

PRELIMINARY

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SOLID STATE PRESSURE DIE

FEATURES

- Solid State, high reliability
- Low cost, Small size
- Available in gage, absolute, differential & sealed
- Overpressure capability to 4 times maximum rated pressure
- Nonlinearity 0.1% typical
- Custom configurations available

APPLICATIONS

- Disposable Blood Pressure
- Automotive fuel, manifold, and brake pressure
- Appliances
- Weather balloons
- Tire pressure

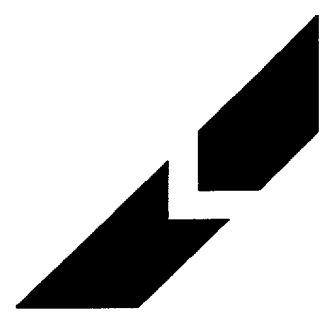
DESCRIPTION

The Nova Die series offers OEM's low cost advantages by allowing the OEM to vertically integrate the silicon pressure sensing die into their manufacturing processes.

The die is a monolithic structure that is formed by chemically machining a silicon wafer. The latest techniques in VLSI and micro-machining are used to integrally form ion implant piezoresistive strain gages in precise locations on the active pressure diaphragm. The resistors are then connected into a Wheatstone bridge configuration.

The OEM can use automated equipment specific to their packaging and manufacturing needs.

Each die is capable of being temperature compensation after the die is mounted to the OEM package.



Lucas NovaSensor

LUCAS NOVA SENSOR

PRELIMINARYLucas NovaSensor
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Fremont, CA 94539Telephone: 510-490-9100
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T-65-13

GENERAL

Parameter	Die	Value	Units	Notes
Pressure Range Other pressure ranges available upon request; please consult factory. * P601 die are gage or differential. ** P592 die are absolute only.	P601*	0-2.5 0-7	kPa kPa	0-10* H ₂ O 01- PSI
	P111 & P592**	0-7 0-30 0-100 0-200	kPa kPa kPa kPa	0-1 PSI 0-5 PSI 0-15 PSI 0-30 PSI
	P122	0-700 0-1700	kPa kPa	0-100 PSI 0-250 PSI

MECHANICAL

Parameter	Die	Value	Units	Notes
Die Size	P601	2.7 x 3.2	mm	Silicon to Pyrex bonding.
	P111	2.7 x 3.2	mm	Silicon to Pyrex bonding.
	P592	1 x 1	mm	Silicon to Silicon Fusion bonding.

TYPICAL DIE PERFORMANCE FOR P601, P111, and P592 DIE

Parameter	Value	Units	Notes	
Offset	±10	mV/V	1	
Thermal Accuracy of Offset	±0.5	%FSO	2	
Thermal Accuracy of Full Scale Output	±0.5	%FSO	2	
Full Scale Output	100	mV		
Nonlinearity	P111/P592 die	±0.1	%FSO	3
	P601 die	±0.5	%FSO	3
Hysteresis and Repeatability	±0.05	%FSO		
Thermal Hysteresis	±0.1	%FSO	4	
Long Term Stability - Sensitivity	±0.1	%FSO	5	
Long Term Stability - Offset	±0.1	%FSO	5	

- Notes: 1. The value given is for an untrimmed sensor. The offset is trimmable to within ±2 mV by using an external laser-trimmed resistor.
 2. 0 to 70°C in reference to 25°C.
 3. Best fit straight line.
 4. 0 to 70°C.
 5. 1 year.
 6. All performance specifications are stated with external temperature compensation resistors.
 7. All values are typical unless otherwise stated.
 8. All values measured in reference to 25°C (77°F) and at 1.5 mA unless otherwise stated.
 9. The above specifications are design specifications and are not test specifications. Lucas NovaSensor only performs wafer evaluation and wafer probe tests. The wafer evaluation test is done on each wafer by selecting sample die and mounting the die on a test header and performing a representative temperature and pressure test. Chips are wafer probe tested 100% for the following parameters:

Bridge Resistance	5000 Ω ± 20%
Zero Output	± 10 mV/V

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