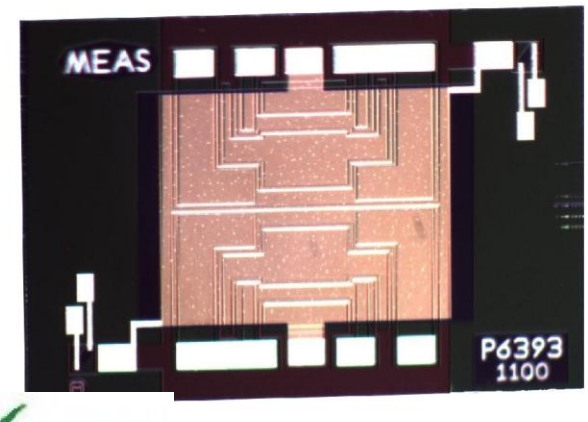
P6393 Pressure Sensor Die



- **2 - 500psi (0.1 – 35Bar)**
- **Both Gage and Absolute versions**
- **Open Bridge Configuration**
- **RoHS-compatible & Pb-free**

DESCRIPTION

The P6393 die is a piezoresistive pressure sensor designed for mid pressure applications. This die is available in 0-2 to 0-500 psi pressure ranges in both gage and absolute configurations. The die can also be configured for backside pressure applications for the 2 and 5psi gage versions. The P6393 die sensors are offered in open bridge (two independent half bridges) configurations and include a resistor field shield tied to substrate contact for oil-filled applications.

FEATURES

- High Sensitivity
- -50°C to +150°C Temperature Range
- ±0.1% Non Linearity
- Die Size: 4.0 x 3.0 mm
- Low Cost, High Reliability

APPLICATIONS

- Air Flow Measurements
- Medical Instrumentation
- Automotive Applications
- Industrial Applications

STANDARD RANGES

Range	Backside, psig	Frontside, psig	Frontside, psia
0 to 2	•	•	
0 to 5	•	•	•
0 to 10		•	
0 to 15		•	•
0 to 30		•	•
0 to 50		•	•
0 to 100		•	•
0 to 250		•	•
0 to 500		•	•

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PERFORMANCE SPECIFICATIONS

Supply Voltage: 5V
Ambient Temperature: 25°C (unless otherwise specified)

PARAMETERS	MIN	TYP	MAX	UNITS	NOTES
Span	11		21	mV/V @ FS	
Span (2psi only)	4.4		8.4	mV/V @ FS	
Pressure Non Linearity	-0.1		0.1	%Span	1
Pressure Non Linearity (500psi only)	-0.25		0.25	%Span	1
Bridge Resistance (Input & Output Impedance)	3800	4800	5600	Ω	2
Temperature Coefficient Resistance (TCR)		2700		ppm/°C	3
Temperature Coefficient Sensitivity (TCS)		-2300		ppm/°C	3
Offset	0	3.0	6.0	mV/V	
Temperature Coefficient Offset		±1		(BV/V/°C)	3,4
Temperature Coefficient mismatch; (TCR + TCS)	-100	300	600	ppm/°C	
Leakage Current			20	nA	5
Operating Voltage		5.0	12.0	V	
Operating Current		1.5	2.0	mA	
Over Pressure			5X	Rated	6
Burst Pressure	6X			Rated	6
Compensated Temperature	0		50	°C	
Operating Temperature	-40		+125	°C	
Storage Temperature	-55		+200	°C	

Notes

1. Best fit straight line.
2. 100% probed for offset and bridge resistance at 1.5mA at room temperature unless otherwise specified
3. Temperature Coefficient values over0°C to 50°C with reference to 25°C.
4. Influenced by die attach.
5. Total Leakage current includes junction isolation and oxide at 10Vdc.
6. Topside measured value.

CHIP DIMENSIONS

PARAMETERS	TYP	MAX	UNITS
Die Length	3.90		mm
Die Width	2.90		mm
Die Height (with glass constraint)	1.29		mm
Pad Size (minimum)	150x150		microns
Gage Hole Diameter	0.8		mm

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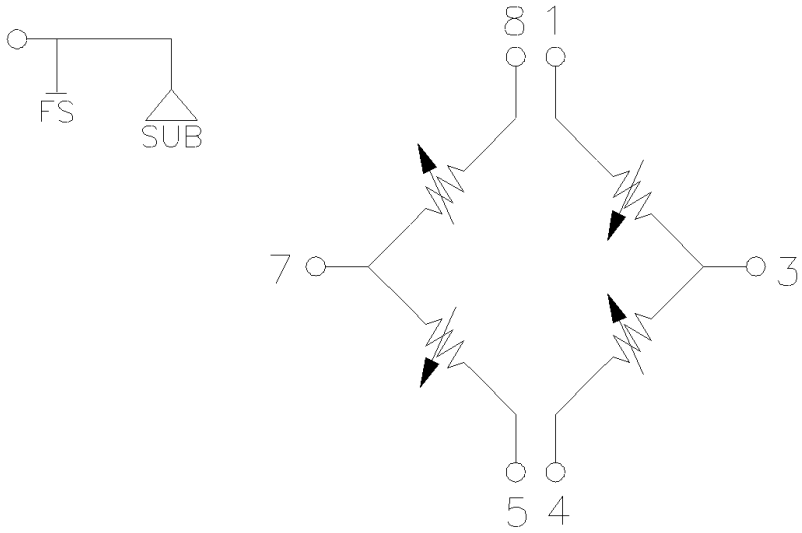
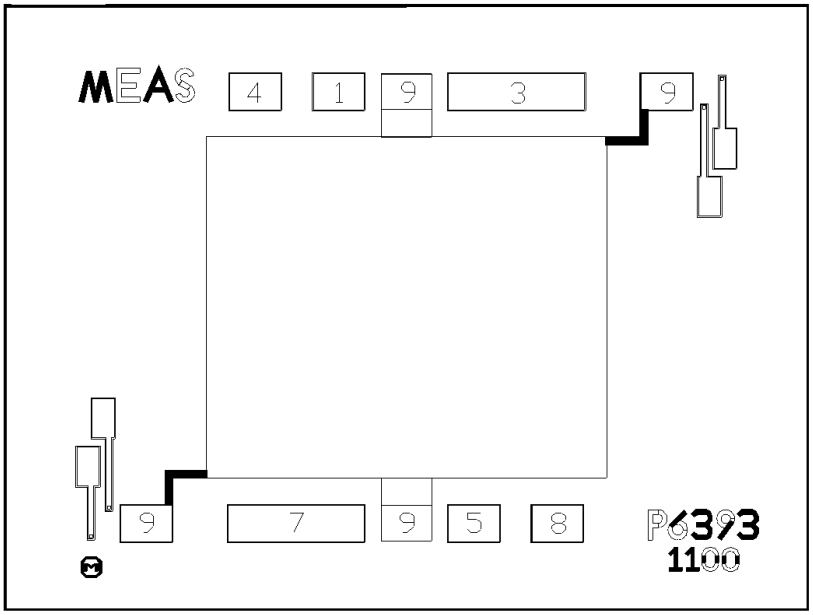
CONNECTIONS

Positive output for pressure applied topside





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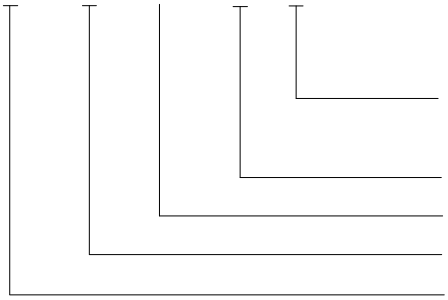
ORDERING INFORMATION

P6393G-050-30-C



Shipping Form (C = Finished Die in Chip Trays, T = Sawn Wafer on Tape
W = Probed Unsawn Wafer)

Pressure Applied (30 = Frontside, 31 = Backside)

Pressure Range

Type (G = Gage, A = Absolute)

Model

For more information, please contact:

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