TENTATIVE SPECIFICATION

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Approved by : ir. Regis Wacheux

Date : - *TENTATIVE*

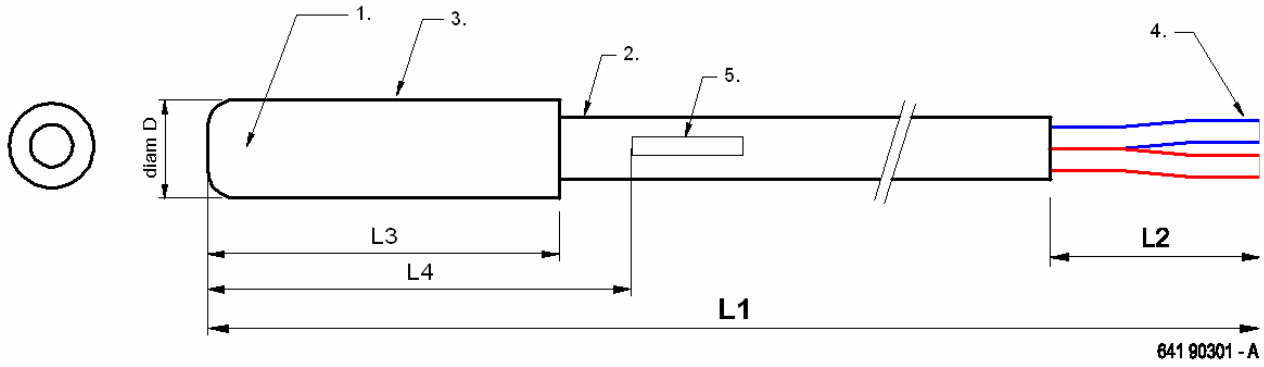
TENTATIVE SPECIFICATION

SAP nr: NTCACAPE3C90431

ELECTRONIC COMPONENTS OF ASSESSED QUALITY MEASURED IN ACCORDANCE WITH IEC 60539-1

DIRECTLY HEATED NEGATIVE TEMPERATURE COEFFICIENT THERMISTORS

Details of sensor construction : see Drawing 2.
Outline, dimensions, features and notes :



L1 xxxx **mm** +25/-10mm L2 = xxx mm +/-10 (L1 and L2 : refer to Table 1)
D = 8 mm +/-0.5 L3 = 30mm +/- 1
L4 = x (no marking).

TABLE 1:

Vishay pn	Customer P/N	L1 (mm)	L2 (mm)	Marking details	SPQ / PQ (pc)	Weight (g)
2381 641 90431	-	2513	35	No marking.	TBD	TBD

FEATURES

- Thermistor used for temperature sensing and control for fridge and freezor applications. For inner cabinet, or evaporator.
- Accurate chip with double insulated wire.
- High adhesive strength between PVC wire and encapsulating lacquer.
- Superior humidity and thermal cycling resistance.
- Directives 2003/11/EC (octa- and penta-BDE) and 2002/95/EC (RoHS) compatible.
- Following EN 60730-1 Class I insulation rules (principal insulation).
- Sensor housing suitable for Class I and Class II applications.
- The cable conductors are suitable to be connected by soldering, screwing, crimping or IDC connecting (e.g. rast 2.5mm).

NOTES

The non-dimensioned details do not affect the performance of the device.

1. Vishay thermistor NTC chip, coatings and potting epoxy resins with middle buffer layer. [2381 640 0x103]. UL-approved.
2. Cable, double insulated, PVC/PVC. PVC jacket, white, diameter 4mm. Conductor size = 7 strands *0.20 mm (0.22 sqmm), tin plated copper. 2 Conductors. PVC insulation. [4304 035 36381].
3. ABS plastic cap, cylindrical, "polar white colour" [8204 025 2148].
4. No connector.
5. No Marking.

TENTATIVE SPECIFICATION

1. RATINGS AND CHARACTERISTICS

- Climatic category (static. -20°C / +60°C)	: 40/60/56.
- Nominal temperature	: 25 °C.
- Resistance at 0°C (for information)	: 32 624 Ohms
- Resistance at 25°C	: 10 000 Ohms +/-2%.
- B25/85 value	: 3984 K ±0.5%.
- Insulation resistance (acc. IEC60, 500Vdc)	: min. 100 MΩ.
- Minimum Breakdown Voltage (voltage proof, 1s, I leakage<0.5mA)	: 3750 Vac.
- Thermal time constant (in water)	: <60s.

2. Marking : sticker on the cable with date code, customer pn and Vishay PN

3. Weight : cf. Table 1.

4. Packing : SPQ = To Be defined.
PQ = To Be Defined.

A bar code label on a plastic bag is provided with following data:
- CUSTOMER P/N : cf. Table 1.
- MFG. P/N: 2381 641 90431
- LOT NO: 22E……..
- QTY …. - DATE (YYWW)
- TYPE : NTC
- Description: R25= 10 000 OHMS. +/-2%, L=2513 mm

A bar code label on a cardboard box is provided with following data:
- Vishay BCcomponents
- CUSTOMER INFO : cf. Table 1.
- BATCH: ……
- ORIG : N260 - RPC : VS
- QTY ….. - DATE (YYWW)
- TYPE : NTC
- CODE NO : 2381 641 90431

RoHS compliant
Ref. : 2002/95/EC EU directive
Ref. : 2003/11/EC EU directive
(e3)

5. Marking Details : cf. Table 1.

6. Curve :
Resistance - Temperature Table : cf. Table 2.

8. Short Inspection requirements : see table 3.

Table 2

Temperature (°C)	R(T)/R25	Resistance (Ohms)	dR/R (%)	α (%/K)	DT (K)	Rmin (Ohms)	Rmax (Ohms)
-40	33.427	334274	3.90	-6.63	0.59	321238	347311
-35	24.132	241323	3.72	-6.41	0.58	232353	250293
-30	17.613	176133	3.54	-6.19	0.57	169895	182370
-25	12.990	129900	3.37	-5.99	0.56	125518	134282
-20	9.676	96761	3.21	-5.79	0.55	93654	99869
-15	7.276	72765	3.06	-5.61	0.54	70541	74988
-10	5.522	55218	2.91	-5.43	0.54	53613	56823
-5	4.227	42268	2.76	-5.26	0.53	41100	43435
0	3.262	32624	2.62	-5.10	0.51	31768	33480
5	2.538	25381	2.49	-4.94	0.50	24749	26013
10	1.990	19897	2.36	-4.80	0.49	19427	20367
15	1.571	15711	2.24	-4.65	0.48	15360	16063
20	1.249	12493	2.12	-4.52	0.47	12228	12757
25	1.000	10000	2.00	-4.39	0.46	9800	10200
30	0.806	8056	2.11	-4.26	0.50	7886	8226
35	0.653	6530	2.22	-4.14	0.54	6385	6675
40	0.532	5324	2.33	-4.03	0.58	5200	5448
45	0.437	4365	2.43	-3.92	0.62	4259	4471
50	0.360	3599	2.53	-3.81	0.66	3508	3690
55	0.298	2982	2.62	-3.71	0.71	2904	3060
60	0.248	2484	2.72	-3.61	0.75	2416	2551
65	0.208	2079	2.81	-3.51	0.80	2020	2137
70	0.175	1748	2.89	-3.42	0.85	1697	1798
75	0.148	1476	2.98	-3.34	0.89	1432	1520
80	0.125	1252	3.06	-3.25	0.94	1213	1290
85	0.107	1066	3.14	-3.17	0.99	1033	1100

Table 3

Notes
1. Clause numbers of tests and performance requirements refer to IEC 60539-1.
2. Inspection levels are selected from IEC plublication 60410 and MIL-STD-105E.
3. In this table : p = periodicity (in months)
n = sample size
c = acceptance criterion (permitted number of defectives)
D = destructive
ND = non-destructive

Clause number and test (see note 1)	D or ND	Conditions of test (see note 1)	IL (see note 2)	Performance requirements (see note 1)
GROUP A INSPECTION Sub-Group A1 (All pieces)	ND			No defect likely to impair function as specified
Visual examination			100%	No break on PVC wire. No bubble or pin hole on encapsulating lacquer No leaking of resin.
Zero-power resistance		Temperature : 0°C Temperature : 25°C	II, c=0 100%	As specified As specified
Insulation resistance		Method : Voltage : 500 Vdc (in water)	100%	As specified
Voltage proof		Method: Voltage 3750 Vac, 1s, water	100%	No breakdown
Sub-Group A2 (lot-by-lot)				
Dimension			100%	Meet requirements
Bvalue : B25/85		$B = \frac{\ln R1 - \ln R2}{1/T1 - 1/T2}$	II, c=0	As specified

Clause number and test (see note 1)	D or ND	Conditions of test (see note 1)	Sample size and criterion of acceptability (see note 3)			Performance requirements (see note 1)
			p	n	c	
GROUP B INSPECTION (periodic)	ND		3	13	0	
Sub-group B1						
4.6. Insulation resistance		Method : Voltage : 500 Vdc (in water)				As specified
4.7. Voltage proof		Method : Voltage : 3750 Vac 1 s (in water)				No breakdown
4.9. Dissipation factor (δ)		$\delta = \frac{V85 \times I85}{T1 - Tamb}$ T1 : 85°C Tamb : 25°C				As specified
4.10. Thermal time constant (response time)		63.2% ΔT 25°C ------> 85°C water				As specified

Groups C&D according to Quality Assurance Program.