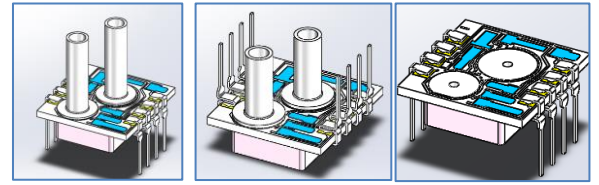


The MCT-SM58A Series  
Vertical Ports, Dual In Line Package (DIL)  
High Level Analog Output  
3.3 & 5.0 Vdc Supply Voltages



### DESCRIPTION

Advanced Sensors Multi Chip Technology (MCT) SM58A Series incorporates the latest mixed signal ASIC (Application Specific Integrated Circuit) with a bonded silicon gage to provide a high level analog output for medical, life science and pneumatic control industries. The designs superior performance provides 1% Total Error across a wide temperature range of -10 to 85 °C. The ASIC's advanced design allows for the sensor output to be limited for safety critical operations with internal error checking of the sensor's input and output lines. With all the advanced features, the MCT-58A series is the ideal choice for OEM customers.

### APPLICATIONS

- Pneumatic controls
- Automotive diagnostics
- Medical equipment/instrumentation
- Air Speed and Altitude
- Environmental controls
- Barometric pressure measurement
- Factory Automation
- Process Controls

### FEATURES

- Ratiometric, Analog Voltage Output
- Low Power Option
- 3.3 & 5.0Vdc Supply Voltages
- Low Overall Errors, 1%TEB
- Many Port Configurations
- Custom Outputs and Ranges Available

### SPECIFICATIONS

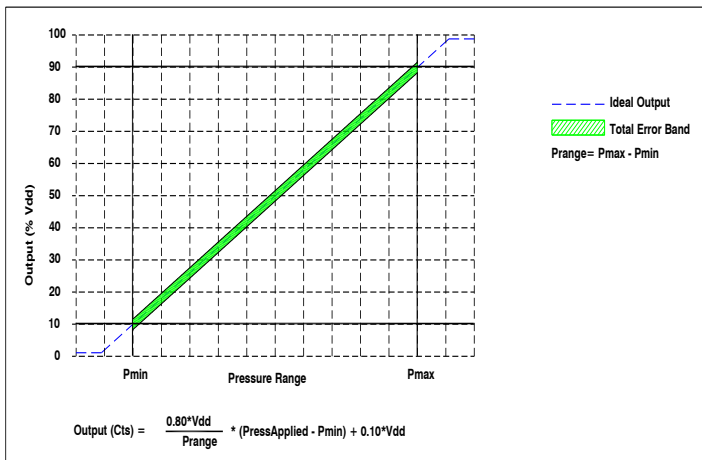
	Symbol	Min	Typical	Max	Unit	Note
<b>Performance Specifications</b>						
Supply Voltage		2.7V	3.3	5.50	V	
Current Consumption				3	mA	
Current Consumption, -L Option			0.25		mA	
Pressure Accuracy		-0.25		0.25	mA	2
Total Error Band	TEB	-1.0		1.0	%FSS	3
Output DAC Resolution				12	bits	
Output (Type 1) at Pmin			10		%Vdd	
Output (Type 1) at Pmax			90		%Vdd	
Output (Type 2) at Pmin			5		%Vdd	
Output (Type 2) at Pmax			95		%Vdd	
Conversion Time			1.0		mS	4
Power On to Valid Data				<10	mS	5
Weight				3	grams	
Compensated Temperature			-10 to 85		°C	6
Operating Temperature			-40 to 125		°C	6

SPECIFICATIONS	Symbol	Min	Typical	Max	Unit	Note
<b>Absolute Maximum Conditions</b>						<b>10</b>
Supply Voltage		-5.0		6	V	
Storage Temperature		-55		150	°C	
Package Integrity, Common Mode				300	psi	7
Proof Pressure				3x		8
Burst Pressure				5x		9
Media Compatibility		CDA, Non Ionic, Non Corrosive Gases				
Moisture Sensitivity Level		MSL 1				
ESD susceptibility (HBM)		±4kV				
Wetted Materials		Ceramic, RTV, Epoxy, Silicon, Gold, Aluminum, LCP				

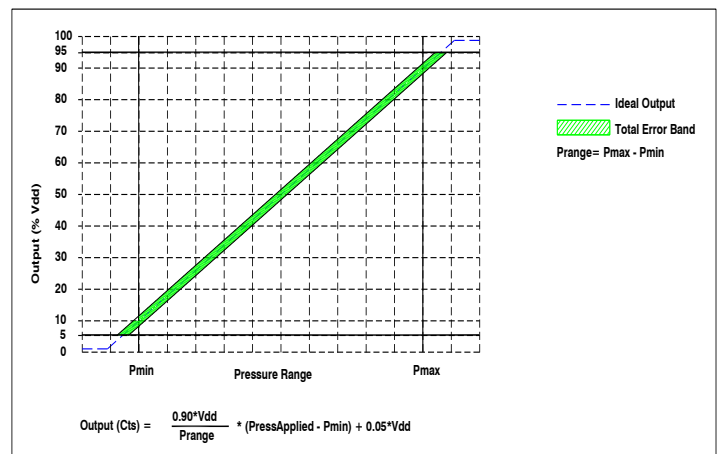
**Reference Conditions:** Vsupply: 3.30Vdc or 5.00, Ta=25 °C, Positive Pressure Port A (Gage, Differential), Port B (Absolute)

1. All specification at reference conditions unless otherwise noted.
2. Maximum deviation from a Best Fit Straight Line through Pmin and Pmax measured at 25 °C. Errors included Pressure Non Linearity, Pressure Hysteresis and Repeatability.
3. Maximum deviation from the Ideal Transfer Function expressed as a percentage of the %FSS over the compensated temperature range. Includes calibration errors (Offset & Span), temperature errors (Offset & Span), pressure non-linearity, pressure and thermal hysteresis. TEB Errors for mBar Ranges below
4. The time for the output DAC to be updated with new data.
5. The time for the output DAC to have valid data after a power on reset.
6. Compensated and operating temperature for mBar ranges are 0 °C to 60 °C and -20 °C – to 105 °C, respectively.
7. Maximum pressure the sensor package can withstand without rupture.
8. Maximum pressure without degrading sensor's performance specifications.
9. Maximum pressure the silicon diaphragm can withstand without rupture.
10. Exceeding Absolute Maximum Specification may damage the device. Extended exposure beyond the operating conditions may affect device reliability.
11. Enabled Diagnostic option will clip the output voltage at 5% and 95% of supply voltage. Output will remain within 2.5% of the supply rails when the diagnostic is triggered.
12. Connection to N/C pin will result in product malfunction. Do Not connect.

### PRESSURE TRANSFER FUNCTIONS



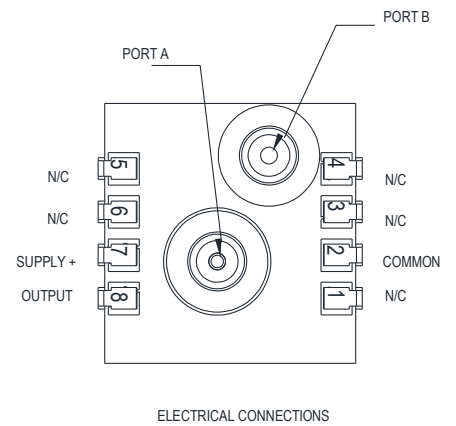
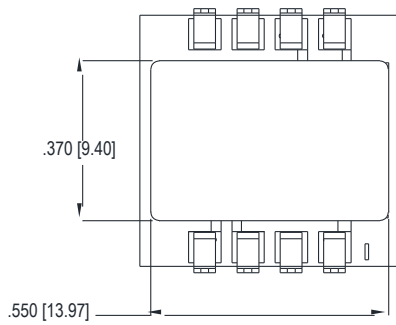
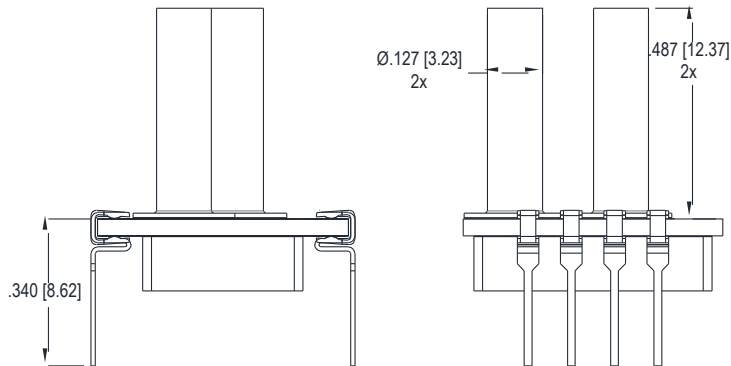
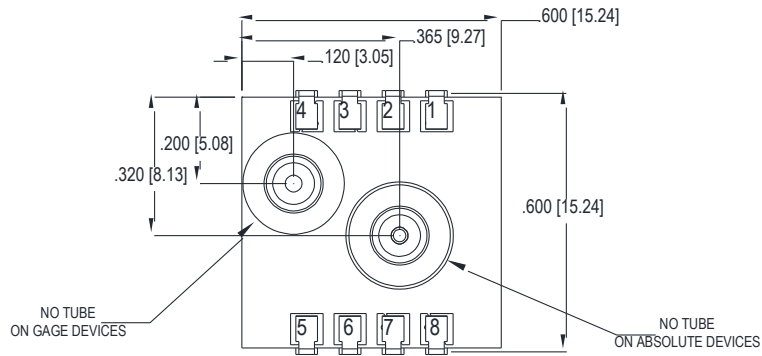
Type 1, 10-90%, Pressure Transfer Function



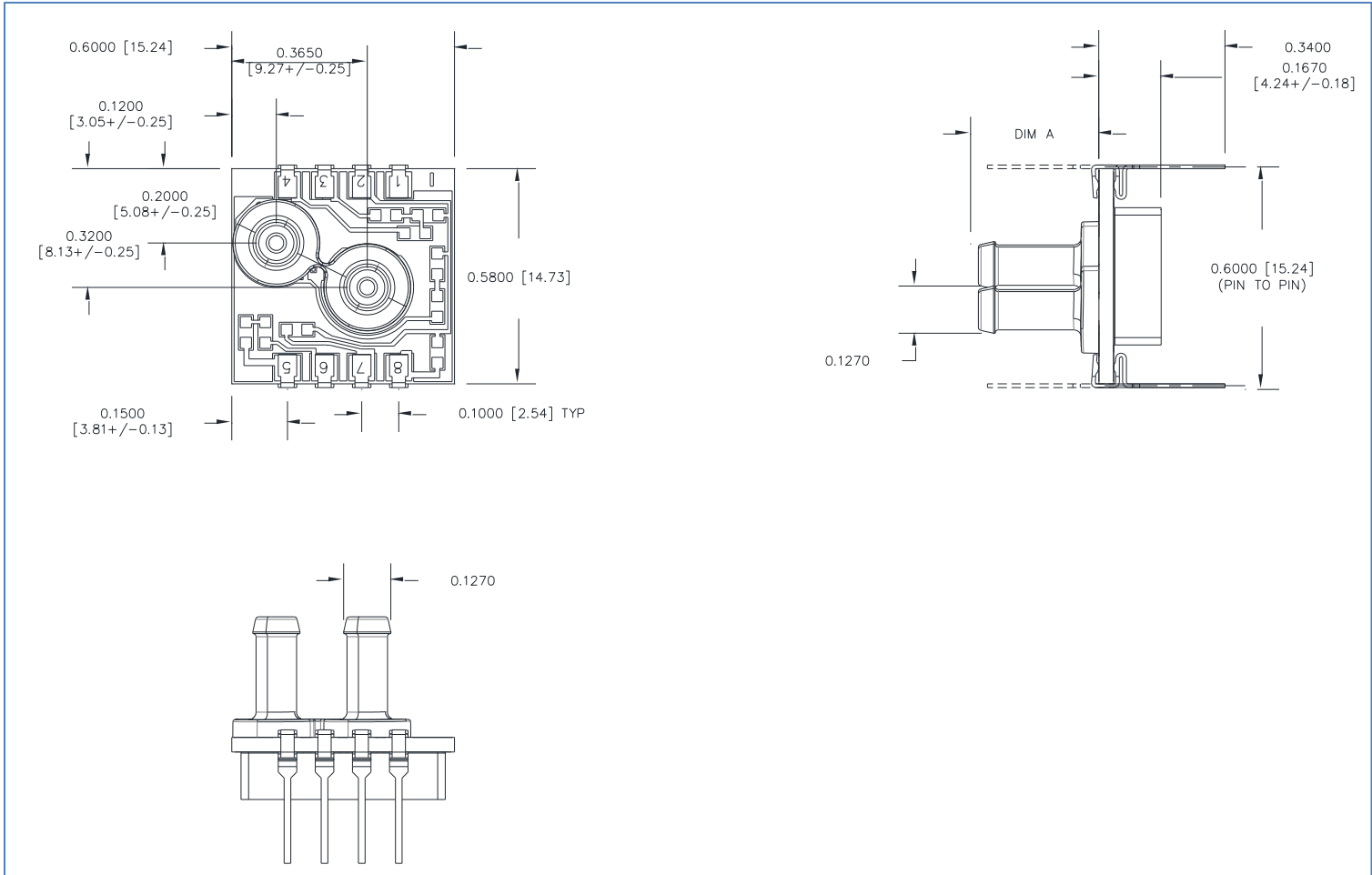
Type 2, 5-95%, Pressure Transfer Function

### ELECTRICAL PINOUT & MECHANICAL DIMENSIONS in [mm]

#### SM58 Series



### TOP BARB



### PART NUMBERING FOR ORDERS

Series	Port Type	Package Pin Orientation	Pressure Range	Pressure Units	Pressure Type (Range Availability) [Package Availability]	Calibrated Voltage	Output Type	Options
MCT-SM58A	VTD=Vertical Tube, Dual	T1= DIL Thru Hole, Pins Down	005	M=mBar	G= Gage (All Ranges) [ VTS Port Types]	3=3.3Vdc	Type1= 10 -90% of Supply Voltage	-L Low Power
			010					
			020					
			050					
			100					
			200					
	VTS=Vertical Tube, Single	T3= DIL Thru Hole, Pins Up	004	I=inH20	A=Absolute (15 PSI Range & above, 1 Bar Ranges & above) [VTS Port Types]	5-5.0Vdc	Type2= 5 -95% of Supply Voltage	-G Gel Coat
			005					
			010					
			020					
			030					
			001					
002								
005								
015								
030								
050								
VBD=Vertical Barb, Dual			001	B=Bar				
			002					
			003					
			006					

**Part Number Example: MCT-SM58A VTS T1 005PG51**

**Single Vertical Tube, Thru Hole Leads, Pins Down, 0 to +5 PSI Range, 5.0Vdc Supply, Pmin=0 PSIG, Pmax=+ 5 PSIG, Output 0.50 to 4.50Vdc**

### 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 buyers 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.