MODEL 132B38

MICRO ICP® PRESSURE SENSOR

- Small size fits in wind tunnel models
- Very high frequency response
- Centered element improves accuracy

TYPICAL APPLICATIONS
- Explosives research
- Time of arrival measurements
- Targeting
- Wind tunnel boundary layer transition

For measurement of short wavelength pressure pulses, 132B38 piezoelectric ICP® micro pressure sensor features 0.5 microsecond response. The sensor’s micro-second response time accurately measures pressure peaks from fast rising shock waves and very high frequency pressure phenomena. The 1mm diameter sensing element allows measurement of short wavelength incident pressure waves. A short time constant filters off the static component of wind tunnel pressure, allowing differentiation of consecutive pulses.
All specifications are at room temperature unless otherwise specified.

### SPECIFICATIONS

<table>
<thead>
<tr>
<th>Performance</th>
<th>English</th>
<th>SI</th>
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</thead>
<tbody>
<tr>
<td>Measurement Range</td>
<td>50 psi</td>
<td>345 kPa</td>
</tr>
<tr>
<td>Sensitivity (±30%)</td>
<td>140 mV/μC</td>
<td>20.3 mV/μC</td>
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<tr>
<td>Maximum Pressure (Dynamic)</td>
<td>800 psi</td>
<td>5516 kPa</td>
</tr>
<tr>
<td>Resolution [2]</td>
<td>0.5-100000 Hz</td>
<td>0.5-100000 Hz</td>
</tr>
<tr>
<td>Rise Time (Incident) [1]</td>
<td>0.6 nsec</td>
<td>5.0 nsec</td>
</tr>
<tr>
<td>Rise Time (Reflected)</td>
<td>≤1 %</td>
<td>≤1.5 %</td>
</tr>
<tr>
<td>Low Frequency Response (±5 %)</td>
<td>11 kHz</td>
<td>11 kHz</td>
</tr>
<tr>
<td>High Frequency Response [3][2]</td>
<td>1 MHz</td>
<td>1 MHz</td>
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</tbody>
</table>

### Environmental

Temperature Range (Operating)   | -13 to +175 °F | -25 to +79 °C |

### Electrical

- **Output Polarity (Positive Pressure)**: Positive
- **Discharge Time Constant (at room temp) [4]**: ≥0.000045 sec
- **Excitation Voltage**: 20 to 30 VDC
- **Constant Current Excitation**: 2 to 20 mA
- **Output Impedance**: ≤100 Ohm
- **Output Bias Voltage**: 8 to 14 VDC

### Physical

- **Sensing Element**: Ceramic
- **Housing Material**: Stainless Steel
- **Sealing**: Epoxy
- **Weight [5]**: 12.77 gm
- **Cable Termination**: 10-32 Coaxial Jack
- **Cable Type**: 030 Coaxial

### Product Notes

1. Rise time in air at Mach 1.
2. Typical.
3. High frequency response may be limited by supply current and output cable length.
4. Calculated.
5. Typical; with cable.

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PCB Piezotronics, Inc. is a designer and manufacturer of microphones, vibration, pressure, force, torque, load, and strain sensors, as well as the pioneer of ICP® technology used by design engineers and predictive maintenance professionals worldwide for test, measurement, monitoring, and control requirements in automotive, aerospace, industrial, R&D, military, educational, commercial, OEM applications, and more. With a worldwide customer support team, 24-hour SensorLine®, and a global distribution network, PCB® is committed to Total Customer Satisfaction. Visit www.pcb.com for more information. PCB Piezotronics, Inc. is a wholly owned subsidiary of MTS Systems Corporation. Additional information on MTS can be found at www.mts.com.

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