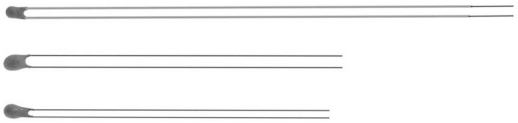
NTC Thermistors,Coated



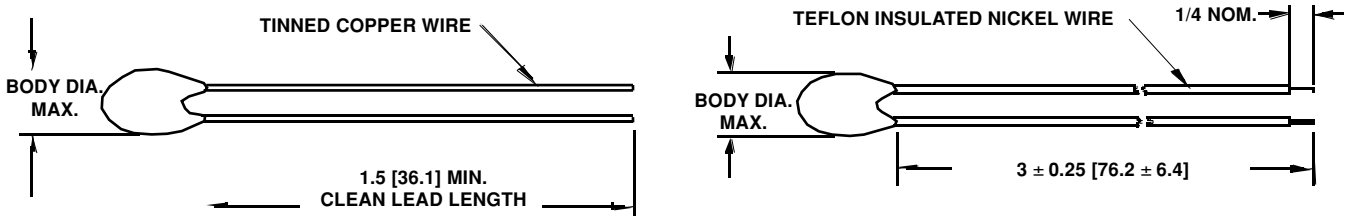
FEATURES

- Small size - conformally coated.
- Wide resistance range.
- Available in 11 different R-T curves.

DESCRIPTION

Models M, C, and T are conformally coated, leaded thermistors for standard PC board mounting or assembly in probes. The coating is baked-on phenolic for durability and long-term stability. Models M and C have tinned solid copper leads. Model T has solid nickel wires with Teflon® insulation to provide isolation when assembled in metal probes or housings.

DIMENSIONS in inches [millimeters]



LD DIAMETER	WIRE SIZE
Type M	AWG 30: 0.0100 [0.254]
Type C	AWG 28: 0.0126 [0.320]
Type T	AWG 30: 0.0100 [0.254]

GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: 01C2001FP (preferred part numbering format)

0	1	C	2	0	0	1	F	P										

CURVE	GLOBAL MODEL	RESISTANCE VALUE	POINT MATCH TOLERANCE	PACKAGING
01 **02** **03** **04** **07** **08** **09** **12** **13** **14** **17**	**C** **M** **T**	**2001** = 2K	**F** = ± 1% **J** = ± 5% **K** = ± 10%	**F** = Lead Free, Bulk **P** = Tin/Lead, Bulk

Historical Part Number example: 1C2001FP (will continue to be accepted)

01	C	2001	F	P
HISTORICAL CURVE	GLOBAL MODEL	RESISTANCE VALUE	TOLERANCE CODE	PACKAGING

New Global Part Numbering: 01C2001SPC3 (preferred part numbering format)

0	1	C	2	0	0	1	S	P	C	3								

CURVE	GLOBAL MODEL	RESISTANCE VALUE	CHARACTERISTICS	PACKAGING	CURVE TRACK TOLERANCE*
01 **02** **03** **04** **07** **08** **09** **12** **13** **14** **17**	**C** **M** **T**	**2001** = 2K	**S**	**F** = Lead Free, Bulk **P** = Tin/Lead, Bulk	**A3** **B3** **C3** **A2** **B2** **C2** **A4** **B4** **A5** **B5** **C5** **A8** **B8** **C8**

*See following pages for Tolerance explanations and details.

Historical Part Number example: 1C2001SPC3 (will continue to be accepted)

1	C	2001	S	P	C3
HISTORICAL CURVE	GLOBAL MODEL	RESISTANCE VALUE	CHARACTERISTIC	PACKAGING	CURVE TRACK TOLERANCE

For technical questions, contact thermistor1@vishay.com

SELECTION GUIDE FOR TYPE M, C, AND T THERMISTORS

R_{25} (Ohms)	CURVE NUMBER									
	1	2	3	4	7	8	9	12	14	17
27										
33										
50										
56										
68										
82										
100										
120										
150										
180										
220										
270										
330										
390										
470										
500										
560										
680										
820										
1K										
1.2K										
1.5K										
1.8K										
2.2K										
2.7K										
3.3K										
3.9K										
4.7K										
5K										
5.6K										
6.8K										
8.2K										
10K										
12K										
15K										
18K										
22K										
27K										
33K										
39K										
47K										
50K										
56K										
68K										
82K										
100K										
120K										
150K										
180K										
220K										
270K										
330K										
390K										
470K										
500K										
560K										
680K										
820K										
1 Meg										

MAXIMUM BODY DIAMETER

0.125 [3.2]

0.110 [2.8]

0.095 [2.4]

DISSIPATION CONSTANT

2 - 3 mWatts/°C

THERMAL TIME CONSTANT

6 - 14 Seconds

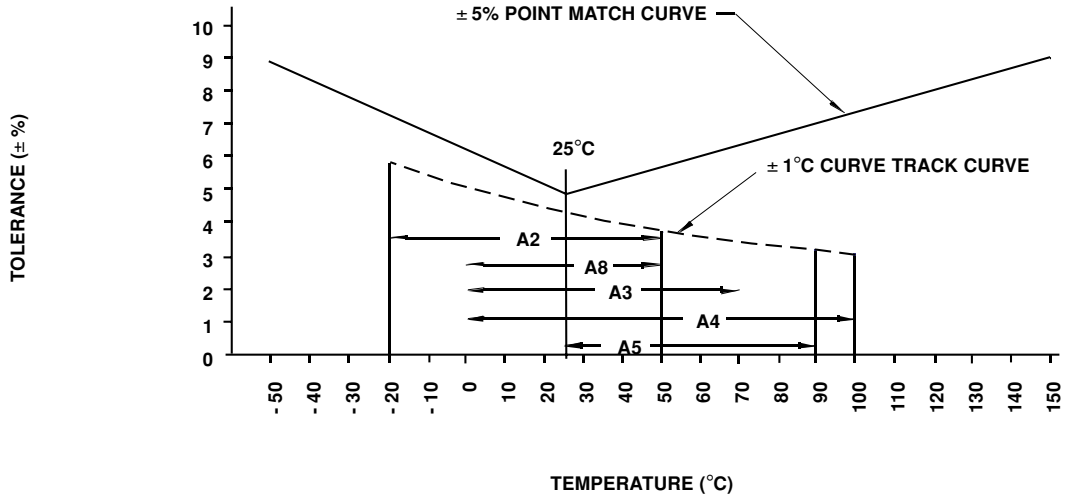
NOTE:

1. Intermediate resistance values between the standard value series are available. Size would be the same as the color grouping.
2. Other body diameters available. Bead diameter increases as Res. decreases. (Consult Factory)
3. Leaded series of thermistors includes additional styles: (Consult Factory)

   Type B: 26AWG lead, .0159 [.40]
   Type F: 32AWG lead, .008 [.20]
   Type E: 24AWG lead, .020 [.51]
   Type D: 22AWG lead, .025 [.64]
   Type G: 20AWG lead, .032 [.81]
   Type H: 18AWG lead, .040 [1.02]

TOLERANCES AVAILABLE FOR TYPE M, C AND T THERMISTORS

Description of Thermistor Tolerances
The many applications of thermistors have mandated the need for two basic tolerance schemes for these products - Curve Tracking and Point Match Thermistors. An example of the resistance tolerance at various temperatures for the two different tolerancing methods is described in the following graph:



Curve Tracking Tolerance:

Thermistors are calibrated at the high temperature of the curve track range and then final tested at the low temperature of the curve track range. This ensures that the thermistor will meet the specified temperature accuracy at every temperature within the desired temperature range. Several temperature ranges are available and the accuracy of the thermistor may be ± 0.2°C, ± 0.5°C, and ± 1.0°C. The Curve Tracking temperature ranges and their code designators are shown in Figure 1 and Table 1.

To specify, add the appropriate suffix from the following table to the part number.

Example: 1M1002-B3 = Curve 1, 10 kilohms at + 25°C, curve tracking to ± 0.5°C from 0°C to + 70°C

STANDARD ELECTRICAL SPECIFICATIONS FOR CURVE TRACKING THERMISTORS

TEMP. RANGE		0°C to + 70°C			- 20°C to + 50°C			0°C to + 100°C			25°C to + 90°C			0°C to + 50°C		
TOLERANCE		± 1°C	± 0.5°C	± 0.2°C	± 1°C	± 0.5°C	± 0.2°C	± 1°C	± 0.5°C	± 0.2°C	± 1°C	± 0.5°C	± 0.2°C	± 1°C	± 0.5°C	± 0.2°C
PART NO. SUFFIX		- A3	- B3	- C3	- A2	- B2	- C2	- A4	- B4	- C4	- A5	- B5	- C5	- A8	- B8	- C8
C	1	X	X	X	X	X	X	X	X	N/A	X	X	X	X	X	X
U	2	X	X	X	X	X	X	X	X	N/A	X	X	X	X	X	X
R	4	X	X	X	X	X	X	X	X	N/A	X	X	X	X	X	X
V	8	X	X	X	X	X	X	X	X	N/A	X	X	X	X	X	X
E	9	X	X	X	X	X	X	X	X	N/A	X	X	X	X	X	X

POINT MATCH TOLERANCE

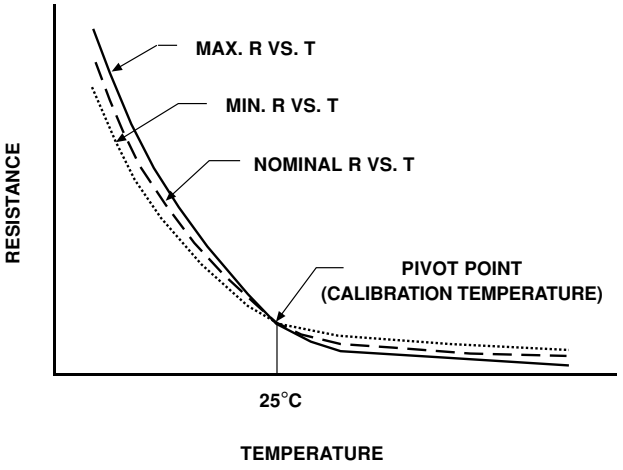
The standard leaded thermistors are calibrated and tested at 25°C to a tolerance of ± 5% or ± 10%; however, tighter tolerance, point matched thermistors are readily available as are special point match temperatures to fit your application.

Since these thermistors have only one controlled point of reference (the point match temperature), the resistance at other temperatures is given by the "Resistance VS Temperature Conversion Tables" for the appropriate material curve. The resistance value at any temperature is the ratio factor times the resistance at 25°C.

Example: 1M1002-5, +70°C resistance = (Resistance factor for curve 1 at 70°C is .1990) X (10000 ohm resistance at 25°C) = 1990 ohms.

The tolerance of the resistance at any temperature is described by Figure 2.

FIGURE 2
POINT MATCH TOLERANCES VS. TEMPERATURE



Point match resistance tolerances at temperatures other than 25ºC are not the same as the calibration temperature. This difference is presented in Figure 2.

The tolerance at any given temperature is the point match tolerance + the MT ±% (Manufacturing Tolerance).

The MT ±% may be obtained from the R vs. T Conversion tables and is added to the point match temperature, i.e., ± 1% Tol. at 25ºC + ± 2.6% at -30ºC for Curve 1 equals a total tolerance of ± 3.6% at -30ºC.

COMPUTER AIDS FOR THERMISTOR SELECTION

A spreadsheet is available for the Vishay Thermistor Materials that calculates Beta, Steinhart-Hart Equation Constants A, B, and C, the resistance at any temperature based upon the Steinhart constants or Beta, the temperature equivalent of the resistance reading, and resistance temperature coefficients.

This spread sheet will also calculate the total resistance tolerance of any point matched thermistor for temperatures in 10ºC increments, and the resistance tolerance at any temperature within the calibrated range of curve tracking thermistors. Please contact factory if interested in this Excel™ spreadsheet.

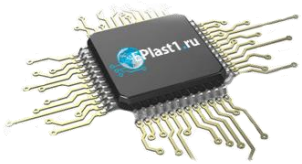
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- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits,General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

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