

**Specification Status: Released**

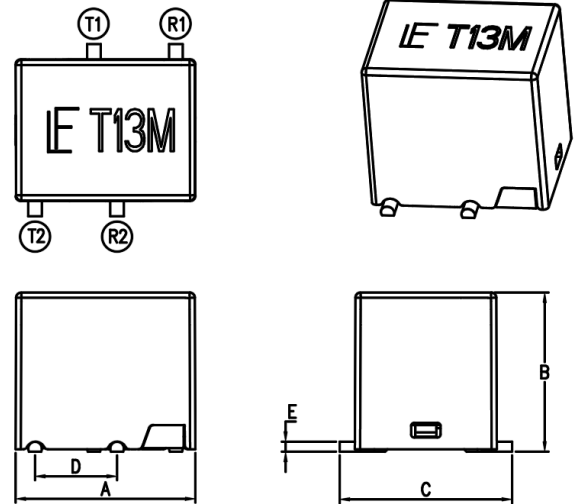
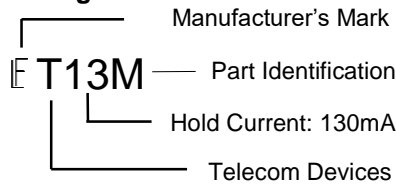
**Maximum Operating Voltage:** 60V<sub>DC</sub>

**Fault Ratings at 20°C:**

- 250 V<sub>RMS</sub>, 3A, 10 applications
- 600 V<sub>RMS</sub>, 1A, 5 applications

**Configuration:** Two PPTC devices per TSM250 part

**Marking:**



**Terminal Description:**  
T1 = Tip In    T2 = Tip Out  
R1 = Ring In    R2 = Ring Out

**Table I. Dimensions**

	A		B		C		D		E	
	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
mm:	8.2	8.9	--	9.0	7.8	8.6	--	3.9	--	0.7
in:	(0.323)	(0.350)	--	(0.354)	(0.307)	(0.339)	--	(0.154)	--	(0.026)

**Table II. Performance Ratings @ 20°C (unless otherwise noted)**

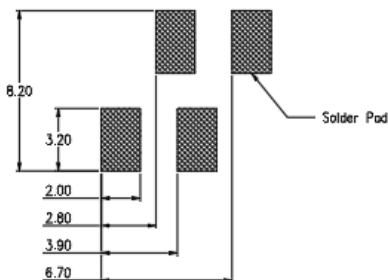
Part No.	I <sub>hold</sub> (A)	I <sub>trip</sub> (A)	RESISTANCE ** @ 20° C (Ω)			TIME TO TRIP @ 1.0 A (Seconds)		OPERATING TEMPERATURE (°C)		TRIPPED STATE POWER DISSIPATION @ 60V <sub>DC</sub> (W)
			R <sub>MIN</sub>	R <sub>MAX</sub>	R <sub>1 MAX*</sub>	TYP	MAX	MIN	MAX	TYP
TSM250-130F	0.13	0.26	4.0	9.0	15.0	1.0	2.4	-40	85	1.5
TSM250-130F-RA	0.13	0.26	4.0	22.0	30.0	1.0	2.4	-40	85	1.5

\* Maximum device resistance: measured 1-hour post reflow or post trip.  
\*\* Resistance per PPTC device.

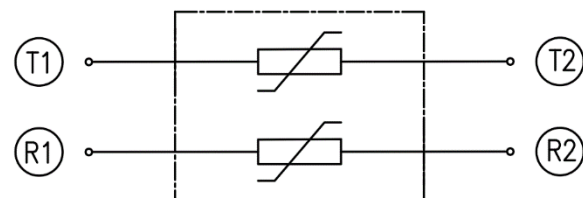
**Additional Ratings @ 20°C**

- Line Balance: 0.5 Ohm
- Lightning Withstand: 10/700μS, 40 Ω (ITU-T K.20, K.21): 1.5kV, 10 shots, 1 minute interval
- Lightning Withstand: 10/1000μS, 60 Ω: 2.0kV, 30 shots, 3 minutes interval
- Moisture Sensitivity Level (MSL): 1

**Recommended Pad Layout (mm)**

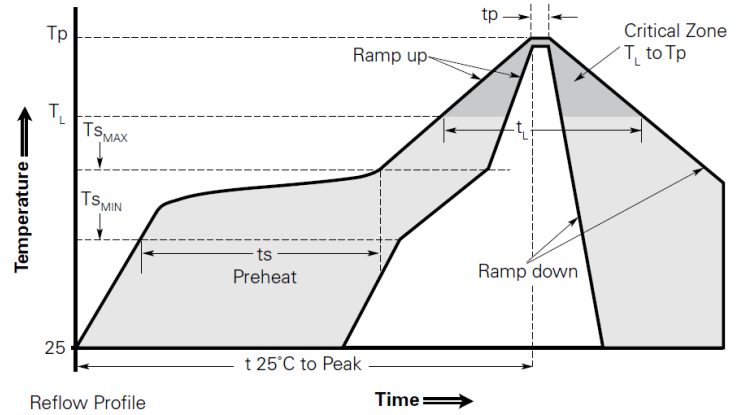


**Schematic**



**Recommended Reflow Profile**

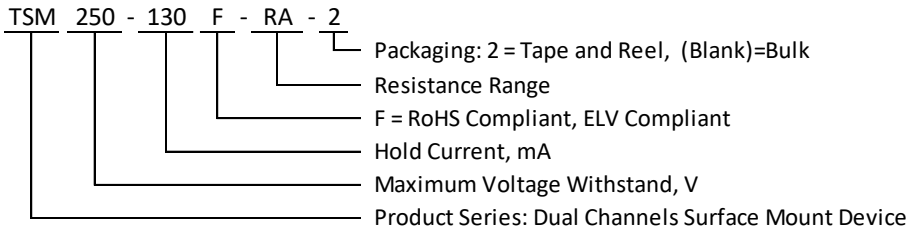
Profile Feature	Pb-Free Assembly
<b>Average ramp up rate (T<sub>S</sub>MAX to T<sub>p</sub>)</b>	3°C/second max.
<b>Preheat</b>	
* Temperature min. (T <sub>S</sub> MIN)	150°C
* Temperature max. (T <sub>S</sub> MAX)	200°C
* Time (t <sub>S</sub> MIN to t <sub>S</sub> MAX)	60-180 seconds
<b>Time maintained 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 topside of the package, measured on the package body surface.**

**Agency Recognitions:** UL (File #E74889)  
**Reference Documents:** 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.

**Part Numbering System and Ordering Information**



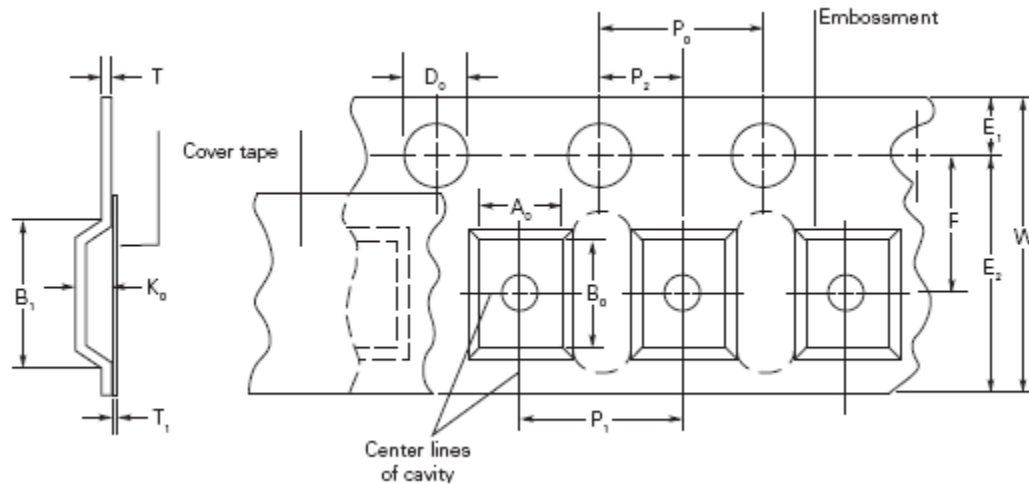
- Packaged with Tape and Reel only, Per EIA481-2
- Standard Package Quantity: 600pcs per reel
- MPQ/MOQ: 3000pcs

**TSM250 Tape and Reel Specifications: per EIA 481 standard**

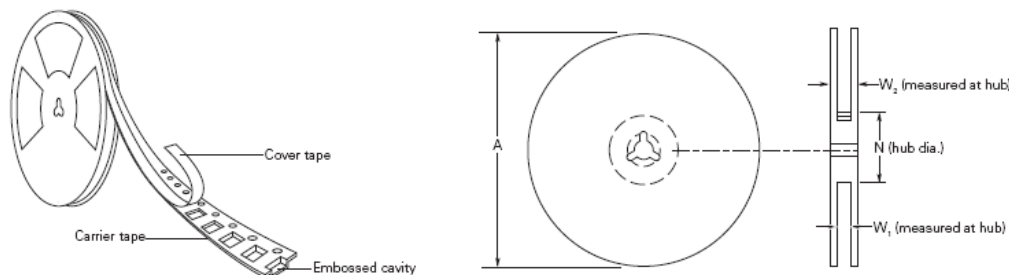
Description	EIA Mark	Dimension (mm)	Tolerance (mm)
Carrier tape width	W	24.0	±0.5
Sprocket hole pitch	P <sub>0</sub>	4.0	±0.1
	P <sub>1</sub>	16.0	±0.1
	P <sub>2</sub>	2.0	±0.1
	A <sub>0</sub>	7.05	±0.2
	B <sub>0</sub>	8.85	±0.2
Sprocket hole diameter	B <sub>1</sub> max.	12.45	
	D	1.5	-0/+1.0
	F	11.5	±0.1
	E <sub>1</sub>	1.75	±0.1
Tape thickness	E2 max.	22.25	
	T max.	0.5	±0.5
Tape thickness with splice	T <sub>1</sub> max.	0.1	
	K <sub>0</sub>	8.55	±0.2

**Reel Dimensions**

Reel diameter	A max.	390	
Core diameter	N min.	75	
Space between flanges less device	W <sub>1</sub>	25.4	±0.5
Reel width	W <sub>2</sub> max.	30.4	



**EIA Referenced Reel Dimensions for TSM250 Devices**



## Materials Information

### ROHS Compliant

Directive 2011/65/EU  
Compliant

### ELV Compliant

Directive 2000/53/EC  
Compliant

### Pb-Free



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