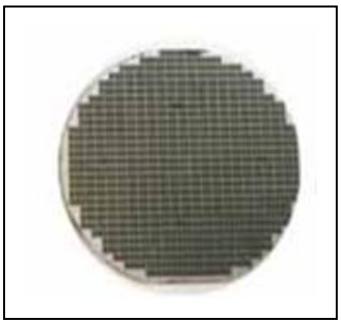
HOPE RF

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 materiel . 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.

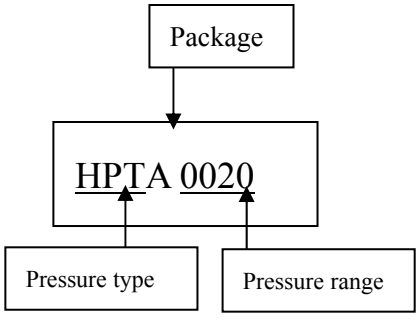
HPT series sensors have been widely used for measuring diesel spray pressure in the self-control testing components of diesel engines in vehicles and vessels. HPT sensors still can operate normally even though the environment temperature exceeds 180 ℃.

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



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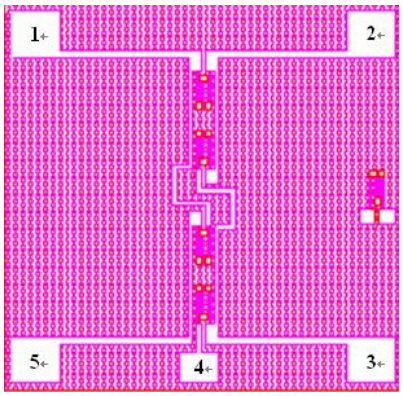
Characteristics

Measurement media	Non-aggressive fluids and gases
Type	AE2
Output signal	compensated
Pressure from	Front/ back side
Dimensions	
Chip size (mm^2)	2.5×2.5
Total height (mm)	0.9
Glass thickness (mm)	0.5
Hole diameter (mm)	0.7
Maximum ratings	
Storage temperature T_{st} (C°)	-40--250
Operating temperature T_a (C°)	-30--180
Supply voltage (max.) V_{DD} (V)	10
Temperature characteristics V_{DD}=5V	
Temperature coefficients ofthe bridge resistance (%/C°)	0.25---0.35
Temperature coefficientsof the Sensitivity (%/C°)	－0.25---－0.15
Temperature coefficients of the Zero (%/C°)	－0.10---+0.10
Characteristics T_a =25°C V_{DD}=5V	
Bridge resistance (min/max)R_s (KΩ)	4.0—6.0
Offset voltage (min/max)V_0 (MV)	-25---+25
Nonlinearity (typ)N_L (%FS)	±0.2
Output span (typ)V_{SP} (MV)	25------40

WAFER ELECTRICAL CONNECTIONS



Chip dimensions：2.5×2.5×0.9mm

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

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