The PE82P5002 is an 8 Bit Digital Controlled Phase Shifter with 360 Deg Phase Range with a switching speed of 500 ns Max over the Operating Frequency Range from 6 GHz to 18 GHz. The Module is offered in a slim line housing measuring only 0.5” Height.

Features
- 8 Bit Digital Controlled Phase Shifter
- 6 GHz to 18 GHz Frequency Range
- +/-15 Deg Max Accuracy
- 360 Deg Phase Shift in 256 Steps
- 500 ns Max Switching Speed
- +/-20 dBm Max Input Power
- Insertion Loss 10 dB Typ

Applications
- Electronic Warfare
- Test & Measurement
- Military & Space
- Radar
- Military Communications Systems

Electrical Specifications (Values at +25°C, sea level)

<table>
<thead>
<tr>
<th>Description</th>
<th>Minimum</th>
<th>Typical</th>
<th>Maximum</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency Range</td>
<td>6</td>
<td>10</td>
<td>18</td>
<td>GHz</td>
</tr>
<tr>
<td>Insertion Loss</td>
<td></td>
<td>10</td>
<td>12</td>
<td>dB</td>
</tr>
<tr>
<td>Input VSWR</td>
<td></td>
<td>2:1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PM / AM</td>
<td></td>
<td>±2.5</td>
<td></td>
<td>dB</td>
</tr>
<tr>
<td>Translation Rate</td>
<td>0</td>
<td></td>
<td>500</td>
<td>KHz</td>
</tr>
<tr>
<td>Carrier Suppression</td>
<td>0</td>
<td></td>
<td>50</td>
<td>dB</td>
</tr>
<tr>
<td>Side Band Suppression</td>
<td>0</td>
<td></td>
<td>15</td>
<td>dB</td>
</tr>
<tr>
<td>Phase Shift</td>
<td>0</td>
<td></td>
<td>360° in 256 Steps</td>
<td></td>
</tr>
<tr>
<td>Control Input</td>
<td>0</td>
<td></td>
<td>8 Bit TTL</td>
<td></td>
</tr>
<tr>
<td>Error</td>
<td>±15°</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Switching Speed @50% TTL to within</td>
<td>0</td>
<td></td>
<td>500</td>
<td>ns</td>
</tr>
<tr>
<td>(10% of Final Phase Value)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Harmonics</td>
<td>-25</td>
<td></td>
<td></td>
<td>dBc</td>
</tr>
<tr>
<td>Power Handling Capability</td>
<td>0.1</td>
<td></td>
<td></td>
<td>Watts</td>
</tr>
<tr>
<td>Without Degradation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Survival Power</td>
<td>20</td>
<td></td>
<td></td>
<td>dBm</td>
</tr>
<tr>
<td>DC Power Supply</td>
<td>115</td>
<td></td>
<td></td>
<td>mA</td>
</tr>
<tr>
<td>@5 Volts</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>@-15 Volts</td>
<td>20</td>
<td></td>
<td></td>
<td>mA</td>
</tr>
</tbody>
</table>

Click the following link (or enter part number in “SEARCH” on website) to obtain additional part information including price, inventory and certifications: 8 Bit Programmable Phase Shifter, 6 GHz to 18 GHz, 360 Deg Phase Shift, 256 Steps and SMA PE82P5002
8 Bit Programmable Phase Shifter, 6 GHz to 18 GHz, 360 Deg Phase Shift, 256 Steps and SMA

TECHNICAL DATA SHEET

Mechanical Specifications

Size
- Length: 1.6 in [40.64 mm]
- Width: 1.75 in [44.45 mm]
- Height: 0.5 in [12.7 mm]

Environmental Specifications

Temperature
- Operating Range: -55 to +85 deg C
- Storage Range: -65 to +125 deg C

Humidity
MIL-STD-202G, METHOD 103B COND. B

Shock
MIL-STD-202G, METHOD 213B COND. B

Vibration
MIL-STD-202G, METHOD 204D COND. B

Altitude
MIL-STD-202G, METHOD 105C COND. B

Temperature Cycle
MIL-STD-202G, METHOD 107D COND. A

Compliance Certifications (visit www.Pasternack.com for current document)
- Not RoHS Compliant

Plotted and Other Data

Notes:
- Values at +25 °C, sea level
- ESD Sensitive Material, Transport material in Approved ESD bags. Handle only in approved ESD Workstation.

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Pasternack Enterprises, Inc. • P.O. Box 16759, Irvine, CA 92623
Phone: (866) 727-8376 or (949) 261-1920 • Fax: (949) 261-7451
Sales@Pasternack.com • Techsupport@Pasternack.com

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8 Bit Programmable Phase Shifter, 6 GHz to 18 GHz, 360 Deg Phase Shift, 256 Steps and SMA

TECHNICAL DATA SHEET

Block Diagram

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8 Bit Programmable Phase Shifter, 6 GHz to 18 GHz, 360 Deg Phase Shift, 256 Steps and SMA from Pasternack Enterprises has same day shipment for domestic and International orders. Our RF, microwave and millimeter wave products maintain a 99% availability and are part of the broadest selection in the industry.

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The information contained in this document is accurate to the best of our knowledge and representative of the part described herein. It may be necessary to make modifications to the part and/or the documentation of the part, in order to implement improvements. Pasternack reserves the right to make such changes as required. Unless otherwise stated, all specifications are nominal. Pasternack does not make any representation or warranty regarding the suitability of the part described herein for any particular purpose, and Pasternack does not assume any liability arising out of the use of any part or documentation.
PE82P5002 CAD Drawing
8 Bit Programmable Phase Shifter, 6 GHz to 18 GHz, 360 Deg Phase Shift, 256 Steps and SMA

View A

15 PIN MICRO-D, MALE CONNECTOR

NOTES:
1. UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE NOMINAL.
2. ALL SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE AT ANY TIME.
3. CAD SPECIFICATIONS PROVIDE PC BOARD CLEARANCE

 CONNECTOR TABLE

<table>
<thead>
<tr>
<th>PIN</th>
<th>DESCRIPTION</th>
<th>PIN</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GROUND</td>
<td>2</td>
<td>+5V</td>
</tr>
<tr>
<td>3</td>
<td>-12V TO -15V</td>
<td>4</td>
<td>1/4&quot; (LSB)</td>
</tr>
<tr>
<td>5</td>
<td>2/8&quot;</td>
<td>6</td>
<td>5/8&quot;</td>
</tr>
<tr>
<td>7</td>
<td>22/5&quot;</td>
<td>8</td>
<td>11/3&quot;</td>
</tr>
</tbody>
</table>

1.60 [40.6] 1.85 [47.0]

0.50 [12.7]

0.38 [9.7]

0.36 [9.1] 0.25 [6.5]

0.82 [20.8] 0.11 [2.8]

1.42 [36.1] 0.88 [22.4]

0.38 [9.7]

1.50 [38.1]

1.75 [44.5]

MOUNTING SURFACE

SMA FEMALE TYP.