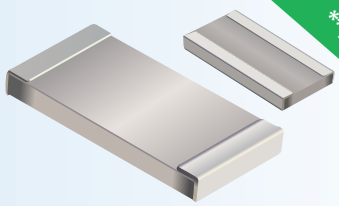
BOURNS®

BTJ SERIES

SMD Thermal Jumper Chip for Thermal Dissipation



*RoHS COMPLIANT & **HALOGEN FREE

Features

- High thermal conductivity (AlN: 170 W/mK)
- High insulation resistance
- Low capacitance
- Operating temperature: -55 °C to +155 °C
- RoHS compliant* and halogen free**

Applications

- Power supplies
- Switching power supplies
- Converters
- Amplifiers / RF, GaN
- Various ECUs
- Pin and laser diodes
- Data servers

Sustainability

- Small size reduces material use
- High pallet density for lower CO_2
- Corrosion-resistant for longevity
- High efficiency, low power loss
- ISO 14001, low impact energy
- Responsibly sourced and produced

Product Overview

The BTJ Series Thermal Jumper Chip for thermal dissipation is a unique surface mount component that provides high thermal conductivity while also possessing insulating properties.

This series is suitable for thermal conductivity and dissipation in a variety of mobile devices and electronic equipment.

In addition, by taking advantage of its insulating properties, the space between the heating element and the heat detection element can be occupied, enabling highly accurate heat detection.

The BTJ Series can simplify complex thermal design and reduce the temperature rise of key devices, which is expected to improve reliability at the system level.

Electrical Characteristics (@ T_A = 25 °C Unless Otherwise Noted)

Bourns Part No.	EIA Size (Inches)	Thermal Resistance (°C/W)	Thermal Conductance (mW/°C)	Capacitance (pF)	Dielectric Withstand Voltage kVac, RMS (60 Hz)
BTJ050820T100	0508	6	160	0.15	> 1.5
BTJ060320T100	0603	20	50	0.07	> 1.5
BTJ061225T100	0612	4	250	0.26	> 1.5
BTJ120625T100	1206	16	63	0.07	> 3.0
BTJ122525T200	1225	4	250	0.26	> 1.5
BTJ251225T200	2512	16	63	0.07	> 5.0

Environmental Characteristics

Storage Conditions
- Temperature ..... 25 °C ±5 °C
- Humidity ..... 60 ±20 %

Moisture Sensitivity Level 1

ESD Classification (HBM) ..... N/A

Reliability Tests and Requirements

Test Item	Test Method	Condition
Solderability	IEC 60115-1 4.17 JIS C-5201-1 4.47	245 ±5 °C for 3 seconds
Terminal Strength (SMD)	AEC-Q200-006	Pressurizing force for 60 seconds 0603: 9.8 N 0508, 0612, 1206, 1225, 2512: 19.6 N
Bending Strength	IEC 5201-1 4.33 JIS C-5201-1 4.33	Bending once for 5 seconds 0603: 5 mm 0508, 1206, 0612: 3 mm 2512, 1225: 2 mm
Temperature Cycling	IEC 60115-1 4.19 JIS C-5201-1 4.19	1000 cycles (-55 °C to +155 °C)

How to Order

BTJ 0603 20 T10 0

- Product Identifier
- Product Size (EIA)
  - 0508 1206
  - 0603 1225
  - 0612 2512
- Product Thickness (Inches)
  - 20 = 0.020
  - 25 = 0.025
- Packaging
  - T10 = Paper Tape, 5K pcs. per reel
  - T20 = Plastic Tape, 4K pcs. per reel
  - T1L = Paper Tape, 1K pcs. per reel
  - T2L = Plastic Tape, 1K pcs. per reel
- Internal Code

Contact Information

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* RoHS Directive 2015/863, Mar 31, 2015 and Annex.

** Bourns considers a product to be "halogen free" if (a) the Bromine (Br) content is 900 ppm or less; (b) the Chlorine (Cl) content is 900 ppm or less; and (c) the total Bromine (Br) and Chlorine (Cl) content is 1500 ppm or less.

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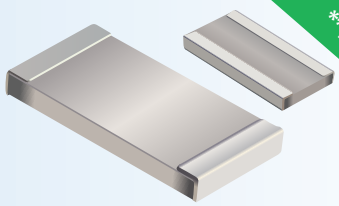

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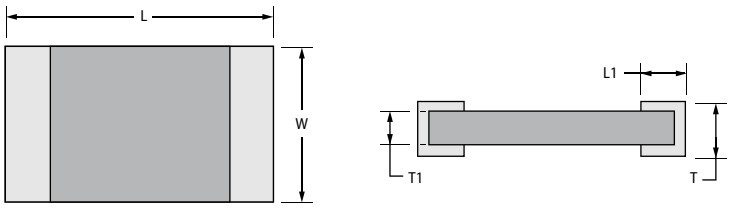
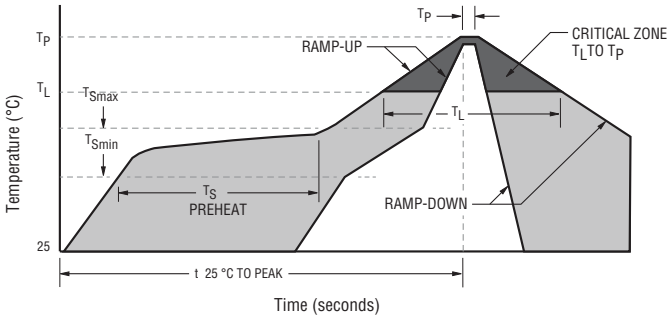
Product Dimensions



DIMENSIONS: MM / (INCHES)

Bourns Part No.	Size	Dimension				
		L	W	T	T1	L1
BTJ050820T100	0508	1.25 ± 0.13 (.049 ± .005)	2.00 ± 0.13 (.079 ± .005)	0.55 ± 0.13 (.022 ± .005)	0.50 ± 0.13 (.020 ± .005)	0.40 ± 0.13 (.016 ± .005)
BTJ060320T100	0603	1.60 ± 0.13 (.063 ± .005)	0.80 ± 0.13 (.031 ± .005)	0.55 ± 0.13 (.022 ± .005)	0.50 ± 0.13 (.020 ± .005)	0.40 ± 0.13 (.016 ± .005)
BTJ061225T100	0612	1.60 ± 0.13 (.063 ± .005)	3.20 ± 0.13 (.126 ± .005)	0.70 ± 0.13 (.028 ± .005)	0.635 ± 0.13 (.025 ± .005)	0.40 ± 0.13 (.016 ± .005)
BTJ120625T100	1206	3.20 ± 0.13 (.126 ± .005)	1.60 ± 0.13 (.063 ± .005)	0.70 ± 0.13 (.028 ± .005)	0.635 ± 0.13 (.025 ± .005)	0.50 ± 0.13 (.020 ± .005)
BTJ122525T200	1225	3.20 ± 0.13 (.126 ± .005)	6.40 ± 0.13 (.252 ± .005)	0.70 ± 0.13 (.028 ± .005)	0.635 ± 0.13 (.025 ± .005)	0.60 ± 0.13 (.024 ± .005)
BTJ251225T200	2512	6.40 ± 0.13 (.252 ± .005)	3.20 ± 0.13 (.126 ± .005)	0.70 ± 0.13 (.028 ± .005)	0.635 ± 0.13 (.025 ± .005)	0.60 ± 0.13 (.024 ± .005)

Solder Reflow Recommendations



A	Stage 1 Preheat Ramp	Ambient to Preheating Temperature	Approximately 3 °C/s
B	Stage 2 Preheat	Preheat Min./Max. Temperature Range	150 °C to 200 °C 60 s to 180 s
C	Stage 3 Preheat to Main Heating	Max. Time Above Stated Temperature	217 °C 60 s to 150 s
D	Main Heating	Max. Time Within 5 °C of Peak Temperature (260 °C)	255 °C to 260 °C 30 s max.
E	Cool Down	Rate from Peak Temperature	Approximately 6 °C/s

CAUTION:

- This product can be damaged by rapid heating, cooling or localized heating.
- Heat shocks should be avoided. Preheating and gradual cooling recommended.
- Solder gun tip temperature should be kept below 280 °C and should not touch the device directly. Contact should be less than 3 seconds. A solder gun under 30 watts is recommended.
- Excess solder volume can damage the body of the product.

Typical Part Marking

Bourns Part Number	Bourns Part Marking	Bourns Part Number	Bourns Part Marking
BTJ050820T100	No marking	BTJ120625T100	No marking
BTJ060320T100	No marking	BTJ122525T200	No marking
BTJ061225T100	No marking	BTJ251225T200	No marking

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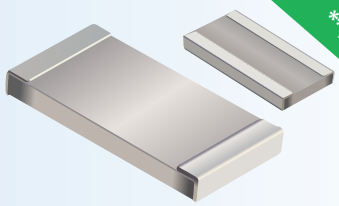

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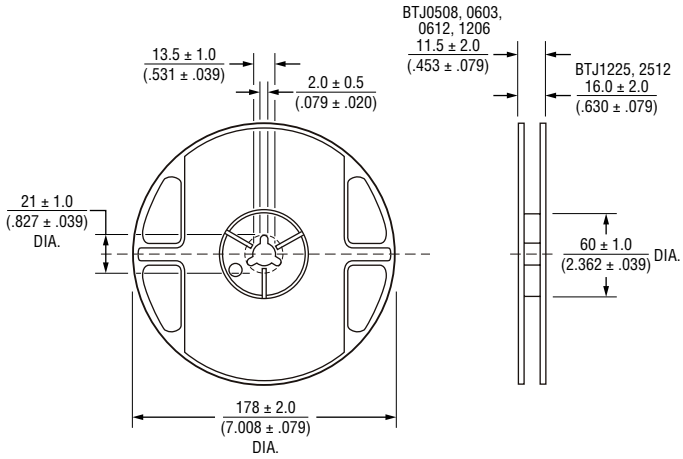
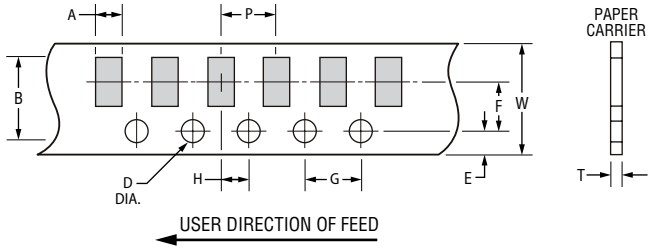
Packaging Specifications



Bourns Part No.	Quantity	
	Per Reel	Per Box
BTJ050820T100	5,000 pcs.	5 Reels
BTJ060320T100		
BTJ061225T100		
BTJ120625T100		
BTJ122525T200	4,000 pcs.	5 Reels
BTJ251225T200		
BTJ050820T1L0	1,000 pcs.	1 Reel
BTJ060320T1L0		
BTJ061225T1L0		
BTJ120625T1L0		
BTJ122525T2L0		
BTJ251225T2L0		

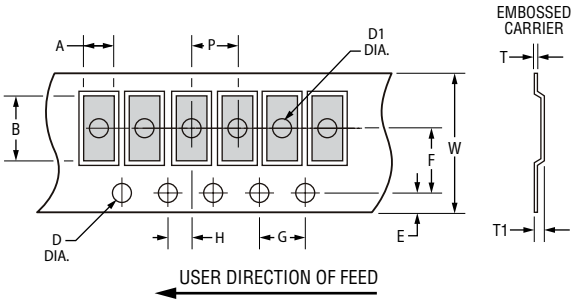
Paper Tape



DIMENSIONS: MM / (INCHES)

Bourns Part No.	Dimension									
	A	B	W	E	F	G	H	T	D DIA.	P
BTJ050820T100	1.05 ± 0.20 (.041 ± .008)	1.80 ± 0.20 (.079 ± .008)	8.0 ± 0.20 (.315 ± .008)	1.75 ± 0.10 (.069 ± .004)	3.5 ± 0.05 (.138 ± .002)	4.0 ± 0.10 (.157 ± .004)	2.0 ± 0.05 (.079 ± .002)	0.60 ± 0.10 (.024 ± .004)	1.50 +0.10/-0 (.059 +.004/-0)	4.0 ± 0.10 (.157 ± .004)
BTJ060320T100	1.55 ± 0.20 (.061 ± .008)	2.30 ± 0.20 (.091 ± .008)						0.75 ± 0.10 (.030 ± .004)		
BTJ061225T100	1.90 ± 0.20 (.075 ± .008)	3.05 ± 0.20 (.120 ± .008)						0.75 ± 0.10 (.030 ± .004)		
BTJ120625T100	1.90 ± 0.20 (.075 ± .008)	3.50 ± 0.20 (.138 ± .008)						0.75 ± 0.10 (.030 ± .004)		

Plastic Tape



Bourns Part No.	Dimension										
	A	B	W	E	F	G	H	T	D DIA.	T1	P
BTJ122525T200	3.40 ± 0.20 (.134 ± .008)	6.70 ± 0.20 (.264 ± .008)	12.0 ± 0.10 (.472 ± .004)	1.75 ± 0.10 (.069 ± .004)	5.5 ± 0.05 (.217 ± .002)	4.0 ± 0.10 (.157 ± .004)	2.0 ± 0.05 (.079 ± .002)	0.23 ± 0.10 (.009 ± .004)	1.50 +0.10/-0 (.059 +.004/-0)	0.85 ± 0.15 (.033 ± .006)	4.0 ± 0.10 (.157 ± .004)
BTJ251225T200											

REV. 11/25

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