

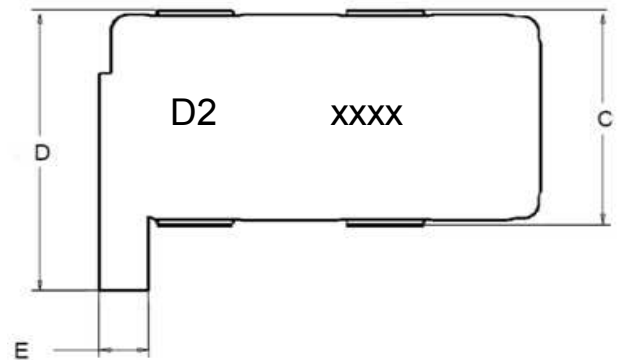
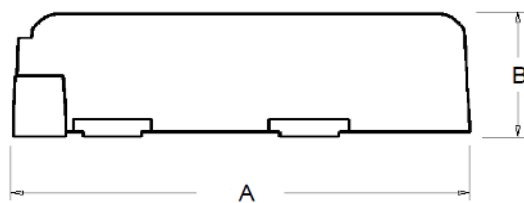
# High Current Reflowable Thermal Protection Device

**PRODUCT: RTP200HR010SA**

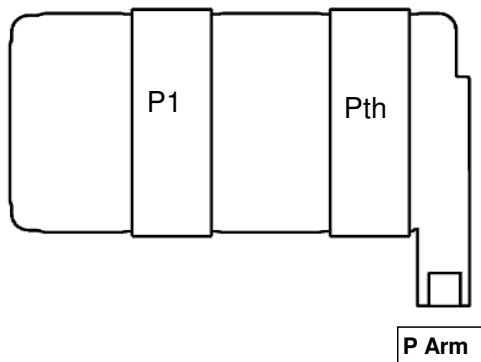
DOCUMENT: SCD28246  
REV LETTER: B  
REV DATE: JANUARY 16, 2014  
PAGE NO.: 1 OF 5

**Specification Status: Released**

**PIN CONFIGURATION AND DESCRIPTION:**



**Note: D2 is product code  
xxxx is Batch code**



**TABLE 1. DIMENSIONS:**

	A		B		C		D		E	
	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
mm	11.35	11.85	3.00	3.70	5.70	6.40	7.90	8.40	1.30	1.60
in:	(0.447)	(0.467)	(0.118)	(0.146)	(0.224)	(0.252)	(0.311)	(0.331)	(0.051)	(0.063)

## High Current Reflowable Thermal Protection Device

**PRODUCT: RTP200HR010SA**

DOCUMENT: SCD28246  
REV LETTER: B  
REV DATE: JANUARY 16, 2014  
PAGE NO.: 2 OF 5

**TABLE 2. ABSOLUTE MAX RATINGS:**

Absolute Max Ratings	Max	Units	Conditions
Max DC Open Voltage <sup>1</sup>	16	V <sub>DC</sub>	
Max DC Interrupt Current <sup>1</sup>	500	A	@ 16 VDC
ESD rating (Human Body Model)	25	KV	
Max Reflow Temperature (pre-arming)	260	°C	
Operating temperature limits, Junction (Pth) and Storage Temperature	-55 150	°C	
	175	°C	10A, 100 h

1. Performance capability at these conditions can be influenced by board design. Performance should be verified in the user's system.

**TABLE 3. PERFORMANCE CHARACTERISTICS (Typical unless otherwise specified):**

Resistance and Open Characteristics P <sub>1</sub> to P <sub>TH</sub>		Min	Typ	Max	Units
R <sub>PP</sub> (Resistance from P <sub>1</sub> to P <sub>TH</sub> )	@ 23+/-3°C @ 150+/-3°C		100 150	150 250	μΩ
Operating Voltage			16		V <sub>DC</sub>
Open Temperature, post-arming	I <sub>PP</sub> = 0	202	210	218	°C
Installation dependent Operating Current, post-arming <sup>2</sup>	@ 23+/-3°C	90			A
	@ 140+/-3°C	45			
Moisture Sensitivity Level Rating <sup>3</sup>			1		

2. Results obtained on 44.4mm x 57.2mm x 1.6mm of 2-sided FR4 board T4350 with 4.0 oz Copper trace. RTP device pad connection of:
  - 283 sq. mm 4.0 oz copper heat spreader connected to I P1 pad.
  - 237 sq. mm 4.0 oz copper heat spreader connected to I PTH pad.
 Results are highly installation-dependent. Users should confirm for their own applications.

3. As per JEDEC J-STD-020C

## High Current Reflowable Thermal Protection Device

**PRODUCT: RTP200HR010SA**

DOCUMENT: SCD28246  
REV LETTER: B  
REV DATE: JANUARY 16, 2014  
PAGE NO.: 3 OF 5

**TABLE 4. ARMING CHARACTERISTICS:**

Arming Characteristics ARM		Min	Typ	Max	Units
Arming Type		Electronically Armed			
R <sub>ARM</sub> (Resistance from ARM to P <sub>1</sub> or P <sub>TH</sub> )	Pre-Arming		500		mΩ
	Post-Arming	10			KΩ
Arming Current (I <sub>ARM</sub> ) <sup>4</sup>		@ 23 +/-3°C	2	5	A
Arming Time (@23 +/-3°C) <sup>4</sup>	@ 2A		0.020		Sec
	@ 5A		0.005		

4. Results obtained on 44.4mm x 57.2mm x 1.6mm of 2-sided FR4 board T4350 with 4.0 oz Copper trace.

RTP device pad connection of:

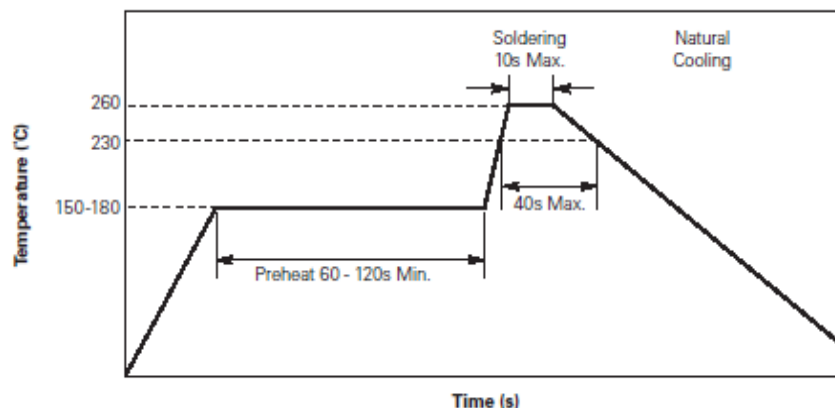
- 283 sq. mm 4.0 oz copper heat spreader connected to I P1 pad.
- 237 sq. mm 4.0 oz copper heat spreader connected to I PTH pad.

### Solder Reflow Recommendation:

#### Classification Reflow Profiles

Profile Feature	Pb-Free Assembly
Average ramp up rate (T <sub>S</sub> MAX to T <sub>p</sub> )	3°C/second max.
<b>Preheat</b>	
• Temperature min. (T <sub>S</sub> MIN)	150°C
• Temperature max. (T <sub>S</sub> MAX)	200°C
• Time (t <sub>S</sub> MIN to t <sub>S</sub> MAX)	60-180 seconds
<b>Time maintained above:</b>	
• Temperature (T <sub>L</sub> )	217°C
• Time (t <sub>L</sub> )	60-150 seconds
<b>Peak/Classification temperature (T<sub>p</sub>)</b>	260°C
<b>Time within 5°C of actual peak temperature</b>	
Time (t <sub>p</sub> )	20-40 seconds
<b>Ramp down rate</b>	6°C/second max.
<b>Time 25°C to peak temperature</b>	8 minutes max.

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

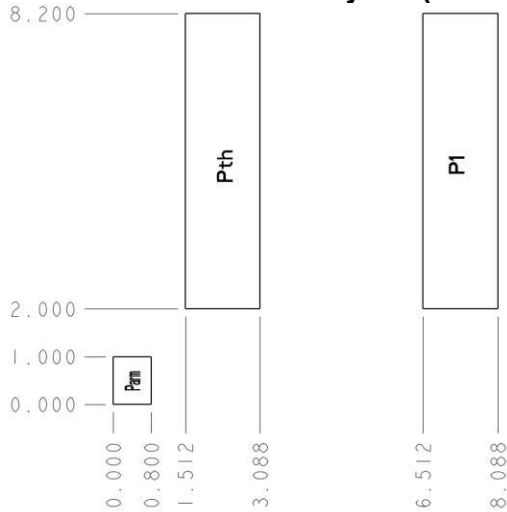


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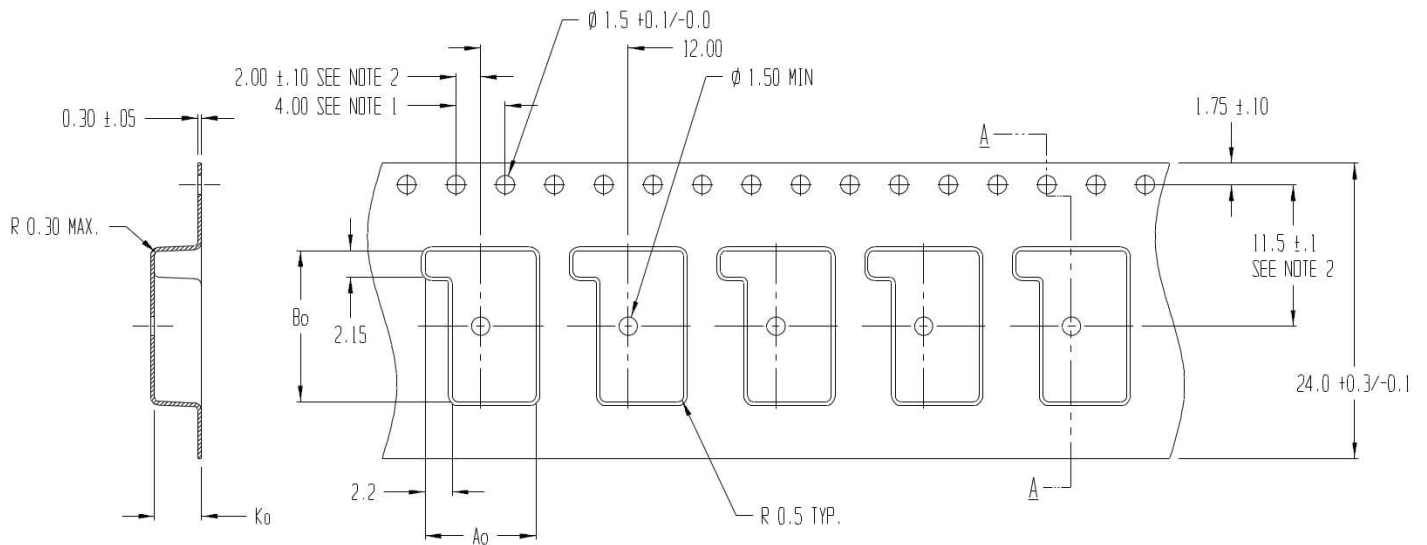
**PRODUCT: RTP200HR010SA**

DOCUMENT: SCD28246  
REV LETTER: B  
REV DATE: JANUARY 16, 2014  
PAGE NO.: 4 OF 5

## Recommended Pad Layout (dimensions in mm):



## Package Information (dimensions are in mm):



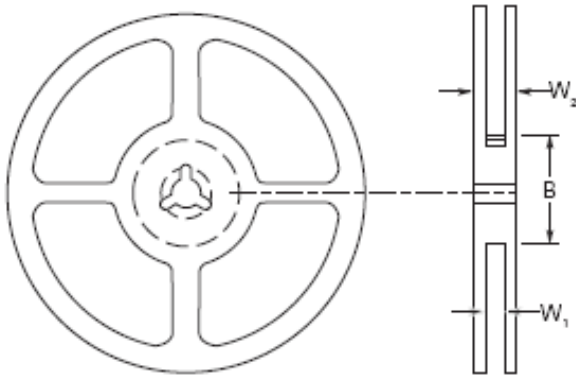
SECTION A - A

$A_0 = 9.00$   
 $B_0 = 12.30$   
 $K_0 = 3.80$

## High Current Reflowable Thermal Protection Device

**PRODUCT: RTP200HR010SA**

DOCUMENT: SCD28246  
REV LETTER: B  
REV DATE: JANUARY 16, 2014  
PAGE NO.: 5 OF 5



	<b>B</b>	<b>W<sub>1</sub></b>	<b>W<sub>2</sub> Max</b>
mm	102.0 ± 2.0	24	29
(inch)	(4.0 ± 0.079)	(0.945)	(1.14)

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.

### Important Installation Instructions:

Note 1: RTP200HR010SA devices are to be board-mounted using only solder pastes referenced in Engineering Report: Q40213  
Note 2: RTP200HR010SA devices are not compatible with conformal coating. If selective coatings are used, avoid covering the RTP200HR010SA device.

## MATERIALS INFORMATION

### RoHS Compliant

Directive 2002/95/EC  
Compliant

### ELV Compliant

Directive 2000/53/EC  
Compliant

### Pb-Free



### Halogen Free\*



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

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