

SMD1206 Series

SMD1206 Polymer PPTC

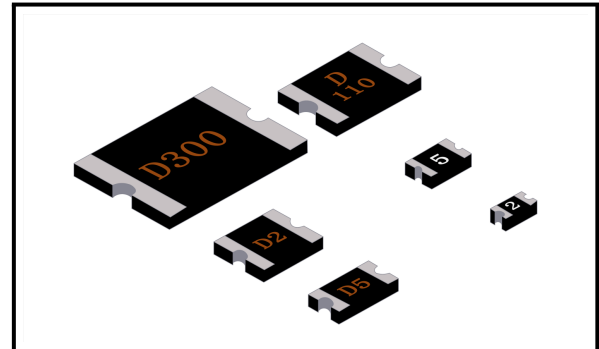
Features

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

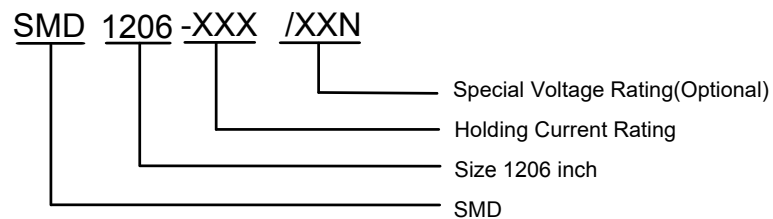
Applications

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

Package



Part Numbering



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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Electrical Characteristics

Part Number	Marking	I_{hold}	I_{trip}	V_{max}	I_{max}	$P_{dtyp.}$	Maximum Time To Trip		$R0min$	$R1max$
		(A)	(A)	(V _{dc})	(A)	(W)	Current(A)	Time(Sec.)	(ohm)	(ohm)
SMD1206-005/30N	D0	0.05	0.15	30.00	40.00	0.60	0.25	1.50	2.50	40.00
SMD1206-005/60N	D0	0.05	0.15	60.00	10.00	0.60	0.25	1.50	2.50	40.00
SMD1206-005/72N	D0	0.05	0.15	72.00	10.00	0.60	0.25	1.50	2.50	40.00
SMD1206-005/85N	D0	0.05	0.15	85.00	10.00	0.60	0.25	1.50	2.50	40.00
SMD1206-010/30N	D1	0.10	0.25	30.00	40.00	0.60	0.50	1.50	1.40	15.00
SMD1206-010/33N	D1	0.10	0.25	33.00	40.00	0.60	0.50	1.50	1.40	15.00
SMD1206-010/60N	D1	0.10	0.25	60.00	10.00	0.60	0.50	1.50	1.40	15.00
SMD1206-010/72N	D1	0.10	0.25	72.00	10.00	0.60	0.50	1.50	1.40	15.00
SMD1206-012/30N	DA	0.12	0.29	30.00	100.00	0.60	1.00	0.20	1.35	8.50
SMD1206-012/48N	DA	0.12	0.29	48.00	100.00	0.60	1.00	0.20	1.40	6.50
SMD1206-012/60N	DA	0.12	0.29	60.00	10.00	0.60	1.00	0.20	1.35	8.50
SMD1206-012/72N	DA	0.12	0.29	72.00	10.00	0.60	1.00	0.20	1.35	8.50
SMD1206-016/48N	DR	0.16	0.45	48.00	10.00	0.60	1.00	0.30	1.10	5.00
SMD1206-016/60N	DV	0.16	0.45	60.00	10.00	0.60	1.00	0.30	1.10	6.00
SMD1206-016/72N	DV	0.16	0.45	72.00	10.00	0.60	1.00	0.30	1.10	6.50
SMD1206-020/24N	D2	0.20	0.40	24.00	100.00	0.60	8.00	0.10	0.50	2.60
SMD1206-020/30N	D2	0.20	0.40	30.00	100.00	0.60	8.00	0.10	0.50	2.60
SMD1206-020/48N	DU	0.20	0.40	48.00	40.00	0.60	8.00	0.10	0.50	3.50
SMD1206-025/16N	DB	0.25	0.50	16.00	100.00	0.60	8.00	0.08	0.40	2.40
SMD1206-025/24N	DB	0.25	0.50	24.00	100.00	0.60	8.00	0.08	0.40	2.40
SMD1206-025/30N	DB	0.25	0.50	30.00	100.00	0.60	8.00	0.08	0.40	2.40
SMD1206-025/48N	DN	0.25	0.50	48.00	40.00	0.60	8.00	0.08	0.40	2.70
SMD1206-035/16N	D3	0.35	0.70	16.00	100.00	0.60	8.00	0.10	0.30	1.20
SMD1206-035/30SN	DC	0.35	0.70	30.00	100.00	0.60	8.00	0.10	0.30	1.20
SMD1206-035/30N	D3	0.35	0.70	30.00	100.00	0.60	8.00	0.10	0.30	1.40
SMD1206-035/48N	DC	0.35	0.70	48.00	40.00	0.60	8.00	0.10	0.30	1.50



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Part Number	Marking	I_{hold}	I_{trip}	V_{max}	I_{max}	$P_{dtyp.}$	Maximum Time To Trip		$R0min$	$R1max$
		(A)	(A)	(V _{dc})	(A)	(W)	Current(A)	Time(Sec.)	(ohm)	(ohm)
SMD1206-050/6N	D5	0.50	1.00	6.00	100.00	0.60	8.00	0.10	0.15	0.75
SMD1206-050/8N	D5	0.50	1.00	8.00	100.00	0.60	8.00	0.10	0.15	0.75
SMD1206-050/16N	D5	0.50	1.00	16.00	100.00	0.60	8.00	0.10	0.15	0.75
SMD1206-050/24N	DE	0.50	1.00	24.00	100.00	0.60	8.00	0.10	0.15	1.00
SMD1206-050/30N	DE	0.50	1.00	30.00	100.00	0.60	8.00	0.10	0.15	1.00
SMD1206-050/33N	DE	0.50	1.00	33.00	100.00	0.60	8.00	0.10	0.15	1.00
SMD1206-050/36N	Dd	0.50	1.00	36.00	40.00	0.60	8.00	0.10	0.15	1.00
SMD1206-075/8N	D7	0.75	1.50	8.00	100.00	0.60	8.00	0.20	0.09	0.40
SMD1206-075/13.2N	D7	0.75	1.50	13.20	100.00	0.60	8.00	0.20	0.09	0.40
SMD1206-075/16N	DF	0.75	1.50	16.00	100.00	0.60	8.00	0.20	0.09	0.50
SMD1206-075/24N	DF	0.75	1.50	24.00	100.00	0.60	8.00	0.20	0.09	0.50
SMD1206-075/30N	DF	0.75	1.50	30.00	100.00	0.60	8.00	0.20	0.09	0.50
SMD1206-100/6N	D8	1.00	2.00	6.00	100.00	0.80	8.00	0.10	0.04	0.21
SMD1206-100/8N	D8	1.00	2.00	8.00	100.00	0.80	8.00	0.10	0.04	0.21
SMD1206-100/12N	DG	1.00	2.00	12.00	100.00	0.80	8.00	0.10	0.04	0.25
SMD1206-100/16N	DG	1.00	2.00	16.00	100.00	0.80	8.00	0.10	0.04	0.25
SMD1206-100/24N	DT	1.00	2.00	24.00	40.00	0.80	8.00	0.10	0.04	0.27
SMD1206-100/30N	DX	1.00	2.00	30.00	40.00	0.80	8.00	0.10	0.04	0.27
SMD1206-110/6N	D8	1.10	2.20	6.00	100.00	0.80	8.00	0.10	0.04	0.21
SMD1206-110/8N	D8	1.10	2.20	8.00	100.00	0.80	8.00	0.10	0.04	0.21
SMD1206-110/12N	DG	1.10	2.20	12.00	100.00	0.80	8.00	0.10	0.04	0.25
SMD1206-110/16N	DG	1.10	2.20	16.00	100.00	0.80	8.00	0.10	0.04	0.25
SMD1206-110/24N	DT	1.10	2.20	24.00	40.00	0.80	8.00	0.10	0.04	0.27
SMD1206-110/30N	DX	1.10	2.20	30.00	40.00	0.80	8.00	0.10	0.04	0.27
SMD1206-125/6N	DS	1.25	2.50	6.00	100.00	0.80	8.00	0.50	0.035	0.16
SMD1206-125/8N	DS	1.25	2.50	8.00	100.00	0.80	8.00	0.50	0.035	0.16



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		(A)	(A)	(V _{dc})	(A)	(W)	Current(A)	Time(Sec.)	(ohm)	(ohm)
SMD1206-150/6N	DH	1.50	3.00	6.00	100.00	0.80	8.00	0.30	0.03	0.15
SMD1206-150/8N	DH	1.50	3.00	8.00	100.00	0.80	8.00	0.30	0.03	0.15
SMD1206-150/12N	DL	1.50	3.00	12.00	100.00	0.80	8.00	0.30	0.03	0.15
SMD1206-150/16N	DL	1.50	3.00	16.00	100.00	0.80	8.00	0.30	0.03	0.15
SMD1206-150/24N	Dh	1.50	3.00	24.00	40.00	0.80	8.00	0.30	0.03	0.15
SMD1206-175/6N	DI	1.75	3.50	6.00	100.00	0.80	8.00	0.50	0.02	0.09
SMD1206-200/6N	DJ	2.00	4.00	6.00	100.00	0.80	8.00	0.50	0.018	0.085
SMD1206-200/10N	DP	2.00	4.00	10.00	40.00	0.80	8.00	0.50	0.018	0.100
SMD1206-200/12N	DP	2.00	4.00	12.00	40.00	0.80	8.00	0.50	0.018	0.100
SMD1206-200/16N	DP	2.00	4.00	16.00	40.00	0.80	8.00	0.50	0.018	0.100
SMD1206-260/6N	DY	2.60	5.20	6.00	100.00	0.80	8.00	2.00	0.012	0.065
SMD1206-300/6N	Dn	3.00	6.00	6.00	100.00	0.80	8.00	2.00	0.010	0.055

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°C still 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.



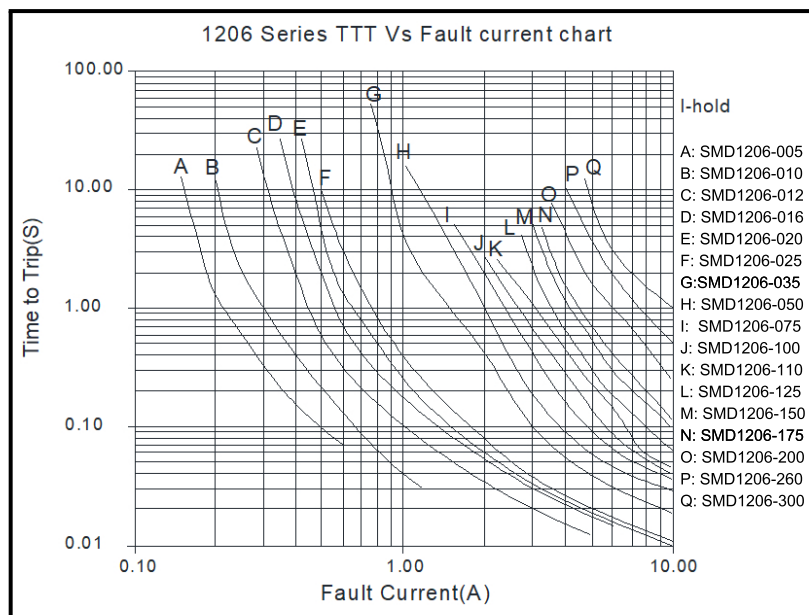
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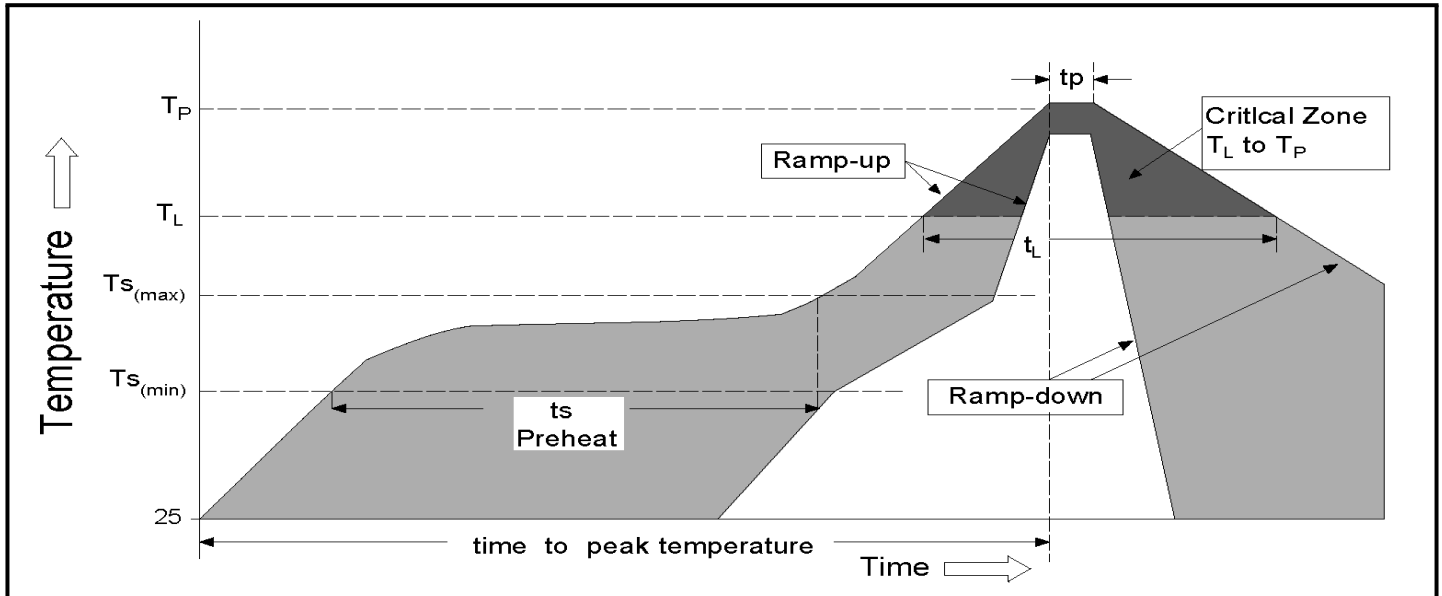
Thermal Derating Chart

Part Number	Ambient Operating Temperature								
	-40°C	-20°C	0°C	25°C	40°C	50°C	60°C	70°C	85°C
SMD1206-005	0.076	0.068	0.060	0.050	0.043	0.039	0.034	0.030	0.023
SMD1206-010	0.156	0.139	0.120	0.100	0.083	0.074	0.065	0.056	0.042
SMD1206-012	0.18	0.16	0.14	0.12	0.10	0.09	0.08	0.07	0.05
SMD1206-016	0.22	0.20	0.18	0.16	0.14	0.13	0.12	0.11	0.09
SMD1206-020	0.28	0.25	0.23	0.20	0.17	0.15	0.14	0.12	0.10
SMD1206-025	0.37	0.33	0.29	0.25	0.22	0.2	0.17	0.15	0.12
SMD1206-035	0.50	0.45	0.40	0.35	0.30	0.27	0.24	0.21	0.15
SMD1206-050	0.71	0.64	0.57	0.50	0.42	0.39	0.35	0.31	0.25
SMD1206-075	1.14	1.01	0.88	0.75	0.65	0.59	0.54	0.49	0.41
SMD1206-100	1.49	1.33	1.18	1.00	0.84	0.75	0.73	0.59	0.47
SMD1206-110	1.64	1.46	1.30	1.10	0.92	0.83	0.80	0.65	0.52
SMD1206-125	1.83	1.65	1.43	1.25	1.09	0.96	0.87	0.76	0.60
SMD1206-150	2.20	1.99	1.77	1.50	1.34	1.23	1.10	1.01	0.84
SMD1206-175	2.50	2.25	2.00	1.75	1.55	1.45	1.35	1.25	1.10
SMD1206-200	2.60	2.44	2.35	2.00	1.78	1.67	1.50	1.45	1.27
SMD1206-260	3.38	3.17	3.06	2.60	2.31	2.17	1.95	1.89	1.43
SMD1206-300	3.90	3.66	3.53	3.00	2.67	2.50	2.25	2.18	1.65

1206 Series TTT Vs Fault current chart(Typical time to trip at 25°C)



Soldering Parameters



Profile Feature		Pb-Free Assembly
Average Ramp-Up Rate ($T_{S(max)}$ to T_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 pack- age body surface
- If reflow temperature exceeds the rec- ommended profile, devices may not meet the performance requirements
- Recommended reflow methods: IR, vapor phase oven, hot air oven, N2 en- vironment for lead
- Recommended maximum paste thick- ness is 0.25mm (0.010inch)
- Devices can be cleaned using stan- dard industry methods and solvents

Test Procedures And Requirements

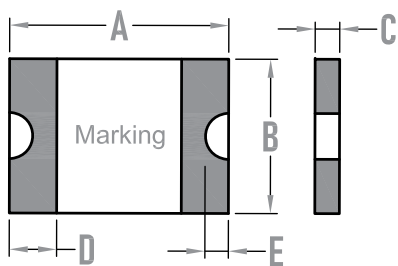
Test	Test Conditions	Accept/Reject Criteria
R0 min	Resistance measurement at 25°C	$R_{0min} \leq R \leq R_{1max}$
R1 max	Resistance measurement one hour after post trip	$R_{0min} \leq R \leq R_{1max}$
I-hold	Hold rated current 1800 second without trip, @25°C	No trip
I-trip	Device must trip within 900 second under rated current, @25°C	Trip
Max. time to trip	At specified current, 25°C	$T \leq \text{max. time to trip (seconds)}$
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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Product Dimensions(mm)



Model	A		B		C		D		E		Quantity
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	PCS/R
SMD1206-005/30N	3.00	3.40	1.40	1.80	0.65	1.15	0.25	0.75	0.10	0.10	3500
SMD1206-005/60N	3.00	3.40	1.40	1.80	0.65	1.15	0.25	0.75	0.10	0.10	3500
SMD1206-005/72N	3.00	3.40	1.40	1.80	0.65	1.15	0.25	0.75	0.10	0.10	3500
SMD1206-005/85N	3.00	3.40	1.40	1.80	0.65	1.15	0.25	0.75	0.10	0.10	3500
SMD1206-010/30N	3.00	3.40	1.40	1.80	0.65	1.15	0.25	0.75	0.10	0.10	3500
SMD1206-010/33N	3.00	3.40	1.40	1.80	0.65	1.15	0.25	0.75	0.10	0.10	3500
SMD1206-010/60N	3.00	3.40	1.40	1.80	0.65	1.15	0.25	0.75	0.10	0.10	3500
SMD1206-010/72N	3.00	3.40	1.40	1.80	0.55	1.15	0.25	0.75	0.10	0.10	3500
SMD1206-012/30N	3.00	3.40	1.40	1.80	0.65	1.15	0.25	0.75	0.10	0.10	3500
SMD1206-012/48N	3.00	3.40	1.40	1.80	0.65	1.15	0.25	0.75	0.10	0.10	3500
SMD1206-012/60N	3.00	3.40	1.40	1.80	0.65	1.15	0.25	0.75	0.10	0.10	3500
SMD1206-012/72N	3.00	3.40	1.40	1.80	0.65	1.15	0.25	0.75	0.10	0.10	3500
SMD1206-016/48N	3.00	3.40	1.40	1.80	0.35	0.85	0.25	0.75	0.10	0.10	3500
SMD1206-016/60N	3.00	3.40	1.40	1.80	0.65	1.15	0.25	0.75	0.10	0.10	3500
SMD1206-016/72N	3.00	3.40	1.40	1.80	0.65	1.15	0.25	0.75	0.10	0.10	3500
SMD1206-020/24N	3.00	3.40	1.40	1.80	0.35	0.85	0.25	0.75	0.10	0.10	4000
SMD1206-020/30N	3.00	3.40	1.40	1.80	0.35	0.85	0.25	0.75	0.10	0.10	4000
SMD1206-020/48N	3.00	3.40	1.40	1.80	0.65	1.15	0.25	0.75	0.10	0.10	3500
SMD1206-025/16N	3.00	3.40	1.40	1.80	0.35	0.85	0.25	0.75	0.10	0.10	4000
SMD1206-025/24N	3.00	3.40	1.40	1.80	0.35	0.85	0.25	0.75	0.10	0.10	4000
SMD1206-025/30N	3.00	3.40	1.40	1.80	0.35	0.85	0.25	0.75	0.10	0.10	4000
SMD1206-025/48N	3.00	3.40	1.40	1.80	0.65	1.15	0.25	0.75	0.10	0.10	3500



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Product Dimensions(mm)

Model	A		B		C		D		E	Quantity
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	PCS/R
SMD1206-035/16N	3.00	3.40	1.40	1.80	0.35	0.85	0.25	0.75	0.10	4000
SMD1206-035/30N	3.00	3.40	1.40	1.80	0.65	1.15	0.25	0.75	0.10	3500
SMD1206-035/30SN	3.00	3.40	1.40	1.80	0.35	0.85	0.25	0.75	0.10	4000
SMD1206-035/48N	3.00	3.40	1.40	1.80	0.65	1.15	0.25	0.75	0.10	3500
SMD1206-050/6N	3.00	3.40	1.40	1.80	0.35	0.85	0.25	0.75	0.10	4000
SMD1206-050/8N	3.00	3.40	1.40	1.80	0.35	0.85	0.25	0.75	0.10	4000
SMD1206-050/16N	3.00	3.40	1.40	1.80	0.35	0.85	0.25	0.75	0.10	4000
SMD1206-050/24N	3.00	3.40	1.40	1.80	0.65	1.15	0.25	0.75	0.10	3500
SMD1206-050/30N	3.00	3.40	1.40	1.80	0.65	1.15	0.25	0.75	0.10	3500
SMD1206-050/33N	3.00	3.40	1.40	1.80	0.65	1.15	0.25	0.75	0.10	3500
SMD1206-050/36N	3.00	3.40	1.40	1.80	0.90	1.30	0.25	0.75	0.10	3500
SMD1206-075/8N	3.00	3.40	1.40	1.80	0.35	0.85	0.25	0.75	0.10	4000
SMD1206-075/13.2N	3.00	3.40	1.40	1.80	0.35	0.85	0.25	0.75	0.10	4000
SMD1206-075/16N	3.00	3.40	1.40	1.80	0.65	1.15	0.25	0.75	0.10	3500
SMD1206-075/24N	3.00	3.40	1.40	1.80	0.65	1.15	0.25	0.75	0.10	3500
SMD1206-075/30N	3.00	3.40	1.40	1.80	0.90	1.30	0.25	0.75	0.10	3500
SMD1206-100/6N	3.00	3.40	1.40	1.80	0.35	0.85	0.25	0.75	0.10	4000
SMD1206-100/8N	3.00	3.40	1.40	1.80	0.35	0.85	0.25	0.75	0.10	4000
SMD1206-100/12N	3.00	3.40	1.40	1.80	0.65	1.15	0.25	0.75	0.10	3500
SMD1206-100/16N	3.00	3.40	1.40	1.80	0.65	1.15	0.25	0.75	0.10	3500
SMD1206-100/24N	3.00	3.40	1.40	1.80	0.90	1.30	0.25	0.75	0.10	3500
SMD1206-100/30N	3.00	3.40	1.40	1.80	0.90	1.30	0.25	0.75	0.10	3500



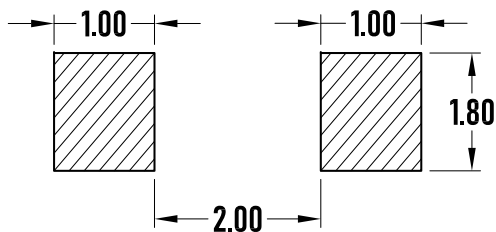
SMD1206 Series

SMD1206 Polymer PPTC

Product Dimensions(mm)

Model	A		B		C		D		E	Quantity
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	PCS/R
SMD1206-110/6N	3.00	3.40	1.40	1.80	0.35	0.85	0.25	0.75	0.10	4000
SMD1206-110/8N	3.00	3.40	1.40	1.80	0.35	0.85	0.25	0.75	0.10	4000
SMD1206-110/12N	3.00	3.40	1.40	1.80	0.65	1.15	0.25	0.75	0.10	3500
SMD1206-110/16N	3.00	3.40	1.40	1.80	0.65	1.15	0.25	0.75	0.10	3500
SMD1206-110/24N	3.00	3.40	1.40	1.80	0.90	1.30	0.25	0.75	0.10	3500
SMD1206-110/30N	3.00	3.40	1.40	1.80	0.90	1.30	0.25	0.75	0.10	3500
SMD1206-125/6N	3.00	3.40	1.40	1.80	0.35	0.85	0.25	0.75	0.10	4000
SMD1206-125/8N	3.00	3.40	1.40	1.80	0.35	0.85	0.25	0.75	0.10	4000
SMD1206-150/6N	3.00	3.40	1.40	1.80	0.65	1.15	0.25	0.75	0.10	3500
SMD1206-150/8N	3.00	3.40	1.40	1.80	0.65	1.15	0.25	0.75	0.10	3500
SMD1206-150/12N	3.00	3.40	1.40	1.80	0.90	1.30	0.25	0.75	0.10	3500
SMD1206-150/16N	3.00	3.40	1.40	1.80	0.90	1.30	0.25	0.75	0.10	3500
SMD1206-150/24N	3.00	3.40	1.40	1.80	0.90	1.30	0.25	0.75	0.10	3500
SMD1206-175/6N	3.00	3.40	1.40	1.80	0.65	1.15	0.25	0.75	0.10	3500
SMD1206-200/6N	3.00	3.40	1.40	1.80	0.65	1.15	0.25	0.75	0.10	3500
SMD1206-200/10N	3.00	3.40	1.40	1.80	0.90	1.30	0.25	0.75	0.10	3500
SMD1206-200/12N	3.00	3.40	1.40	1.80	0.90	1.30	0.25	0.75	0.10	3500
SMD1206-200/16N	3.00	3.40	1.40	1.80	0.90	1.30	0.25	0.75	0.10	3500
SMD1206-260/6N	3.00	3.40	1.40	1.80	0.90	1.30	0.25	0.75	0.10	3500
SMD1206-300/6N	3.00	3.40	1.40	1.80	0.90	1.30	0.25	0.75	0.10	3500

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.

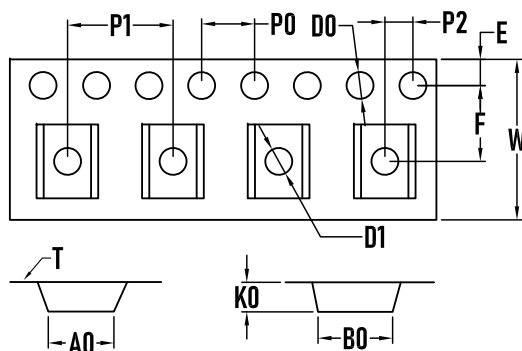


SMD1206 Series

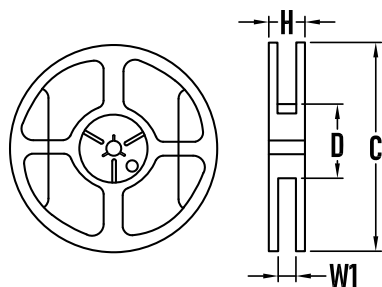
SMD1206 Polymer PPTC

Tape And Reel Specifications (mm)&Packaging quantity

item	TAPE SPECIFICATIONS: EIA-481-1 (mm)	
W	8.10±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	1.90±0.10	2.00±0.10
B0	3.45±0.10	3.50±0.10
T	0.25±0.05	0.25±0.05
K0	0.85±0.10	1.05±0.10
Leader	390 mm	390 mm
Trailer	160 mm	160 mm
Quantity	4000pcs/Reel	3500pcs/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

