



SFS01 (Silicon Flow Sensor)

Thermal mass flow sensor

Optimal for fast measuring of gas flow and direction

Characteristics & Applications

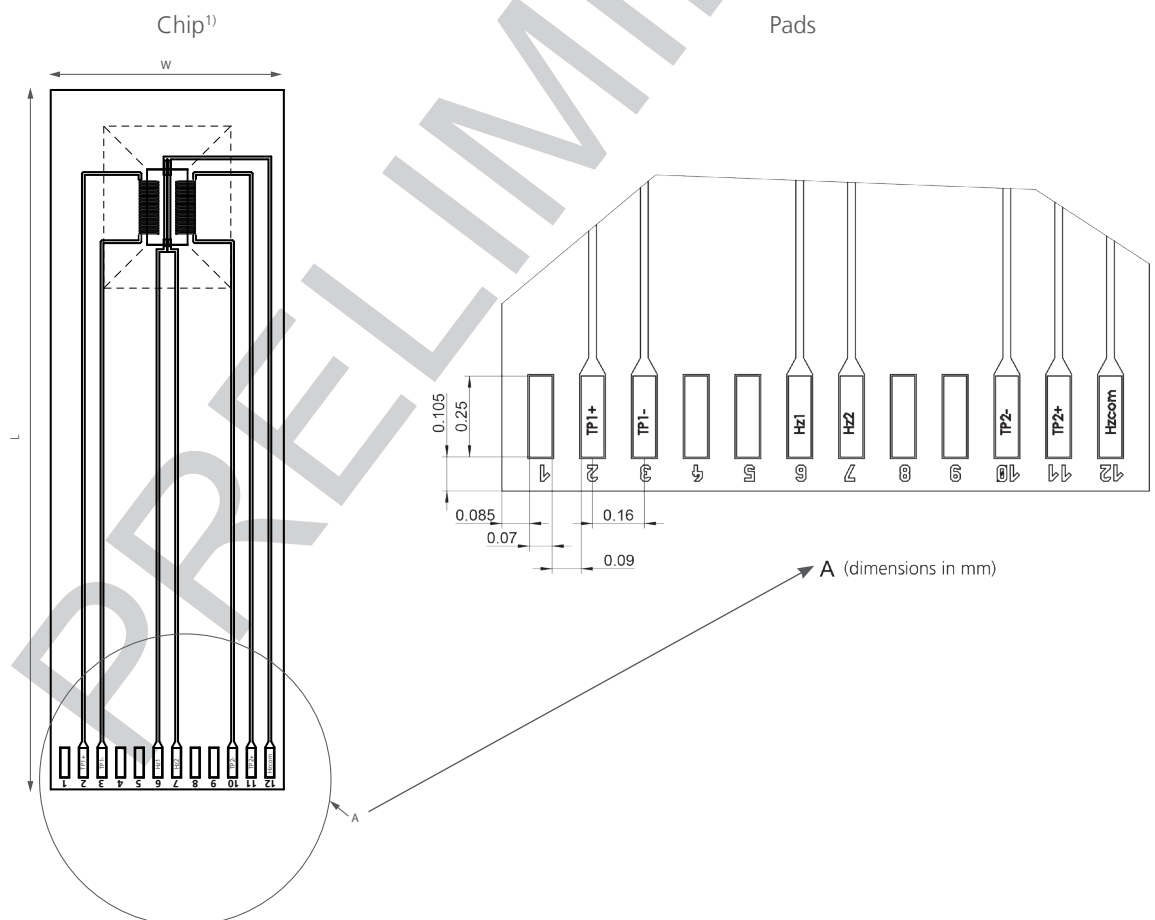
Characteristics:

- 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



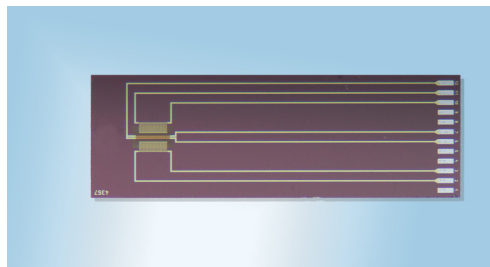
1) For exact size see measurements



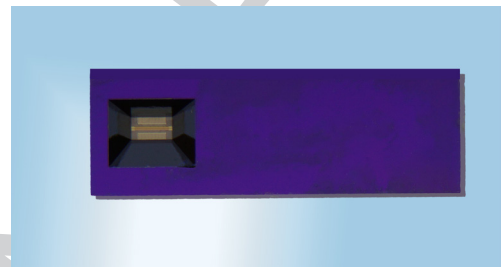
Technical Sensor Data

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)

Product Photo



Front side of sensor



Back side of sensor

Electrical Sensor Data

Connection:	Bond pads (recommended bonding process: wedge-wedge with aluminum wires)
Heater resistance:	1'000 $\Omega \pm 20 \%$
Thermopile resistance:	< 40 k Ω
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. *



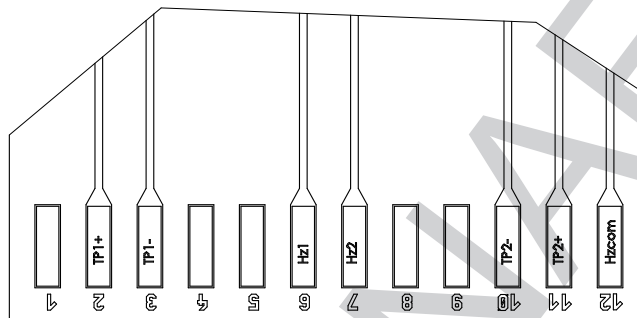
Sensitivity to positioning: < 0.1 % F.S.

Humidity sensitivity: < 4.0 % F.S.

* dependent on electronics

** dependent on calibration

Bondpad-configuration



1	2	3	4	5	6
n.c.	TP1+ Thermopile 1 (hot end)	TP1- Thermopile 1 (cold end)	n.c.	n.c.	Hz1 - left heater (heater series connection supply voltage)
7	8	9	10	11	12
Hz2 - right heater (heater series connection supply voltage)	n.c.	n.c.	TP2- Thermopile 2 (cold end)	TP2+ Thermopile 2 (hot end)	Hzcom heater at parallel circuit/mutual connection

Order Information

Description:	Item number:	Former main reference:
SFS01	105050	350.00312

Additional Electronics

Description:	Item number:	Former main reference:
SFS01 EvaKit	105059	350.00330



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Additional Documents

Document name:

AFSFS01_E

Application Note:

PRELIMINARY



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