Coaxial Power Detector

ZX47-60+ ZX47-60LN+

Maximum Ratings
- Operating Temperature: -40°C to 85°C
- Storage Temperature: -55°C to 100°C
- DC Power:
  - Max. voltage: 5.7V
  - Max. current: 120mA
- Internal Power Dissipation: 0.73W
- Input Power: 15dBm

Permanent damage may occur if any of these limits are exceeded.

Coaxial Connections
- RF IN 1
- DC OUT 5
- Vcc (+5V) 2
- TEMPERATURE SENSOR 4
- GROUND 3

Outline Drawing

Outline Dimensions (inch/mm)

Simplified Functional Diagram

Electrical Specifications (T<sub>AMB</sub> = 25°C)

<table>
<thead>
<tr>
<th>Frequency (MHz)</th>
<th>Dynamic Range at ±1dB (dBm)</th>
<th>Output Voltage Range (V)</th>
<th>Slope (mV/dB)</th>
<th>VSWR (Note 1)</th>
<th>PULSE RESPONSE TIME (nSec)</th>
<th>TEMP SENSOR OUTPUT SLOPE (mV/°C)</th>
<th>TEMP SENSOR OUTPUT RANGE (V)</th>
<th>DC Operating Power (Note 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>-55 to 0</td>
<td>Typ.</td>
<td>Typ.</td>
<td>Typ.</td>
<td>1.1</td>
<td>400</td>
<td>10</td>
<td>800</td>
</tr>
<tr>
<td>1000</td>
<td>-5 to +5</td>
<td>0.50 - 2.10</td>
<td>-25</td>
<td>1.1</td>
<td></td>
<td>400</td>
<td>10</td>
<td>500</td>
</tr>
<tr>
<td>5000</td>
<td>-55 to +5</td>
<td>1.8</td>
<td>1.7</td>
<td>2.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6000</td>
<td>-50 to +5</td>
<td>1.4</td>
<td>1.7</td>
<td>4.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes:
1. The negative slope indicates that Output Voltage decreases as Input Power increases.
2. Temperature sensor output provides a DC Output Voltage which increases linearly with temperature rise.
3. Recommended minimum load for this port is 2 kΩ.

Applications
- RF/IF Power Measurements
- Low Cost Power Monitoring System
- RF Leakage Monitors
- Fast feedback Levelling Circuits
- RF Power Control
- Receiver RF/IF Gain Control
- RSSI measurements

Permanent damage may occur if any of these limits are exceeded.

Output Voltage Vs Input Power @ +25°C
Performance Curves

ZX47-60+
ZX47-60LN+

Power Input Deviation from Ideal Vs Output Voltage @ Freq 10MHz

Power Input Deviation from Ideal Vs Output Voltage @ Freq 2000MHz

Power Input Deviation from Ideal Vs Output Voltage @ Freq 6000MHz

Power Input Deviation from Ideal Vs Output Voltage @ Freq 8000MHz

Output Voltage Change Vs Freq Over Temperature Range

Output Voltage Change Vs Freq Over Temperature Range

Notes
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Performance Curves

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**Performance Curves**

**ZX47-60+**

**ZX47-60LN+**

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**Output Voltage Change Vs Input Power**

*Over Temperature Range*

<table>
<thead>
<tr>
<th>Input Power (dBm)</th>
<th>@ Freq 2000MHz</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Output Voltage Deviation @ -40°C relative to +25°C</td>
</tr>
<tr>
<td></td>
<td>Output Voltage Deviation @ +85°C relative to +25°C</td>
</tr>
</tbody>
</table>

**VSWR Vs Freq**

*Over Temperature Range*

<table>
<thead>
<tr>
<th>Frequency (MHz)</th>
<th>0</th>
<th>1000</th>
<th>2000</th>
<th>3000</th>
<th>4000</th>
<th>5000</th>
<th>6000</th>
<th>7000</th>
<th>8000</th>
</tr>
</thead>
<tbody>
<tr>
<td>VSWR</td>
<td>1.0</td>
<td>1.4</td>
<td>1.8</td>
<td>2.2</td>
<td>2.6</td>
<td>3.0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Temperature Sensor Voltage**

*Vs Ambient Temperature*

<table>
<thead>
<tr>
<th>Ambient Temperature (degC)</th>
<th>Sensor Voltage (V)</th>
</tr>
</thead>
<tbody>
<tr>
<td>-60</td>
<td>-50</td>
</tr>
<tr>
<td>0.3</td>
<td>0.4</td>
</tr>
</tbody>
</table>

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