

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/

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	-40 to +125	°C
Maximum power dissipation	0 to +55	
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	M Ω
Weight	2.1	g

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


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.

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

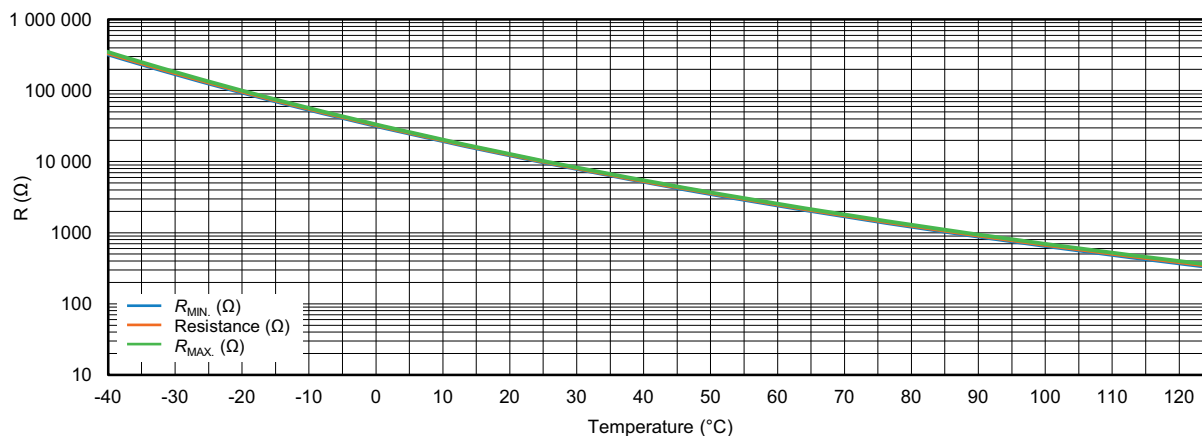
R_{25} (Ω)	R_{25} -TOL. ($\pm$ %)	$B_{25/85}$ (K)	$B_{25/85}$ -TOL. ($\pm$ %)	SAP MATERIAL AND ORDERING NUMBER	DESCRIPTION
10 000	2	3984	0.5	NTCASCWE3C70001A	NTC screw 10K 2 % 3984K AWG28 6-32 UNC

**RESISTANCE TEMPERATURE CHARACTERISTICS**

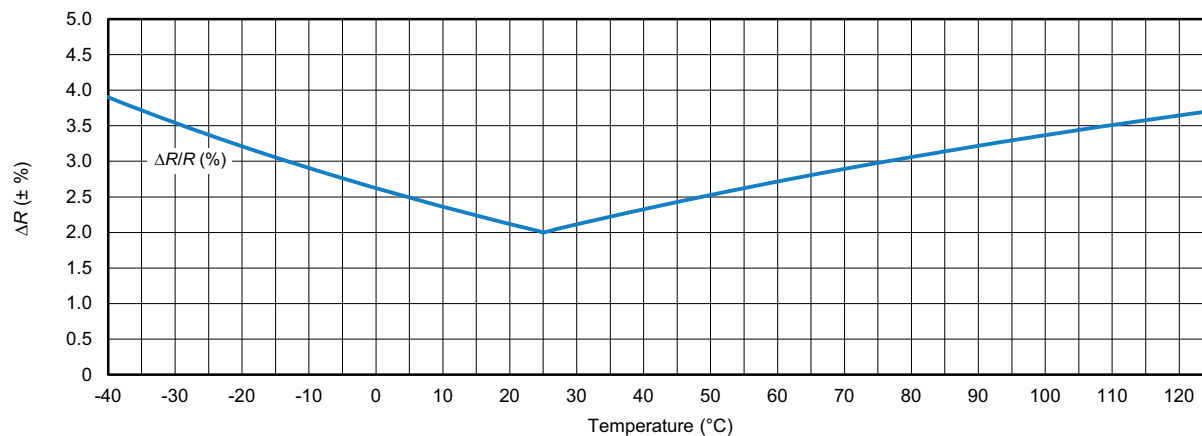
TEMP. (°C)	$R(T)/R_{25}$	RESISTANCE (Ω)	$\Delta R/R$ (%)	α (%/K)	ΔT ($\pm$ K)	$R_{MIN.}$ (Ω)	$R_{MAX.}$ (Ω)
-40	33.427	334 274.4	3.90	-6.63	0.59	321 238.0	347 310.8
-35	24.132	241 322.9	3.72	-6.41	0.58	232 353.0	250 292.7
-30	17.613	176 132.5	3.54	-6.19	0.57	169 894.8	182 370.3
-25	12.990	129 900.0	3.37	-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



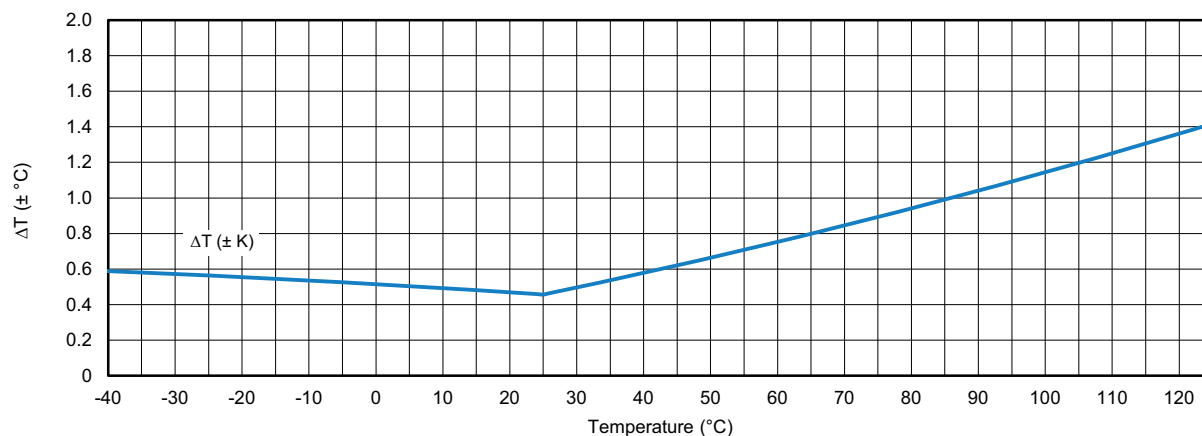
RT CURVE



$\Delta R (\pm \%)$



$\Delta T (\pm ^\circ C)$





Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Hyperlinks included in this datasheet may direct users to third-party websites. These links are provided as a convenience and for informational purposes only. Inclusion of these hyperlinks does not constitute an endorsement or an approval by Vishay of any of the products, services or opinions of the corporation, organization or individual associated with the third-party website. Vishay disclaims any and all liability and bears no responsibility for the accuracy, legality or content of the third-party website or for that of subsequent links.

Vishay products are not designed for use in life-saving or life-sustaining applications or any application in which the failure of the Vishay product could result in personal injury or death unless specifically qualified in writing by Vishay. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.