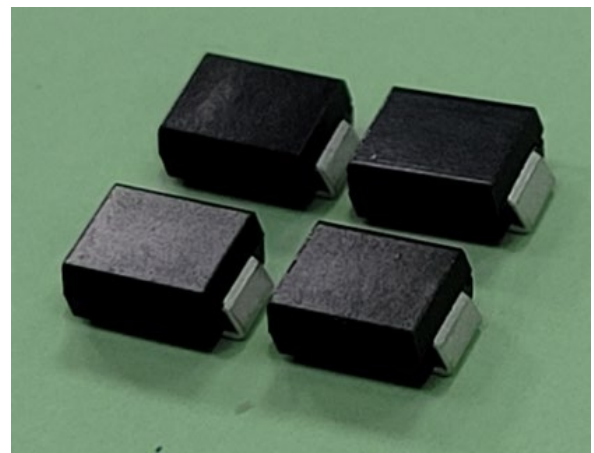




TCLAD
a POLYTRONICS company

**PRODUCT
DATASHEET**



SMTB Series Surface Mount Thermal Bridge Devices



Lead Frame & Epoxy Transfer Molding Series

SMTB Series Surface Mount Thermal Bridge Devices

Description

The Surface Mountable Thermal Bridge (SMTB) functions as an advanced heat spreader designed to enhance the thermal dissipation efficiency of the entire printed circuit board (PCB). This component contributes to reducing the overall cost of thermal management solutions and optimizing the spatial footprint of the final product.

Leveraging the advantages of a lead frame structure, a thermally conductive core material, and a functional molding compound, the SMTB offers superior thermal conductivity and electrical insulation properties. These features make it highly suitable for a wide range of electronic devices, particularly those involving high-power and high-density integrated circuit applications.



Features

- Easy to process/Surface mountable
- Low Thermal Resistance
- High Voltage Withstand
- Broad operating temperature (-55~150°C)

Application

- Power Electronics
- Home Appliances Camera
- Electric Motor
- Heater Element to Heat Spreader
- Server and Consumer market

Epoxy Transfer Molding Series Electrical Characteristics

Part Number	Thermal Resistance (°C/W)	Capacitance [pf, 2kHz]	Breakdown Voltage DC (KV)
SMTB2114P30E	4.0	3.5	>5.0
SMTB3123P30E	1.1	5.0	>5.0

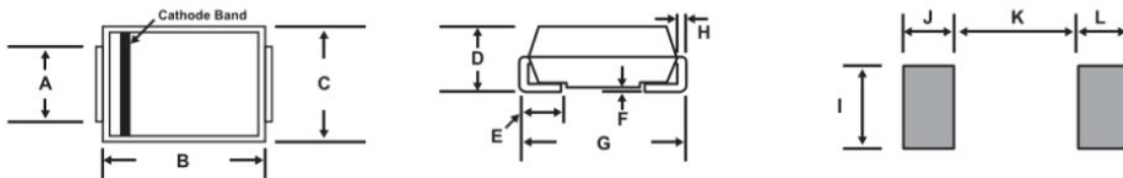
SMTB Series Surface Mount Thermal Bridge Devices

Lead Frame Series Electrical Characteristics

Part Number	Thermal Resistance (°C/W)	Capacitance [pf, 2kHz]	Breakdown Voltage DC (KV)
SMTB2920P30M	0.7	6.9	>1.0

Specifications are subject to change without notice

Epoxy Transfer Molding Series Physical Dimension (mm)

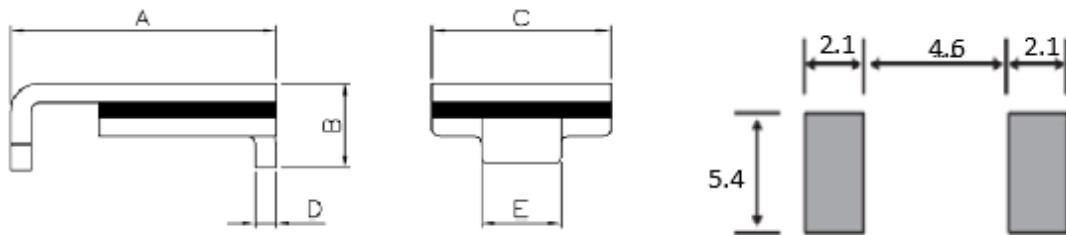


	SMTB2114P30E		SMTB3123P30E	
	Min	Max	Min	Max
A	1.96	2.20	2.90	3.20
B	4.35	4.85	6.60	7.11
C	3.30	3.94	5.59	6.22
D	2.13	2.44	2.20	2.80
E	0.75	1.52	0.26	1.52
F	0.02	0.20	-	0.20
G	5.10	5.50	7.75	8.13
H	0.15	0.30	0.15	0.31
I	2.26	-	3.30	-
J	2.16	-	2.40	-
K	-	2.74	-	4.20
L	2.16	-	2.40	-

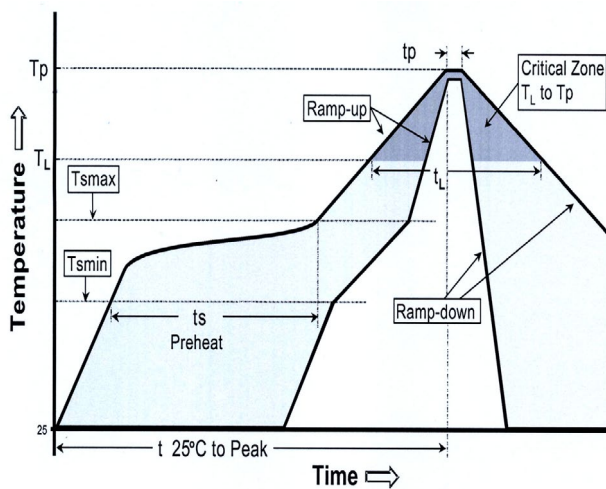
SMTB Series Surface Mount Thermal Bridge Devices

Lead Frame Series Physical Dimension (mm)

Part Number	A		B		C		D		E	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
SMTB2920P30M	6.70	8.00	-	3.00	4.80	5.44	0.56	0.71	2.16	2.46



Soldering Parameters



Profile Feature	Pb-Free Assembly
Average Ramp-Up Rate ($T_{s_{max}}$ to T_p)	3°C/second max.
Preheat	
-Temperature Min ($T_{s_{min}}$)	150°C
-Temperature Max ($T_{s_{max}}$)	200°C
-Time ($T_{s_{min}}$ to $T_{s_{max}}$)	60-180 seconds
Time maintained above:	
-Temperature (T_l)	217°C
-Time (t_l)	60-150 seconds
Peak Temperature (T_p)	260°C
Time within 5°C of actual Peak Temperature (t_p)	20-40 seconds
Ramp-Down Rate	6 °C /second max.
Time 25°C to Peak Temperature	8 minutes max.
Ramp-Down Rate	6 °C /second max.
Time 25°C to Peak Temperature	8 minutes max.

Note 1: The temperature shown above is the top-side surface temperature of the device.

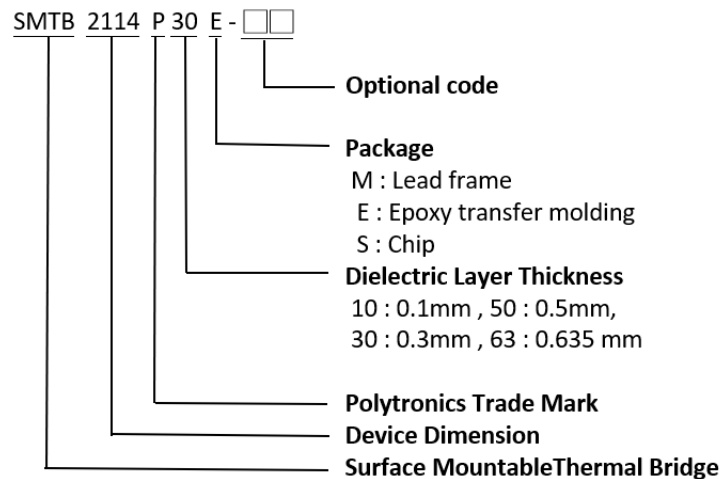
Note 2: If the soldering temperature profile deviates from the recommended profile, devices may not meet the performance requirements

SMTB Series Surface Mount Thermal Bridge Devices

Environmental Specifications

Operating/Storage Temperature	-50°C to +150 °C
Solvent Resistance	MIL-STD-202, Method 215
Vibration	MIL-STD-883C, Method 2007.1, Condition A No structural damage and functional failure
Moisture Level Sensitivity	Level 1, J-STD-020C

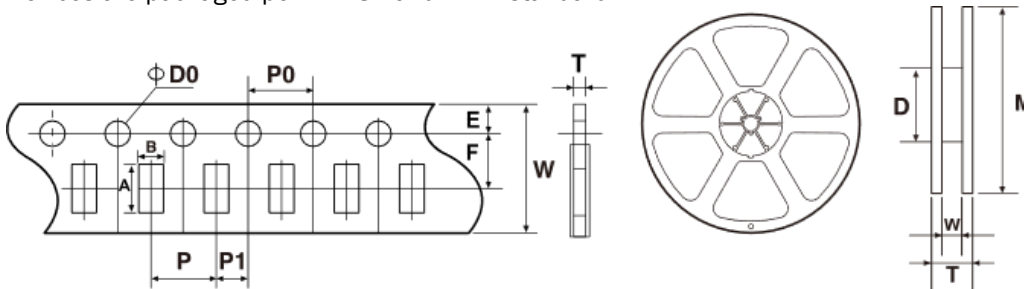
Part Number System



Tape & Reel

Specification (mm.)

Devices are packaged per EIA481 and EIA-2 standard



Plastic Tape measurements

Size	A	B	W	F	E	P	P0	P1	D0	T
2114	3.76±0.20	5.69±0.20	12.0±0.20	5.5±0.05	1.75±0.10	8.0±0.10	4.0±0.10	2.0±0.05	1.5±0.10	2.67±0.10
3123	6.10±0.20	8.31±0.20	16.0±0.20	7.5±0.05	1.75±0.10	8.0±0.10	4.0±0.10	2.0±0.05	1.55±0.10	2.90±0.10
2920	6.10±0.20	8.31±0.20	16.0±0.20	7.5±0.05	1.75±0.10	8.0±0.10	4.0±0.10	2.0±0.05	1.55±0.10	2.90±0.10



SMTB Series Surface Mount Thermal Bridge Devices

Reel measurements

Size	M	T	D
2114/3123/2920	330.0±2.0	16.0±2.0	100±4.0

Packaging Quantity

Part Number	Tape & Reel Quantity
SMTB2114P30E	3000
SMTB3123P30E	3000
SMTB2920P30M	3000

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