Phase Shifters and Trimmers Technical Data Sheet

PE82P2001

Features

• Analog Phase Shifter Module
• Frequency Range 6 to 15 GHz
• Single Positive DC Voltage Control 0 to 5 Vdc
• Continuously Variable Monotonic Phase Shift 0 to >600°
• High Resolution
• Low Conversion Loss 7 dB typical

Applications

• Electronic Warfare
• Radar
• Telecom Infrastructure

• Fiber Optic
• Military
• Test Instrumentation
• Space Systems

Description

The PE82P2001 is an analog phase shifter module that operates across a frequency band of 6 to 15 GHz and supports a single positive voltage control of 0 to +5Vdc. The design offers a continuously variable monotonic phase shift response that ranges from 0 to >600 degrees depending on frequency, while maintaining consistent insertion loss versus phase shift characteristics. The control port can support a modulation bandwidth of 50 MHz. The drop-in compact package is hermetically sealed with field SMA replaceable connectors. Operating temperature range is -55°C to +85°C. And for added confidence, this rugged package assembly is designed to meet MIL-STD-883 test conditions for fine and gross leak and temperature cycle.

Electrical Specifications

<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>15</td>
<td></td>
<td>GHz</td>
</tr>
<tr>
<td>Impedance</td>
<td>50</td>
<td></td>
<td></td>
<td>Ohms</td>
</tr>
<tr>
<td>Phase Adjustment</td>
<td>120</td>
<td></td>
<td></td>
<td>Deg/GHz</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: Analog Phase Shifter, 6 GHz to 15 GHz, With an Adjustable Phase of 120 Deg. Per GHz and SMA PE82P2001
Phase Shifters and Trimmers Technical Data Sheet

PE82P2001

Performance by Frequency

<table>
<thead>
<tr>
<th>Description</th>
<th>Frequency</th>
<th>Min.</th>
<th>Typ.</th>
<th>Max.</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase Shift Range:</td>
<td>6 - 10 GHz</td>
<td>600</td>
<td>800</td>
<td>800</td>
<td>degrees</td>
</tr>
<tr>
<td></td>
<td>10 - 15 GHz</td>
<td>360</td>
<td>600</td>
<td>600</td>
<td>degrees</td>
</tr>
<tr>
<td>Insertion Loss</td>
<td>6 - 15 GHz</td>
<td>7</td>
<td>10</td>
<td></td>
<td>dB</td>
</tr>
<tr>
<td>Return Loss (Input And Output)</td>
<td>6 - 15 GHz</td>
<td>7</td>
<td></td>
<td></td>
<td>dB</td>
</tr>
<tr>
<td>Control Voltage Range</td>
<td>6 - 15 GHz</td>
<td>0 - 5</td>
<td></td>
<td></td>
<td>Volt</td>
</tr>
<tr>
<td>Modulation Bandwidth</td>
<td>6 - 15 GHz</td>
<td>50</td>
<td></td>
<td></td>
<td>MHz</td>
</tr>
<tr>
<td>Phase Voltage Sensitivity</td>
<td>6 - 15 GHz</td>
<td>120</td>
<td></td>
<td></td>
<td>deg /Vol</td>
</tr>
<tr>
<td>Insertion Phase Temperature Sensitivity</td>
<td>6 - 15 GHz</td>
<td>0.5</td>
<td></td>
<td></td>
<td>deg /°C</td>
</tr>
</tbody>
</table>

Mechanical Specifications

Size

- Length: 0.64 in [16.26 mm]
- Width/Diameter: 0.7 in [17.78 mm]
- Height: 0.29 in [7.37 mm]
- Weight: 0.056 lbs [25.4 g]

Configuration

- Input Connector: SMA Female
- Output Connector: SMA Female

Environmental Specifications

Temperature

- Operating Range: -55 to 85 deg C
- Storage Range: -65 to 150 deg C

- Gross Leak MIL-STD-883 Method 1014C1/Fine Leak
- MIL-STD-883, Method 1014A2, 5 x 10^-8 atm cc
- ESD Sensitive Material, Transport material in Approved ESD bags. Handle only in ESD Workstation.

Click the following link (or enter part number in “SEARCH” on website) to obtain additional part information including price, inventory and certifications: Analog Phase Shifter, 6 GHz to 15 GHz, With an Adjustable Phase of 120 Deg. Per GHz and SMA PE82P2001

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

© 2016 Pasternack Enterprises All Rights Reserved

PE82P2001 REV 1.0
Analog Phase Shifter, 6 GHz to 15 GHz, With an Adjustable Phase of 120 Deg. Per GHz and SMA
Typical Performance Data

**Insertion Loss vs. Control Voltage**

**Phase Shift vs. Control Voltage**

**Phase Shift vs. Frequency @ Vctl = 5V**

(Relative to Vctl = 0V)

**Insertion Loss vs. Frequency**

**Input Return Loss vs. Frequency, Vctl = 0 to +5V**

**Output Return Loss vs. Frequency, Vctl = 0 to +5V**

Click the following link (or enter part number in “SEARCH” on website) to obtain additional part information including price, inventory and certifications: Analog Phase Shifter, 6 GHz to 15 GHz, With an Adjustable Phase of 120 Deg. Per GHz and SMA PE82P2001
Analog Phase Shifter, 6 GHz to 15 GHz, With an Adjustable Phase of 120 Deg. Per GHz and SMA

Phase Shifters and Trimmers Technical Data Sheet

Click the following link (or enter part number in “SEARCH” on website) to obtain additional part information including price, inventory and certifications: Analog Phase Shifter, 6 GHz to 15 GHz, With an Adjustable Phase of 120 Deg. Per GHz and SMA PE82P2001
Analog Phase Shifter, 6 GHz to 15 GHz, With an Adjustable Phase of 120 Deg. Per GHz 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.

Click the following link (or enter part number in “SEARCH” on website) to obtain additional part information including price, inventory and certifications: **Analog Phase Shifter, 6 GHz to 15 GHz, With an Adjustable Phase of 120 Deg. Per GHz and SMA PE82P2001**

Analog Phase Shifter, 6 GHz to 15 GHz, With an Adjustable Phase of 120 Deg. Per GHz and SMA

**NOTE:**
HEAT SINK REQUIRED FOR PROPER OPERATION, UNIT IS COOLED BY CONDUCTING TO HEAT SINK.