



Features

- ◆ Surface Mount Devices
- ◆ Standard 3216mm(1206mils) footprint
- ◆ Surface mount packaging for automated assembly
- ◆ Compatible with Pb and Pb-free solder reflow profiles.
- ◆ Agency recognition: UL approved

Applications

- ◆ Mobile phones- Battery and port protection
- ◆ PC motherboards – Plug and Play protection
- ◆ PDAs/Digital cameras
- ◆ USB port protection
- ◆ HDMI source protection
- ◆ Game console port protection

Electrical Characteristics

Part Number	I _H (A)	I _T (A)	V _{max} (V)	I _{max} (A)	T _{trip}		Pd _{typ} (W)	R _{min} (Ω)	R1 _{max} (Ω)
					(A)	(Sec.)			
NSMD005	0.05	0.10	60.0	10	0.25	1.50	0.40	2.500	40.00
NSMD010	0.10	0.20	30.0	10	0.50	1.20	0.40	1.400	9.500
NSMD012	0.12	0.29	30.0	10	1.00	0.20	0.40	1.350	8.500
NSMD020	0.20	0.46	30.0	10	1.00	0.60	0.60	0.600	2.600
NSMD025	0.25	0.55	24.0	10	1.25	0.60	0.60	0.400	2.400
NSMD035	0.35	0.75	6.0	40	8.00	0.10	0.60	0.300	1.200
NSMD050	0.50	1.00	13.2	40	8.00	0.10	0.40	0.150	0.700
NSMD075	0.75	1.50	6.0	100	8.00	0.10	0.40	0.100	0.400
NSMD100	1.00	2.00	6.0	100	8.00	0.10	0.60	0.070	0.300
NSMD110	1.10	2.20	6.0	100	8.00	0.10	0.60	0.060	0.280
NSMD150	1.50	3.00	6.0	100	8.00	0.30	0.60	0.030	0.130
NSMD200	2.00	4.00	6.0	100	8.00	1.00	0.70	0.020	0.085

Test Description

I_H (Holding Current): maximum current at which the device will not trip in 25°C still air.

I_T: Tripping Current minimum current at which the device will trip in 25°C still air.

V_{max}: Maximum 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(sec.) at assigned current.

Pd_{typ}: Rated working power.

R_{min}: Minimum resistance of device prior to trip at 25°C.

R1_{max}: Maximum resistance of device is measured one hours post reflow at 25°C.

Environmental Characteristics

Operating/Storage Temperature -40 °C to +85 °C

Maximum Device Surface Temperature in Tripped State 125 °C

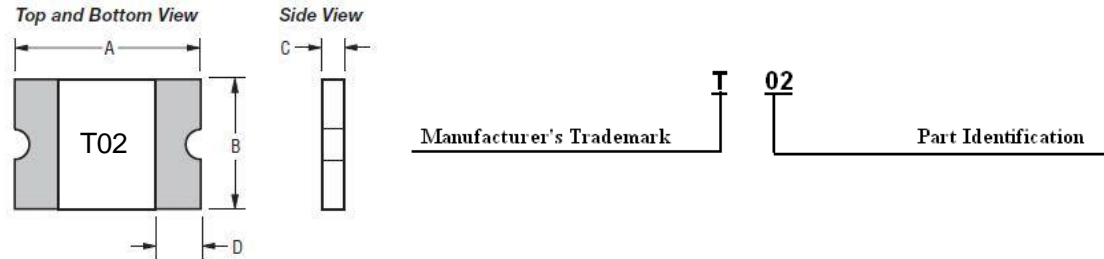
Test	Conditions	Resistance change
Passive Aging	+85 °C, 1000 hours	±5 % typical
Humidity Aging	+85 °C, 85 % R.H. 1000 hours	±5 % typical
Thermal Shock	-40 °C to +85 °C, 10 times	±10 % typical
Solvent Resistance	MIL-STD-202, Method 215	No change
Vibration	MIL-STD-883C, Method 2007.1 CON. A	No change

Agency Approvals

NSMD1206 Series

- Agency Approvals: UL, CSA, TUV
- Regulation/Standard: RoHS 2002/95/EC

Product Dimensions & Marking (Unit: mm)

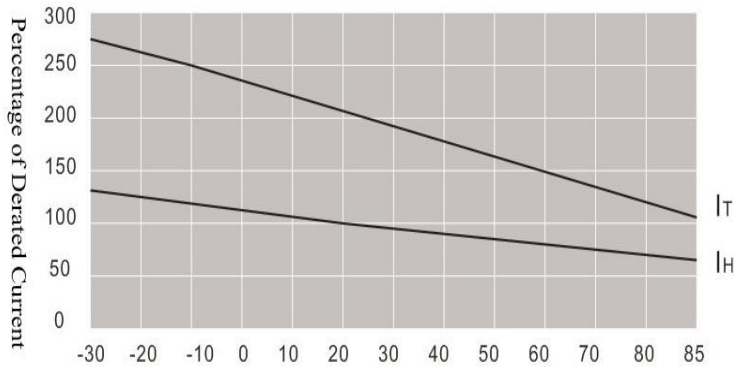


Part Number	Typical Marking	A		B		C		D
		Min.	Max.	Min.	Max.	Min.	Max.	Min.
NSMD005	T ₀	3.00	3.40	1.40	1.80	0.80	1.20	0.25
NSMD010	T ₁	3.00	3.40	1.40	1.80	0.80	1.20	0.25
NSMD012	T ₀₁	3.00	3.40	1.40	1.80	0.80	1.20	0.25
NSMD020	T ₀₂	3.00	3.40	1.40	1.80	0.60	1.00	0.25
NSMD025	T ₀₃	3.00	3.40	1.40	1.80	0.60	1.00	0.25
NSMD035	T ₀₄	3.00	3.40	1.40	1.80	0.60	1.00	0.25
NSMD050	T ₀₅	3.00	3.40	1.40	1.80	0.60	1.00	0.25
NSMD075	T ₀₇	3.00	3.40	1.40	1.80	0.45	0.85	0.25
NSMD100	T ₁₀	3.00	3.40	1.40	1.80	0.45	0.85	0.25
NSMD110	T ₁₀	3.00	3.40	1.40	1.80	0.45	0.85	0.25
NSMD150	T ₁₅	3.00	3.40	1.40	1.80	0.45	0.85	0.25
NSMD200	T ₂₀	3.00	3.50	1.40	1.80	0.80	1.20	0.25

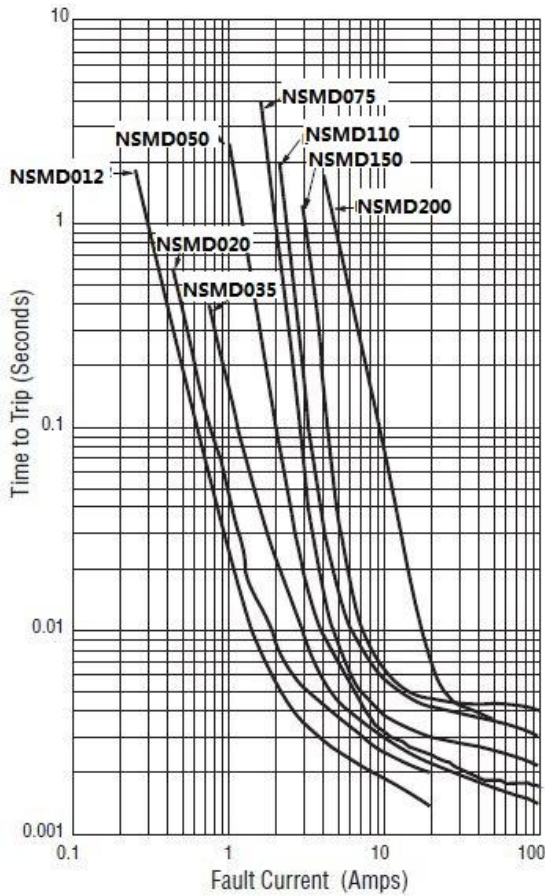
Thermal Derating Chart – I_{hold} (Amps)

Part Number	Ambient Operating Temperature								
	-40°C	-20°C	0°C	25°C	40°C	50°C	60°C	70°C	85°C
NSMD005	0.08	0.07	0.06	0.05	0.05	0.04	0.04	0.03	0.03
NSMD010	0.16	0.14	0.13	0.10	0.09	0.08	0.08	0.07	0.06
NSMD012	0.19	0.17	0.15	0.12	0.11	0.10	0.09	0.08	0.07
NSMD020	0.30	0.27	0.24	0.20	0.18	0.16	0.14	0.12	0.11
NSMD025	0.38	0.34	0.30	0.25	0.23	0.20	0.18	0.15	0.14
NSMD035	0.51	0.46	0.40	0.35	0.30	0.27	0.24	0.22	0.18
NSMD050	0.76	0.68	0.59	0.50	0.44	0.40	0.35	0.32	0.26
NSMD075	1.11	1.00	0.85	0.75	0.67	0.61	0.52	0.50	0.42
NSMD100	1.60	1.40	1.30	1.00	0.90	0.80	0.75	0.70	0.60
NSMD110	1.64	1.46	1.30	1.10	0.92	0.83	0.80	0.65	0.52
NSMD150	2.20	1.99	1.77	1.50	1.34	1.23	1.10	1.01	0.84
NSMD200	2.88	2.61	2.28	2.00	1.80	1.66	1.51	1.39	1.19

NSMD1206 Series



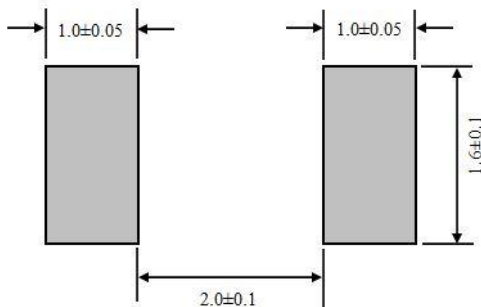
Typical time to trip at 25°C



◆ The Time to Trip curves represent typical performance of a device in a simulated application environment. Actual performance in specific customer applications may differ from these values due to the influence of other variables.

Recommended Pad Layout(mm/Inch) and Solder Reflow Conditions

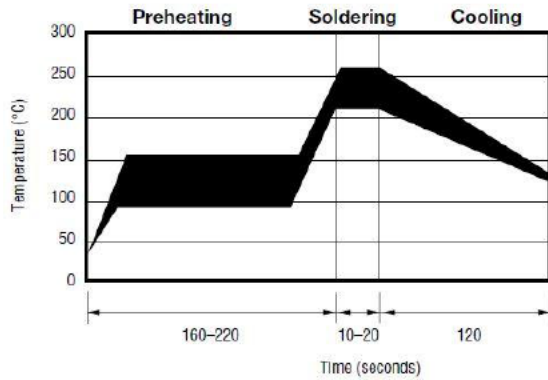
Recommended Pad Layout (mm)



Termination pad characteristics

- ◆ Terminal pad material:
Tin-Plated Nickle-Copper or Au-Plated Nickle-Copper
- ◆ Terminal pad solderability:
Meets EIA specification RS186-9E and ANSI/J-STD -002 category 3.

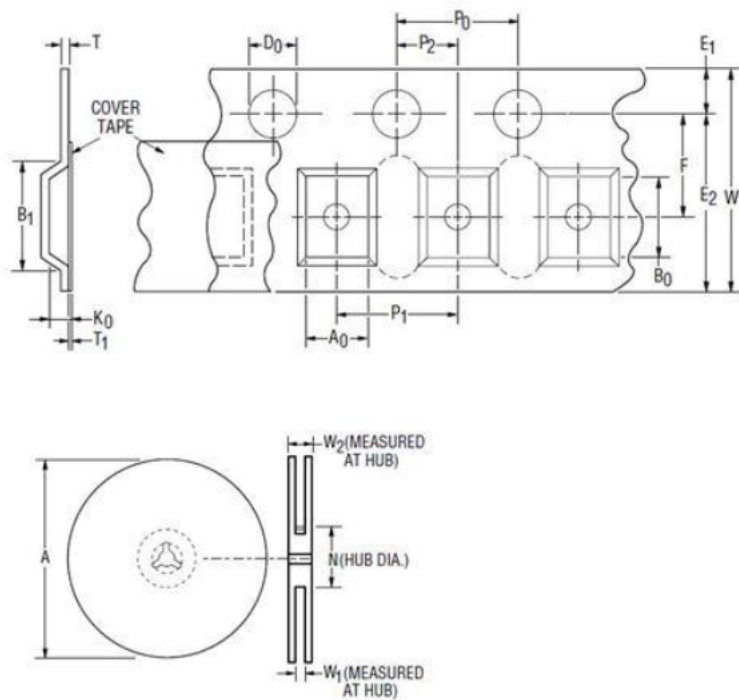
NSMD1206 Series



- ◆ Devices cannot be wave soldered. Please contact TLC for hand soldering recommendations.
- ◆ If reflow temperatures exceed the recommended profile, devices may not meet the performance requirements.
- ◆ Compatible with Pb and Pb-free solder reflow profiles.
- ◆ Excess solder may cause a short circuit, especially during hand soldering.

Tape and Reel Specification (mm)

Tape Dimensions	EIA 481-1
W	8.1±0.3
P0	4.0±0.10
P1	4.0±0.10
P2	2.0±0.05
A0	1.95±0.10
B0	3.45±0.10
B1max.	4.35
D0	1.5+0.1,-0
F	3.5±0.05
E1	1.75±0.10
E2min.	6.25
Tmax.	0.6
T1max.	0.1
K0	1.04±0.10
Leader min.	390
Trailer min.	160
Reel Dimensions	
Amax.	178
Nmin.	60
W1	9.0±0.50
W2	12.6±0.50



Package information

Model	O'ty/Reel
NSMD012 ~ NSMD200	4000 pcs

Note: Reel packaging per EIA-481-1 standard

How to order

Warning:

1. Use PPTC beyond the maximum ratings or improper use may result in device damage and possible electrical arcing and flame.
2. PPTC 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.
3. Device performance can be impacted negatively if devices are handled in a manner inconsistent with recommended electronic, thermal and mechanical procedures for electronic components.
4. Use PPTC with a large inductance in circuit will generate a circuit voltage (L di/dt) above the rated voltage of the PPTC.