MLPNC-7102

NLTL Comb Generator

Features
- Ultra-Low Phase Noise
- Variable Input Frequency 300 - 700 MHz
- Variable Input Power from 19 - 24 dBm
- Output Harmonics to 20 GHz
- SMT680 Surface Mount Package
- SMA800 Hermetically Package
- No Bias or Tuning Required
- RoHS* Compliant

Description
The MLPNC-7102 is a monolithic non-linear-transmission-line (NLTL) comb generator which offers outstanding phase noise performance. This high performance comb generator operates over specified ranges of input frequency/power.

Operating Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Units</th>
<th>Recommended Input</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Min.</td>
</tr>
<tr>
<td>Frequency</td>
<td>MHz</td>
<td>300</td>
</tr>
<tr>
<td>Power</td>
<td>dBm</td>
<td>19</td>
</tr>
</tbody>
</table>

1. The model MLPNC-7102 does not abruptly stop working at the recommended min and max frequencies and powers. The conversion efficiency drops outside recommended limits.

Production Test Limits

<table>
<thead>
<tr>
<th>Input / Power</th>
<th>Units</th>
<th>Output Harmonics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>4 GHz</td>
</tr>
<tr>
<td>500 MHz, 22 dBm</td>
<td>dBm</td>
<td>&gt; -8</td>
</tr>
</tbody>
</table>

2. These are the harmonic output test limits used for production screening.

Absolute Maximum Ratings

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Absolute Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Power</td>
<td>27 dBm</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-45°C to +85°C</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-55°C to +125°C</td>
</tr>
<tr>
<td>Temperature Cycling</td>
<td>-55°C to +125°C</td>
</tr>
</tbody>
</table>

3. Exceeding any one or combination of these limits may cause permanent damage to this device.
4. MACOM does not recommend sustained operation near these survivability limits.

Ordering Information

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Package</th>
</tr>
</thead>
<tbody>
<tr>
<td>MLPNC-7102-SMA800</td>
<td>ESD Box with Foam</td>
</tr>
<tr>
<td>MLPNC-7102-SMT680</td>
<td>ESD Box with Foam</td>
</tr>
</tbody>
</table>

* Restrictions on Hazardous Substances, compliant to current RoHS EU directive.

For further information and support please visit: https://www.macom.com/support
Typical Performance Curves @ 300 MHz

**Harmonic Output, 18 dBm Input**

-30 -20 -10 0 10

```
Frequency (GHz)
```

**Harmonic Output, 20 dBm Input**

-30 -20 -10 0 10

```
Frequency (GHz)
```

**Harmonic Output, 22 dBm Input**

-30 -20 -10 0 10

```
Frequency (GHz)
```

**Harmonic Output, 24 dBm Input**

-30 -20 -10 0 10

```
Frequency (GHz)
```
Typical Performance Curves @ 500 MHz

Harmonic Output, 18 dBm Input

Harmonic Output, 20 dBm Input

Harmonic Output, 22 dBm Input

Harmonic Output, 24 dBm Input

Phase Noise, 500 MHz Input, 12 GHz Output
Typical Performance Curves @ 700 MHz

Harmonic Output, 18 dBm Input

Harmonic Output, 20 dBm Input

Harmonic Output, 22 dBm Input

Harmonic Output, 24 dBm Input

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Outline: SMT680

Top View

Side View

Bottom View

Dimensions in inches [mm]
Outline: SMA800, hermetic

Dimensions in inches [mm]