

## **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 T0247 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		-65°C ~175°C

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Dimensions in millimetres unless otherwise specified Dimensions Shown for reference purposes only. Specifications subject to change



# TCR / Tolerance Value Chart

	0.5%	1%	5%	10%	TCR
MPT20		-		R05 ~ 1R0	Unspecified
	-		1R1 ~ 3R0		
		3R3 ~ 10R			100PPM
		1	11R ~1M0		
		-	- R05 ~1R0		Unspecified
MPT30	-		1R1 ~ 3R0		300PPM
			3R3 ~10R		100PPM
		1	11R ~100K		
		-		R05 ~ R91	Unspecified
MPT35	-		1R0 ~ 10R		100PPM
		1	11R ~ 10K		50PPM
		1R0		R10~1R0	Unspecified
MPT50	-		1R1 ~3R0		300PPM
IVIF 150		3R3 ~ 10R			100PPM
		1	11R ~10K		
		1R0		R10~1R0	Unspecified
MPT50H	-	- 1R1 ~ 3R0		300PPM	
		3R3 ~ 10R			100PPM
		11R ~ 10K			50PPM
		-		R05 ~ 1R0	Unspecified
MPT100	_		1R1 ~ 3R0		300PPM
IVIF I 100	-		3R3 ~ 10R		100PPM
			11R ~ 100K		50PPM

## **Characteristics – Environmental**

Test Item	Requirement	Test Method
Temperature Coefficient of	As Spec.	Referenced to 25°C, ΔR taken at
Resistance (T.C.R.)		+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.

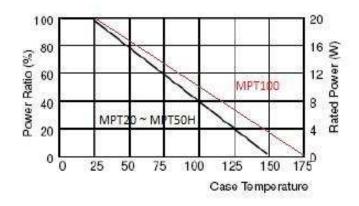
Thermal Grease should be Applied Properly

RCWV (Rated continuous working voltage)=  $V(P^*R)$  or Max. Operating voltage whichever is lower

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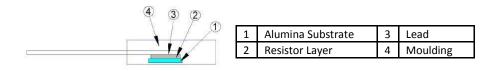


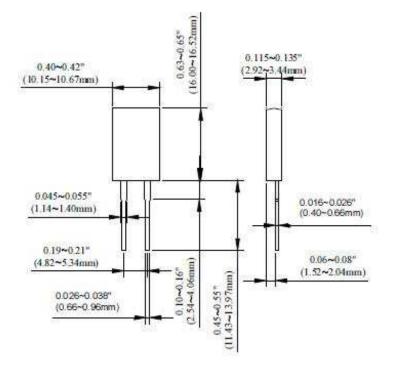
## **Derating Curve**



## **Construction and dimensions**

## **MPT20**



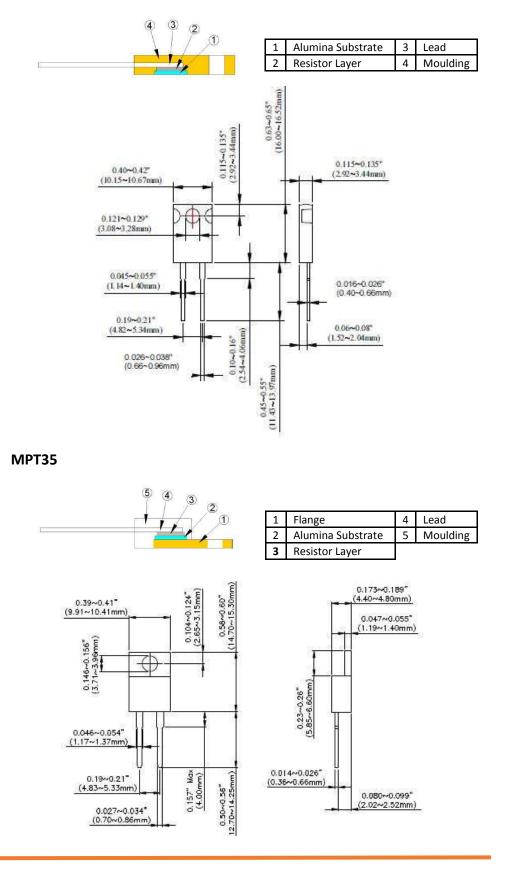


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### **MPT30**

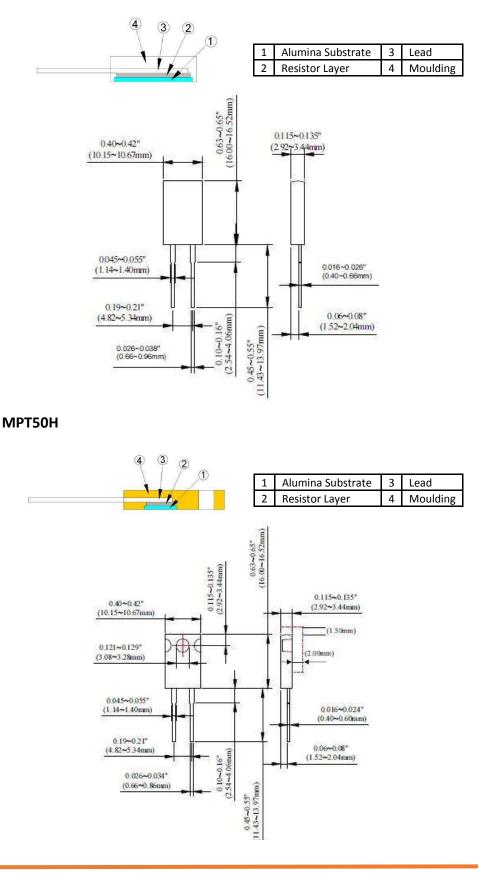


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**MPT50** 

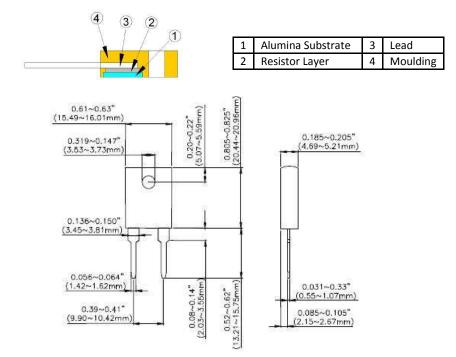


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### **MPT100**



# Packaging

Model	Net Weight (1000 pieces)	Tube
MPT20	1290g	50 pieces
MPT30	1155g	50 pieces
MPT35	1902g	50 pieces
MPT50	1290g	50 pieces
МРТ50Н	2770g	50 pieces
MPT100	3381g	35 pieces

### **How To Order**

MPT	35	С	100R	J
Common Part	Power Rating on Heatsink @25°C	Temp. Coefficient of Resistance	Resistance Value	Tolerance
МРТ	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%

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# **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 MPT100C390RF 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 MPT35C470RJ MPT100C470RF MPT35XR68J MPT35C1K5J MPT35C1K8F MPT35C220RF MPT35C220RJ MPT35C680RF MPT35C680RJ MPT35XR10J MPT35XR15J MPT35C1K8F MPT35C220RF MPT35C247RJ MPT35C4K7F MPT35C4K7J MPT35C560RF MPT35C56RF MPT35C5K6F MPT35C2K2F MPT35C2K2J MPT35C2K7F MPT35C330RF MPT35C330RJ MPT35C47RF MPT35A1R5J MPT35A1R8F MPT35A2R2F MPT35A2R2J MPT35C270RF MPT35C27RF MPT100C2K2F MPT100C2K2F MPT100C2K7F MPT100C270RF MPT100C330RJ MPT35A1R5F MPT100C220RF MPT100C2K2F MPT100C2K2F MPT100C22RJ MPT100C270RF MPT100C27RF MPT100T1R2F MPT100T1R5F MPT100T1R5J MPT100T1R8F MPT100C2R7F MPT100C1K8F MPT100C668RJ MPT100C6K8F MPT100C6K8J MPT100C820RF MPT100C82RF MPT100C2K7F MPT100C270RF MPT100C668RJ MPT100C6K8F MPT100C6K8J MPT100C820RF MPT100C82RF MPT100C287F MPT35C18RF