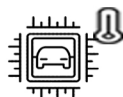


Temperature Compensator NTC Sensor

Application



Temperature Compensation in Analog Circuit.



Automotive Compensation Circuits



Calibration/ Instrumentation Circuits.

Dimensions



Features

- Good thermal coupling to the surface
Surface mount or clip on style .
- Mounting hardware / contact area
- Long term stability & ruggedness
- Customisable lead lengths, insulation type are available depending on design requirement.

Options Available

- Temperature range — make sure the sensor covers the lowest and highest expected temperatures (including extremes like deep freeze or defrost) with margin.
- Tolerance classes: e.g., $\pm 1\%$, $\pm 3\%$ on R_{25} and $\pm 1\%$ or $\pm 2\%$ on Beta, depending on cost/accuracy.

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

STLT 103 R5 E01 A L 340 3977	
Product Category	Beta Value @ (25 °C/85 °C)
STLT NTC THERMISTOR TEMPERATURE SENSOR ELEMENT SERIES	3930 3930 K 3977 3977 K 3435 3435 K
Resistance Value @25 °C (In Ohm Unit)	Wire Length
111 11000 Ohm 103 10000 Ohm 302 3000 Ohm	340 34 MM 451 450 MM 501 500 MM
Resistance Value Tolerance	Wire Gauge
R1 1% Tolerance in Resistance Value R2 2% Tolerance in Resistance Value R5 5% Tolerance in Resistance Value	L AWG 23 A AWG 32 H AWG 26
Encapsulation	
E01 Blue Epoxy Powder Coating E02 Epoxy Dip Coating E03 6 MM Nickel Plated Brass Ring Terminal.	
Wire Type	
A Tinned Plated Copper Wire D Enamel Coated Copper Wire AG Tinned Copper Clad Steel Wire	