.05\Omega$
Terminal Strength	$\pm 0.5\%$	$\pm 0.5\%$	$\pm 0.5\%$	$\pm 0.5\%$	$\pm 0.5\%$
Dielectric Withstand Voltage	400V RMS	700V RMS	700V RMS	800V RMS	800V RMS
Maximum Pulse Voltage	400V	750V	1000V	1500V	1500V
Insulation Resistance	10,000 meg min.	10,000 meg min.	10,000 meg min.	10,000 meg min.	10,000 meg min.
Voltage Coefficient	0.001%/V	0.001%/V	0.001%/V	0.001%/V	0.001%/V
Short Time Overload	$\pm(0.5+0.05\Omega)$	$\pm(0.5+0.05\Omega)$	$\pm(0.5+0.05\Omega)$	$\pm(0.5+0.05\Omega)$	$\pm(0.5+0.05\Omega)$

### DIMENSIONS (Inches and (mm)):

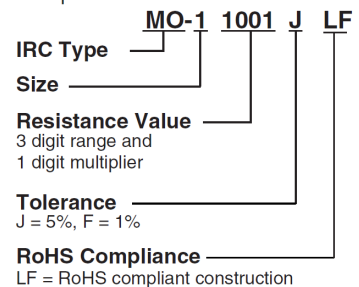
	A	B	C	D
<b>MO 1/2</b>	1.10 $\pm$ 0.08 (28.0 $\pm$ 2.0)	0.35 $\pm$ 0.04 (9.0 $\pm$ 1.0)	0.024 $\pm$ 0.002 (0.60 $\pm$ 0.05)	0.14 $\pm$ 0.02 (3.5 $\pm$ 0.5)
<b>MO 1</b>	1.10 $\pm$ 0.08 (28.0 $\pm$ 2.0)	0.43 $\pm$ 0.04 (11.0 $\pm$ 1.0)	0.028 $\pm$ 0.002 (0.70 $\pm$ 0.05)	0.18 $\pm$ 0.02 (4.5 $\pm$ 0.5)
<b>MO 2</b>	1.26 $\pm$ 0.12 (32.0 $\pm$ 3.0)	0.59 $\pm$ 0.02 (15.0 $\pm$ 0.5)	0.029 $\pm$ 0.002 (0.75 $\pm$ 0.05)	0.2 $\pm$ 0.04 (5.0 $\pm$ 1.0)
<b>MO 3</b>	1.38 $\pm$ 0.12 (35.0 $\pm$ 3.0)	0.71 $\pm$ 0.04 (17.5 $\pm$ 2.0)	0.031 $\pm$ 0.002 (0.80 $\pm$ 0.05)	0.26 $\pm$ 0.04 (6.5 $\pm$ 1.0)
<b>MO 5</b>	1.38 $\pm$ 0.12 (35.0 $\pm$ 3.0)	0.96 $\pm$ 0.04 (24.5 $\pm$ 1.0)	0.031 $\pm$ 0.002 (0.80 $\pm$ 0.05)	0.34 $\pm$ 0.04 (8.5 $\pm$ 1.0)

#### PACKAGING:

MO 1:	2500/reel
MO 2:	1000/reel
MO 3:	1000/ammo box
MO 5:	1000/bulk box
All Above:	1000/bulk box

### HOW TO ORDER:

Sample Part No.:



#### General Note

TT Electronics reserves the right to make changes in product specification without notice or liability. All information is subject to TT Electronics' own data and is considered accurate at time of going to print.

[www.ttelectronics.com/resistors](http://www.ttelectronics.com/resistors)

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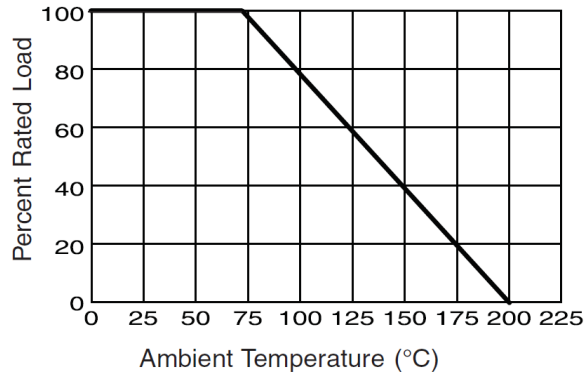
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## MO Series

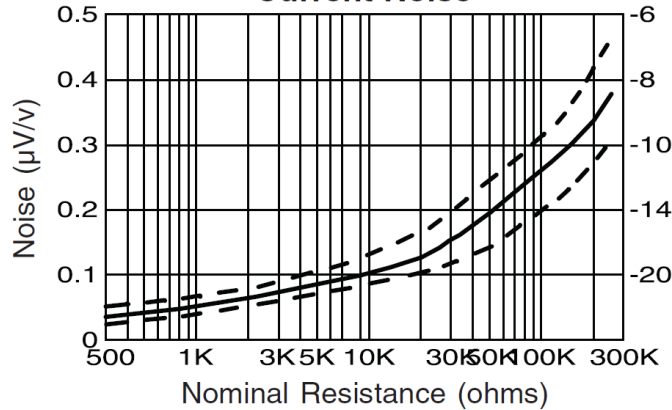


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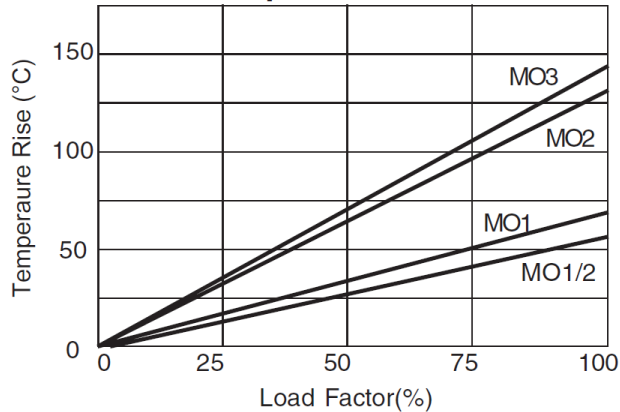
### Power - Temperature Derating



### Current Noise



### Surface Temperature Rise vs Load



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