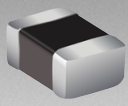


*ROHS COMPLIANT
** HALOGEN FREE



BOURNS®

Features

- SMD NTC thermistor for thermal sense
- Highly stable electrical characteristics
- Highly reliable structure
- Operating temperature: -40 °C to +125 °C
- Agency recognition:
- 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) | | | | | |
| BTN02G473G4AFT00 | | ±2 % | | | | | | | |
| BTN02G473H4AFT00 | | ±3 % | | | | | | | |
| BTN02G473J4AFT00 | | ±5 % | | | | | | | |
| BTN02G104F4EFT00 | 100k | ±1 % | 4250 | (4300) | | | | | |
| 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 _____

Additional Information

Click these links for more information:

[PRODUCT](#) [TECHNICAL LIBRARY](#) [INVENTORY](#) [SAMPLES](#) [CONTACT](#)

Agency Recognition

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

Environmental Characteristics

Storage Conditions
 Temperature..... +15 °C to +40 °C
 Humidity..... 20 % to 70 %



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.
 Specifications are subject to change without notice. Users should verify actual device performance in their specific applications. The products described herein and this document are subject to specific legal disclaimers as set forth on the last page of this document, and at www.bourns.com/docs/legal/disclaimer.pdf.

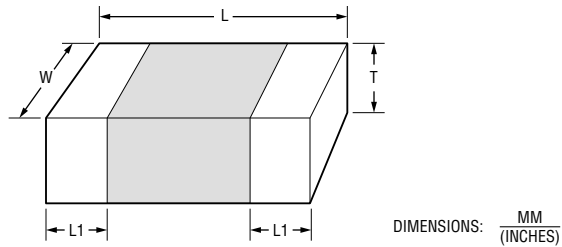
BOURNS®

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 Email: americus@bourns.com
Mexico: Tel: +52-614-478-0400
 Email: mexicus@bourns.com
Asia: Tel: +886-2-2562-4117
 Email: asiacus@bourns.com
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 Email: eurocus@bourns.com
www.bourns.com

BTN02G Series – SMD NTC Thermistor for Thermal Sense

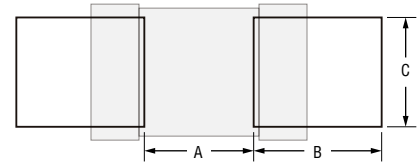


Product Dimensions



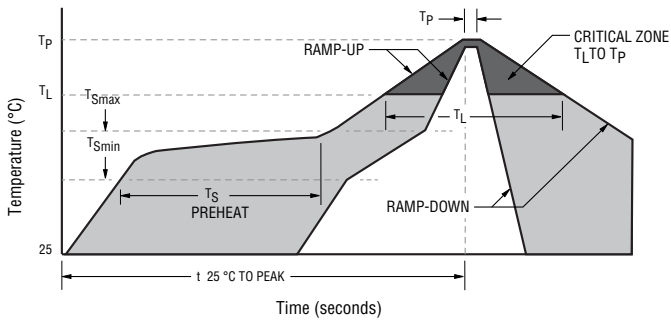
| Size (EIA) | L | W | T | L1 |
|--------------|---|---|---|---|
| BTN02 (0201) | $\frac{0.60 \pm 0.05}{(.024 \pm .002)}$ | $\frac{0.30 \pm 0.05}{(.012 \pm .002)}$ | $\frac{0.30 \pm 0.05}{(.012 \pm .002)}$ | $\frac{0.15 \pm 0.05}{(.006 \pm .002)}$ |

Recommended Pad Layout



| A | B | C |
|-----------------------|-----------------------|-----------------------|
| $\frac{0.35}{(.014)}$ | $\frac{0.35}{(.014)}$ | $\frac{0.35}{(.014)}$ |

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.

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

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