

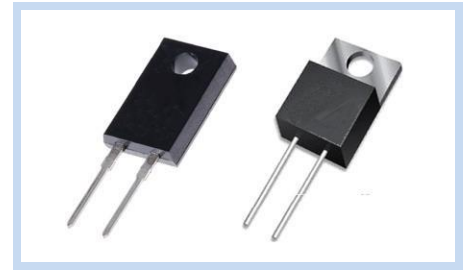
# Molded Power Resistor TO-220/TO-247 Package

MTR Series

**MERITEK**

## FEATURE

- Operation Temperature: -65°C~175°C
- High Stability Film Resistance Element
- Molded Case for Protection and Easy Mounting
- Electrically Isolated Case
- Non-Inductive Design for High Speed Switching Application



## PART NUMBERING SYSTEM

**MTR** **50** **J** **B** **D** **1001** - **H**  
(1) (2) (3) (4) (5) (6) (7)



No.	Item	Code	Description	
(1)	Meritek Series	MTR	Molded Power Resistor, Radial Leaded type	
(2)	Power Rating	50	50: 50W	at 25°C case temperature heat sinks mounted
(3)	Resistance Tolerance	J	J: ±5%	D: ±0.5%, F: ±1%, K: ±10%
(4)	Packaging Code	T	T: Tube package	B: Bulk
(5)	T.C.R.	D	D: ±50 PPM/°C	E: ±100, F: ±200, G: ±300, -: Not Specified
(6)	Resistance	1001	1001: 1000Ω	First Three Digits: Significant, Fourth: Multiplier
(7)	Internal Code	H	H: Mounting Hole	Option for MTR50, Blank: No mounting hole

## ELECTRICAL CHARACTERISTICS

Series	Rated Voltage	Power Rating	Dielectric Strength	Resistance (Ω)				TCR (PPM/°C)	Operating Temperature
				±0.5%	±1%	±5%	±10%		
MTR20	350V	20W	1800VAC	-	-	0.05 ~ 1		Not Specified	-65~ 150°C
				-	-	>1 ~ 3		±300	
				-	-	>3 ~ 10		±100, ±200	
				>10 ~ 1M			±50, ±100, ±200		
MTR30	420V	30W	1800VAC	-	-	0.05 ~ 1		Not Specified	-65~ 150°C
				-	-	>1 ~ 3		±300	
				-	-	>3 ~ 10		±100, ±200	
				>10 ~ 100K			±50, ±100, ±200		
MTR35	350V	35W	1800VAC	-	-	0.05 ~ 0.91		Not Specified	-65~ 150°C
				-	-	1 ~ 2.7		±100, ±200, ±300	
				-	-	3 ~ 10		±100, ±200, ±300	
				>10 ~ 10K			±50, ±100, ±200		
MTR50	350V	50W	1800VAC	-	1	0.05 ~ 1		Not Specified	-65~ 150°C
				-	-	>1 ~ 3		±300	
				-	-	>3 ~ 10		±100, ±200	
				>10~ 100K			±50, ±100, ±200		
MTR50-H	420V	50W	1800VAC	-	1	0.1 ~ 1		Not Specified	~
				-	-	>1 ~ 3		±300	
				-	-	>3 ~ 10		±100, ±200	
				>10 ~ 100K			±50, ±100, ±200		
MTR100	700V	100W	1800VAC	-	-	0.05 ~ 1		Not Specified	-65~ 175°C
				>1 ~ 3			±200, ±300		
				>3 ~ 10			±100, ±200		
				>10 ~ 100K			±50, ±100, ±200		

Note: 1. Power Rating at 25°C Case Temp. Heat Sink Mounted 2. Insulation Resistance: 10GΩ minimum

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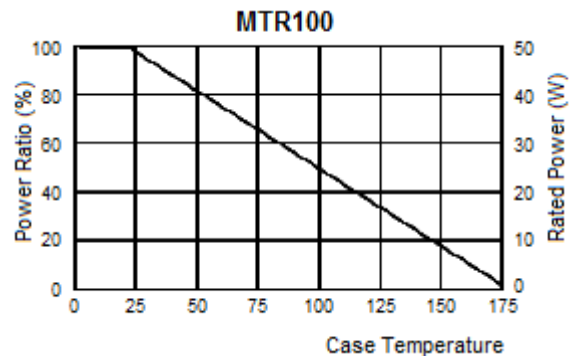
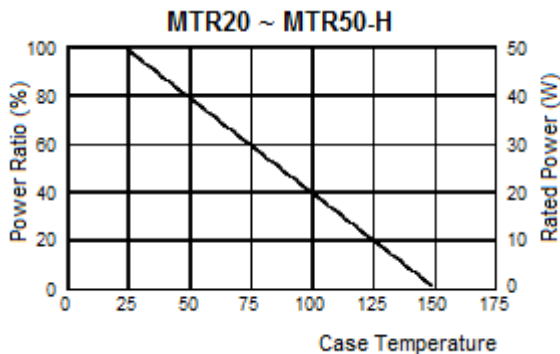
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## RELIABILITY AND TEST CONDITIONS

Item	Test Method	Requirement
Temperature Coefficient of Resistance (T.C.R.)	Referenced to 25°C, ΔR taken at 105°C	As Specified
Short Time Overload	2 times rated power (1.5 for MTR100) with applied voltage not to exceed 1.5 times Maximum continuous operating voltage for 5 seconds.	ΔR±0.3%, ΔR±0.5% (MTR100)
Load Life	2000 hours at rated power	ΔR±1%
Damp Heat with Load	40±2°C, 90~95% RH, RCWV for 1000hrs, 1.5hrs ON,0.5hrs OFF MTR100: -10~65°C, RH > 90%, cycle for 240 hrs.	ΔR±0.5%
Solderability	245±5°C for 3 seconds	90% minimum coverage
Thermal Shock	-65 ~ 150°C for 100 cycles	ΔR±0.3%, ΔR±0.5% (MTR100)
Terminal Strength	(Pull Test) 2.4N	ΔR±0.2%
Vibration, High Frequency	20g peak	ΔR±0.2%, ΔR±0.4%

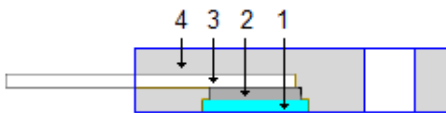
RCWV (Rated Continuous Working Voltage) =  $\sqrt{P * R}$  or Max Operating Voltage whichever is lower.

## DERATING CURVE

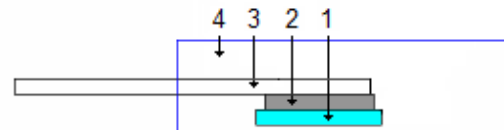


## CONSTRUCTION

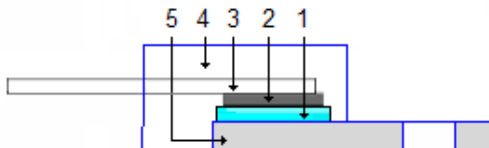
**MTR30 / MTR50-H – TO-220 package**



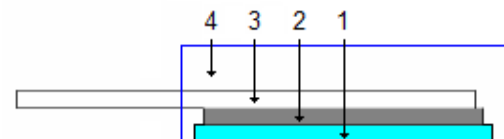
**MTR20 – TO-220 Package**



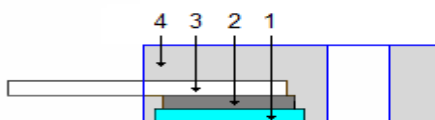
**MTR35 – TO-220 Package**



**MTR50 – TO-220 Package**



**MTR100 – TO-247 Package**



Item	Description
1	Alumina Substrate
2	Resistor Layer
3	Lead
4	Molding
5	Flange

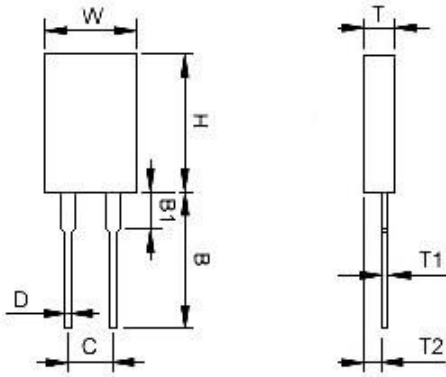
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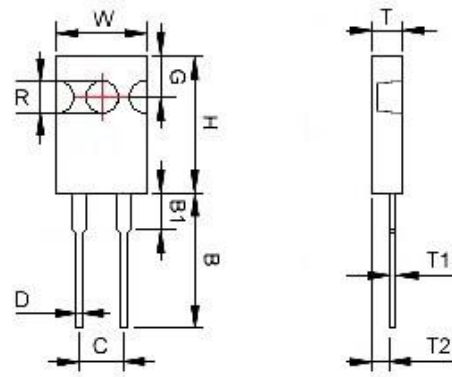
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## DIMENSIONS

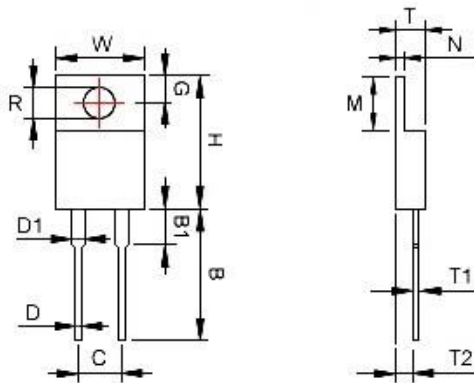
MTR20, MTR50 – TO-220 Package



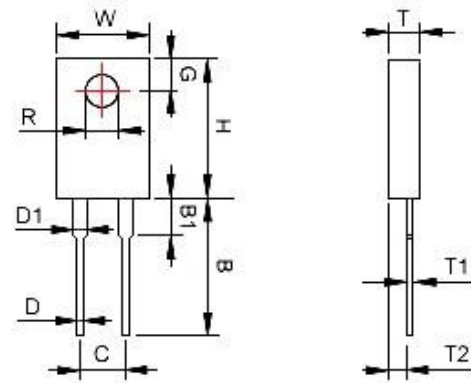
MTR30, MTR50-H – TO-220 Package



MTR35 – TO-220 Package



MTR100 – TO-247 Package



Dimensions (mm)														
Part	W	R	G	H	B	B1	D	D1	C	T	N	M	T1	T2
MTR20	10.15~ 10.67	~	~	16.00~ 16.52	11.43~ 13.97	2.54~ 4.06	0.66~ 0.96	1.14~ 1.40	4.82~ 5.34	2.92~ 3.44	~	~	0.40~ 0.66	1.52~ 2.04
MTR30	10.15~ 10.67	3.08~ 3.28	2.92~ 3.44	16.00~ 16.52	11.43~ 13.97	2.54~ 4.06	0.66~ 0.96	1.14~ 1.40	4.82~ 5.34	2.92~ 3.44	~	~	0.40~ 0.66	1.52~ 2.04
MTR35	9.91~ 10.41	3.71~ 3.96	2.65~ 3.15	14.70~ 15.30	12.70~ 14.25	4.00 max	0.70~ 0.86	1.17~ 1.37	4.83~ 5.33	4.40~ 4.80	1.19~ 1.40	5.85~ 6.60	0.36~ 0.66	2.02~ 2.52
MTR50	10.15~ 10.67	~	~	16.00~ 16.52	11.43~ 13.97	2.54~ 4.06	0.66~ 0.96	1.14~ 1.40	4.82~ 5.34	2.92~ 3.44	~	~	0.40~ 0.66	1.52~ 2.04
MTR50-H	10.15~ 10.67	3.08~ 3.28	2.92~ 3.44	16.00~ 16.52	11.43~ 13.97	2.54~ 4.06	0.66~ 0.86	1.14~ 1.40	4.82~ 5.34	2.92~ 3.44	~	~	0.40~ 0.60	1.52~ 2.04
MTR100	15.49~ 16.01	3.53~ 3.73	5.07~ 5.59	20.44~ 20.96	13.21~ 15.75	2.03~ 3.55	1.42~ 1.62	3.45~ 3.81	9.90~ 10.42	4.69~ 5.21	~	~	0.55~ 1.07	2.15~ 2.67