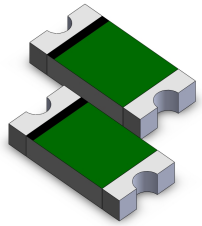
Surface Mount Resettable PTCs

SMD0805 Series

Description

The SMD0805 Series PTC provides surface mount over-current protection for applications where space is at a premium and resettable protection is desired.



Features

- RoHS compliant, Lead-Free and Halogen-Free
- Fast time-to-trip
- Compact design saves board space
- Low resistance
- Low-profile

Applicable

- PC motherboard - plug and play protection
- Mobile phones - battery and port protection
- Game console port protection
- USB peripherals
- Disk drive
- PDAS / digital cameras
- Power ports
- General electronics

Electrical Parameters

Part Number	Hold Current	Trip Current	Rated Voltage	Max Current	Typical Power	Maximum Time To Trip		Resistance	
	I_{hold} (A)	I_{trip} (A)	V_{max} (Vdc)	I_{max} (A)	$P_{dtyp.}$ (W)	Current (A)	Time (Sec.)	R_{min} (Ω)	R_{1max} (Ω)
SMD0805-010	0.10	0.30	15	100	0.5	0.50	1.50	1.000	6.000
SMD0805-020	0.20	0.50	9	100	0.5	8.00	0.02	0.650	3.500
SMD0805-035	0.35	0.75	6	100	0.5	8.00	0.10	0.250	1.200
SMD0805-050	0.50	1.00	6	100	0.5	8.00	0.10	0.150	0.850
SMD0805-075	0.75	1.50	6	40	0.6	8.00	0.20	0.090	0.385
SMD0805-100	1.00	1.95	6	100	0.6	8.00	0.30	0.060	0.230

I_{hold}= Hold current: maximum current device will pass without tripping in 23°C still air.

I_{trip}= Trip current: minimum current at which the device will trip in 23°C still air.

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

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

$P_{dtyp.}$= Power dissipated from device when in the tripped state at 23°C still air.

R_{min}= Minimum resistance of device in initial (un-soldered) state.

R_{1max}= Maximum resistance of device at 23°C measured one hour after tripping.

Caution: Operation beyond the specified rating may result in damage and possible arcing and flame.

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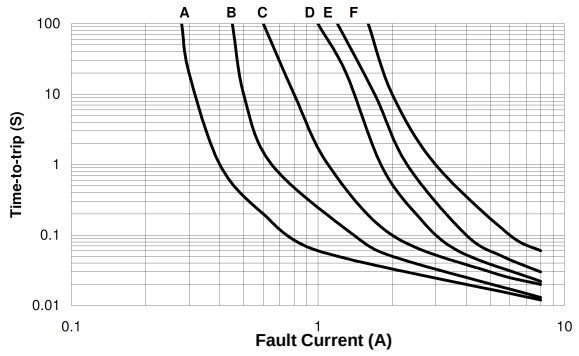
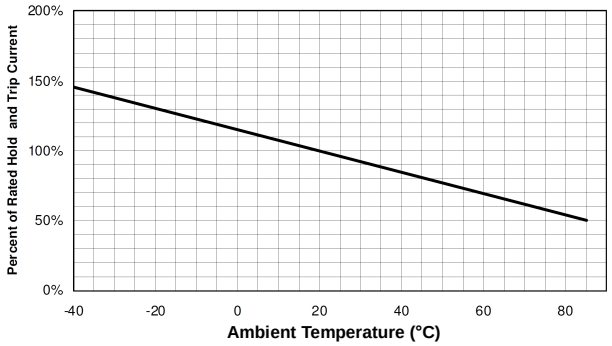
Temperature Rerating Chart – I_{hold} (A)

Average Time Current Curves



A= SMD0805-010
B= SMD0805-020
C= SMD0805-035
D= SMD0805-050
E= SMD0805-075
F= SMD0805-100

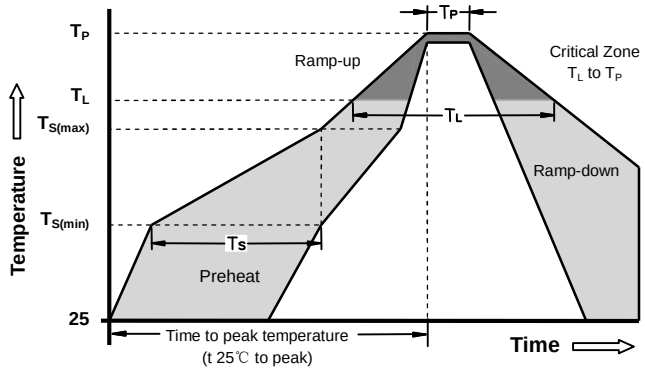
Temperature Rerating Curve



Material Specifications

Terminal pad material	Pure Tin
Soldering Characteristics	Meets EIA specification RS 186-9E, ANSI/J-std-002 Category 3

Soldering Parameters



Profile Feature	Pb-Free Assembly
Average Ramp-Up Rate (T_S max to T_P)	3°C/second max.
Preheat : **Temperature Min ($T_S$min)** **Temperature Max ($T_S$max)** **Time ($T_S$min to $T_S$max)**	 150°C 200°C 60-180 seconds
Time maintained above: **Temperature(TL)** **Time (tL)**	 217°C 60-150 seconds
Peak/Classification Temperature(T_P):	260°C
Time within 5°C of actual peak: **Temperature**	 20-40 seconds
Ramp-down Rate:	6°C/ second max.
Time 25°C to Peak Temperature	8 minutes max.
Note: All temperatures refer to of the package, measured on the package body surface.	

Solder reflow

Due to “Lead Free” nature, Temperature and Dwelling time for the soldering zone is higher than those for Regular. This may cause damage to other components.

1. Recommended max past thickness > 0.25mm.
2. Devices can be cleaned using standard methods and aqueous solvent.
3. Rework use standard industry practices.
4. Storage Environment : < 30℃/ 60%RH

Caution:

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

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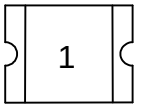
Part Numbering

Part Marking

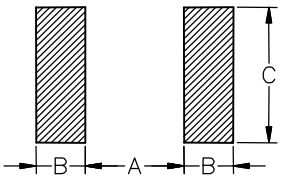


Example

1= SMD0805-010
2= SMD0805-020
3= SMD0805-035
5= SMD0805-050
7= SMD0805-075
0= SMD0805-100

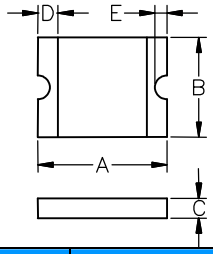
Pad Layouts Unit: mm

The dimension in the table below provide the recommended pad layout for each SMD0805 device



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

Dimensions Unit: mm



Part Number	A		B		C		D		E	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
SMD0805-010	2.00	2.20	1.20	1.50	0.50	1.00	0.20	0.60	0.10	0.45
SMD0805-020	2.00	2.20	1.20	1.50	0.45	1.00	0.20	0.60	0.10	0.45
SMD0805-035	2.00	2.20	1.20	1.50	0.45	1.00	0.20	0.60	0.10	0.45
SMD0805-050	2.00	2.20	1.20	1.50	0.30	0.60	0.20	0.60	0.10	0.45
SMD0805-075	2.00	2.20	1.20	1.50	0.40	1.00	0.20	0.60	0.10	0.45
SMD0805-100	2.00	2.20	1.20	1.50	0.50	1.10	0.20	0.60	0.10	0.45

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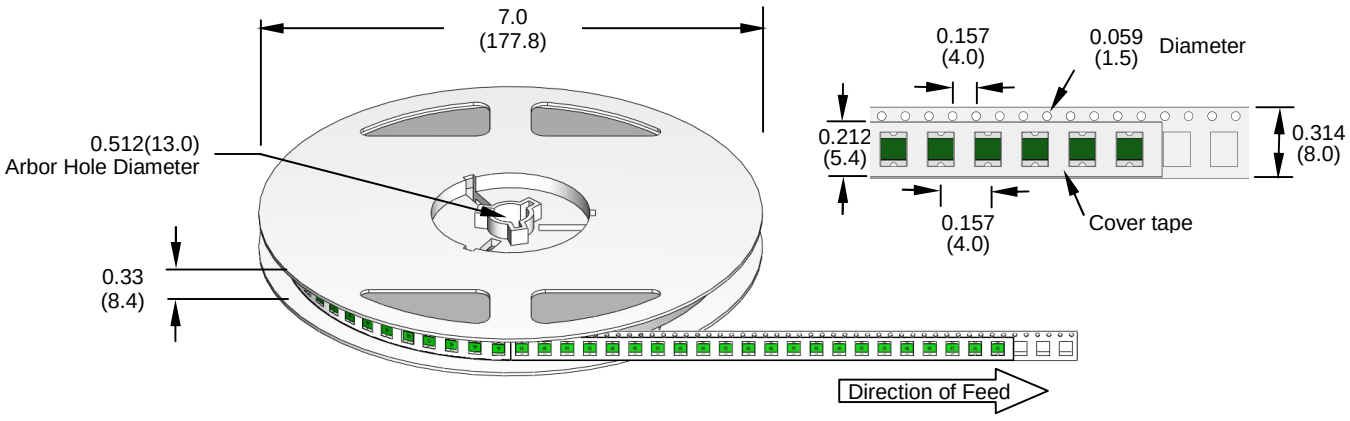
Packaging

Part Number	Packaging Option	Quantity
SMD0805-010	Tape & Reel -8mm/7″tape	5000
SMD0805-020	Tape & Reel -8mm/7″tape	5000
SMD0805-035	Tape & Reel -8mm/7″tape	5000
SMD0805-050	Tape & Reel -8mm/7″tape	5000
SMD0805-075	Tape & Reel -8mm/7″tape	5000
SMD0805-100	Tape & Reel -8mm/7″tape	4000

Tape and Reel Specifications



Dimensions are in inches
(and millimeters)

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 over-current protection. Application for repeated over-current condition and/or prolonged trip are not anticipated.
- Avoid contact of PPTC device with chemical solvent. Prolonged contact will damage the device performance.