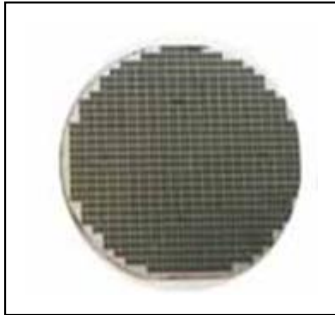


## HPTA0020

## High Temperature Pressure Sensor



- 0 to 20kPa pressure range
- high stability
- anti-high-temperature
- RoHS-compatible & Pb-free
- Provide the other gage pressure range sensor

### DESCRIPTION

HPTA0020 is a kind of high temperature MEMS sensor based on SOI semiconductor material. Its operating temperature is -30~180°C. With advanced beam--diaphragm structure design and stress equipartition technology adopted, HPTA0020 sensor has the advantages of high temperature resistance, transient high temperature shock immunity, high measuring range and high overload which make it ideal for pressure self-control testing equipments used in aerospace / aviation, energy transportation, oil exploitation, heat process automation in Chemical industry, metallurgical automation, etc.

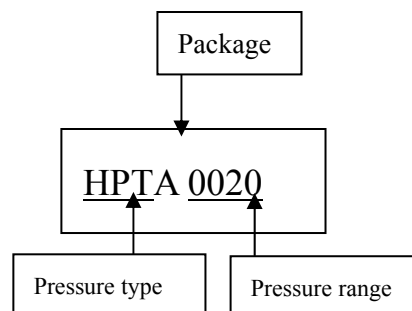
HPT series sensors have been widely used for measuring diesel spray pressure in the self-control testing components of diesel engines in vehicles and vessels. HPT sensors still can operate normally even though the environment temperature exceeds 180 °C.

HPT sensors are produced first by ion implanting the four piezoresistors into silicon. The four resistors are connected in a Wheatstone bridge arrangement, whereby two resistors increase with positive pressure while the other two decrease in resistance. When pressure is applied to the device and two ports of the resistor bridge are supplied with power source, the other two ports will output an electric signal which is directly proportional to pressure. Stress equipartition technology is introduced into the design of die, making the device more robust against high overload. Furthermore, the resistors are isolated with insulating medium which guarantees the high steadiness of sensor device.

### Part number System

#### Package:

A: Absolute pressure sensor DIE

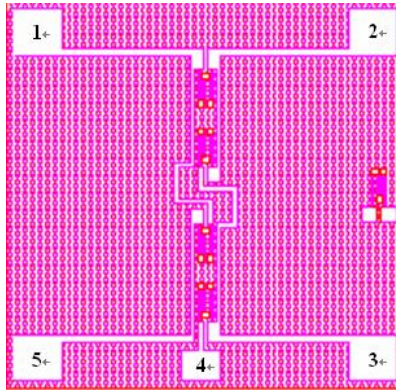


# HOPE RF

## Characteristics

<b>Measurement media</b>	Non-aggressive fluids and gases	
<b>Type</b>	AE2	
<b>Output signal</b>	compensated	
<b>Pressure from</b>	Front/ back side	
<b>Dimensions</b>		
Chip size	(mm <sup>2</sup> )	2.5×2.5
Total height	(mm)	0.9
Glass thickness	(mm)	0.5
Hole diameter	(mm)	0.7
<b>Maximum ratings</b>		
Storage temperature	T <sub>st</sub> (C°)	-40--250
Operating temperature	T <sub>a</sub> (C°)	-30--180
Supply voltage (max.)	V <sub>DD</sub> (V)	10
<b>Temperature characteristics</b> <b>V<sub>DD</sub>=5V</b>		
Temperature coefficients of the bridge resistance	(%/C°)	0.25---0.35
Temperature coefficients of the Sensitivity	(%/C°)	- 0.25--- - 0.15
Temperature coefficients of the Zero	(%/C°)	- 0.10---+0.10
<b>Characteristics T<sub>a</sub> =25°C V<sub>DD</sub>=5V</b>		
Bridge resistance (min/max)R <sub>s</sub>	(KΩ)	4.0—6.0
Offset voltage (min/max)V <sub>0</sub>	(MV)	-25---+25
Nonlinearity (typ)N <sub>L</sub>	(%FS)	±0.2
Output span (typ)V <sub>SP</sub>	(MV)	25-----40

## WAFER ELECTRICAL CONNECTIONS



Pad	Connection
1	Vout-
2	Vc
3	Vout+
4	Vd
5	Vd

Chip dimensions: 2.5 × 2.5 × 0.9mm

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