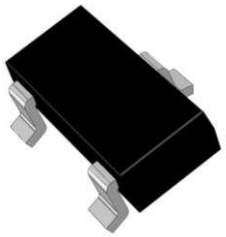

Ni1000SOT

Temperature Sensor

SPECIFICATIONS

- **Contact temperature sensing**
- **Comply with former DIN 43760 standard**
- **Small SMD package SOT 23**
- **Automotive qualified**

Ni1000SOT is a nickel thin film resistance temperature detector (RTD) that is suitable for use in contact temperature sensing.
The devices are manufactured by PVD-deposition on a silicon substrate. The thin film structure is covered by a passivation layer for environmental protection and enhanced stability. The nickel elements are mounted on lead frames and encapsulated in SOT23 packages. This technology allows the production of miniature, low cost, high precision temperature sensors.
The characteristics of the temperature sensor comply with the former DIN 43760 standard. It is qualified for the most demanding automotive applications (incl. exposure to hot oil) and is suitable for many more applications in harsh environments

FEATURES

- Resistance: 1000 ohms at 0°C
- Min/ Max temp -55°C to +160°C
- Good linearity between resistance and temperature (R V's T)
- Large temperature coefficient of resistance: 6178 ppm/K (0°C, 100°C)
- Low power consumption
- Good thermal contact via Pin 3
- Tape and reel (8mm format)

APPLICATIONS

- Temperature sensing, control and compensation
- General instrumentation
- Automotive (VW standard 801-01 vibration)
- Remote sensing

PERFORMANCE SPECS

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Basic resistance	R_0	0°C	997,81	1000	1002,20	Ω
Temperature coefficient of resistance (according to DIN 43760, see below)	TCR	0°C to +100°C	6100	6178	6240	ppm/K
Measurement current	I			0.2	5	mA
Self heating coefficient	EK	+23 °C, still air	1.4	1.7	2	mW/K
Operation temperature	T_{Op}		-55		+160	°C
Maximum resistance drift	ΔR	1000h@150°C		0.1		%
Storage temperature	T_{St}		-55		+160	°C
ESD resistant		MIL 883E3015.7		Class 1		

SELF HEATING EFFECT

For accurate temperature measurement it is recommended to choose a small current to avoid self heating of the nickel sensing element. The temperature error caused by excessive measurement current can be calculated using: $\Delta T = P/EK$
where $P = I^2 \cdot R$ is the power generated by the measurement current and EK is the self heating coefficient.

PACKAGE INFORMATION

Parameter	Condition	Typ.	Unit
Package		SOT23	
Soldering	Reflow to + 260°C	96Sn4Ag	
Packing units		13" (330 mm) / 10000	Reel Size / # of sensors
Package marking		Three Digit code: "1" + "XX", where "XX" is the revision.	