

# Polymeric PTC



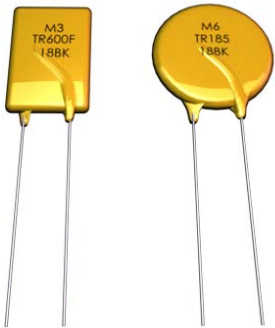
MPTR Series

MERITEK

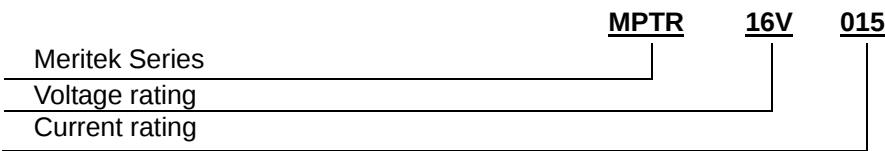
## Feature and Applications

UL E223037

- ROHS Compliant (Lead Free) Product
- Wide variety of electronic applications
- Radial leaded type
- Operation Current: Up to 14.0A
- Maximum Voltage: 16V to 90V
- Temperature Range: -40°C to 125°C



## PART NUMBERING SYSTEM



## Electrical Characteristics (23°C)

## MPTR16V

| Part Number | Hold Current       | Trip Current       | Max.Time to trip     | Maximum Current | Rated Voltage | Typical Power | Resistance Tolerance |       |
|-------------|--------------------|--------------------|----------------------|-----------------|---------------|---------------|----------------------|-------|
|             |                    |                    |                      |                 |               |               | Rmin                 | R1max |
|             | I <sub>H</sub> , A | I <sub>T</sub> , A | at 5x I <sub>H</sub> | I MAX, A        | V MAX, Vdc    | Pd, W         | ohms                 | ohms  |
| MPTR16V250  | 2.5                | 4.7                | 5.0                  | 100             | 16            | 1.0           | 0.022                | 0.053 |
| MPTR16V300  | 3.0                | 5.1                | 2.0                  | 100             | 16            | 2.3           | 0.034                | 0.105 |
| MPTR16V400  | 4.0                | 6.8                | 3.5                  | 100             | 16            | 2.4           | 0.020                | 0.063 |
| MPTR16V500  | 5.0                | 8.5                | 3.6                  | 100             | 16            | 2.6           | 0.014                | 0.044 |
| MPTR16V500K | 5.0                | 8.5                | 3.6                  | 100             | 16            | 2.6           | 0.014                | 0.044 |
| MPTR16V600  | 6.0                | 10.2               | 5.8                  | 100             | 16            | 2.8           | 0.009                | 0.033 |
| MPTR16V700  | 7.0                | 11.9               | 8.0                  | 100             | 16            | 3.0           | 0.006                | 0.021 |
| MPTR16V800  | 8.0                | 13.6               | 9.0                  | 100             | 16            | 3.0           | 0.005                | 0.018 |
| MPTR16V900  | 9.0                | 15.3               | 12.0                 | 100             | 16            | 3.3           | 0.004                | 0.015 |
| MPTR16V1000 | 10.0               | 17.0               | 12.5                 | 100             | 16            | 3.3           | 0.003                | 0.012 |
| MPTR16V1100 | 11.0               | 18.7               | 13.5                 | 100             | 16            | 3.7           | 0.003                | 0.010 |
| MPTR16V1200 | 12.0               | 20.4               | 16.0                 | 100             | 16            | 4.2           | 0.002                | 0.009 |
| MPTR16V1400 | 14.0               | 23.8               | 20.0                 | 100             | 16            | 4.6           | 0.002                | 0.008 |

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-minimum current at which the device will always trip at 23°C still air.

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

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

Pd=Typical power dissipated-type amount of power dissipated by the device when in the tripped state in 23°C still air environment.

R<sub>min</sub>=Minimum device resistance at 23°C prior to tripping.

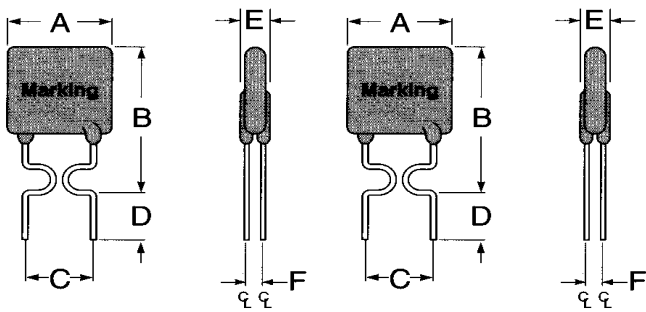
R1<sub>MAX</sub>=Maximum device resistance at 23°C measured 1 hour after tripping or reflow soldering of 260°C for 20 seconds.

Termination pad characteristics

Termination pad materials: Pure Tin

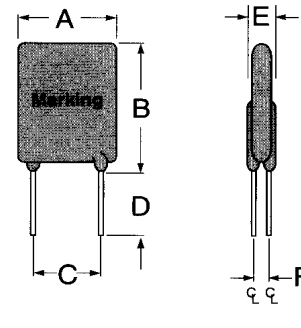
### Product Dimensions (Millimeters)

#### MPTR16V

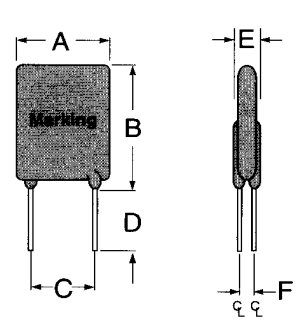


**Figure 1**  
Lead Size: 24AWG  
Φ 0.51 mm Diameter

**Figure 2**  
Lead Size: 20AWG  
Φ 0.81 mm Diameter



**Figure 3**  
Lead Size: 20AWG  
Φ 0.81 mm Diameter



**Figure 4**  
Lead Size: 18AWG  
Φ 1.0 mm Diameter

| Part Number | Fig | A       | B       | C       | D       | E       | F       |
|-------------|-----|---------|---------|---------|---------|---------|---------|
|             |     | Maximum | Maximum | Typical | Minimum | Maximum | Typical |
| MPTR16V250  | 1   | 8.9     | 12.8    | 5.1     | 7.6     | 3.0     | 1.2     |
| MPTR16V300  | 3   | 7.1     | 11.0    | 5.1     | 7.6     | 3.0     | 1.2     |
| MPTR16V400  | 3   | 8.9     | 12.8    | 5.1     | 7.6     | 3.0     | 1.2     |
| MPTR16V500  | 3   | 10.4    | 14.3    | 5.1     | 7.6     | 3.0     | 1.2     |
| MPTR16V500K | 2   | 10.4    | 18.7    | 5.1     | 7.6     | 3.0     | 1.2     |
| MPTR16V600  | 3   | 10.7    | 17.1    | 5.1     | 7.6     | 3.0     | 1.2     |
| MPTR16V700  | 3   | 11.2    | 19.7    | 5.1     | 7.6     | 3.0     | 1.2     |
| MPTR16V800  | 3   | 12.7    | 20.9    | 5.1     | 7.6     | 3.0     | 1.2     |
| MPTR16V900  | 3   | 14.0    | 21.7    | 5.1     | 7.6     | 3.0     | 1.2     |
| MPTR16V1000 | 3   | 16.5    | 24.1    | 5.1     | 7.6     | 3.0     | 1.2     |
| MPTR16V1100 | 3   | 17.5    | 26.0    | 5.1     | 7.6     | 3.0     | 1.2     |
| MPTR16V1200 | 3   | 17.5    | 28.0    | 10.2    | 7.6     | 3.6     | 1.4     |
| MPTR16V1400 | 3   | 27.9    | 27.9    | 10.2    | 7.6     | 3.6     | 1.4     |

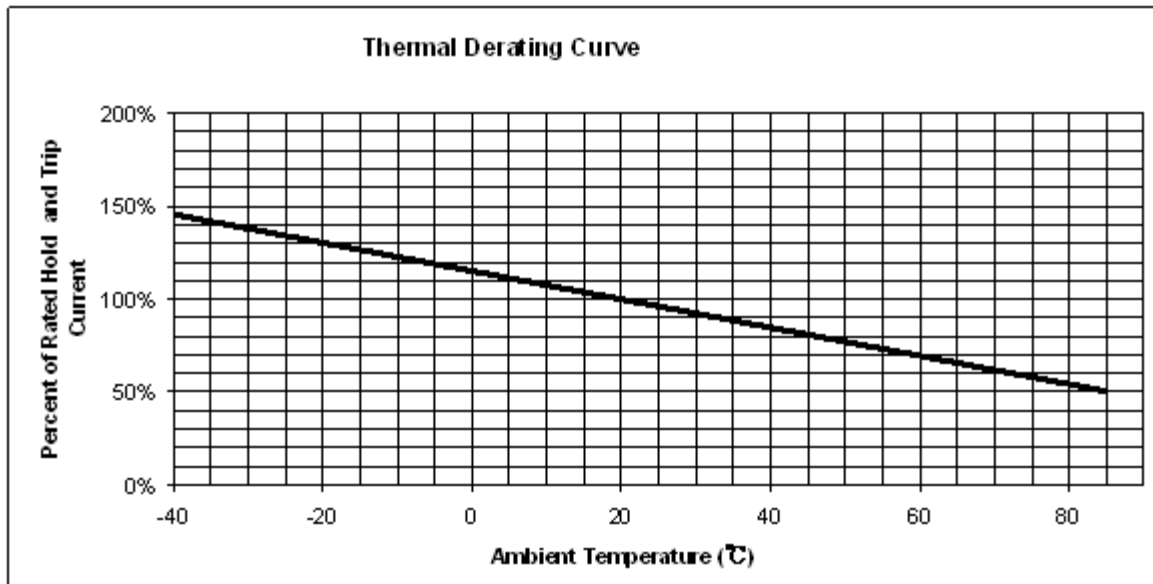
# Polymeric PTC



MPTR Series

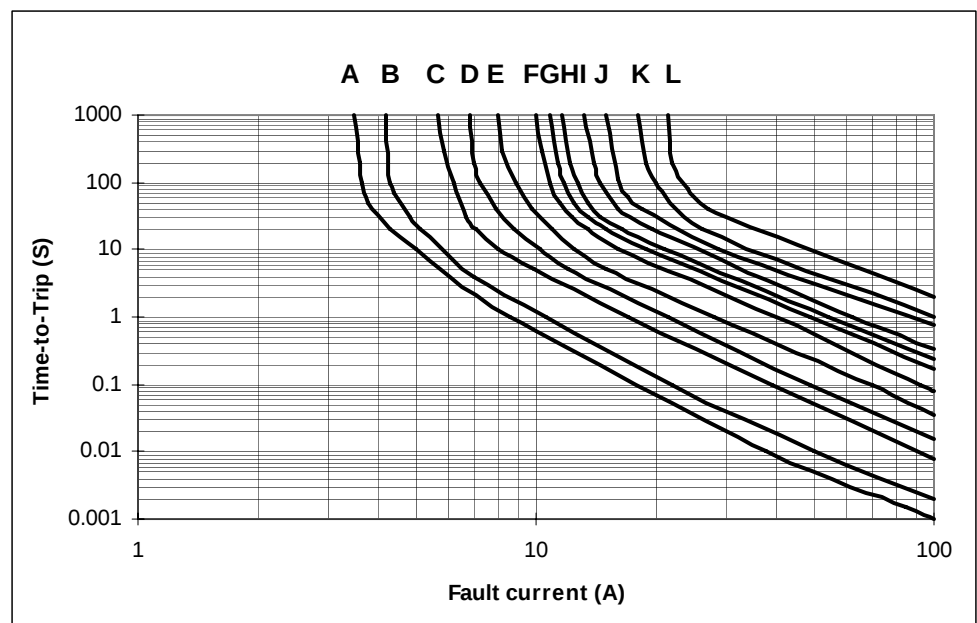
MERITEK

## Thermal Derating Curve



## Typical Time-To-Trip at 23°C

A = MPTR16V250  
B = MPTR16V300  
C = MPTR16V400  
D = MPTR16V500 and  
MPTR16V500K  
E = MPTR16V600  
F = MPTR16V700  
G = MPTR16V800  
H = MPTR16V900  
I = MPTR16V1000  
J = MPTR16V1100  
K = MPTR16V1200  
L = MPTR16V1400





### Electrical Characteristics (23°)

#### MPTR30V

| Part Number  | Hold Current       | Trip Current       | Max.Time to Trip          | Maximum Current      | Rated Voltage                      | Typical Power      | Resistance Tolerance |                     |
|--------------|--------------------|--------------------|---------------------------|----------------------|------------------------------------|--------------------|----------------------|---------------------|
|              | I <sub>H</sub> , A | I <sub>T</sub> , A | at 5xI <sub>H</sub> , Sec | I <sub>max</sub> , A | V <sub>max</sub> , V <sub>DC</sub> | P <sub>d</sub> , W | R <sub>min</sub>     | R <sub>1max</sub> . |
|              | I <sub>H</sub> , A | I <sub>T</sub> , A | at 5xI <sub>H</sub> , Sec | I <sub>max</sub> , A | V <sub>max</sub> , V <sub>DC</sub> | P <sub>d</sub> , W | ohms                 | ohms                |
| MPTR30V050H  | 0.5                | 0.9                | 2.5                       | 40                   | 30                                 | 0.9                | 0.4800               | 1.1000              |
| MPTR30V070H  | 0.7                | 1.4                | 3.2                       | 40                   | 30                                 | 1.4                | 0.3000               | 0.8000              |
| MPTR30V100H  | 1.0                | 1.8                | 5.2                       | 40                   | 30                                 | 1.4                | 0.1800               | 0.4300              |
| MPTR16V200H  | 2.0                | 3.8                | 3.0                       | 100                  | 16                                 | 1.4                | 0.0450               | 0.1100              |
| MPTR16V300H  | 3.0                | 6.0                | 5.0                       | 100                  | 16                                 | 3.0                | 0.0330               | 0.0790              |
| MPTR16V400H  | 4.0                | 7.0                | 5.0                       | 100                  | 16                                 | 3.3                | 0.0240               | 0.0600              |
| MPTR16V450H  | 4.5                | 7.8                | 3.0                       | 100                  | 16                                 | 3.6                | 0.0220               | 0.0540              |
| MPTR16V550H  | 5.5                | 10.0               | 6.0                       | 100                  | 16                                 | 3.5                | 0.0150               | 0.0370              |
| MPTR16V600H  | 6.0                | 10.8               | 5.0                       | 100                  | 16                                 | 4.1                | 0.0130               | 0.0320              |
| MPTR16V650H  | 6.5                | 12.0               | 5.5                       | 100                  | 16                                 | 4.3                | 0.0110               | 0.0260              |
| MPTR16V700H  | 7.0                | 13.0               | 7.0                       | 100                  | 16                                 | 4.0                | 0.0100               | 0.0250              |
| MPTR16V750H  | 7.5                | 13.1               | 7.0                       | 100                  | 16                                 | 4.5                | 0.0094               | 0.0220              |
| MPTR16V800H  | 8.0                | 15.0               | 8.0                       | 100                  | 16                                 | 4.2                | 0.0080               | 0.0200              |
| MPTR16V900H  | 9.0                | 16.5               | 10.0                      | 100                  | 16                                 | 5.0                | 0.0074               | 0.0170              |
| MPTR16V1000H | 10.0               | 18.5               | 9.0                       | 100                  | 16                                 | 5.3                | 0.0062               | 0.0150              |
| MPTR16V1100H | 11.0               | 20.0               | 11.0                      | 100                  | 16                                 | 5.5                | 0.0055               | 0.0130              |
| MPTR16V1300H | 13.0               | 24.0               | 13.0                      | 100                  | 16                                 | 6.9                | 0.0041               | 0.0100              |
| MPTR16V1400H | 14.0               | 27.0               | 13.0                      | 100                  | 16                                 | 6.9                | 0.0030               | 0.0090              |
| MPTR16V1500H | 15.0               | 28.0               | 20.0                      | 100                  | 16                                 | 7.0                | 0.0032               | 0.0092              |

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-minimum current at which the device will always trip at 23°C still air.

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

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

P<sub>d</sub>=Typical power dissipated-type amount of power dissipated by the device when in the tripped state in 23°C still air environment.

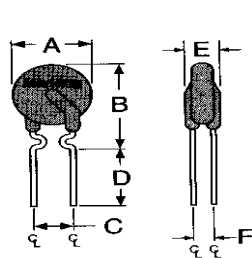
R<sub>MIN</sub>=Minimum device resistance at 23°C prior to tripping.

R<sub>1MAX</sub>=Maximum device resistance at 23°C measured 1 hour after tripping or reflow soldering of 260°C for 20 seconds.

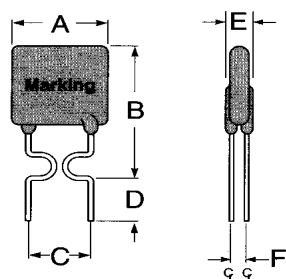
Termination pad characteristics

Termination pad materials: Pure Tin

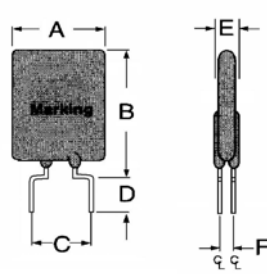
## Product Dimensions (Millimeters)



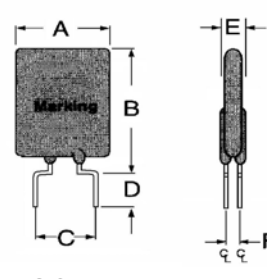
**Figure 1**  
Lead Size: 24AWG  
Φ 0.51 mm Diameter



**Figure 2**  
Lead Size: 20AWG  
Φ 0.81 mm Diameter



**Figure 3**  
Lead Size: 20AWG  
Φ 0.81 mm Diameter



**Figure 4**  
Lead Size: 18AWG  
Φ 1.0 mm Diameter

**MPTR30V**

| Part Number  | Figure | A       | B       | C       | D       | E       | F       |
|--------------|--------|---------|---------|---------|---------|---------|---------|
|              |        | Maximum | Maximum | Typical | Minimum | Maximum | Typical |
| MPTR30V050H  | 1      | 7.4     | 12.7    | 5.1     | 7.6     | 3.0     | 1.2     |
| MPTR30V070H  | 2      | 6.9     | 10.8    | 5.1     | 7.6     | 3.0     | 1.2     |
| MPTR30V100H  | 1      | 9.7     | 13.6    | 5.1     | 7.6     | 3.0     | 1.2     |
| MPTR16V200H  | 1      | 9.4     | 14.4    | 5.1     | 7.6     | 3.0     | 1.2     |
| MPTR16V300H  | 3      | 8.8     | 13.8    | 5.1     | 7.6     | 3.0     | 1.2     |
| MPTR16V400H  | 3      | 10.0    | 15.0    | 5.1     | 7.6     | 3.0     | 1.2     |
| MPTR16V450H  | 3      | 10.4    | 15.6    | 5.1     | 7.6     | 3.0     | 1.2     |
| MPTR16V550H  | 3      | 11.2    | 18.9    | 5.1     | 7.6     | 3.0     | 1.2     |
| MPTR16V600H  | 3      | 11.2    | 21.0    | 5.1     | 7.6     | 3.0     | 1.2     |
| MPTR16V650H  | 3      | 12.7    | 22.2    | 5.1     | 7.6     | 3.0     | 1.2     |
| MPTR16V700H  | 3      | 14.0    | 21.9    | 5.1     | 7.6     | 3.0     | 1.2     |
| MPTR16V750H  | 3      | 14.0    | 23.5    | 5.1     | 7.6     | 3.0     | 1.2     |
| MPTR16V800H  | 3      | 16.5    | 22.5    | 5.1     | 7.6     | 3.0     | 1.2     |
| MPTR16V900H  | 3      | 16.5    | 25.7    | 5.1     | 7.6     | 3.0     | 1.2     |
| MPTR16V1000H | 3      | 17.5    | 26.5    | 10.2    | 7.6     | 3.0     | 1.2     |
| MPTR16V1100H | 3      | 21.0    | 26.1    | 10.2    | 7.6     | 3.0     | 1.2     |
| MPTR16V1300H | 4      | 23.5    | 28.7    | 10.2    | 7.6     | 3.6     | 1.4     |
| MPTR16V1400H | 4      | 23.5    | 28.7    | 10.2    | 7.6     | 3.6     | 1.4     |
| MPTR16V1500H | 4      | 23.5    | 28.7    | 10.2    | 7.6     | 3.6     | 1.4     |

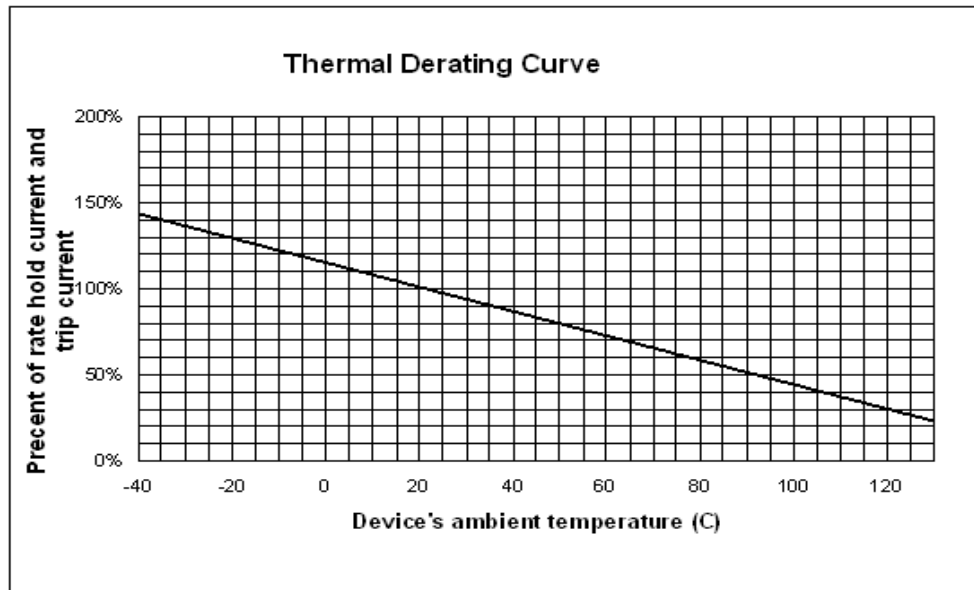
# Polymeric PTC



MPTR Series

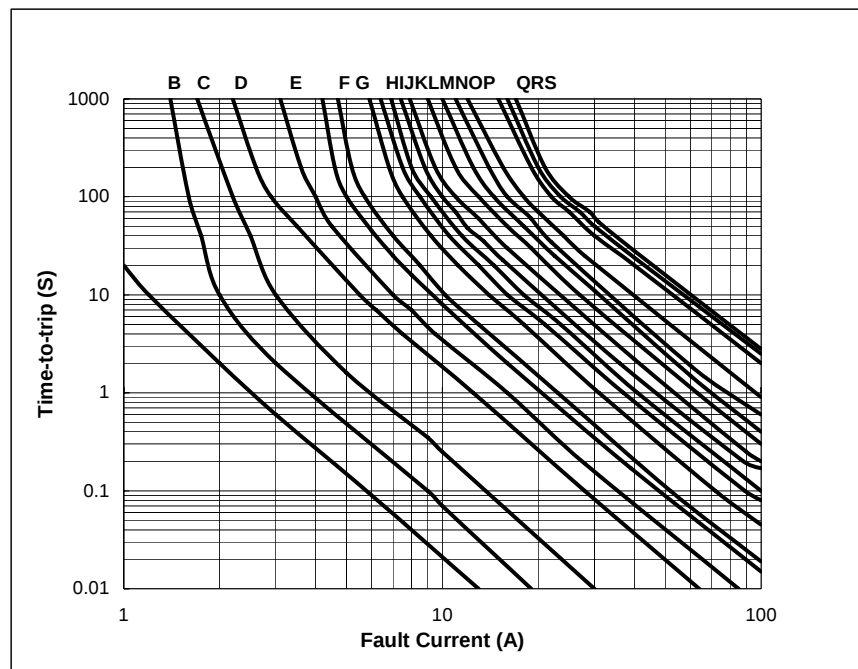
MERITEK

## Thermal Derating Curve



## Typical Time-To-Trip at 23°

A =MPTR30V050H  
B =MPTR30V070H  
C =MPTR30V100H  
D =MPTR16V200H  
E =MPTR16V300H  
F =MPTR16V400H  
G =MPTR16V450H  
H =MPTR16V550H  
I =MPTR16V600H  
J =MPTR16V650H  
K =MPTR16V700H  
L =MPTR16V750H  
M =MPTR16V800H  
N =MPTR16V900H  
O =MPTR16V1000H  
P =MPTR16V1100H  
Q =MPTR16V1300H  
R =MPTR16V1400H  
S =MPTR16V1500H





## Electrical Characteristics (23°)

## MPTR30V

| Part Number | Hold Current       | Trip Current       | Max.Time To Trip    | Maximum Current      | Rated Voltage          | Typical Power      | Resistance Tolerance |                   |
|-------------|--------------------|--------------------|---------------------|----------------------|------------------------|--------------------|----------------------|-------------------|
|             | I <sub>H</sub> , A | I <sub>T</sub> , A | at 5xI <sub>H</sub> | I <sub>MAX</sub> , A | V <sub>MAX</sub> , Vdc | P <sub>d</sub> , W | R <sub>MIN</sub>     | R <sub>1MAX</sub> |
| MPTR30V090  | 0.90               | 1.80               | 5.9                 | 40                   | 30                     | 0.6                | 0.070                | 0.22              |
| MPTR30V110  | 1.10               | 2.20               | 6.6                 | 40                   | 30                     | 0.7                | 0.050                | 0.17              |
| MPTR30V135  | 1.35               | 2.70               | 7.3                 | 40                   | 30                     | 0.8                | 0.040                | 0.13              |
| MPTR30V160  | 1.60               | 3.20               | 8.0                 | 40                   | 30                     | 0.9                | 0.030                | 0.11              |
| MPTR30V185  | 1.85               | 3.70               | 8.7                 | 40                   | 30                     | 1.0                | 0.030                | 0.09              |
| MPTR30V250  | 2.50               | 5.00               | 10.3                | 40                   | 30                     | 1.2                | 0.020                | 0.07              |
| MPTR30V300  | 3.00               | 6.00               | 10.8                | 40                   | 30                     | 2.0                | 0.020                | 0.08              |
| MPTR30V400  | 4.00               | 8.00               | 12.7                | 40                   | 30                     | 2.5                | 0.010                | 0.05              |
| MPTR30V500  | 5.00               | 10.00              | 14.5                | 40                   | 30                     | 3.0                | 0.010                | 0.05              |
| MPTR30V600  | 6.00               | 12.00              | 16.0                | 40                   | 30                     | 3.5                | 0.005                | 0.04              |
| MPTR30V700  | 7.00               | 14.00              | 17.5                | 40                   | 30                     | 3.8                | 0.005                | 0.03              |
| MPTR30V800  | 8.00               | 16.00              | 18.8                | 40                   | 30                     | 4.0                | 0.005                | 0.02              |
| MPTR30V900  | 9.00               | 18.00              | 20.0                | 40                   | 30                     | 4.2                | 0.005                | 0.02              |

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-minimum current at which the device will always trip at 23°C still air.

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

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

P<sub>d</sub>=Typical power dissipated-type amount of power dissipated by the device when in the tripped state in 23°C still air environment.

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

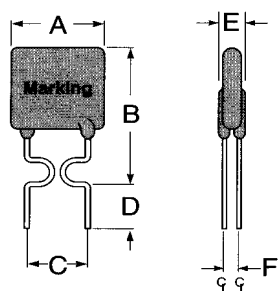
R<sub>1MAX</sub>=Maximum device resistance at 23°C measured 1 hour after tripping or reflow soldering of 260°C for 20 seconds.

Termination pad characteristics

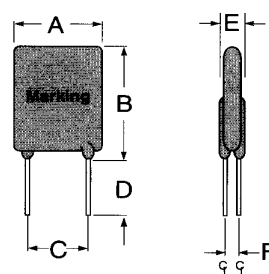
Termination pad materials: Pure Tin

## Product Dimensions (Millimeters)

### MPTR30V



**Figure 1**  
Lead Size: 24AWG  
Φ 0.51 mm Diameter



**Figure 2**  
Lead Size: 20AWG  
Φ 0.81 mm Diameter

| Part Number | A       | B       | C       | D       | E       | F       |
|-------------|---------|---------|---------|---------|---------|---------|
|             | Maximum | Maximum | Typical | Minimum | Maximum | Typical |
| MPTR30V090  | 7.4     | 12.2    | 5.1     | 7.6     | 3.0     | 0.9     |
| MPTR30V110  | 7.4     | 14.2    | 5.1     | 7.6     | 3.0     | 0.9     |
| MPTR30V135  | 8.9     | 13.5    | 5.1     | 7.6     | 3.0     | 0.9     |
| MPTR30V160  | 8.9     | 15.2    | 5.1     | 7.6     | 3.0     | 0.9     |
| MPTR30V185  | 10.2    | 15.7    | 5.1     | 7.6     | 3.0     | 0.9     |
| MPTR30V250  | 11.4    | 18.3    | 5.1     | 7.6     | 3.0     | 0.9     |
| MPTR30V300  | 11.4    | 17.3    | 5.1     | 7.6     | 3.0     | 1.2     |
| MPTR30V400  | 14.0    | 20.1    | 5.1     | 7.6     | 3.0     | 1.2     |
| MPTR30V500  | 14.0    | 24.9    | 10.2    | 7.6     | 3.0     | 1.2     |
| MPTR30V600  | 16.5    | 24.9    | 10.2    | 7.6     | 3.0     | 1.2     |
| MPTR30V700  | 19.1    | 26.7    | 10.2    | 7.6     | 3.0     | 1.2     |
| MPTR30V800  | 21.6    | 29.2    | 10.2    | 7.6     | 3.0     | 1.2     |
| MPTR30V900  | 24.1    | 29.7    | 10.2    | 7.6     | 3.0     | 1.2     |

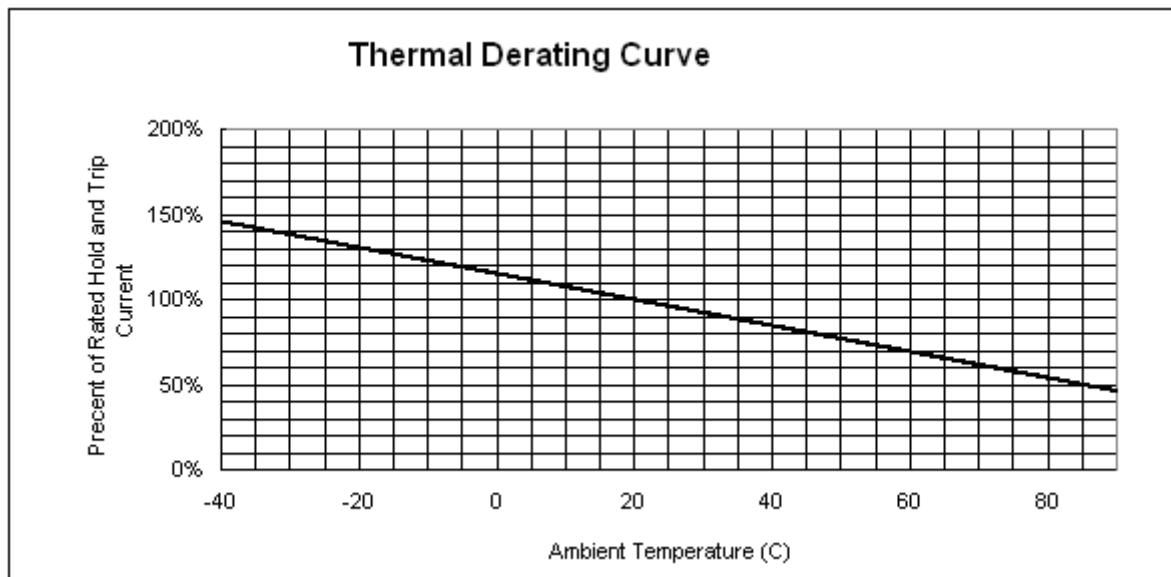
# Polymeric PTC



MPTR Series

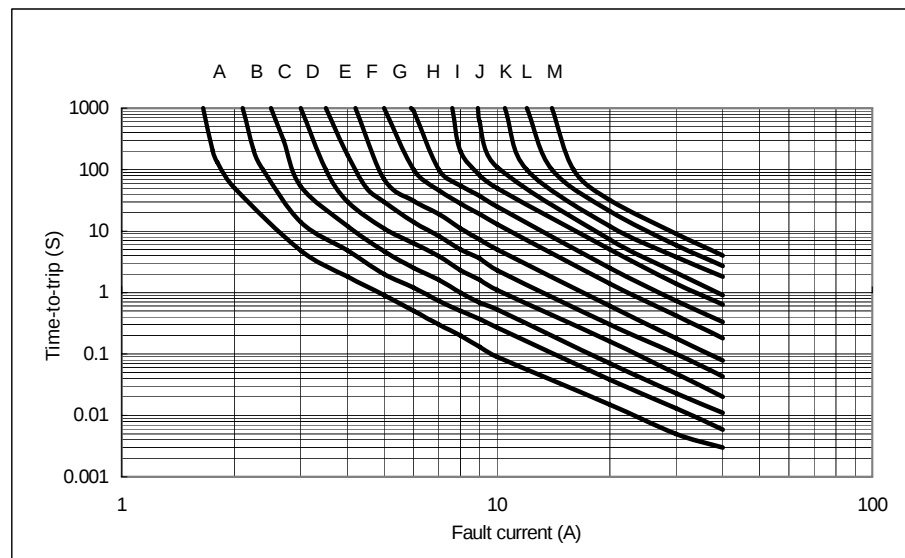
MERITEK

## Thermal Derating Curve



## Typical Time-To-Trip at 23°C

A = MPTR30V090  
B = MPTR30V110  
C = MPTR30V135  
D = MPTR30V160  
E = MPTR30V185  
F = MPTR30V250  
G = MPTR30V300  
H = MPTR30V400  
I = MPTR30V500  
J = MPTR30V600  
K = MPTR30V700  
L = MPTR30V800  
M = MPTR30V900



# Polymeric PTC



## MPTR Series

**MERITEK**

### Electrical Characteristics (23°)

#### MPTR36V

| Part Number | Hold Current      | Trip Current      | Maximum Current     | Rated Voltage         | Typical Power      | Resistance Tolerance |                   |
|-------------|-------------------|-------------------|---------------------|-----------------------|--------------------|----------------------|-------------------|
|             | I <sub>H</sub> ,A | I <sub>T</sub> ,A | I <sub>MAX</sub> ,A | V <sub>MAX</sub> ,Vdc | P <sub>d</sub> , W | R <sub>MIN</sub>     | R <sub>1MAX</sub> |
|             |                   |                   |                     |                       |                    | Ω                    | Ω                 |
| MPTR36V050  | 0.50              | 1.10              | 40                  | 36                    | 0.67               | 0.140                | 0.448             |
| MPTR36V075  | 0.75              | 1.50              | 40                  | 36                    | 0.71               | 0.115                | 0.368             |
| MPTR36V090  | 0.90              | 1.80              | 40                  | 36                    | 0.74               | 0.090                | 0.288             |
| MPTR36V120  | 1.20              | 2.30              | 40                  | 36                    | 0.78               | 0.074                | 0.180             |
| MPTR36V135  | 1.35              | 2.50              | 40                  | 36                    | 0.84               | 0.059                | 0.143             |
| MPTR36V160  | 1.60              | 2.75              | 40                  | 36                    | 0.86               | 0.041                | 0.131             |
| MPTR36V190  | 1.90              | 3.00              | 40                  | 36                    | 0.90               | 0.045                | 0.092             |
| MPTR36V220  | 2.20              | 3.50              | 40                  | 36                    | 0.95               | 0.025                | 0.080             |
| MPTR36V250  | 2.50              | 4.00              | 40                  | 36                    | 0.99               | 0.020                | 0.064             |

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-minimum current at which the device will always trip at 23°C still air.

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

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

P<sub>d</sub>=Typical power dissipated-type amount of power dissipated by the device when in the tripped state in 23°C still air environment.

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

R<sub>1MAX</sub>=Maximum device resistance at 23°C measured 1 hour after tripping or reflow soldering of 260°C for 20 seconds.

Termination pad characteristics

Termination pad materials: Pure Tin



Product Dimensions (Millimeters)

MPTR36V

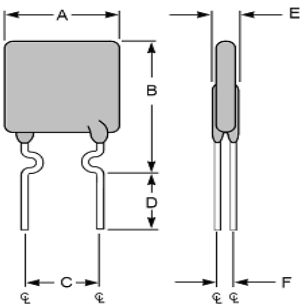


Figure 1  
Lead Size: 24AWG  
Φ 0.51 mm Diameter

| Part Number | A       | B       | C       | D       | E       | F       |
|-------------|---------|---------|---------|---------|---------|---------|
|             | Maximum | Maximum | Typical | Minimum | Maximum | Typical |
| MPTR36V050  | 7.4     | 12.2    | 5.1     | 7.6     | 3.0     | 1.1     |
| MPTR36V075  | 7.4     | 12.2    | 5.1     | 7.6     | 3.0     | 1.1     |
| MPTR36V090  | 7.4     | 12.2    | 5.1     | 7.6     | 3.0     | 1.1     |
| MPTR36V120  | 7.4     | 12.2    | 5.1     | 7.6     | 3.0     | 1.1     |
| MPTR36V135  | 7.4     | 14.2    | 5.1     | 7.6     | 3.0     | 1.1     |
| MPTR36V160  | 7.4     | 14.0    | 5.1     | 7.6     | 3.0     | 1.1     |
| MPTR36V190  | 9.0     | 13.5    | 5.1     | 7.6     | 3.0     | 1.1     |
| MPTR36V220  | 10.0    | 17.0    | 5.1     | 7.6     | 3.0     | 1.1     |
| MPTR36V250  | 10.0    | 19.5    | 5.1     | 7.6     | 3.0     | 1.1     |

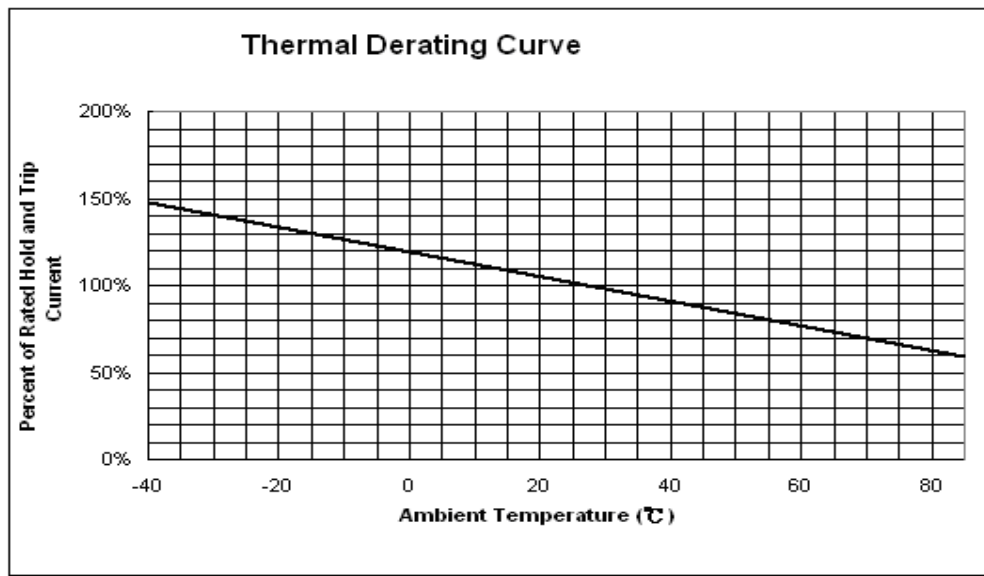
# Polymeric PTC



MPTR Series

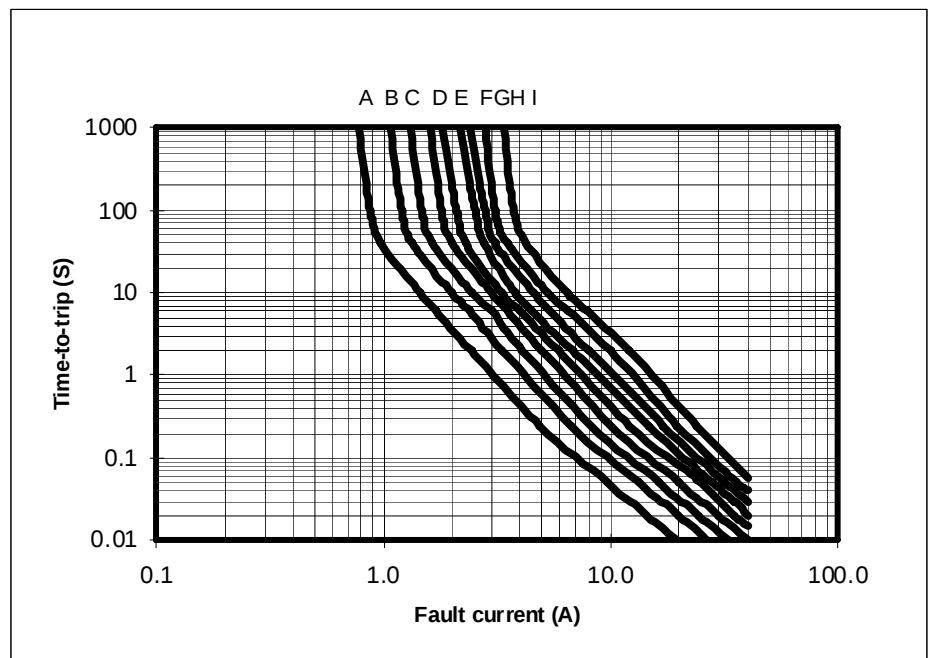
MERITEK

## Thermal Derating Curve



## Typical Time-To-Trip at 23°C

A = MPTR36V050  
B = MPTR36V075  
C = MPTR36V090  
D = MPTR36V120  
E = MPTR36V135  
F = MPTR36V160  
G = MPTR36V190  
H = MPTR36V220  
I = MPTR36V250



# Polymeric PTC



## MPTR Series

**MERITEK**

### Electrical Characteristics (23°C)

#### MPTR60V

| Part Number | Hold Current      | Trip Current      | Max.Time to Trip    | Maximum Current     | Rated Voltage         | Typical Power      | Resistance Tolerance |       |
|-------------|-------------------|-------------------|---------------------|---------------------|-----------------------|--------------------|----------------------|-------|
|             |                   |                   |                     |                     |                       |                    | RMIN                 | R1MAX |
|             | I <sub>H</sub> ,A | I <sub>T</sub> ,A | at 5xI <sub>H</sub> | I <sub>MAX</sub> ,A | V <sub>MAX</sub> ,VDC | P <sub>d</sub> , W | ohms                 | ohms  |
| MPTR60V005  | 0.05              | 0.10              | 5.0                 | 40                  | 60                    | 0.26               | 7.30                 | 20.0  |
| MPTR60V010  | 0.10              | 0.20              | 4.0                 | 40                  | 60                    | 0.38               | 2.50                 | 7.50  |
| MPTR60V017  | 0.17              | 0.34              | 3.0                 | 40                  | 60                    | 0.48               | 2.00                 | 8.00  |
| MPTR60V020  | 0.20              | 0.40              | 2.2                 | 40                  | 60                    | 0.41               | 1.83                 | 4.40  |
| MPTR60V025  | 0.25              | 0.50              | 2.5                 | 40                  | 60                    | 0.45               | 1.25                 | 3.00  |
| MPTR60V030  | 0.30              | 0.60              | 3.0                 | 40                  | 60                    | 0.49               | 0.88                 | 2.10  |
| MPTR60V040  | 0.40              | 0.80              | 3.8                 | 40                  | 60                    | 0.56               | 0.55                 | 1.29  |
| MPTR60V050  | 0.50              | 1.00              | 4.0                 | 40                  | 60                    | 0.77               | 0.50                 | 1.17  |
| MPTR60V065  | 0.65              | 1.30              | 5.3                 | 40                  | 60                    | 0.88               | 0.31                 | 0.72  |
| MPTR60V075  | 0.75              | 1.50              | 6.3                 | 40                  | 60                    | 0.92               | 0.25                 | 0.60  |
| MPTR60V090  | 0.90              | 1.80              | 7.2                 | 40                  | 60                    | 0.99               | 0.20                 | 0.47  |
| MPTR60V110  | 1.10              | 2.20              | 8.2                 | 40                  | 60                    | 1.50               | 0.15                 | 0.38  |
| MPTR60V135  | 1.35              | 2.70              | 9.6                 | 40                  | 60                    | 1.70               | 0.12                 | 0.30  |
| MPTR60V160  | 1.60              | 3.20              | 11.4                | 40                  | 60                    | 1.90               | 0.09                 | 0.22  |
| MPTR60V185  | 1.85              | 3.70              | 12.6                | 40                  | 60                    | 2.10               | 0.08                 | 0.19  |
| MPTR60V250  | 2.50              | 5.00              | 15.6                | 40                  | 60                    | 2.50               | 0.05                 | 0.13  |
| MPTR60V300  | 3.00              | 6.00              | 19.8                | 40                  | 60                    | 2.80               | 0.04                 | 0.10  |
| MPTR60V375  | 3.75              | 7.50              | 24.0                | 40                  | 60                    | 3.20               | 0.03                 | 0.08  |

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-minimum current at which the device will always trip at 23°C still air.

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

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

P<sub>d</sub>=Typical power dissipated-type amount of power dissipated by the device when in the tripped state in 23°C still air environment.

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

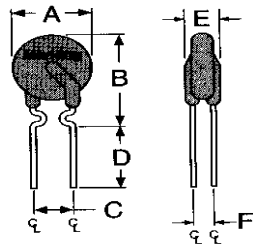
R<sub>1MAX</sub>=Maximum device resistance at 23°C measured 1 hour after tripping or reflow soldering of 260°C for 20 seconds.

Termination pad characteristics

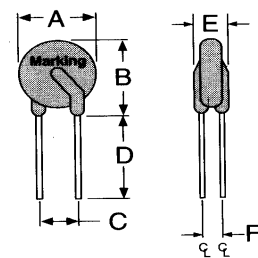
Termination pad materials: Pure Tin

### Product Dimensions (Millimeters)

#### MPTR60V



**Figure 1**  
Lead Size: 24AWG  
Φ 0.51 mm Diameter



**Figure 2**  
Lead Size: 20AWG  
Φ 0.81 mm Diameter

| Part Number | A       | B       | C       | D       | E       | F       |
|-------------|---------|---------|---------|---------|---------|---------|
|             | Maximum | Maximum | Typical | Minimum | Maximum | Typical |
| MPTR60V005  | 7.4     | 12.7    | 5.1     | 7.6     | 3.1     | 1.1     |
| MPTR60V010  | 7.4     | 12.7    | 5.1     | 7.6     | 3.1     | 1.1     |
| MPTR60V017  | 7.4     | 12.7    | 5.1     | 7.6     | 3.1     | 1.1     |
| MPTR60V020  | 7.4     | 12.7    | 5.1     | 7.6     | 3.1     | 1.1     |
| MPTR60V025  | 7.4     | 12.7    | 5.1     | 7.6     | 3.1     | 1.1     |
| MPTR60V030  | 7.4     | 13.0    | 5.1     | 7.6     | 3.1     | 1.1     |
| MPTR60V040  | 7.6     | 13.5    | 5.1     | 7.6     | 3.1     | 1.1     |
| MPTR60V050  | 7.9     | 13.7    | 5.1     | 7.6     | 3.1     | 1.1     |
| MPTR60V065  | 9.7     | 14.5    | 5.1     | 7.6     | 3.1     | 1.1     |
| MPTR60V075  | 10.4    | 15.2    | 5.1     | 7.6     | 3.1     | 1.1     |
| MPTR60V090  | 11.7    | 15.8    | 5.1     | 7.6     | 3.1     | 1.1     |
| MPTR60V110  | 13.0    | 18.0    | 5.1     | 7.6     | 3.1     | 1.4     |
| MPTR60V135  | 14.5    | 19.6    | 5.1     | 7.6     | 3.1     | 1.4     |
| MPTR60V160  | 16.3    | 21.3    | 5.1     | 7.6     | 3.1     | 1.4     |
| MPTR60V185  | 17.8    | 22.9    | 5.1     | 7.6     | 3.1     | 1.4     |
| MPTR60V250  | 21.3    | 26.4    | 10.2    | 7.6     | 3.1     | 1.4     |
| MPTR60V300  | 24.9    | 30.0    | 10.2    | 7.6     | 3.1     | 1.4     |
| MPTR60V375  | 28.5    | 33.5    | 10.2    | 7.6     | 3.1     | 1.4     |

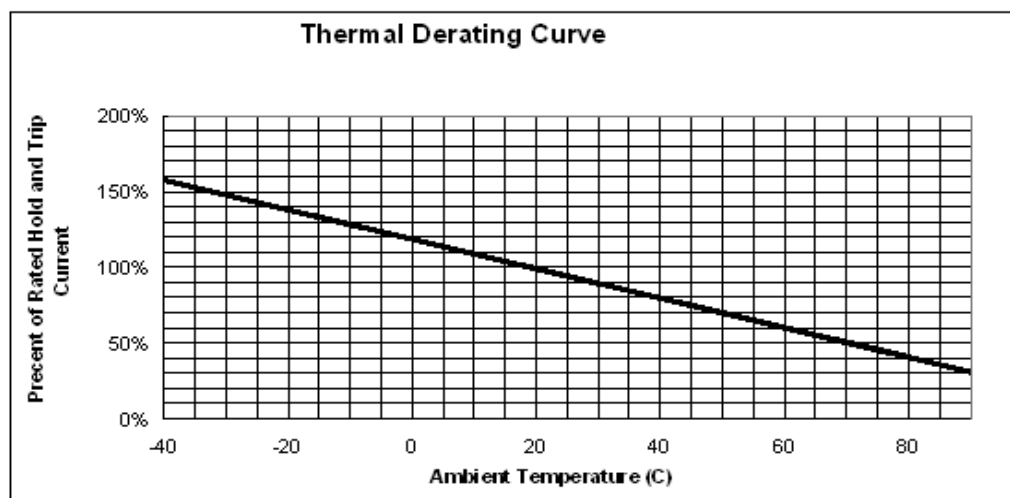
# Polymeric PTC



MPTR Series

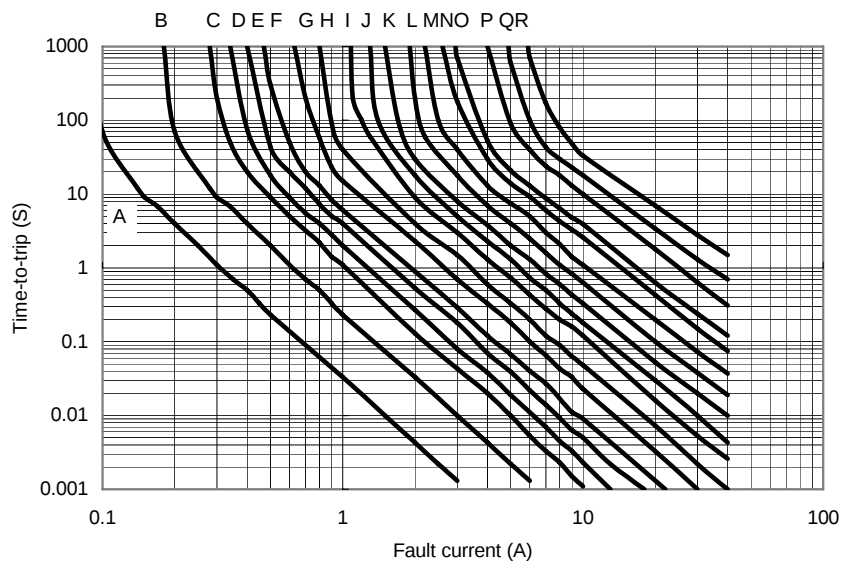
MERITEK

## Thermal Derating Curve



## Typical Time-To-Trip at 23°C

- A = MPTR60V005
- B = MPTR60V010
- C = MPTR60V017
- D = MPTR60V020
- E = MPTR60V025
- F = MPTR60V030
- G = MPTR60V040
- H = MPTR60V050
- I = MPTR60V065
- J = MPTR60V075
- K = MPTR60V090
- L = MPTR60V110
- M = MPTR60V135
- N = MPTR60V160
- O = MPTR60V185
- P = MPTR60V250
- Q = MPTR60V300
- R = MPTR60V375



## Electrical Characteristics (23°C)

## MPTR90V

| Part Number | Hold Current      | Trip Current      | Max.Time to Trip    | Maximum Current     | Rated Voltage         | Typical Power | Resistance Tolerance |       |
|-------------|-------------------|-------------------|---------------------|---------------------|-----------------------|---------------|----------------------|-------|
|             |                   |                   |                     |                     |                       |               | RMIN                 | R1MAX |
|             | I <sub>H</sub> ,A | I <sub>T</sub> ,A | at 5xI <sub>H</sub> | I <sub>MAX</sub> ,A | V <sub>MAX</sub> ,Vdc | Pd, W         | ohms                 | ohms  |
| MPTR90V010  | 0.10              | 0.20              | 4.0                 | 40                  | 72/90                 | 0.38          | 2.50                 | 7.50  |
| MPTR90V015  | 0.15              | 0.35              | 10.0                | 40                  | 72/90                 | 0.70          | 2.40                 | 7.00  |
| MPTR90V017  | 0.17              | 0.34              | 3.0                 | 40                  | 72/90                 | 0.48          | 2.00                 | 8.00  |
| MPTR90V020  | 0.20              | 0.40              | 2.2                 | 40                  | 72/90                 | 0.41          | 1.83                 | 4.40  |
| MPTR90V025  | 0.25              | 0.50              | 2.5                 | 40                  | 72/90                 | 0.45          | 1.25                 | 3.00  |
| MPTR90V030  | 0.30              | 0.60              | 3.0                 | 40                  | 72/90                 | 0.49          | 0.88                 | 2.10  |
| MPTR90V035  | 0.35              | 0.75              | 10.0                | 40                  | 72/90                 | 1.30          | 0.70                 | 2.50  |
| MPTR90V040  | 0.40              | 0.80              | 3.8                 | 40                  | 72/90                 | 0.56          | 0.55                 | 1.29  |
| MPTR90V050  | 0.50              | 1.00              | 4.0                 | 40                  | 72/90                 | 0.77          | 0.50                 | 1.17  |
| MPTR90V055  | 0.55              | 1.20              | 10.0                | 40                  | 72/90                 | 1.50          | 0.40                 | 1.50  |
| MPTR90V065  | 0.65              | 1.30              | 5.3                 | 40                  | 72/90                 | 0.88          | 0.31                 | 0.72  |
| MPTR90V075  | 0.75              | 1.50              | 6.3                 | 40                  | 72/90                 | 0.92          | 0.25                 | 0.60  |
| MPTR90V090  | 0.90              | 1.80              | 7.2                 | 40                  | 72/90                 | 0.99          | 0.20                 | 0.47  |
| MPTR90V110  | 1.10              | 2.20              | 8.2                 | 40                  | 72/90                 | 1.50          | 0.15                 | 0.38  |
| MPTR90V135  | 1.35              | 2.70              | 9.6                 | 40                  | 72/90                 | 1.70          | 0.12                 | 0.30  |
| MPTR90V160  | 1.60              | 3.20              | 11.4                | 40                  | 72/90                 | 1.90          | 0.09                 | 0.22  |
| MPTR90V185  | 1.85              | 3.70              | 12.6                | 40                  | 72/90                 | 2.10          | 0.08                 | 0.19  |
| MPTR90V250  | 2.50              | 5.00              | 15.6                | 40                  | 72/90                 | 2.50          | 0.05                 | 0.13  |
| MPTR90V300  | 3.00              | 6.00              | 19.8                | 40                  | 72/90                 | 2.80          | 0.04                 | 0.10  |
| MPTR90V375  | 3.75              | 7.50              | 24.0                | 40                  | 72/90                 | 3.20          | 0.03                 | 0.08  |

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-minimum current at which the device will always trip at 23°C still air.

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

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

Pd=Typical power dissipated-type amount of power dissipated by the device when in the tripped state in 23°C still air environment.

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

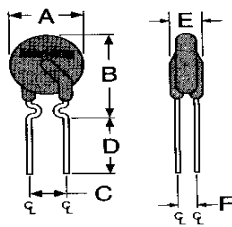
R1<sub>MAX</sub>=Maximum device resistance at 23°C measured 1 hour after tripping or reflow soldering of 260°C for 20 seconds.

Termination pad characteristics

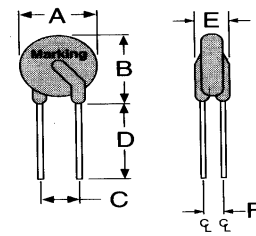
Termination pad materials: Pure Tin

### Product Dimensions (Millimeters)

#### MPTR90V



**Figure 1**  
Lead Size: 24AWG  
Φ 0.51 mm Diameter



**Figure 2**  
Lead Size: 20AWG  
Φ 0.81 mm Diameter

| Part Number | A       | B       | C       | D       | E       | F       |
|-------------|---------|---------|---------|---------|---------|---------|
|             | Maximum | Maximum | Typical | Minimum | Maximum | Typical |
| MPTR90V010  | 7.4     | 12.7    | 5.1     | 7.6     | 3.1     | 1.1     |
| MPTR90V015  | 7.4     | 12.7    | 5.1     | 7.6     | 3.1     | 1.1     |
| MPTR90V017  | 7.4     | 12.7    | 5.1     | 7.6     | 3.1     | 1.1     |
| MPTR90V020  | 7.4     | 12.7    | 5.1     | 7.6     | 3.1     | 1.1     |
| MPTR90V025  | 7.4     | 12.7    | 5.1     | 7.6     | 3.1     | 1.1     |
| MPTR90V030  | 7.4     | 13.0    | 5.1     | 7.6     | 3.1     | 1.1     |
| MPTR90V035  | 7.4     | 12.7    | 5.1     | 7.6     | 3.1     | 1.1     |
| MPTR90V040  | 7.6     | 13.5    | 5.1     | 7.6     | 3.1     | 1.1     |
| MPTR90V050  | 7.9     | 13.7    | 5.1     | 7.6     | 3.1     | 1.1     |
| MPTR90V055  | 9.7     | 14.0    | 5.1     | 7.6     | 3.1     | 1.1     |
| MPTR90V065  | 9.7     | 14.5    | 5.1     | 7.6     | 3.1     | 1.1     |
| MPTR90V075  | 10.4    | 15.2    | 5.1     | 7.6     | 3.1     | 1.1     |
| MPTR90V090  | 11.7    | 15.8    | 5.1     | 7.6     | 3.1     | 1.1     |
| MPTR90V110  | 13.0    | 18.0    | 5.1     | 7.6     | 3.1     | 1.4     |
| MPTR90V135  | 14.5    | 19.6    | 5.1     | 7.6     | 3.1     | 1.4     |
| MPTR90V160  | 16.3    | 21.3    | 5.1     | 7.6     | 3.1     | 1.4     |
| MPTR90V185  | 17.8    | 22.9    | 5.1     | 7.6     | 3.1     | 1.4     |
| MPTR90V250  | 21.3    | 26.4    | 10.2    | 7.6     | 3.1     | 1.4     |
| MPTR90V300  | 24.9    | 30.0    | 10.2    | 7.6     | 3.1     | 1.4     |
| MPTR90V375  | 28.5    | 33.5    | 10.2    | 7.6     | 3.1     | 1.4     |

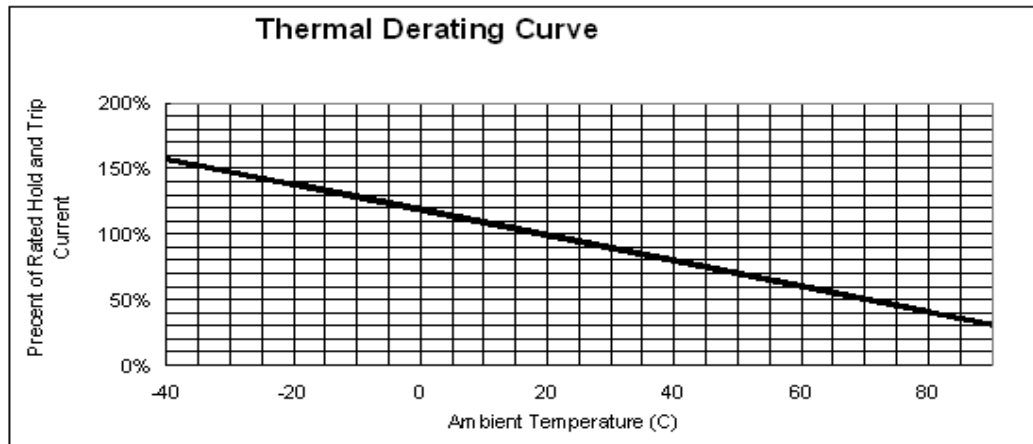
# Polymeric PTC



MPTR Series

MERITEK

## Thermal Derating Curve



## Typical Time-To-Trip at 23°C

A = MPTR90V010  
B = MPTR90V015  
C = MPTR90V017  
D = MPTR90V020  
E = MPTR90V025  
F = MPTR90V030  
G = MPTR90V035  
H = MPTR90V040  
I = MPTR90V050  
J = MPTR90V055  
K = MPTR90V065  
L = MPTR90V075  
M = MPTR90V090  
N = MPTR90V110  
O = MPTR90V135  
P = MPTR90V160  
Q = MPTR90V185  
R = MPTR90V250  
S = MPTR90V300  
T = MPTR90V375

