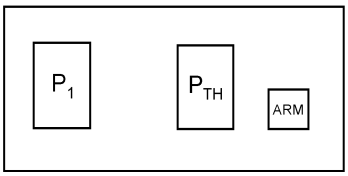
TE CIRCUIT PROTECTION connectivity
308 Constitution Drive
Menlo Park, CA USA
www.circuitprotection.com

Reflowable Thermal Protection Device

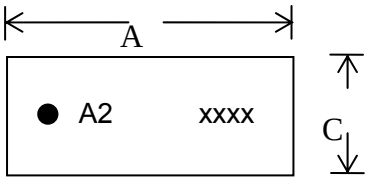
Specification Status: Released

PIN CONFIGURATION AND DESCRIPTION:

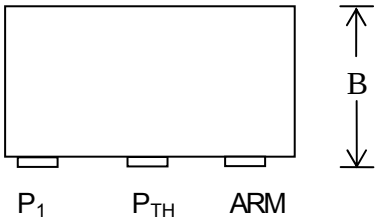
Pin Configuration
(Bottom View of Device)



(Top View of Device)



(Side View of Device)



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

TABLE 1. DIMENSIONS:

	A		B		C	
	MIN	**MAX**	**MIN**	**MAX**	**MIN**	**MAX**
mm	11.60	12.00	6.00	6.35	5.25	5.50
in:	(0.46)	(0.47)	(0.24)	(0.25)	(0.21)	(0.22)

TABLE 2. ABSOLUTE MAX RATINGS:

Absolute Max Ratings		Max	Units
Max DC Open Voltage [1]		32	V_{DC}
Max DC Interrupt Current [1]	@ 16 V_{DC} @ 24 V_{DC} @ 32 V_{DC}	200 130 100	A
ESD rating (Human Body Model)		25	KV
Max Reflow Temperature (pre-arming)		260	°C
Operating temperature limits, post-arming, 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.

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 @ 175+/-3°C		0.6 0.8	0.8 1.2	mΩ
Operating Voltage			32		V_{DC}
Open Temperature, post-arming	I_{PP} = 0	196	205	213	°C
Thermal Resistance: Junction to Case	Case = P_{TH} pad		0.5		°C/W
Installation dependent Operating Current, post-arming [2, 3]	@ 23+/-3°C @ 100+/-3°C @ 175+/-3°C	32 27	34 28 10		A
Moisture Sensitivity Level Rating [4]			1		

2. 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_{TH} pad, and a 387 sq. mm Cu heat spreader connected to the P_1 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.
3. 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:

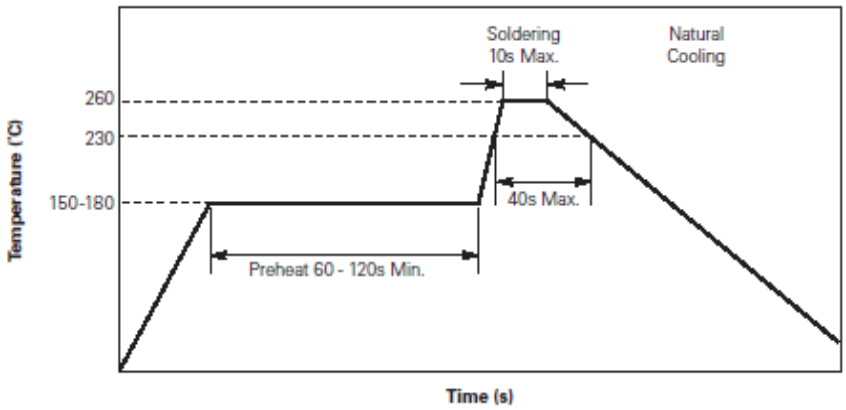
Arming Characteristics ARM		Min	Typ	Max	Units
Arming Type		Electronically Armed			
R_{ARM} (Resistance from ARM to P_1 or P_{TH})	Pre-Arming		300		mΩ
	Post-Arming	10			KΩ
Arming Current (I_{ARM}) [5]	@ 23 +/-3°C	2		5	A
Arming Time (@23 +/-3°C) [5]	@ 2A @ 5A		0.10 0.01		Sec

5. 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_{TH} pad, and a 387 sq. mm Cu heat spreader connected to the P_1 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.

Solder Reflow Recommendation:

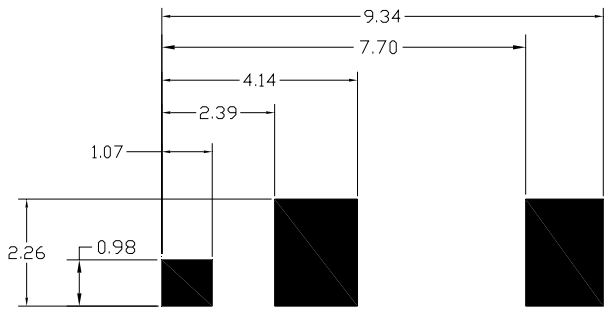
Classification Reflow Profiles	
Profile Feature	**Pb-Free Assembly**
Average ramp up rate (Ts_{MAX} to Tp)	3°C/second max.
Preheat	
• Temperature min. (Ts_{MIN})	150°C
• Temperature max. (Ts_{MAX})	200°C
• Time (ts_{MIN} to ts_{MAX})	60-180 seconds
Time maintained above:	
• Temperature (T_L)	217°C
• 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.

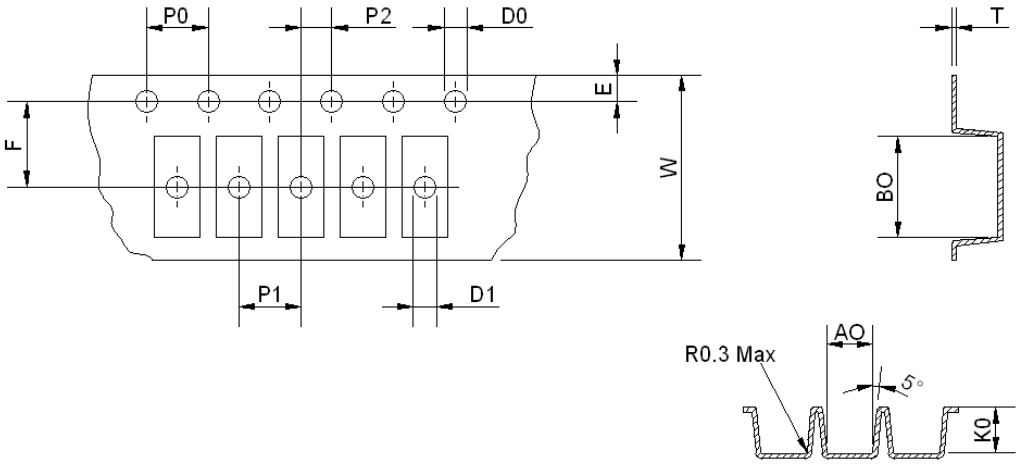


Recommended Pad Layout:

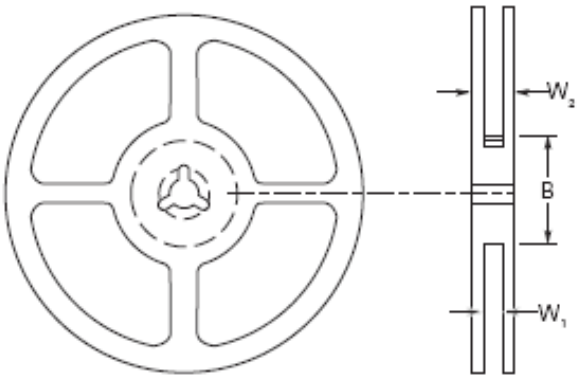
mm



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	T	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)



	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.

MATERIALS INFORMATION

RoHS Compliant	ELV Compliant	Pb-Free	Halogen Free*
Directive 2002/95/EC Compliant	Directive 2000/53/EC Compliant	Pb	HF

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

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