

# Polymeric PTC

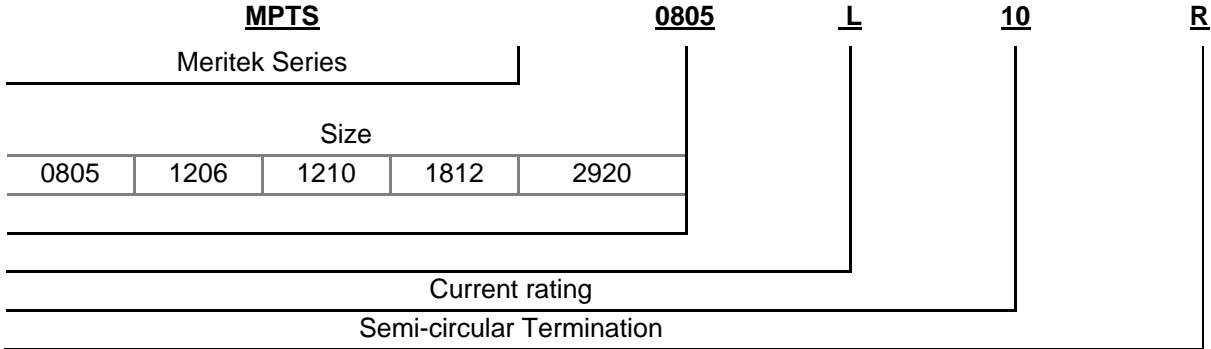


MPTS Series	MERITEK
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## Feature and Applications

UL E223037

- ROHS Compliant & Halogen Free
- Excellent for high density applications
- Surface Mount, 0805, 1206, 1210, 1812, 2920
- Faster time to trip than standard SMD devices
- Lower resistance than standard SMD devices
- Operation Current: 0.05A ~ 3.0A
- Maximum Voltage: 6V ~ 60V
- Temperature Range: -40°C to 85°C



### Electrical Characteristics (23°C)

#### MPTS0805

Part Number	Hold Current	Trip Current	Rated Voltage	Max Current	Typical Power	Max Time to Trip		Resistance	
						Current	Time	R <sub>MIN</sub>	R1 <sub>MAX</sub>
						Amp	Sec	Ω	Ω
MPTS0805L010R	0.10	0.30	15	100	0.5	0.50	1.50	0.700	6.000
MPTS0805L020R	0.20	0.50	9	100	0.5	8.00	0.02	0.400	3.500
MPTS0805L035R	0.35	0.75	6	100	0.5	8.00	0.10	0.250	1.200
MPTS0805L050R	0.50	1.00	6	100	0.5	8.00	0.10	0.150	0.850
MPTS0805L075R	0.75	1.50	6	40	0.6	8.00	0.20	0.090	0.350
MPTS0805L100R	1.00	1.95	6	40	0.6	8.00	0.30	0.060	0.210

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.

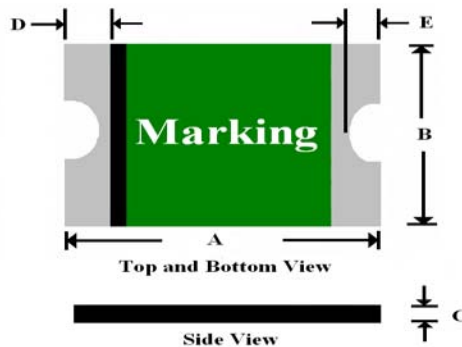
R1<sub>MAX</sub>=Maximum device resistance at 23°C measured 1 hour after tripping or reflow soldering of 260°C for 20 seconds.

Termination pad characteristics

Termination pad materials: Pure Tin

### Product Dimensions (Millimeters)

#### MPTS0805



Part Number	A		B		C		D		E	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
MPTS0805L010R	2.00	2.30	1.20	1.50	0.55	1.00	0.20	0.60	0.10	0.45
MPTS0805L020R	2.00	2.30	1.20	1.50	0.55	1.00	0.20	0.60	0.10	0.45
MPTS0805L035R	2.00	2.30	1.20	1.50	0.45	0.75	0.20	0.60	0.10	0.45
MPTS0805L050R	2.00	2.30	1.20	1.50	0.55	1.25	0.20	0.60	0.10	0.45
MPTS0805L075R	2.00	2.30	1.20	1.50	0.55	1.25	0.20	0.60	0.10	0.45
MPTS0805L100R	2.00	2.30	1.20	1.50	0.75	1.80	0.20	0.60	0.10	0.45

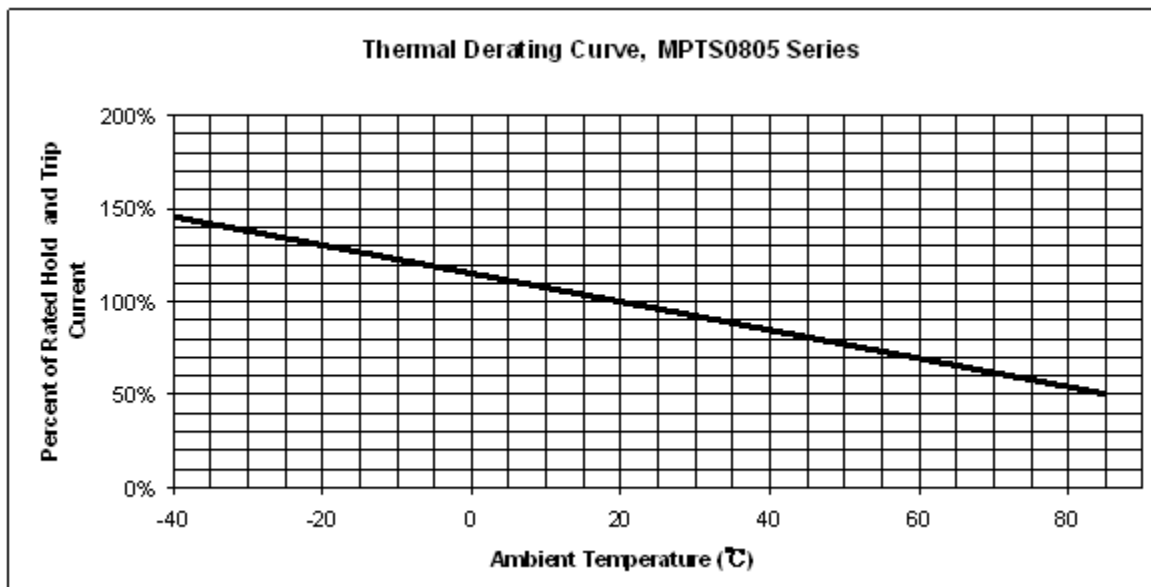
# Polymeric PTC



MPTS Series

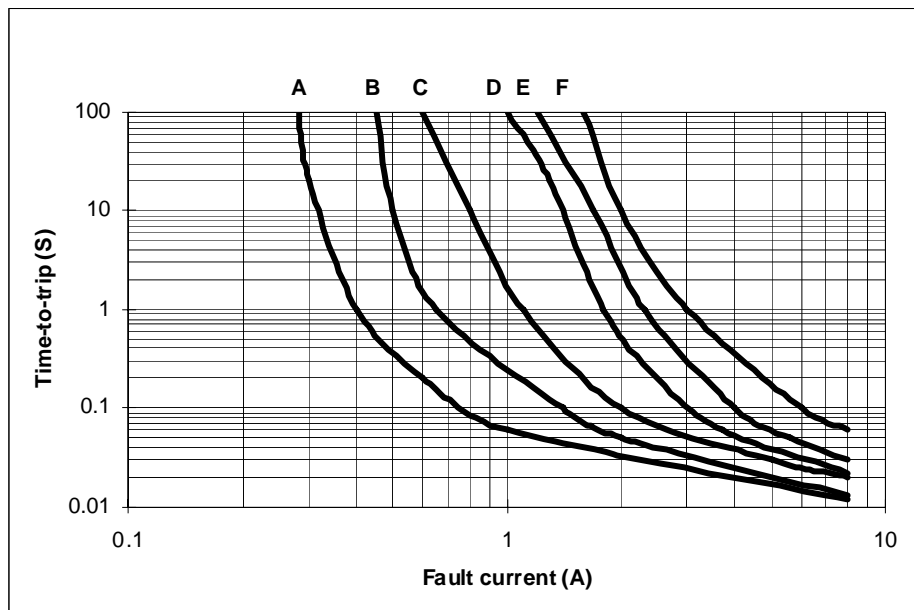
MERITEK

## Thermal Derating Curve



## Typical Time-To-Trip at 23°C

- A = MPTS0805L010R
- B = MPTS0805L020R
- C = MPTS0805L035R
- D = MPTS0805L050R
- E = MPTS0805L075R
- F = MPTS0805L100R



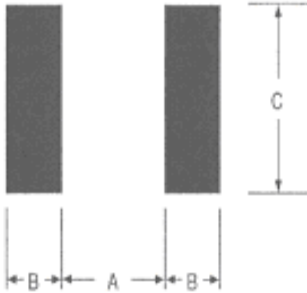
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The dimension in the table below provides the recommended pad layout for each MPTS0805 device



## Pad dimensions (millimeters)

Device	A Nominal	B Nominal	C Nominal
All 0805 Series	1.20	1.00	1.50

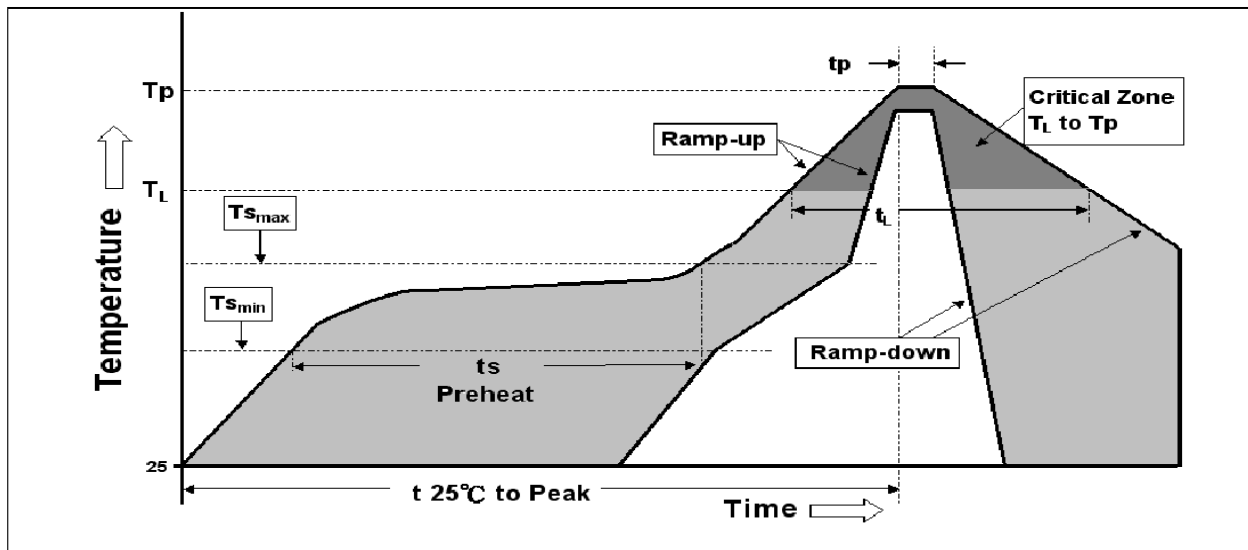
Profile Feature	Pb-Free Assembly
<b>Average Ramp-Up Rate (T<sub>smax</sub> to T<sub>p</sub>)</b>	3 °C/second max.
<b>Preheat :</b>	
Temperature Min (T <sub>smin</sub> )	150 °C
Temperature Max (T <sub>smax</sub> )	200 °C
Time (t <sub>smin</sub> to t <sub>smax</sub> )	60-180 seconds
<b>Time maintained above:</b>	
Temperature(T <sub>L</sub> )	217 °C
Time (t <sub>L</sub> )	60-150 seconds
<b>Peak/Classification Temperature(T<sub>p</sub>) :</b>	260 °C
<b>Time within 5°C of actual Peak :</b>	
Temperature (t <sub>p</sub> )	20-40 seconds
<b>Ramp-Down Rate :</b>	6 °C/second max.
<b>Time 25 °C to Peak Temperature :</b>	8 minutes max.

### Solder reflow

- Due to "Lead Free" nature, Temperature and Dwell time for the soldering zone is higher than those for Non-compliant parts. This may cause damage to other components.
- Recommended max solder paste thickness > 0.25mm.
- Devices can be cleaned using standard methods and aqueous solvent.
- Rework should utilize standard industry practices. These changes should apply to all notes for each case size.
- Storage Environment : < 30°C / 60%RH

### Caution:

- If reflow temperatures exceed the recommended profile, devices may not meet the performance requirements.
- Devices are not designed to be wave soldered to the bottom side of the board.





### Electrical Characteristics (23°)

#### MPTS1206

Part Number	Hold Current	Trip Current	Rated Voltage	Max Current	Typical Power	Max Time to Trip		Resistance	
	$I_H$ , A	$I_T$ , A	$V_{MAX}$ , Vdc	$I_{MAX}$ , A	$P_d$ , W	Current	Time	$R_{MIN}$	$R1_{MAX}$
						Amp	Sec	$\Omega$	$\Omega$
MPTS1206L005R	0.05	0.15	60	10	0.4	0.25	1.50	3.60	50.00
MPTS1206L010R	0.10	0.25	60	10	0.4	0.50	1.00	1.60	15.00
MPTS1206L012R	0.12	0.39	48	10	0.6	1.00	0.20	1.40	6.50
MPTS1206L016R	0.16	0.45	48	10	0.6	1.00	0.30	1.10	5.00
MPTS1206L020R	0.20	0.40	30	10	0.4	8.00	0.10	0.600	2.500
MPTS1206L025R	0.25	0.50	16	40	0.6	8.00	0.08	0.550	2.300
MPTS1206L035R	0.35	0.75	16	40	0.4	8.00	0.10	0.300	1.200
MPTS1206L050R	0.50	1.00	8	40	0.4	8.00	0.10	0.150	0.700
MPTS1206L050-24R	0.50	1.00	24	100	0.6	8.00	0.10	0.150	0.750
MPTS1206L075R	0.75	1.50	6	100	0.6	8.00	0.20	0.090	0.290
MPTS1206L075-16R	0.75	1.50	16	100	0.6	8.00	0.20	0.090	0.290
MPTS1206L100R	1.00	1.80	6	100	0.6	8.00	0.30	0.055	0.210
MPTS1206L110R	1.10	2.20	6	100	0.8	8.00	0.30	0.040	0.180
MPTS1206L150R	1.50	3.00	6	100	0.8	8.00	1.00	0.030	0.120
MPTS1206L200R	2.00	3.50	6	100	0.8	8.00	1.50	0.018	0.080

$I_H$ =Hold current-maximum current at which the device will not trip at 23°C still air.

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

$V_{MAX}$ =Maximum voltage device can withstand without damage at its rated current ( $I_{MAX}$ )

$I_{MAX}$ = Maximum fault current device can withstand without damage at rated voltage ( $V_{MAX}$ ).

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

$R_{MIN}$ =Minimum device resistance at 23°C prior to tripping.

$R1_{MAX}$ =Maximum device resistance at 23°C measured 1 hour after tripping or reflow soldering of 260°C for 20 seconds.

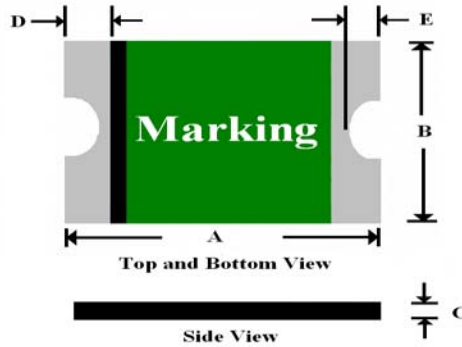
Termination pad characteristics

Termination pad materials: Pure Tin



### Product Dimensions (Millimeters)

#### MPTS1206



Part Number	A		B		C		D		E	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
MPTS1206L005R	3.00	3.50	1.50	1.80	0.45	0.85	0.10	0.75	0.10	0.45
MPTS1206L010R	3.00	3.50	1.50	1.80	0.45	0.85	0.10	0.75	0.10	0.45
MPTS1206L012R	3.00	3.50	1.50	1.80	0.45	0.85	0.10	0.75	0.10	0.45
MPTS1206L016R	3.00	3.50	1.50	1.80	0.45	0.75	0.10	0.75	0.10	0.45
MPTS1206L020R	3.00	3.50	1.50	1.80	0.45	0.75	0.10	0.75	0.10	0.45
MPTS1206L025R	3.00	3.50	1.50	1.80	0.45	0.75	0.10	0.75	0.10	0.45
MPTS1206L035R	3.00	3.50	1.50	1.80	0.45	0.75	0.10	0.75	0.10	0.45
MPTS1206L050R	3.00	3.50	1.50	1.80	0.25	0.55	0.10	0.75	0.10	0.45
MPTS1206L050-24R	3.00	3.50	1.50	1.80	0.90	1.30	0.25	0.75	0.10	0.45
MPTS1206L075R	3.00	3.50	1.50	1.80	0.45	1.25	0.25	0.75	0.10	0.45
MPTS1206L075-16R	3.00	3.50	1.50	1.80	0.45	1.25	0.25	0.75	0.10	0.45
MPTS1206L100R	3.00	3.50	1.50	1.80	0.45	1.00	0.25	0.75	0.10	0.45
MPTS1206L110R	3.00	3.50	1.50	1.80	0.45	1.00	0.25	0.75	0.10	0.45
MPTS1206L150R	3.00	3.50	1.50	1.80	0.80	1.40	0.25	0.75	0.10	0.45
MPTS1206L200R	3.00	3.50	1.50	1.80	0.85	1.60	0.25	0.75	0.10	0.45

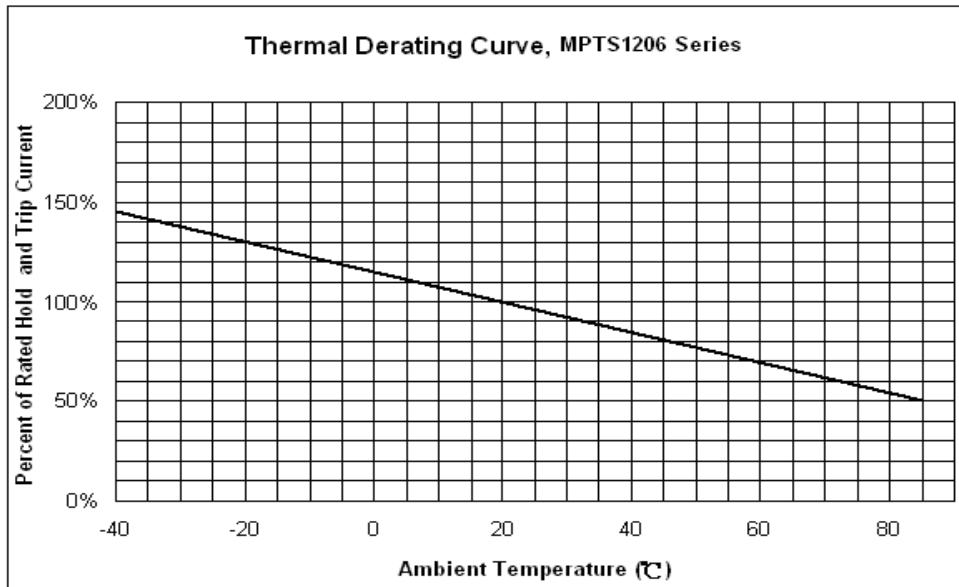
# Polymeric PTC



MPTS Series

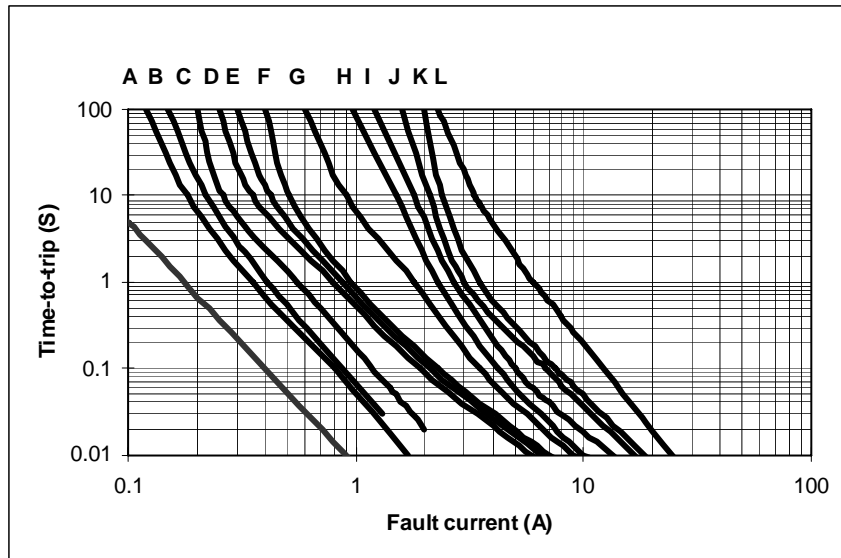
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## Thermal Derating Curve



## Typical Time-To-Trip at 23°

- Z= MPTS1206L005R
- A= MPTS1206L010R
- B= MPTS1206L012R
- C= MPTS1206L016R
- D= MPTS1206L020R
- E= MPTS1206L025R
- F= MPTS1206L035R
- G= MPTS1206L050R
- MPTS1206L050-24R
- H= MPTS1206L075R
- MPTS1206L075-16R
- I= MPTS1206L100R
- J= MPTS1206L110R
- K= MPTS1206L150R
- L= MPTS1206L200R



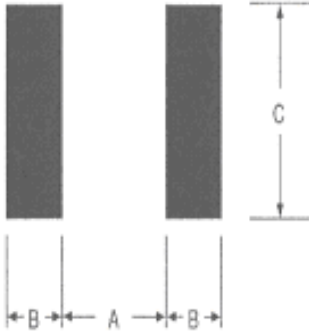
# Polymeric PTC



MPTS Series

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The dimension in the table below provides the recommended pad layout for each MPTS1206 device



Pad dimensions (millimeters)

Device	A Nominal	B Nominal	C Nominal
All 1206 Series	2.00	1.00	1.90

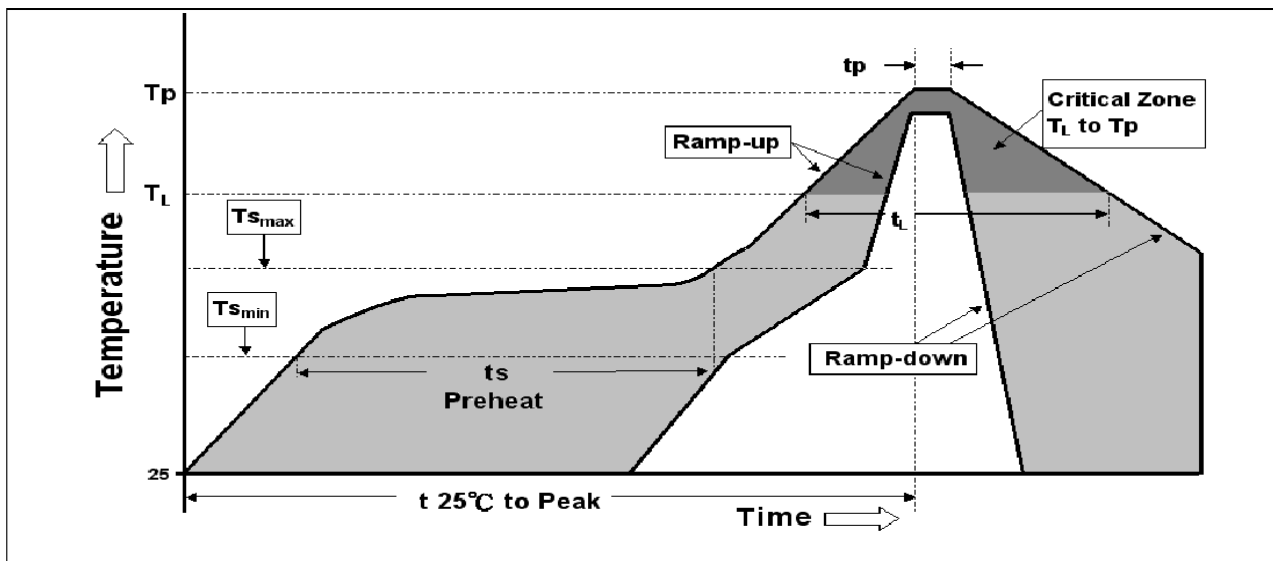
Profile Feature	Pb-Free Assembly
<b>Average Ramp-Up Rate (T<sub>smax</sub> to T<sub>p</sub>)</b>	3 °C/second max.
<b>Preheat :</b> Temperature Min (T <sub>smin</sub> ) Temperature Max (T <sub>smax</sub> ) Time (t <sub>smin</sub> to t <sub>smax</sub> )	150 °C 200 °C 60-180 seconds
<b>Time maintained above:</b> Temperature(T <sub>L</sub> ) Time (t <sub>L</sub> )	217 °C 60-150 seconds
<b>Peak/Classification Temperature(T<sub>p</sub>) :</b>	260 °C
<b>Time within 5°C of actual Peak :</b> Temperature (t <sub>p</sub> )	20-40 seconds
<b>Ramp-Down Rate :</b>	6 °C/second max.
<b>Time 25 °C to Peak Temperature :</b>	8 minutes max.

**Solder reflow**

- Due to “Lead Free” nature, Temperature and Dwell time for the soldering zone is higher than those for Non-compliant parts. This may cause damage together components.
- Recommended max solder paste thickness > 0.25mm.
- Devices can be cleaned using standard methods and aqueous solvent.
- Rework should utilize standard industry practices. These changes should apply to all notes for each case size.
- Storage Environment : < 30°C / 60%RH

**Caution:**

- If reflow temperatures exceed the recommended profile, devices may not meet the performance requirements.
- Devices are not designed to be wave soldered to the bottom side of the board.



# Polymeric PTC



MPTS Series

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## Electrical Characteristics (23°)

### MPTS1210

Part Number	Hold Current	Trip Current	Rated Voltage	Max Current	Typical Power	Max Time to Trip		Resistance	
						Current	Time	R <sub>MIN</sub>	R <sub>1MAX</sub>
	I <sub>H</sub> , A	I <sub>T</sub> , A	V <sub>MAX</sub> , Vdc	I <sub>MAX</sub> , A	Pd, W	Amp	Sec	Ω	Ω
MPTS1210L005R	0.05	0.15	60	10	0.60	0.25	3.00	3.600	50.000
MPTS1210L010R	0.10	0.25	60	10	0.60	0.50	1.50	1.600	15.000
MPTS1210L020R	0.20	0.40	30	10	0.60	8.00	0.02	0.800	5.000
MPTS1210L035R	0.35	0.70	16	40	0.60	8.00	0.20	0.320	1.300
MPTS1210L050R	0.50	1.00	16	40	0.60	8.00	0.10	0.250	0.900
MPTS1210L075R	0.75	1.50	8	40	0.60	8.00	0.10	0.130	0.400
MPTS1210L110R	1.10	2.20	6	100	0.80	8.00	0.30	0.060	0.210
MPTS1210L150R	1.50	3.00	6	100	0.80	8.00	0.50	0.040	0.110
MPTS1210L175R	1.75	4.00	6	100	0.80	8.00	0.60	0.020	0.080
MPTS1210L200R	2.00	4.00	6	100	0.80	8.00	1.00	0.015	0.070

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.

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

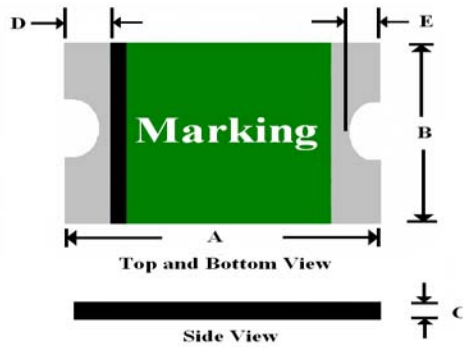
# Polymeric PTC



MPTS Series	<b>MERITEK</b>
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## Product Dimensions (Millimeters)

### MPTS1210



Part Number	A		B		C		D		E	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
MPTS1210L005R	3.00	3.43	2.35	2.80	0.60	1.15	0.25	0.75	0.10	0.45
MPTS1210L010R	3.00	3.43	2.35	2.80	0.60	1.15	0.25	0.75	0.10	0.45
MPTS1210L020R	3.00	3.43	2.35	2.80	0.40	0.85	0.25	0.75	0.10	0.45
MPTS1210L035R	3.00	3.43	2.35	2.80	0.40	0.80	0.25	0.75	0.10	0.45
MPTS1210L050R	3.00	3.43	2.35	2.80	0.30	0.75	0.25	0.75	0.10	0.45
MPTS1210L075R	3.00	3.43	2.35	2.80	0.30	0.70	0.25	0.75	0.10	0.45
MPTS1210L110R	3.00	3.43	2.35	2.80	0.60	1.00	0.25	0.75	0.10	0.45
MPTS1210L150R	3.00	3.43	2.35	2.80	0.50	0.90	0.25	0.75	0.10	0.45
MPTS1210L175R	3.00	3.43	2.35	2.80	0.80	1.40	0.25	0.75	0.10	0.45
MPTS1210L200R	3.00	3.43	2.35	2.80	0.80	1.40	0.25	0.75	0.10	0.45

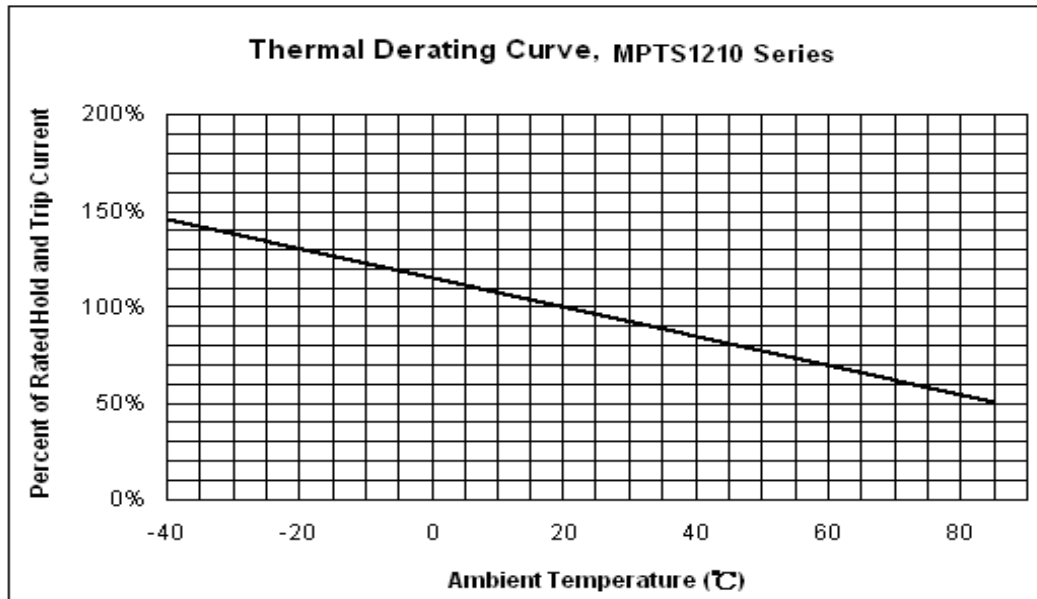
# Polymeric PTC



MPTS Series

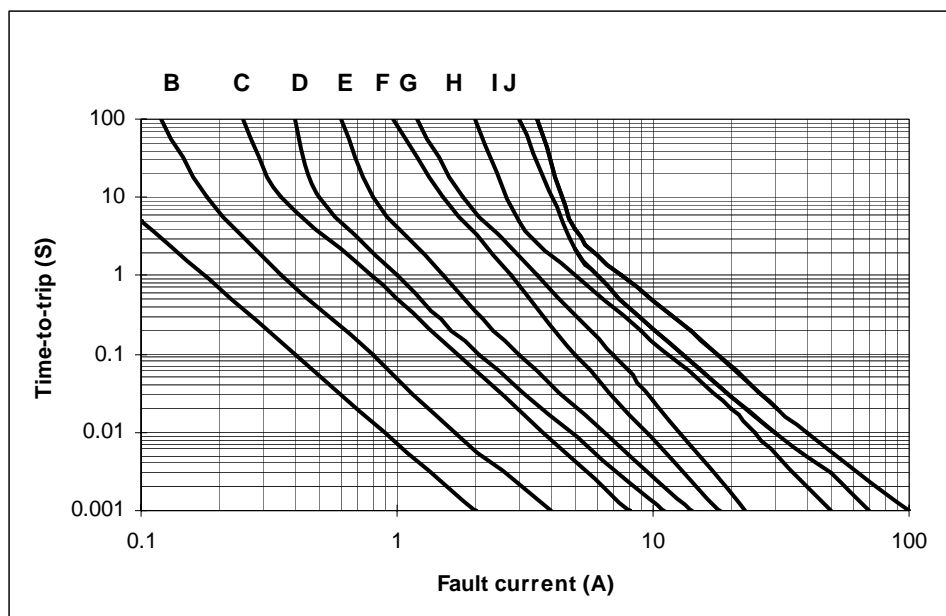
MERITEK

## Thermal Derating Curve



## Typical Time-To-Trip at 23°C

- A = MPTS1210L005R
- B = MPTS1210L010R
- C = MPTS1210L020R
- D = MPTS1210L035R
- E = MPTS1210L050R
- F = MPTS1210L075R
- G = MPTS1210L110R
- H = MPTS1210L150R
- I = MPTS1210L175R
- J = MPTS1210L200R





# Polymeric PTC



MPTS Series

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## Electrical Characteristics (23°)

### MPTS1812

Part Number	Hold Current	Trip Current	Rated Voltage	Max Current	Typical Power	Max Time to Trip		Resistance	
	$I_H$ , A	$I_T$ , A	$V_{MAX}$ , Vdc	$I_{MAX}$ , A	Pd, W	Current	Time	$R_{MIN}$	$R1_{MAX}$
	$I_H$ , A	$I_T$ , A	$V_{MAX}$ , Vdc	$I_{MAX}$ , A	Pd, W	Amp	Sec	$\Omega$	$\Omega$
MPTS1812L010R	0.10	0.30	60	10	0.8	8.0	0.020	1.600	15.00
MPTS1812L014R	0.14	0.30	60	10	0.8	8.0	0.008	1.200	6.500
MPTS1812L020R	0.20	0.40	30	10	0.8	8.0	0.020	0.800	5.000
MPTS1812L035R	0.35	0.70	16	40	0.8	8.0	0.100	0.320	1.500
MPTS1812L050R	0.50	1.00	16	40	0.8	8.0	0.150	0.150	1.000
MPTS1812L075R	0.75	1.50	16	40	0.8	8.0	0.200	0.110	0.450
MPTS1812L075-24R	0.75	1.50	24	40	1.0	8.0	0.200	0.110	0.290
MPTS1812L075-33R	0.75	1.50	33	40	1.0	8.0	0.200	0.110	0.400
MPTS1812L110R	1.10	2.20	8	100	0.8	8.0	0.300	0.040	0.210
MPTS1812L110-16R	1.10	2.20	16	100	0.8	8.0	0.500	0.040	0.180
MPTS1812L110-24R	1.10	2.20	24	100	1.0	8.0	0.500	0.060	0.200
MPTS1812L125R	1.25	2.50	6	40	0.8	8.0	0.400	0.050	0.140
MPTS1812L150R	1.50	3.00	8	100	0.8	8.0	0.500	0.040	0.110
MPTS1812L150-12R	1.50	3.00	12	100	1.0	8.0	0.500	0.040	0.110
MPTS1812L150-24R	1.50	3.00	24	100	1.0	8.0	1.500	0.040	0.120
MPTS1812L160R	1.60	3.20	8	100	0.8	8.0	0.500	0.030	0.100
MPTS1812L160-12R	1.60	3.20	12	100	1.0	8.0	1.000	0.030	0.100
MPTS1812L160-16R	1.60	3.20	16	100	1.0	8.0	1.000	0.030	0.100
MPTS1812L200R	2.00	3.50	8	100	1.0	8.0	2.000	0.020	0.070
MPTS1812L260R	2.60	5.00	6	100	1.0	8.0	2.500	0.015	0.047
MPTS1812L260-13R	2.60	5.00	13.2	100	1.3	8.0	5.000	0.015	0.050
MPTS1812L260-16R	2.60	5.00	16	100	1.3	8.0	5.000	0.015	0.050
MPTS1812L300R	3.00	5.00	6	100	1.0	8.0	4.000	0.012	0.040

$I_H$ =Hold current-maximum current at which the device will not trip at 23°C still air.

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

$V_{MAX}$ =Maximum voltage device can withstand without damage at its rated current ( $I_{MAX}$ )

$I_{MAX}$ =Maximum fault current device can withstand without damage at rated voltage ( $V_{MAX}$ ).

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

$R_{MIN}$ =Minimum device resistance at 23°C prior to tripping.

$R1_{MAX}$ =Maximum device resistance at 23°C measured 1 hour after tripping or reflow soldering of 260°C for 20 seconds.

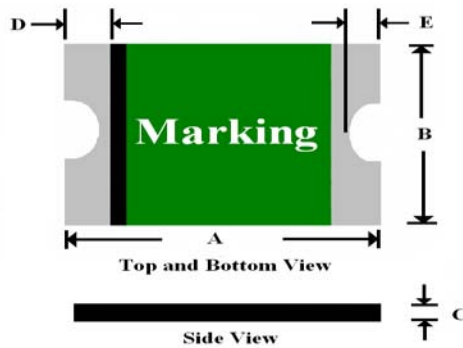
Termination pad characteristics

Termination pad materials: Pure Tin



### Product Dimensions (Millimeters)

#### MPTS1812



Part Number	A		B		C		D		E	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
MPTS1812L010R	4.37	4.73	3.07	3.41	0.60	0.90	0.30	0.95	0.25	0.65
MPTS1812L014R	4.37	4.73	3.07	3.41	0.60	0.90	0.30	0.95	0.25	0.65
MPTS1812L020R	4.37	4.73	3.07	3.41	0.60	0.90	0.30	0.95	0.25	0.65
MPTS1812L035R	4.37	4.73	3.07	3.41	0.40	0.70	0.30	0.95	0.25	0.65
MPTS1812L050R	4.37	4.73	3.07	3.41	0.35	0.65	0.30	0.95	0.25	0.65
MPTS1812L075R	4.37	4.73	3.07	3.41	0.35	0.65	0.30	0.95	0.25	0.65
MPTS1812L075-24R	4.37	4.73	3.07	3.41	0.80	1.55	0.25	0.95	0.25	0.65
MPTS1812L075-33R	4.37	4.73	3.07	3.41	0.80	1.55	0.25	0.95	0.25	0.65
MPTS1812L110R	4.37	4.73	3.07	3.41	0.25	0.55	0.30	0.95	0.25	0.65
MPTS1812L110-16R	4.37	4.73	3.07	3.41	0.25	0.90	0.30	0.95	0.25	0.65
MPTS1812L110-24R	4.37	4.73	3.07	3.41	0.80	1.30	0.25	0.95	0.25	0.65
MPTS1812L125R	4.37	4.73	3.07	3.41	0.25	0.55	0.30	0.95	0.25	0.65
MPTS1812L150R	4.37	4.73	3.07	3.41	0.25	0.55	0.30	0.95	0.25	0.65
MPTS1812L150-12R	4.37	4.73	3.07	3.41	0.60	1.10	0.25	0.95	0.25	0.65
MPTS1812L150-24R	4.37	4.73	3.07	3.41	0.60	1.55	0.25	0.95	0.25	0.65
MPTS1812L160R	4.37	4.73	3.07	3.41	0.25	0.90	0.30	0.95	0.25	0.65
MPTS1812L160-12R	4.37	4.73	3.07	3.41	0.60	1.35	0.25	0.95	0.25	0.65
MPTS1812L160-16R	4.37	4.73	3.07	3.41	0.60	1.35	0.25	0.95	0.25	0.65
MPTS1812L200R	4.37	4.73	3.07	3.41	0.55	1.20	0.25	0.95	0.25	0.65
MPTS1812L260R	4.37	4.73	3.07	3.41	0.55	1.20	0.25	0.95	0.25	0.65
MPTS1812L260-13R	4.37	4.73	3.07	3.41	0.80	1.55	0.25	0.95	0.25	0.65
MPTS1812L260-16R	4.37	4.73	3.07	3.41	0.80	1.55	0.25	0.95	0.25	0.65
MPTS1812L300R	4.37	4.73	3.07	3.41	0.80	1.55	0.25	0.95	0.25	0.65

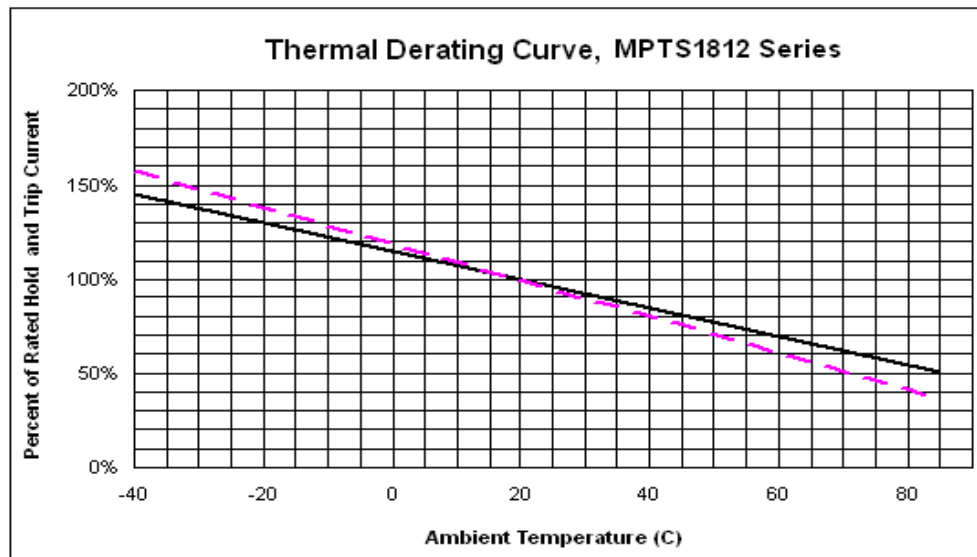
# Polymeric PTC



MPTS Series

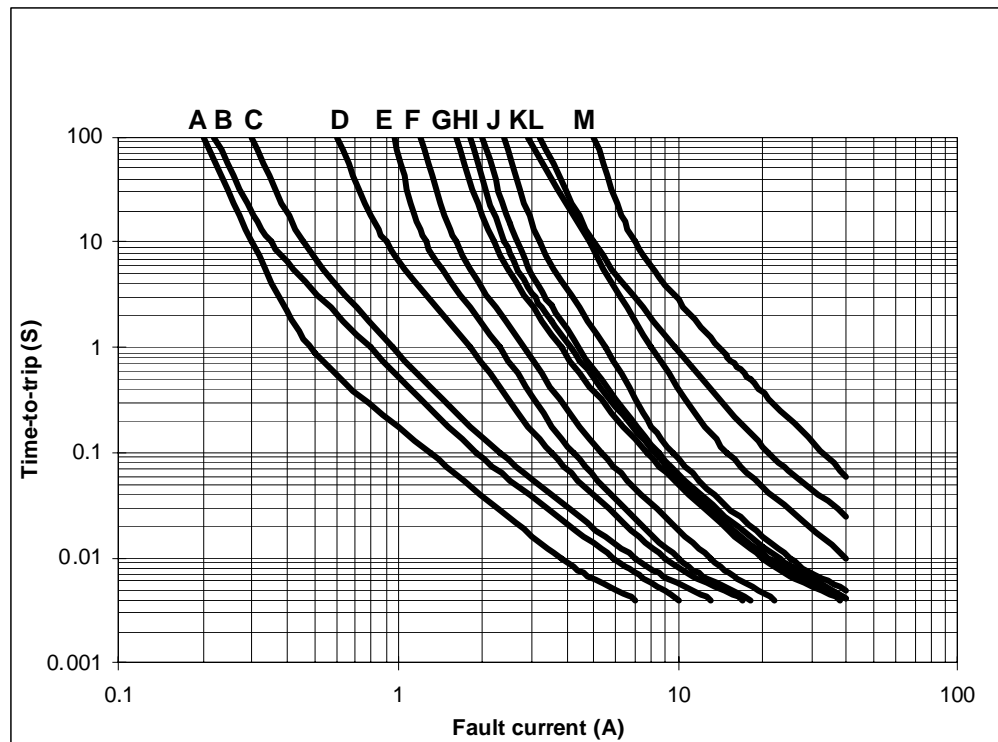
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## Thermal Derating Curve



## Typical Time-To-Trip at 23°C

- A = MPTS1812L010R
- B = MPTS1812L014R
- C = MPTS1812L020R
- D = MPTS1812L035R
- E = MPTS1812L050R
- F = MPTS1812L075R
- MPTS1812L075-24R
- MPTS1812L075-33R
- G = MPTS1812L110R
- MPTS1812L110-16R
- MPTS1812L110-24R
- H = MPTS1812L125R
- I = MPTS1812L150R
- MPTS1812L150-12R
- MPTS1812L150-24R
- J = MPTS1812L160R
- MPTS1812L160-12R
- MPTS1812L160-16R
- K = MPTS1812L200R
- L = MPTS1812L260R
- MPTS1812L260-13R
- MPTS1812L260-16R
- M = MPTS1812L300R



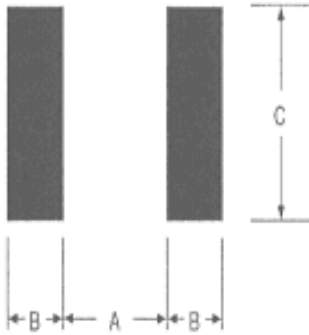
# Polymeric PTC



MPTS Series

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The dimension in the table below provides the recommended pad layout for each MPTS1812 device



### Pad dimensions (millimeters)

Device	A Nominal	B Nominal	C Nominal
All 1812 Series	3.45	1.78	3.50

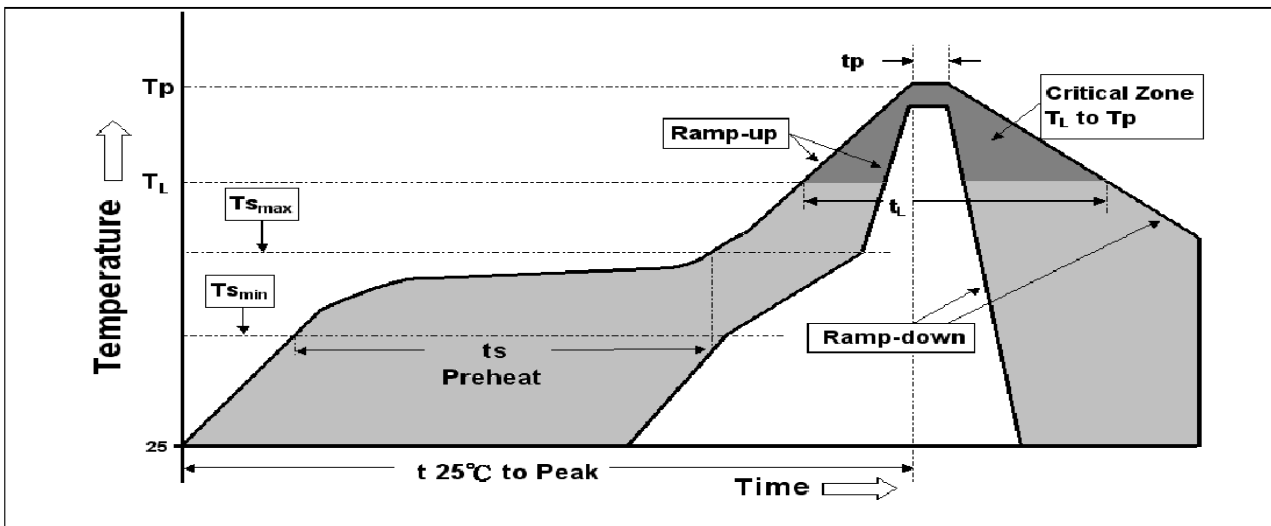
Profile Feature	Pb-Free Assembly
<b>Average Ramp-Up Rate (T<sub>smax</sub> to T<sub>p</sub>)</b>	3 °C/second max.
<b>Preheat :</b> Temperature Min (T <sub>smin</sub> ) Temperature Max (T <sub>smax</sub> ) Time (t <sub>smin</sub> to t <sub>smax</sub> )	150 °C 200 °C 60-180 seconds
<b>Time maintained above:</b> Temperature(T <sub>L</sub> ) Time (t <sub>L</sub> )	217 °C 60-150 seconds
<b>Peak/Classification Temperature(T<sub>p</sub>) :</b>	260 °C
<b>Time within 5°C of actual Peak :</b> Temperature (t <sub>p</sub> )	20-40 seconds
<b>Ramp-Down Rate :</b>	6 °C/second max.
<b>Time 25 °C to Peak Temperature :</b>	8 minutes max.

### Solder reflow

- Due to "Lead Free" nature, Temperature and Dwell time for the soldering zone is higher than those for Non-compliant parts. This may cause damage to other components.
- Recommended max solder paste thickness > 0.25mm.
- Devices can be cleaned using standard methods and aqueous solvent.
- Rework should utilize standard industry practices. These changes should apply to all notes for each case size.
- Storage Environment : < 30°C / 60%RH

### Caution:

- If reflow temperatures exceed the recommended profile, devices may not meet the performance requirements.
- Devices are not designed to be wave soldered to the bottom side of the board.



# Polymeric PTC



MPTS Series

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## Electrical Characteristics (23°C)

### MPTS2920

Part Number	Hold Current	Trip Current	Rated Voltage	Max Current	Typical Power	Max Time to Trip		Resistance	
	$I_H, A$	$I_T, A$	$V_{MAX}, Vdc$	$I_{MAX}, A$	$Pd, W$	Current A	Time Sec	$R_{MIN}$ $\Omega$	$R1_{MAX}$ $\Omega$
MPTS2920L030R	0.30	0.60	60	10	1.5	1.5	3.0	1.000	4.800
MPTS2920L050R	0.50	1.00	60	10	1.5	2.5	4.0	0.300	1.400
MPTS2920L075R	0.75	1.50	33	40	1.5	8.0	0.3	0.180	1.000
MPTS2920L100R	1.10	2.20	33	40	1.5	8.0	0.5	0.090	0.410
MPTS2920L125R	1.25	2.50	33	40	1.5	8.0	2.0	0.050	0.250
MPTS2920L150R	1.50	3.00	33	40	1.5	8.0	2.0	0.050	0.230
MPTS2920L185R	1.85	3.70	33	40	1.5	8.0	2.5	0.040	0.150
MPTS2920L200R	2.00	4.00	16	40	1.5	8.0	4.5	0.035	0.120
MPTS2920L250R	2.50	5.00	16	40	1.5	8.0	16.0	0.025	0.085
MPTS2920L260R	2.60	5.20	6	40	1.5	8.0	20.0	0.020	0.075
MPTS2920L300R	3.00	5.20	6	40	1.5	8.0	25.0	0.010	0.048

$I_H$ =Hold current-maximum current at which the device will not trip at 23°C still air.

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

$V_{MAX}$ =Maximum voltage device can withstand without damage at its rated current ( $I_{MAX}$ )

$I_{MAX}$ = Maximum fault current device can withstand without damage at rated voltage ( $V_{MAX}$ ).

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

$R_{MIN}$ =Minimum device resistance at 23°C prior to tripping.

$R1_{MAX}$ =Maximum device resistance at 23°C measured 1 hour after tripping or reflow soldering of 260°C for 20 seconds.

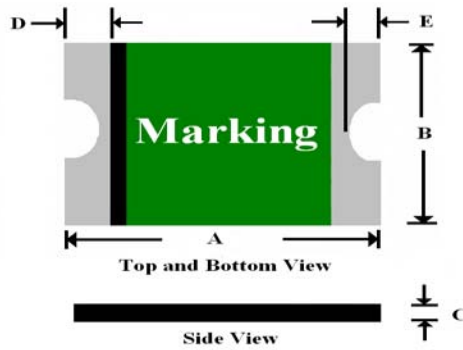
Termination pad characteristics

Termination pad materials: Pure Tin



## Product Dimensions (Millimeters)

### MPTS2920



Part Number	A		B		C		D		E	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
MPTS2920L030R	6.73	7.98	4.80	5.44	0.60	1.15	0.50	1.20	0.50	0.90
MPTS2920L050R	6.73	7.98	4.80	5.44	0.60	1.15	0.50	1.20	0.50	0.90
MPTS2920L075R	6.73	7.98	4.80	5.44	0.40	1.15	0.50	1.20	0.50	0.90
MPTS2920L100R	6.73	7.98	4.80	5.44	0.40	1.00	0.50	1.20	0.50	0.90
MPTS2920L125R	6.73	7.98	4.80	5.44	0.40	0.90	0.50	1.20	0.50	0.90
MPTS2920L150R	6.73	7.98	4.80	5.44	0.40	0.90	0.50	1.20	0.50	0.90
MPTS2920L185R	6.73	7.98	4.80	5.44	0.30	0.90	0.50	1.20	0.50	0.90
MPTS2920L200R	6.73	7.98	4.80	5.44	0.30	0.90	0.50	1.20	0.50	0.90
MPTS2920L250R	6.73	7.98	4.80	5.44	0.30	0.90	0.50	1.20	0.50	0.90
MPTS2920L260R	6.73	7.98	4.80	5.44	0.30	0.90	0.50	1.20	0.50	0.90
MPTS2920L300R	6.73	7.98	4.80	5.44	0.40	0.90	0.50	1.20	0.50	0.90

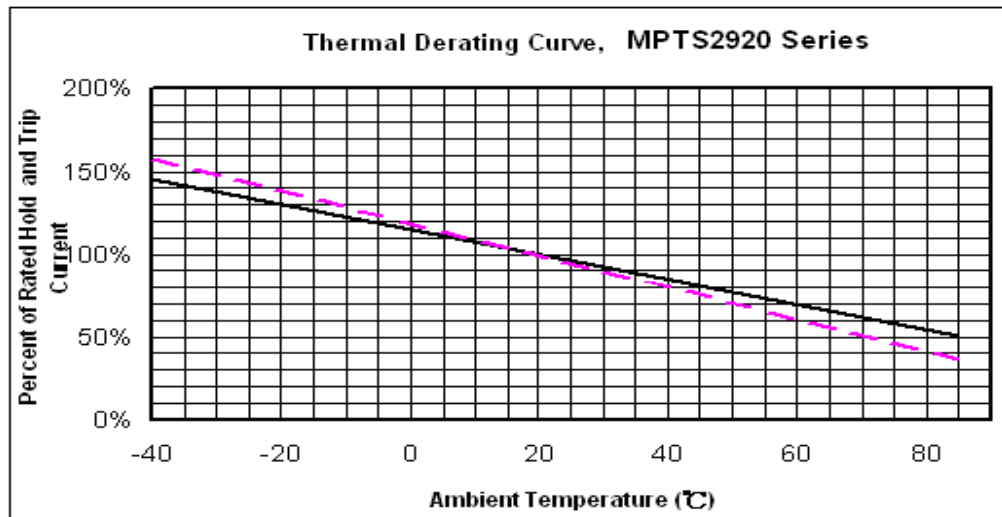
# Polymeric PTC



MPTS Series

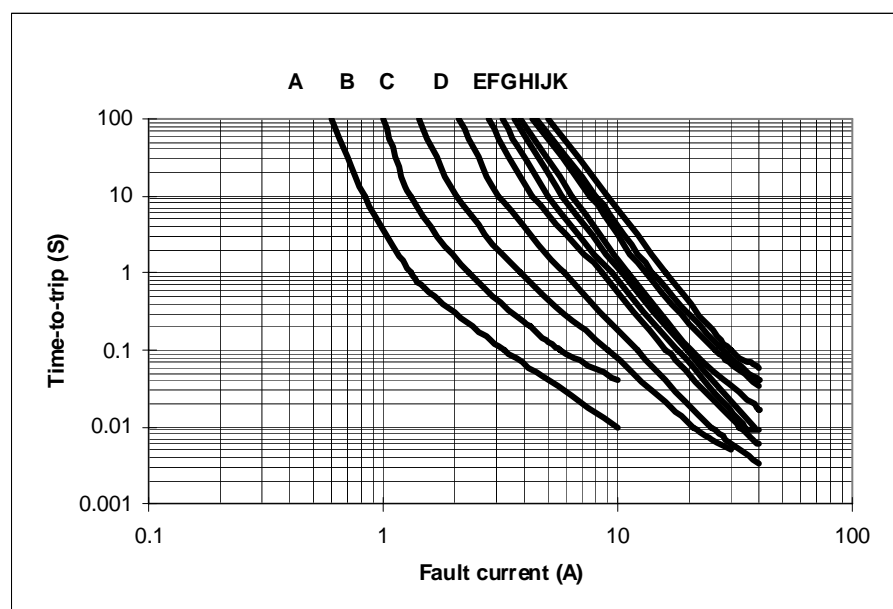
MERITEK

## Thermal Derating Curve



## Typical Time-To-Trip at 23°C

- A = MPTS2920L030R
- B = MPTS2920L050R
- C = MPTS2920L075R
- D = MPTS2920L100R
- E = MPTS2920L125R
- F = MPTS2920L150R
- G = MPTS2920L185R
- H = MPTS2920L200R
- I = MPTS2920L250R
- J = MPTS2920L260R
- K = MPTS2920L300R



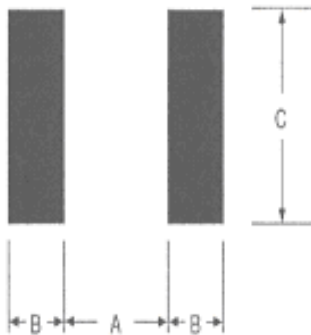
# Polymeric PTC



MPTS Series

**MERITEK**

The dimension in the table below provides the recommended pad layout for each MPTS2920 device



Pad dimensions (millimeters)			
Device	A Nominal	B Nominal	C Nominal
All 2920 Series	5.10	2.30	5.60

Profile Feature	Pb-Free Assembly
<b>Average Ramp-Up Rate (T<sub>smax</sub> to T<sub>p</sub>)</b>	3 °C/second max.
<b>Preheat :</b> Temperature Min (T <sub>smin</sub> ) Temperature Max (T <sub>smax</sub> ) Time (t <sub>smin</sub> to t <sub>smax</sub> )	150 °C 200 °C 60-180 seconds
<b>Time maintained above:</b> Temperature(T <sub>L</sub> ) Time (t <sub>L</sub> )	217 °C 60-150 seconds
<b>Peak/Classification Temperature(T<sub>p</sub>) :</b>	260 °C
<b>Time within 5°C of actual Peak :</b> Temperature (t <sub>p</sub> )	20-40 seconds
<b>Ramp-Down Rate :</b>	6 °C/second max.
<b>Time 25 °C to Peak Temperature :</b>	8 minutes max.

**Solder reflow**

- Due to "Lead Free" nature, Temperature and Dwell time for the soldering zone is higher than those for Non-compliant parts. This may cause damage to other components.
- Recommended max solder paste thickness > 0.25mm.
- Devices can be cleaned using standard methods and aqueous solvent.
- Rework should utilize standard industry practices. These changes should apply to all notes for each case size.
- Storage Environment : < 30°C / 60%RH

**Caution:**

- If reflow temperatures exceed the recommended profile, devices may not meet the performance requirements.
- Devices are not designed to be wave soldered to the bottom side of the board.

