

308 Constitution Drive Menlo Park, CA USA www.circuitprotection.com

# PolySwitch® PTC Devices

**Overcurrent Protection Device** 

PRODUCT: nanoSMD200LR-2

DOCUMENT: SCD28040

REV LETTER: E

REV DATE: AUGUST 13, 2014

PAGE NO.: 1 OF 2

# **Specification Status: Released**

### **Maximum Electrical Rating**

Voltage: 6.0V<sub>DC</sub>

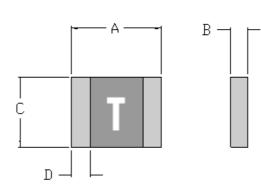
**Short Circuit Current: 50A** 

#### Notes:

Termination Finish: NiAu
 Drawing not to scale
 For battery application only

## Marking:

Τ



#### **TABLE I. DIMENSIONS:**

mm: in:

Α		В		С		D	
MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
3.00	3.43	0.50	1.00	1.37	1.85	0.25	0.75
(0.118)	(0.135)	(0.019)	(0.039)	(0.054)	(0.073)	(0.010)	(0.030)

#### **TABLE II. PERFORMANCE RATINGS:**

TABLE III T ETII OTIIIIATTOE TATTITGO.									
	CURRENT RATINGS**					TIME TO	RESISTANCE		TRIPPED-STATE
						TRIP**	VALUES		POWER
							DISSIPATION**		
AMPE	AMPERES AMPER		ERES	AMPERES		SECONDS	OHMS		WATTS AT
AT 0°C		AT 20°C		AT 60°C		AT 20°C, 9.5A	AT 20°C		20°C, 6.0V
HOLD	TRIP	HOLD	TRIP	HOLD	TRIP	MAX	MIN	MAX*	MAX
2.8	8.0	2.0	6.0	1.4	4.0	3.0	.006	.024	1.0

<sup>\*</sup>Maximum resistance is measured 1 hour after reflow.

Agency Recognition: UL, CSA Reference Document: PS300

Precedence: This specification takes precedence over documents referenced herein.

Effectivity: Reference documents shall be the issue in effect on the date of invitation for bid.

CAUTION: Operation beyond the rated voltage or current may result in rupture, electrical arcing or flame.

#### **Materials Information**

ROHS Compliant

**ELV Compliant** 

Pb-Free

Halogen Free\*

Directive 2002/95/EC Compliant Directive 2000/53/EC

**(**)



<sup>\*\*</sup>Values specified were determined using PCB's with 0.025" x 2.0 ounce copper traces.

<sup>\*</sup> Halogen Free refers to: Br≤900ppm, Cl≤900ppm, Br+Cl≤1500ppm.



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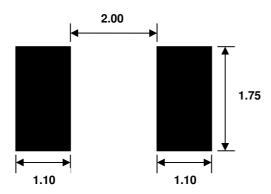
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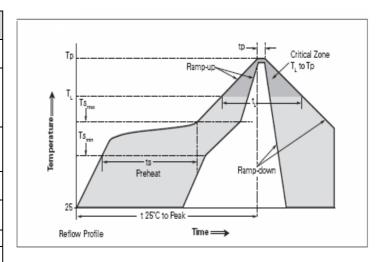
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#### Recommended pad layout (mm.)



### Recommended reflow profile

	Pb-Free		
Profile Feature	Assembly		
Average ramp up rate (Ts <sub>max</sub> to Tp)	3°C/s max.		
Preheat  • Temperature min. (Ts <sub>min</sub> )  • Temperature max. (Ts <sub>max</sub> )  • Time (ts <sub>min</sub> to ts <sub>max</sub> )	150°C 200°C 60-120s		
Time maintained above: • Temperature (T <sub>L</sub> ) • Time (t <sub>L</sub> )	217°C 60-150s		
Peak/Classification temperature (Tp)	260°C		
Time within 5°C of actual peak temperature (tp)	30s max.		
Ramp down rate	2°C/s max.		
Time 25°C to peak temperature	8 mins max.		



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

#### Solder reflow recommendation

- Recommended reflow methods: IR, hot air and Nitrogen
- Recommended maximum solder paste thickness: 0.25mm
- Recommended minimum stencil thickness: 0.1mm
- Devices can be cleaned using standard methods and aqueous solvents.
- TE believes the optimum conditions for forming acceptable solder fillets occur when a reasonable amount of solder paste is placed underneath each device's termination. As such, we request that customers comply with our recommended solder pad layouts.
- Customer should validate that the solder paste amount and reflow recommendations meet its application.
- TE requests that customer board layouts refrain from placing raised features (e.g. vias, nomenclature, traces, etc.) underneath PolySwitch devices. It is possible that raised features could negatively impact solderability performance of our devices.

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