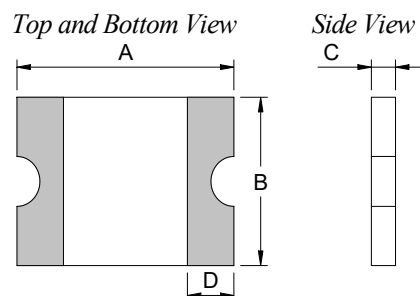


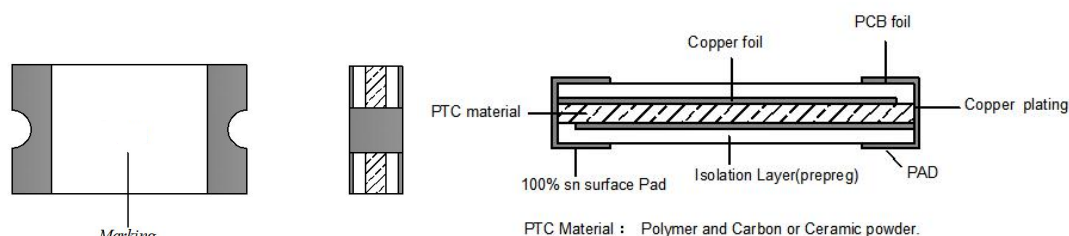
### Product Introduction

#### 1. Product Dimensions & Outline Drawing & marking (Unit:mm)



Model	A		B		C		D
	Min.	Max.	Min.	Max.	Min.	Max.	Min.
NSMD100	3.00	3.40	1.40	1.80	<b>0.60</b>	<b>1.00</b>	0.25

#### 2. Mechanical construction (Typical construction)



#### 3. Electrical Properties

Model	$I_H$ (A)	$I_T$ (A)	$V_{max}$ (V)	$I_{max}$ (A)	TTT (Max time to trip)		$Pd_{typ}$ (W)	$R_{min}$ ( $\Omega$ )	$R1_{max}$ ( $\Omega$ )
					(A)	(S)			
NSMD100	1.00	2.00	6	100	8.00	0.10	0.60	0.070	0.280

$I_H$ : 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(s) at assigned current.

$Pd_{typ}$ : Rated working power.

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

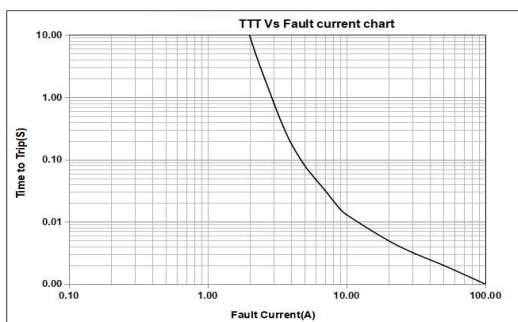
$R1_{max}$ : Maximum resistance of device is measured one hours post reflow at 25°C.

Noted: All electrical funtion test is conducted after PCB mounted.

#### 4. Thermal Derating Chart – $I_{hold}$ (Amps)

NSMD100	Ambient Operating Temperature								
	-40°C	-20°C	0°C	25°C	40°C	50°C	60°C	70°C	85°C
Hold Current(A)	1.60	1.40	1.30	1.00	0.90	0.80	0.75	0.70	0.60
Trip Current(A)	3.20	2.80	2.60	2.00	1.80	1.60	1.50	1.40	1.20

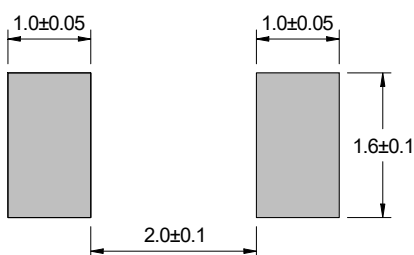
## 5. Typical time to trip at 25°C



- ◆ 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.

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

### Recommended Pad Layout(mm)



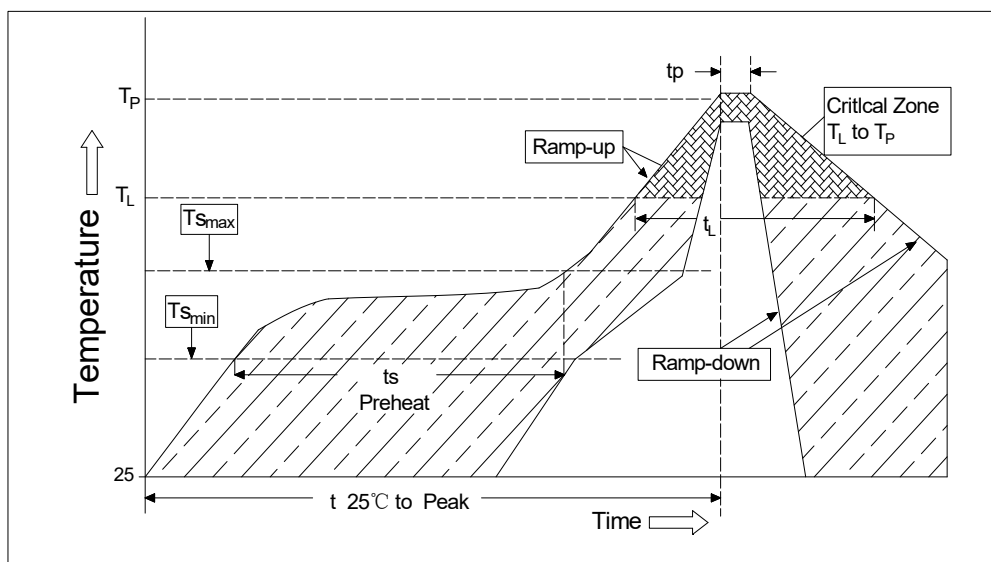
### Termination pad characteristics

- ◆ 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.

Reflow Profile	Lead free
Heating rate from T <sub>max</sub> to T <sub>p</sub>	Max.3 °C/second
Pre-heat:	
T <sub>min</sub>	150 °C
T <sub>max</sub>	200 °C
T <sub>min</sub> to T <sub>max</sub>	60~180seconds
Soldering time:	
Temperature (T <sub>L</sub> )	>217 °C
Time (t <sub>L</sub> )	60~150seconds
Peak temperature (T <sub>p</sub> )	260 °C
Time at Peak temperature ± 5 °C (t <sub>p</sub> )	20~40seconds
Cooling rate	Max.6 °C/second
Time from 25 °C to Peak Temperature	8 minutes max

### Warning for Reflow:

- 1、The printed solder thickness is not over 0.25mm, Excess solder may cause a short circuit, especially during hand soldering
  - 2、If reflow temperatures exceed the recommended profile, devices may not meet the performance requirements
  - 3、Device can not be wave soldered. Please contact TLC for hand soldering and dip soldering recommendations.
  - 4、Device can't contact solvent
- Note: All temperature in top chart is measured on the surface of devices



### 7. Environmental Characteristics

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

Maximum Device Surface Temperature in Tripped State ..... 125 °C

Storage Conditions ..... +40 °C Max. 70% RH Max. Packed in original packaging.

### 8. Conformance Requirement

NO.	Item	Test Condition	Spec.	Unit
1	Rmin	Resistance measurement at 25°C	0.07	Ω
2	Post Trip R1max	Resistance measurement one hour after post trip	0.28	Ω
3	2X Rmin Tsw	2 times of minimum Resistance value of R/T testing	100 ± 15	°C
4	I-hold	Hold rated current 1800 second without trip, @ 6Vdc, 25°C	1.00	A
5	I-trip	Device must trip within 900 second under rated current, @ 6Vdc, 25°C	2.00	A
6	TTT	@6Vdc/ 8.00A, 25°C	Max:0.10	Sec.
7	Cycle Life	6Vdc/ 100A, 100cycles	No visible damage or burning	N/A
8	Trip Endurance	6Vdc/ 100A, hold under 24 hours	No visible damage or burning	N/A
9	Power dissipation	@ 6Vdc/ 8.00A, 25°C	0.60 TYP	Watts

### 9. Reliability Requirement

NO.	Item	Test Condition	Spec.
1	Humidity Aging	85°C, 85% R.H., 1000 Hours	± 5% Typical Resistance Change
2	Passive Aging	85°C, 1000 Hours	± 5% Typical Resistance Change
3	Thermal Shock	-40°C ~ 85°C, 20 times	-33% Typical Resistance Change
4	Resistance to Solvents	MIL-STD-202, Method 215	Marking Still legible
5	Vibration	MIL-STD-833C, Method 2007.1, Condition A	Rmin. < R < R1max.
6	Solderability	245°C ± 5°C, 5 Seconds	>95% coverage