

## NTC Thermistor, Epoxy Coated Mini Sensor


**RoHS**  
COMPLIANT

### 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
- Fast response time
- High sensitivity
- Delivery in bulk or in tape with extra long leads (for automatic mounting)
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)

### 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.

### MOUNTING

The thermistors are suitable for all standard assembly processes like crimping, soldering, welding. The parameters of the assembly process should be chosen in accordance with the lead-wire material (tinned nickel) and validated in 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
- Avoid large temperature gradients between the welding region and the sensor

### 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)

### DESIGN IN SUPPORT

R(T) tables spreadsheet available on request at [nlr@vishay.com](mailto:nlr@vishay.com) or to download at:

[www.vishay.com/resistors-non-linear/curve-computation-list](http://www.vishay.com/resistors-non-linear/curve-computation-list)

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 still air (for info)	5	s
Dissipation factor $\delta$ in still air (for info)	1.8	mW
Maximum power dissipation	100	mW
Min. dielectric withstanding voltage between terminals and coated body	500	V <sub>AC</sub>
Insulation resistance at 100 V <sub>DC</sub>	> 10M	Ω
Weight	approx. 100	mg

ELECTRICAL DATA AND ORDERING INFORMATION					
VISHAY SAP ORDERING NUMBER <sup>(1)</sup>	$R_{25}$ -VALUE (kΩ)	$R_{25}$ -TOL. (%)	$B_{25/85}$ -VALUE (K)	$B_{25/85}$ -TOL. (%)	COLOR DOT (see next page)
NTCLE213E3212xMyy	2.1	1, 2, 3, 5	3511	1	Orange
NTCLE213E3103xLyy	10	1, 2, 3, 5	3435	1	Red
NTCLE213E3103xHyy	10	1, 2, 3, 5	3984	0.5	Blue
NTCLE213E3123xMyy	12	1, 2, 3, 5	3740	1	Black
NTCLE213E3303xHyy	30	1, 2, 3, 5	3935	0.75	Green
NTCLE213E3104xXyy	100	1, 2, 3, 5	4190	1.5	Brown

#### Note

- <sup>(1)</sup> 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.

**DIMENSIONS** in millimeters


PARAMETER	VALUE
B	2.5 max.
T	2.5 max.
P	1.1 nominal
P1	2.54
d	0.4 ± 10 %
H1	5.5 max.
H2	10 max.
L	41 ± 1

**Note**

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



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