NTC THERMISTORS: TYPE HTP

HIGH TEMPERATURE PROBES

DESCRIPTION:

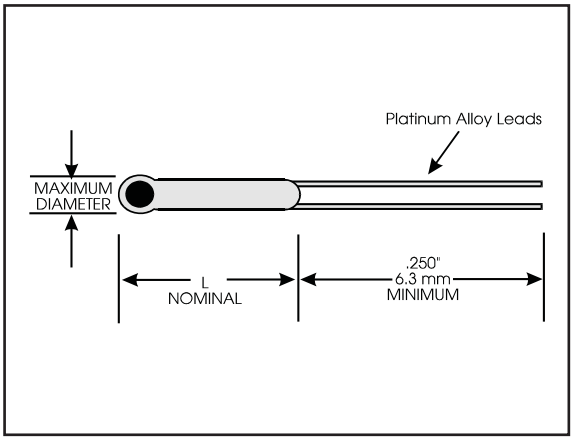
The Hi-Temp THERMOPROBE consists of a bead thermistor hermetically sealed in the tip of a shock resistant glass rod. These units are rugged and unaffected by severe environmental exposures, including high density nuclear radiation.

APPLICATIONS:

- Temperature measurement and control
- Temperature compensation
- Controlled temperature soldering stations
- Process oven control

A ruggedized Hi-Temp BEAD THERMISTOR (Type HTBR55) is available on special order.

DIMENSIONS:



DATA:

All Hi-Temp THERMISTORS are aged at 450°C for extended periods of time. As such, they exhibit excellent stability for all temperatures at or below 450°C. Intermittent operations at temperatures up to 600°C is permissible. When additional precondition-ing is specified, compliance with the performance requirements of MIL-PRF-23648 can be guaranteed.

CODING:

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

HTP 60 B D 514 M

- M — Tolerance code letter (see NOTE 1 and TABLE B)
- 514 — Zero-power resistance as 125°C (see NOTE 2 and TABLE D)
- D — Material System Code Letter (see TABLE A)
- B — Probe Length Code Letter (See TABLE C for ordering codes)
  - Standard length is: "B" = .250" ± .050"
  - (See TABLE A for probe length restrictions)
- 60 — Nominal Probe Diameter in mils (specify 60, 65, 85 or 100)
- HTP — Style "HTP" denotes A Hi-Temp THERMISTOR structure

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

NOTE 2: The zero-power resistance at 125°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: For example, 0.06 inch max. diameter x 1/4 inch long glass probe with a zero-power resistance at 125°C of 510k and a tolerance of ±20% would be specified as HTP60BD514M.

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TABLE A: THERMAL AND ELECTRICAL PROPERTIES:

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

THERMISTOR TYPE:	HTP60	HTP65	HTP85	HTP100
BODY DIMENSIONS:				
Max. Diameter:	.060" (1.5 mm)	.065" (1.7 mm)	.085 (2.2 mm)	.100" (2.5 mm)
Standard Length Code "B":	.250" (6.3 mm)	.250" (6.3 mm)	.250" (6.3 mm)	.250" (6.3 mm)
Length Codes Available (Special Order Only)	"A", "C", "D"	"A", "C", "D"	"A", "C", "D"	"A", "C", "D"
lead-wires:				
Nom. Diameter:	.008" (.20 mm)	.008" (.20 mm)	.008" (.20 mm)	.008" (.20 mm)
Minimum Lead Length:	.250" (6.3 mm)	.250" (6.3 mm)	.250" (6.3 mm)	.250" (6.3 mm)
Lead Material:	Platinum Alloy	Platinum Alloy	Platinum Alloy	Platinum Alloy
THERMAL TIME CONSTANT:				
Still Air at 25°C:	12 sec	13 sec	16 sec	22 sec
DISSIPATION CONSTANT:				
Still Air at 25°C:	.60 mW/°C	.65 mW/°C	.80 mW/°C	1.0 mW/°C
Resistance Range @ 125°C (ohms)	100k-2M	100k-2M	100k-2M	100k-2M
Maximum Power Rating:	0.060 Watts	0.065 Watts	0.075 Watts	0.100 Watts

TABLE B: STANDARD TOLERANCES:

Tolerance Code Letter	F	G	J	K	L	M	N	P	Q	R	S
± % Tolerance at 125°C	1	2	5	10	15	20	25	30	40	50	Non-standard – consult factory

TABLE C: PROBE LENGTH CODES: (Refer to Table A for probe length options)

NOMINAL PROBE LENGTH	.125"	.250" (Standard)	.375"	.500"
PROBE LENGTH CODE LETTER	A	B	C	D

The nominal standard values for the Zero-Power Resistance at 125°C, R_{125} are shown in Table D.

Also shown is a curve of R_T/R_{125} vs. Temperature where R_T is the resistance at any temperature.

TABLE D: STANDARD RESISTANCE VALUES

R_T @ 125°C	Resistance Code
510k ohms	514
750k ohms	754
1.0 Megohm	105
1.5 Megohm	155

DATA

TEMP °C	R_T/R_{125}	TEMP °C	R_T/R_{125}
125	1.00000	300	.00793
150	.41087	325	.00487
175	.18272	350	.00310
200	.08720	375	.00203
225	.04430	400	.00138
250	.02380	425	.00096
275	.01344	450	.00068

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