

# Polymeric PTC

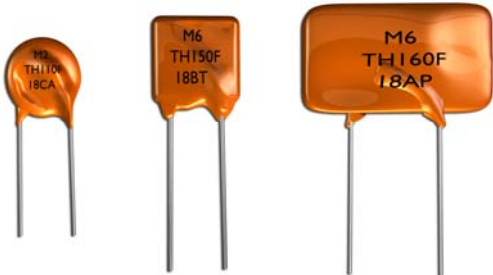


<b>MPTH Series</b>	<b>MERITEK</b>
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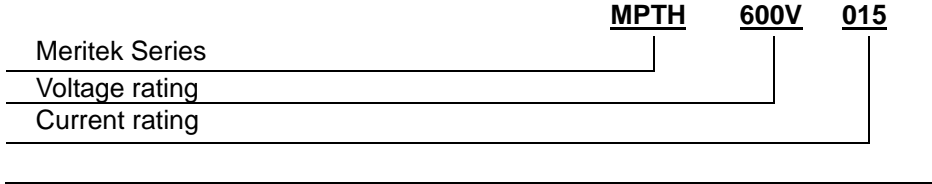
## Feature and Applications

UL E223037

- ROHS Compliant (Lead Free) Product
- Wide variety of electronic applications
- Low hold current Solid state, Radial leaded product ideal for up to 60V/250V/600V
- Operation Current: 80mA to 180mA
- Maximum Operating Voltage: 100V / 250V
- Maximum Interrupt Voltage: 250V / 600V
- Temperature Range: -40°C to 85°C



### PART NUMBERING SYSTEM



# Polymeric PTC



MPTH Series

MERITEK

## Electrical Characteristics (23°C)

Part Number	Hold Current	Trip Current	Max. Time To Trip		Maximum Current	Max Oper. Voltage	Max Int. Voltage	Typical Power	Resistance Tolerance	
			Current	Time					RMIN	R1MAX
			I <sub>H</sub> , A	I <sub>T</sub> , A					A	Sec
MPTH250V080U	0.08	0.16	0.35	4.0	3.0	60	250	1.0	14.0	33.0
MPTH250V080	0.08	0.16	0.35	4.0	3.0	60	250	1.0	14.0	33.0
MPTH250V110U	0.11	0.22	1.00	2.0	3.0	60	250	1.0	5.0	16.0
MPTH250V110	0.11	0.22	1.00	2.0	3.0	60	250	1.0	5.0	16.0
MPTH250V120U	0.12	0.24	1.00	2.0	3.0	60	250	1.0	6.0	16.0
MPTH250V120	0.12	0.24	1.00	2.0	3.0	60	250	1.0	4.0	16.0
MPTH250V145U	0.15	0.29	1.00	2.5	3.0	60	250	1.0	3.5	12.0
MPTH250V145	0.15	0.29	1.00	2.5	3.0	60	250	1.0	3.0	12.0
MPTH250V180U	0.18	0.65	1.50	10.0	10.0	60	250	1.5	0.8	4.0
MPTH250V180	0.18	0.65	1.50	11.0	10.0	60	250	1.5	0.8	4.0
MPTH600V150	0.15	0.30	1.00	5.0	3.0	60	600	1.6	6.0	22.0
MPTH600V160	0.16	0.32	1.00	7.0	3.0	60	600	1.6	4.0	18.0

I<sub>H</sub>=Hold current-maximum current at which the device will not trip at 23°C still air.

I<sub>T</sub>=Trip current-maximum current at which the device will always trip at 23°C still air.

V<sub>MAX</sub>=Maximum operating voltage at which the device can withstand without damage at its rated current.

V<sub>I-MAX</sub> = Maximum interrupt voltage device can withstand for short period of time. (Not for long term.)

I<sub>MAX</sub>= Maximum fault current device can withstand without damage at rated voltage (V<sub>MAX</sub>).

Pd=Typical power dissipated from device when in the tripped state in 23°C still air environment.

R<sub>MIN</sub>=Minimum device resistance at 23°C.

R<sub>1MAX</sub>=Maximum device resistance at 23°C 1 hour after tripping .

Physical specifications:

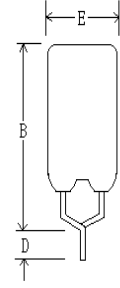
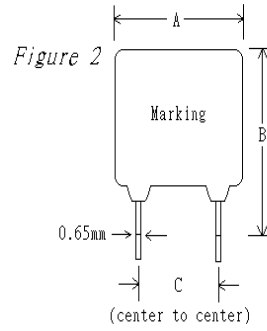
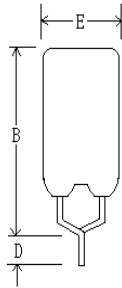
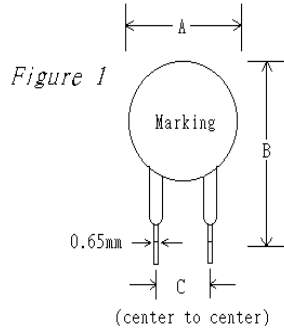
Lead material: MPTH250V080 ~ MPTH250V180 Tin plated copper, 22 AWG.

MPTH600V150 ~ MPTH600V160 Tin plated copper, 22 AWG.

Soldering characteristics:MIL-STD-202, Method 208E.

Insulating coating:Flame retardant epoxy ,meet UL-94V-0 requirement.

### Product Dimensions (Millimeters)



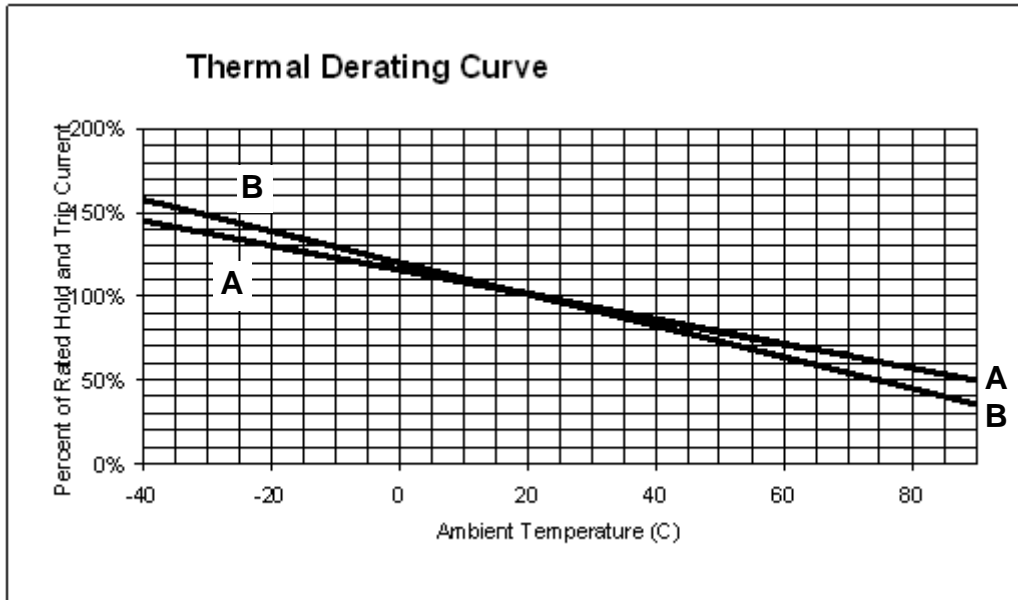
**Figure 1**  
Lead Size: 22AWG  
Φ 0.65 mm Diameter

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

Part Number	Fig	A	B	C	D	E
		Maximum	Maximum	Typical	Minimum	Maximum
MPTH250V080U	1	5.1	9.1	5.0	4.7	3.8
MPTH250V080	1	5.8	9.6	5.0	4.7	4.6
MPTH250V110U	1	5.9	9.4	5.0	4.7	3.8
MPTH250V110	1	6.8	9.9	5.0	4.7	4.6
MPTH250V120U	2	6.0	10.0	5.0	4.7	3.8
MPTH250V120	2	6.5	11.0	5.0	4.7	4.6
MPTH250V145U	2	6.0	10.0	5.0	4.7	3.8
MPTH250V145	2	6.5	11.0	5.0	4.7	4.6
MPTH250V180U	2	10.4	12.6	5.0	4.7	3.8
MPTH250V180	2	10.9	12.6	5.0	4.7	4.6
MPTH600V150	2	14.0	12.6	5.0	4.7	6.0
MPTH600V160	2	16.0	12.6	5.0	4.7	6.0



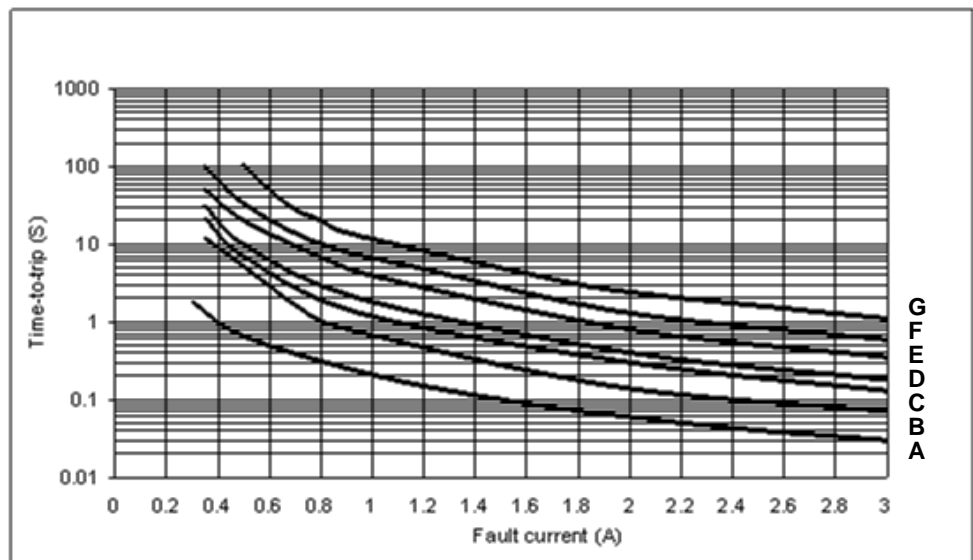
### Thermal Derating Curve



A= MPTH250V180U / MPTH250V180  
 B= All other MPTH devices

### Typical Time-To-Trip at 23°C

- A = MPTH250V080U / MPTH250V080
- B = MPTH250V110U / MPTH250V110
- C = MPTH250V120U / MPTH250V120
- D = MPTH250V145U / MPTH250V145
- E = MPTH250V180U / MPTH250V180
- F = MPTH600V150
- G = MPTH600V160





### Electrical Characteristics (23°C)

Part Number	Hold Current	Trip Current	Max. Time To Trip		Maximum Current	Max Oper. Voltage	Max Int. Voltage	Typical Power	Resistance	
			Current	Time					R <sub>MIN</sub>	R <sub>1MAX</sub>
			I <sub>H</sub> , A	I <sub>T</sub> , A					A	Sec
MPTH250V080UV	0.08	0.16	0.35	4.0	3.0	100	250	1.0	14.0	33.0
MPTH250V080V	0.08	0.16	0.35	4.0	3.0	100	250	1.0	14.0	33.0
MPTH250V110UV	0.11	0.22	1.00	2.0	3.0	100	250	1.0	5.0	16.0
MPTH250V110V	0.11	0.22	1.00	2.0	3.0	100	250	1.0	5.0	16.0
MPTH250V120UV	0.12	0.24	1.00	2.0	3.0	100	250	1.0	6.0	16.0
MPTH250V120V	0.12	0.24	1.00	2.0	3.0	100	250	1.0	4.0	16.0
MPTH250V145UV	0.15	0.29	1.00	2.5	3.0	100	250	1.0	3.5	12.0
MPTH250V145V	0.15	0.29	1.00	2.5	3.0	100	250	1.0	3.0	12.0
MPTH250V180UV	0.18	0.65	1.50	10.0	10.0	100	250	1.5	0.8	4.0
MPTH250V180V	0.18	0.65	1.50	11.0	10.0	100	250	1.5	0.8	4.0
MPTH250V180XV	0.18	0.65	3.00	2.0	10.0	100	250	1.5	0.8	4.0
MPTH600V150V	0.15	0.30	1.00	5.0	3.0	250	600	1.0	6.0	22.0
MPTH600V150M	0.15	0.30	1.00	4.0	3.0	250	600	1.0	6.0	17.0
MPTH600V160V	0.16	0.32	1.00	7.0	3.0	250	600	1.0	4.0	18.0

I<sub>H</sub>=Hold current-maximum current at which the device will not trip at 23°C still air.

I<sub>T</sub>=Trip current-maximum current at which the device will always trip at 23°C still air.

V<sub>MAX</sub>=Maximum operating voltage at which the device can withstand without damage at its rated current.

V<sub>I-MAX</sub> = Maximum interrupt voltage device can withstand for short period of time. (Not for long term.)

I<sub>MAX</sub>= Maximum fault current device can withstand without damage at rated voltage (V<sub>MAX</sub>).

Pd=Typical power dissipated from device when in the tripped state in 23°C still air environment.

R<sub>MIN</sub>=Minimum device resistance at 23°C.

R<sub>1MAX</sub>=Maximum device resistance at 23°C 1 hour after tripping .

Physical specifications:

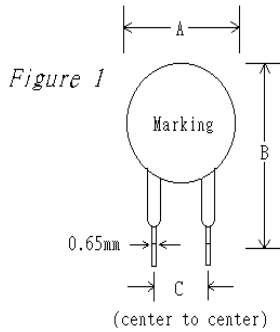
Lead material: MPTH250V080V ~ MPTH250V180V Tin plated copper, 22 AWG.

MPTH600V150V ~ MPTH600V160V Tin plated copper, 22 AWG.

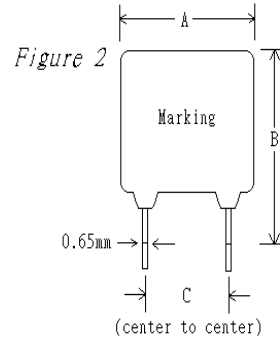
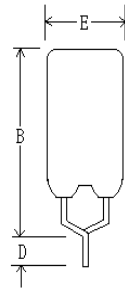
Soldering characteristics:MIL-STD-202, Method 208E.

Insulating coating:Flame retardant epoxy ,meet UL-94V-0 requirement.

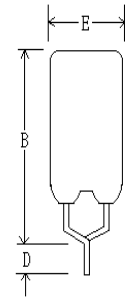
### Product Dimensions (Millimeters)



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



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



Part Number	Fig	A	B	C	D	E
		Maximum	Maximum	Typical	Minimum	Maximum
MPTH250V080UV	1	5.1	9.1	5.0	4.7	3.8
MPTH250V080V	1	5.8	9.6	5.0	4.7	4.6
MPTH250V110UV	1	5.9	9.4	5.0	4.7	3.8
MPTH250V110V	1	6.8	9.9	5.0	4.7	4.6
MPTH250V120UV	2	6.0	10.0	5.0	4.7	3.8
MPTH250V120V	2	6.5	11.0	5.0	4.7	4.6
MPTH250V145UV	2	6.0	10.0	5.0	4.7	3.8
MPTH250V145V	2	6.5	11.0	5.0	4.7	4.6
MPTH250V180UV	2	10.4	12.6	5.0	4.7	3.8
MPTH250V180V	2	10.9	12.6	5.0	4.7	4.6
MPTH250V180XV	1	9.0	12.0	5.0	4.7	3.8
MPTH600V150V	2	14.0	12.6	5.0	4.7	6.0
MPTH600V150M	2	9.0	12.5	5.0	4.7	4.6
MPTH600V160V	2	16.0	12.6	5.0	4.7	6.0

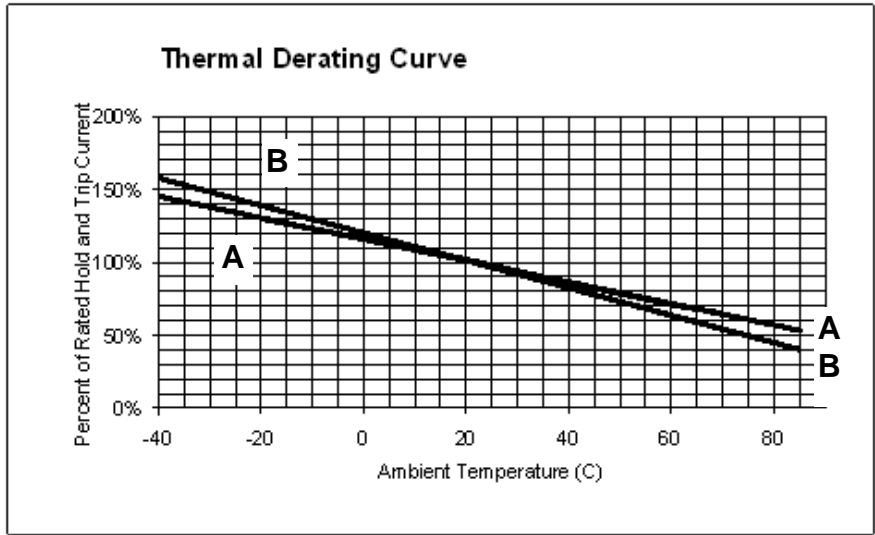
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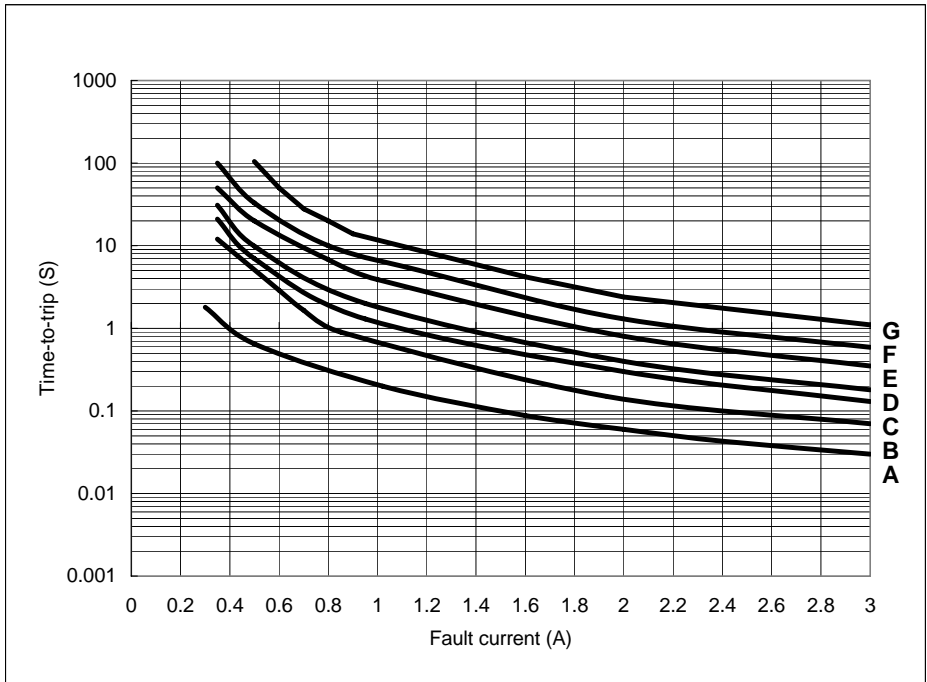
## Thermal Derating Curve



A= MPTH250V180UV  
 MPTH250V180V &  
 MPTH250V180XV  
 B= All other MPTH devices

## Typical Time-To-Trip at 23°C

- A = MPTH250V080UV / MPTH250V080V
- B = MPTH250V110UV / MPTH250V110V
- C = MPTH250V120UV / MPTH250V120V
- D = MPTH250V145UV / MPTH250V145V
- E = MPTH250V180UV / MPTH250V180V
- F = MPTH600V150V
- G = MPTH600V160V



# Polymeric PTC



MPTH Series

MERITEK

## Typical Time-To-Trip at 23°C

H = MPTH250V180XV  
I = MPTH600V150M

