NTC Thermistors, Ice Cube Sensors



FEATURES

- Key component for temperature sensing and electronic control
- Accurate Vishay NTC chips, enabling class A to class A+++ refrigerator grades
- Sensor design following class II insulation (principal + supplementary insulation for the sensor head)
- High adhesive strength between silicone cable and encapsulating lacquer
- Specifically developed design allows for a very good water, moisture and ice resistance (min. 1000 h water immersion)
- Suitable for evaporator temperature measurement. Very high number of thermal cycles resistant (min. 100 000 cycles)
- The cables jackets are suitable for back-panel polyurethane foaming process (max. 100 °C, 5 min)
- Surface temperature sensors
- The housing and cable are cold flexible at -60 °C
- The housing plastic is FDA grade
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

RoHS COMPLIANT

APPLICATIONS

Temperature measurement, sensing and control:

- Ice cube makers
- White goods
- Refrigerators
- Freezers, deep-freezers
- Counter drinks coolers
- Backbar and catering coolers
- Display fridges
- Wine coolers

DESIGN-IN SUPPORT

- Other resistance curves and tolerances are available on request
- Consult Vishay for other lead length, other connector, or other features
- 3D solid model available on request.
- NTC curve computation: www.vishay.com/thermistors/ntc-curve-list/

QUICK REFERENCE DATA

PARAMETER	VALUE	UNIT
Resistance value at 25 °C (1)	9.965K	Ω
Tolerance on R_{25}-value	± 1.92	%
$B_{25/85}$-value (1)	3984	K
Tolerance on $B_{25/85}$-value	± 0.5	%
Operating temperature range at zero power	-55 to +50	°C
Resistance value at 0 °C	32.51K	Ω
Tolerance on R_0-value	± 1.3	%
Min. dielectric withstanding voltage (immersed in water)	3750	V_{AC}
Maximum power dissipation at 25 °C	150	mW
Climatic category (LCT / UCT / days)	55 / 50 / 56	
Weight	10	g

Note

(1) Other resistance, tolerance and B-value available on request.

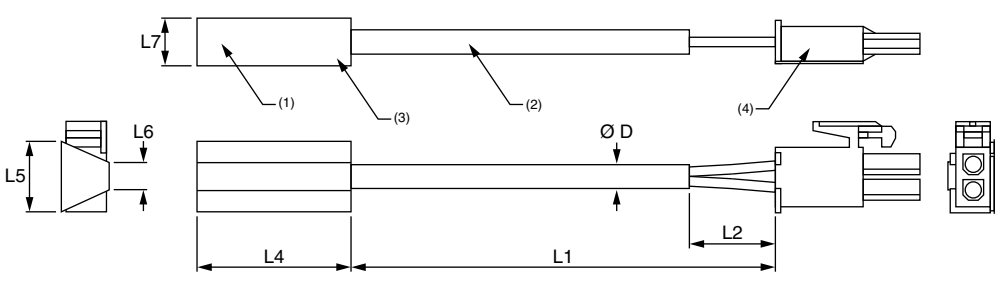
PACKAGING

The thermistors are packed in plastic bags containing 1000 units.

ELECTRICAL DATA AND ORDERING INFORMATION

R_{25} (Ω)	R_{25}-TOL. (± %)	$B_{25/85}$ (K)	$B_{25/85}$-TOL. (± %)	DESCRIPTION	SAP MATERIAL AND ORDERING NUMBER
10 000	1.92	3984	0.5	NTC ice cube 10K 380 mm	NTCASRFE3C90406

DIMENSIONS in millimeters



Ø D	4 mm
L1	380 mm + 20 / - 10
L2	35 mm ± 10 mm
L4	25 mm ± 0.3 mm
L5	11.5 mm ± 0.2 mm
L6	4.5 mm ± 0.2 mm
L7	8 mm ± 0.2 mm

For technical questions, contact: nlr@vishay.com

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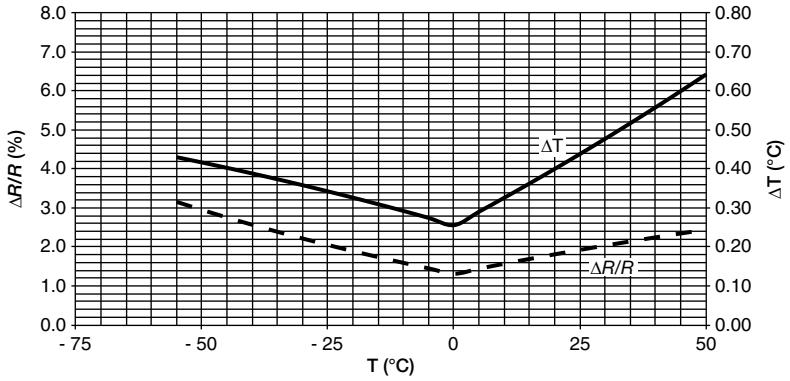
RESISTANCE VALUES AT INTERMEDIATE TEMPERATURES							
TEMPERATURE (°C)	R_T/R_{25}	RESISTANCE (Ω)	R-TOL. (± %)	α (%/K)	$\Delta T_{max.}$ (± °C)	$R_{min.}$ (Ω)	$R_{max.}$ (Ω)
-55	95.377	950 434	3.16	-7.37	0.43	920 376	980 492
-50	66.417	661 844	2.96	-7.11	0.42	642 284	681 403
-45	46.836	466 723	2.76	-6.86	0.40	453 855	479 591
-40	33.427	333 104	2.57	-6.63	0.39	324 552	341 656
-35	24.132	240 478	2.39	-6.41	0.37	234 741	246 215
-30	17.613	175 516	2.21	-6.19	0.36	171 634	179 397
-25	12.990	129 445	2.04	-5.99	0.34	126 799	132 091
-20	9.676	96 422	1.88	-5.79	0.33	94 606	98 239
-15	7.276	72 510	1.73	-5.61	0.31	71 256	73 764
-10	5.522	55 025	1.58	-5.43	0.29	54 155	55 895
-5	4.227	42 120	1.44	-5.26	0.27	41 514	42 725
0	3.262	32 510	1.30	-5.10	0.25	32 087	32 933
5	2.538	25 292	1.43	-4.94	0.29	24 930	25 655
10	1.990	19 827	1.56	-4.80	0.33	19 518	20 137
15	1.571	15 656	1.68	-4.65	0.36	15 393	15 920
20	1.249	12 449	1.80	-4.52	0.40	12 224	12 674
25	1.000	9965	1.92	-4.39	0.44	9774	10 156
30	0.806	8028	2.03	-4.26	0.48	7865	8191
35	0.653	6507	2.14	-4.14	0.52	6368	6646
40	0.532	5305	2.24	-4.03	0.56	5186	5424
45	0.437	4350	2.34	-3.92	0.60	4248	4452
50	0.360	3586	2.44	-3.81	0.64	3499	3674

RESISTANCE AND TEMPERATURE TOLERANCE



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