

Platinum Resistance Temperature Detector

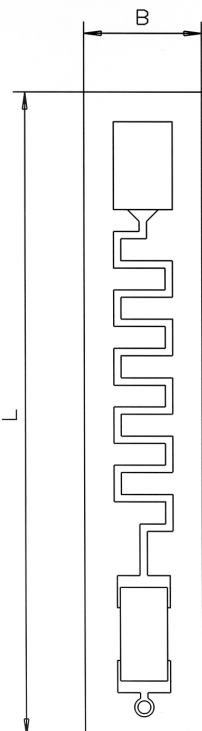
PCB 2225/ 2240 (0805)

This platinum temperature sensor on a printed circuit board has been specially designed for use in calorimetry. When designing these sensors, the stringent requirements of this sector with regard to precision, long-term stability, cost minimisation as well as the option for fully automatic further processing were of prime concern.

The temperature sensor in an SMD model forms the measurement active element on a PCB. The chip is connected with the terminal faces via meandering circuit board conductors in order to reduce heat dissipation and to prevent corruption of the measuring results. As a cable set sensor, it is suitable for a wide range of applications within a temperature range of 0°C to 150°C.

| Nominal Resistance R_0 | Tolerance DIN EN 60751 1996-07 | Tolerance DIN EN 60751 2009-05 | Ordner No. | Dimensions in mm | | FC Type |
|-----------------------------|--------------------------------------|--------------------------------------|------------|------------------|-----------|---------|
| | | | | L +2.2 -0.2 | B -0.2 | |
| 100 | Class B | F 0.3 | 30 201 075 | 22 | 2,5 | 0805 |
| 500 | | | 30 201 073 | 22 | 2,5 | 0805 |
| 1000 | | | 30 201 063 | 22 | 2,5 | 0805 |
| 100 | | | 30 201 071 | 22 | 4,0 | 0805 |
| 500 | | | 30 201 069 | 22 | 4,0 | 0805 |
| 1000 | | | 30 201 067 | 22 | 4,0 | 0805 |
| 10000 | Class 2B | F 0.6 | 30 201 081 | 22 | 4,0 | 0805 |
| 10000 | | | 30 201 080 | 22 | 2,5 | 0805 |

| Specification | DIN EN 60751 |
|--------------------------------------|---|
| Tolerance classes | Class B; Pt 10000: Class 2B |
| Temperature range | 0°C to 150°C |
| Temperature coefficient | TC = 3850 ppm/K |
| Long-term stability | ≤ 0.1 K after 1000 h at 150°C (energized with Pt 100: 1.0mA; Pt 500: 0.7mA; Pt 1000: 0.3mA) |
| Measuring current | 100Ω: 0.3 to 1.0mA 500Ω: 0.1 to 0.7mA 1000Ω: 0.1 to 0.3mA 10000Ω: 0.1 to 0.25mA (self heating has to be considered) |
| Self-heating | 0.15 K/mW in ice water |
| Track Resistance | Meander: 0.06Ω |
| Temperature change resistance | ≤ 0.1 K after 1000 change 0°C/150°C in air |
| Contact | Cu connection pad with chem. Sn surface |
| Soldering | 1) Chip is soldered lead free 2) Connection pads are ready for lead free soldering |
| Ambient conditions | Use unprotected only in dry environments |
| Response time | water (v= 0.4m/s): $t_{0,5} = 0.05s$ $t_{0,9} = 0.10s$ air (v=2m/s): $t_{0,5} = 1.5s$ $t_{0,9} = 5.0s$ |
| Packaging | Supplied in plastic container |
| Storage life | 12 months |
| Note | Other tolerances and values of resistance are available on request. |



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