Phase Locked Oscillators Technical Data Sheet

PE19XC7007

2 GHz Phase Locked Oscillator, 100 MHz External Ref., Phase Noise -110 dBC/Hz, SMA

Features

- Phase Locked Oscillator (PLO) Module
- 2,000 MHz Fixed Frequency
- 100 MHz External Reference Frequency
- Output Power: +7 dBm typical
- Low Phase Noise: -110 dBC/Hz @ 10 kHz offset typical
- Low Spurious Suppression: < -70 dBc typical
- Nickel Plated Compact Package
- SMA Connectors
- TTL Lock Detect Pin
- -30°C to +70°C Operating Temperature
- Designed to meet MIL-STD-202 Test Conditions

Applications

- Local Oscillator
- Microwave Radio
- Communication and Sensor Systems
- Test Instrumentation
- Telecom Infrastructure
- Electronic Warfare
- Electronic Countermeasures
- Space Systems

Description

The PE19XC7007 is a highly reliable Phase Locked Oscillator (PLO) module that operates at a fixed frequency of 2,000 MHz. The versatile low noise signal source supports a 100 MHz External Reference for design flexibility. Impressive performance includes an output power level of +7 dBm typical and low phase noise performance of -110 dBC/Hz @ 10 kHz offset typical, while using a +12V single DC supply. The design also exhibits excellent Spurious suppression levels < -70 dBc typical. The PCB solder assembly is RoHS compliant and available in a compact coaxial package that's Nickel plated and supports SMA connectors with DC bias pins and a TTL Lock Detect pin available to signal an out-of-lock condition. The Phase Locked Oscillator operates over a temperature range of -30°C to +70°C and is designed to meet MIL-STD-202 test conditions for Vibration and Shock.

Electrical Specifications

<table>
<thead>
<tr>
<th>Description</th>
<th>Minimum</th>
<th>Typical</th>
<th>Maximum</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output Frequency</td>
<td>2</td>
<td></td>
<td></td>
<td>GHz</td>
</tr>
<tr>
<td>Output Impedance</td>
<td>50</td>
<td></td>
<td></td>
<td>Ohms</td>
</tr>
<tr>
<td>Output Power</td>
<td>+4</td>
<td>+7</td>
<td>+10</td>
<td>dBm</td>
</tr>
<tr>
<td>Phase Noise @ 1kHz Offset</td>
<td>-105</td>
<td>-100</td>
<td></td>
<td>dBC/Hz</td>
</tr>
<tr>
<td>Phase Noise @ 10kHz Offset</td>
<td>-110</td>
<td>-105</td>
<td></td>
<td>dBC/Hz</td>
</tr>
<tr>
<td>Phase Noise @ 100kHz Offset</td>
<td>-120</td>
<td>-115</td>
<td></td>
<td>dBC/Hz</td>
</tr>
<tr>
<td>Phase Noise @ 1MHz Offset</td>
<td>-140</td>
<td>-135</td>
<td></td>
<td>dBC/Hz</td>
</tr>
<tr>
<td>Reference Frequency</td>
<td>100</td>
<td></td>
<td></td>
<td>MHz</td>
</tr>
<tr>
<td>Reference Impedance</td>
<td>50</td>
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<td></td>
<td>Ohms</td>
</tr>
<tr>
<td>Reference Input Power</td>
<td>+4</td>
<td>+7</td>
<td>+10</td>
<td>dBm</td>
</tr>
<tr>
<td>Reference Phase Noise @ 10Hz Offset</td>
<td>-95</td>
<td></td>
<td></td>
<td>dBC/Hz</td>
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<tr>
<td>Reference Phase Noise @ 100Hz Offset</td>
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<td></td>
<td>dBC/Hz</td>
</tr>
<tr>
<td>Reference Phase Noise @ 1kHz Offset</td>
<td>-135</td>
<td></td>
<td></td>
<td>dBC/Hz</td>
</tr>
<tr>
<td>2nd Harmonics</td>
<td>-25</td>
<td>-20</td>
<td></td>
<td>dBC</td>
</tr>
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</table>

Click the following link (or enter part number in “SEARCH” on website) to obtain additional part information including price, inventory and certifications: 2 GHz Phase Locked Oscillator, 100 MHz External Ref., Phase Noise -110 dBC/Hz, SMA PE19XC7007
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<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
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</thead>
<tbody>
<tr>
<td>Spurious</td>
<td>-70, -65</td>
</tr>
<tr>
<td>Lock Detect</td>
<td>5 V DC TTL, High=Lock</td>
</tr>
<tr>
<td>Supply Voltage (DC) 1</td>
<td>12 Vdc</td>
</tr>
<tr>
<td>Supply Current (DC) 1</td>
<td>150, 200 mA</td>
</tr>
</tbody>
</table>

**Mechanical Specifications**

- **Size**
  - Length: 2 in [50.8 mm]
  - Width: 1.5 in [38.1 mm]
  - Height: 0.6 in [15.24 mm]
  - Weight: 0.105 lbs [47.63 g]
- **Body Material and Plating**: Aluminum

**Configuration**

- **Design**: Commercial
- **Reference Type**: External
- **Package Style**: Connectorized
- **Input Connector**: SMA Female
- **Output Connector**: SMA Female

**Environmental Specifications**

- **Temperature**
  - Operating Range: -30 to +70 deg C
  - Shock: IAW MIL-STD-202, Method 213, Condition A
  - Vibration: IAW MIL-STD-202, Method 204, Condition A
  - ESD Sensitivity: ESD Sensitive Material, Transport material in Approved ESD bags. Handle only in ESD Workstation.

**Compliance Certifications** (see product page for current document)

**Plotted and Other Data**

- **Notes:**

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Functional Block Diagram

Typical Performance Data

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NOTE: HOUSING IS GROUND.

NOTE: UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE NOMINAL AND DAUGHTERBOARD SUBJECT TO CHANGE WITHOUT NOTICE AT ANY TIME.

NOTE: SPECIFICATIONS APPLY IN VARIOUS FORMS OF ADDITIONAL TECHNOLOGY.