

## NTC Thermistors, Steel Capped Sensors


**RoHS**  
COMPLIANT

### 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](http://www.vishay.com/doc?99912)

### 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

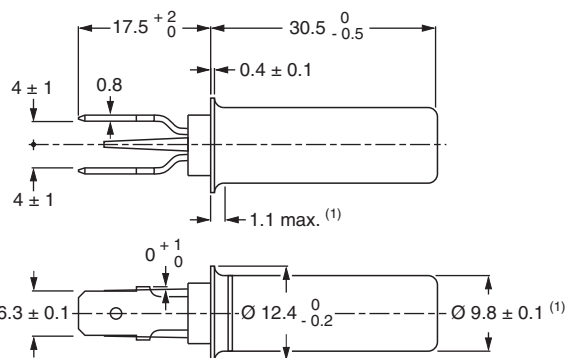
Connect to two FASTONS 6.3 x 0.8 (0.25" x 0.032") receptacle or equivalent and mounted with a watertight sealing.

### DESIGN-IN SUPPORT

For complete curve computation, visit:  
[www.vishay.com/thermistors/ntc-curve-list/](http://www.vishay.com/thermistors/ntc-curve-list/)

### DIMENSIONS in millimeters

Component outline

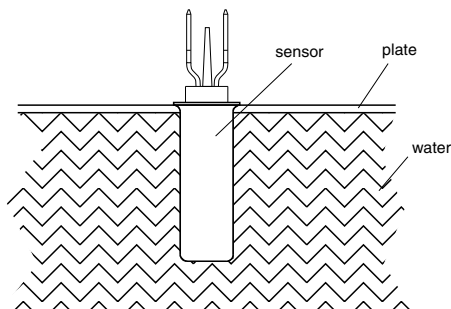


QUICK REFERENCE DATA		
PARAMETER	VALUE	UNIT
Resistance value at $25\text{ }^{\circ}\text{C}$	12K	$\Omega$
Tolerance on $R_{25}$ -value	$\pm 4.0$	%
$B_{25/85}$ -value	3730	K
Tolerance on $B_{25/85}$ -value	$\pm 1.5$	%
Operating temperature range at zero dissipation	-25 to +110	$^{\circ}\text{C}$
Max. short term operation	130	
Resistance value at $0\text{ }^{\circ}\text{C}$	$35\,875 \pm 7\%$	$\Omega$
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		mW/K
in still air (for information only)	7.5	
in still water (for information only)	18	
Thermal time constant in still air ( $\tau$ )	285	s
Response time <sup>(1)</sup>	13 to 16	
Temperature gradient <sup>(2)</sup>	$\leq 0.02$	K/K
Minimum dielectric withstanding voltage between terminals and capsule during		$V_{\text{RMS}}$
1 min	1500	
10 s	1650	
Minimum insulation resistance between terminals and capsule at $100\text{ V}_{\text{DC}}$	100M	$\Omega$
Weight	$\approx 8$	g

#### Notes

- <sup>(1)</sup> 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  $100\text{ }^{\circ}\text{C}$
- <sup>(2)</sup> 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



### ELECTRICAL DATA AND ORDERING

$R_{25}$ ( $\Omega$ )	$R_{25}$ -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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