RoHS 2002/95/EC

ELECTRICAL CHARACTERISTICS

Part Number	I_{hold} (A)	I_{trip} (A)	V_{max} (Vdc)	I_{max} (A)	P_d max. (W)	Maximum Time To Trip		Resistance			Agency Approval
						Current (A)	Time (Sec.)	R_{min} (Ω)	R_{typ} (Ω)	R_{1max} (Ω)	
SMD0805P010TF	0.10	0.30	15	40	0.5	0.50	1.50	1.000	3.500	6.000	UL/CSA/TÜV
SMD0805P020TF	0.20	0.50	9	40	0.5	8.00	0.02	0.650	2.000	3.500	UL/CSA/TÜV
SMD0805P035TF	0.35	0.75	6	40	0.5	8.00	0.10	0.250	0.750	1.200	UL/CSA/TÜV
SMD0805P050TF	0.50	1.00	6	40	0.5	8.00	0.10	0.150	0.500	0.850	UL/CSA/TÜV
SMD0805P075TF	0.75	1.50	6	40	0.6	8.00	0.20	0.090	---	0.350	UL/CSA/TÜV
SMD0805P100TF	1.00	1.95	6	40	0.6	8.00	0.30	0.060	---	0.210	UL/CSA/TÜV

Note: I_{hold} = Hold current: maximum current device will pass without tripping in 20℃ still air.

I_{trip} = Trip current: minimum current at which the device will trip in 20℃ 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_d = Power dissipated from device when in the tripped state at 20℃ still air.

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

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

R_{1max} = Maximum resistance of device at 20℃ measured one hour after tripping or reflow soldering of 260℃ for 20 sec.

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

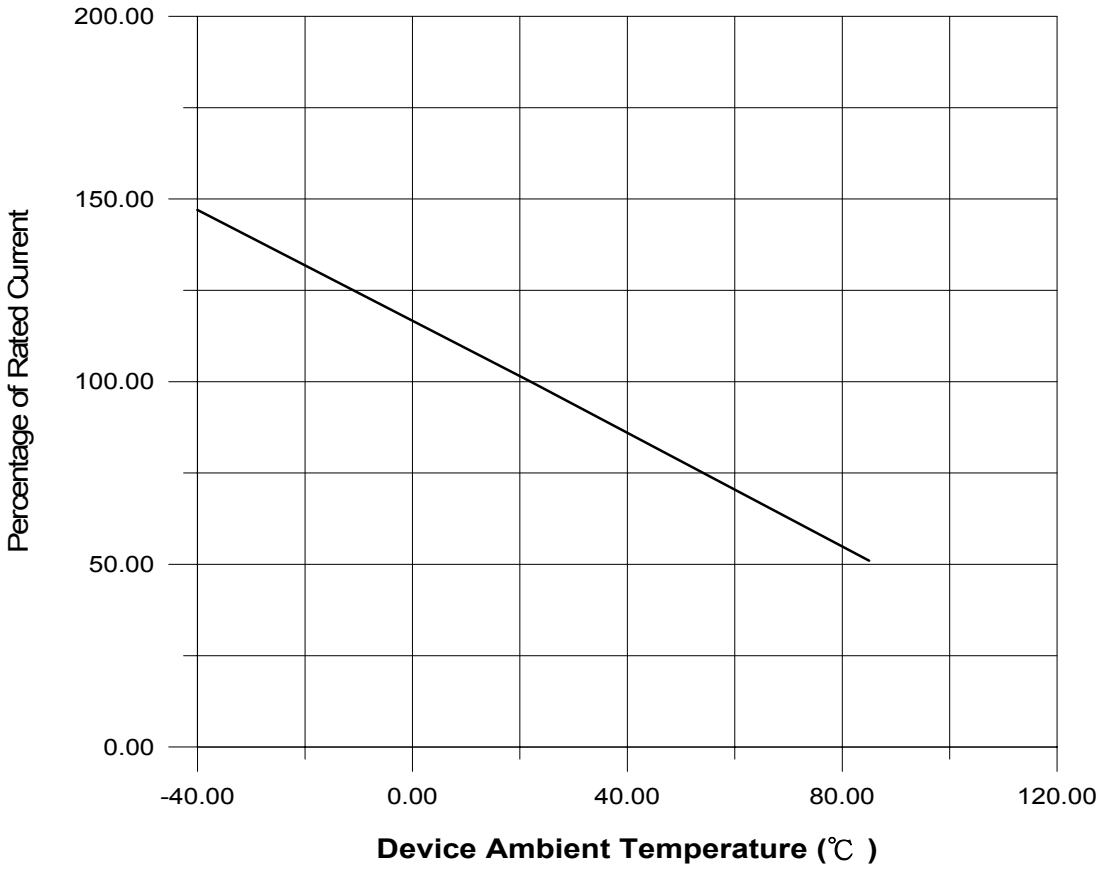
Recognitions: UL, CSA, TÜV recognized.

◎Specifications are subject to change without notice.

How to Select a Polymer PTC fuse:

(1) Determine the following operating parameters for the circuits:
  (A) Normal Operating Current (I hold)
  (B) Maximum Circuit Voltage (V max)
  (C) Maximum Interrupt Current (I max)
  (D) Normal Operating Temperature (min℃/max℃)
(2) Select the device form factor and dimension suitable for the application:
  Surface Mount Device (SMD Series)
  Radial Leaded Device (RLD Series)
  Axial Leaded Strap Device (STD Series)
  Other Custom-designed Device (Disc/Chip)
(3) Compare the maximum ratings for V max and I max of the PTC device with the circuit in application and make sure that the circuit's requirement does not exceed the device ratings.
(4) Check that the PTC device's trip time (time-to-trip) will protect the circuit.
(5) Verify that the circuit operating temperatures are within the PTC device's normal operating temperature range.
(6) Verify the performance and suitability of the chosen PTC device in the application.

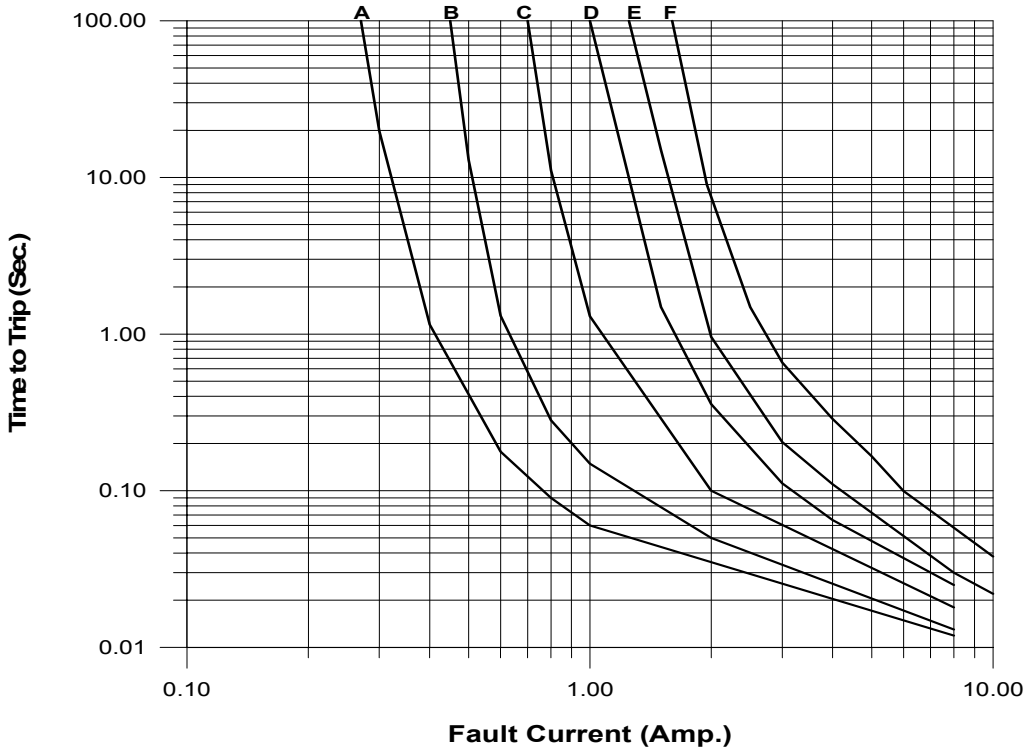
THERMAL DERATING CURVE FOR SMD0805 SERIES



THERMAL DERATING CHART FOR SMD0805 SERIES – Ihold (Amps)

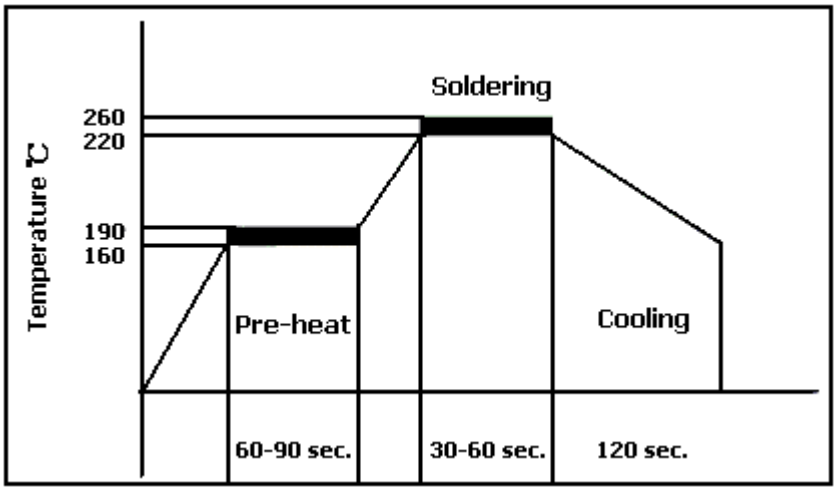
Model	Ambient Operation Temperature								
	-40℃	-20℃	0℃	23℃	40℃	50℃	60℃	70℃	85℃
SMD0805P010TF	0.14	0.12	0.11	0.10	0.08	0.07	0.06	0.05	0.03
SMD0805P020TF	0.28	0.25	0.23	0.20	0.17	0.14	0.12	0.10	0.07
SMD0805P035TF	0.47	0.44	0.39	0.35	0.30	0.27	0.24	0.20	0.14
SMD0805P050TF	0.68	0.62	0.55	0.50	0.40	0.37	0.33	0.29	0.23
SMD0805P075TF	1.00	0.90	0.79	0.75	0.63	0.57	0.53	0.41	0.34
SMD0805P100TF	1.35	1.25	1.10	1.00	0.82	0.74	0.65	0.55	0.42

AVERAGE TIME-CURRENT CURVE FOR SMD0805 SERIES



A:SMD0802P010TF
B:SMD0805P020TF
C:SMD0805P035TF
D:SMD0805P050TF
E:SMD0805P075TF
F:SMD0805P100TF

SOLDER REFLOW



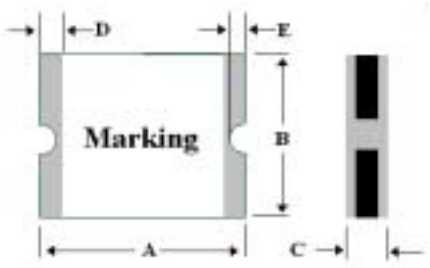
RECOMMENDED CONDITIONS

Condition	Reflow
Peak Temp/Time	245℃ ≧ 5 Sec
≧220℃	30 Sec ~ 60 Sec
Preheat 160℃~ 190℃	60 Sec ~ 90 Sec
Storage Condition	0℃~35℃, ≦70%RH

- Recommended reflow methods: IR, vapor phase oven, hot air oven, N_2 environment for lead-free
- Devices are not designed to be wave soldered to the bottom side of the board.
- Recommended maximum paste thickness is 0.25mm (0.010 inch)
- Devices can be cleaned using standard industry methods and solvents.

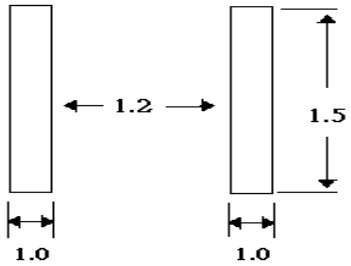
Note: If reflow temperatures exceed the recommended profile, devices may not meet the performance requirements.

FIGURE



SOLDER PAD LAYOUTS

(Dimension in mm)



PHYSICAL DIMENSIONS (mm)

Part Number	A		B		C		D	E	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Min.	Max.
SMD0805P010TF	2.00	2.20	1.20	1.50	0.55	1.00	0.20	0.10	0.45
SMD0805P020TF	2.00	2.20	1.20	1.50	0.55	1.00	0.20	0.10	0.45
SMD0805P035TF	2.00	2.20	1.20	1.50	0.45	0.75	0.20	0.10	0.45
SMD0805P050TF	2.00	2.20	1.20	1.50	0.75	1.25	0.20	0.10	0.45
SMD0805P075TF	2.00	2.20	1.20	1.50	0.75	1.25	0.20	0.15	0.45
SMD0805P100TF	2.00	2.20	1.20	1.50	0.80	1.80	0.20	0.15	0.45

ENVIRONMENTAL SPECIFICATIONS

Operating/Storage Temperature	-40℃ to +85℃	
Maximum Device Surface Temperature in Tripped State	125℃	
Passive Aging	+85℃, 1000 hours	±5% typical resistance change
Humidity Aging	+85℃, 85%R.H. 1000 hours	±5% typical resistance change
Thermal Shock	MIL-STD-202 Method 107G +85℃/-40℃ 20 times	 -30% typical resistance change
Solvent Resistance	MIL-STD-202, Method 215	No change
Vibration	MIL-STD-883C, Method 2007.1, Condition A	No change

PHYSICAL SPECIFICATIONS

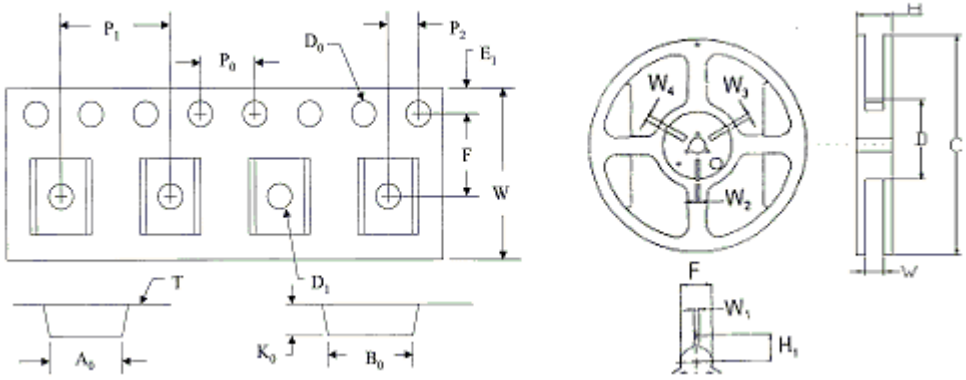
Terminal Material	Gold-Plated Copper or Solder-Plated Copper (Solder Material: Tin(Sn) or others)
Lead Solderability	Meets EIA Specification RS186-9E, ANSI/J-STD-002 Category 3.
Packaging	8 mm tape on 7 inch reel per EIA-481-1 (equivalent to IEC286, part 3) 3000 devices per reel for P050TF 5000 devices per reel for P075TF For the others: 4000 devices per reel

◎ Specifications are subject to change without notice.

TAPE SPECIFICATIONS: EIA-481-1 REEL DIMENSIONS: EIA-481-1

	P010TF, P020TF, P035TF	P050TF,	P075TF,	P100TF		
W	8.0+/-0.10	8.0+/-0.10	8.0+/-0.10	8.0+/-0.10	H	12.0+/-0.05
F	3.5+/-0.05	3.5+/-0.05	3.5+/-0.05	3.5+/-0.05	W	9.0+/-0.5
E_1	1.75+/-0.10	1.75+/-0.10	1.75+/-0.10	1.75+/-0.10	D	Ø60+0.5
D_0	1.55+/-0.05	1.55+/-0.05	1.55+/-0.05	1.55+/-0.05	F	Ø13.0+/-0.2
D_1	1.0 (min)	1.0 (min)	1.0 (min)	1.0 (min)	C	Ø178+/-1.0
P_0	4.0+/-0.10	4.0+/-0.10	4.0+/-0.10	4.0+/-0.10	H_1	11+/-0.5
P_1	4.0+/-0.10	4.0+/-0.10	4.0+/-0.10	4.0+/-0.10	W_1	2.2+/-0.5
P_2	2.0+/-0.05	2.0+/-0.05	2.0+/-0.05	2.0+/-0.05	W_2	3.0+0.5
A_0	1.45+/-0.10	1.42+/-0.10	1.65+/-0.10	1.65+/-0.10	W_3	4.0+0.5
B_0	2.30+/-0.10	2.24+/-0.10	2.35+/-0.10	2.35+/-0.10	W_4	5.5+0.5
T	0.25+/-0.10	0.20+/-0.10	0.20+/-0.10	0.25+/-0.10		(mm)
K_0	0.74+/-0.10	1.04+/-0.10	1.05+/-0.10	1.50+/-0.10		
Leader min.	390	390	390	390		
Trailer min.	160	160	160	160		

(mm)



PART NUMBERING SYSTEM

SMD 0805 P □□□ TF