

NLTL Comb Generator

Rev. V2

Features

- Ultra-Low Phase Noise
- Variable Input Frequency 600 - 1500 MHz
- Variable Input Power from 19 - 24 dBm
- Output Harmonics to 30 GHz
- SMT680 Surface Mount Package
- SMA800 Hermetically Package
- No Bias or Tuning Required
- RoHS* Compliant

Description

The MLPNC-7103 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.

SMA800
hermetic

SMT680

Operating Parameters¹

| Parameter | Units | Recommended Input | | |
|-----------|-------|-------------------|------|------|
| | | Min. | Typ. | Max. |
| Frequency | MHz | 600 | 1000 | 1500 |
| Power | dBm | 19 | 22 | 24 |

1. The model MLPNC-7103 does not abruptly stop working at the recommended min and max frequencies and powers. The conversion efficiency drops outside recommended limits.

Production Test Limits²

| Input / Power | Units | Output Harmonics | | | | |
|------------------|-------|------------------|--------|--------|--------|--------|
| | | 6 GHz | 12 GHz | 18 GHz | 24 GHz | 30 GHz |
| 1000 MHz, 22 dBm | dBm | > -5 | > -8 | > -15 | > -18 | > -20 |

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

Absolute Maximum Ratings^{3,4}

| Parameter | Absolute Maximum |
|-----------------------|------------------|
| Input Power | 27 dBm |
| Operating Temperature | -45°C to +85°C |
| Storage Temperature | -55°C to +125°C |
| Temperature Cycling | -55°C to +125°C |

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.

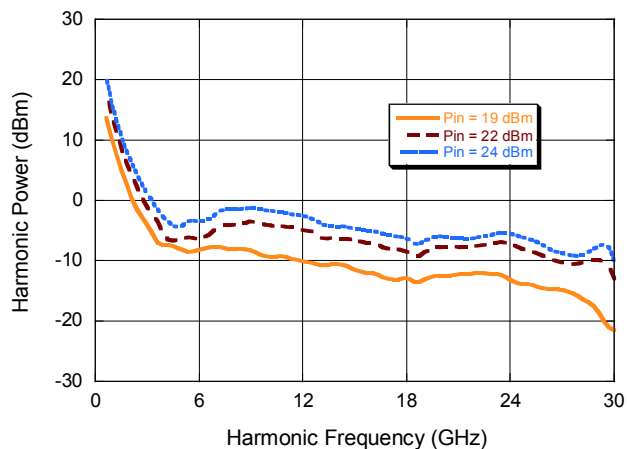
Ordering Information

| Part Number | Package |
|-------------------|-------------------|
| MLPNC-7103-SMA800 | ESD Box with Foam |
| MLPNC-7103-SMT680 | ESD Box with Foam |

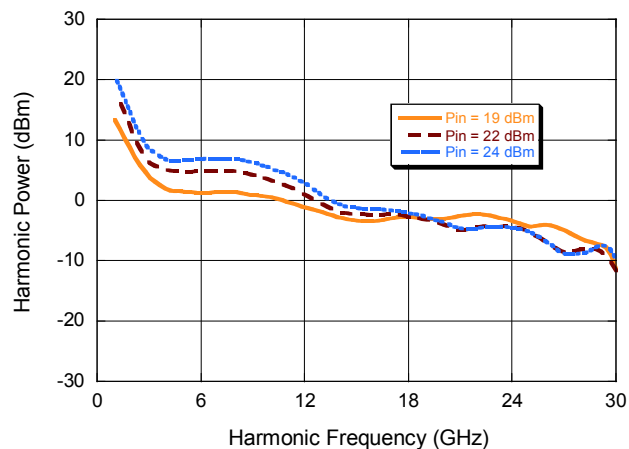
* Restrictions on Hazardous Substances,
European Union Directive 2011/65/EU.

Typical Performance Curves @ +25°C using SMA package:

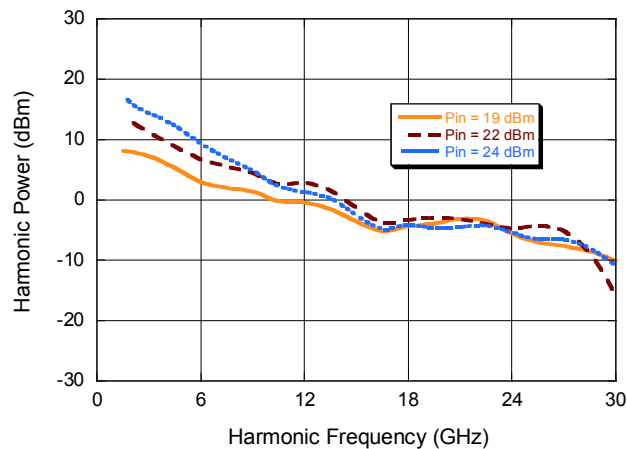
Harmonic Output, 600 MHz Input Frequency



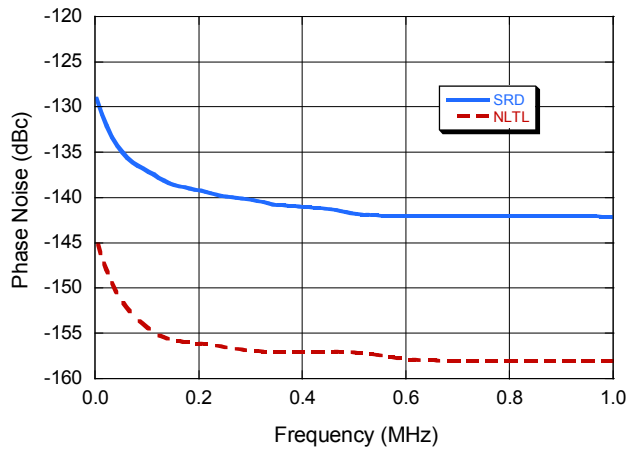
Harmonic Output, 1000 MHz Input Frequency



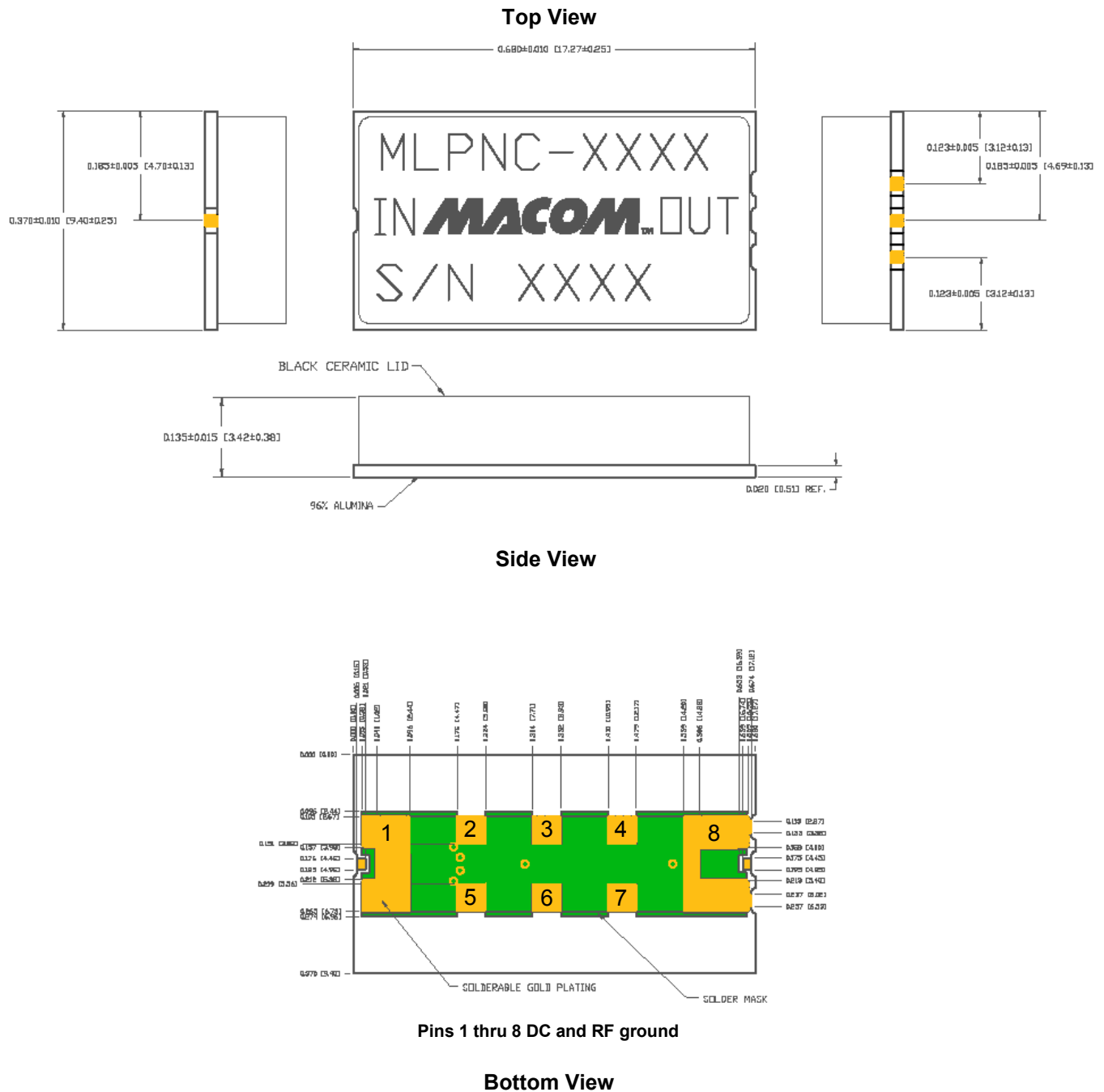
Harmonic Output, 1500 MHz Input Frequency



Phase Noise, 500 MHz Input Frequency, 22 dBm NLTL 24 dBm SRD

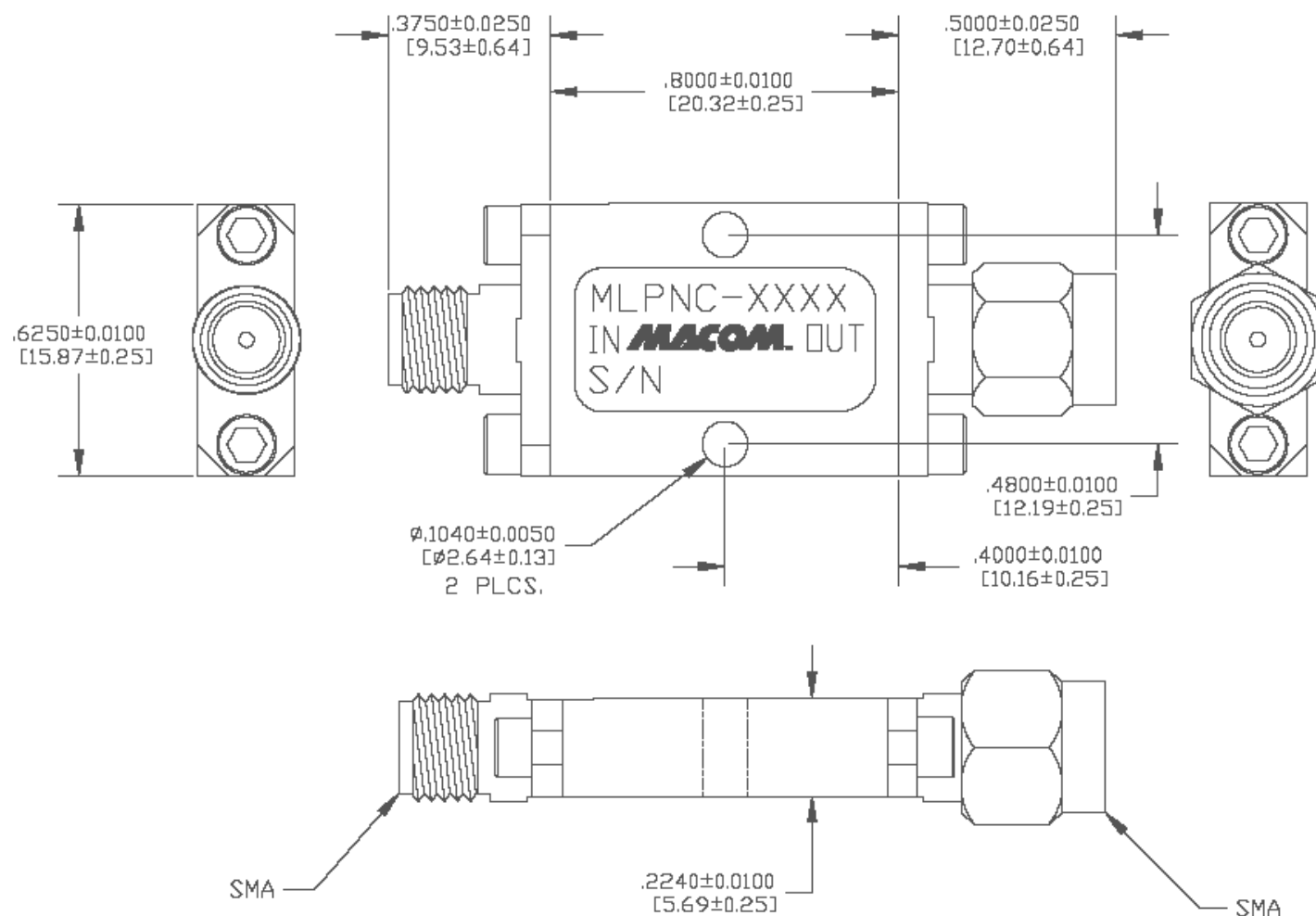


Outline: SMT680



Dimensions in inches [mm]

Outline: SMA800, hermetic



Dimensions in inches [mm]

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