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 ±0.20, 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 Unbalance 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.
Three-Way Isolated Power Dividers Tapered, Ultra-Broadband

2090 Series

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) A</th>
<th>Size, Inch (mm) B</th>
<th>Weight Fig.</th>
<th>Weight oz. g</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>8.0 226</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>2.9 83</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>1.1 30</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

Revision 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

Outline Drawing

Specifications

<table>
<thead>
<tr>
<th>Part Number</th>
<th>NO. of Outputs</th>
<th>Frequency Range (GHz)</th>
<th>VSWR (max.)</th>
<th>Isolation (dB)</th>
<th>Insertion Loss dB</th>
<th>Output Unbalance Phase (deg.) 1.0-2.5/2.5-18.0</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>
</tr>
</tbody>
</table>
Three-Way Isolated Power Dividers Tapered, Ultra-Broadband

M/A-COM Technology Solutions Inc. All rights reserved.

Information in this document is provided in connection with M/A-COM Technology Solutions Inc ("MACOM") products. These materials are provided by MACOM as a service to its customers and may be used for informational purposes only. Except as provided in MACOM’s Terms and Conditions of Sale for such products or in any separate agreement related to this document, MACOM assumes no liability whatsoever. MACOM assumes no responsibility for errors or omissions in these materials. MACOM may make changes to specifications and product descriptions at any time, without notice. MACOM makes no commitment to update the information and shall have no responsibility whatsoever for conflicts or incompatibilities arising from future changes to its specifications and product descriptions. No license, express or implied, by estoppels or otherwise, to any intellectual property rights is granted by this document.

THESE MATERIALS ARE PROVIDED “AS IS” WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, RELATING TO SALE AND/OR USE OF MACOM PRODUCTS INCLUDING LIABILITY OR WARRANTIES RELATING TO FITNESS FOR A PARTICULAR PURPOSE, CONSEQUENTIAL OR INCIDENTAL DAMAGES, MERCHANTABILITY, OR INFRINGEMENT OF ANY PATENT, COPYRIGHT OR OTHER INTELLECTUAL PROPERTY RIGHT. MACOM FURTHER DOES NOT WARRANT THE ACCURACY OR COMPLETENESS OF THE INFORMATION, TEXT, GRAPHICS OR OTHER ITEMS CONTAINED WITHIN THESE MATERIALS. MACOM SHALL NOT BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, INCLUDING WITHOUT LIMITATION, LOST REVENUES OR LOST PROFITS, WHICH MAY RESULT FROM THE USE OF THESE MATERIALS.

MACOM products are not intended for use in medical, lifesaving or life sustaining applications. MACOM customers using or selling MACOM products for use in such applications do so at their own risk and agree to fully indemnify MACOM for any damages resulting from such improper use or sale.