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

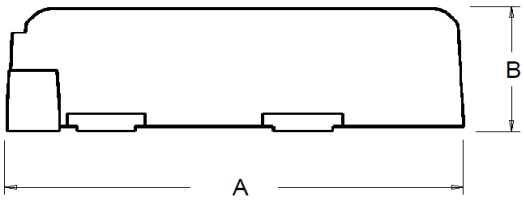
High Current Reflowable Thermal Protection Device

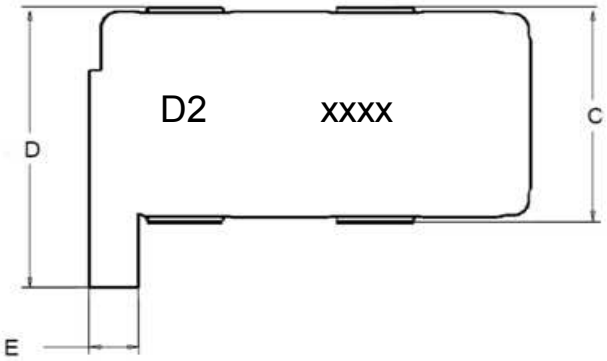
PRODUCT: RTP200HR010SA

DOCUMENT: SCD28246
REV LETTER: B
REV DATE: JANUARY 16, 2014

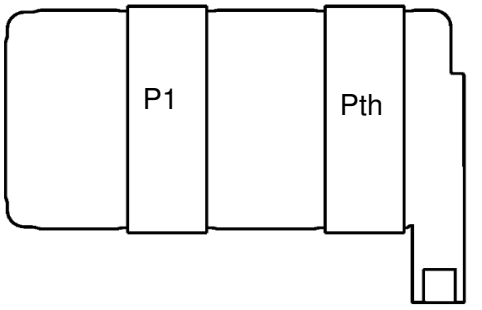
Specification Status: Released

PIN CONFIGURATION AND DESCRIPTION:





Note: D2 is product code
xxxx is Batch code



P Arm

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)

TABLE 2. ABSOLUTE MAX RATINGS:

Absolute Max Ratings	Max	Units	Conditions
Max DC Open Voltage [1]	16	V_{DC}	
Max DC Interrupt Current [1]	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_1 to P_{TH}		Min	Typ	Max	Units
R_{PP} (Resistance from P_1 to P_{TH})	@ 23+/-3°C @ 150+/-3°C		100 150	150 250	µΩ
Operating Voltage			16		V_{DC}
Open Temperature, post-arming	I_{PP} = 0	202	210	218	°C
Installation dependent Operating Current, post-arming [2]	@ 23+/-3°C @ 140+/-3°C	90 45			A
Moisture Sensitivity Level Rating [3]			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

TABLE 4. ARMING CHARACTERISTICS:

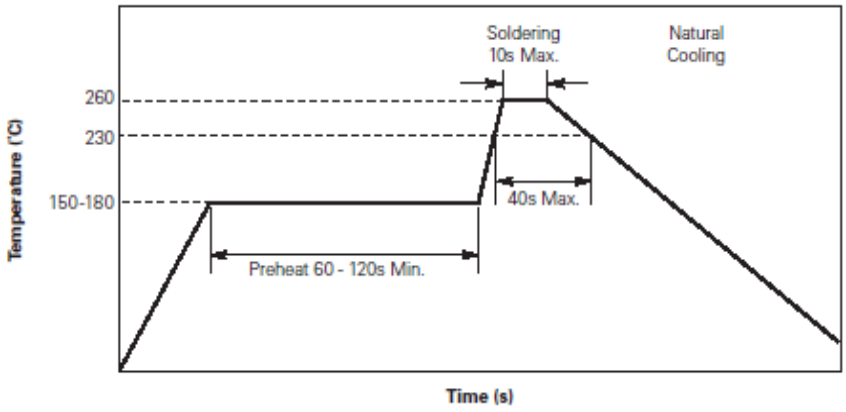
Arming Characteristics ARM		Min	Typ	Max	Units
Arming Type		Electronically Armed			
R_{ARM} (Resistance from ARM to P_1 or P_{TH})	Pre-Arming		500		mΩ
	Post-Arming	10			KΩ
Arming Current (I_{ARM}) [4]	@ 23 +/-3°C	2		5	A
Arming Time (@23 +/-3°C) [4]	@ 2A		0.020		Sec
	@ 5A		0.005		

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 (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})	60-180 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)	20-40 seconds
Ramp down rate	6°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.



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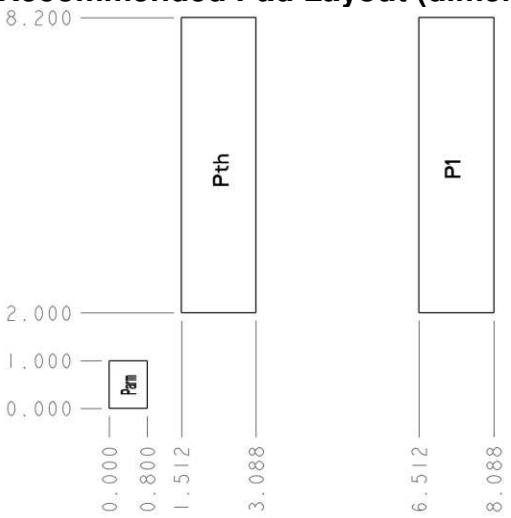
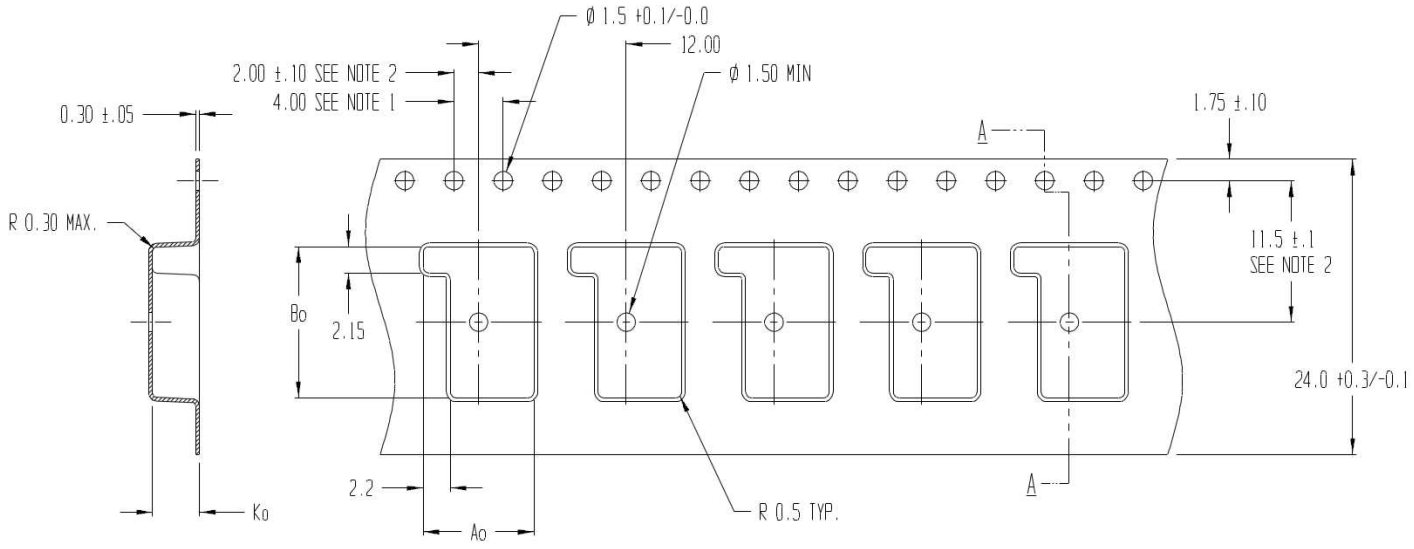
Recommended Pad Layout (dimensions in mm):



Package Information (dimensions are in mm):



SECTION A - A

Ao = 9.00
Bo = 12.30
Ko = 3.80

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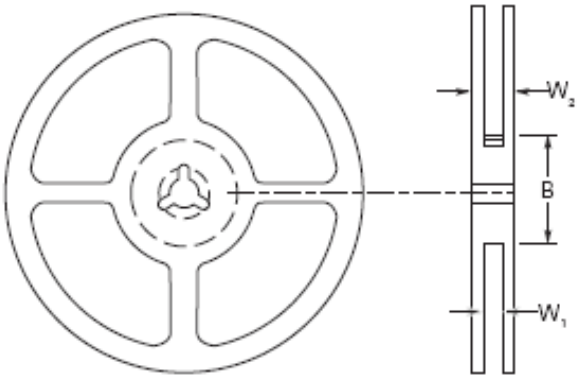

	B	W_1	W_2 Max
mm (inch)	102.0 ± 2.0 (4.0 ± 0.079)	24 (0.945)	29 (1.14)

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*
HF

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