## **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-lineartransmission-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**<sup>1</sup>

Parameter	Units	Recommended Input			
		Min.	Тур.	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 Limits<sup>2</sup>**

Input / Power U	Units	Output Harmonics					
	Units	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<sup>3,4</sup>

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.

 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.

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1



SMA800 hermetic



## **NLTL Comb Generator**



- Pin = 22 dBr

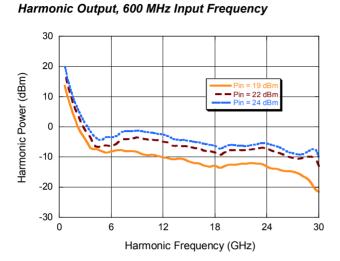
= 24

24

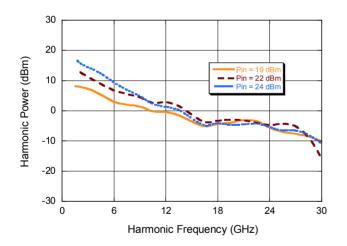
30

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



#### Harmonic Output, 1500 MHz Input Frequency



Harmonic Power (dBm) 0

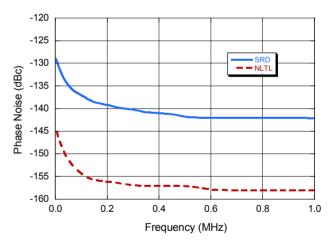
12

18

Harmonic Frequency (GHz)



6



#### Harmonic Output, 1000 MHz Input Frequency

30

20

10

-10

-20

-30

0

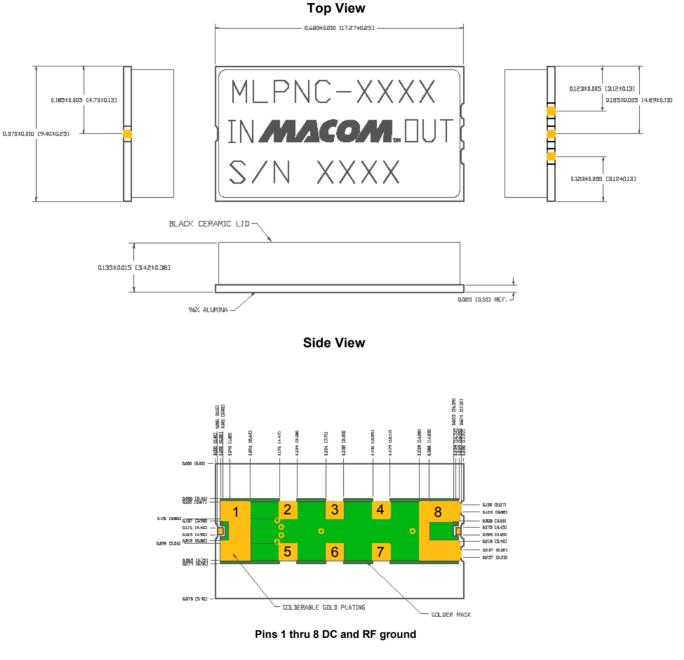
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MACOM

#### Outline: SMT680



**Bottom View** 

Dimensions in inches [mm]

3

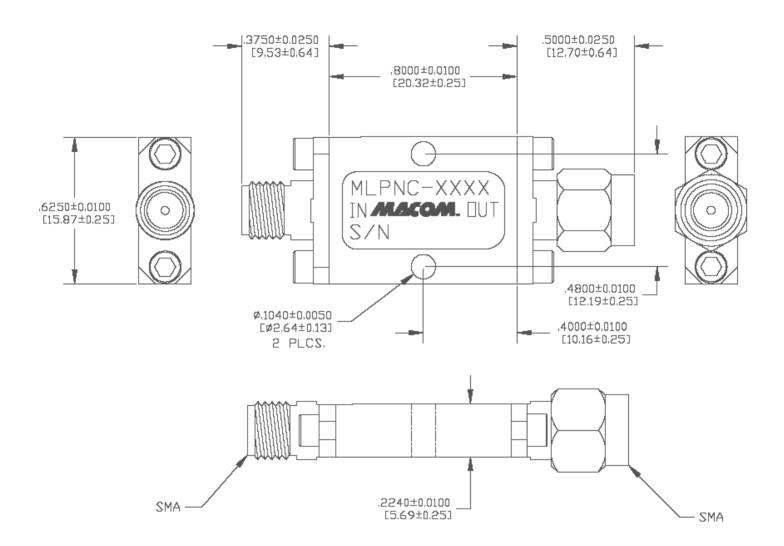
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#### Outline: SMA800, hermetic



Dimensions in inches [mm]

4

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### **NLTL Comb Generator**



Rev. V2

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<sup>5</sup> 

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