SFS01 (Silicon Flow Sensor)
Thermal mass flow sensor
Optimal for fast measuring of gas flow and direction

Characteristics & Applications

Characteristics:
- Measurement from 0.0 to 3.5 m/s (Gas)
- Detection of flow direction
- Very fast response time
- Very low power requirement
- Easy system integration

Applications:
- Automation technology
- Process and regulation technology
- Medicinal and biological technology
- Air conditioning
- Battery-operated applications in portable devices

Illustration

1) For exact size see measurements
Technical Sensor Data

- Measurements (L x B x H in mm): 6.00 (±0.05) x 2.00 (± 0.02) x 0.525 (±0.01)
- Temperature range: 0 °C to +80 °C
- Storage temperature: -20 °C to +80 °C
- Compressive load: up to 1 bar (one-sided on membrane for a duration of 10 years)

Electrical Sensor Data

- Connection: Bond pads (recommended bonding process: wedge-wedge with aluminum wires)
- Heater resistance: 1000 Ω ± 20 %
- Thermopile resistance: < 40 kΩ
- Thermopile sensitivity: > 5 mV/mW
- Thermopile synchronization sensitivity: < 9 %
- Thermopile voltage: typically 5.5 mV/K
- Heater output: typically 3-10 mW (air), maximum tolerance: 20 mW

Flow Performance

The following values are viewed as typical and achieved in laboratory conditions. The gas used was nitrogen.

- Medium: non-aggressive gases (5-95 % rel. humidity, non-condensating)
- Measurement range: 0.0 to 3.5 m/s
- Sensitivity: 0.002 m/s*
- Response time $t_{63}$: 5 ms
- Accuracy: 0.2 % F.S.**
- Temperature sensitivity (uncomp.): < 0.18 %/K F.S.*
- Sensitivity to positioning: < 0.1 % F.S.
- Humidity sensitivity: < 4.0 % F.S.

* dependent on electronics
** dependent on calibration
### Bondpad-configuration

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<tbody>
<tr>
<td></td>
<td>n.c.</td>
<td>TP1+ Thermopile 1 (hot end)</td>
<td>TP1- Thermopile 1 (cold end)</td>
<td>n.c.</td>
<td>n.c.</td>
<td>Hz1 - left heater (heater series connection supply voltage)</td>
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<td>Hz2 - right heater (heater series connection supply voltage)</td>
<td>n.c.</td>
<td>n.c.</td>
<td>TP2- Thermopile 2 (cold end)</td>
<td>TP2+ Thermopile 2 (hot end)</td>
<td>Hzcom heater at parallel circuit/mutual connection</td>
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### Order Information

- **Sensor element:** SFS01
- **Order number:** 105050 (previous order number 350.00312)

### Additional Electronics

- **Evakit:** SFS01 Evakit
- **Order number:** 105059 (previous order number 350.00330)