

NTC Thermistors, Steel Capped Sensors



FEATURES

- High mechanical strength
- FASTON connectors for easy connection
- Accuracy of $\pm 1\text{ }^{\circ}\text{C}$ between $25\text{ }^{\circ}\text{C}$ and $85\text{ }^{\circ}\text{C}$
- Material categorization:
for definitions of compliance please see www.vishay.com/doc?99912


RoHS
COMPLIANT

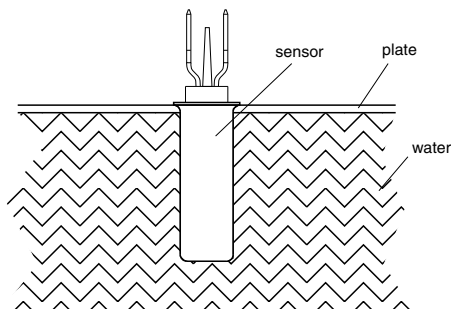
QUICK REFERENCE DATA

PARAMETER	VALUE	UNIT
Resistance value at $25\text{ }^{\circ}\text{C}$	12K	Ω
Tolerance on R_{25} -value	± 4.0	%
$B_{25/85}$ -value	3730	K
Tolerance on $B_{25/85}$ -value	± 1.5	%
Operating temperature range at zero dissipation	-25 to +110	$^{\circ}\text{C}$
Max. short term operation	130	
Resistance value at $0\text{ }^{\circ}\text{C}$	$35\,875 \pm 7\%$	Ω
Resistance value at $85\text{ }^{\circ}\text{C}$	$1475 \pm 3\%$	
Resistance value at $100\text{ }^{\circ}\text{C}$	$963 \pm 4.2\%$	
Maximum power dissipation at $55\text{ }^{\circ}\text{C}$	250	mW
Dissipation factor in still air (for information only)	7.5	mW/K
Dissipation factor in still water (for information only)	18	
Thermal time constant in still air (τ)	285	s
Response time ⁽¹⁾	13 to 16	
Temperature gradient ⁽²⁾	≤ 0.02	K/K
Minimum dielectric withstanding voltage between terminals and capsule during		V_{RMS}
1 min	1500	
10 s	1650	
Minimum insulation resistance between terminals and capsule at 100 V_{DC}	100M	Ω
Weight	≈ 8	g

Notes

- ⁽¹⁾ The response time is the time necessary to change 63.2 % of the total difference between the initial and the final body temperature, when subjected to a step function change in ambient temperature from $25\text{ }^{\circ}\text{C}$ air to boiling water at $100\text{ }^{\circ}\text{C}$
- ⁽²⁾ The temperature gradient is the difference per degree Celsius between the true temperature of the liquid (water) and the temperature measured by the sensor

METHOD OF APPLICATION



APPLICATIONS

- Sensors for water temperature control in, for example:
 - Washing machines
 - Dish washers
 - Heat pumps
 - Electric boilers

DESCRIPTION

These thermistors have a negative temperature coefficient. The device consists of a soldered ceramic chip which is mounted in a capsule of stainless steel SS304 and provided with two 6.3 mm tinned spade connectors.

MOUNTING

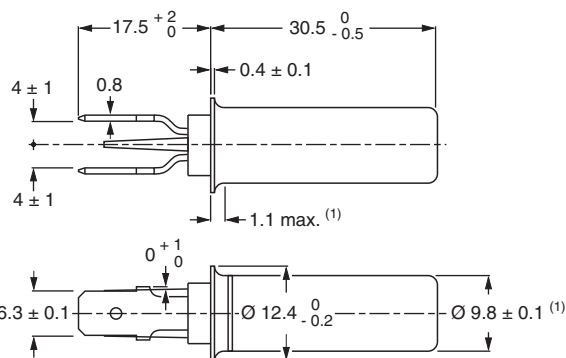
Connect to two FASTONS 6.3 x 0.8 (0.25" x 0.032") receptacle or equivalent and mounted with a watertight sealing.

DESIGN-IN SUPPORT

For complete curve computation, visit:
www.vishay.com/thermistors/ntc-curve-list/

DIMENSIONS in millimeters

Component outline



ELECTRICAL DATA AND ORDERING

R_{25} (Ω)	R_{25} -TOL. ($\pm\%$)	$B_{25/85}$ (K)	$B_{25/85}$ -TOL. ($\pm\%$)	SAP MATERIAL AND ORDERING NUMBER
12 000	4	3730	1.5	NTCAIMME3C90042



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