Surface Mount Quadrature Hybrid, 200 - 400 MHz

Features

- Fully Hermetic
- Octave Bandwidth
- Low VSWR: 1.1:1 Typical
- Impedance: 50 Ohms Nominal
- Input Power: 5 Watts Max @ +25°C, Derated to 1 Watt @ +85°C
- Typical Phase Linearity: 3° from straight line
- MIL-STD-202 Screening Available

Description

3 dB Hybrids are ideal for dividing a signal into two signals of equal amplitude and a constant 90° or 180° phase differential and for Quadrature combining or performing summation/differential combining.

Phasing Diagram

<table>
<thead>
<tr>
<th>IN</th>
<th>OUT</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td></td>
<td>ISO</td>
<td>-90°</td>
<td>0°</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>ISO</td>
<td>0°</td>
<td>-90°</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>-90°</td>
<td>0°</td>
<td>ISO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>0°</td>
<td>-90°</td>
<td>ISO</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Electrical Specifications¹: Freq. = 200 - 400 MHz, \( T_A = -55^\circ \text{C to } +85^\circ \text{C} \)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Test Conditions</th>
<th>Units</th>
<th>Min</th>
<th>Typ</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insertion Loss</td>
<td>Less Coupling</td>
<td>dB</td>
<td>—</td>
<td>—</td>
<td>0.5</td>
</tr>
<tr>
<td>Isolation</td>
<td></td>
<td>dB</td>
<td>18</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Amplitude Balance</td>
<td></td>
<td>dB</td>
<td>—</td>
<td>—</td>
<td>1.0</td>
</tr>
<tr>
<td>VSWR</td>
<td></td>
<td>Ratio</td>
<td>—</td>
<td>—</td>
<td>1.3:1</td>
</tr>
<tr>
<td>Deviation from Quadrature</td>
<td></td>
<td>°</td>
<td>—</td>
<td>—</td>
<td>4</td>
</tr>
</tbody>
</table>

¹ All specifications apply with 50 ohm source and load impedance.
² Average of coupled output less 3 dB.

This product contains elements protected by United States Patent Number 3,484,724.
Typical Performance Curves

**Isolation**

![Isolation Graph]

**Deviation from Quadrature**

![Deviation Graph]

**Coupling**

![Coupling Graph]

### Ordering Information

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Package</th>
</tr>
</thead>
<tbody>
<tr>
<td>JHS-142 PIN</td>
<td>SF-1</td>
</tr>
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</table>
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