# PTC Resettable Fuse
# Radial Leaded Type

MPTH Series

MERITEK

## FEATURE

- **Operation Current: 80mA to 400mA**
- **Maximum Interrupt Voltage: 250V / 600V**
- **Temperature Range: -40ºC to 85ºC**
- **Low hold current Solid State**
- **Wide variety of electronic applications**
- **UL/cUL safety approved: certification No: E223037**
- **TUV safety approved: certification No: R50223766**


## PART NUMBERING SYSTEM

**MPTH** **250V** **080** **V**
(1) (2) (3) (4)

RoHS

| No | Item | Digit | Description | Series Reference |
|---|---|---|---|---|
| (1) | **Meritek Series** | MPTH | Polymer Resettable Fuse Series | Radial Lead Type |
| (2) | **Voltage Rating** | 250V | 250V: 250VDC | 300V: 300VDC |
| (3) | **Current Rating** | 080 | 080: 80mA | 110: 110mA, |
| (4) | **Internal Code** | V | V: High Operating Voltage | X: Round Type, M: Special Type |

## ELECTRICAL CHARACTERISTICS AT 23ºC

| Item | Value | | Characteristics |
|---|---|---|---|
| **Hold Current** | 0.08A | | **$I_H$**=Hold current-maximum current at which the device will not trip at 23ºC still air. |
| **Trip Current** | 0.16A | | **$I_T$**=Trip current-minimum current at which the device will always trip at 23ºC still air. |
| **Rated Voltage** | $60V_{DC}$ | | **$V_{MAX}$**=Maximum voltage device can withstand without damage at its rated current ($I_{MAX}$). |
| **Max Current** | 3.0A | | **$I_{MAX}$**= Maximum fault current device can withstand without damage at rated voltage (V MAX). |
| **Typical Power** | 1.0W | | **$P_d$**=Typical power dissipated-type amount of power dissipated by the device when in the tripped state in 23ºC still air environment. |
| **Max Time to Trip** | 4.0Sec. | | Device response time, at current 0.35A |
| **Resistance** | $R_{MIN}$ | 14.0 Ω | **$R_{MIN}$**=Minimum device resistance at 23ºC prior to tripping. |
| | $R1_{MAX}$ | 33.0 Ω | **$R1_{MAX}$**=Maximum device resistance at 23ºC measured 1 hour after tripping or reflow soldering of 260ºC for 20 seconds. |

* Physical specifications:
  - Soldering characteristics: MIL-STD-202, Method 208E.
  - Insulating coating: Flame retardant epoxy, meet UL-94V-0 requirement.
  - Lead material: Tin plated copper, 22 AWG.
* All MPTH products are designed to assist equipment to pass ITU, UL1950 or GR1089 specification.
* MPTH150-600M, MPTH160-600V meet UL497A Overvoltage and Endurance Conditioning requirements for Thermistor type component.
* CAUTION: MPTH devices are not intended for continuous use of Line Voltage such as $120V_{AC}$ ~ $600V_{AC}$ and above.

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## ELECTRICAL CHARACTERISTICS AT 23ºC

| Part Number | Hold Current | Trip Current | Maximum Current | Max Oper. Voltage | Max Int. Voltage | Typical Power | Max.Time to trip | | Resistance | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Current | Time | $R_{MIN}$ | $R1_{MAX}$ |
| | $I_H$, A | $I_T$, A | $I_{MAX}$, A | $V_{MAX}$, $V_{DC}$ | $V_{I-MAX}$,V | $P_d$, W | A | Sec. | ohms | ohms |
| MPTH250V080V | 0.08 | 0.16 | 3.0 | 100 | 250 | 1.0 | 0.35 | 4.0 | 14.0 | 33.0 |
| MPTH250V110V | 0.11 | 0.22 | 3.0 | 100 | 250 | 1.0 | 1.00 | 2.0 | 5.00 | 16.0 |
| MPTH250V120V | 0.12 | 0.24 | 3.0 | 100 | 250 | 1.0 | 1.00 | 2.0 | 4.00 | 16.0 |
| MPTH250V145V | 0.15 | 0.29 | 3.0 | 100 | 250 | 1.0 | 1.00 | 2.5 | 3.00 | 12.0 |
| MPTH250V180X | 0.18 | 0.65 | 10.0 | 100 | 250 | 1.5 | 3.00 | 2.0 | 0.80 | 4.0 |
| MPTH600V150M | 0.15 | 0.30 | 3.0 | 250 | 600 | 1.0 | 1.00 | 4.0 | 6.00 | 17.0 |
| MPTH600V160M | 0.16 | 0.32 | 3.0 | 250 | 600 | 1.0 | 1.00 | 7.0 | 4.00 | 16.0 |
| MPTH600V160V | 0.16 | 0.32 | 3.0 | 250 | 600 | 1.0 | 1.00 | 7.0 | 4.00 | 18.0 |
| MPTH600V200V | 0.20 | 0.40 | 3.0 | 250 | 600 | 1.0 | 1.00 | 12.0 | 4.00 | 13.5 |
| MPTH600V250V | 0.25 | 0.86 | 3.0 | 250 | 600 | 1.0 | 3.00 | 1.0 | 1.00 | 7.0 |
| MPTH600V400 | 0.40 | 1.00 | 3.0 | 60 | 600 | 1.0 | 3.00 | 4.0 | 0.95 | 1.9 |

## DIMENSIONS

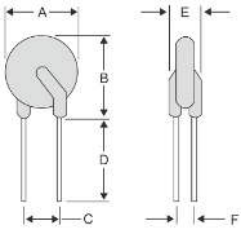



**Figure 1**
**Lead Size: 22AWG**
**Φ 0.65 mm Diameter**

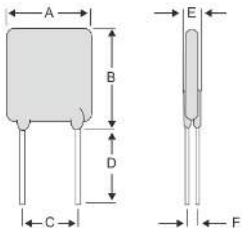
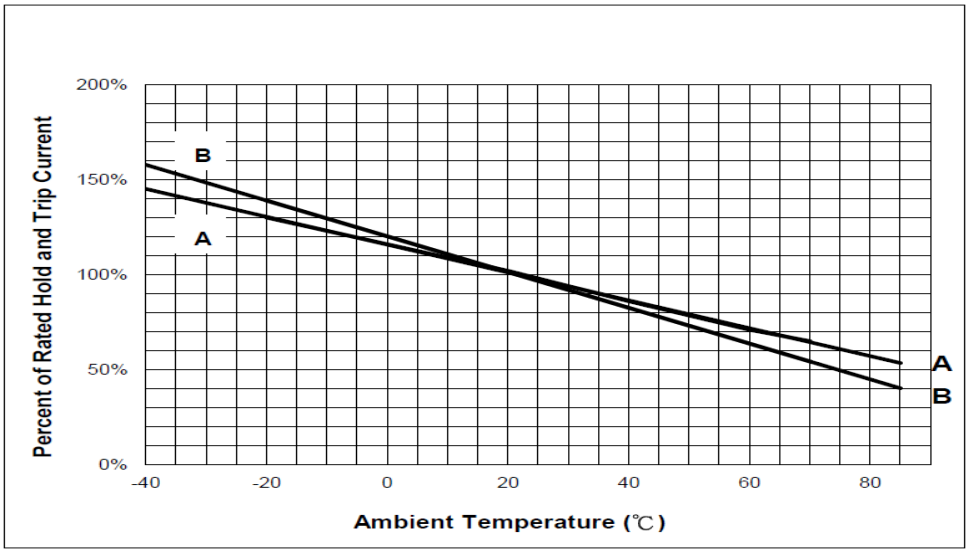



**Figure 2**
**Lead Size: 22AWG**
**Φ 0.65 mm Diameter**

| Part Number | Figure | A (mm) | B (mm) | C (mm) | D (mm) | E (mm) |
|---|---|---|---|---|---|---|
| | | Maximum | Maximum | Typical | Minimum | Maximum |
| MPTH250V080V | 1 | 5.8 | 9.6 | 5.0 | 4.7 | 4.6 |
| MPTH250V110V | 1 | 6.8 | 9.9 | 5.0 | 4.7 | 4.6 |
| MPTH250V120V | 2 | 6.5 | 11 | 5.0 | 4.7 | 4.6 |
| MPTH250V145V | 2 | 6.5 | 11 | 5.0 | 4.7 | 4.6 |
| MPTH250V180X | 1 | 9.0 | 12 | 5.0 | 4.7 | 3.8 |
| MPTH600V150M | 2 | 9.0 | 12.5 | 5.0 | 4.7 | 4.6 |
| MPTH600V160M | 2 | 9.0 | 12.5 | 5.0 | 4.7 | 4.6 |
| MPTH600V160V | 2 | 16.0 | 12.6 | 5.0 | 4.7 | 6 |
| MPTH600V200V | 2 | 12.0 | 14 | 5.0 | 4.7 | 6 |
| MPTH600V250V | 2 | 12.0 | 15 | 5.0 | 4.7 | 6 |
| MPTH600V400 | 2 | 15.0 | 14.5 | 5.0 | 4.7 | 6 |

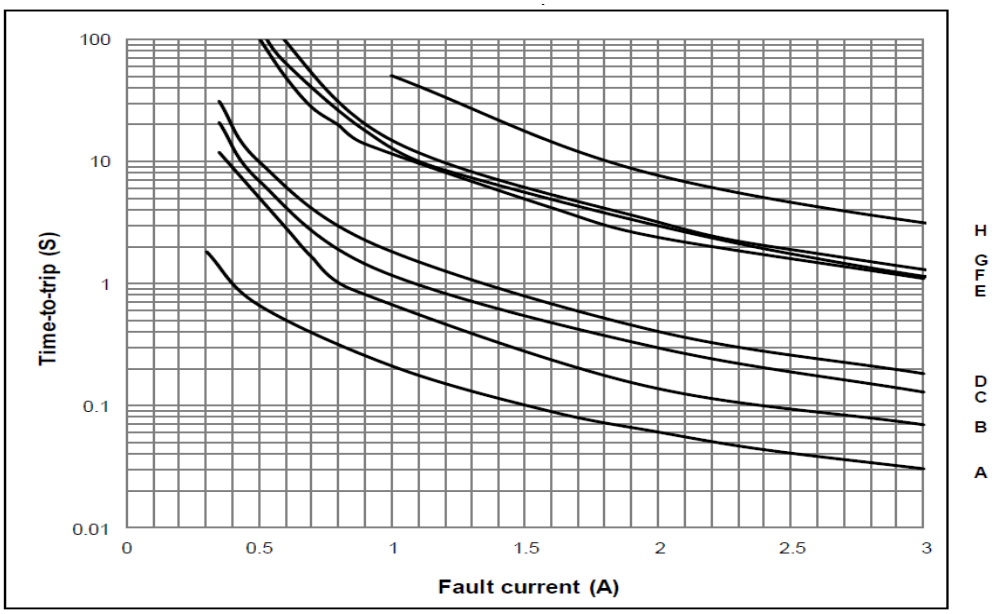
## THERMAL DERATING CURVE

**A: MPTH250V180X**
**B: All other MPTH Devices**




## TYPICAL TIME-TO-TRIP AT 23ºC (CONTINUED)

**A = MPTH250V080V**
**B = MPTH250V110V**
**C = MPTH250V120V**
**D = MPTH250V145V**
**E = MPTH600V160V**
**F = MPTH600V200V**
**G = MPTH600V250V**
**H = MPTH600V400**




## WARNING

- Operation beyond the specified maximum ratings or improper use may result in damage and possible electrical arcing and/or flame.
- PPTC device are intended for occasional overcurrent protection. Application for repeated overcurrent condition and/or prolonged trip is not anticipated.
- Avoid contact of PPTC device with chemical solvent. Prolonged contact will damage the device performance

**NOTE: Specification subject to change without notice.**