

### Features and Benefits

- 0-350mBar Range
- Compact Design
- High Long Term Stability
- Low Cost

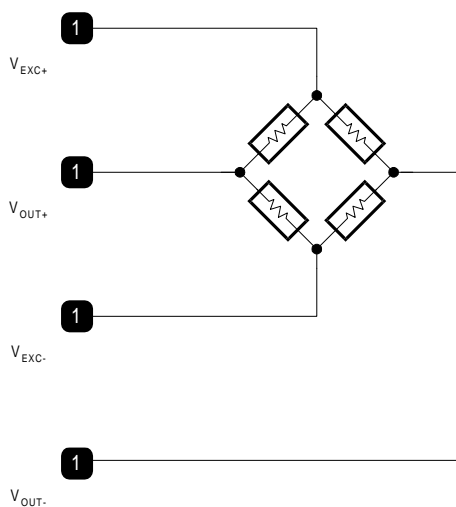
### Applications

- Medical Instrumentation (Blood Pressure)
- Consumer Appliances
- Sports Equipment
- Pressure Difference and Flow monitoring

### Ordering Information

Part No.	Temperature Suffix	Package	Temperature Range
MLX90240	S	CA	-20C to 85C Industrial
MLX90240	S	UD	-20C to 85C Industrial

### Functional Diagram



### Description

The MLX90240 is a discrete micromachined pressure sensor IC suitable for pressure ranges between 0 to 350mBar. The pressure medium must be dry and non-corrosive, such as air.

The 90240 is packaged in a plastic/ceramic package, (CA) or can be ordered as unpackaged die (UD) The principal of the circuit is a piezoresistive bridge which realized in silicon through a special micromachine process. As pressure is applied to the bridge, a differential voltage change is seen across the  $V_{OUT}$  pins, while a bias voltage is applied to the  $V_{EXC}$  pins.

The MLX90240 is a versatile pressure sensor solution which can be directly interfaced with other Melexis ICs such as the MLX90308, which provides amplification, signal conditioning as well as the bias current to supply the sensor itself.

### MLX90240 Electrical Specifications

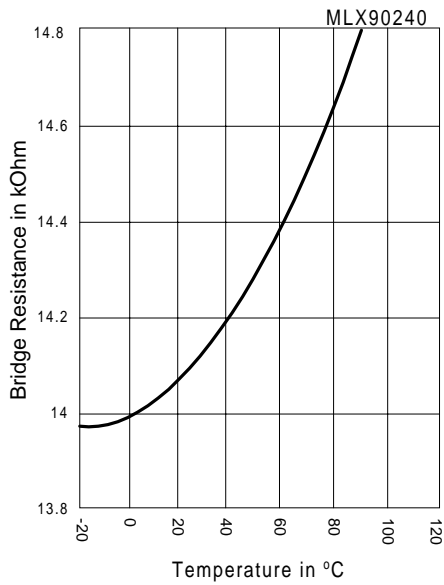
DC Operating Parameters  $T_A = 25^\circ\text{C}$ ,  $V_{DD} = 5\text{V}$ , Pressure = 350mBar full scale.

Parameter	Min	Typ	Max	Units
Excitation voltage	0	5	12	V
Offset	-25	0	+25	mV
TC of the Offset	-15	-21	-25	$\mu\text{V}/^\circ\text{C}$
Sensitivity	43	58	71	mV/V/bar
TC of the Sensitivity (1)	-0.17	-0.21	-0.26	$\%/^\circ\text{C}$
Bridge impedance	12	14	16	kOhm
TC of the Bridge (1)	0.057	0.063	0.066	$\%/^\circ\text{C}$
Non linearity (3)		+/- 0.15	+/- 0.30	%FS
Hysteresis			0.1	% FS
Offset Long term stability (2)			0.5	%FS
Sensitivity Long term stability (2)			0.3	%
Burst pressure	5x			FS pressure
Operating Temp	-20		85	$^\circ\text{C}$
Storage Temp	-40		125	$^\circ\text{C}$

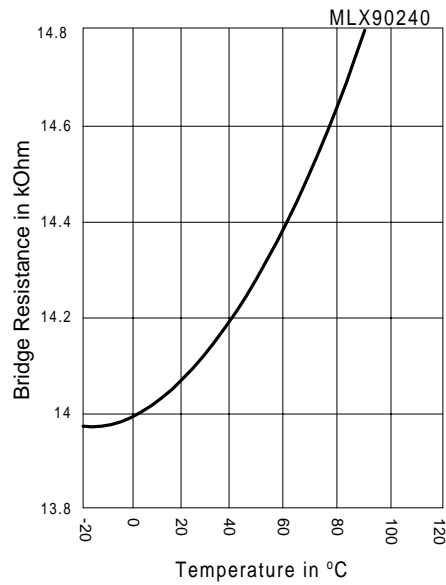
#### Notes:

- 1) Between 0 and  $70^\circ\text{C}$
- 2) After: 100 thermos cycles 0 –  $70^\circ\text{C}$
- 3) 1 mil pressure cycles 0 – 350 mbar
- 4) Typical 0.5% FS for 0-500 mbar range

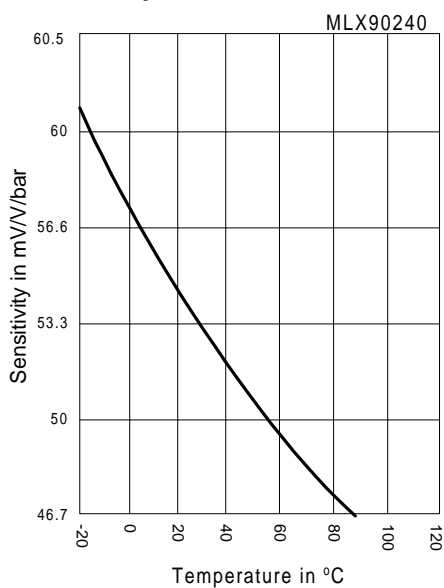
**Bridge Resistance versus Temperature**



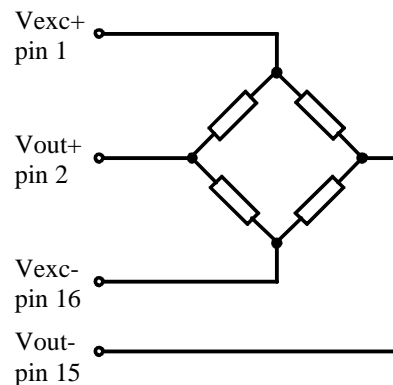
**Bridge Resistance versus Temperature**



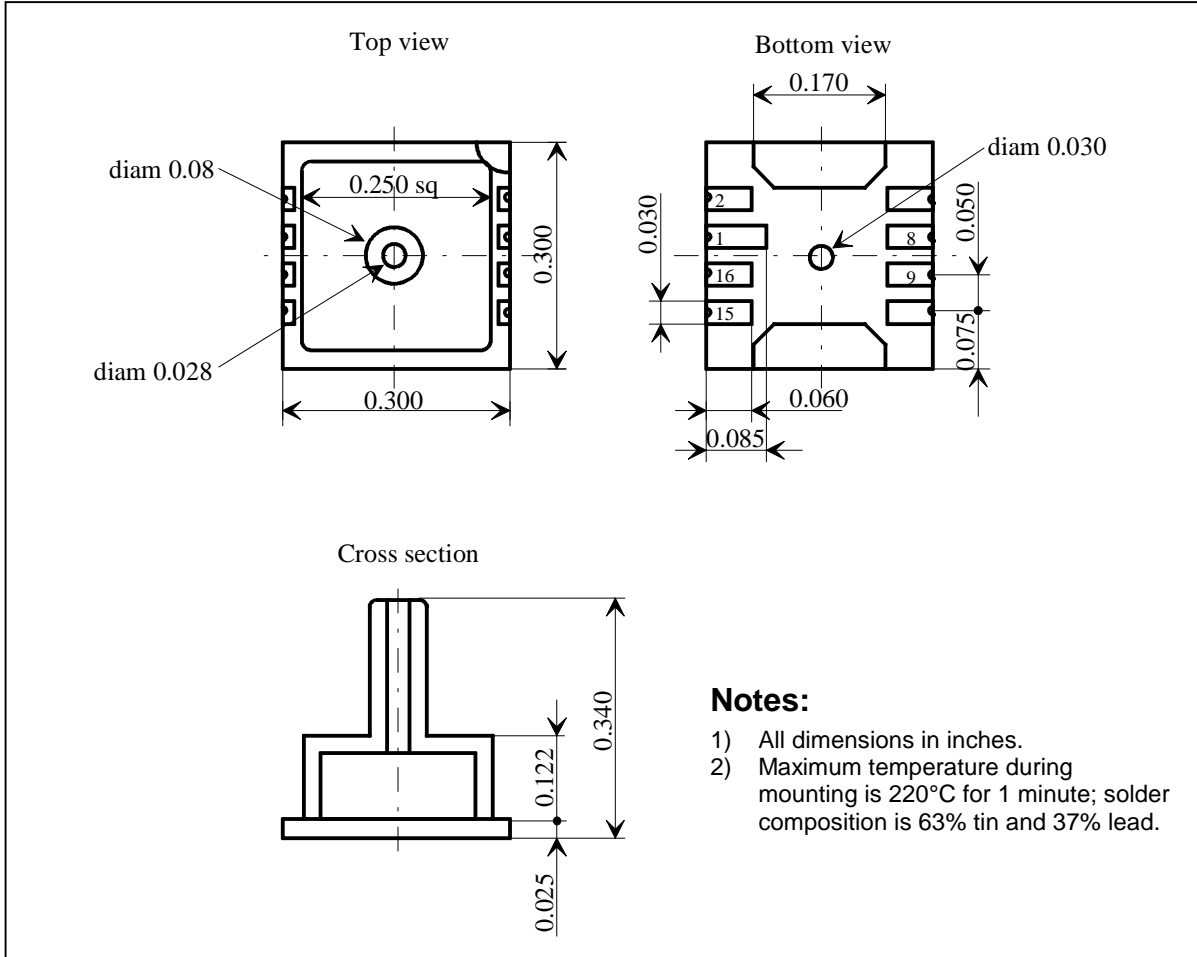
**Sensitivity versus Temperature**



**MLX90240 Pin Description**



**“CA” Package Dimensions**



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