

EV Battery Sensor



■ Application



EV Automotive Battery Temperature Monitoring.

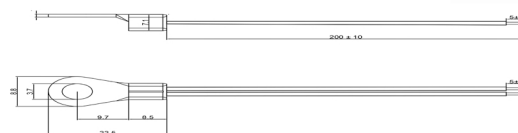


Monitoring Automotive BMS & TMS Reading



Safety Cutoff Battery Protection

■ Dimensions



■ Electrical Data (Resistance and Beta Values)

Resistance At 25°C (Ω)	Beta Value (25/85) (Unit :K)	Resistance At 25°C (Ω)	Beta Value (25/85) (Unit :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

■ Features

- Tight tolerance on resistance at 25°C (R10= ohms @25°C) and on the Beta (β) constant ±1% or ±3% tolerance.
- Good dissipation factor (so the sensor doesn't self heat too much when current flows through it) and minimal self heating error.
- Lead / connection options: insulated wire leads, bare leads. Some may also have automotive connectors, custom cable lengths, etc

■ Options Available

- Encapsulation types: epoxy coated, glass encapsulated bead, metal housing (immersion sensors), chip version.
- Lead types: insulated thin wires, high temp wires, connectorized harness, or simple pair of wires.
- Tolerance classes: e.g., ±1%, ±3% on R₍₂₅₎ and ±1% or ±2% on Beta, depending on cost/accuracy.
- Leadwire options: insulated thin wires, high temp wires, connectorized harness, or simple pair of wires. Lead length, cable gauge, connector type can be customised

■ Rated Temp and Dissipation Factor

Heat capacity (Cth) :		≈ 18 mJ/K	
Lower Temperature :	-40°C	Dissipation factor in air(δth) :	approx 1.5 mW/K
Upper Temperature :	140°C	Beta Tolerance (Δβ/βN) :	±1%, ±2%, ±3%.
Max Permissible Power at 25°C :	60 mW	Resistance Tolerance (ΔR/RN) :	±0.5%, ±1% ±2%, ±5%
Rated Temperature (TN) :	25°C	Thermal cooling time constant in air (τc) :	≈ 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 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

■ Ordering Codes For Sensor

STTS 103 R1 E192 K H 221 3435			
Product Category			
STTS	NTC THERMISTOR TEMPERATURE SENSOR SERIES		
Resistance Value		Beta Value (In K)	
103	10 * 10 ^{±3} Ohm	3435	3435 K
102	10 * 10 ^{±2} Ohm	3977	3977 K
302	3 * 10 ^{±2} Ohm	4000	4000 K
Tolerance in R Value		Wire Length (In MM)	
R1	1% Tolerance	221	220 MM
R2	2% Tolerance	501	500 MM
R5	5% Tolerance	1001	1000 MM
Encapsulation		Wire Gauge	
E192	3.7mm Tag Type	P	AWG 20
E40	3mm Aluminum Tag Type	H	AWG 26
E48	6 MM Tin Plated Copper Lug Type	K	AWG 24
Wire Type			
K	PTFE Multi Strand Copper Wire		
AA	FEP Multi strand copper wire		
U	PVC Multi Core copper wire		