

Reflowable Thermal Protection Device

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

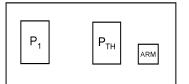
#### PRODUCT: RTP200R060SA

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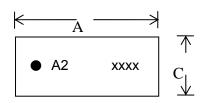
## **Specification Status: Preliminary**

#### PIN CONFIGURATION AND DESCRIPTION:

Pin Configuration (Bottom View of Device)

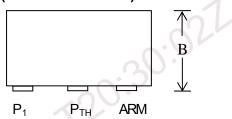


Note: A2 is product code xxxx is Batch Code P1 indicated by inmolded mark



(Side View of Device)

(Top View of Device)



#### **TABLE 1. DIMENSIONS:**

Α		A B		C	
MIN	MAX	MIN	MAX	MIN	MAX
11.60	12.00	6.00	6.35	5.25	5.50
(0.46)	(0.47)	(0.24)	(0.25)	(0.21)	(0.22)
	<b>MIN</b> 11.60	MINMAX11.6012.00	MIN MAX MIN   11.60 12.00 6.00	MIN MAX MIN MAX   11.60 12.00 6.00 6.35	MIN MAX MIN MAX MIN   11.60 12.00 6.00 6.35 5.25

#### TABLE 2. ABSOLUTE MAX RATINGS:

Absolute Max Rating	Max	Units	
Max DC Open Voltage 1	32	$V_{\text{DC}}$	
. 605	@ 16 V <sub>DC</sub>	200	
Max DC Interrupt Current <sup>1</sup>	@ 24 V <sub>DC</sub>	130	А
	@ 32 V <sub>DC</sub>	100	
ESD rating (Human Body Model)	25	KV	
Max Reflow Temperature (pre-arr	260	°C	
Operating temperature limits, pos non-opening	-55 +175	°C	

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



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

Resistance and Open Characteristics $P_1$ to $P_{TH}$			Тур	Max	Units
$R_{PP}$ (Resistance from P <sub>1</sub> to P <sub>TH</sub> )	@ 23+/-3°C		0.6	0.8	mΩ
$r_{PP}$ (resistance from $r_1$ to $r_{TH}$ )	@ 175+/-3°C		0.8	1.0	11122
Operating Voltage			32		$V_{\text{DC}}$
Open Temperature, post-arming	I <sub>PP</sub> = 0	200	205	210	°C
Thermal Resistance: Junction to Ambient <sup>2</sup>	See note 2		150		°C/W
Thermal Resistance: Junction to Case	Case = $P_{TH}$ pad		0.5		°C/W
Installation demondent Operation Operations	@ 23+/-3°C	32	34		
Installation dependent Operating Current, post- arming <sup>2,3</sup>	@ 100+/-3°C		28		А
	@ 175+/-3°C		10		1
Moisture Sensitivity Level Rating <sup>4</sup>			1	~	

 Results obtained on 44.4mm x 57.2mm x 1.6mm single layer FR4 boards with 2oz Cu traces, a 645 sq. mm, 2oz Cu heat spreader connected to the P<sub>TH</sub> pad, and a 387 sq. mm Cu heat spreader connected to the P<sub>1</sub> pad of the RTP device. (See RTP test board drawing in the RTP Datasheet). Results are highly installation-dependent. Users should confirm for their own applications.

 Operating current is measured on the RTP test board (see the RTP Datasheet) at the specified temperature. It is a highly installation dependent value. Users should confirm for their own applications.

4. As per JEDEC J-STD-020C

#### TABLE 4. ARMING CHARACTERISTICS:

Arming Characteristics ARM			Тур	Max	Units
Arming Type		Elect	ronically A	rmed	
$R_{ARM}$ (Resistance from ARM to P <sub>1</sub> or P <sub>TH</sub> )	Pre-Arming		300		mΩ
RARM (RESISTANCE NOT ARM TO F1 OF FTH)	Post-Arming	10			KΩ
Arming Current (I <sub>ARM</sub> ) <sup>5</sup>	@ 23 +/-3°C	2		5	А
Arming Time (@23 +/-3°C) <sup>5</sup>	@ 2A		0.20		Sec
	@ 5A		0.02		380

Results obtained on 44.4mm x 57.2mm x 1.6mm single layer FR4 boards with 2oz, Cu traces, a 645 sq. mm 2oz Cu heat spreader connected to the P<sub>TH</sub> pad, and a 387 sq. mm Cu heat spreader connected to the P<sub>1</sub> pad of the RTP device. (See RTP test board drawing in the RTP Datasheet.) Results are highly installation dependent. Users should confirm for their own applications.



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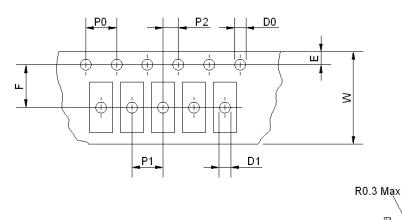
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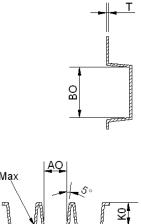
Classification Reflow Profiles	
rofile Feature	Pb-Free Assembly
verage ramp up rate (Ts <sub>MAX</sub> to Tp)	3°C/second max.
reheat	
Temperature min. (Ts <sub>MIN</sub> )	150°C
Temperature max. (Ts <sub>MAX</sub> )	200°C
Time (ts <sub>MIN</sub> to ts <sub>MAX</sub> )	60-180 seconds
ime maintained above:	
Temperature (TL)	217°C
Time (t <sub>L</sub> )	60-150 seconds
eak/Classification temperature (Tp)	260°C
ime within 5°C of actual peak temperature	
īme (tp)	20-40 seconds
amp down rate	6°C/second max.
ïme 25°C to peak temperature	8 minutes max.
230 150-180	Preheat 60 - 120s Min.
commended Pad Layout:	Preheat 60 - 120s Min.



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### Package Information:

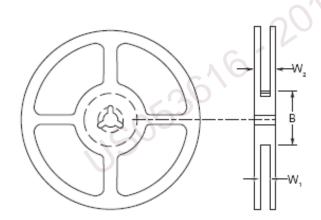




	E	F	w	P1	P0	P2
mm (in)	1.75±0.10 (0.069±0.004)	11.50±0.10 (0.453±0.004)	24.00±0.30 (0.945±0.012)	12.00±0.10 (0.472±0.004)	4.00±0.10 (0.157±0.004)	2.00±0.10 (0.079±0.004)
	D0	D1	Т	A0	B0	K0
mm (in)	1.50+0.10/-0.00 (0.059+0.004/-0.000)	1.50±0.10 (0.059±0.004)	0.46±0.046 (0.018±0.002)	5.70±0.18 (0.224±0.007)	12.40±0.18 (0.488±0.007)	6.50±0.18 (0.256±0.007)

**Reflowable Thermal Protection** 

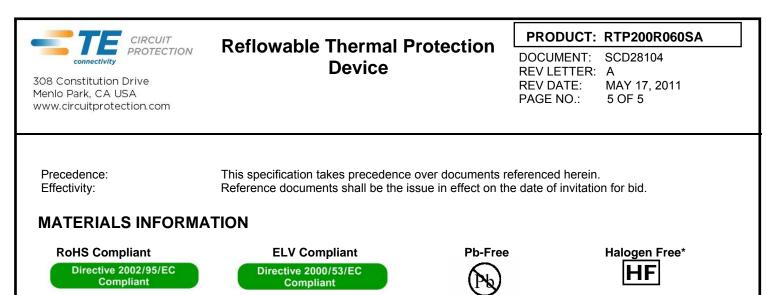
Device



	В	<b>W</b> <sub>1</sub>	W₂ Max
mm	102.0 ± 2.0	24	29
(inch)	(4.0 ± 0.079)	(0.945)	(1.14)

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

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