Balanced Phase Detectors

FEATURES:

- High Sensitivity
- Good RF Isolation
- High-Reliability Beam-Lead Diodes

APPLICATIONS:

- Phased-lock Loops
- Phase-encoded Systems
- Phase Bridges

CBD Series

DESCRIPTION:
Cernex’s CBD series balanced phase detectors feature a pair of Schottky diodes that mix or beat two input signals at the same frequency to produce a DC output voltage proportional to the phase difference of the input signals. Matching the two Schottky diodes ensures low DC offset results as well as good port-to-port isolation.

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>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>
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<tr>
<td>Frequency Range (GHz)</td>
<td>18 to 26.5</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>
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<tr>
<td>Sensitivity (mV/o), Typ.</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>2</td>
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<tr>
<td>Bandwidth (%), Typ.</td>
<td></td>
<td></td>
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<td>4</td>
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<tr>
<td>RF Isolation (dB), Typ.</td>
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<tr>
<td>AM Suppression (dB), Typ.</td>
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</tbody>
</table>

1. The sensitivity given above was measured with 4dBm incident onto each input port with a 1MΩ load on the output port.

HOW TO ORDER:

Specify Model Number          CBD — LH HF SS IS— XX
Low End frequency     ↑     ↑     |  |  |  |  |
High End Frequency      |     |     |     | Isolation     |
To be Specified by the factory

Example: To order WR-15 a balanced phase detector from 50 to 75 Ghz, a sensitivity of 3 mV, and an isolation of 20db, specify CBD-50750320-XX.

CERNEX RESERVE THE RIGHT TO CHANGE THE SPECIFICATIONS WITHOUT NOTICE