

CHT-SM5651 Series
Dual In Line Package, Sub PSI Range
mV Output, Temperature Compensated
Current Supply

DESCRIPTION

Advanced Sensor Ceramic Hybrid Technology (CHT) SM5651 Series is a temperature compensated, mV output, PCB mounted pressure sensor packaged in a rugged Dual In Line package. The Ceramic Hybrid Technology uses a silicon MEMS pressure sensor bound to a ceramic substrate containing thick film resistors that are uniquely laser trimmed for each sensor. Incorporating a flexible design, the CHT-SM5651 Series is available with no, short or long tubes and can be mounted pin up or pins down to allow OEMs to optimize their board design. The CHT-SM5651 series is powered using a constant current and when configured as in the Application Note, the integrated gain set resistor will ensure field interchangeability. The CHT-SM5651 series superior die performance, coupled with rugged ceramic substrate ensures long term stability with superior temperature performance over a wide operating range.

APPLICATIONS

- Medical Equipment
- Medical Respirators
- Process Flow Controls
- Building Automation, HVAC

FEATURES

- Field Interchangeability
- Constant Current
- High mV Output
- Differential Pressures
- Temperature Compensated
- Sub PSI Pressure Ranges

Specification All Ranges

SPECIFICATIONS	Symbol	Min	Typical	Max	Unit	Note
Performance Characteristic						
Supply Current		0.5	1.5	2.0	mA	
Bridge Resistance, Input & Output		1800		3800	Ω	
Zero Pressure Offset		-2.0	± 0.1	+2.0	mV	
Pressure Non Linearity		See Table Below			%FSS	2
Hysteresis & Repeatability		-0.30	0.05	+0.30	%FSS	
Full Scale Span	FSS	25		75	mV	3
Response Time			100		μ S	
Insulation Resistance		50			M Ω	
Long Term Stability, Offset & Span			± 0.4		%FSS	5
Weight				3.0	grams	
Compensated Temperature		0 to 60			$^{\circ}$ C	
Operating Temperatures		-40 to 125			$^{\circ}$ C	

Specification for 0.15 PSI Range

SPECIFICATIONS	Symbol	Min	Typical	Max	Unit	Note
Performance Characteristic						
Thermal Error of Span		-2.0		+2.0	%FSS	
Thermal Error of Offset		-2.0		+2.0	%FSS	
Temperature Hysteresis, Offset & Span		-0.65		+0.65	%FSS	4
Pressure Non Linearity		-0.50		+0.50	%FSS	2

Specification for 0.30 PSI Range

SPECIFICATIONS	Symbol	Min	Typical	Max	Unit	Note
Performance Characteristic						
Thermal Error of Span		-0.75		+0.75	%FSS	
Thermal Error of Offset		-1.0		+1.0	%FSS	
Temperature Hysteresis, Offset & Span		-0.45		+0.45	%FSS	4
Pressure Non Linearity		-0.50		+0.50	%FSS	2

Specification for 0.80 & 1.5 PSI Range

SPECIFICATIONS	Symbol	Min	Typical	Max	Unit	Note
Performance Characteristic						
Thermal Error of Span		-0.65		+0.65	%FSS	
Thermal Error of Offset		-1.0		+1.0	%FSS	
Temperature Hysteresis, Offset & Span		-0.30		+0.30	%FSS	4
Pressure Non Linearity		-0.30		+0.30	%FSS	2

Specification All Ranges

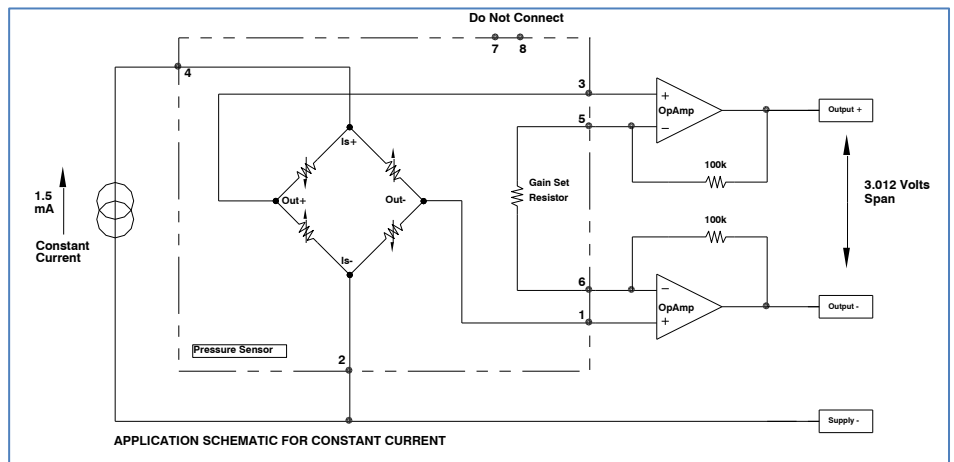
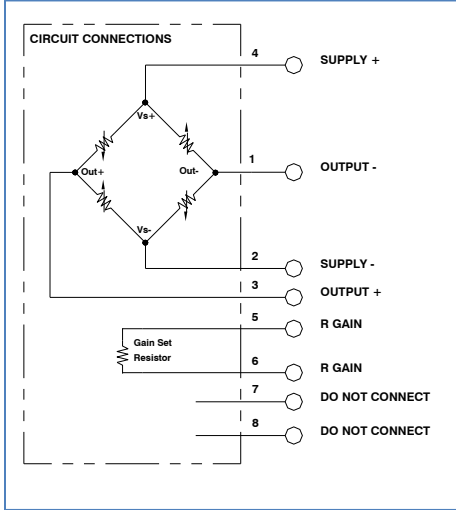
SPECIFICATIONS	Symbol	Min	Typical	Max	Unit	Note
Absolute Maximum Conditions						6
Supply Current				3	mA	
Storage Temperature		-40		150	°C	
Overage Pressure				15x	Range	
Proof Pressure				3x	Range	
Media Compatibility		CDA, Non Ionic, Non Corrosive Gases				
Wetted Materials		Ceramic, Epoxy, RTV, Silicon, Gold, Aluminum, Palladium Silver				

Reference Conditions: Vsupply: 1.500mA, Ta=25 °C.

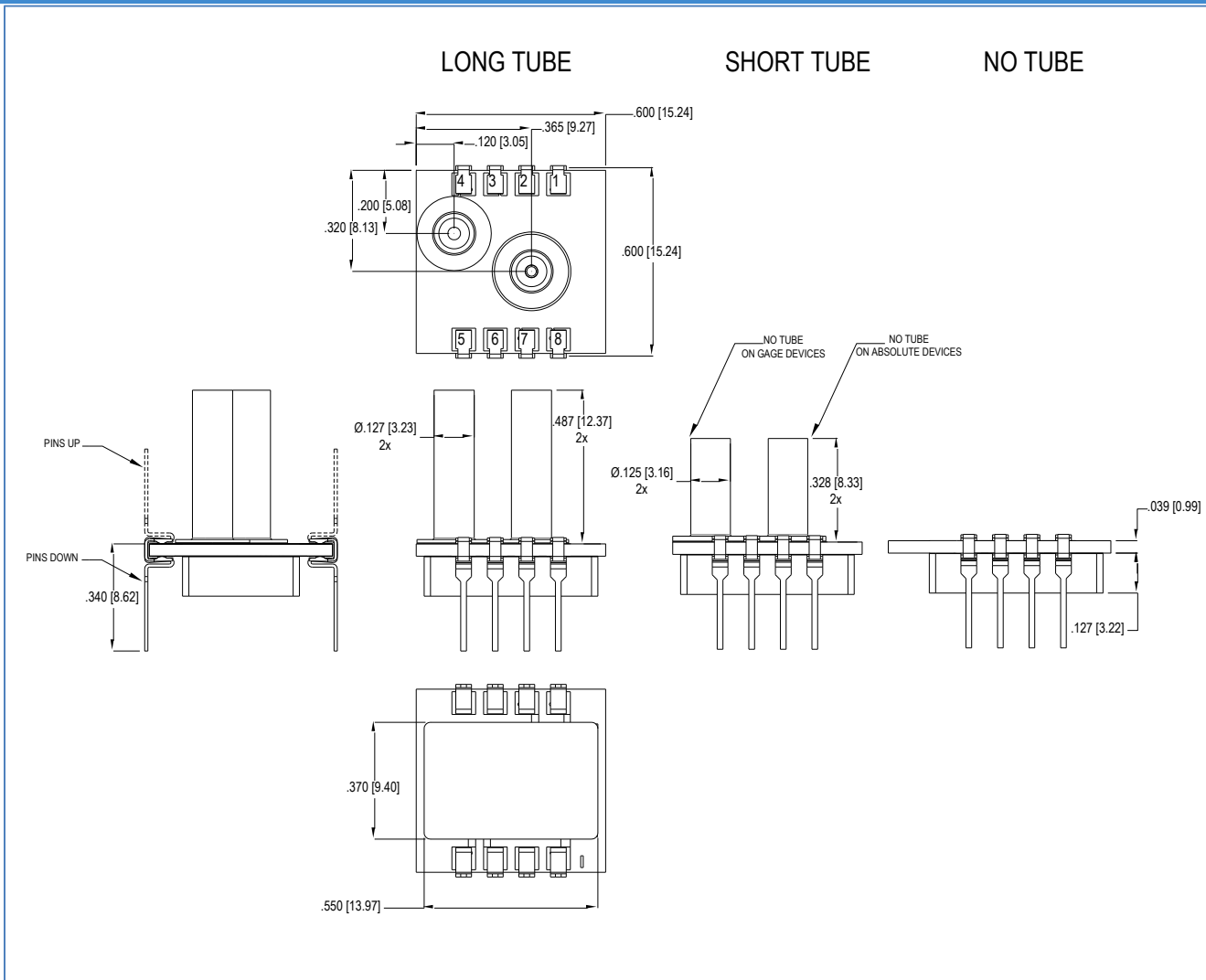
1. All specification at reference conditions unless otherwise noted. Output is ratio metric to supply voltage.
2. ½ Terminal Base Non Linearity (Measured at 0, 50% and 100% FS).
3. Full Scale Span output with sensor only. Field Interchangeability of 1% is guaranteed with use of Application Note.
4. Deviation between 60 °C and 0 °C expressed as percentage of reading at 25 °C.
5. Deviation after 1 year period measured at reference conditions.
6. Exceeding Absolute Maximum Specification may damage the device. Extended exposure beyond the operating conditions may affect device reliability.

EQUIVALENT CIRCUIT

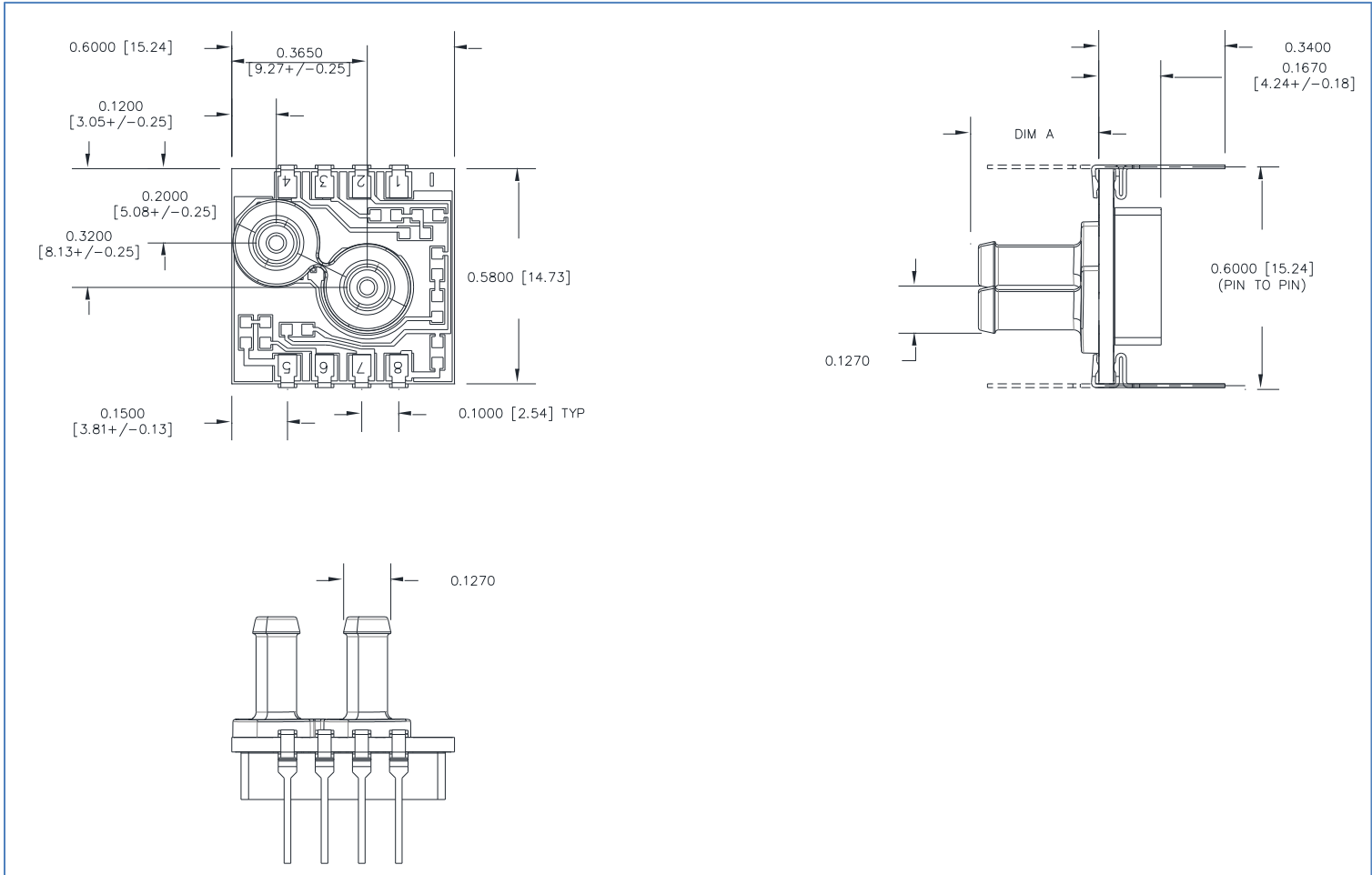
APPLICATION CIRCUIT



MECHANICAL DIMENSIONS in [mm]



TOP BARB



PART NUMBERING FOR ORDERS

Series	Pressure Range	Pressure Units	Pressure Type (Range Availability) [Package Availability]	Pin Orientation	Port Style
CHT-SM5651	0.15 0.30 0.80 1.50	P=PSI	D=Differential (All Ranges) [ST,LT]	3= Down 1= Up	ST=Short Tube LT=Long Tube TB=Top Barb

Part Number Example: CHT-SM5651 0.15P D3 ST**0- 0.15 PSI Pressure Range, Short Tube Pressure Ports, Down Thru Hole Pin****WARRANTY**

Pressure sensors have a limited one-year warranty to the original purchaser. AVSensors will repair or replace, at its option, without charge those items it finds defective. This is the buyer's sole remedy and is in lieu of all other warranties, expressed or implied, including those of merchantability and fitness for a particular purpose. In no event shall AVSensors be liable for consequential, special, or indirect damages. This warranty does not apply to units that have been modified, misused, neglected or installed where the application exceeds published ratings. Specifications may change without notice. The information supplied is believed to be accurate and reliable as of this printing, however, we assume no responsibility for its use.