

# Metal Film Resistor Axial Leaded Type

MF Series

**MERITEK**

## FEATURE

- Operating Temperature: -55 ~ 155°C
- High Precision: Tolerances of 1, 0.5, 0.25, 0.1, and 0.05%
- Low T.C.R.: 200, 100, 50, 25, 15, 10, and 5ppm/°C
- Power Ratings: Standard Type 1/8~2W, Miniature Type 1/4~3WS
- Low Noise Design



## PART NUMBERING SYSTEM

MF 25 F 2002 B TR  
(1) (2) (3) (4) (5) (6)

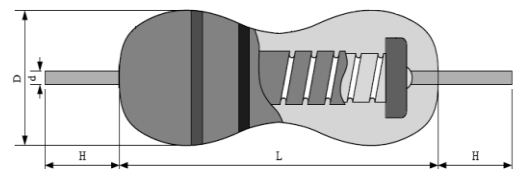


No	Item	Code	Description	Series Reference
(1)	Meritek Series	MF	Metal Film Resistor	Axial Leaded Type
(2)	Power Rating	25	25: 1/4W	12: 1/8W, 20: 1/6W, 40: 2/5W, 50: 1/2W, 60: 3/5W, 100: 1W, 200: 2W, 300S: 3WS, S: miniature size
(3)	T.C.R.	F	F: ±25ppm/°C	B: ±5, C: ±10, D: ±15, Blank: ±50, G: ±100, H: ±200ppm/°C
(4)	Resistance	2002	2002: 20KΩ	First 3 digits are significant, 4 <sup>th</sup> digit is multiplier, "R" indicates decimal
(5)	Tolerance	B	B: ±0.1%	A: ±0.05%, C: ±0.25%, D: ±0.5%, F: ±1%, J: ±5%
(6)	Internal Control Code	B	B: Bulk	Package or Customer Product Reference: A or TA: Tape and Ammo, R or TR: Tape and Reel

## ELECTRICAL CHARACTERISTICS AND DIMENSIONS

Power Rating	Dimensions (mm)				Max Working Voltage	Max Overload Voltage	Dielectric Withstand Voltage
	D	L	H	d			
1/8W	1.8±0.3	3.4±0.3	29±2.0	0.45±0.03	150V	300V	300V
1/6W	1.8±0.3	3.4±0.3	29±2.0	0.45±0.03	150V	300V	300V
1/4WS	1.8±0.3	3.55±0.45	29±2.0	0.45±0.03	200V	400V	300V
2/5W	1.8±0.3	3.55±0.45	29±2.0	0.45±0.03	200V	400V	300V
1/4W	2.3±0.3	6.3±0.5	28±2.0	0.55±0.03	250V	500V	500V
1/2WS	2.3±0.3	6.3±0.5	28±2.0	0.55±0.03	300V	500V	500V
3/5W	2.3±0.3	6.3±0.5	28±2.0	0.55±0.03	350V	500V	500V
1/2W	3.2±0.5	9.0±0.5	26±2.0	0.65±0.03	350V	500V	500V
1WS	3.2±0.5	9.0±0.5	26±2.0	0.65±0.03	400V	600V	500V
1W	4.5±0.5	11.5±1.0	35±2.0	0.78±0.03	500V	700V	700V
2WS	4.5±0.5	11.5±1.0	35±2.0	0.78±0.03	500V	700V	700V
2W	5.0±0.5	15.5±1.0	32±2.0	0.78±0.03	500V	1000V	1000V
3WS	5.0±0.5	15.5±1.0	32±2.0	0.78±0.03	500V	1000V	1000V

Resistance (Ω)	Tolerance	Series
0.1~1, 1.1M~10M	±1%	E24
1~1M	±1%, ±0.5%	E24, E96
10~100K	±0.25%, ±0.1%, ±0.05%	E24, E192

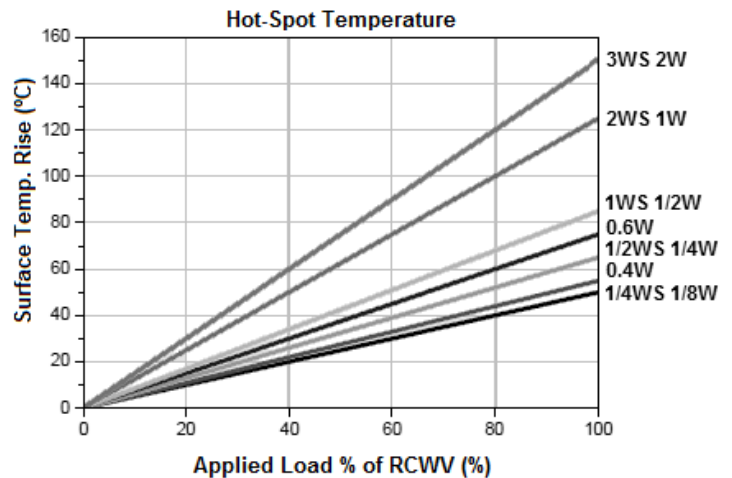
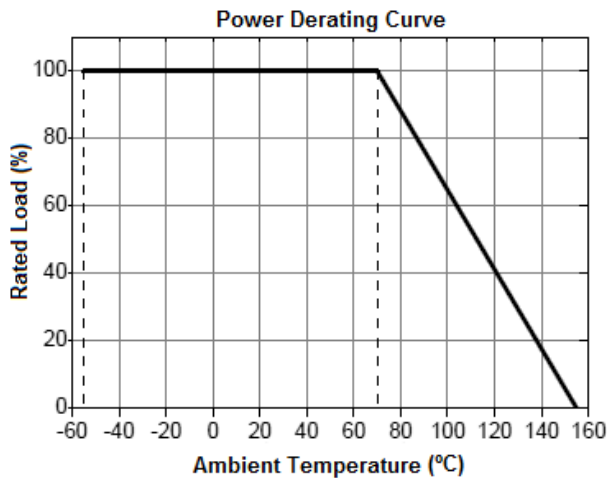


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## CHARACTERISTIC CURVES



## RELIABILITY TEST CONDITION AND REQUIREMENT

Test	Condition	Requirement
Short Time Overload	2.5 times RCWV for 5 seconds	$\Delta R = \pm(0.25\% \pm 0.05\Omega)$
Temperature Coefficient of Resistance (T.C.R.)	Resistance value at room temperature (25°C) and at 125°C	By Type
Voltage Proof	In V-Block for 60 seconds	By Type
Pulse Overload	4 times RCWV for 10000 cycles (1 seconds "ON" 25 seconds "OFF")	$\Delta R = \pm(0.75\% \pm 0.05\Omega)$
Insulation Resistance	In V-Block	>10000M $\Omega$
Load Life	70°C at RCWV for 1000 hours (1.5hours "ON", 0.5hours "OFF")	$\Delta R = \pm(1.5\% \pm 0.05\Omega)$
Load Life in Humidity	40±2°C, 90~95% RH at RCWV for 1000hours (1.5hours "ON", 0.5hours "OFF")	$\Delta R = \pm(1.5\% \pm 0.05\Omega)$
Temperature Cycling	-55~125°C for 5 cycles. (0.5hrs. at extremes, transfer time < 30 seconds)	$\Delta R = \pm(0.75\% \pm 0.05\Omega)$
Solderability	260±5°C for 2±0.5 seconds	95% minimum coverage
Resistance to Soldering Heat	Soldering Iron Temperature: 260±5°C Apply to termination for 10±1 seconds	1/8W, 1/6W, 1/4WS, 0.4W: 0.75 1/4W, 1/2WS, 0.6W, 1/2W, 1WS: 0.5 1W, 2WS, 2W, 3WS: 0.25
Resistance to Solvent	IPA for 5±0.5 minutes with ultrasonic	No abnormality in coating and markings
Terminal Strength	Direct load for 10 seconds in the direction of the terminal leads	Tensile: ≥ 2.5kg

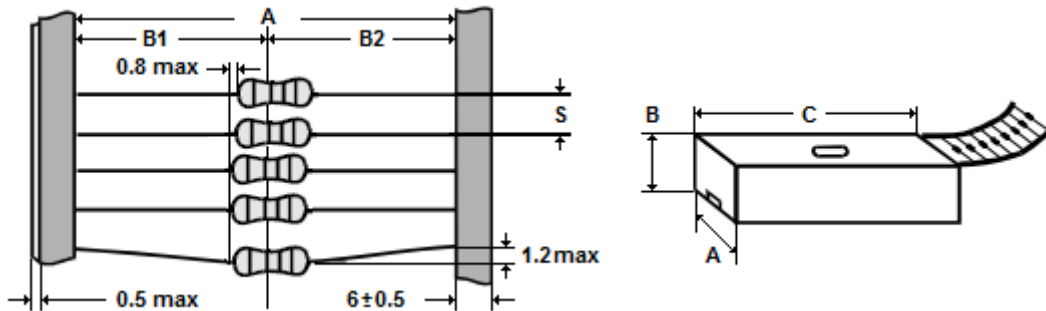
Notes:  
Reference Standards: IEC 60115-1  
Storage Temperature: 25±3°C; Humidity < 80% RH  
Rated Continuous Working Voltage (RCWV) =  $\sqrt{\text{Power.Rating} * \text{Resistance.Value}}$

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## PACKAGING SPECIFICATION



Power Rating	Tape Dimensions (mm)				Box Dimensions (mm)			Quantity Per Box
	A	B1, B2	S	Max Deviation of S	A	B	C	
1/8W 1/6W 1/4WS 2/5W	52~53	1.2	5	1mm per 10 Spacing	80	75	264	5,000
	26~27	1	5		80	75	264	5,000
1/4W 1/2WS 3/5W	52~53	1.2	5	1mm per 10 Spacing	80	105	264	5,000
	26~27	1	5		80	105	264	5,000
1/2W 1WS	52~53	1.2	5	1mm per 10 Spacing	80	46	264	1,000
1W 2WS	52~53	1.5	5	1mm per 10 Spacing	103	82	265	1,000
	73~74	1.5			103	82	265	1,000
2W 3WS	52~53	1.5	10	1mm per 10 Spacing	103	96	265	1,000
	73~74	1.5			103	96	265	1,000

\*Specifications subject to change without notice.