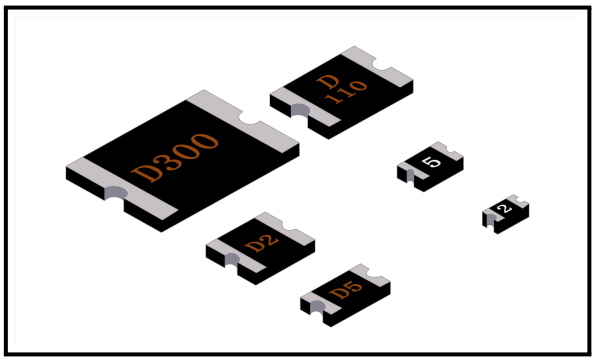
SMD0805 Series

SMD0805 Polymer PPTC

Features

- RoHS compliant and lead-free
- Halogen-free
- Fast reponse to flault current
- Symmetrical design

Package



Applications

- Li-ion/Li-Polymer battery packs
- PDA'S / digital cameras
- Computer peripherals
- PC motherboards-plug and play protection

Part Numbering

SMD 0805 XXX /XX

- /XX — Special Voltage Rating(Optional)
- XXX — Holding Current Rating
- 0805 — Size 0805 inch
- SMD — SMD

Environmental Specifications

Operating Temperature	-40°C to +85°C
Maximum Device Surface Temperature in Tripped State	125°C
Passive Aging	+85°C, 1000 hours; ±5% typical resistance change
Humidity Aging	+85°C, 85% R.H.1000 hours; ±5% typical resistance change
Thermal Shock	MIL-STD-202, Method 107; +85°C to -40°C, 20 times; -30% typical resistance change
Solvent Resistance	MIL-STD-202, Method 215; No change
Vibration	MIL-STD-883, Method 2007, Condition A; No change
Moisture Sensivity Level	Level 1, J-STD-020
Storage Conditions	+40°C Max.70% RH Max. Packed in original packaging.

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SMD0805 Series

SMD0805 Polymer PPTC

Electrical Characteristics

Part Number	Marking	I_{hold} (A)	I_{trip} (A)	V_{max} (V_{dc})	I_{max} (A)	$P_{dtyp.}$ (W)	Maximum Time To Trip		R0min (ohm)	R1max (ohm)
							Current(A)	Time(Sec.)		
SMD0805-001/60N	C	0.01	0.05	60.00	30.00	0.50	0.15	1.50	12.00	100.00
SMD0805-002/60N	Z	0.02	0.06	60.00	40.00	0.50	0.10	1.50	12.00	70.00
SMD0805-003/30N	Y	0.03	0.09	30.00	40.00	0.50	0.10	1.50	6.00	50.00
SMD0805-003/60N	Y	0.03	0.09	60.00	40.00	0.50	0.10	1.50	6.00	50.00
SMD0805-004/48N	P	0.04	0.12	48.00	40.00	0.50	0.50	1.50	2.50	40.00
SMD0805-004/60N	P	0.04	0.12	60.00	40.00	0.50	0.50	1.50	2.50	40.00
SMD0805-005/30N	0	0.05	0.15	30.00	40.00	0.50	0.25	1.50	3.60	20.00
SMD0805-005/48N	0	0.05	0.15	48.00	40.00	0.50	0.25	1.50	3.60	20.00
SMD0805-005/60N	1	0.05	0.15	60.00	10.00	0.50	0.25	1.50	1.50	25.00
SMD0805-010/15N	1	0.10	0.30	15.00	100.00	0.50	0.50	1.50	1.00	6.50
SMD0805-010/24N	1	0.10	0.30	24.00	100.00	0.50	0.50	1.50	1.00	7.50
SMD0805-010/30N	1	0.10	0.30	30.00	100.00	0.50	0.50	1.50	1.00	7.50
SMD0805-010/33N	1	0.10	0.30	33.00	40.00	0.50	0.50	1.50	1.00	7.50
SMD0805-010/48N	1	0.10	0.30	48.00	40.00	0.50	0.50	1.50	1.00	7.50
SMD0805-010/60N	1	0.10	0.25	60.00	10.00	0.50	0.50	1.50	1.00	7.50
SMD0805-020/9N	2	0.20	0.50	9.00	100.00	0.50	8.00	0.02	0.65	3.50
SMD0805-020/16N	2	0.20	0.50	16.00	100.00	0.50	8.00	0.02	0.65	3.50
SMD0805-020/24N	2	0.20	0.50	24.00	100.00	0.50	8.00	0.02	0.65	3.50
SMD0805-020/30N	2	0.20	0.50	30.00	100.00	0.50	8.00	0.02	0.65	3.50
SMD0805-020/33N	2	0.20	0.50	33.00	100.00	0.50	8.00	0.02	0.65	3.50
SMD0805-020/48N	2	0.20	0.50	48.00	40.00	0.50	8.00	0.02	0.65	4.00

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SMD0805 Series

SMD0805 Polymer PPTC

Electrical Characteristics

Part Number	Marking	I_{hold} (A)	I_{trip} (A)	V_{max} (V_{dc})	I_{max} (A)	$P_{dtyp.}$ (W)	Maximum Time To Trip		R0min (ohm)	R1max (ohm)
							Current(A)	Time(Sec.)		
SMD0805-035/6N	3	0.35	0.70	6.00	100.00	0.50	8.00	0.10	0.25	1.20
SMD0805-035/9N	3	0.35	0.70	9.00	100.00	0.50	8.00	0.10	0.25	1.20
SMD0805-035/16N	3	0.35	0.70	16.00	100.00	0.50	8.00	0.10	0.25	1.20
SMD0805-035/24N	3	0.35	0.70	24.00	40.00	0.50	8.00	0.10	0.25	1.20
SMD0805-035/30N	3	0.35	0.70	30.00	40.00	0.50	8.00	0.10	0.25	1.20
SMD0805-050/6N	5	0.50	1.00	6.00	100.00	0.50	8.00	0.10	0.15	0.85
SMD0805-050/9N	5	0.50	1.00	9.00	100.00	0.50	8.00	0.10	0.15	0.85
SMD0805-050/12N	5	0.50	1.00	12.00	100.00	0.50	8.00	0.10	0.15	0.85
SMD0805-050/16N	5	0.50	1.00	16.00	40.00	0.50	8.00	0.10	0.15	0.85
SMD0805-050/24N	5	0.50	1.00	24.00	40.00	0.50	8.00	0.10	0.15	0.85
SMD0805-050/30N	5	0.50	1.00	30.00	40.00	0.50	8.00	0.10	0.15	0.85
SMD0805-075/6N	7	0.75	1.50	6.00	100.00	0.60	8.00	0.20	0.09	0.35
SMD0805-075/12N	7	0.75	1.50	12.00	40.00	0.60	8.00	0.20	0.09	0.35
SMD0805-075/16N	7	0.75	1.50	16.00	40.00	0.60	8.00	0.20	0.09	0.35
SMD0805-075/24N	7	0.75	1.50	24.00	40.00	0.60	8.00	0.20	0.09	0.45
SMD0805-100/6N	F	1.00	2.00	6.00	100.00	0.60	8.00	0.30	0.06	0.22
SMD0805-100/12N	0	1.00	2.00	12.00	100.00	0.60	8.00	0.30	0.06	0.25
SMD0805-100/16N	0	1.00	2.00	16.00	100.00	0.60	8.00	0.30	0.06	0.25
SMD0805-110/6N	F	1.10	2.20	6.00	100.00	0.60	8.00	0.30	0.06	0.20
SMD0805-110/12N	0	1.10	2.20	12.00	100.00	0.60	8.00	0.30	0.06	0.25
SMD0805-110/16N	0	1.10	2.20	16.00	100.00	0.60	8.00	0.30	0.06	0.25
SMD0805-125/6N	12	1.25	2.50	6.00	100.00	0.60	8.00	0.60	0.025	0.140
SMD0805-150/6N	15	1.50	3.00	6.00	100.00	0.60	8.00	0.50	0.035	0.135

I_{hold} : Holding Current: maximum current at which the device will not trip in 25°C still air.

I_{trip} : Tripping Current: minimum current at which the device will trip in 25° 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}).

$P_{dtyp.}$: Typical power dissipated from device when in the tripped state at 25°Cstill air.

R_{0min} : Minimum resistance of device in initial (un-soldered) state.

R_{1max} : Maximum resistance of device at 25°C measured one hour after tripping or reflow soldering of 260°C for 20 sec.

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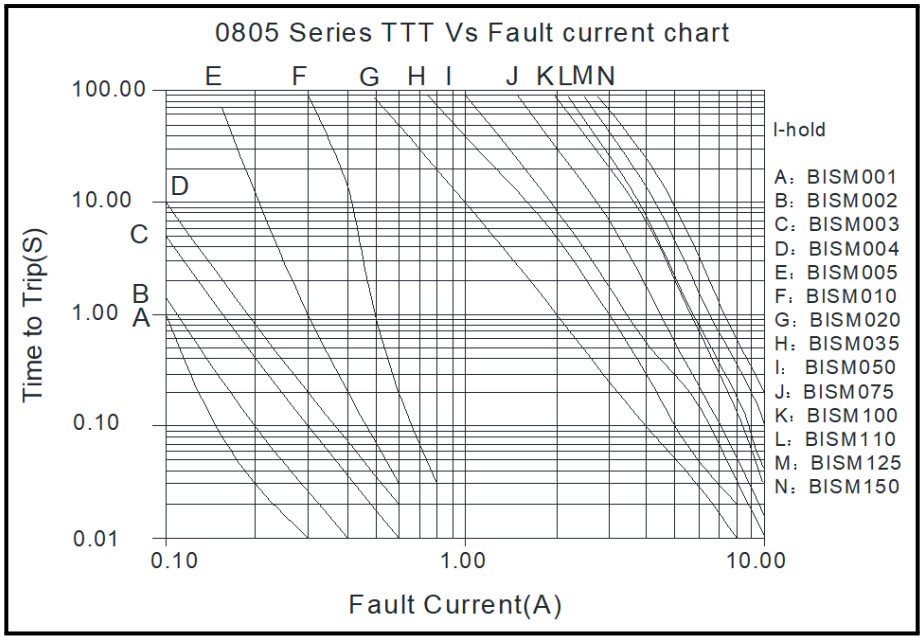
SMD0805 Series

SMD0805 Polymer PPTC

Thermal Derating Chart

Part Number	Ambient Operating Temperature								
	-40°C	-20°C	0°C	25°C	40°C	50°C	60°C	70°C	85°C
SMD0805-001N	0.016	0.014	0.012	0.010	0.008	0.0075	0.0065	0.0055	0.0040
SMD0805-002N	0.031	0.028	0.024	0.020	0.016	0.015	0.013	0.011	0.008
SMD0805-003N	0.047	0.041	0.036	0.03	0.024	0.021	0.018	0.016	0.0108
SMD0805-004N	0.052	0.048	0.044	0.04	0.032	0.028	0.024	0.02	0.012
SMD0805-005N	0.078	0.070	0.060	0.050	0.041	0.038	0.033	0.028	0.021
SMD0805-010N	0.14	0.12	0.11	0.10	0.08	0.07	0.06	0.05	0.03
SMD0805-020N	0.28	0.25	0.23	0.20	0.17	0.14	0.12	0.10	0.07
SMD0805-035N	0.48	0.45	0.40	0.35	0.31	0.28	0.25	0.20	0.14
SMD0805-050N	0.70	0.65	0.55	0.50	0.40	0.37	0.33	0.29	0.23
SMD0805-075N	1.00	0.90	0.80	0.75	0.63	0.57	0.53	0.41	0.34
SMD0805-100N	1.35	1.25	1.10	1.00	0.82	0.74	0.65	0.55	0.42
SMD0805-110N	1.40	1.30	1.15	1.10	0.90	0.82	0.70	0.60	0.47
SMD0805-125N	1.65	1.55	1.35	1.25	1.05	0.95	0.85	0.75	0.60
SMD0805-150N	2.20	2.00	1.75	1.50	1.35	1.25	1.10	1.05	0.85

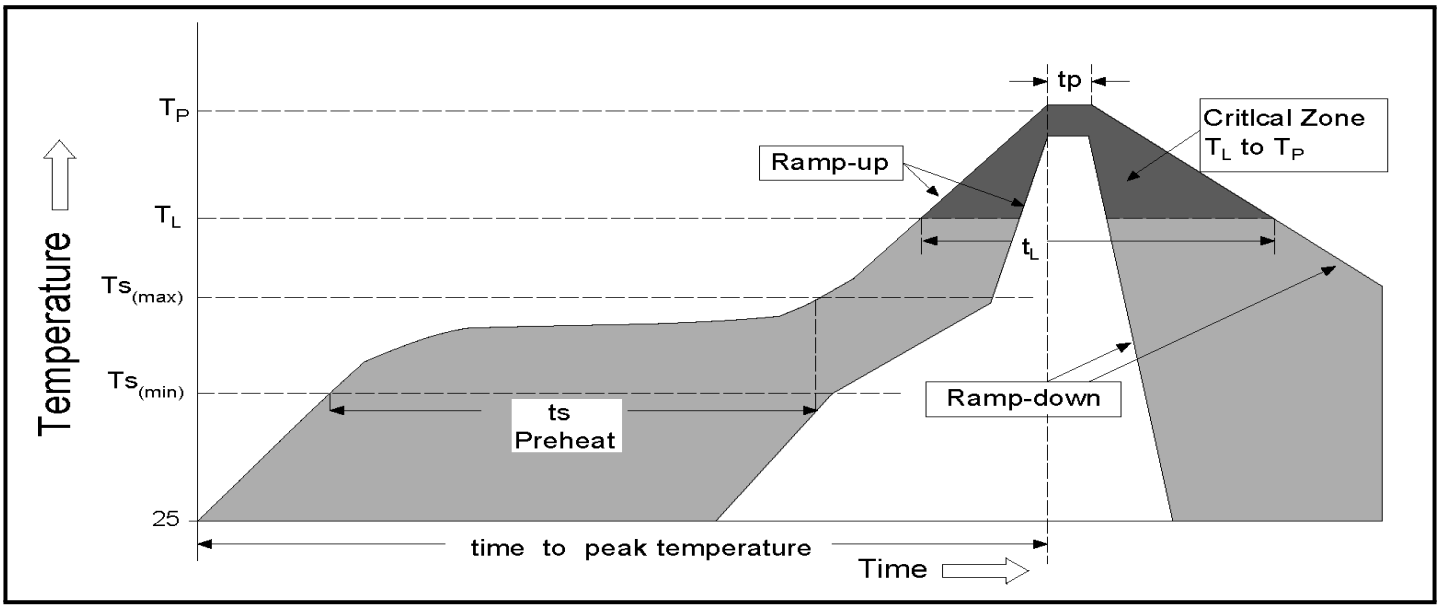
0805 Series TTT Vs Fault current chart(Typical time to trip at 25°C)



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SMD0805 Series

Soldering Parameters



Profile Feature		Pb-Free Assembly
Average Ramp-Up Rate ($T_{S(max)}$ toT_P)		3°C/second max
Pre Heat	Temperature Min (T_S(min))	150°C
	Temperature Max (T_S(max))	200°C
	Time (min to max) (t_S)	60 - 180 secs
Time Maintained Above	Temperature (T_L)	217°C
	Temperature (t_L)	60 -150 secs
Peak/Classification Temperature (T_P)		$260^{+0/-5}$°C
Time within 5°C of actual peak Temperature (t_p)		20-40 second
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (T_P)		8 minutes Max.

- All temperature refer to topside of thepackage, measured on the package body surface
- If reflow temperature exceeds the recommended profile, devices may not meet the performance requirements
- Recommended reflow methods: IR, vapor phase oven, hot air oven„N2 environment for lead
- Recommended maximum paste thickness is 0.25mm (0.010inch)
- Devices can be cleaned using standard industry methods and solvents

Test Procedures And Requirements

Test	Test Conditions	Accept/Reject Criteria
R0 min	Resistance measurement at 25°C	$R0_{min} \le R \le R1_{max}$
R1 max	Resistance measurement one hour after post trip	$R0_{min} \le R \le R1_{max}$
I-hold	Hold rated current 1800 second without trip, @25°C	No trip
I-trip	Device must trip within 900 second under rated current, @25°C	Trip
Max. time to trip	At specified current, 25°C	T ≤ max. time to trip (seconds)
Trip Cycle Life	V_{max}, I_{max}, 100 cycles	No arcing or burning
Trip Endurance	V_{max}, I_{max} 24 hours	No arcing or burning
Solderability	ANSI/J-STD-002	95 % min. coverage

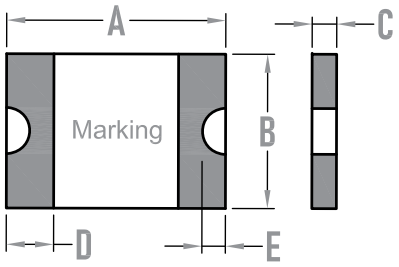
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SMD0805 Series

SMD0805 Polymer PPTC

Product Dimensions(mm)



Model	A		B		C		D		E	Quantity
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	PCS/R
SMD0805-001/60N	2.00	2.30	1.20	1.50	0.40	0.90	0.20	0.55	0.10	5000
SMD0805-002/60N	2.00	2.30	1.20	1.50	0.40	0.90	0.20	0.55	0.10	5000
SMD0805-003/30N	2.00	2.30	1.20	1.50	0.40	0.90	0.20	0.55	0.10	5000
SMD0805-003/60N	2.00	2.30	1.20	1.50	0.40	0.90	0.20	0.55	0.10	5000
SMD0805-004/48N	2.00	2.30	1.20	1.50	0.40	0.90	0.20	0.55	0.10	5000
SMD0805-004/60N	2.00	2.30	1.20	1.50	0.40	0.90	0.20	0.55	0.10	5000
SMD0805-005/30N	2.00	2.30	1.20	1.50	0.40	0.90	0.20	0.55	0.10	5000
SMD0805-005/48N	2.00	2.30	1.20	1.50	0.40	0.90	0.20	0.55	0.10	5000
SMD0805-005/60N	2.00	2.30	1.20	1.50	0.40	0.90	0.20	0.55	0.10	5000
SMD0805-010/15N	2.00	2.30	1.20	1.50	0.40	0.90	0.20	0.55	0.10	5000
SMD0805-010/24N	2.00	2.30	1.20	1.50	0.40	0.90	0.20	0.55	0.10	5000
SMD0805-010/30N	2.00	2.30	1.20	1.50	0.40	0.90	0.20	0.55	0.10	5000
SMD0805-010/33N	2.00	2.30	1.20	1.50	0.40	0.90	0.20	0.55	0.10	5000
SMD0805-010/48N	2.00	2.30	1.20	1.50	0.65	1.15	0.20	0.55	0.10	5000
SMD0805-010/60N	2.00	2.30	1.20	1.50	0.65	1.15	0.20	0.55	0.10	5000
SMD0805-020/9N	2.00	2.30	1.20	1.50	0.40	0.90	0.20	0.55	0.10	5000
SMD0805-020/16N	2.00	2.30	1.20	1.50	0.40	0.90	0.20	0.55	0.10	5000
SMD0805-020/24N	2.00	2.30	1.20	1.50	0.40	0.90	0.20	0.55	0.10	5000
SMD0805-020/30N	2.00	2.30	1.20	1.50	0.40	0.90	0.20	0.55	0.10	5000
SMD0805-020/33N	2.00	2.30	1.20	1.50	0.40	0.90	0.20	0.55	0.10	5000
SMD0805-020/48N	2.00	2.30	1.20	1.50	0.65	1.15	0.20	0.55	0.10	5000

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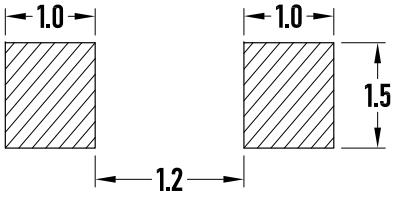
SMD0805 Series

SMD0805 Polymer PPTC

Product Dimensions(mm)

Model	A		B		C		D		E	Quantity
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	PCS/R
SMD0805-035/6N	2.00	2.30	1.20	1.50	0.40	0.90	0.20	0.55	0.10	5000
SMD0805-035/9N	2.00	2.30	1.20	1.50	0.40	0.90	0.20	0.55	0.10	5000
SMD0805-035/16N	2.00	2.30	1.20	1.50	0.40	0.90	0.20	0.55	0.10	5000
SMD0805-035/24N	2.00	2.30	1.20	1.50	0.65	1.15	0.20	0.55	0.10	5000
SMD0805-035/30N	2.00	2.30	1.20	1.50	0.65	1.15	0.20	0.55	0.10	5000
SMD0805-050/6N	2.00	2.30	1.20	1.50	0.40	0.90	0.20	0.55	0.10	5000
SMD0805-050/9N	2.00	2.30	1.20	1.50	0.40	0.90	0.20	0.55	0.10	5000
SMD0805-050/12N	2.00	2.30	1.20	1.50	0.40	0.90	0.20	0.55	0.10	5000
SMD0805-050/16N	2.00	2.30	1.20	1.50	0.65	1.15	0.20	0.55	0.10	5000
SMD0805-050/24N	2.00	2.30	1.20	1.50	0.65	1.15	0.20	0.55	0.10	5000
SMD0805-050/30N	2.00	2.30	1.20	1.50	0.65	1.15	0.20	0.55	0.10	4000
SMD0805-075/6N	2.00	2.30	1.20	1.50	0.65	1.15	0.20	0.55	0.10	4000
SMD0805-075/12N	2.00	2.30	1.20	1.50	0.65	1.15	0.20	0.55	0.10	4000
SMD0805-075/16N	2.00	2.30	1.20	1.50	0.65	1.15	0.20	0.55	0.10	4000
SMD0805-075/24N	2.00	2.30	1.20	1.50	0.65	1.15	0.20	0.55	0.10	4000
SMD0805-100/6N	2.00	2.30	1.20	1.50	0.65	1.15	0.20	0.55	0.10	4000
SMD0805-100/12N	2.00	2.30	1.20	1.50	0.65	1.15	0.20	0.55	0.10	4000
SMD0805-100/16N	2.00	2.30	1.20	1.50	0.65	1.15	0.20	0.55	0.10	4000
SMD0805-110/6N	2.00	2.30	1.20	1.50	0.65	1.15	0.20	0.55	0.10	4000
SMD0805-110/12N	2.00	2.30	1.20	1.50	0.65	1.15	0.20	0.55	0.10	4000
SMD0805-110/16N	2.00	2.30	1.20	1.50	0.65	1.15	0.20	0.55	0.10	4000
SMD0805-125/6N	2.00	2.30	1.20	1.50	0.65	1.15	0.20	0.55	0.10	4000
SMD0805-150/6N	2.00	2.30	1.20	1.50	0.65	1.15	0.20	0.55	0.10	4000

Recommended Pad Layout(mm)&Physical Specifications



Terminal Material	Tin-Plated Nickle-Copper (Solder Material: Matte Tin (Sn))
Lead Solderability	T Meets EIA Specification RS186-9E, ANSI/J-STD-002 Category 3.

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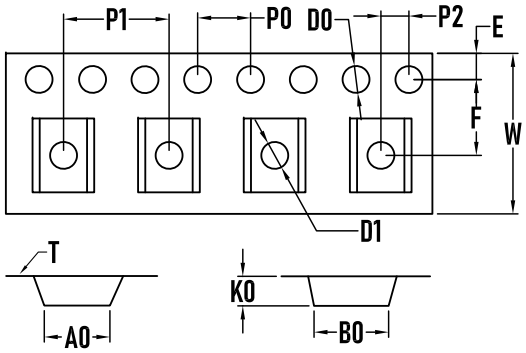
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SMD0805 Series

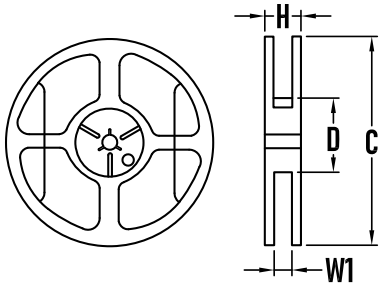
SMD0805 Polymer PPTC

Tape And Reel Specifications (mm)&Packaging quantity

item	TAPE SPECIFICATIONS: EIA-481-1 (mm)	
W	8.00±0.10	8.10±0.10
F	3.50±0.05	3.50±0.05
E	1.75±0.10	1.75±0.10
D0	1.55±0.05	1.55±0.05
D1	1.00 min	1.00 min
P0	4.0±0.10	4.0±0.10
P1	4.0±0.10	4.0±0.10
P2	2.0±0.05	2.0±0.05
A0	1.70±0.10	1.70±0.10
B0	2.45±0.10	2.45±0.10
T	0.20±0.05	0.25±0.05
K0	0.80±0.10	0.95±0.10
Leader	390 mm	390 mm
Trailer	160 mm	160 mm
Quantity	5000pcs/Reel	4000pcs/Reel



Packaging quantity per Reel



REEL DIMENSIONS:EIA-481-1(mm)	
C	178±1.0
D	60.2±0.5
W1	9.0±1.5
H	11.0±0.5

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Specifications are subject to change without notice.
Please refer to http://*www.born-tw.com* for current information. **Revision: 2025-March-1-B**