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

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.

Outline Drawing

Note: All dimensions are ±0.020, except mounting hole diameters (±0.005) and mounting hole location (±0.010). Height dimension excludes rivet protrusion.

Typical Performance Part No. 2090-6309-00

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>0.5†</td>
<td>**</td>
<td>80</td>
<td>1</td>
<td>11.0 (280)</td>
<td>9.64 (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.
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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 Unbal-amped Amp. (dB)</th>
<th>Output Unbal-anced Phase (deg.)</th>
<th>Max Input Power** (watts)</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</td>
<td>1.35 (0.5 to 11) GHz</td>
<td>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>
</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</td>
<td>1.35 (2 to 11) GHz</td>
<td>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>
</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>
</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
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

<table>
<thead>
<tr>
<th>Part Number</th>
<th>NO. of Outputs</th>
<th>Frequency Range (GHz)</th>
<th>VSWR (max.) Frequency Input/Output</th>
<th>Isolation (dB) Frequency 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.

Specifications

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>
</tr>
</tbody>
</table>
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