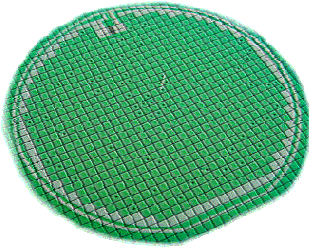


MS763

PRESSURE SENSOR DIE (0-300 mmHg)



- 0 to 300 mmHg range (0.4 bar or 5.8 PSI)
- Absolute or differential pressure sensors
- Medical applications
- RoHS-compatible & Pb-free¹

DESCRIPTION

The MS763 is a biomedical sensor. It has been designed as an implantable sensor where all the connections are on one side. The bonding pads are large in order to glue or solder wires on. The sensor element of the MS763 consists of a silicon micro-machined membrane. Implanted resistors sense the deformation of the membrane by using of the piezo-resistive effect. The MS763 is available as a differential sensor (MS763-S) without base Pyrex or as an absolute sensor with a 0.2 mm thick Pyrex (MS763-A).

FEATURES

- | | |
|---|---|
| <ul style="list-style-type: none"> • Uncompensated pressure sensor die • Small size, made for implantable sensor • Connections on one side • Sensitivity: 0.075 mV / mmHg@ 5V | <ul style="list-style-type: none"> • Temperature Range -40°...+125°C • Linearity 0.15% (typical) • Die Size 1.3 x 2.2 mm² • High reliability |
|---|---|

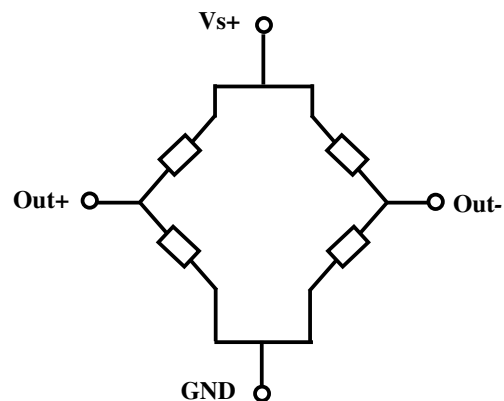
APPLICATION

- | | |
|---|---|
| <ul style="list-style-type: none"> • Medical applications • Blood pressure measurement. • Designed for implantable devices | <ul style="list-style-type: none"> • Differential pressure sensor systems. |
|---|---|

ELECTRICAL CONNECTIONS

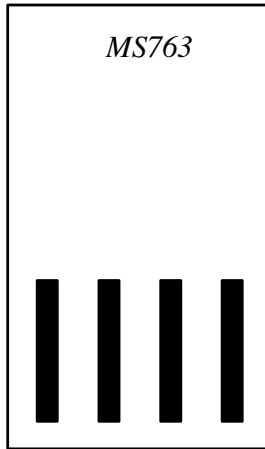
Positive output for pressure applied topside

- Vs+ : Supply voltage of Wheatstone bridge
- Out- : Negative output
- Out+ : Positive output
- GND : Ground



¹ The European RoHS directive 2002/95/EC (Restriction of the use of certain Hazardous Substances in electrical and electronic equipment) bans the use of lead, mercury, cadmium, hexavalent chromium and polybrominated biphenyls (PBB) or polybrominated diphenyl ethers (PBDE).

PAD OUT

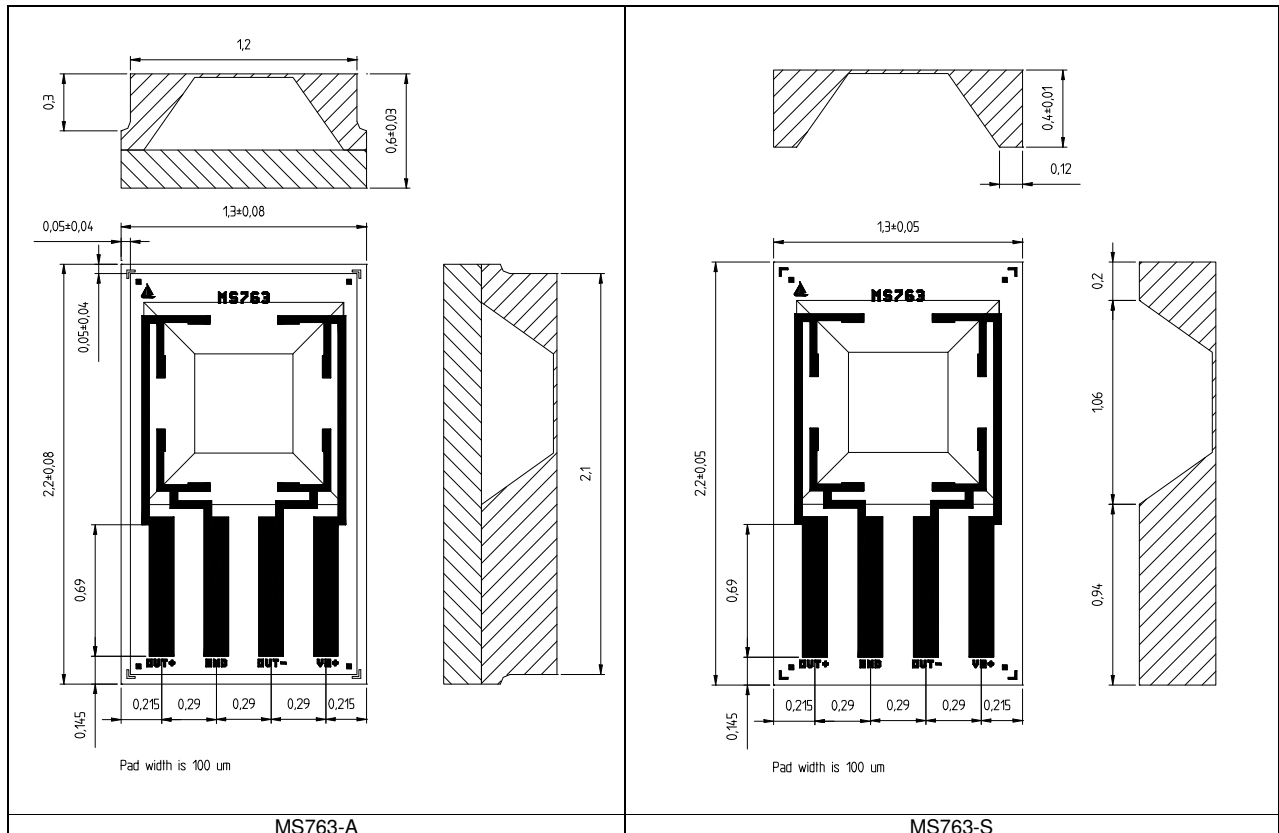


Out+ GND Out- Vs+

Important remarks:

There is no pad to connect the epitaxial layer to the Vs+ pin.

LAYOUT



FULL SCALE PRESSURE

kPa	bar	mbar	PSI	atm	mm Hg	m H ₂ O	Inches H ₂ O
40	0.4	400	5.8	0.4	300	4.1	161

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Conditions	Min	Max	Unit
Supply voltage	VS+	Ta = 25 °C		20	V
Storage temperature	T _s		-40	+150	°C
Pressure overload				20	Bar

ELECTRICAL CHARACTERISTICS

(Reference conditions: Supply Voltage VS+ = 5 Vdc; Ambient Temperature Ta = 25 °C)

Parameter	Min	Typ	Max	Unit	Notes
Operating Pressure Range	0		0.4	Bar	
Operating Temperature Range	-40		125	°C	
Bridge Resistance	3.0	3.4	3.8	kΩ	
Full-scale span (FS)	18	22.5	27	mV	
Zero Pressure Offset	-40	0	40	mV	
Linearity		± 0.15	± 0.2	% FS	1
Temperature Coefficient of Resistance Span Offset	+ 2400 - 1500 - 80	+ 2800 - 1900	+ 3300 - 2300 + 80	ppm/°C ppm/°C μV/°C	2
Pressure Hysteresis		± 0.05	± 0.15	% FS	3
Repeatability		± 0.05	± 0.15	% FS	4
Temperature Hysteresis			0.3	% FS	5

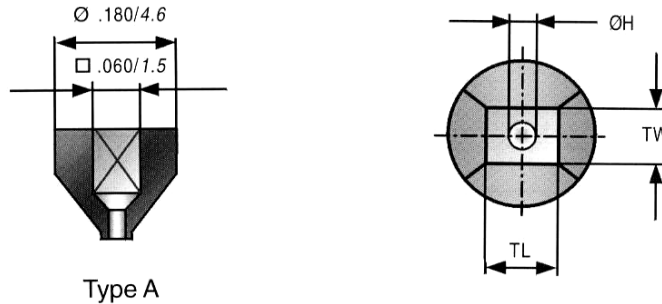
NOTES

- 1) Deviation at one half full-scale pressure from the least squares best line fit over pressure range (0 to 0.4 bar).
- 2) Slope of the endpoint straight line from 25 °C to 60 °C.
- 3) Output deviation at any pressure within the specified range, when this pressure is cycled to and from the minimum or maximum rated pressure, at 25 °C.
- 4) Same as 3) after 10 pressure cycles
- 5) Maximum difference in offset after one thermal cycle from -40 °C to +125 °C.

PICKING TOOLS

The MS763 sensors have a membrane size of 0.5 x 0.5 mm and outer dimensions of 1,3 x 2.2 mm. The pick and place tool has to be of a soft material as rubber (Hardness 78-97 Shore A). Its external size must fit the sensor and the vacuum cavity must be as large as the membrane itself. Successful tests were done with some tools of SPT (see SPT drawing and references below).

SPT references	RTR-A1-060x060
External dimension	TL & TW: 0.06 inch / 1.52 mm
Internal dimensions	ØH: 0.035 inch / 0.89 mm



ORDERING INFORMATION

Product Code	type	Product	Art.-Nr.
MS763-A	Absolute	300 mmHg Pressure Sensor 0.2 mm Pyrex sawn on b/f	76325022
MS763-S	Differential	300 mmHg Pressure Sensor sawn on b/f	76325221

The MS763 dice are supplied sawn on blue foil, mounted on plastic rings

FACTORY CONTACTS

Intersema Sensoric SA Ch. Chapons-des-Prés 11 CH-2022 BEVAIX SWITZERLAND	Tel. 032 847 9550 Tel. Int. +41 32 847 9550 Telefax +41 32 847 9569 e-mail: sales@intersema.ch http://www.intersema.ch
---	--

NOTICE

Intersema reserves the right to make changes to the products contained in this data sheet in order to improve the design or performance and to supply the best possible products. Intersema assumes no responsibility for the use of any circuits shown in this data sheet, conveys no license under any patent or other rights unless otherwise specified in this data sheet, and makes no claim that the circuits are free from patent infringement. Applications for any devices shown in this data sheet are for illustration only and Intersema makes no claim or warranty that such applications will be suitable for the use specified without further testing or modification.