NTC Thermistor, Epoxy Coated Mini Sensor



LINKS TO ADDITIONAL RESOURCES

3D Models | Design Tools | SPICE Models | Related Documents

QUICK REFERENCE DATA		
PARAMETER	VALUE	UNIT
Resistance value at 25 °C	2.1K to 100K	Ω
Tolerance on R_{25}-value	± 1 to ± 5	%
$B_{25/85}$-value	3511 to 4190	K
Tolerance on $B_{25/85}$-value	± 0.5 to ± 1.5	%
Operating temperature range	-55 to +150	°C
Response time (63.2 %) 25 °C to 85 °C stirred air (for info)	5	s
Dissipation factor δ in still air (for info)	1.8	mW
Maximum power dissipation at 55 °C	100	mW
Min. dielectric withstanding voltage between terminals and coated body	500	V_{AC}
Insulation resistance at 100 V_{DC}	> 10M	Ω
Weight	≈ 100	mg

PACKAGING

- Bulk components are delivered in boxes of 500 components
- Taped components are delivered on a reel of 1500 components (according to IEC 60286-2 but with extra long leads: H0 = 32 mm)

FEATURES

- Advanced NTC technology
- Temperature range from -55 °C to +150 °C
- Highly resistant to thermal shocks
- Small body diameter of max. 2.5 mm
- AEC-Q200 qualified
- Fast response time
- High sensitivity
- Delivery in bulk or in tape with extra long leads (for automatic mounting)
- Mounting: radial
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

Pb e3 RoHS COMPLIANT

APPLICATIONS

Temperature sensing, control and compensation. E.g. inlet air temperature sensing thermistors or ECT in automotive applications, sensor elements in industrial and commercial applications, heating systems and industrial systems.

DESCRIPTION

These negative temperature coefficient thermistors consist of a mini-chip soldered between two tin plated 0.4 mm nickel leads, coated with ocher colored epoxy lacquer and coded with a color dot.

MOUNTING

Important mounting and handling instructions: see www.vishay.com/doc?29222

The thermistors are suitable for all standard assembly processes like crimping, soldering, welding, and potting into epoxy or silicon resins. The parameters and materials of the assembly process should be chosen in accordance with the lead-wire and coated body and validated in the application. The mounting process should be in compliance with the following guidelines and recommendations:

- Peeling forces on the leads should be reduced to a minimum and should never exceed 3 N. A strain relief tool should be used if needed
- Avoid large temperature gradients between the welding region and the sensor

ELECTRICAL DATA AND ORDERING INFORMATION

R_{25} (Ω)	R_{25}-TOL. (± %)	$B_{25/85}$ (K)	$B_{25/85}$-TOL. (± %)	COLOR DOT (see next page)	SAP MATERIAL AND ORDERING NUMBER (1)	
					RoHS-COMPLIANT WITH EXEMPTION (2)	RoHS-COMPLIANT
2100	1, 2, 3, 5	3511	1	Orange	NTCLE213E3212xMyy	-
2100	1, 2, 3, 5	3528	1	Orange	-	NTCLE213E3212xMyyA
10 000	1, 2, 3, 5	3435	1	Red	NTCLE213E3103xLyy	NTCLE213E3103xLyyA
10 000	1, 2, 3, 5	3984	0.5	Blue	NTCLE213E3103xHyy	NTCLE213E3103xHyyA
12 000	1, 2, 3, 5	3740	1	Black	NTCLE213E3123xMyy	NTCLE213E3123xMyyA
30 000	1, 2, 3, 5	3935	0.75	Green	NTCLE213E3303xHyy	NTCLE213E3303xHyyA
100 000	1, 2, 3, 5	4190	1.5	Brown	NTCLE213E3104xXyy	NTCLE213E3104xXyyA

Notes

Preferred versions for new designs

(1) Replace the x-digit by J for R_{25}-tolerance of 5 %, H for 3 %, G for 2 %, and F for 1 %.
Replace the y-digits by B0 for bulk delivery and by T1 for tape and reel delivery

(2) RoHS exemption 7(c)-I: electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezo-electronic devices, or in a glass or ceramic matrix compound

For technical questions, contact: nlr@vishay.com

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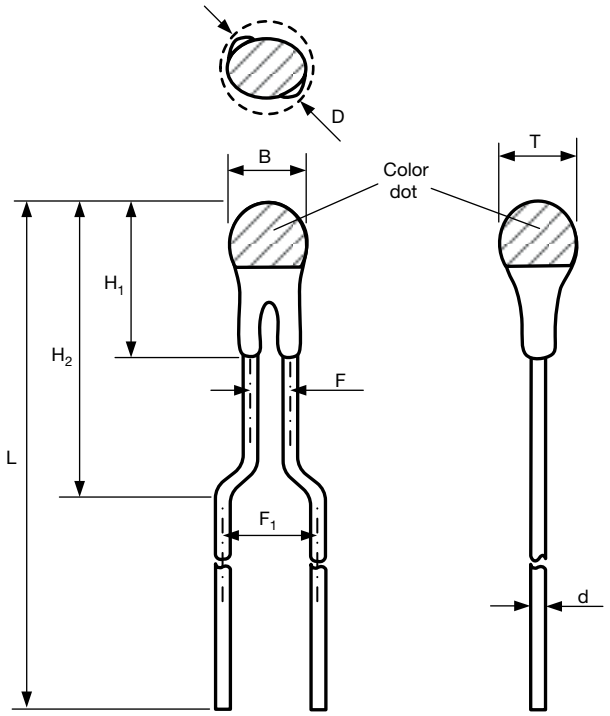
DIMENSIONS in millimeters



PARAMETER	VALUE
B max.	2.5
T max.	2.5
F	1.1
F1	2.54
D max. (mounting diameter)	2.5
d	0.4 ± 10 %
H1 max.	5.5
H2 max.	10
L	41 ± 1

Note

- Non-dimensioned details do not affect the performance of the thermistors

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