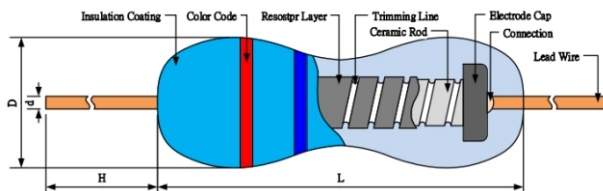


INTRODUCTION

Metal Film Resistors are designed to provide MIL performance and reliability at a significantly lower cost. High grade materials make the much smaller space saver size available. Automated production assures uniform quality and low cost.

FEATURES

- Operating Temperature : -55C to +155C
- Low T.C.R : 5ppm ~200ppm/C
- High Precision Tolerance : 0.05% ~ 1%

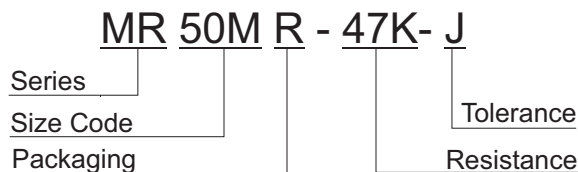


POWER RATING & DIMENSIONS (mm)

Code	Rated Wattage	Max. Working Voltage	Max. Overload Voltage	Dimensions				Resistance Range (Ω)	Standard Taping
				L ± .5	D ± .5	H	d ± .05		
MR12	0.125	150V	300V	3.3	1.8	26	0.40	0.1 ~ 10M (TOL: 1%)	T52
MR25M	0.25	200V	400V	3.3	1.8	26	0.45		
MR25		250V	500V	6.3	2.3	26	0.52		
MR50M	0.50	300V	500V	6.3	2.3	26	0.52		
MR50		350V		500V	9.0	3.2	26		
MR100M	1	400V	600V	9.0	3.2	26	0.65		
MR100		500V	700V	700V	11.5	4.5	35	0.65	
MR200M	2			1000V	11.5	4.5	35	0.65	
MR200					15.5	5.0	35	0.72	
MR300M	3			1000V	15.5	5.0	35	0.72	T73

1. Resistance Range for standard resistance, below or over this resistance range on request.
2. Above resistance range is based on ±1% tolerance. Other tolerance is available on request.

PART NUMBER EXAMPLE



TOLERANCE

±%	0	0.1	0.25	0.5	1
Code	A	B	C	D	F

RESISTANCE

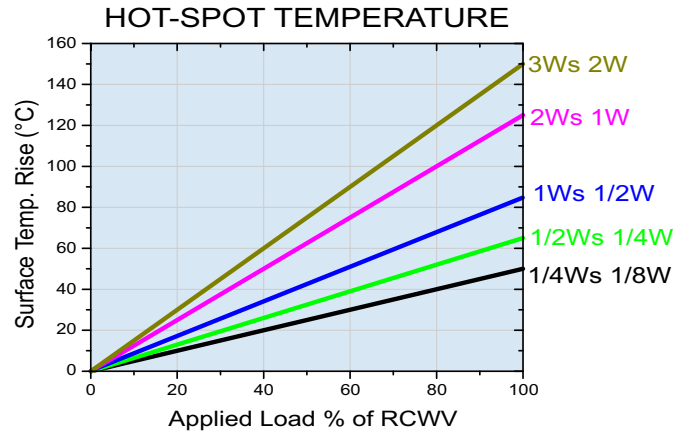
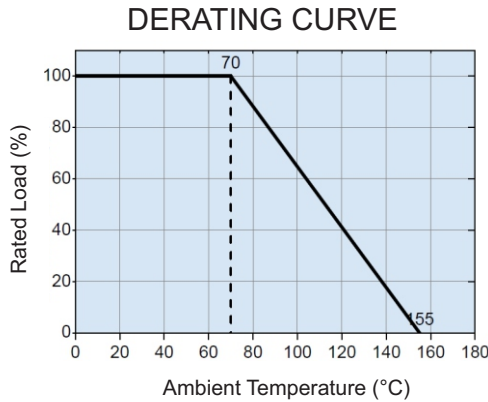
Ohms	0.5	1.5	1.5K	15K	1.5Meg	150Meg
Code	0R5	1R5	1K5	15K	1M5	150M

PACKAGING

Packaging Code	R	A	B	C
Description	Tape & Reel	Taped Box	Loose (Bulk)	Cut & Form
Special Taping Suffix	T52, T73			

ELECTRICAL CHARACTERISTICS

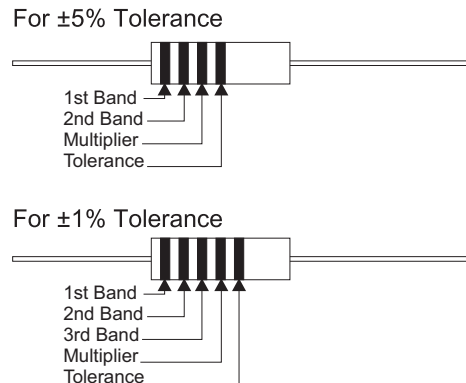
ITEMS	MR12 (0.125W)	MR25/M (0.25W)	MR50/M (0.50W)	MR100/M (1W)	MR200/M (2W)	MR300M (3W)
Operating Temperature	-55°C to +155°C (derated at 70°C / see chart)					
Temperature Coefficient (ppm / °C)	5ppm, 10ppm, 15ppm, 25ppm, 50ppm, 100ppm, 200ppm					
Tolerance	0.05%, 0.1%, 0.25%, 0.5%, 1%					
Short Time Overload	$\Delta R \leq \pm(0.25\% + 0.05\Omega)$					
Load Life	$\Delta R \leq \pm(1.5\% + 0.05\Omega)$					
Dielectric Withstanding Voltage	$\Delta R \leq \pm(0.5\% + 0.05\Omega)$					
Pulse Overload	$\Delta R \leq \pm(0.75\% + 0.05\Omega)$					
Insulation Resistance	JIS-C5202 5.6 In V-Block >10,000M Ω					
Load Life in Humidity	$\Delta R \leq \pm(1.5\% + 0.05\Omega)$					
Solder Ability	JIS-C5202 6.5 95% minimum coverage					
Soldering Heat Resistance	$\Delta R \leq \pm(0.5\% + 0.05\Omega)$					
Terminal Strength	Direct load for 10 sec. in the direction off the terminal leads Tensile : $\geq 2.5\text{Kg}$					



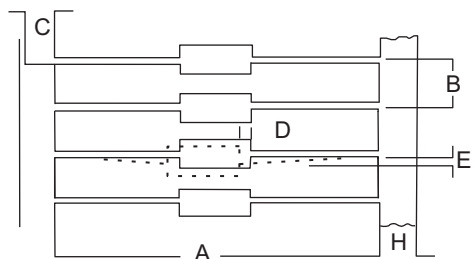
$$\text{Rated continuous Working Voltage (RCWV)} = \sqrt{\text{POWER.RATING} \cdot \text{RESISTANCE.VALUE}}$$

COLOR CODE CHART

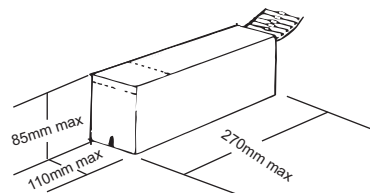
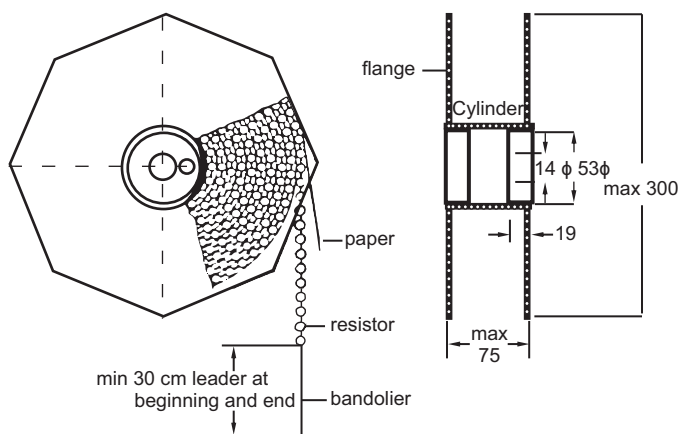
Color	1st Band	2nd Band	3rd Band (B ~ F Tol)	Multiplier	Tolerance	Tolerance Code
Black	0	0	0	10 ⁰		
Brown	1	1	1	10 ¹	±1%	F
Red	2	2	2	10 ²	±2%	G
Orange	3	3	3	10 ³		
Yellow	4	4	4	10 ⁴		
Green	5	5	5	10 ⁵	±0.5%	D
Blue	6	6	6	10 ⁶	±0.25%	C
Violet	7	7	7	10 ⁷	±0.10%	B
Gray	8	8	8	10 ⁸	±0.05%	A
White	9	9	9	10 ⁹		
Gold				10 ⁻¹	±5%	J
Silver				10 ⁻²	±10%	K



TAPE, REEL & AMMO SPECIFICATIONS



Body Diameter	Size Code	A	B	C	D	E	H
< 5mm	T-52	52 ± 1	5 ± 0.5	4.0 min.	0.8 max.	1.2 max.	6 ± 1
> 5mm	T-52	52 ± 1	10 ± 0.5	4.0 min.	0.8 max.	1.2 max.	6 ± 1
	T-73	73 ± 1					



RESISTANCE DECADE TABLE

Resistance Tolerance	Resistance Values																							
M (20%)	1.0	1.5	2.2	3.3	4.7	6.8																		
K (10%)	1.0	1.2	1.5	1.8	2.2	2.7	3.3	3.9	4.7	5.6	6.8	8.2												
G (2%), J (5%)	1.0	1.1	1.2	1.3	1.5	1.6	1.8	2.0	2.2	2.4	2.7	3.0	3.3	3.6	3.9	4.3	4.7	5.1	5.6	6.2	6.8	7.5	8.2	9.1
F (1%)	1.00	1.10	1.21	1.33	1.47	1.62	1.78	1.96	2.15	2.37	2.61	2.87	3.16	3.48	3.83	4.22	4.64	5.11	5.62	6.19	6.81	7.50	8.25	9.09
	1.02	1.13	1.24	1.37	1.50	1.65	1.82	2.00	2.21	2.43	2.67	2.94	3.24	3.57	3.92	4.32	4.75	5.23	5.76	6.34	6.98	7.68	8.45	9.31
	1.05	1.15	1.27	1.40	1.54	1.69	1.87	2.05	2.26	2.49	2.74	3.01	3.32	3.65	4.02	4.42	4.87	5.36	5.90	6.49	7.15	7.87	8.66	9.53
	1.07	1.18	1.30	1.43	1.58	1.74	1.91	2.10	2.32	2.55	2.80	3.09	3.40	3.74	4.12	4.53	4.99	5.49	6.04	6.65	7.32	8.06	8.87	9.76
D (0.5%)	1.00	1.10	1.21	1.33	1.47	1.62	1.78	1.96	2.15	2.37	2.61	2.87	3.16	3.48	3.83	4.22	4.64	5.11	5.62	6.19	6.81	7.50	8.25	9.09
C (0.25%)	1.01	1.11	1.23	1.35	1.49	1.64	1.80	1.98	2.18	2.40	2.64	2.91	3.20	3.52	3.88	4.27	4.70	5.17	5.69	6.26	6.90	7.59	8.35	9.20
B (0.1%)	1.02	1.13	1.24	1.37	1.50	1.65	1.82	2.00	2.21	2.43	2.67	2.94	3.24	3.57	3.92	4.32	4.75	5.23	5.76	6.34	6.98	7.68	8.45	9.31
A (0.05%)	1.04	1.14	1.26	1.38	1.52	1.67	1.84	2.03	2.23	2.46	2.71	2.98	3.28	3.61	3.97	4.37	4.81	5.30	5.83	6.42	7.06	7.77	8.56	9.42
	1.05	1.15	1.27	1.40	1.54	1.69	1.87	2.05	2.26	2.49	2.74	3.01	3.32	3.65	4.02	4.42	4.87	5.36	5.90	6.49	7.15	7.87	8.66	9.53
	1.06	1.17	1.29	1.42	1.56	1.72	1.89	2.08	2.29	2.52	2.77	3.05	3.36	3.70	4.07	4.48	4.93	5.42	5.97	6.57	7.23	7.96	8.76	9.65
	1.07	1.18	1.30	1.43	1.58	1.74	1.91	2.10	2.32	2.55	2.80	3.09	3.40	3.74	4.12	4.53	4.99	5.49	6.04	6.65	7.32	8.06	8.87	9.76
	1.09	1.20	1.32	1.45	1.60	1.76	1.93	2.13	2.34	2.58	2.84	3.12	3.44	3.79	4.17	4.59	5.05	5.56	6.12	6.73	7.41	8.16	8.98	9.88