Voltage-Controlled Oscillator Surface Mount Module

### Applications
- Satellite Communication Systems
- Upconverter/Downconverter

### Application Notes
- AN-101: Mounting and Grounding
- AN-102: Output Loading
- AN-107: Manual Soldering

### Performance Specifications

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Min</th>
<th>Typ</th>
<th>Max</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oscillation Frequency Range</td>
<td>1300 MHz</td>
<td>1300 MHz</td>
<td></td>
<td>MHz</td>
</tr>
<tr>
<td>Phase Noise @ 10 kHz offset (1 Hz BW)</td>
<td>-117 dBc/Hz</td>
<td>-15 dBc</td>
<td>-13 dBc</td>
<td>dBc/Hz</td>
</tr>
<tr>
<td>Harmonic Suppression (2nd)</td>
<td>-15 dBc</td>
<td>-13 dBc</td>
<td></td>
<td>dBc</td>
</tr>
<tr>
<td>Tuning Voltage</td>
<td>0 Vdc</td>
<td>5 Vdc</td>
<td></td>
<td>Vdc</td>
</tr>
<tr>
<td>Tuning Sensitivity (avg.)</td>
<td>3 MHz/V</td>
<td></td>
<td></td>
<td>MHz/V</td>
</tr>
<tr>
<td>Power Output</td>
<td>0 dBm</td>
<td>3.5 dBm</td>
<td>7 dBm</td>
<td>dBm</td>
</tr>
<tr>
<td>Load Impedance</td>
<td>50 Ω</td>
<td></td>
<td></td>
<td>Ω</td>
</tr>
<tr>
<td>Input Capacitance</td>
<td>50 pF</td>
<td></td>
<td></td>
<td>pF</td>
</tr>
<tr>
<td>Pushing</td>
<td>.3 MHz/V</td>
<td></td>
<td></td>
<td>MHz/V</td>
</tr>
<tr>
<td>Pulling (12 dB Return Loss, Any Phase)</td>
<td>.1 MHz</td>
<td></td>
<td></td>
<td>MHz</td>
</tr>
<tr>
<td>Operating Temperature Range</td>
<td>0 °C</td>
<td>50 °C</td>
<td></td>
<td>°C</td>
</tr>
<tr>
<td>Package Style</td>
<td>MINI-16-SM</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Power Supply Requirements

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Min</th>
<th>Typ</th>
<th>Max</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply Voltage (Vcc, nom.)</td>
<td>5 Vdc</td>
<td></td>
<td></td>
<td>Vdc</td>
</tr>
<tr>
<td>Supply Current (Icc)</td>
<td>19 mA</td>
<td>23 mA</td>
<td></td>
<td>mA</td>
</tr>
</tbody>
</table>

### Additional Notes

LFSuffix = RoHS Compliant. All specifications are subject to change without notice.

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Voltage-Controlled Oscillator (VCO)

**Tuning Curve, typ.**

![Tuning Curve Graph](image)

- **FREQUENCY (MHz)**
  - 1285
  - 1290
  - 1295
  - 1300
  - 1305
  - 1310

- **TUNING VOLTAGE (Vdc)**
  - 0
  - 0.5
  - 1
  - 1.5
  - 2
  - 2.5
  - 3
  - 3.5
  - 4
  - 4.5
  - 5

- **Temperature Settings**
  - Red: 50°C
  - Black: 25°C
  - Blue: 0°C

**Power Curve, typ.**

![Power Curve Graph](image)

- **POWER OUTPUT (dBm)**
  - 0.03
  - 0.15
  - 0.21
  - 0.25
  - 0.31
  - 0.38
  - 0.41
  - 0.47

- **FREQUENCY (MHz)**
  - 1290
  - 1292
  - 1295
  - 1296
  - 1298
  - 1300
  - 1301
  - 1303
  - 1304
  - 1305

- **Temperature Settings**
  - Red: 50°C
  - Black: 25°C
  - Blue: 0°C

**Footprint**

- **Recommended Footprint**
  - Several holes of 0.015 on GND plane recommended for good grounding.

- **Power Output Min. Cutback**
  - From live pads

- **Z-COMM XXXXXXXXX-LF**
- W/O #
- D/C

**Physical Dimensions**

- **SOLDER MASK**
- **GOLD PLATED PADS**

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