

Room Temperature Thermistor Sensor



Application



Room Temperature Sensing in Air Conditioners.



Ambient Temperature Sensing in Refrigerator



Automotive Climate Control System

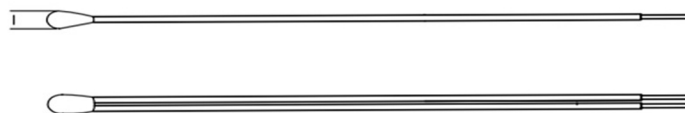
Features

- High sensitivity to small temperature changes and Fast thermal response
- Compact size and High accuracy
- Stable resistance-temperature characteristics and Excellent long-term reliability.
- Good thermal cycling endurance and Wide operating temperature range.

Options Available

- Resistance tolerance : Available in $\pm 1\%$, $\pm 2\%$, and $\pm 5\%$.
- Encapsulation : Options include epoxy powder coated in blue (E01), black (E02), or Epoxy Dip Coating (E03).
- Non-standard lead lengths.
- Alternative resistance ratings.
- Rated temperatures and tolerances.

Dimensions



Electrical Data (Resistance and Beta Values)

Resistance At 25°C (Ω)	Beta Value (25°C/85°C) (K)	Resistance At 25°C (Ω)	Beta Value (25°C/85°C) (K)
2000	3540	20000	4000
2057	3540	30000	4050
2800	3900	47000	4100
3000	3977	49300	3960
4700	3977	50000	4100
5000	3977	100000	4400
10000	3977	170000	4250

Rated Temp and Dissipation Factor

Heat capacity (Cth) :		$\approx 18 \text{ mJ/K}$	
Lower Temperature :	-40°C	Dissipation factor in air (δ_{th}) :	approx 1.5 mW/K
Upper Temperature :	140°C	Beta Tolerance ($\Delta\beta/\beta_N$) :	$\pm 1\%$, $\pm 2\%$, $\pm 3\%$.
Max Permissible Power at 25°C :	60 mW	Resistance Tolerance ($\Delta R/R_N$) :	$\pm 0.5\%$, $\pm 1\%$, $\pm 2\%$, $\pm 5\%$
Rated Temperature (TN) :	25°C	Thermal cooling time constant in air (τ_c) :	$\approx 12s$

Reliability Data

Test	Standard	Test Conditions	Change In R	Remarks
Storage in dry heat	IEC 60068-2- 2	Storage at upper category temp T: 100°C t: 1000 h	<2%	No Visible Damage
Storage in damp heat, steady state	IEC 60068 - 2- 78	Temp of air: 40 °C Relative humidity of air: 93 % Duration: 56 days	<2%	No Visible Damage
Storage in coldness		Storage at lower category temp T: -30 °C t: 1000 h	<2%	No Visible Damage
Vibration resistance	IEC 60068-2-6	Frequency range: 5 to 500 Hz Amplitude: 7.5 mm, 2 g Duration: 3 x 8 h	<3%	No Visible Damage
Long-term stability (empirical value)		Temperature: 200 °C t: 10000 h	<3%	No Visible Damage
Voltage proof Test		1250 V AC, 1 s	<3%	No Flashover
Insulation test		The sensors are placed in a vessel containing metallic balls of 1 mm diameter (with total immersed head). The applied voltage is 100 V DC.		Above 1000 M Ω
Rapid temperature cycling	IEC 60068 - 2- 14	Lower test temp : -30°C Upper test temp : 150°C Time to change from Low to Up Temp : <30s Number of cycles: 1000 Medium: air	<2%	No Visible Damage

Ordering Codes For Sensor

STTS		103	R1	E03	V	H	102	3977
Product Category							Beta Value @ (25 °C/85 °C)	
STTS	NTC THERMISTOR TEMPERATURE SENSOR ELEMENT SERIES						4250	4250 K
							3977	3977 K
							3435	3435 K
Resistance Value @25 °C (In Ohm Unit)							Wire Length	
174	170000 Ohm						102	1000 MM
103	10000 Ohm						361	360 MM
302	3000 Ohm						501	500 MM
Resistance Value Tolerance							Wire Gauge	
R1	1% Tolerance in Resistance Value						H	AWG 26
R2	2% Tolerance in Resistance Value						P	AWG 20
R5	5% Tolerance in Resistance Value						K	AWG 24
Encapsulation								
E01	Blue Epoxy Powder Coating							
E02	Black Epoxy Powder Coating							
E03	Epoxy Dip Coating							
Wire Type								
V	PVC Twin Parallel Copper Wire							
T	PVC Multistrand Copper Wire							
N	XLPE Multistrand Copper Wire							