NTC Thermistors, Screw Threaded Insulated Leads Sensors

LINKS TO ADDITIONAL RESOURCES

3D Models Design Tools

For complete RT curve computation, visit:
www.vishay.com/thermistors/ntc-curve-list/

FEATURES

- Easy mounting with thread
- Rugged construction
- Mounting: assembly threaded screw mounting
- Lead (Pb)-free
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

Pb-free

e3

RoHS COMPLIANT

APPLICATIONS

- Temperature measurement, sensing, and control
- Suitable for surface temperature applications, especially when a good electrical insulation and a good thermal contact with the chassis is required
- Industrial
- Consumer appliances

DESCRIPTION

The thermistor is made of NTC ceramic material soldered to the cable conductors and potted in the head of the lead (Pb)-free brass screw.

The screw thread is of the tap size no. 6, with 32 thread-per-inch, under the Unified National Coarse definition (6-32 UNC ISO68-2 ISO263).

The cables are multi-stranded copper AWG#28, UL 3656 certified, with XLPE insulation, and a rating of 125 °C and 300 V.

MOUNTING

Inserted in a threaded hole (for example tapping #36 / 2.85 mm) or in a clearance hole (for example clearance drill #25 / 3.80 mm).

The product is not intended to be mounted in direct contact with water or liquids.

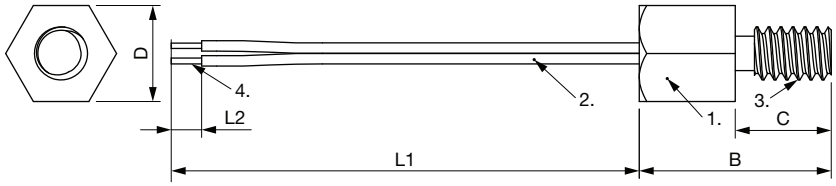
The recommended torque is 0.89 N · m / 7.9 inch-pounds.

Leads conductors can be soldered or crimped.

QUICK REFERENCE DATA

PARAMETER	VALUE	UNIT
Resistance value at 25 °C	10K	Ω
Tolerance on R_{25}-value	± 2	%
$B_{25/85}$-value	3984	K
Tolerance on $B_{25/85}$-value	± 0.5	%
Operating temperature range at: Zero dissipation Maximum power dissipation	 -40 to +125 0 to +55	°C
Dissipation factor (still air 25 °C)	≈ 5	mW/K
Maximum power dissipation	50	mW
Min. dielectric withstanding voltage between terminals and brass case	500	V_{AC}
Insulation resistance between terminals and brass case	Min. 100	MΩ
Weight	2.1	g

DIMENSIONS in millimeters



L1	L2	B	C	D
200 +10 / -15	2.5 ± 1	12.70 ± 1	6.35 ± 1	6.35 ± 1

Notes

1. NTC chip with epoxy coating and potting
2. Insulated leads: UL 3656 style, XLPE insulated, rating 125 °C, rating 300 V, AWG#28
3. 6-32 UNC threaded lead (Pb)-free brass hex housing
4. Lead wire end is stripped

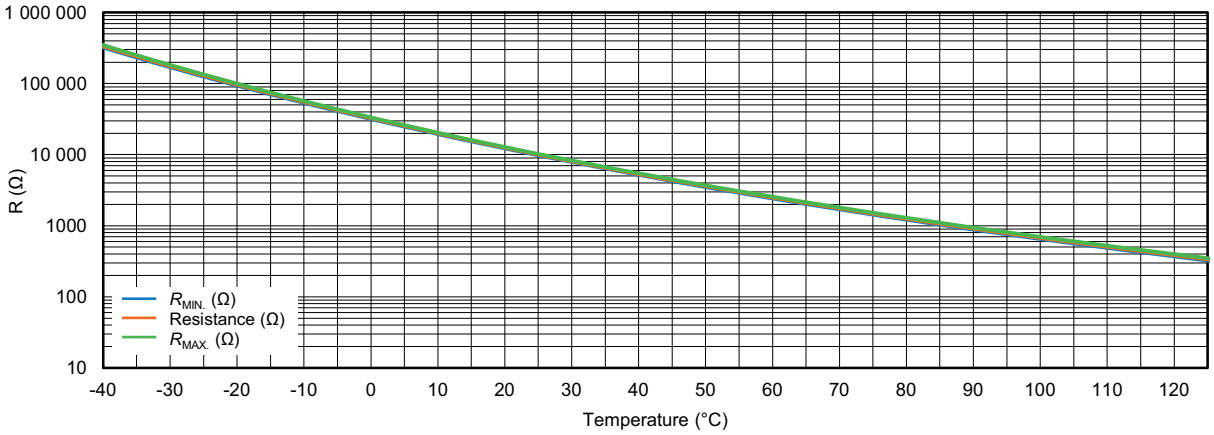
ELECTRICAL DATA AND ORDERING INFORMATION

R_{25} (Ω)	R_{25}-TOL. (± %)	$B_{25/85}$ (K)	$B_{25/85}$-TOL. (± %)	SAP MATERIAL AND ORDERING NUMBER	DESCRIPTION
10 000	2	3984	0.5	NTCASCWE3C70001A	NTC screw 10K 2 % 3984K AWG28 6-32 UNC

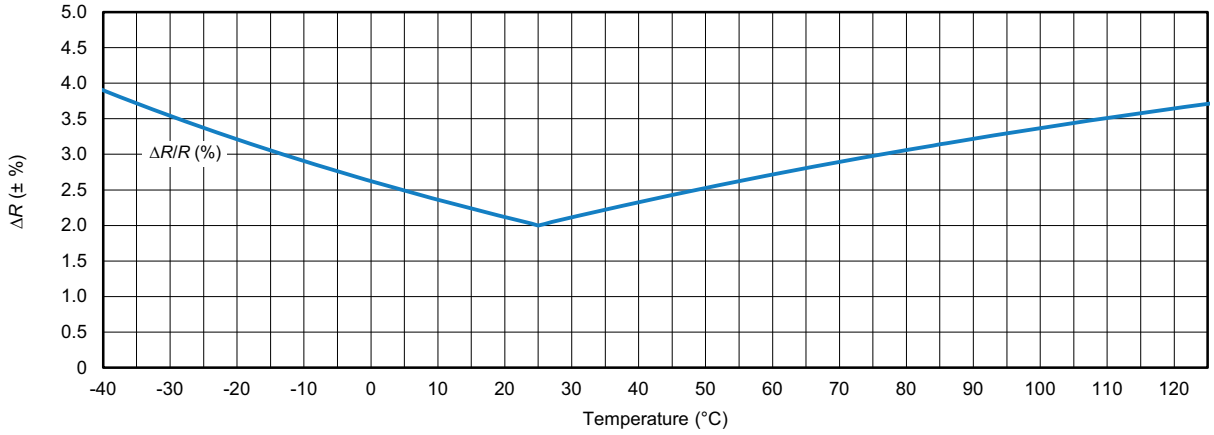
RESISTANCE TEMPERATURE CHARACTERISTICS

TEMP. (°C)	$R_{(T)}/R_{25}$	RESISTANCE (Ω)	$\Delta R/R$ (%)	α (%/K)	ΔT (± K)	$R_{MIN.}$ (Ω)	$R_{MAX.}$ (Ω)
-40	33.427	334 274.4	3.90	-6.63	0.59	321 238.0	347 310.8
-35	24.132	241 322.9	3.72	-6.41	0.58	232 353.0	250 292.7
-30	17.613	176 132.5	3.54	-6.19	0.57	169 894.8	182 370.3
-25	12.990	129 900.0	3.37	-5.99	0.56	125 518.3	134 281.7
-20	9.676	96 761.1	3.21	-5.79	0.55	93 653.8	99 868.5
-15	7.276	72 764.6	3.06	-5.61	0.54	70 540.9	74 988.2
-10	5.522	55 218.1	2.91	-5.43	0.54	53 613.2	56 823.0
-5	4.227	42 267.8	2.76	-5.26	0.53	41 100.2	43 435.5
0	3.262	32 624.2	2.62	-5.10	0.51	31 768.3	33 480.2
5	2.538	25 381.4	2.49	-4.94	0.50	24 749.4	26 013.4
10	1.990	19 896.9	2.36	-4.80	0.49	19 427.1	20 366.7
15	1.571	15 711.3	2.24	-4.65	0.48	15 359.9	16 062.6
20	1.249	12 492.7	2.12	-4.52	0.47	12 228.4	12 757.1
25	1.000	10 000.0	2.00	-4.39	0.46	9800.0	10 200.0
30	0.806	8056.0	2.11	-4.26	0.50	7885.8	8226.1
35	0.653	6529.7	2.22	-4.14	0.54	6384.7	6674.8
40	0.532	5323.9	2.33	-4.03	0.58	5200.0	5447.7
45	0.437	4365.3	2.43	-3.92	0.62	4259.3	4471.3
50	0.360	3598.7	2.53	-3.81	0.66	3507.8	3689.7
55	0.298	2982.3	2.62	-3.71	0.71	2904.0	3060.5
60	0.248	2483.8	2.72	-3.61	0.75	2416.4	2551.3
65	0.208	2078.7	2.81	-3.51	0.80	2020.3	2137.0
70	0.175	1747.7	2.89	-3.42	0.85	1697.1	1798.2
75	0.148	1475.9	2.98	-3.34	0.89	1432.0	1519.9
80	0.125	1251.8	3.06	-3.25	0.94	1213.5	1290.1
85	0.107	1066.1	3.14	-3.17	0.99	1032.6	1099.6
90	0.091	911.6	3.22	-3.09	1.04	882.2	940.9
95	0.078	782.5	3.30	-3.02	1.09	756.7	808.2
100	0.067	674.1	3.37	-2.94	1.14	651.4	696.8
105	0.058	582.8	3.44	-2.87	1.20	562.8	602.9
110	0.051	505.7	3.51	-2.81	1.25	487.9	523.4
115	0.044	440.2	3.58	-2.74	1.31	424.4	455.9
120	0.038	384.4	3.65	-2.68	1.36	370.4	398.4
125	0.034	336.7	3.71	-2.62	1.42	324.2	349.2

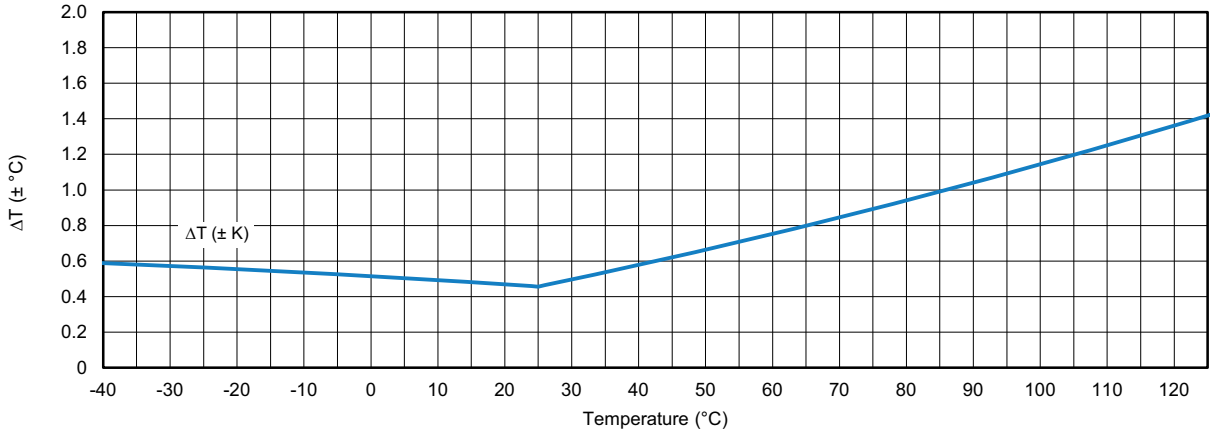
RT CURVE



ΔR (± %)



ΔT (± °C)



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