

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 TO220 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

	MPT20	MPT30	MPT35
Package Size	TO220	TO220	TO220
Resistance Range	R05 ~ 1M0	R05 ~ 100K	R05 ~ 10K
Rated Power (with Heatsink)	20W	30W	35W
Rated Power (in free air)	3W@25°C	2.25W@25°C	2.5W@25°C
Maximum Operating Voltage	350V	420V	350V
Dielectric Strength	1800VAC		
Insulation Resistance	10GΩ min.		
Operating Temperature	-65°C~150°C		

	MPT50	MPT50H	MPT100
Package Size	TO220	TO220	TO247
Resistance Range	R10 ~ 10K	R10 ~ 10K	R05 ~ 100K
Rated Power (w / Heatsink)	50W	50W	100W
Rated Power (in free air)	3W@25°C	2.25W@25°C	3.5W@25°C
Maximum Operating Voltage	350V	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
MPT20	-	-	R05 ~ 1R0		Unspecified
		1R1 ~ 3R0			300PPM
		3R3 ~ 10R			100PPM
		11R ~ 1M0			50PPM
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

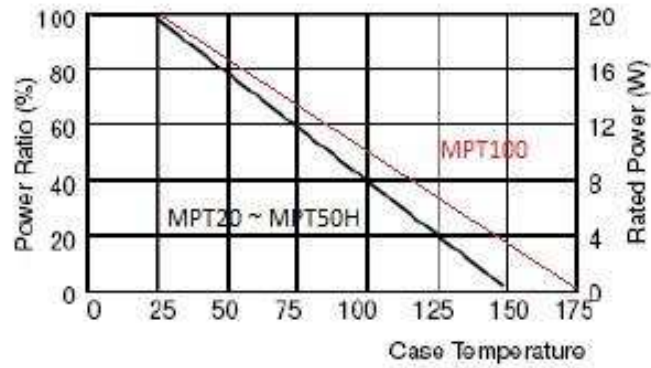
The Case Temperature is to be used for the Definition of the Applied Power Limit

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)= $\sqrt{P \cdot R}$ or Max. Operating voltage whichever is lower

Derating Curve

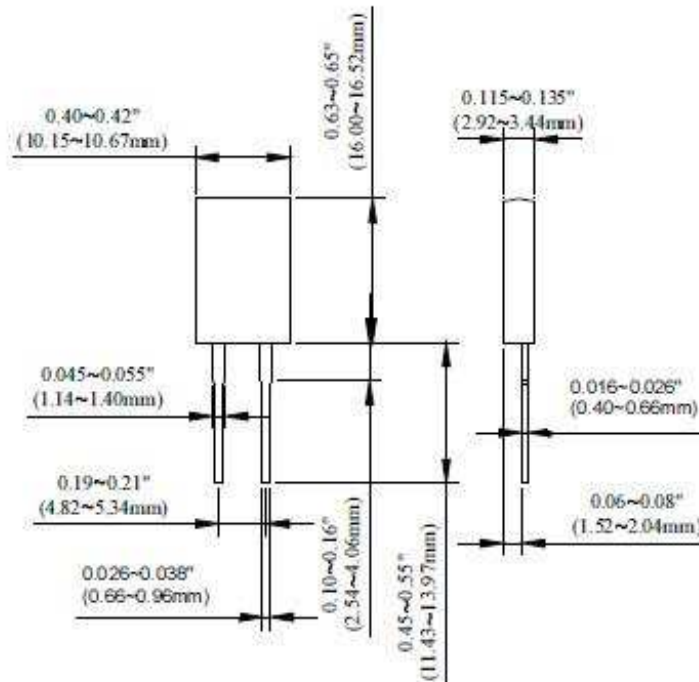


Construction and dimensions

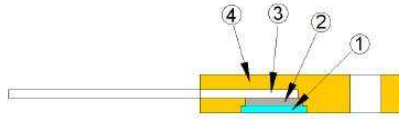
MPT20



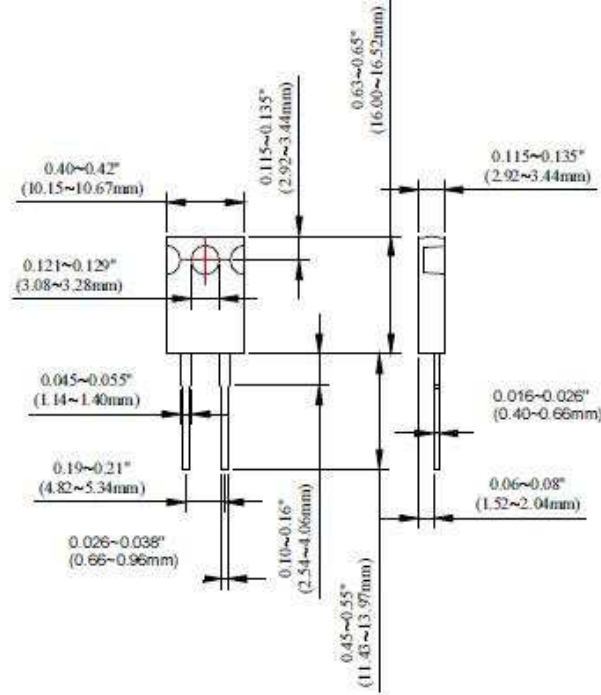
1	Alumina Substrate	3	Lead
2	Resistor Layer	4	Moulding



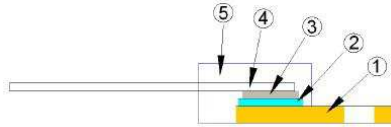
MPT30



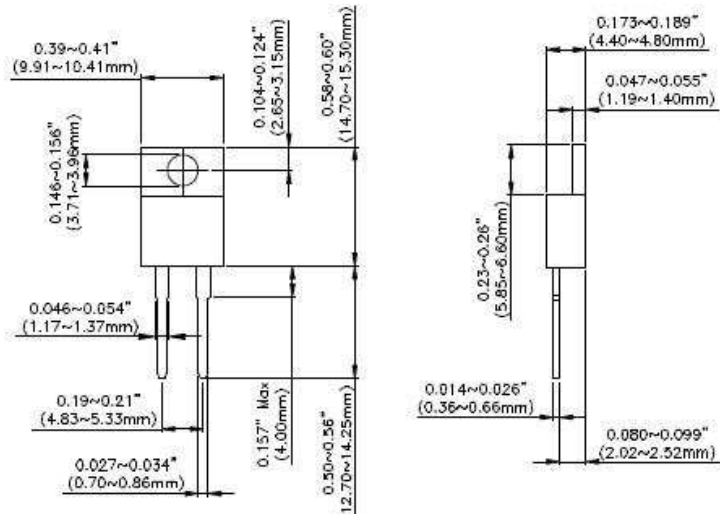
1	Alumina Substrate	3	Lead
2	Resistor Layer	4	Moulding



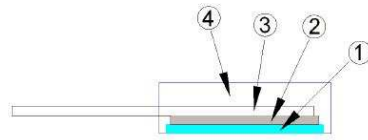
MPT35



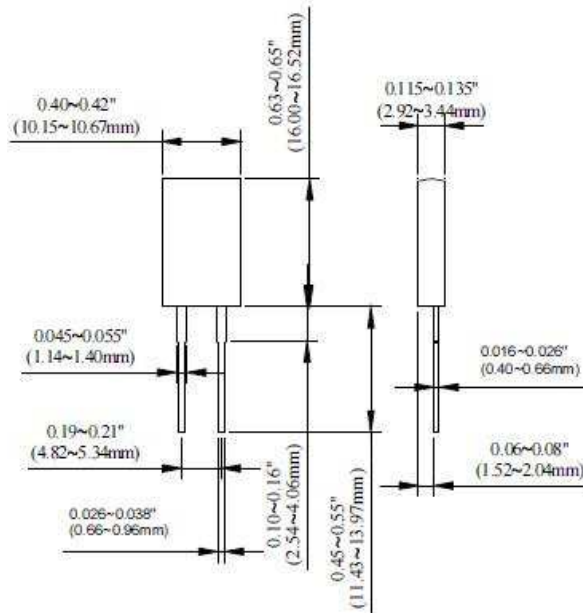
1	Flange	4	Lead
2	Alumina Substrate	5	Moulding
3	Resistor Layer		



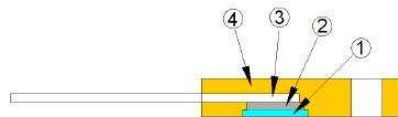
MPT50



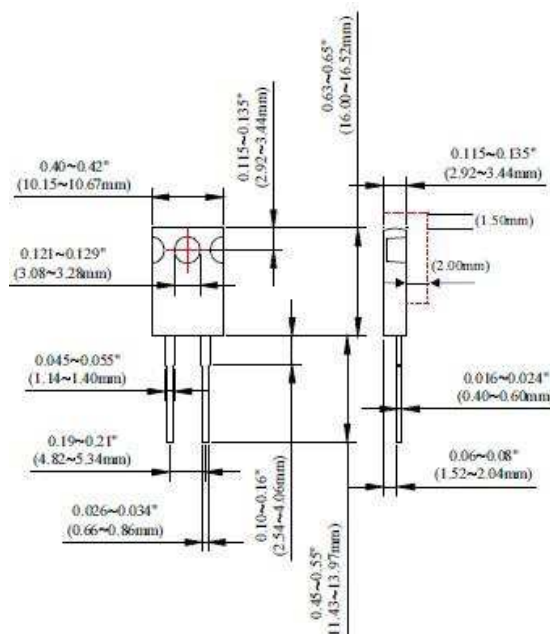
1	Alumina Substrate	3	Lead
2	Resistor Layer	4	Moulding



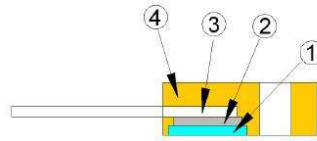
MPT50H



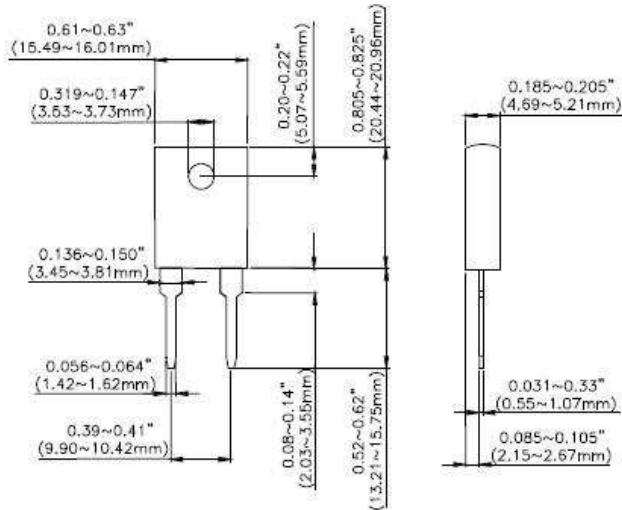
1	Alumina Substrate	3	Lead
2	Resistor Layer	4	Moulding



MPT100



1	Alumina Substrate	3	Lead
2	Resistor Layer	4	Moulding



Packaging

Model	Net Weight (1000 pieces)	Tube
MPT20	1290g	50 pieces
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	20 – 20W 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%

Mouser Electronics

Authorized Distributor

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TE Connectivity:

[MPT100A10RF](#) [MPT100A10RJ](#) [MPT100A3R3F](#) [MPT100A3R3J](#) [MPT35C82RF](#) [MPT35C8K2F](#) [MPT100C33RF](#)
[MPT100C33RJ](#) [MPT100C390RF](#) [MPT35C12RF](#) [MPT35C68RF](#) [MPT35C68RJ](#) [MPT35C6K8F](#) [MPT35C6K8J](#)
[MPT35C820RF](#) [MPT100X1R0J](#) [MPT35C100RF](#) [MPT35C100RJ](#) [MPT35C10KF](#) [MPT35C10KJ](#) [MPT35C120RF](#)
[MPT100C56RF](#) [MPT100C5K6F](#) [MPT100C680RF](#) [MPT100C680RJ](#) [MPT100T2R2J](#) [MPT100T2R7F](#) [MPT100C470RJ](#)
[MPT100C47RF](#) [MPT100C47RJ](#) [MPT100C4K7F](#) [MPT100C4K7J](#) [MPT100C560RF](#) [MPT35C3K3F](#) [MPT35C3K3J](#)
[MPT35C3K9F](#) [MPT35C470RF](#) [MPT35C470RJ](#) [MPT100C470RF](#) [MPT35C22RF](#) [MPT35C22RJ](#) [MPT35C33RF](#)
[MPT35C33RJ](#) [MPT35C390RF](#) [MPT35C39RF](#) [MPT35XR47J](#) [MPT35XR68J](#) [MPT35C1K5J](#) [MPT35C1K8F](#)
[MPT35C220RF](#) [MPT35C220RJ](#) [MPT35C680RF](#) [MPT35C680RJ](#) [MPT35XR10J](#) [MPT35XR15J](#) [MPT35XR22J](#)
[MPT35XR33J](#) [MPT35C47RJ](#) [MPT35C4K7F](#) [MPT35C4K7J](#) [MPT35C560RF](#) [MPT35C56RF](#) [MPT35C5K6F](#)
[MPT35C2K2F](#) [MPT35C2K2J](#) [MPT35C2K7F](#) [MPT35C330RF](#) [MPT35C330RJ](#) [MPT35C47RF](#) [MPT35A1R5J](#)
[MPT35A1R8F](#) [MPT35A2R2F](#) [MPT35A2R2J](#) [MPT35C270RF](#) [MPT35C27RF](#) [MPT100C2K2F](#) [MPT100C2K2J](#)
[MPT100C2K7F](#) [MPT100C330RF](#) [MPT100C330RJ](#) [MPT35A1R5F](#) [MPT100C220RF](#) [MPT100C220RJ](#) [MPT100C22RF](#)
[MPT100C22RJ](#) [MPT100C270RF](#) [MPT100C27RF](#) [MPT100T1R2F](#) [MPT100T1R5F](#) [MPT100T1R5J](#) [MPT100T1R8F](#)
[MPT100T2R2F](#) [MPT100C1K8F](#) [MPT100C68RJ](#) [MPT100C6K8F](#) [MPT100C6K8J](#) [MPT100C820RF](#) [MPT100C82RF](#)
[MPT100C8K2F](#) [MPT35C18RF](#)