

Glass Coated Thermistor Sensor

■ Application



EV Automotive Systems



Power Electronics



HVAC Systems

■ Features

- Operating temperature ranges from -55°C to +250°C.
- Resistant to humidity and corrosion
- Stable resistance-temperature characteristics and Excellent long-term reliability.
- Good thermal cycling endurance and Wide operating temperature range.

■ Options Available

Type	Construction	Mounting	Key Application	Drawing
Axial Lead Type Glass Thermistor	Glass bead with wire leads on both ends	Through-hole axial mount	HVAC, industrial sensors, EV systems	
Radial Lead Type Glass Thermistor	Glass bead with two parallel leads	Through-hole vertical mount	Power electronics, chargers, protection circuits	
MELF Type Glass Thermistor	Cylindrical glass-coated chip type thermistor	Surface mount	Automotive ECUs, Compact electronics	

- Resistance tolerance : Available in $\pm 1\%$, $\pm 2\%$, and $\pm 5\%$.
- Non-standard lead lengths.
- Alternative resistance ratings.
- Rated temperatures and tolerances.

■ 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 MΩ
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

■ Dimensions

Axial Lead Type Glass Thermistor	Radial Lead Type Glass Thermistor	MELF Type Glass Thermistor

■ 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

■ Comparison Of Different Glass Coated Thermistor

Parameter	Axial	Radial	Melf
Size	Medium	Small	Very Small
Mounting	Through- hole	Through hole	SMD
Temperature Range	-55°C to +250°C	-55°C to +250°C	-40°C to +200°C
Response Time	Medium	Fast	Very Fast
Mechanical Strength	High	Medium	High
Cost	Moderate	Low	Moderate
Applications	Industrial, Automotive	Power Chargers	Automotive ECU, BMS.
Best Feature	Stability	Compactness	Fast Response

■ Ordering Codes For Sensor

STTS 103 R2 E105 F C 660 3435	
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 103 10000 Ohm 302 3000 Ohm	660 66 MM 330 33 MM
Resistance Value Tolerance	Wire Gauge
R1 1% Tolerance in Resistance Value R2 2% Tolerance in Resistance Value R5 5% Tolerance in Resistance Value	C AWG 30 A AWG 32 K AWG 24
Thermistor Type	
E105 Glass Coated	
Wire Type	
F Bored Dummet Wire T PVC Multistrand Copper Wire	