

# FST Series

## Thin Film Temperature Sensor



The FST series design positions the contact surfaces on the side with the active measuring layer. This design produces a sensor in position for face-down mounting. This mounting optimizes current trends in the 'adhesion instead of soldering' electronics sector. Using conductive adhesives provides reliable and cost-effective connection to the circuit board and is an alternative to the conventional reflow or wave soldering. The FST series is available in 2 tolerance classes, 0.12% and 0.24% per the DIN EN 60751 specification. Both tolerance classes are available in the three resistance levels of the FST series.

### SERIES SPECIFICATIONS

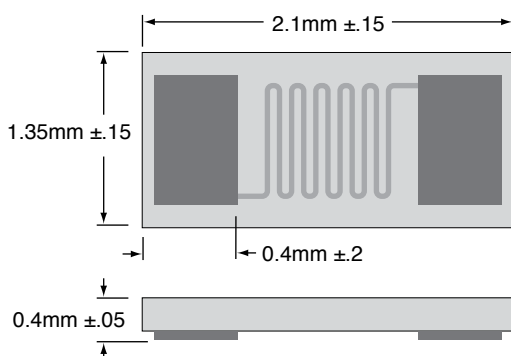
| Model         | Nom. Resistance (ohms) | Tolerance Class |
|---------------|------------------------|-----------------|
| FST08-B-100E  | 100                    | B               |
| FST08-2B-100E | 100                    | 2B              |
| FST08-B-500E  | 500                    | B               |
| FST08-2B-500E | 500                    | 2B              |
| FST08-B-1K0E  | 1000                   | B               |
| FST08-2B-1K0E | 1000                   | 2B              |

Other tolerances and values of resistance are available on request.

Resistance taken at 0°C

### DIMENSIONS

(mm)



### ORDERING INFORMATION

**F S T 0 8 - 2 B - 1 0 0 R E**

Series      Tolerance      Resistance value      RoHS Compliant

### CHARACTERISTICS

| Specification                 | DIN EN 60751                                                                                                                                                                                                                                                                                                                                                       |
|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Tolerance</b>              | Class B (R0: ± 0.12 %), Class 2B (R0: ± 0.24 %)                                                                                                                                                                                                                                                                                                                    |
| <b>Temperature range</b>      | -50 °C to 170 °C                                                                                                                                                                                                                                                                                                                                                   |
| <b>Temp. coefficient</b>      | TCR = 3850 ppm/K                                                                                                                                                                                                                                                                                                                                                   |
| <b>Contact</b>                | AgPd metallising in thick-film technology                                                                                                                                                                                                                                                                                                                          |
| <b>Long-term stability</b>    | R <sub>0</sub> drift ≤ 0.06 % after 1000 h at 170°C                                                                                                                                                                                                                                                                                                                |
| <b>Ambient conditions</b>     | Use unprotected only in dry environments                                                                                                                                                                                                                                                                                                                           |
| <b>Insulation resistance</b>  | > 100 MW at 20°C; > 2 MW at 170°C (glass cover)                                                                                                                                                                                                                                                                                                                    |
| <b>Measuring current</b>      | 100 W: 0.3 to 1.0 mA<br>500 W: 0.1 to 0.7 mA<br>1000 W: 0.1 to 0.3 mA<br>(self heating has to be considered)                                                                                                                                                                                                                                                       |
| <b>Self heating</b>           | 0.8 K/mW at 0°C                                                                                                                                                                                                                                                                                                                                                    |
| <b>Reaction time</b>          | Flowing water (v = 0.4 m/s): t <sub>0.5</sub> = 0.10 s, t <sub>0.9</sub> = 0.25 s<br>Air flow (v = 2 m/s): t <sub>0.5</sub> = 2.5 s, t <sub>0.9</sub> = 8.0 s                                                                                                                                                                                                      |
| <b>Processing information</b> | <ul style="list-style-type: none"> <li>• Reflow soldering or wave soldering, e.g. double wave soldering &lt; 8 s / 235°</li> <li>• Also can be mounted using SMD insertion machines with Ag conductive adhesive.</li> <li>• When mounting PCB circuits, the expansion relationship of the sensor and the substrate material must be taken into account.</li> </ul> |
| <b>Storage life</b>           | Stored in a nitrogen atmosphere, min. 9 months                                                                                                                                                                                                                                                                                                                     |
| <b>Packaging</b>              | "Face-down" in blister reel, 1000 pcs / reel                                                                                                                                                                                                                                                                                                                       |