

NTC Thermistors, Glass Encapsulated High Temperature Sensors



FEATURES

- Small diameter down to 1.8 mm
- Quick response time down to 0.9 s
- Wide temperature range from -40 °C to +200 °C
- Resistant to corrosive atmospheres and harsh environments
- Available in bulk or on tape
- Mounting: axial
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912


RoHS
COMPLIANT

QUICK REFERENCE DATA		
PARAMETER	VALUE	UNIT
Resistance value at 25 °C (R_{25})	10K to 220K	Ω
Tolerance on R_{25} -value	± 5	%
$B_{25/85}$ -value	3797 to 3977	K
Tolerance on $B_{25/85}$ -value	± 1.3 to ± 3	%
Operating temperature range	-40 to +200	°C
Maximum power dissipation at 55 °C	100	mW
Dissipation factor	2.5	mW/K
Response time	0.9	s
Thermal time constant τ	6	s
Climatic category (LCT / UCT / days)	40 / 200 / 56	
Weight	≈ 0.14	g

APPLICATIONS

High temperature measurement, sensing and control:

- Domestic appliances
- Industrial process control

DESIGN-IN SUPPORT

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

DESCRIPTION

These thermistors have a negative temperature coefficient and are mounted in a glass envelope:

NTCLG100E2...B (SOD27) with tinned copper-clad steel leads in bulk

NTCLG100E2...T is the taped on bandolier version

MOUNTING

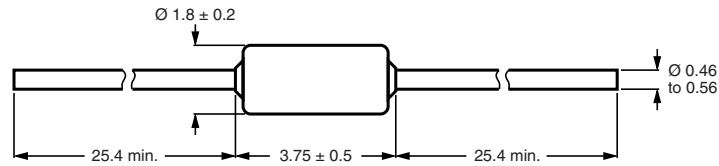
By soldering, clamping or welding. Bending of the leads should be done at least 3 mm from the glass body and without exerting forces on the glass body.

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 NTCLG100E2...
10 000	5	3977	1.3	103JB
20 000	5	3977	1.3	203JB
30 000	5	3977	1.3	303JB
100 000	5	3977	1.3	104JB
220 000	5	3797	3.0	224JB

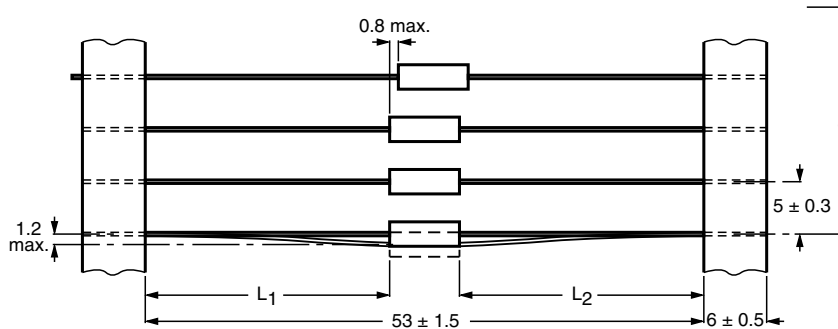
Note

- In SAP part replace last character by B for bulk and by T for taped components

DIMENSIONS in millimeters
Thermistors in bulk (NTCLG100E2...B)



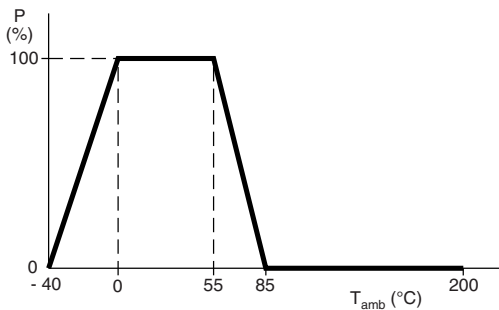
THERMISTORS ON BANDOLIER (NTCLG100E2...T)
Bandolier taped according to IEC 60286-1



The components are centered so that $|L_1 - L_2| = 1.2 \text{ mm max.}$ The cumulative space (S) measured over 10 spacings = $50 \text{ mm} \pm 2 \text{ mm}$

DERATING

Power derating curve

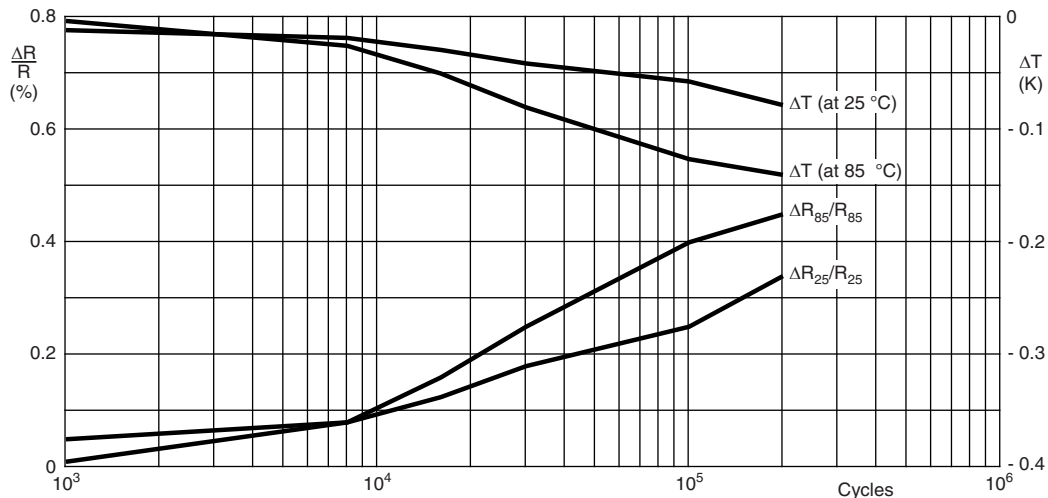


Note

- Zero power is considered as measuring power max. 1 % of rated power

STABILITY CHARACTERISTICS

Stability of glass encapsulated NTCs in thermal shock test (200 000 cycles -40 °C / +200 °C)





RESISTANCE VALUES AT INTERMEDIATE TEMPERATURES FOR NTCLG100E2

Table with 9 columns: TEMPERATURE (°C), RT/RT25, RT FOR 10 kΩ, RT FOR 20 kΩ, RT FOR 30 kΩ, RT FOR 100 kΩ, R-TOL. (± %), α (%/K), T-TOL. (± °C). Rows range from -40 to 200 °C.



RESISTANCE VALUES AT INTERMEDIATE TEMPERATURES FOR NTCLG100E2					
TEMPERATURE (°C)	R_T/R_{25}	R_T FOR 220 kΩ	R-TOL. (± %)	α (%/K)	T-TOL. (± °C)
-40	25.78	5 672 264	16.18	-6.07	2.67
-35	19.13	4 207 576	15.11	-5.88	2.57
-30	14.32	3 150 400	14.07	-5.70	2.47
-25	10.82	2 380 124	13.08	-5.52	2.37
-20	8.244	1 813 764	12.13	-5.35	2.27
-15	6.335	1 393 675	11.22	-5.19	2.16
-10	4.907	1 079 442	10.34	-5.03	2.05
-5	3.829	842 474	9.49	-4.88	1.94
0	3.011	662 373	8.67	-4.74	1.83
5	2.384	524 457	7.88	-4.60	1.71
10	1.900	418 080	7.13	-4.47	1.59
15	1.525	335 455	6.39	-4.34	1.47
20	1.231	270 847	5.68	-4.22	1.35
25	1.000	220 000	5.00	-4.10	1.22
30	0.817	179 734	5.66	-3.99	1.42
35	0.6712	147 656	6.30	-3.88	1.63
40	0.5543	121 952	6.92	-3.77	1.83
45	0.4602	101 242	7.52	-3.67	2.05
50	0.3839	84 466	8.10	-3.58	2.27
55	0.3218	70 806	8.67	-3.48	2.49
60	0.2710	59 627	9.21	-3.39	2.72
65	0.2293	50 436	9.75	-3.30	2.95
70	0.1947	42 844	10.26	-3.22	3.19
75	0.1661	36 544	10.76	-3.14	3.43
80	0.1422	31 294	11.25	-3.06	3.67
85	0.1223	26 901	11.72	-2.99	3.92
90	0.1055	23 210	12.18	-2.92	4.18
95	0.09135	20 096	12.63	-2.85	4.44
100	0.07936	17 460	13.06	-2.78	4.70
105	0.06918	15 220	13.49	-2.71	4.97
110	0.06050	13 310	13.90	-2.65	5.24
115	0.05307	11 676	14.30	-2.59	5.52
120	0.04670	10 273	14.69	-2.53	5.81
125	0.04121	9065	15.08	-2.47	6.09
130	0.03646	8022	15.45	-2.42	6.39
135	0.03235	7117	15.81	-2.37	6.68
140	0.02878	6332	16.17	-2.31	6.99
145	0.02567	5647	16.51	-2.26	7.29
150	0.02295	5049	16.85	-2.22	7.61
155	0.02057	4525	17.18	-2.17	7.92
160	0.01847	4064	17.50	-2.12	8.24
165	0.01663	3659	17.82	-2.08	8.57
170	0.01501	3301	18.13	-2.04	8.90
175	0.01357	2985	18.43	-2.00	9.24
180	0.01229	2704	18.72	-1.95	9.58
185	0.01116	2455	19.01	-1.92	9.92
190	0.01015	2233	19.29	-1.88	10.27
195	0.009247	2034	19.57	-1.84	10.63
200	0.008442	1857	19.84	-1.81	10.99



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