90 Degree SMA Hybrid Coupler From 6 GHz to 12.4 GHz Rated to 100 Watts

Features
- 90° Hybrid Coupler
- High Power
- Isolation > 17 dB
- 6 to 12.4 GHz Frequency Range

Applications
- Test and Measurement
- Military Communications
- Commercial Communications
- Wireless Communications
- SATCOM

Description
The PE2055 is a high power 90 degree hybrid coupler that operates from 6 to 12.4 GHz and can handle up to 100 Watts (CW) with 17 dB isolation minimum and 1.4:1 VSWR maximum. The package interface uses SMA female connectors, and is REACH and RoHS compliant.

The PE2055 is part of Pasternack's family of 90 degree hybrid couplers in connectorized packages. These quadrature hybrids are excellent for any situation to either equally split an input signal into two paths with a 90 degree phase shift between them or to combine signals while maintaining high isolation between them.

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>12.4</td>
<td>GHz</td>
<td></td>
</tr>
<tr>
<td>Impedance</td>
<td>50</td>
<td></td>
<td>Ohms</td>
<td></td>
</tr>
<tr>
<td>Phase Difference</td>
<td>90</td>
<td></td>
<td>Degrees</td>
<td></td>
</tr>
<tr>
<td>Coupling</td>
<td>3.4 ±0.8</td>
<td></td>
<td>dB</td>
<td></td>
</tr>
<tr>
<td>Isolation</td>
<td>17</td>
<td></td>
<td>dB</td>
<td></td>
</tr>
<tr>
<td>VSWR</td>
<td></td>
<td>1.4:1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amplitude Balance</td>
<td>±1.4</td>
<td></td>
<td>dB</td>
<td></td>
</tr>
<tr>
<td>Phase Balance</td>
<td>±6</td>
<td></td>
<td>Degrees</td>
<td></td>
</tr>
<tr>
<td>Input Power (CW)</td>
<td>100</td>
<td></td>
<td>Watts</td>
<td></td>
</tr>
</tbody>
</table>

Electrical Specification Notes:
Max input power rated for load VSWR better than 1.20:1

Click the following link (or enter part number in “SEARCH” on website) to obtain additional part information including price, inventory and certifications: 90 Degree SMA Hybrid Coupler From 6 GHz to 12.4 GHz Rated to 100 Watts PE2055
### Mechanical Specifications

**Size**
- Length: 1 in [25.4 mm]
- Width: 0.5 in [12.7 mm]
- Height: 0.38 in [9.65 mm]
- Weight: 0.041 lbs [18.6 g]

**Configuration**
- RF Connector Type: SMA Female

### Environmental Specifications

**Temperature**
- Operating Range: -25 to +80 deg C
- Storage Range: -55 to +150 deg C

**Humidity**
- MIL-STD-202, Method 106 (90% relative humidity, +65°C)

**Shock**
- MIL-STD-202, Method 213/I (100 G’s, 6 ms)

**Vibration**
- MIL-STD-202, Method 204/D (10 to 2,000 Hz, 20 G’s, 12 hours)

**Altitude**
- MIL-STD-202, Method 105/E (150,000 feet)

### Compliance Certifications

- RoHS Compliant
- REACH Compliant

### Plotted and Other Data

**Notes:**

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90 Degree SMA Hybrid Coupler From 6 GHz to 12.4 GHz Rated to 100 Watts

Hybrids Technical Data Sheet PE2055

90 Degree SMA Hybrid Coupler From 6 GHz to 12.4 GHz Rated to 100 Watts 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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URL: http://www.pasternack.com/hybrid-directional-3-db-sma-coupler-6-12.4-ghz-50-watts-pe2055-p.aspx

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.
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\[\text{INPUT} \quad \text{PORT CONFIGURATION} \quad \text{ISOLATED}\]

<table>
<thead>
<tr>
<th></th>
<th>90° OUTPUT</th>
<th>0° OUTPUT</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

\[\text{STANDARD TOLERANCES APPLY ONLY TO DIMENSIONS IN INCHES}\]

\[\text{DECIMAL} \quad \pm 0.02 \quad \pm 0.010\]

\[\text{[mm]}\]

\[0.38 \quad [9.7]\]

\[0.50 \quad [12.7]\]

\[\frac{1}{4} - 36 \quad \text{TYP.}\]

\[0.105 \quad [2.7]\]

\[\phi (2 \text{ HOLES})\]

\[0.38 \quad [9.5]\]

\[\text{TYP.}\]

\[0.314 \quad [8.0]\]

\[1.00 \quad [25.4]\]

\[0.50 \quad [12.7]\]

\[\text{PASTERNACK} \quad \text{PE2055} \quad \text{REV 1.1}\]