

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

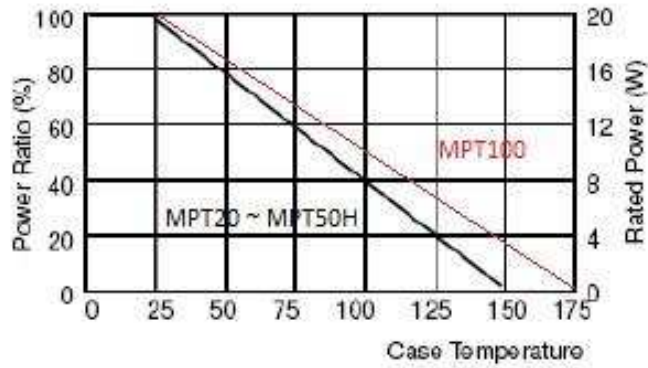
The Case Temperature is to be used for the Definition of the Applied Power Limit

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

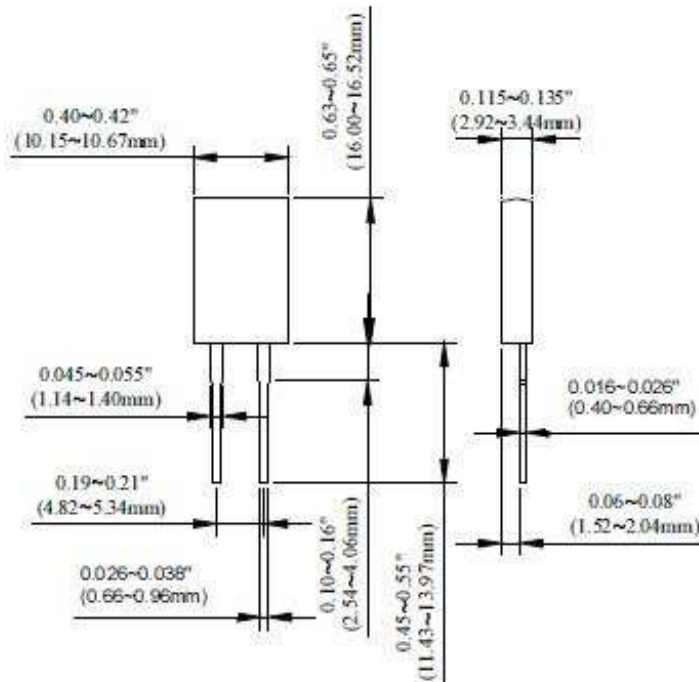


Construction and dimensions

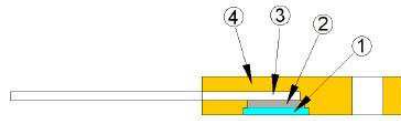
MPT20



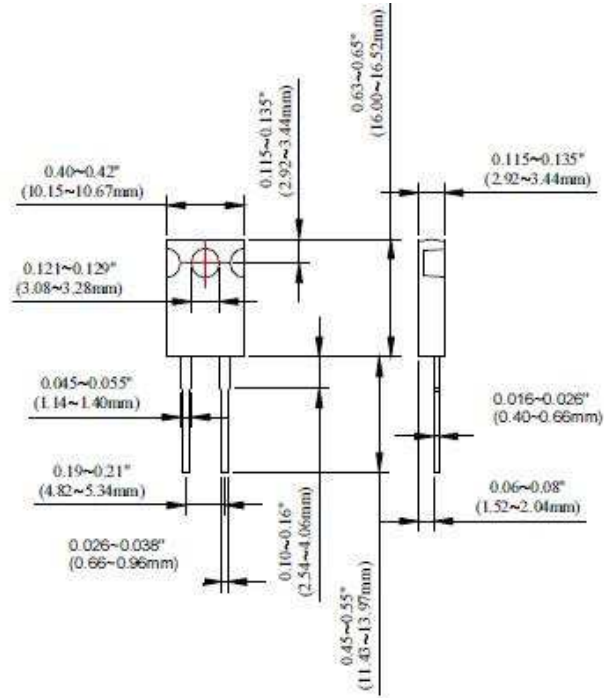
| | | | |
|---|-------------------|---|----------|
| 1 | Alumina Substrate | 3 | Lead |
| 2 | Resistor Layer | 4 | Moulding |



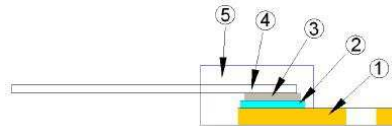
MPT30



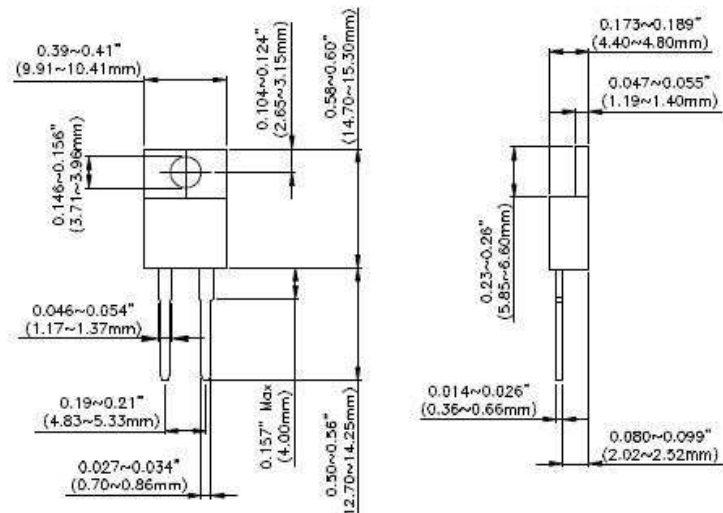
| | | | |
|---|-------------------|---|----------|
| 1 | Alumina Substrate | 3 | Lead |
| 2 | Resistor Layer | 4 | Moulding |



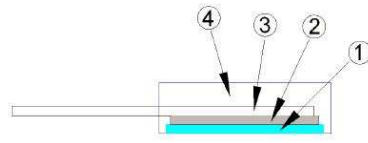
MPT35



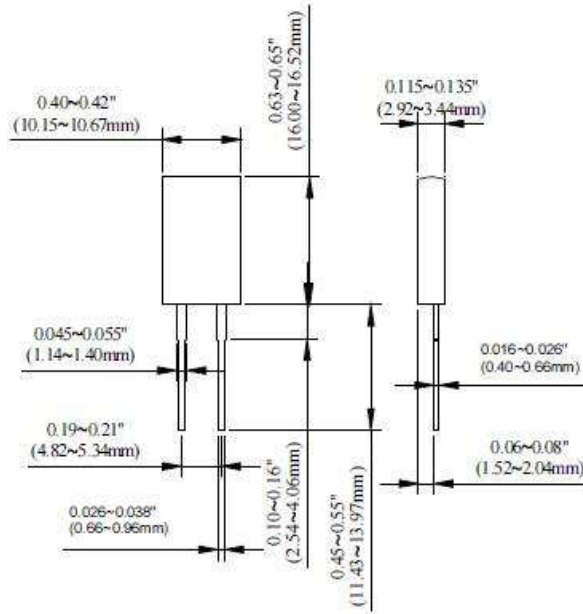
| | | | |
|---|-------------------|---|----------|
| 1 | Flange | 4 | Lead |
| 2 | Alumina Substrate | 5 | Moulding |
| 3 | Resistor Layer | | |



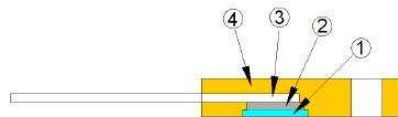
MPT50



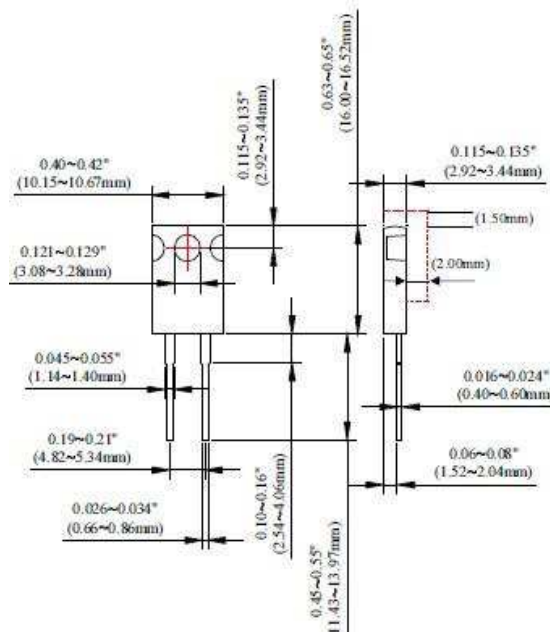
| | | | |
|---|-------------------|---|----------|
| 1 | Alumina Substrate | 3 | Lead |
| 2 | Resistor Layer | 4 | Moulding |



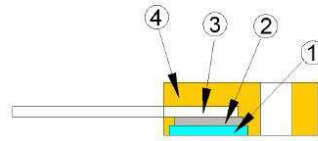
MPT50H



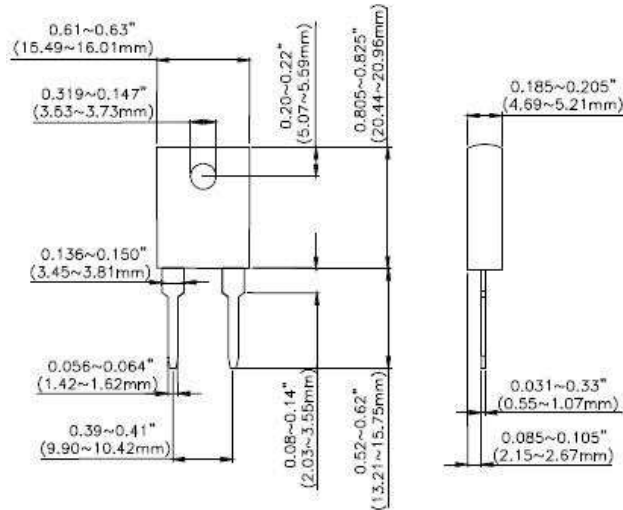
| | | | |
|---|-------------------|---|----------|
| 1 | Alumina Substrate | 3 | Lead |
| 2 | Resistor Layer | 4 | Moulding |



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% |

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [Thick Film Resistors - Through Hole](#) *category:*

Click to view products by [TE Connectivity](#) *manufacturer:*

Other Similar products are found below :

[M8340104M4701GCD03](#) [M8340105K3300GGD03](#) [M8340105K3922FGD03](#) [M8340106K1002JCD03](#) [M8340107K1002GGD03](#)
[M8340107K1152FGD03](#) [M8340107K2701GCD03](#) [M8340107M2002GCD03](#) [M8340108K1000GCD03](#) [M8340108K5601GCD03](#)
[M8340108M2203GCD03](#) [M8340109K1002JCD03](#) [M8340109K2001GCD03](#) [M8340109K5101GGD03](#) [FHV05010M0FKRB](#) [MOX-2-125005F](#) [MP850-3.00-1%](#) [MS220-1K-1%](#) [hte24511kf](#) [SM-SP093](#) [ARC3.11](#) [2M J A](#) [M8340105K1001GCD03](#) [M8340105K3002GGD03](#)
[M8340105M1002JGD03](#) [M8340107K2001GGD03](#) [M8340107K4701GGD03](#) [M8340107K5101GGD03](#) [M8340107K5600GGD03](#)
[M8340108K4990FGD03](#) [M8340108K49R9FGD03](#) [M8340108M10R0GGD03](#) [M8340109K2202GGD03](#) [M8340109K5601GCD03](#) [MOX-GRD-001](#) [MOX-SP020](#) [MOX-SP025E](#) [M8340107K2001GCD03](#) [M8340102M4701GBD04](#) [M8340102K1002GBD04](#)
[M8340102K1002GAD04](#) [M8340109K2002GGD03](#) [M8340108K22R0GGD03](#) [M8340107M5100GGD03](#) [OE1305](#) [WMHP100-R22J](#)
[M8340104K39R2FCD03](#) [M8340106MA012JHD03](#) [M8340107K1003GGD03](#) [MS126-9.09K-0.1%](#) [MS126-249K-0.1%](#)