2090 Series
Three-Way Isolated Power Dividers Tapered, Ultra-Broadband

Features
- Good Amplitude and Phase Balance
- High Isolation Between Output Ports
- Low VSWR, Small Size and Light Weight
- Octave, Multi-Octave and Decade Frequency Coverage
- Low Insertion Loss
- Power: 80 Watts Maximum
- Meets MIL-E-5400 Environments

Outline Drawing

Description
Power Dividers are compact stripline units with wide bandwidth and multiple outputs. Tapered line transformers and internal terminations provide low VSWR at all ports and high isolation between all output ports. Phase and amplitude tracking of all outputs is excellent due to the symmetrical designs. Combinations of three-way and two-way power dividers in one package are available for custom applications.

Typical Performance Part No. 2090-6309-00

![Graphs showing VSWR, Insertion Loss, and Isolation vs Frequency for 2090-6309-00](image)

Specifications

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Freq. Range (GHz)</th>
<th>Insertion Loss Max (dB)</th>
<th>Isolation dB (min)</th>
<th>VSWR (max)</th>
<th>Output Unbalanced Amp. (dB)</th>
<th>Output Unbalanced Phase (deg.)</th>
<th>Max Input Power* (watts)</th>
<th>Fig</th>
<th>Size, Inch (mm) A</th>
<th>Size, Inch (mm) B</th>
<th>Weight Oz.</th>
<th>Weight g</th>
</tr>
</thead>
<tbody>
<tr>
<td>2090-6304-00</td>
<td>0.5-18.0</td>
<td>0.4 + .24f</td>
<td>18</td>
<td>1.6</td>
<td>**</td>
<td>**</td>
<td>80</td>
<td>1</td>
<td>11.0 (280)</td>
<td>9.84 (250.0)</td>
<td>11.4</td>
<td>322</td>
</tr>
<tr>
<td>2090-6309-00</td>
<td>4.0-18.0</td>
<td>0.5 + 0.08f</td>
<td>18</td>
<td>1.5</td>
<td>0.5</td>
<td>**</td>
<td>40</td>
<td>1</td>
<td>2.02 (51.3)</td>
<td>—</td>
<td>2.1</td>
<td>60</td>
</tr>
</tbody>
</table>

* Maximum input power with output loads of VSWR ≤2.0:1. Derate to 10% of listed value when arbitrarily terminated.
Three-Way Isolated Power Dividers Tapered, Ultra-Broadband

Features
- Octave, Multi-Octave and Decade Frequency Coverage
- Low Insertion Loss
- Excellent Amplitude and Phase Balance
- High Isolation Between Output Ports
- Low VSWR
- Power: 80 Watts Maximum
- Meets MIL-E-5400 Environments

Description
New designs include operation through 26 GHz and retain the performance of lower frequency units. These units are ideal for multioctave ECM systems, and function as either dividers or combiners to facilitate system performance.

Specifications

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Freq. Range (GHz)</th>
<th>Insertion Loss Max (dB)</th>
<th>Isolation dB (min)</th>
<th>VSWR (max)</th>
<th>Output Unbalanced Amp. (dB)</th>
<th>Output Unbalanced Phase (deg.)</th>
<th>Max Input Power** (watts)</th>
<th>Size, Inch (mm)</th>
<th>Size, Inch (mm)</th>
<th>Weight Fig.</th>
<th>Weight oz.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2090-6204-00</td>
<td>0.5 - 18.0</td>
<td>0.2 + 0.17f</td>
<td>20 (0.5 to 3) GHz 23 (3 to 18) GHz</td>
<td>1.35 (0.5 to 11) GHz 1.50 (11 to 18) GHz</td>
<td>0.3</td>
<td>5</td>
<td>80</td>
<td>9.40 (239)</td>
<td>11.02 (291)</td>
<td>1</td>
<td>8.0226</td>
</tr>
<tr>
<td>2090-6205-00</td>
<td>2.0 - 18.0</td>
<td>0.2 + 0.07f</td>
<td>18 (2 to 3) GHz 23 (3 to 18) GHz</td>
<td>1.35 (2 to 11) GHz 1.50 (11 to 18) GHz</td>
<td>0.3</td>
<td>5</td>
<td>40</td>
<td>2.40 (61.1)</td>
<td>4.02 (102)</td>
<td>1</td>
<td>2.983</td>
</tr>
<tr>
<td>2090-6210-00*</td>
<td>8.0 - 18.0</td>
<td>0.2 + 0.03f</td>
<td>18</td>
<td>1.50</td>
<td>0.3</td>
<td>5</td>
<td>20</td>
<td>—</td>
<td>—</td>
<td>2</td>
<td>1.130</td>
</tr>
</tbody>
</table>

* To 18GHz
** Maximum input power with output loads of VSWR ≤2.01 derate to 10% of listed value when arbitrarily terminated.
Note: f is frequency in GHz
Three-Way Isolated Power Dividers Tapered
Ultra-Broadband

Rev. V3

Features

- Broadband Performance 1.0 - 18.0 GHz
- Low Insertion Loss
- Excellent Amplitude and Phase Balance
- Power: 50 Watts Maximum
- Meets MIL-E-5400 Environments

Description

These are the smallest in-phase isolation 1.0 - 18.0 GHz power dividers available. Rugged stripline construction, housed in sealed lightweight packages insure reliable operation in the roughest environments. SMA stainless steel connectors are standard. Contact the factory for other connector designs.

Typical Performance Part No. 2090-6214-00

Specifications

<table>
<thead>
<tr>
<th>Part Number</th>
<th>NO. of Outputs</th>
<th>Frequency Range (GHz)</th>
<th>VSWR (max.) Input/Output</th>
<th>Isolation (dB) min. Frequency (GHz) 1.0-2.5/2.5-18.0</th>
<th>Insertion Loss dB (max.)</th>
<th>Output Unbalance Phase (deg.) 1.0-2.5/2.5-18.0 GHz</th>
<th>Output Unbalance Amp (dB) 1.0-2.5/2.5-18.0 GHz</th>
<th>Max. Input Power * (watts)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2090-6214-00</td>
<td>2</td>
<td>1.0 - 18.0</td>
<td>1.40/1.35</td>
<td>15/22</td>
<td>0.25 + 0.11f</td>
<td>5/5</td>
<td>0.4/0.4</td>
<td>50</td>
</tr>
<tr>
<td>2090-6414-00</td>
<td>4</td>
<td>1.0 - 18.0</td>
<td>1.6/1.4</td>
<td>14/18</td>
<td>0.6 + 0.20f</td>
<td>8/12</td>
<td>0.6/1.0</td>
<td>50</td>
</tr>
<tr>
<td>2090-6814-00</td>
<td>8</td>
<td>1.0 - 18.0</td>
<td>1.7/1.5</td>
<td>14/17</td>
<td>1.0 + 0.25f</td>
<td>10/16</td>
<td>0.8/1.4</td>
<td>50</td>
</tr>
</tbody>
</table>

* 50 Watts with 1.2:1 max. load VSWR.
25 Watts with 2:1 max. load VSWR.

Mechanical Specifications

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Size, Inch(mm) A</th>
<th>Size, Inch(mm) B</th>
<th>Size, Inch(mm) F</th>
<th>Size, Inch(mm) G</th>
<th>Weight Oz.</th>
<th>Weight g</th>
</tr>
</thead>
<tbody>
<tr>
<td>2090-6214-00</td>
<td>5.0 (139.7)</td>
<td>1.00 (25.4)</td>
<td>4.00 (101.5)</td>
<td>0.60 (15.2)</td>
<td>3.4</td>
<td>96.6</td>
</tr>
<tr>
<td>2090-6414-00</td>
<td>5.20 (132.1)</td>
<td>2.00 (50.8)</td>
<td>3.20 (81.3)</td>
<td>1.60 (45.7)</td>
<td>16</td>
<td>448</td>
</tr>
<tr>
<td>2090-6814-00</td>
<td>5.20 (132.1)</td>
<td>4.00 (101.5)</td>
<td>3.20 (81.3)</td>
<td>3.60 (91.4)</td>
<td>30</td>
<td>840</td>
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</tbody>
</table>

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