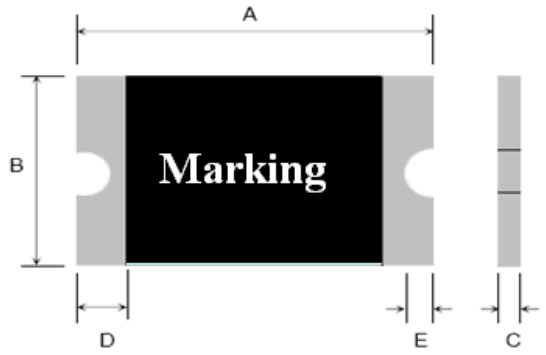
NSMD1206 Series

Features：

- ✧ RoHS Compliant ＆ Halogen Free
- ✧ faster tripping, 1206 Dimension, Surface mountable, Solid state
- ✧ Operation Current: 0.05A~2.00A
- ✧ Maximum Voltage: 6V~60Vdc
- ✧ Operating Temperature：-40℃TO 85℃
- ✧ Agency recognition:UL、CSA、TUV

Product Dimensions



Pig.1

Terminal pad materials :Tin-Plated Nickle-copper
Terminal pad solderability : Meets EIA specification RS 186-9E and ANSI/J-STD-002 Category 3.

Unit ： mm

Model No.	Marking on sample	A		B		C		D	E
		Min	Max	Min	Max	Min	Max	Min	Min
nSMD005	JZ	3.00	3.50	1.50	1.80	0.60	1.10	0.15	0.10
nSMD010	JN	3.00	3.50	1.50	1.80	0.60	1.10	0.15	0.10
nSMD010-33	JN	3.00	3.50	1.50	1.80	0.50	1.10	0.15	0.10
nSMD012	JN	3.00	3.50	1.50	1.80	0.60	1.10	0.15	0.10
nSMD016	JF	3.00	3.50	1.50	1.80	0.40	0.90	0.15	0.10
nSMD020	JF	3.00	3.50	1.50	1.80	0.40	0.90	0.15	0.10
nSMD025	JF	3.00	3.50	1.50	1.80	0.40	0.90	0.15	0.10
nSMD030	JB	3.00	3.50	1.50	1.80	0.40	0.90	0.15	0.10
nSMD035	JB	3.00	3.50	1.50	1.80	0.40	0.90	0.15	0.10
nSMD050	JG	3.00	3.50	1.50	1.80	0.35	0.85	0.15	0.10
nSMD050-13.2	JG	3.00	3.50	1.50	1.80	0.35	0.85	0.15	0.10

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Model No.	Marking on sample	A		B		C		D	E
		Min	Max	Min	Max	Min	Max	Min	Min
nSMD050-16	JG	3.00	3.50	1.50	1.80	0.35	0.85	0.15	0.10
nSMD050-24	JG	3.00	3.50	1.50	1.80	0.35	0.85	0.15	0.10
nSMD075	JA	3.00	3.50	1.50	1.80	0.35	0.85	0.15	0.10
nSMD075-13.2	JA	3.00	3.50	1.50	1.80	0.35	0.85	0.15	0.10
nSMD075-16	JA	3.00	3.50	1.50	1.80	0.60	1.30	0.15	0.10
nSMD100	JH	3.00	3.50	1.50	1.80	0.40	0.80	0.15	0.10
nSMD100-13.2	JH	3.00	3.50	1.50	1.80	0.40	1.30	0.15	0.10
nSMD100-16	JH	3.00	3.50	1.50	1.80	0.40	1.30	0.15	0.10
nSMD110	JH	3.00	3.50	1.50	1.80	0.40	0.80	0.15	0.10
nSMD150	JI	3.00	3.50	1.50	1.80	0.60	1.50	0.15	0.10
nSMD200	JK	3.00	3.50	1.50	1.80	0.70	1.70	0.15	0.10

Thermal Derating Chart-IH（A）

Part number	Maximum ambient operating temperatures（℃）								
	-40	-20	0	25	40	50	60	70	85
nSMD005	0.09	0.08	0.06	0.05	0.04	0.036	0.033	0.029	0.02
nSMD010	0.18	0.16	0.12	0.1	0.08	0.072	0.066	0.058	0.04
nSMD010-33	0.18	0.16	0.12	0.1	0.08	0.072	0.066	0.058	0.04
nSMD012	0.216	0.192	0.144	0.12	0.096	0.086	0.079	0.070	0.048
nSMD016	0.288	0.256	0.192	0.160	0.128	0.115	0.106	0.093	0.064
nSMD020	0.31	0.26	0.22	0.20	0.18	0.16	0.15	0.13	0.07
nSMD025	0.37	0.33	0.29	0.25	0.22	0.20	0.17	0.15	0.12
nSMD030	0.444	0.396	0.348	0.30	0.264	0.24	0.204	0.18	0.144
nSMD035	0.50	0.45	0.40	0.35	0.30	0.27	0.24	0.21	0.15
nSMD050	0.71	0.64	0.57	0.50	0.42	0.39	0.35	0.31	0.25
nSMD050-13.2	0.71	0.64	0.57	0.50	0.42	0.39	0.35	0.31	0.25
nSMD050-16	0.71	0.64	0.57	0.50	0.42	0.39	0.35	0.31	0.25
nSMD050-24	0.639	0.576	0.513	0.50	0.378	0.351	0.315	0.279	0.225
nSMD075	1.14	1.01	0.88	0.75	0.65	0.59	0.54	0.49	0.41
nSMD100	1.45	1.31	1.15	1.00	0.84	0.77	0.69	0.61	0.48
nSMD100-13.2	1.305	1.179	1.035	1.00	0.756	0.693	0.621	0.549	0.432
nSMD100-16	1.305	1.179	1.035	1.00	0.756	0.693	0.621	0.549	0.432
nSMD110	1.595	1.441	1.265	1.10	0.924	0.847	0.759	0.671	0.528
nSMD150	2.18	1.94	1.72	1.50	1.28	1.17	1.06	0.96	0.77
nSMD200	2.60	2.44	2.35	2.00	1.78	1.67	1.50	1.45	1.10

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Electrical Characteristic

Model No.	Umax (Vdc)	Imax (A)	Ihold @25℃ (A)	Itrip @25℃ (A)	Time to trip		R25	
					Current (A)	Time (Sec)	Ri_{min} (Ω)	$R1_{max}$ (Ω)
nSMD005	60.0	100	0.05	0.15	0.25	1.50	3.600	50.000
nSMD010	60.0	100	0.10	0.25	0.5	1.00	1.600	15.000
nSMD010-33	33.0	100	0.10	0.25	0.5	1.00	1.600	15.000
nSMD012	30	100	0.12	0.29	1.00	0.20	1.350	10.00
nSMD016	30	100	0.16	0.37	1.00	0.30	1.200	4.50
nSMD020	24.0	100	0.20	0.46	8.0	0.08	0.350	3.500
nSMD025	16.0	100	0.25	0.50	8.0	0.08	0.350	2.700
nSMD030	16.0	100	0.30	0.65	8.0	0.10	0.250	2.00
nSMD035	16.0	100	0.35	0.75	8.0	0.10	0.250	1.300
nSMD050	6.0	100	0.50	1.00	8.0	0.10	0.150	0.700
nSMD050-13.2	13.2	100	0.50	1.00	8.0	0.10	0.150	0.700
nSMD050-16	16	100	0.50	1.00	8.0	0.10	0.150	0.750
nSMD050-24	24	100	0.50	1.00	8.0	0.10	0.150	0.750
nSMD075	6.0	100	0.75	1.50	8.0	0.20	0.090	0.500
nSMD075-13.2	13.2	100	0.75	1.50	8.0	0.20	0.090	0.500
nSMD075-16	16	100	0.75	1.50	8.0	0.20	0.090	0.500
nSMD100	6.0	100	1.00	1.80	8.0	0.30	0.055	0.270
nSMD100-13.2	13.2	100	1.00	1.80	8.0	0.30	0.055	0.270
nSMD100-16	16	100	1.00	1.80	8.0	0.30	0.055	0.330
nSMD110	8.0	100	1.10	1.80	8.0	0.30	0.050	0.230
nSMD150	6.0	100	1.50	3.00	8.0	1.00	0.040	0.130
nSMD200	6.0	100	2.00	3.50	8.0	1.0	0.018	0.080

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Test Procedures And Requirements

Test	Test Conditions	Accept/Reject Criteria
Resistance	In still air @ 25℃	$R_{min} \leq R \leq R_{max}$
Time to Trip	Specified current，V_{max}，25℃	T≤maximum Time to Trip
Hold Current	30min，at I_H	No trip
Trip Cycle Life	Vmax，Imax，100cycles	No arcing or burning
Trip Endurance	Vmax，1 hours	No arcing or burning

Physical Characteristics and Environmental Specifications

Physical Characteristics

Terminal materials :	Tin-Plated Nickle-copper	
Soldering zone	Meets EIA specification RS 186-9E and ANSI/J-STD-002 Category 3.	
Environmental Specifications		
Test	Conditions	Resistance Change
Passive aging	85℃,1000hours	±10%
Humidity aging	85℃/85%RH.1000 hours	±5%
Thermal shock	MIL-STD-202,Method 107G +85℃/-40℃,20times	-30% typical resistance change
Solvent Resistance	MIL-STD-202,Method 215	no change
Vibration	ML-STD-883C,Test Condition A	No chage

Electrical Specifications:

I_{hold} = Hold Current. Maximum current device will not trip in 25℃ still air.

I_{trip} = Trip Current. Minimum current at which the device will always trip in 25℃ still air.

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

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

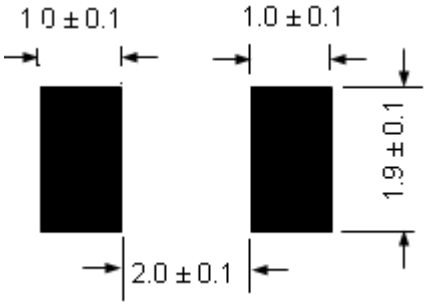
Pd=Maximum power dissipation when device is in the tripped state in 25℃ still air environment at rated voltage.

$Ri_{min/max}$ = Minimum/Maximum device resistance prior to tripping at 25℃.

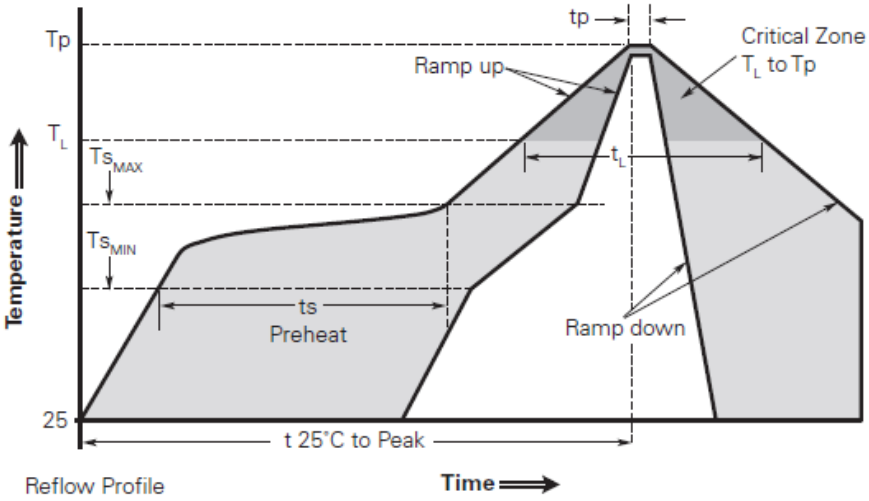
$R1_{max}$ = Maximum device resistance is measured one hour post reflow.

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Recommended pad layout (mm)



Solder reflow conditions



Profile Feature	Pb-Free Assembly
Average ramp up rate (Ts_{MAX} to Tp)	3°C/second max.
Preheat	
• Temperature min. (Ts_{MIN})	150°C
• Temperature max. (Ts_{MAX})	200°C
• Time (ts_{MIN} to ts_{MAX})	60-120 seconds
Time maintained above:	
• Temperature (T_L)	217°C
• Time (t_L)	60-150 seconds
Peak/Classification temperature (Tp)	260°C
Time within 5°C of actual peak temperature	
Time (tp)	30 seconds max.
Ramp down rate	3°C/second max.
Time 25°C to peak temperature	8 minutes max.

Note: All temperatures refer to topside of the package, measured on the package body surface.

- Recommended reflow methods: IR, vapor phase oven, hot air oven, N2 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 (0.010inch).
- Devices can be cleaned using standard industry methods and solvents.
- Soldering temprature profile meets RoHsleadfree process.

Notes: If reflow temperatures exceed the recommended profile, devices may not meet the

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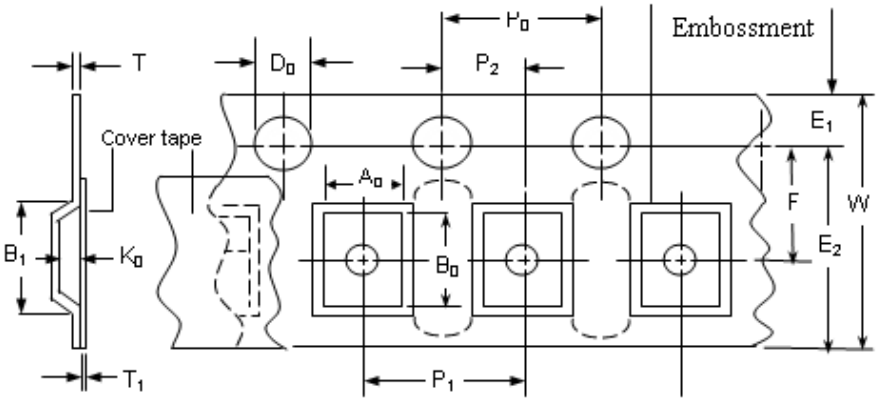
performance requirements

Tape Specification And Reel Dimensions

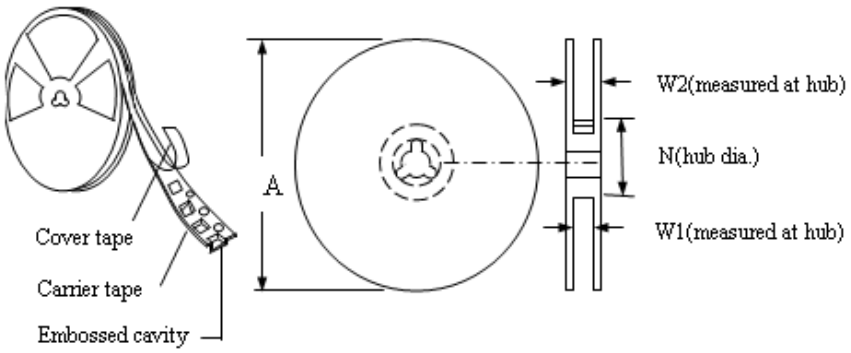
Coverning Specifications EIA 481-1(Unit:mm)	
W	8.15 +0.15/-0.3
P_0	4.0 ± 0.10
P_1	4.0± 0.10
P_2	2.0 ± 0.05
A_0	1.95 ± 0.10
B_0	3.65 ± 0.10
D_0	1.55± 0.05
F	3.50± 0.05
E_1	1.75 ± 0.10
T	0.20± 0.10
Leadermin.	390
Trailer min.	160

Reel Dimensions	
A	178±1.0
N	59±1
W_1	8.5+1.0/-0.2
W_2	12.0±1

EIA Tape Component Dimentions



EIA Reel Dimentions



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