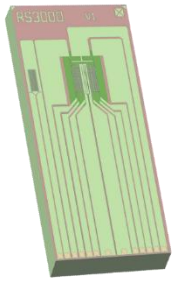
Features:

- Suitable for high-speed mass flow
- Detection of flow direction
- Fast response time
- High stability
- Low power consumption



Description:

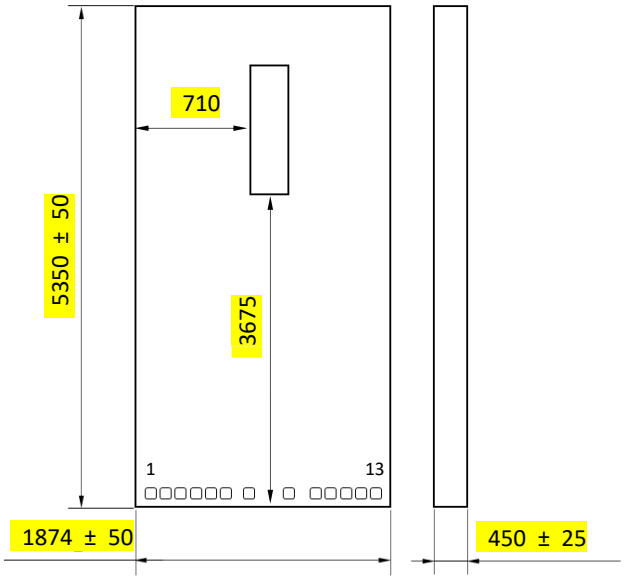
The RS3000 thermal mass flow sensor chip can provide a voltage output signal linearly related to the mass flow rate. The chip uses the bulk silicon anisotropic etching process to create a suspended membrane structure, which improves the device's response speed and reduces power consumption. The thermistor of the chip consists of platinum resistors with a positive temperature coefficient. The functionality of the RS3000 is based on the calorimetric measuring principle. The sensor element consists of a heater、upstream and downstream temperature sensors located next to the heater. The temperature difference between the upstream and downstream temperature sensors is flow-dependent and can therefore be used as a parameter for the flow.

The RS3000 thermal mass flow sensor chip adopts an independent IP design and has the characteristics of fast response time, high accuracy, high stability, and low power consumption.

Application:

- Automotive intake air mass flow detection
- Air conditioning
- Flow detection in instruments

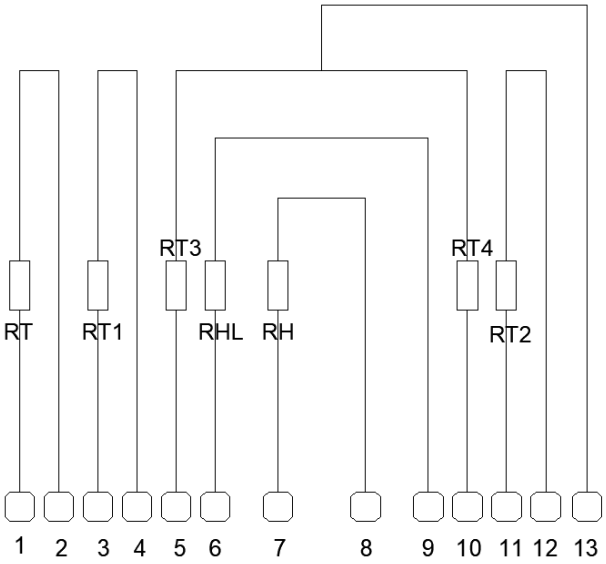
Chip Information:



PAD Center Coordinates		
PAD No.	X	Y
1	115	100
2	235	100
3	355	100
4	475	100
5	595	100
6	715	100
7	885	100
8	1109	100
9	1279	100
10	1399	100
11	1519	100
12	1639	100
13	1759	100
Membrane Size: 575*815.5		
Pad Size: 90*90		
Number of Pads: 13		
Pad Material: Platinum		
Chip Thickness: 450		

Unit: μm

Equivalent Circuit:



PAD Definition:

1\2 Ambient Temperature Sensing RT

3\4 Upstream Resistance Temperature Detector RT1

5\13 Upstream Resistance Temperature Detector RT3

6\9 Heater Temperature Sensing RHL

7\8 Heater RH

10\13 Downstream Resistance Temperature Detector RT4

11\12 Downstream Resistance Temperature Detector RT2

Technical Data:

Measuring Range	0 m/s to 150 m/s
Accuracy	≤3 % of the measured value (dependent on the electronics and calibration)
Response Time	＜12 ms
RH	R (25℃) = 123 Ω ± 5%
RHL	R (25℃) = 457.6 Ω ± 5%
RT	R (25℃) = 1670 Ω ± 5%
RT1、RT2	R (25℃) = 968 Ω ± 5%
RT3、RT4	R (25℃) = 992 Ω ± 5%