Type MPT Series

Key Features

Small Size TO220 and TO247

Easy to mount

Isolated moulded case

Non Inductive

High Power – TO220 to 50W when mounted on suitable heatsink

TO247 to 100W when mounted on suitable heatsink



The MPT Resistor series are a range of T0220 and TO247 packaged, low inductance thick film power resistors. This small size, high power device with 5 models are ideally suited to applications where high power dissipation yet small size are key design requirements. The MPT Resistor series are the ideal solution for small snubber circuits, the output side of high speed pulse generators and low inductive resistor requirements in switch mode power supplies.

Characteristics – Electrical

	MPT30	MPT35	MPT50
Package Size	TO220	TO220	TO220
Resistance Range	R05 ~ 100K	R05 ~10K	R10 ~ 10K
Rated Power (with Heatsink)	30W	35W	50W
Rated Power (in free air)	2.25W@25°C	2.5W@25°C	3W@25°C
Maximum Operating Voltage	420V	350V	350V
Dielectric Strength	1800VAC		
Insulation Resistance	10GΩ min.		
Operating Temperature	-65°C~150°C		

	MPT50H	MPT100
Package Size	TO220	TO247
Resistance Range	R10 ~ 10K	R05 ~ 100K
Rated Power (w / Heatsink)	50W	100W
Rated Power (in free air	2.25W@25°C	3.5W@25°C
Maximum Operating Voltage	420V	700V
Dielectric Strength	1800VAC	
Insulation Resistance	10GΩ min.	
Operating Temperature	-65°C ~ 150°C	-65°C ~175°C

TCR / Tolerance Value Chart

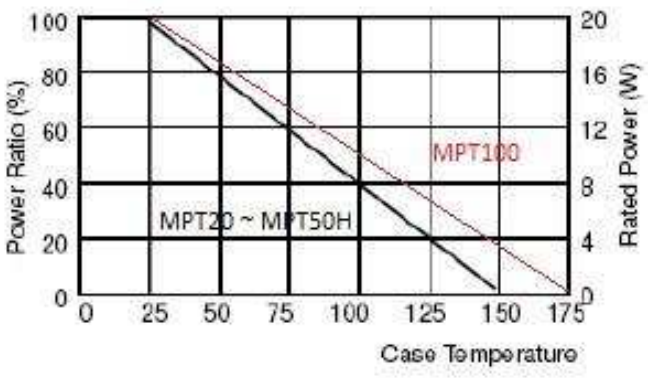
	0.5%	1%	5%	10%	TCR
MPT30	-	-	R05 ~1R0		Unspecified
		1R1 ~ 3R0			300PPM
		3R3 ~10R			100PPM
	11R ~100K				50PPM
MPT35	-	-	R05 ~ R91		Unspecified
		1R0 ~ 10R			100PPM
	11R ~ 10K				50PPM
MPT50	-	1R0	R10 ~ 1R0		Unspecified
		1R1 ~3R0			300PPM
		3R3 ~ 10R			100PPM
	11R ~10K				50PPM
MPT50H	-	1R0	R10 ~1R0		Unspecified
		1R1 ~ 3R0			300PPM
		3R3 ~ 10R			100PPM
	11R ~ 10K				50PPM
MPT100	-	-	R05 ~ 1R0		Unspecified
		1R1 ~ 3R0			300PPM
		3R3 ~ 10R			100PPM
		11R ~ 100K			50PPM

Characteristics – Environmental

Test Item	**Requirement**	**Test Method**
Temperature Coefficient of Resistance (T.C.R.)	As Spec.	Referenced to 25°C, ΔR taken at +105°C
Short Time Overload	ΔR±0.3%	2 times rated power with applied voltage not to exceed 1.5 times Maximum continuous operating voltage for 5 seconds
Load Life	ΔR±1.0%	2,000 hours at rated power
Damp Heat with Load	ΔR±0.5%	40±2°C, 90~95% R.H., RCWV for 1000 hrs with 1.5 hrs “ON” and 0.5 hrs “OFF”
Solderability	90% min. coverage	245±5°C for 3 seconds
Thermal Shock	ΔR±0.3%	-65°C~150°C, 100 cycles
Terminal Strength	ΔR±0.2%	(Pull Test) 2.4N
Vibration, High Frequency	ΔR±0.2%	20g peak

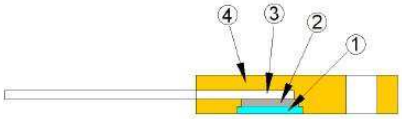
Lead Material: Tinned Copper
For Models with fixing hole, maximum torque 0.9Nm
The Case Temperature is to be used for the Definition of the Applied Power Limit
The Case Temperature Measurement must be made with a Thermocouple Contacting the Center of the Component mounted on the Designed Heat Sink.
Thermal Grease should be Applied Properly
RCWV (Rated continuous working voltage)= √(P*R) or Max. Operating voltage whichever is lower

Derating Curve

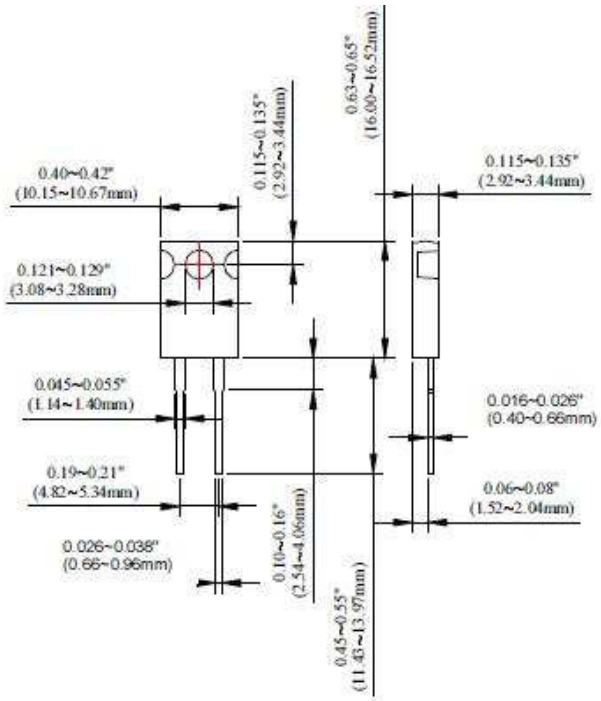


Construction and dimensions

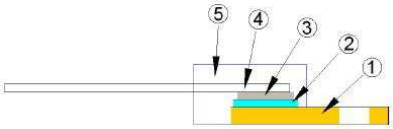
MPT30



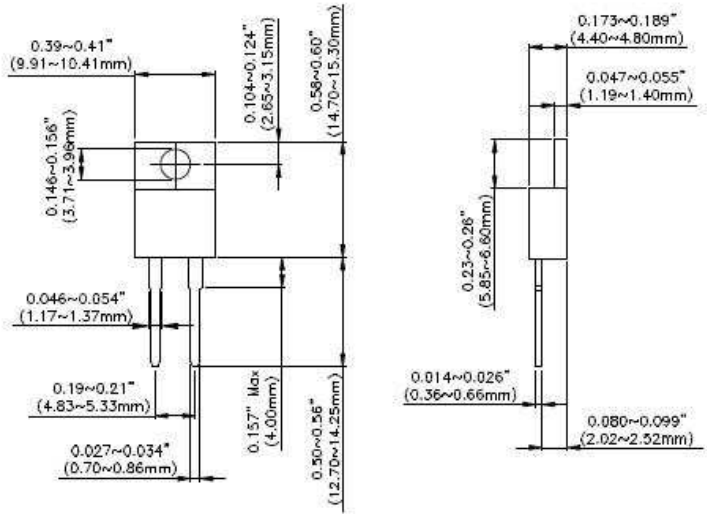
1	Alumina Substrate	3	Lead
2	Resistor Layer	4	Moulding



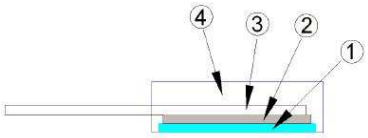
MPT35



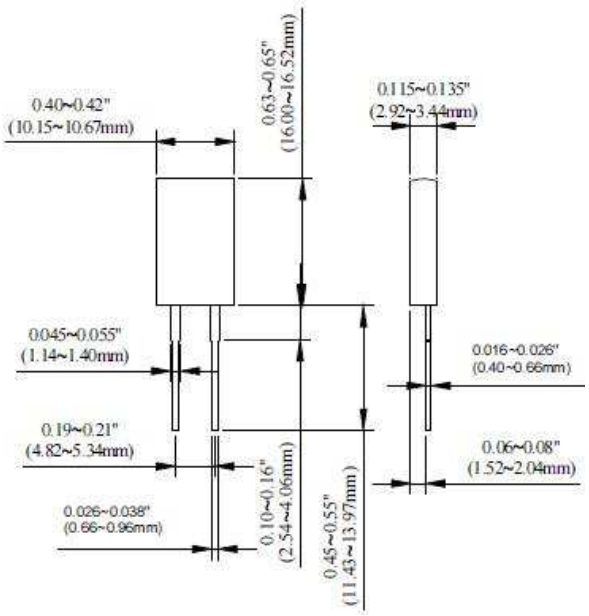
1	Flange	4	Lead
2	Alumina Substrate	5	Moulding
3	Resistor Layer		



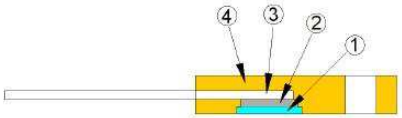
MPT50



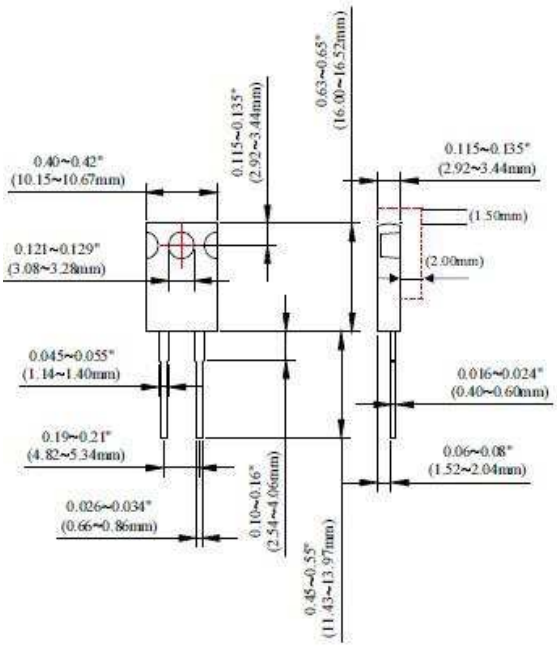
1	Alumina Substrate	3	Lead
2	Resistor Layer	4	Moulding



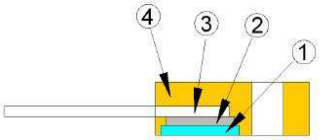
MPT50H



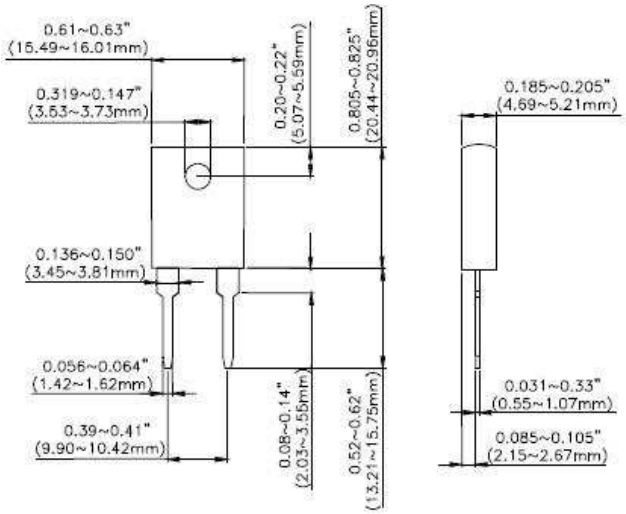
1	Alumina Substrate	3	Lead
2	Resistor Layer	4	Moulding



MPT100



1	Alumina Substrate	3	Lead
2	Resistor Layer	4	Moulding



Packaging

Model	Net Weight (1000 pieces)	Tube
MPT30	1155g	50 pieces
MPT35	1902g	50 pieces
MPT50	1290g	50 pieces
MPT50H	2770g	50 pieces
MPT100	3381g	35 pieces

How To Order

MPT	35	C	100R	J
Common Part	**Power Rating on Heatsink @25°C**	**Temp. Coefficient of Resistance**	**Resistance Value**	**Tolerance**
MPT	30 – 30W 35 – 35W 50 – 50W 50H – 50W 100 – 100W	X – unspecified C – 50PPM A – 100PPM S – 200PPM T – 300PPM	0.1 ohm (100 milliohms) R10 1 ohm (1000 milliohms) 1R0 1K ohm (1000 ohm) 1K0	D - 0.5% F - 1% J - 5% K - 10%