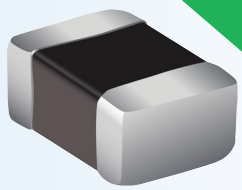
BOURNS®

BTN06G SERIES

SMD NTC Thermistor for Thermal Sense



*RoHS COMPLIANT & **HALOGEN FREE

Features

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

Applications

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

Sustainability

- Eco-logistics-friendly packing
- Energy-saving low-power design
- ISO 14001, low-impact energy

Product Overview

The BTN06G Series 0603-size NTC thermistor is a chip-type temperature-sensitive resistor based on semiconductor ceramic technology. Exhibiting distinct negative temperature coefficient (NTC) characteristics, this series enables high-precision temperature sensing, monitoring, and compensation. Advanced material and process controls ensure stable resistance-temperature (R-T) characteristics and superior reliability, while also providing compatibility with standard lead-free reflow soldering processes.

Contact Information

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The Americas	+1-951 781-5500	americus@bourns.com

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

Bourns Part Number	R25 (Ohms)	B Value (K)		Dissipation Factor δ (mW/°C)	Thermal Time Constant τ (Seconds)	Max. Power Rating @ 25 °C (mW)	Operating Temperature (°C)
BTN06G103x3Hy1T0A	10,000	B 25/50	3380	Approx.2.1	Approx. 3.1	210	-40 to +125
BTN06G103x3Uy1T00	10,000		3950				
BTN06G153x3Uy1T00	15,000		3950				
BTN06G333x4Ay1T00	33,000		4050				
BTN06G473x4Ay1T00	47,000		4050				
BTN06G503x4Ay1T00	50,000		4050				
BTN06G683x4Ay1T00	68,000		4050				
BTN06G104x3Uy1T00	100,000		3950				
BTN06G104x4Dy1T00	100,000		4200				
BTN06G104x4Ey1T0A	100,000		4250				
BTN06G104x4Hy1T0A	100,000		4360				
BTN06G154x4Ky1T00	150,000		4500				
BTN06G474x4Ky1T00	470,000		4500				
BTN06G682x3Jy2T00	6,800	B 25/85	3435				
BTN06G103x3Jy2T0A	10,000		3435				
BTN06G103x3Vy2T00	10,000		3980				
BTN06G333x4By2T00	33,000		4100				
BTN06G473x3Uy2T00	47,000		3950				
BTN06G473x3Vy2T00	47,000		3980				
BTN06G473x4Ay2T00	47,000		4050				
BTN06G503x3Uy2T00	50,000		3950				
BTN06G104x4Gy2T0A	100,000		4310				
BTN06G104x4Hy2T0A	100,000		4400				
BTN06G104x4Ky2T00	100,000		4485				

Note: x = Tolerance of R25 y = Tolerance of B value

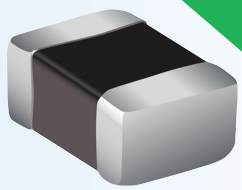
* RoHS Directive 2015/863, Mar 31, 2015 and Annex.
** Bourns considers a product to be "halogen free" if (a) the Bromine (Br) content is 900 ppm or less; (b) the Chlorine (Cl) content is 900 ppm or less; and (c) the total Bromine (Br) and Chlorine (Cl) content is 1500 ppm or less.

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Environmental Characteristics

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

Moisture Sensitivity Level 1

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

Agency Recognition

UL	E307915

How to Order

BTN 06 G 473 F 3H F 2 TX

Product Identifier

Product Size (EIA)
- 06 = 0603

Grade
- G = General

Resistance / R25 (Ohms)
- 103 = 10K 333 = 33K 473 = 47K 104 = 100K

Tolerance / R25 (%)
- F = ±1 G = ±2 H = ±3 J = ±5

B Value (K)

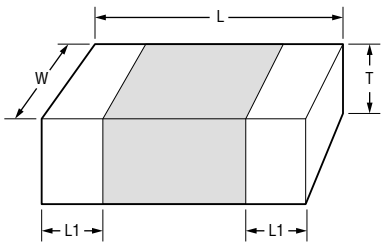
3A = 3000 to 3050	3E = 3201 to 3250	3T = 3851 to 3900	4A = 4000 to 4050	4E = 4201 to 4250	4T = 4851 to 4900
3B = 3051 to 3100	3H = 3351 to 3400	3U = 3901 to 3950	4B = 4051 to 4100	4H = 4351 to 4400	4U = 4901 to 4950
3D = 3151 to 3200	3J = 3401 to 3450	3V = 3951 to 3999	4D = 4151 to 4200	4J = 4401 to 4450	4V = 5951 to 4999

B Tolerance (%)
- F = ±1 G = ±2 H = ±3 J = ±5

B Value Defined
- 1 = B25/50 2 = B25/85

Internal Code

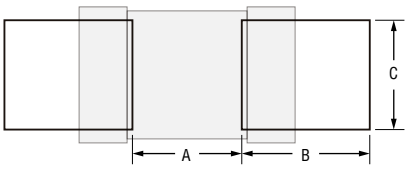
Product Dimensions



Type (EIA)	L	W	T	L1
BTN06G (0603)	1.60 ± 0.15 (.063 ± .006)	0.80 ± 0.15 (.031 ± .006)	0.80 ± 0.15 (.031 ± .006)	0.30 ± 0.20 (.012 ± .008)

DIMENSIONS: MM (INCHES)

Recommended Layout



Type (EIA)	A	B	C
BTN06G (0603)	0.70 (.028)	0.80 (.031)	0.70 (.028)

DIMENSIONS: MM (INCHES)

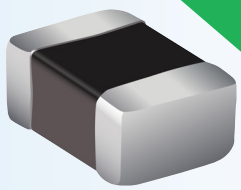
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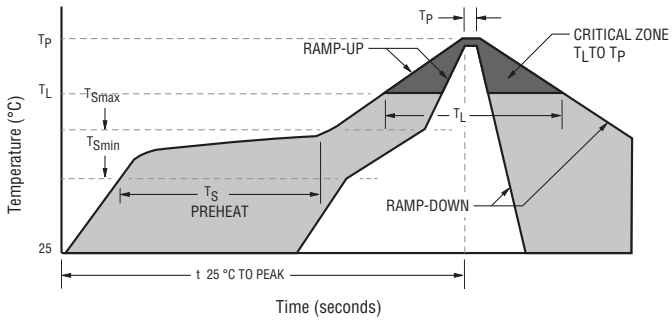
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Soldering Profile



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.

Reliability Data

Test Item	Standard	Test Conditions	Specifications
Bending Strength	IEC 60068-2-21	Speed < 0.5 mm/sec.	No visible damage ΔR25/R25≤±5 %
Solderability	IEC 60068-2-58	245 ± 5 °C, 3 ± 0.3 sec.	Above 95 % on the terminal surface shall be with new solder
Resistance to Soldering Heat	IEC 60068-2-58	260 ± 5 °C, 10 ± 1 sec.	No visible damage ΔR25/R25≤±3 %
High Temperature Storage	IEC 60068-2-2	125 ± 5 °C, 1000 ± 24 hrs.	No visible damage ΔR25/R25≤±5 %
Damp Heat, Steady State	IEC 60068-2-78	40 ± 2 °C, 90 ~ 95 %RH, 1000 ± 24 hrs.	No visible damage ΔR25/R25≤±3 %
Rapid Change of Temperature	IEC 60068-2-14	Temperature cycle shall be repeated 5 cycles on PCB Step / Temperature (°C) / Period (Minutes) 1 / -40 ± 3 / 30 ± 3 2 / Room Temperature / 5 ± 3 3 / +125 ± 5 / 30 ± 3 4 / Room Temperature / 5 ± 3	No visible damage ΔR25/R25≤±3 %
Max. Power Dissipation	IEC 60539-1 4.26.3	25 ± 5 °C, Pmax, 1000 ± 24 hrs.	No visible damage ΔR25/R25≤±5 %

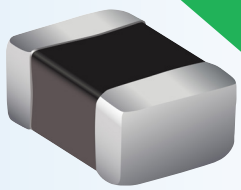
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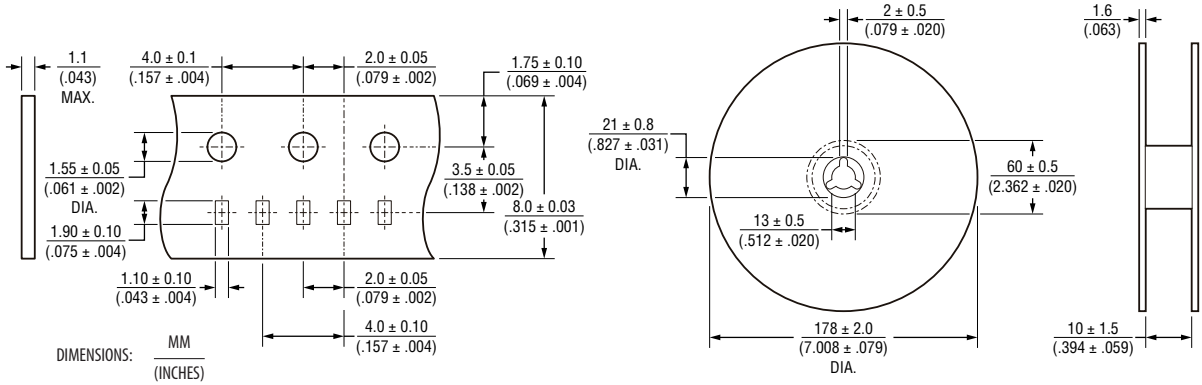
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Packaging Specifications



Packaging Quantities

Type (EIA)	Pieces per Reel	Reels per Box	Pieces per Box
BTN06G (0603)	4,000	5	20,000

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