



Features

- SMD NTC thermistor for thermal sense
- Highly stable electrical characteristics
- Highly reliable structure
- Operating temperature: -40 °C to +125 °C
- Agency recognition: us
- RoHS compliant* and halogen free**

Applications

- Battery packs
- NBPC, smartphones
- LED displays, lighting
- Communication equipment
- AC adapters
- OA equipment

BTN02G Series – SMD NTC Thermistor for Thermal Sense

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

Bourns Part No.	Resistance @ 25 °C (Ω)	Resistance Tolerance	B Value 25/50 °C	B Value 25/85 °C	B Value Tolerance	Dissipation Factor σ (mW/°C)	Thermal Time Constant (sec.)	Max. Power Rating @ 25 °C (mW)	Operating Temperature Range (°C)										
BTN02G103F3HFT00	10k	±1 %	3380	(3435)	±1 %	Approx. 1.0	Approx. 3.0	100	-40 to +125										
BTN02G103G3HFT00		±2 %																	
BTN02G103H3HFT00		±3 %																	
BTN02G103J3HFT00		±5 %																	
BTN02G473F4AFT00	47k	±1 %	4050	(4100)						±1 %	Approx. 1.0	Approx. 3.0	100	-40 to +125					
BTN02G473G4AFT00		±2 %																	
BTN02G473H4AFT00		±3 %																	
BTN02G473J4AFT00		±5 %																	
BTN02G104F4EFT00	100k	±1 %	4250	(4300)											±1 %	Approx. 1.0	Approx. 3.0	100	-40 to +125
BTN02G104G4EFT00		±2 %																	
BTN02G104H4EFT00		±3 %																	
BTN02G104J4EFT00		±5 %																	

How to Order

BTN 02 G 103 F 3H F TXX

Series Code _____

Product Size (EIA) _____
02 = 0201

Grade _____
G = General

Resistance / R25 _____
103 = 10k Ω 473 = 47k Ω
333 = 33k Ω 104 = 100k Ω

Tolerance / R25 _____
F = ±1 % H = ±3 %
G = ±2 % J = ±5 %

B Value (K) _____
3A = 3000-3050 4A = 4000-4050
3B = 3051-3100 4B = 4051-4100
3D = 3151-3200 4D = 4151-4200
3E = 3201-3250 4E = 4201-4250
3H = 3351-3400 4H = 4351-4400
3J = 3401-3450 4J = 4401-4450
3T = 3851-3900 4T = 4851-4900
3U = 3901-3950 4U = 4901-4950

B Tolerance _____
F = ±1 % G = ±2 % H = ±3 % J = ±5 %

Internal Code _____



WARNING Cancer and Reproductive Harm
www.P65Warnings.ca.gov

* 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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Additional Information

Click these links for more information:



Agency Recognition

Description	
UL	E307915
TÜV	R50648033 (EN60539-1,-2)

Environmental Characteristics

Storage Conditions

Temperature..... +15 °C to +40 °C

Humidity..... 20 % to 70 %

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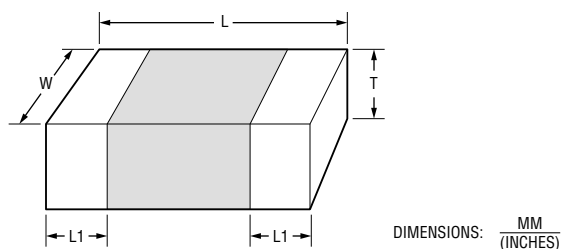
Email: eurocus@bourns.com

www.bourns.com

BTN02G Series – SMD NTC Thermistor for Thermal Sense

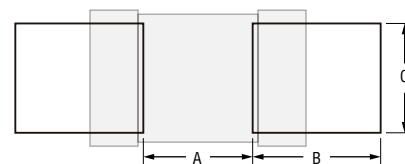
BOURNS®

Product Dimensions



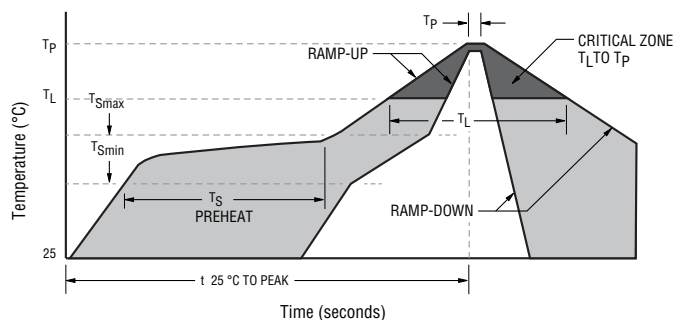
Size (EIA)	L	W	T	L1
BTN02 (0201)	0.60 ± 0.05 (.024 ± .002)	0.30 ± 0.05 (.012 ± .002)	0.30 ± 0.05 (.012 ± .002)	0.15 ± 0.05 (.006 ± .002)

Recommended Pad Layout



A	B	C
0.35 (.014)	0.35 (.014)	0.35 (.014)

Solder Reflow Recommendations



A	Stage 1 Preheat Ramp	Ambient to Preheating Temperature	3 °C/s max.
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 20 s to 40 s
E	Cool Down	Rate from Peak Temperature	6 °C/s max.

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.

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Technical drawing of a mechanical part, showing front and top views with dimensions in millimeters (MM) and inches (INCHES).

Front View Dimensions:

- Overall Width: 4.0 ± 0.1 (MM) / $(.157 \pm .004)$ (INCHES)
- Distance between centerlines of first two holes: 2.0 ± 0.05 (MM) / $(.079 \pm .002)$ (INCHES)
- Distance between centerlines of last two holes: 2.0 ± 0.05 (MM) / $(.079 \pm .002)$ (INCHES)
- Distance from right edge to centerline of last hole: 2.0 ± 0.05 (MM) / $(.079 \pm .002)$ (INCHES)
- Overall Height: 3.5 ± 0.05 (MM) / $(.138 \pm .002)$ (INCHES)
- Distance from top edge to centerline of holes: E
- Distance from bottom edge to centerline of holes: B
- Overall Width of Part: D_0
- Distance from left edge to centerline of first hole: A

Top View Dimensions:

- Overall Diameter: 178 ± 2.0 (MM) / $(7.008 \pm .079)$ (INCHES)
- Distance from center to edge of hole: 13 ± 0.5 (MM) / $(.512 \pm .020)$ (INCHES)
- Distance from center to edge of hole (DIA.): 21 ± 0.8 (MM) / $(.827 \pm .031)$ (INCHES)
- Distance from center to edge of hole (DIA.): 60 ± 0.5 (MM) / $(2.362 \pm .020)$ (INCHES)
- Distance from center to edge of hole (DIA.): 10 ± 1.5 (MM) / $(.394 \pm .059)$ (INCHES)
- Distance from center to edge of hole (DIA.): 2 ± 0.5 (MM) / $(.079 \pm .020)$ (INCHES)
- Distance from center to edge of hole (DIA.): 1.6 (MM) / $(.063)$ (INCHES)

DIMENSIONS: MM (INCHES)

Size (EIA)	A	B	W	E	D ₀	T Max.
BTN02 (0201)	$\frac{0.38 \pm 0.1}{(.015 \pm .004)}$	$\frac{0.68 \pm 0.1}{(.027 \pm .004)}$	$\frac{8.0 \pm 0.03}{(.315 \pm .001)}$	$\frac{1.75 \pm 0.10}{(.069 \pm .004)}$	$\frac{1.50 + 0.1/-0}{(.059 + .004/-0)}$	$\frac{0.5}{(.020)}$

Pcs. / Reel	Reel / Box	Pcs. / Box
15,000	5	75,000

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