PIN Diode Switches

Bulletin No. CPS, CPD and CPM

FEATURES
- Low insertion loss
- High isolation
- High speed available
- TTL control available
- Single, double and multi-throw

APPLICATIONS
- Pulse modulation
- Radar duplexing
- Receiver protection
- Antenna beam switching

DESCRIPTION
CPS, CPD and CPM series are discrete or MMIC based PIN diode switches that operate at the frequency range from 18 to 110 GHz. These switches are especially designed for low insertion loss and high isolation applications. While these switches are designed for broadband operation, lower insertion loss and higher isolation can be achieved by optimizing design for specific narrower frequency range. These PIN diode switches are reflective type and can be tailored to absorptive type by integrating input and output isolators. Furthermore, the internal TTL driver is offered as an option for ease TTL control.

SPECIFICATIONS

<table>
<thead>
<tr>
<th>Frequency Range (GHz)</th>
<th>Maximum Available Bandwidth (GHz)</th>
<th>Insertion Loss (dB, Typ)*</th>
<th>Isolation (dB, Min)*</th>
<th>VSWR (Typ)</th>
<th>Switch Speed (nS, Min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>18 - 26.5</td>
<td>Full</td>
<td>SPST 1.2 SPDT 1.8</td>
<td>20</td>
<td>2:1</td>
<td>250</td>
</tr>
<tr>
<td>26.5 - 40</td>
<td>Full</td>
<td>SPST 1.5 SPDT 2.0</td>
<td>20</td>
<td>2:1</td>
<td>250</td>
</tr>
<tr>
<td>33 to 50</td>
<td>10</td>
<td>SPST 1.8 SPDT 2.2</td>
<td>20</td>
<td>2:1</td>
<td>250</td>
</tr>
<tr>
<td>40 to 60</td>
<td>10</td>
<td>SPST 2.0 SPDT 2.4</td>
<td>20</td>
<td>2:1</td>
<td>250</td>
</tr>
<tr>
<td>50 to 75</td>
<td>10</td>
<td>SPST 2.2 SPDT 2.6</td>
<td>20</td>
<td>2:1</td>
<td>250</td>
</tr>
<tr>
<td>60 to 90</td>
<td>10</td>
<td>SPST 2.3 SPDT 2.8</td>
<td>20</td>
<td>2:1</td>
<td>250</td>
</tr>
<tr>
<td>75 to 110</td>
<td>10</td>
<td>SPST 2.5 SPDT 3.0</td>
<td>20</td>
<td>2:1</td>
<td>250</td>
</tr>
</tbody>
</table>

Temperature Range: 0 to +50°C

* Insertion Loss & Isolation are for waveguide version.
** Consult factory for the switches with the outlines and specifications other than listed above.

HOW TO ORDER

The switches with the performance other than listed above are available per customer’s request. You may submit your specifications along with the model number per following instruction.

Specify Model Number:

Example: To order a SPDT switch with center frequency of 60 GHz, 4 GHz bandwidth, 2.2 dB insertion loss and 20 dB isolation, specify CPS-6004220-XX.
Direct Reading Attenuators

**FEATURES**
- Rugged waveguide configuration
- Full band operation
- 0 to 50 dB attenuation range
- High accuracy
- Test benches
- Instrumentation
- Calibration

**APPLICATIONS**

CAR series direct reading attenuators are offered for the frequency range of 18 to 110 GHz in seven waveguide bands. The attenuators are constructed with a precision rotary resistive vane in a circular waveguide. Therefore, they are frequency independent. The attenuators offer a high degree of repeatability and accuracy over the full waveguide band operation. The attenuation value is read directly from the helical drum scale. These attenuators are the ideal devices when precision measurement, such as output power, gain, insertion loss, isolation, coupling and return loss is required.

**DESCRIPTION**

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Band</th>
<th>W &amp; E</th>
<th>V</th>
<th>U &amp; Q</th>
<th>K</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>K</td>
<td>2.50</td>
<td>3.50</td>
<td>4.00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Dimensions are in inches**

<table>
<thead>
<tr>
<th>Band</th>
<th>W &amp; E</th>
<th>V</th>
<th>U &amp; Q</th>
<th>K</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>K</td>
<td>1.20</td>
<td>1.50</td>
<td>2.00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Dimensions are in inches**

- 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.