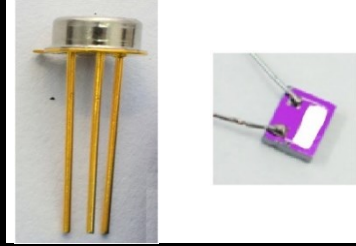




## Platinum Based Temperature Sensor (PRT)



### PRODUCT DESCRIPTION:

SCL is involved in developing MEMS based Temperature sensors. These sensors are thin film platinum based PRTs. Nominal resistance at ambient is around 1K  $\Omega$  with sensitivity of 3 $\Omega$ /°C. Sensor variants with nominal resistance  $R_0$  values of 100 $\Omega$ , 500 $\Omega$  & 1500 $\Omega$  can also be customized as per application requirements.

### FEATURES:

- Operating Ranges : -20°C to 100°C
- Accuracy : <0.5°C
- Nominal Resistance ( 25°C ) : 1K  $\Omega$ ±5%
- Sensitivity : 3 $\Omega$ /°C
- Package : Dies, Custom
- Die Size : 2.0 mm x 2.5 mm x 0.675 mm

Product Specification		
S.No.	Parameters	Specification
1	Temperature Range	-20°C to 100 °C
2	Accuracy <sup>1</sup>	< 0.5°C
3	Nominal Resistance (at 0°C), $R_0$	900 $\Omega$
4	Nominal Temperature Coefficient, TCR	0.00315 $\Omega$ / $\Omega$ /°C
5	Package Style	TO-46, Dies, Custom Package
6	Lead Length	13.5 $\pm$ 0.5mm (TO-46)
7	Storage Temperature	-65°C to 135°C
8	Bare Die Size	2.0 mm x 2.5 mm x 0.675 mm
9	Response Time in still air using LCSR <sup>2</sup> method ( $\tau$ 63.2%)	40 sec (TO-46)
		3 sec (bare die, with lead wires)
10	Recommended values of excitation Current	0.1mA to 0.3mA
R-T Calibration Polynomial <sup>3</sup>  $R_T = R_0 (1+AT+BT^2)$ $R_T$ = Resistance at Temperature T°C $R_0$ = Resistance at Temperature 0°C A, B = Polynomial Coefficients		

Note-1: Worst case accuracy with calibration coefficients ( $R_0$ , A & B) in the range -20°C to 100 °C.

Note-2: LCSR (Loop Current Step Response). This response time corresponds to the package TO46.

Note-3: Each sensor is individually calibrated with 0.1 mA of excitation current. Sensor comes with values of calibration coefficients  $R_0$ , A & B.