FEATUES

- Rugged waveguide configuration
- Full band operation
- Low cost

APPLICATIONS

- Test benches
- Subsystems
- Prototypes

DESCRIPTION

PWS, PWE, PWH, PWM and PWT series offered various waveguide components to cover frequency range of 18 to 110 GHz in seven waveguide bands. Other frequency bands are available per request.

Straight waveguide sections (PWS) offer the inter-connections between the waveguide ports and are available in 1” to 8” standard length in 1” incremental as well as customer-specified lengths.

Waveguide bends (PWE) change the E plane direction in the waveguide assembly. While standard version offers 90° bend, the special bend angle up to 180° are available per request.

Waveguide bends (PWH) change the H plane direction in the waveguide assembly. While standard version offers 90° bend, the special bend angle up to 180° are available per request.

Waveguide termination loads (PWM) are useful when a matched port termination is required. The standard termination loads offer less than 1.10 VSWR and up to 10.0 watts power handling. Higher power handling versions are offered as custom-specified option.

Waveguide twists (PWT) allow changing the orientation of the waveguide port and are available with the twisting angle of 45° or 90°.

WAVEGUIDE SPECIFICATIONS

<table>
<thead>
<tr>
<th>Waveguide Band</th>
<th>K</th>
<th>Ka</th>
<th>Q</th>
<th>U</th>
<th>V</th>
<th>E</th>
<th>W</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency Range (GHz)</td>
<td>18</td>
<td>26.5 to 40</td>
<td>33 to 50</td>
<td>40 to 60</td>
<td>50 to 75</td>
<td>60 to 90</td>
<td>75 to 110</td>
</tr>
<tr>
<td>Waveguide Size</td>
<td>WR-42</td>
<td>WR-28</td>
<td>WR-22</td>
<td>WR-19</td>
<td>WR-15</td>
<td>WR-12</td>
<td>WR-10</td>
</tr>
<tr>
<td>Inner Dimension (A x B, Inches)</td>
<td>0.420 x 0.170</td>
<td>0.280 x 0.140</td>
<td>0.224 x 0.112</td>
<td>0.188 x 0.094</td>
<td>0.148 x 0.074</td>
<td>0.122 x 0.061</td>
<td>0.100 x 0.050</td>
</tr>
</tbody>
</table>

Note: Contact factory for other waveguide band needs.
The flange pattern shown is for illustration purpose. Refer to Technical Reference Section for flange pattern details. The outline drawings shown are standard versions. Contact factory for your specific package requirements.
Passive Component Outline Drawings #2

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**HOW TO ORDER**

**Straight waveguide sections**

Specify Model Number

PWS - WG LL -XX

Waveguide Size ________

Length in Inches ________

Example: To order a 2” long, WR-15 straight waveguide section, specify PWS-1502-XX.

**Waveguide E plane bends**

Specify Model Number

PWE - WG DD -XX

Waveguide Size ________

Degrees ________

Example: To order a WR-28, E-plane, 30° waveguide bend, specify PWE-2830-XX.

**Waveguide H plane bends**

Specify Model Number

PWH - WG DD -XX

Waveguide Size ________

Degrees ________

Example: To order a WR-28, E-plane, 30° waveguide bend, specify PWE-2830-XX.

**Waveguide twists**

Specify Model Number

PWT - WG DD -XX

Waveguide Size ________

Degrees ________

Example: To order a 45°, 1” long, WR-12 waveguide twist, specify PWT-120145-XX.

**Waveguide termination loads**

Specify Model Number

PWM – WG WW -XX

Waveguide Size ________

Power in Watts ________

Example: To order a WR-42 waveguide, 2 Watts termination load, specify PWM-4202-XX.
Waveguide Sections, Bends, Twists and Loads
Bulletin No. PWG

Outline: WT-E-A1

Outline: WT-E-A2

Outline: WT-E-A3

Outline: WT-E-A4

Outline: WT-E-A5

<table>
<thead>
<tr>
<th>Waveguide Band</th>
<th>Frequency Range (GHz)</th>
<th>Waveguide Size</th>
<th>Flange Pattern</th>
<th>E-Bends A (Inch)</th>
<th>H-Bends B (Inch)</th>
<th>Twist C (Inch)</th>
<th>Loads D (Inch)</th>
<th>Section L (Inch)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>8-12.4</td>
<td>WR-90</td>
<td>UG39/U</td>
<td>2.00</td>
<td>2.00</td>
<td>3.00</td>
<td>3.00</td>
<td>2.0</td>
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<tr>
<td>WR-75</td>
<td>10-15</td>
<td>WR-75</td>
<td>Square</td>
<td>1.75</td>
<td>1.75</td>
<td>2.75</td>
<td>2.75</td>
<td>2.0</td>
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<tr>
<td>Ku</td>
<td>12-18</td>
<td>WR-62</td>
<td>UG419/U</td>
<td>1.50</td>
<td>1.50</td>
<td>2.50</td>
<td>2.50</td>
<td>2.0</td>
</tr>
<tr>
<td>K</td>
<td>18-26.5</td>
<td>WR-42</td>
<td>UG595/U</td>
<td>1.25</td>
<td>1.25</td>
<td>2.50</td>
<td>2.50</td>
<td>1.0</td>
</tr>
<tr>
<td>Ka</td>
<td>26.5-40</td>
<td>WR-28</td>
<td>UG599/U</td>
<td>1.00</td>
<td>1.00</td>
<td>2.00</td>
<td>2.00</td>
<td>1.0</td>
</tr>
<tr>
<td>Q</td>
<td>33-50</td>
<td>WR-22</td>
<td>UG383/U</td>
<td>1.00</td>
<td>1.00</td>
<td>2.00</td>
<td>2.00</td>
<td>1.0</td>
</tr>
<tr>
<td>U</td>
<td>40-60</td>
<td>WR-19</td>
<td>UG383/U-M</td>
<td>1.00</td>
<td>1.00</td>
<td>1.50</td>
<td>2.00</td>
<td>1.0</td>
</tr>
<tr>
<td>V</td>
<td>50-75</td>
<td>WR-15</td>
<td>UG385/U</td>
<td>0.75</td>
<td>0.75</td>
<td>1.50</td>
<td>1.50</td>
<td>1.0</td>
</tr>
<tr>
<td>E</td>
<td>60-90</td>
<td>WR-12</td>
<td>UG387/U</td>
<td>0.75</td>
<td>0.75</td>
<td>1.25</td>
<td>1.50</td>
<td>1.0</td>
</tr>
<tr>
<td>W</td>
<td>75-110</td>
<td>WR-10</td>
<td>UG387/U-M</td>
<td>0.75</td>
<td>0.75</td>
<td>1.25</td>
<td>1.50</td>
<td>1.0</td>
</tr>
</tbody>
</table>

* The length shown is for standard model. Customer may specify the length at time of inquiry.

The flange pattern shown is for illustration purpose. Refer to standard waveguide flange pattern for details.