**LEAD-FREE / RoHS-COMPLIANT**

**HIGH ISOLATION POWER COMBINER**

**PBR-0003SMG**

**Features**
- 10 MHz to 3 GHz Power Combiner/Divider
- 40 dB Typ Isolation
- Applications: High Isolation Power Combining for Test Equipment
- **Microwave Power Dividers & Couplers App Note**

**Electrical Specifications** - Specifications guaranteed from -55 to +100°C, measured in a 50Ω system.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Frequency Range</th>
<th>Min</th>
<th>Typ</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal Power Splitting</td>
<td>10 MHz to 3 GHz</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amplitude Balance (dB)</td>
<td></td>
<td>±0.8</td>
<td>±1.6</td>
<td></td>
</tr>
<tr>
<td>Excess Insertion Loss (dB)</td>
<td></td>
<td>1.5</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Input Port VSWR</td>
<td></td>
<td>1.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Common Port VSWR</td>
<td></td>
<td>1.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Isolation (dB)</td>
<td></td>
<td>28</td>
<td>40</td>
<td>1</td>
</tr>
</tbody>
</table>

Excess Insertion Loss = (Input Port to Common Port Insertion Loss) – 6 dB.

**Model Number** | **Description**
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PBR-0003SMG | 10 MHz to 3 GHz Power Combiner, Surface Mount, LEAD-FREE/RoHS COMPLIANT

Connectorized evaluation fixtures available. Consult factory.

Substrate material is 8-mil thick Rogers 4003, 1 Oz Electrodeposited Cu. I/O Pads & Ground Plane Finish is Gold Flash, 5 to 10 μ-inches, over Electroplated Nickel, 100-200 μ-inches, over Cu. See **PBRSMG-PCB** for suggested PCB layout. Drying bake required after aqueous wash.

215 Vineyard Court, Morgan Hill, CA 95037 | Ph: 408.778.4200 | Fax 408.778.4300 | info@markimicrowave.com
HIGH ISOLATION POWER COMBINDER

PBR-0003SMG

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IP3 measurement using high isolation power combiner

Fig. 1. Mixer IP3 measurement

Fig. 2. Amplifier IP3 measurement

Typical Performance

Fig. 3. Input port to common port insertion loss.

Fig. 4. Return loss for input and common ports.

Fig. 5. Amplitude balance between input ports.

Fig. 6. Isolation between input ports.
Fig. 7. Low Frequency Performance.

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