

## NTC Thermistors, Long Lead Sensors



### FEATURES

- Accuracy of 0.5 °C between 0 °C and 50 °C
- Small diameter
- High stability over a long life
- Long and flexible leads for special mounting or assembly requirements
- Old part number was 2322 645 10/20....
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC



**RoHS**  
COMPLIANT

QUICK REFERENCE DATA	
PARAMETER	VALUE
Resistance value at:	
0 °C	See Resistance Values table
50 °C	See Resistance Values table
B <sub>25/85</sub> - value	3977K
Max. ΔT measured between 0 °C and 50 °C	± 0.5 °C
Temperature coefficient	See Resistance Values table
Maximum dissipation	100 mW
Minimum dielectric withstanding voltage (RMS) between leads and coating	500 V
Operating temperature range	- 40 °C to + 125 °C
Climatic category	40/125/56
Mass	≈ 0.2 g

### APPLICATIONS

- Temperature measurement, sensing and control in automotive, industrial and consumer electronic equipment

### DESCRIPTION

These negative temperature coefficient thermistors consist of a mini-chip soldered between two insulated (LE300) or non-insulated (LE201) nickel leads and coated with a solid ochre epoxy lacquer.

### PACKAGING

The thermistors are packed in cardboard boxes; the smallest packing quantity is 1000 units.

### MARKING

The body is colored with ochre lacquer and not marked.

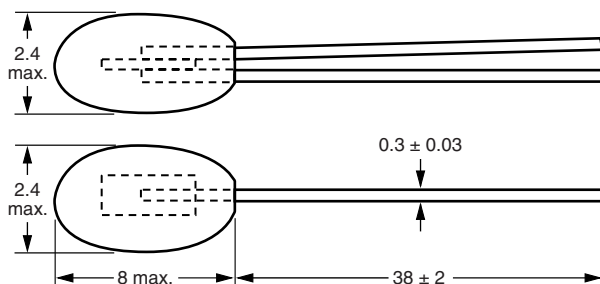
### MOUNTING

By soldering in any position.

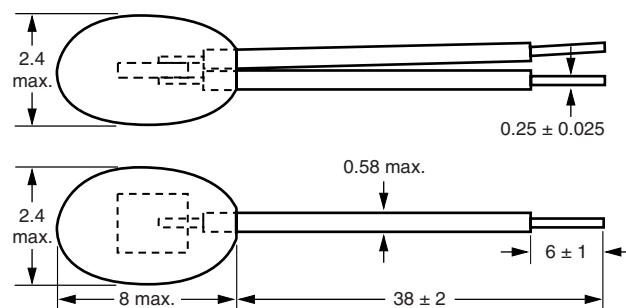
ELECTRICAL DATA AND ORDERING INFORMATION			
R <sub>25</sub> - VALUE (kΩ)	B <sub>25/85</sub> - VALUE (K)	12NC ORDERING CODE 2381 645....	SAP MATERIAL NO. NTCLE201E3...
3	3977	10302	302SB
5	3977	10502	502SB
10	3977	10103	103SB
R <sub>25</sub> - VALUE (kΩ)	B <sub>25/85</sub> - VALUE (K)	12NC ORDERING CODE 2381 645....	SAP MATERIAL NO. NTCLE300E3...
3	3977	20302	302SB
5	3977	20502	502SB
10	3977	20103	103SB

### DIMENSIONS in millimeters

Component outline for 2381 645 10/NTCLE201E3... series

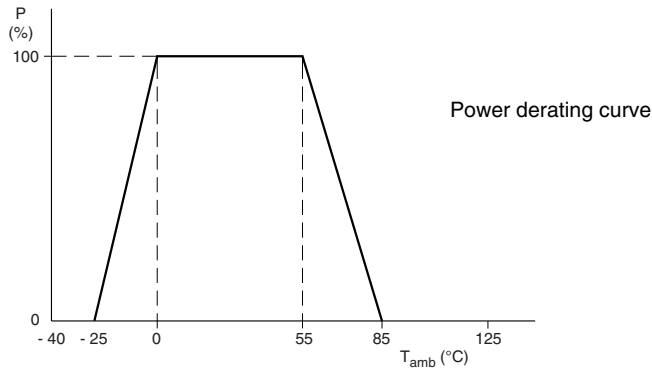


Component outline for 2381 645 20/NTCLE300E3... series





**DERATING**



RESISTANCE VALUES AT INTERMEDIATE TEMPERATURES						
T <sub>OPER</sub> (°C)	R <sub>T</sub> /R <sub>25</sub>	ΔT (K)	TCR (%/K)	R <sub>25</sub> -VALUE (kΩ)		
				2381 645 10... (NTCLE201E3...SB) OR 2381 645 20... (NTCLE300E3...SB)		
				302	502	103
- 40	33.21	0.68	6.57	99.63	166.1	332.1
- 35	23.99	0.66	6.36	71.97	120.0	239.9
- 30	17.52	0.64	6.15	52.56	87.60	175.2
- 25	12.93	0.62	5.95	38.79	64.65	129.3
- 20	9.636	0.59	5.76	28.91	48.18	96.36
- 15	7.250	0.57	5.58	21.75	36.25	72.50
- 10	5.505	0.55	5.40	16.51	27.52	55.05
- 5	4.216	0.52	5.24	12.65	21.08	42.16
0	3.255	0.50	5.08	9.766	16.28	32.56
5	2.534	0.50	4.92	7.602	12.67	25.34
10	1.987	0.50	4.78	5.962	9.936	19.87
15	1.570	0.50	4.64	4.710	7.849	15.70
20	1.249	0.50	4.50	3.746	6.244	12.49
25	1.000	0.50	4.37	3.000	5.000	10.00
30	0.8059	0.50	4.25	2.418	4.030	8.059
35	0.6535	0.50	4.13	1.960	3.267	6.535
40	0.5330	0.50	4.02	1.599	2.665	5.330
45	0.4372	0.50	3.91	1.312	2.186	4.372
50	0.3605	0.50	3.80	1.082	1.803	3.606
55	0.2989	0.55	3.70	0.8966	1.494	2.989
60	0.2490	0.61	3.60	0.7470	1.245	2.490
65	0.2084	0.66	3.51	0.6253	1.042	2.084
70	0.1753	0.72	3.42	0.5259	0.8765	1.753
75	0.1481	0.77	3.33	0.4443	0.7405	1.481
80	0.1256	0.83	3.25	0.3769	0.6282	1.256
85	0.1070	0.89	3.16	0.3211	0.5352	1.070
90	0.09154	0.95	3.09	0.2746	0.4577	0.9154
95	0.07860	1.02	3.01	0.2358	0.3930	0.7860
100	0.06773	1.08	2.94	0.2032	0.3387	0.6773
105	0.05858	1.14	2.87	0.1757	0.2929	0.5858
110	0.05083	1.21	2.80	0.1525	0.2542	0.5083
115	0.04426	1.27	2.73	0.1328	0.2213	0.4426
120	0.03866	1.34	2.67	0.1160	0.1933	0.3866
125	0.03387	1.41	2.61	0.1016	0.1694	0.3387



## Disclaimer

All product specifications and data are subject to change without notice.

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 herein or in any other disclosure relating to any product.

Vishay disclaims any and all liability arising out of the use or application of any product described herein or of any information provided herein to the maximum extent permitted by law. The product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein, which apply to these products.

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.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications unless otherwise expressly indicated. Customers using or selling Vishay products not expressly indicated for use in such applications do so entirely at their own risk and agree to fully indemnify Vishay for any damages arising or resulting from such use or sale. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

Product names and markings noted herein may be trademarks of their respective owners.