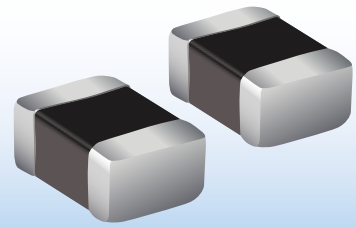


Bourns® BTN02G and BTN04G Series NTC Thermistors



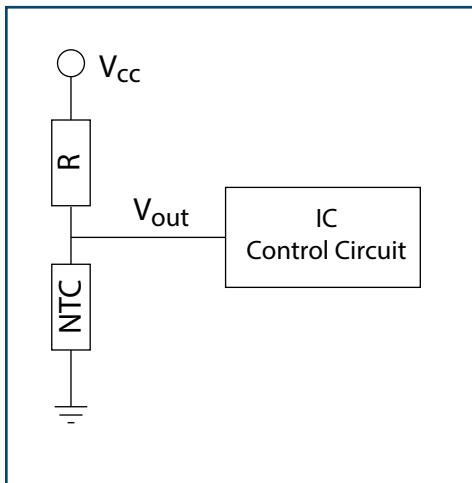
NEW PRODUCT BRIEF

INTRODUCTION

The Bourns® BTN02G and BTN04G Series SMD Negative Temperature Coefficient (NTC) Thermistors offer a compact SMD, high-precision solution for temperature sensing and compensation. The series' advanced features make them ideal for a variety of mobile devices and other electronic applications.

Bourns' latest NTC thermistors are available in highly accurate $\pm 1\%$ and $\pm 2\%$ resistance tolerances in addition to the standard $\pm 3\%$ and $\pm 5\%$ resistance tolerances. The $\pm 1\%$ B-value tolerance is particularly suited as a temperature sensor in applications that require the highest accuracy.

CIRCUIT DIAGRAM



FEATURES

- Advanced thermal sense capabilities in an SMD package
- Highly stable electrical characteristics
- High reliability construction
- Operating temperature: $-40\text{ }^{\circ}\text{C}$ to $+125\text{ }^{\circ}\text{C}$
- Agency recognition: UL, TUV
- RoHS compliant* and halogen-free**

BENEFITS

- High-precision solution
- Compact footprint and packages that comply with industrial standards
- Wide range of resistance tolerances: $\pm 1\%$, $\pm 2\%$, $\pm 3\%$, $\pm 5\%$
- Purpose-built and tailored to application-specific requirements

TYPICAL APPLICATIONS

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

MARKET OVERVIEW/APPLICATION FIT

The leading application segment for these NTC thermistors is consumer electronics. With the widespread use of Li-ion batteries, NTC thermistors are used to sense the temperature that is the basis for controlling charging and discharging. Plus, the trend of continuing miniaturization of electronic devices necessitates the use of compact and efficient temperature sensors. Meeting these trend requirements is expected to further drive the adoption of NTC thermistors.

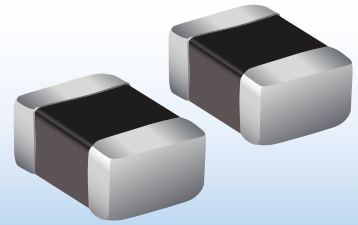
HOW TO ORDER

BTN 02 G 103 F 3H F TXX				
Series Code				
Product Size (EIA)				
02 = 0201				
04 = 0402				
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				

*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.

Bourns® BTN02G and BTN04G Series NTC Thermistors



NEW PRODUCT BRIEF

ELECTRICAL CHARACTERISTICS

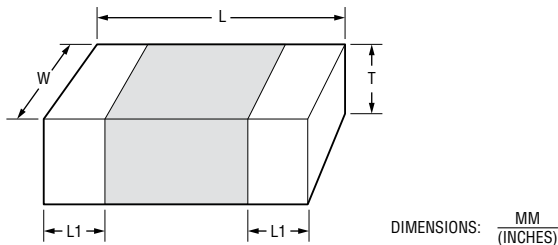
Bourns Part No.	Resistance @ 25 °C (Ω)	Resistance Tolerance	B Value 25/50 °C	B Value Tolerance	Dissipation Factor σ(mW/°C)	Thermal Time Constant (sec.)	Max. Power Rating @ 25 °C (mW)	Operating Temperature Range (°C)
BTN02G103□3HFT00	10k	±1 %, ±2 %, ±3 %, ±5 %	3380	±1 %	Approx. 1.0	Approx. 3.0	100	-40 to +125
BTN02G473□4AFT00	47k	±1 %, ±2 %, ±3 %, ±5 %	4050	±1 %	Approx. 1.0	Approx. 3.0	100	-40 to +125
BTN02G473□4AFT00	47k	±1 %, ±2 %, ±3 %, ±5 %	4050	±1 %	Approx. 1.0	Approx. 3.0	100	-40 to +125
BTN02G104□4EFT00	10k	±1 %, ±2 %, ±3 %, ±5 %	4250	±1 %	Approx. 1.0	Approx. 3.0	100	-40 to +125
BTN04G103□3HFT00	10k	±1 %, ±2 %, ±3 %, ±5 %	3380	±1 %	Approx. 1.7	Approx. 3.0	170	-40 to +125
BTN04G1033□TFT00	10k	±1 %, ±2 %, ±3 %, ±5 %	3900	±1 %	Approx. 1.7	Approx. 3.0	170	-40 to +125
BTN04G333□4AFT00	33k	±1 %, ±2 %, ±3 %, ±5 %	4050	±1 %	Approx. 1.7	Approx. 3.0	170	-40 to +125
BTN04G473□4AFT00	47k	±1 %, ±2 %, ±3 %, ±5 %	4050	±1 %	Approx. 1.7	Approx. 3.0	170	-40 to +125
BTN04G104□4EFT00	100k	±1 %, ±2 %, ±3 %, ±5 %	4250	±1 %	Approx. 1.7	Approx. 3.0	170	-40 to +125

□ : F = ±1 %, G = ±2 %, H = ±3 %, J = ±5 %

For full characteristics, see data sheet

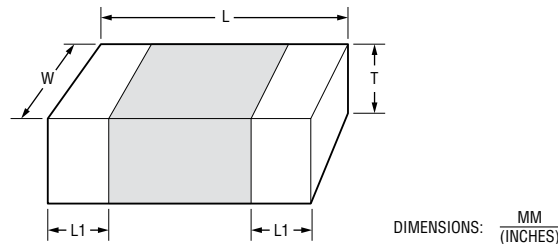
PRODUCT DIMENSIONS

BTN02G



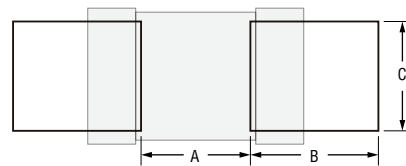
Size (EIA)	L	W	T	L1
BTN02 (0201)	$\frac{0.60 \pm 0.05}{(.024 \pm .002)}$	$\frac{0.30 \pm 0.05}{(.012 \pm .002)}$	$\frac{0.30 \pm 0.05}{(.012 \pm .002)}$	$\frac{0.15 \pm 0.05}{(.006 \pm .002)}$

BTN04G

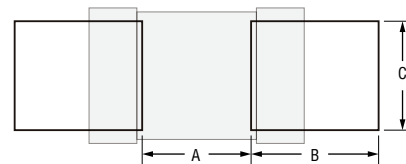


Size (EIA)	L	W	T	L1
BTN04 (0402)	$\frac{1.00 \pm 0.15}{(.039 \pm .006)}$	$\frac{0.50 \pm 0.15}{(.020 \pm .006)}$	$\frac{0.50 \pm 0.10}{(.020 \pm .004)}$	$\frac{0.25 \pm 0.10}{(.010 \pm .004)}$

RECOMMENDED PAD LAYOUT



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



A	B	C
$\frac{0.50}{(.020)}$	$\frac{0.60}{(.024)}$	$\frac{0.51}{(.020)}$