

## Metal Oxide Film Resistors

### MO Series

1/4W , 1/2W , 1W , 2W , 3W , 5W

MO-25 , MO-50 , MO-100 , MO-200 , MO-300 , MO-500

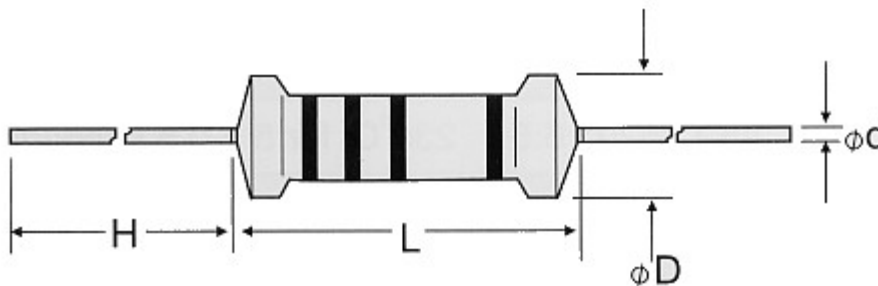
### INTRODUCTION

These Metal Oxide Resistors offer excellent performance in application where stability and uniformity of characteristics are desired. They provide lower cost alternatives to Carbon Composition Resistors and General Purpose Metal Films. Metal Oxide also can replace many low power General Purpose Wirewound applications, saving both money and time, with shorter delivery cycles.

### FEATURES

- High power-to-size ratio for significant space savings.
- Excellent long-term stability.
- Complete flameproof construction. High surge/overload capability
- Wide resistance range :  $1\Omega \sim 1M\Omega$
- Standard tolerance :  $\pm 5\%$

### DIMENSIONS



STYLE	DIMENSION (mm)				POWER RATING (Watt)	VALUE RANGE
	L	$\phi D$	H	$\phi d$		
MO-25	$6.5 \pm 0.5$	$2.3 \pm 0.3$	$28 \pm 2$	$0.6 \pm 0.05$	1/4W	$1\Omega \sim 1M$
MO-50	$9.5 \pm 0.5$	$3.2 \pm 0.5$	$26 \pm 2$	$0.55 \pm 0.05$	1/2W	$1\Omega \sim 1M$
MO-100	$12 \pm 1.0$	$4.5 \pm 0.5$	$35 \pm 2$	$0.8 \pm 0.05$	1W	$1\Omega \sim 1M$
MO-200	$15 \pm 1.0$	$5.5 \pm 0.5$	$35 \pm 3$	$0.8 \pm 0.05$	2W	$1\Omega \sim 1M$
MO-300	$17 \pm 1.0$	$6.0 \pm 1.0$	$35 \pm 3$	$0.8 \pm 0.05$	3W	$1\Omega \sim 1M$
MO-500	$25 \pm 1.0$	$8.5 \pm 1.0$	$35 \pm 3$	$0.8 \pm 0.05$	5W	$1\Omega \sim 1M$

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### ELECTRICAL CHARACTERISTICS

Style	MO-25	MO-50	MO-100	MO-200	MO-300	MO-500
Power Rating 70°C	1/4W	1/2W	1W	2W	3W	5W
Operating Temp. Range	-55°C~+155°C					
Max. Working Voltage	250V	250V	350V	350V	500V	500V
Max. Overload Voltage	400V	400V	600V	600V	800V	1000V
Dielectric Withstanding Voltage(AC)	300V	350V	1000V	1000V	1000V	1000V
Max. Intermittence Overload Voltage	500V	600V	1000V	1000V	1500V	1500V
Value Range±1%, ±2%, ±5%	1Ω ~ 510KΩ					
Temp. Coefficient (by Type)	±200ppm / °C					

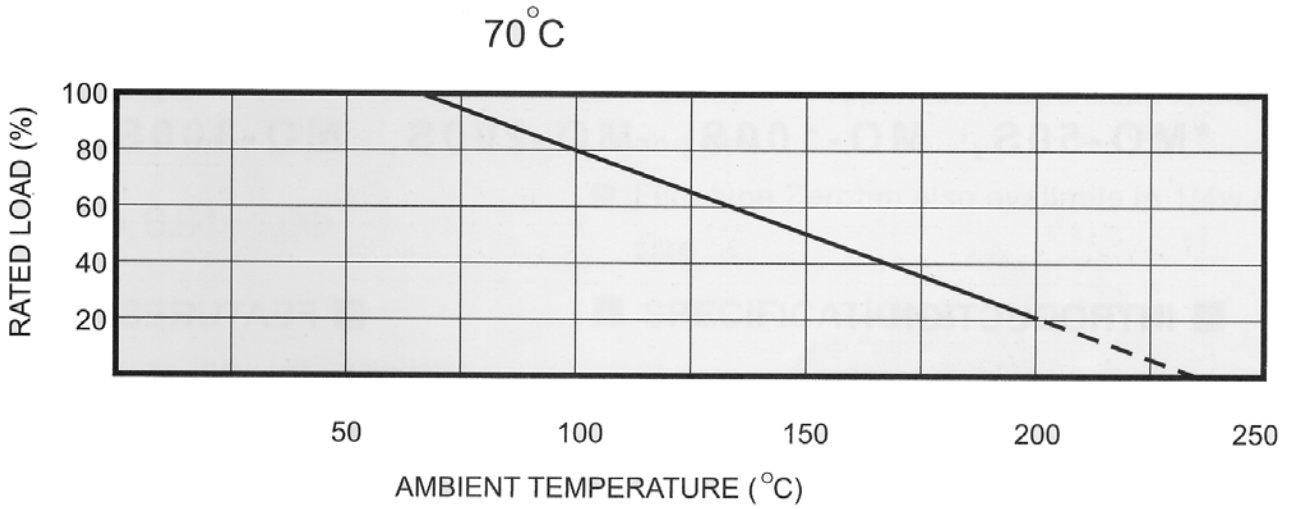
### ENVIRONMENTAL CHARACTERISTICS

PERFORMANCE TEST	TEST METHOD	APPRAISE
Short Time Overload	JIS-C-5202 5.5 : 2.5 times RCWV for 5 seconds	±(1%+0.05Ω)
Dielectric Withstanding V.	JIS-C-5202 5.7 : in V-Block for 60 seconds	By Type
Temperature Coefficient	JIS-C-5202 5.2 : -55°C ~ + 155°C	MAX. 200ppm/°C
Insulation Resistance	JIS-C-5202 5.6 : in V-Block	≥1000 MΩ
Solderability	JIS-C-5202 6.5 : 235°C for 5 ± 0.5 seconds	95% min. Coverage
Resistance to solvent	JIS-C-5202 6.9 : Trichroethance for 1 min. With ultrasonic	No deterioration
Terminal Strength	Direct load for 10 sec. In the direction of the terminal leads	≥2.5Kg/24.5N
Pulse Overload	JIS-C-5202 5.8 : 4 time RCWV 10000 cycles (1 sec.on,25 sec.off)	±(2%+0.05Ω)
Load Life in Humidity	JIS-C-5202 7.9 : 40±2°C, 90~95% RH at RCWV for 1000 hrs (1.5 hrs. On, 0.5 hrs. Off)	±(5%+0.05Ω)
Load Life	JIS-C-5202 7.10 : 70°C at RCWV for 1000 hrs (1.5 hrs. On, 0.5 hrs. off)	±(5%+0.05Ω)
Temperature Cycling	JIS-C-5202 7.4 : 65°C ~ room temp ~ 150°C ~ room temp. For 5 cycle	±(1%+0.05Ω)
Soldering Heat	JIS-C-5202 6.4 : 350±10 C for 3 ± 0.5 seconds	±(1%+0.05Ω)

—★ **Rated continuous Working Voltage (RCWV)**=  $\sqrt{\text{power rating} \times \text{resistance value}}$

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**FIG.1 Derating Curve**



**FIG.2 Hot-Spot Temperature**

