

Surface-Mount Device

SMD1206C



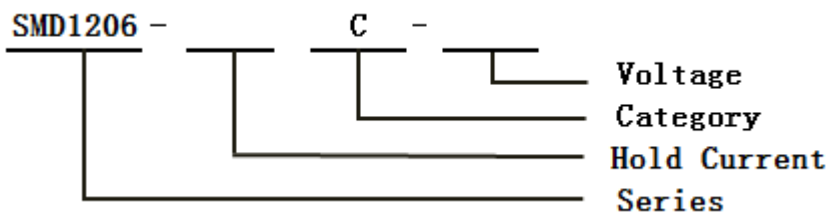
Feature

- Resettable over current and over temperature protection
- Small size of 1206
- Small footprint
- Low resistance
- Fast time-to-trip
- RoHS complaint

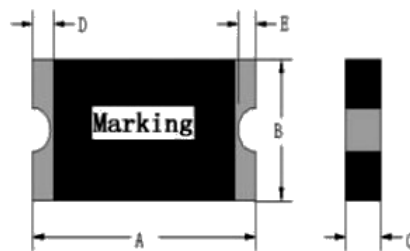
Application

- Computer
- Battery
- Mobile phones
- Industrial controls
- Automotive
- Portable electronics
- Multimedia
- Game machines
- Telephony and broadband

Part Numbering



Product Dimensions in Millimeter



Part Number	A		B		C		D	E
	Min	Max	Min	Max	Min	Max	Min	Min
SMD1206-005C-60V	3.00	3.60	1.50	1.90	0.60	1.20	0.15	0.10
SMD1206-010C-60V	3.00	3.60	1.50	1.90	0.60	1.20	0.15	0.10
SMD1206-012C-60V	3.00	3.60	1.50	1.90	0.60	1.20	0.15	0.10
SMD1206-016C-33V	3.00	3.60	1.50	1.90	0.40	1.00	0.15	0.10
SMD1206-020C-30V	3.00	3.60	1.50	1.90	0.40	1.00	0.15	0.10
SMD1206-020C-48V	3.00	3.60	1.50	1.90	0.40	1.00	0.15	0.10
SMD1206-025C-48V	3.00	3.60	1.50	1.90	0.40	1.00	0.15	0.10
SMD1206-035C-16V	3.00	3.60	1.50	1.90	0.40	1.00	0.15	0.10
SMD1206-035C-30V	3.00	3.60	1.50	1.90	0.40	1.00	0.15	0.10
SMD1206-050C-8V	3.00	3.60	1.50	1.90	0.40	1.00	0.15	0.10
SMD1206-050C-16V	3.00	3.60	1.50	1.90	0.40	1.00	0.15	0.10
SMD1206-050C-30V	3.00	3.60	1.50	1.90	0.40	1.00	0.15	0.10
SMD1206-075C-8V	3.00	3.60	1.50	1.90	0.50	1.00	0.15	0.10
SMD1206-075C-16V	3.00	3.60	1.50	1.90	0.50	1.00	0.15	0.10
SMD1206-075C-30V	3.00	3.60	1.50	1.90	0.50	1.00	0.15	0.10

Surface-Mount Device

SMD1206C



SMD1206-100C-16V	3.00	3.60	1.50	1.90	0.50	1.00	0.15	0.10
SMD1206-100C-24V	3.00	3.60	1.50	1.90	0.50	1.00	0.15	0.10
SMD1206-110C-24V	3.00	3.60	1.50	1.90	0.50	1.00	0.15	0.10
SMD1206-150C-6V	3.00	3.60	1.50	1.90	0.50	1.00	0.15	0.10
SMD1206-150C-13.2V	3.00	3.60	1.50	1.90	0.80	1.60	0.15	0.10
SMD1206-200C-6V	3.00	3.60	1.50	1.90	0.70	1.30	0.15	0.10
SMD1206-200C-12V	3.00	3.60	1.50	1.90	0.70	1.30	0.15	0.10
SMD1206-200C-16V	3.00	3.60	1.50	1.90	0.70	1.60	0.15	0.10
SMD1206-260C-6V	3.00	3.60	1.50	1.90	1.00	1.60	0.15	0.10
SMD1206-300C-6V	3.00	3.60	1.50	1.90	1.00	1.60	0.15	0.10
SMD1206-350C-6V	3.00	3.60	1.50	1.90	1.00	1.60	0.15	0.10

Electrical Characteristics

Part Number	I(A)		V _{max}	I _{max}	Pd _{typ}	T _{trip}		R _{min}	R _{1max}
	25°C		--	--	--	25°C		25°C	
	Hold	Trip	(V)	(A)	(W)	Current(A)	Time(S)	(Ω)	(Ω)
SMD1206-005C-60V	0.05	0.15	60	40	0.4	0.25	1.50	3.60	50.0
SMD1206-010C-60V	0.10	0.25	60	40	0.4	0.50	1.00	1.60	15.0
SMD1206-012C-60V	0.12	0.29	60	40	0.4	0.50	1.00	1.60	13.0
SMD1206-016C-33V	0.16	0.37	33	40	0.4	1.00	0.30	1.00	6.00
SMD1206-020C-30V	0.20	0.46	30	40	0.6	8.00	0.10	0.35	2.70
SMD1206-020C-48V	0.20	0.46	48	40	0.6	8.00	0.10	0.35	2.70
SMD1206-025C-48V	0.25	0.50	48	40	0.6	8.00	0.10	0.35	2.50
SMD1206-035C-16V	0.35	0.75	16	40	0.6	8.00	0.10	0.25	1.50
SMD1206-035C-30V	0.35	0.75	30	40	0.6	8.00	0.10	0.25	1.30
SMD1206-050C-8V	0.50	1.00	8	100	0.6	8.00	0.10	0.15	0.70
SMD1206-050C-16V	0.50	1.00	16	100	0.6	8.00	0.10	0.15	0.70
SMD1206-050C-30V	0.50	1.00	30	40	0.6	8.00	0.10	0.15	0.70
SMD1206-075C-8V	0.75	1.50	8	100	0.6	8.00	0.20	0.09	0.50
SMD1206-075C-16V	0.75	1.50	16	100	0.6	8.00	0.20	0.09	0.50
SMD1206-075C-30V	0.75	1.50	30	40	0.6	8.00	0.20	0.09	0.50
SMD1206-100C-16V	1.00	1.80	16	100	0.6	8.00	0.30	0.05	0.27
SMD1206-100C-24V	1.00	1.80	24	40	0.6	8.00	0.30	0.05	0.27
SMD1206-110C-24V	1.10	2.20	24	40	0.6	8.00	0.30	0.04	0.25
SMD1206-150C-6V	1.50	3.00	6	100	0.8	8.00	0.30	0.025	0.130
SMD1206-150C-13.2V	1.50	3.00	13.2	40	0.8	8.00	0.30	0.025	0.130
SMD1206-200C-6V	2.00	3.50	6	100	0.8	8.00	1.50	0.015	0.080
SMD1206-200C-12V	2.00	3.50	12	100	0.8	8.00	1.50	0.015	0.080
SMD1206-200C-16V	2.00	3.50	16	40	0.8	8.00	1.50	0.015	0.080
SMD1206-260C-6V	2.60	5.20	6	100	0.8	8.00	2.00	0.010	0.060
SMD1206-300C-6V	3.00	6.00	6	100	1.0	8.00	4.00	0.010	0.050
SMD1206-350C-6V	3.50	7.00	6	100	1.2	10.0	5.00	0.005	0.040

I_H =Hold current: maximum current at which the device will not trip at 25°C still air reflow soldering of 260°C for 20 sec.
 I_T =Trip current: minimum current at which the device will always trip at 25°C still air reflow soldering of 260°C for 20 sec.
 V_{max} =Maximum continuous voltage device can withstand without damage at rated current

I_{max} =Maximum fault current device can withstand without damage at rated voltage.
 T_{trip} =Maximum time to trip(s) at assigned current reflow soldering of 260°C for 20 sec.
 Pd_{typ} =Typical power dissipation: typical amount of power dissipated by the device when in state air environment.
 R_{min} = Minimum resistance of device in initial (un-soldered) state.
 $R_{I_{max}}$ =Maximum resistance of device at 25°C measured one hour after reflow soldering of 260°C for 20 sec.

Value specified is determined by using the PWB with 0.030" *1.5oz copper traces.

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

Environmental Specifications

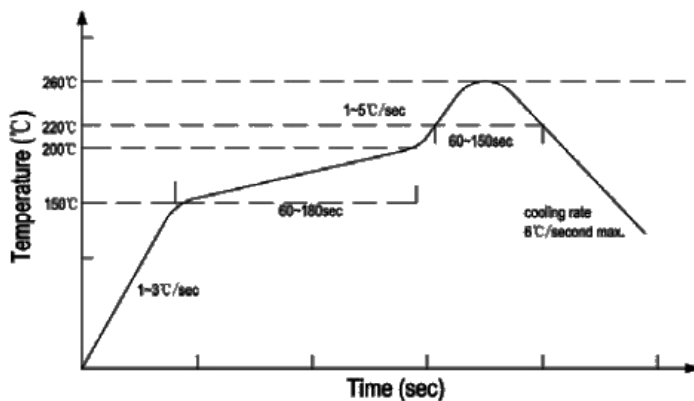
Test	Test Conditions	Accept /Reject Criteria
Recommended storage conditions	40°C max, 70% R.H. max	No change
Passive aging:	85°C, 1000 hours	≤ $R_{I_{max}}$
Moisture Resistance	85% RH,85°C,1000hrs	≤ $R_{I_{max}}$
Thermal Shock	MIL-STD-202 Method 107G +85°C /-40°C 20 times	≤ $R_{I_{max}}$
Vibration	MIL-STD-883C, Method 2007.1, Condition A	No change
Solvent Resistance	MIL-STD-202, Method 215	No change
Moisture Level Sensitivity	Level 1, J-STD-020C	No change

Thermal Derating [Hold Current (A) and Trip Current at Ambient Temperature (°C)]

Part Number		Maximum Ambient Operating Temperature (°C)								
		-40	-20	0	25	40	50	60	70	85
SMD1206-005C	I_{hold}	0.074	0.066	0.056	0.050	0.042	0.037	0.035	0.030	0.027
	I_{trip}	0.148	0.132	0.112	0.100	0.084	0.074	0.070	0.060	0.054
SMD1206-010C	I_{hold}	0.148	0.132	0.116	0.100	0.085	0.075	0.070	0.060	0.055
	I_{trip}	0.296	0.264	0.232	0.200	0.170	0.150	0.140	0.120	0.110
SMD1206-012C	I_{hold}	0.18	0.16	0.14	0.12	0.10	0.09	0.08	0.07	0.06
	I_{trip}	0.36	0.32	0.28	0.24	0.20	0.18	0.16	0.14	0.12
SMD1206-016C	I_{hold}	0.24	0.21	0.18	0.16	0.14	0.13	0.12	0.11	0.10
	I_{trip}	0.48	0.42	0.36	0.32	0.28	0.26	0.24	0.22	0.20
SMD1206-020C	I_{hold}	0.30	0.26	0.23	0.20	0.17	0.15	0.14	0.12	0.11
	I_{trip}	0.60	0.52	0.46	0.40	0.34	0.30	0.28	0.24	0.22
SMD1206-025C	I_{hold}	0.37	0.33	0.29	0.25	0.22	0.20	0.17	0.15	0.12
	I_{trip}	0.74	0.66	0.58	0.50	0.44	0.40	0.34	0.30	0.24
SMD1206-035C	I_{hold}	0.50	0.45	0.40	0.35	0.30	0.27	0.24	0.21	0.15
	I_{trip}	1.00	0.90	0.80	0.70	0.60	0.54	0.48	0.42	0.30
SMD1206-050C	I_{hold}	0.71	0.64	0.57	0.50	0.42	0.39	0.35	0.31	0.25
	I_{trip}	1.42	1.28	1.14	1.00	0.84	0.78	0.70	0.62	0.50

SMD1206-075C	I_{hold}	1.14	1.01	0.88	0.75	0.65	0.59	0.54	0.49	0.41
	I_{trip}	2.28	2.02	1.76	1.50	1.30	1.18	1.08	0.98	0.82
SMD1206-100C	I_{hold}	1.45	1.31	1.15	1.00	0.84	0.77	0.69	0.61	0.48
	I_{trip}	2.90	2.62	2.30	2.00	1.68	1.54	1.38	1.22	0.96
SMD1206-110C	I_{hold}	1.60	1.45	1.30	1.10	0.95	0.80	0.72	0.66	0.55
	I_{trip}	3.20	2.90	2.60	2.20	1.90	1.60	1.44	1.32	1.10
SMD1206-150C	I_{hold}	2.18	1.94	1.72	1.50	1.28	1.17	1.06	0.96	0.77
	I_{trip}	4.36	3.88	3.44	3.00	2.56	2.34	2.12	1.92	1.54
SMD1206-200C	I_{hold}	2.88	2.63	2.34	2.00	1.74	1.58	1.42	1.17	0.93
	I_{trip}	5.76	5.26	4.68	4.00	3.48	3.16	2.84	2.34	1.86
SMD1206-260C	I_{hold}	3.43	3.22	2.93	2.60	2.23	2.03	1.87	1.57	1.35
	I_{trip}	6.86	6.44	5.86	5.20	4.46	4.06	3.74	3.14	2.70
SMD1206-300C	I_{hold}	4.05	3.66	3.36	3.00	2.50	2.28	2.00	1.62	1.38
	I_{trip}	2.10	7.32	6.72	6.00	5.00	4.56	4.00	3.24	2.76
SMD1206-350C	I_{hold}	4.65	4.22	3.92	3.50	2.92	2.68	2.35	1.91	1.42
	I_{trip}	9.30	8.44	7.84	7.00	5.84	5.36	4.70	3.82	2.84

Solder Reflow Recommendation



Reflow -curve

Recommended reflow methods: IR, hot air oven, nitrogen oven
 Devices can be cleaned using standard industry methods and solvents.

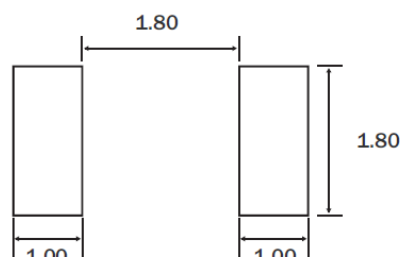
NOTE:

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

Caution: Operation beyond the rated voltage or current may result in rupture electrical arcing or flame

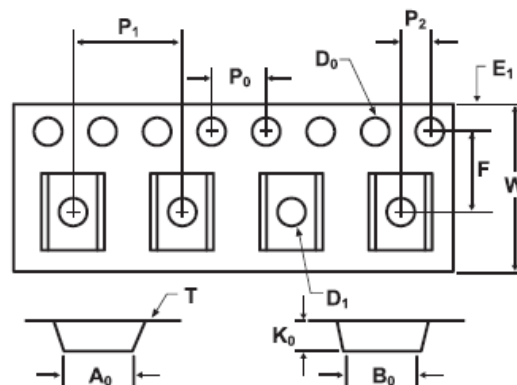
Packaging Quantity and Marking

Recommended Pad Layout (mm.)



Device	Marking	Standard Quantity (pcs)
SMD1206-005C-60V	BZ	3500
SMD1206-010C-60V	BN	3500
SMD1206-012C-60V	BN	3500
SMD1206-016C-33V	BT	3500
SMD1206-020C-30V	BA	3500
SMD1206-020C-48V	BA	3500
SMD1206-025C-48V	BA	3500
SMD1206-035C-16V	BB	3500
SMD1206-035C-30V	BB	3500
SMD1206-050C-8V	BF	3500
SMD1206-050C-16V	BF	3500
SMD1206-050C-30V	BF	3500
SMD1206-075C-16V	BG	3500
SMD1206-075C-30V	BG	3500
SMD1206-100C-16V	BH	3500
SMD1206-100C-24V	BH	3500
SMD1206-110C-24V	BH	3500
SMD1206-150C-6V	BI	3500
SMD1206-150C-6V	BI	3500
SMD1206-150C-13.2V	BI	3500
SMD1206-200C-6V	BK	3500
SMD1206-200C-12V	BK	3500
SMD1206-200C-16V	BK	3500
SMD1206-260C-6V	BO	3500
SMD1206-300C-6V	BP	3500
SMD1206-350C-6V	BV	3500

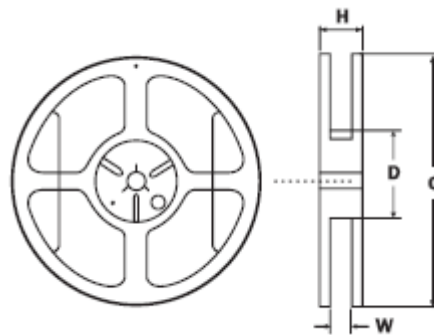
Tape Specifications: EIA-481-1(mm)



Governing Specifications	SMD1206-005C-60V~ SMD1206-050C-16V	SMD1206-050C-30V~ SMD0805-075C-30V	SMD1206-100C-16V~ SMD1206-350C-6V
W	8.0±0.3	8.0±0.3	8.0±0.3
F	3.5±0.05	3.5±0.05	3.5±0.05
E1	1.75±0.1	1.75±0.1	1.75±0.1
D0	1.55±0.05	1.55±0.05	1.55±0.05
D1	1.0±0.1	1.0±0.1	1.0±0.1
P0	4.0±0.1	4.0±0.1	4.0±0.1
P1	4.0±0.1	4.0±0.1	4.0±0.1
P2	2.0±0.05	2.0±0.05	2.0±0.05
A0	1.95±0.1	1.95±0.1	1.95±0.1
B0	3.65±0.1	3.65±0.1	3.65±0.1
T	0.2±0.1	0.2±0.1	0.2±0.1
K0	0.74±0.1	1.04±0.1	1.35±0.1
Leader min	390	390	390
Trailer min	160	160	160

Reel Dimensions:EIA-481-1(mm)

Governing Specifications	EIA481-1
C	Φ 178±1.0
D	Φ 60.2±0.5
H	11.0±0.5
W	9.0±1.5



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CAUTION:

Operation beyond the maximum ratings or improper use may result in device damage and possible electrical arcing and flame. The devices are intended for protection against occasional over-current or over temperature fault conditions and should not be used when repeated fault conditions or prolonged trip events are anticipated. Device performance can be impacted negatively if devices are handled in a manner inconsistent with recommended electronic, thermal, and mechanical procedures for electronic components.

Contact information

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Rev. letter		Date	
Design	Check	Audit	Approve