



NTC THERMISTORS: TYPE B05/07/10/14

GLASS COATED BEAD THERMISTOR

DESCRIPTION:

Small glass coated bead thermistors on fine diameter platinum alloy lead-wires.

FEATURES:

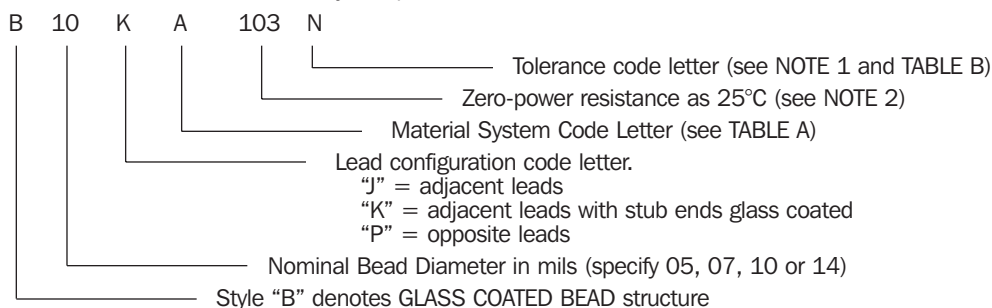
- Extremely small sizes
- Very fast thermal response times
- Low heat capacity and high power sensitivity
- Special thin glass coatings provide hermetic seal.
- Suitable for self-heated applications such as: gas chromatography, thermal conductivity analysis or gas flow measurement.
- Normal operating/storage temperatures range from -80°C to:
 - 105°C for Material system E0
 - 200°C for Material systems A1 through A4
 - 300°C for Material systems A5 through D17
- Unaffected by severe environmental exposures, including nuclear radiation.
- Intermittent operation to 600°C is permissible, however, stability will be degraded.

OPTIONS:

- Non-standard resistance tolerances
- Non-standard resistance values
- Reference temperature(s) other than 25°C - specify
- Mounting in special housings or enclosures
- Longer continuous leads
- Welded or soldered extension leads - specify lead material, diameter, length and insulation, if any.
- Solderable or weldable/solderable leads
- Calibration - specify temperature(s)
- Interchangeable pairs or sets, R-vs-T curve matching – specify temperature range(s) and tolerance(s)
- Special aging and conditioning for high reliability applications

CODING:

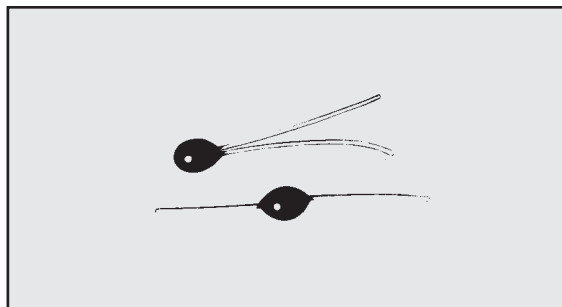
The code number to be ordered may be specified as follows:



NOTE 1: Special tolerances are available upon request. Consult factory for special resistance tolerances, non-standard resistances and/or non-standard temperatures.

NOTE 2: The zero-power resistance at 25°C, expressed in Ohms, is identified by a three digit code number. The first two digits represent significant figures, and the last digit specifies the number of zeros to follow. Example: 10k Ohms = "103". The standard resistance values are from the 24-Value series decade as specified in Military Standard MS90178.

1.0 / 1.1 / 1.2 / 1.3 / 1.5 / 1.6 / 1.8 / 2.0 / 2.2 / 2.4 / 2.7 / 3.0
3.3 / 3.6 / 3.9 / 4.3 / 4.7 / 5.1 / 5.6 / 6.2 / 6.8 / 7.5 / 8.2 / 9.1



DIMENSIONS:

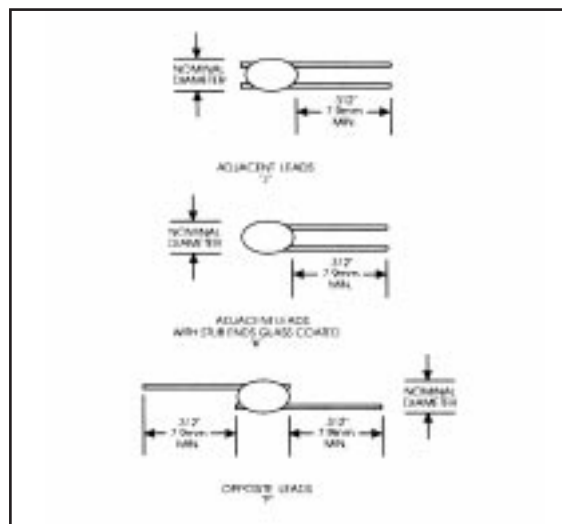


TABLE A: THERMAL AND ELECTRICAL PROPERTIES:

The following table lists the THERMAL and ELECTRICAL properties for all SMALL GLASS COATED THERMISTORS. All definitions and test methods are per MIL-PRF-23648.

THERMISTOR TYPE:			B05	B07	B10	B14
BODY DIMENSIONS:						
	Nom. Diameter:		.005" (.13 mm)	.007" (.18 mm)	.010" (.25 mm)	.014" (.36 mm)
	Max. Diameter:		.0065" (.17 mm)	.0085" (.22 mm)	.0115" (.29 mm)	.016" (.41 mm)
	Max. Length:		.012" (.30 mm)	.014" (.36 mm)	.020" (.51 mm)	.030" (.76 mm)
lead-wires:						
	Nom. Diameter:		.0007" (.02 mm)	.0007" (.02 mm)	.0011" (.03 mm)	.0011" (.03 mm)
	Minimum Lead Length:		.312" (7.9 mm)	.312" (7.9 mm)	.312" (7.9 mm)	.312" (7.9 mm)
	Lead Material:		Platinum Alloy	Platinum Alloy	Platinum Alloy	Platinum Alloy
	Available Cuts:		"J" adj. (stubs) "K" adjacent "P" opposite	"J" adj. (stubs) "K" adjacent "P" opposite	"J" adj. (stubs) "K" adjacent "P" opposite	"J" adj. (stubs) "K" adjacent "P" opposite
MATERIAL SYSTEM:			Nominal Resistance Range @ 25°C	Nominal Resistance Range @ 25°C	Nominal Resistance Range @ 25°C	Nominal Resistance Range @ 25°C
CODE LETTER	R-vs-T CURVE	25/125 RATIO				
E	0	5.0	—	—	—	—
A	1	11.8	1.0 kΩ – 1.5 kΩ	1.0 kΩ – 1.5 kΩ	300 Ω – 680 Ω	300 Ω – 680 Ω
A	2	12.5	1.5 kΩ – 3.6 kΩ	1.5 kΩ – 3.6 kΩ	680 Ω – 1.6 kΩ	680 Ω – 1.6 kΩ
A	3	14.0	3.6 kΩ – 7.5 kΩ	3.6 kΩ – 7.5 kΩ	1.6 kΩ – 3.6 kΩ	1.6 kΩ – 3.6 kΩ
A	4	16.9	7.5 kΩ – 15 kΩ	7.5 kΩ – 15 kΩ	3.6 kΩ – 6.8 kΩ	3.6 kΩ – 6.8 kΩ
A	5	19.8	15 kΩ – 51 kΩ	15 kΩ – 51 kΩ	6.8 kΩ – 27 kΩ	6.8 kΩ – 27 kΩ
A	6	22.1	—	—	—	—
A	7	22.7	51 kΩ – 150 kΩ	51 kΩ – 150 kΩ	27 kΩ – 75 kΩ	27 kΩ – 75 kΩ
B	8	29.4	150 kΩ – 270 kΩ	150 kΩ – 270 kΩ	75 kΩ – 130 kΩ	75 kΩ – 130 kΩ
B	9	30.8	270 kΩ – 470 kΩ	270 kΩ – 470 kΩ	130 kΩ – 240 kΩ	130 kΩ – 240 kΩ
B	10	32.3	470 kΩ – 750 kΩ	470 kΩ – 750 kΩ	240 kΩ – 360 kΩ	240 kΩ – 360 kΩ
B	11	35.7	750 kΩ – 1.6 MΩ	750 kΩ – 1.6 MΩ	360 kΩ – 820 kΩ	360 kΩ – 820 kΩ
B	12	38.1	1.6 MΩ – 2.7 MΩ	1.6 MΩ – 2.7 MΩ	820 kΩ – 1.3 MΩ	820 kΩ – 1.3 MΩ
B	13	45.0	2.7 MΩ – 6.8 MΩ	2.7 MΩ – 6.8 MΩ	1.3 MΩ – 3.3 MΩ	1.3 MΩ – 3.3 MΩ
B	14	48.1	6.8 MΩ – 10 MΩ	6.8 MΩ – 10 MΩ	3.3 MΩ – 6.8 MΩ	3.3 MΩ – 6.8 MΩ
B	15	56.5	—	—	6.8 MΩ – 10 MΩ	6.8 MΩ – 10 MΩ
D	16	75.6	—	—	—	—
D	17	81.0	—	—	—	—
THERMAL TIME CONSTANT:						
	Still Air at 25°C:		0.12 sec	0.23 sec	0.5 sec	1.0 sec
	Plunge into Water:		5.0 msec	7.0 msec	10 msec	15 msec
DISSIPATION CONSTANT:						
	Still Air at 25°C:		.045 mW/°C	.06 mW/°C	.09 mW/°C	.10 mW/°C
	Still Water at 25°C:		.23 mW/°C	.30 mW/°C	.45 mW/°C	.50 mW/°C
POWER RATING: (in air)						
	Maximum Power Rating:		.006 Watts	.008 Watts	.010 Watts	.014 Watts
	100% Max. Power to:		25°C	25°C	25°C	25°C
	Derated to 0% at:		200°C	200°C	200°C	200°C

RESISTANCE -VS- TEMPERATURE CHARACTERISTICS: The nominal resistance range for the zero-power resistance at 25°C is shown for each THERMISTOR Type and each available Material System. Each Material System is denoted by an ordering Code Letter, a referenced Curve number and the nominal 25°C/125°C resistance ratio.

TABLE B: STANDARD TOLERANCES:

Tolerance Code Letter	F	G	J	K	L	M	N	P	Q	R	S
± % Tolerance at 25°C	1	2	5	10	15	20	25	30	40	50	Non-standard – consult factory

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