

### 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


 SMA800  
hermetic


SMT680

### 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.

### Operating Parameters<sup>1</sup>

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 Limits<sup>2</sup>

Part Number	Units	Output Harmonics				
		6 GHz	12 GHz	18 GHz	24 GHz	30 GHz
MLPNC-7103-SMA800	dBm	> -5	> -8	> -15	> -18	> -20
MLPNC-7103-SMT680	dBm	> -5	> -8	> -21	> -28	> -30

2. Input frequency and power are 1000 MHz and 22 dBm.

### 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.
4. MACOM does not recommend sustained operation near these survivability limits.

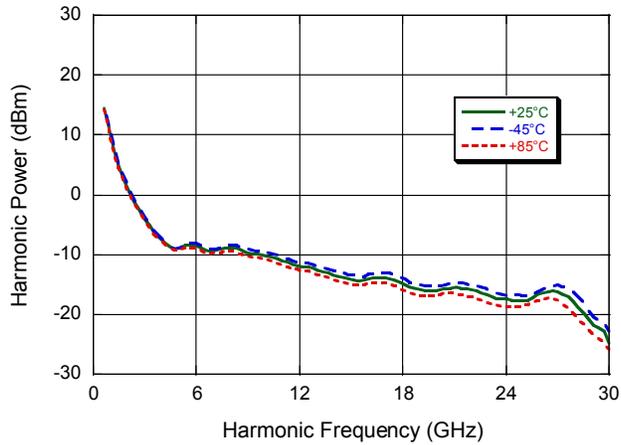
### Ordering Information

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

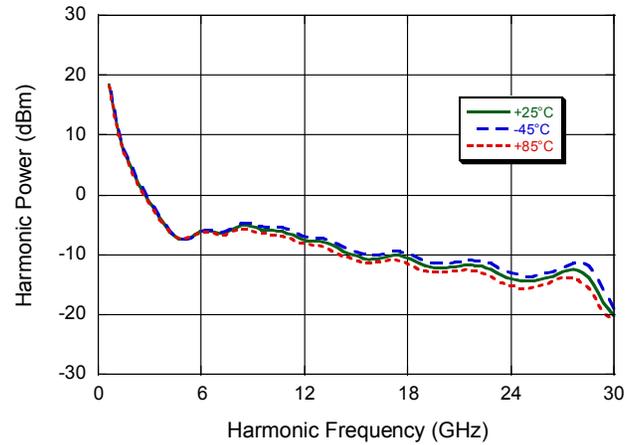
\* Restrictions on Hazardous Substances, compliant to current RoHS EU directive.

### Typical Performance Curves using SMA package @ 600 MHz:

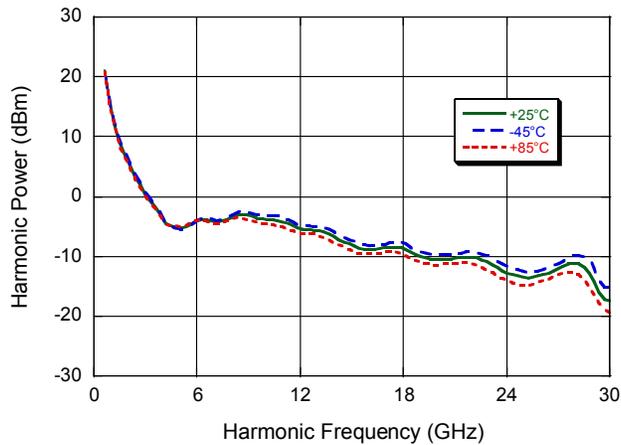
**Harmonic Output, @  $P_{IN} = 19$  dBm**



**Harmonic Output, @  $P_{IN} = 22$  dBm**

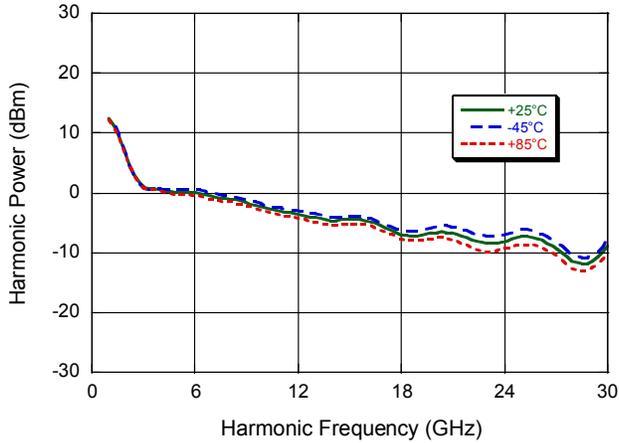


**Harmonic Output, @  $P_{IN} = 24$  dBm**

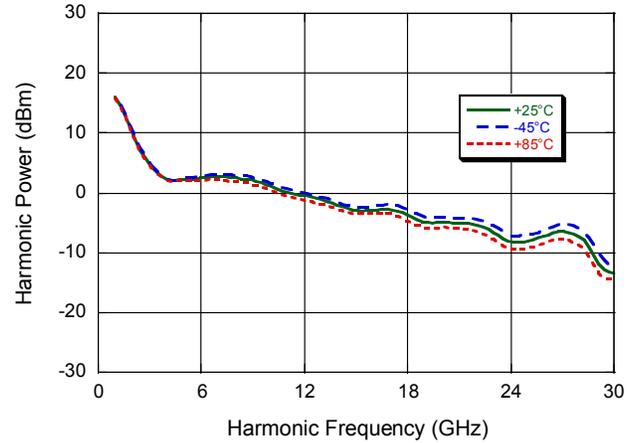


### Typical Performance Curves using SMA package @ 1000 MHz:

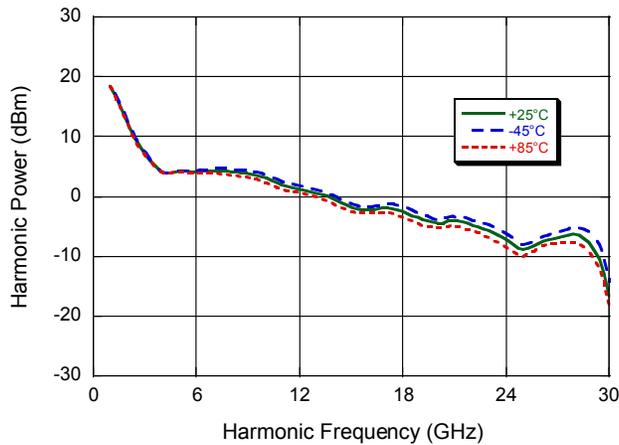
Harmonic Output, @  $P_{IN} = 19$  dBm



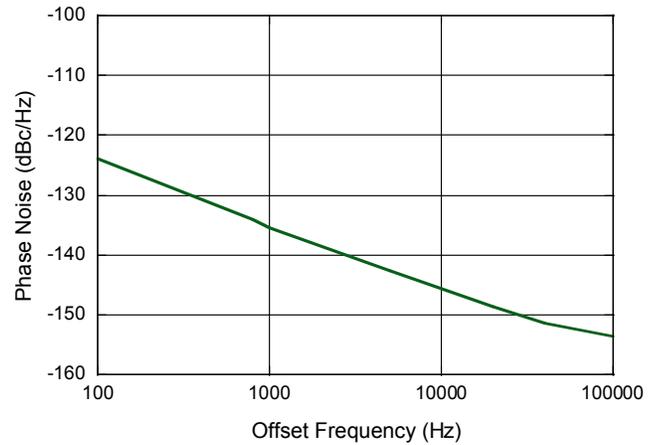
Harmonic Output, @  $P_{IN} = 22$  dBm



Harmonic Output, @  $P_{IN} = 24$  dBm

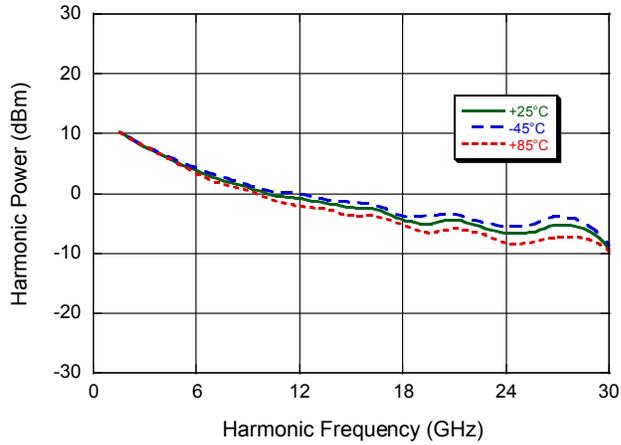


Phase Noise, @ 12 GHz Output,  $P_{IN} = 22$  dBm

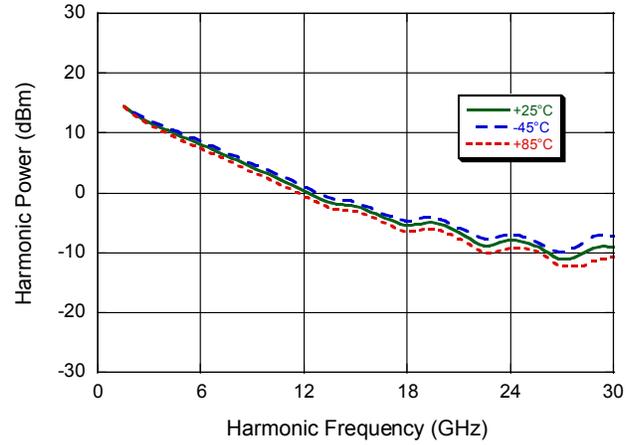


### Typical Performance Curves using SMA package @ 1500 MHz:

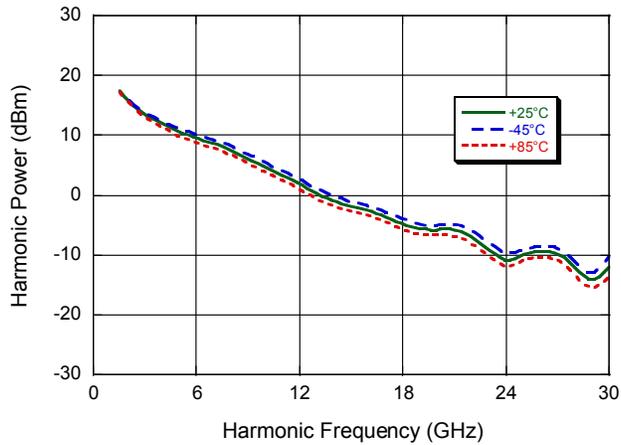
Harmonic Output, @  $P_{IN} = 19$  dBm



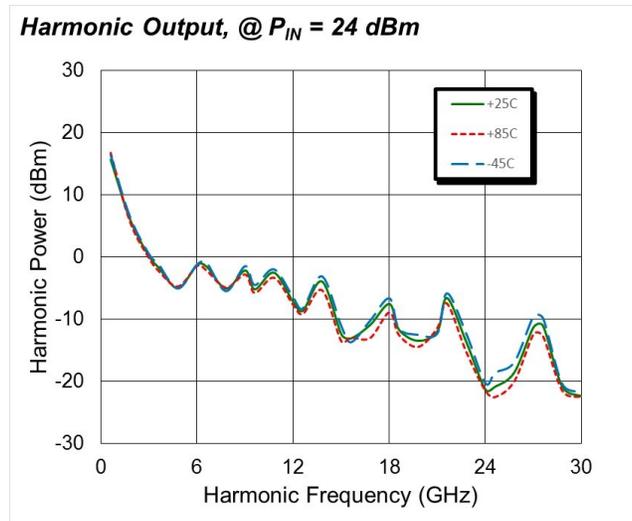
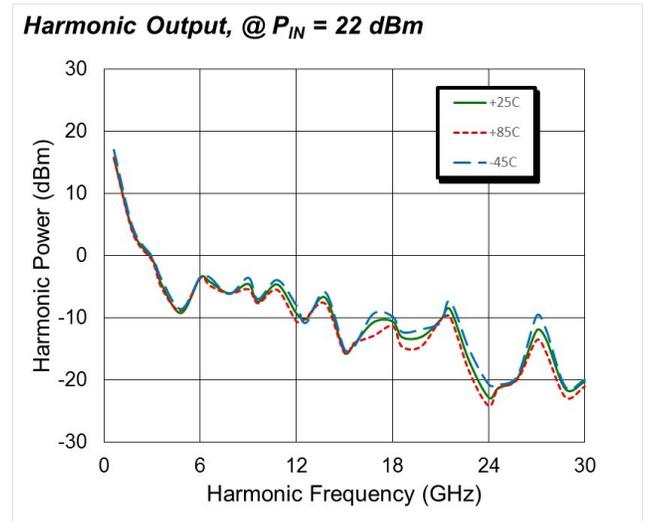
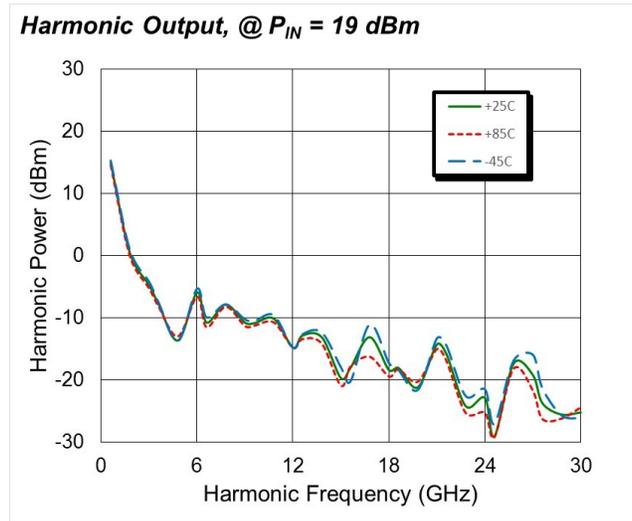
Harmonic Output, @  $P_{IN} = 22$  dBm



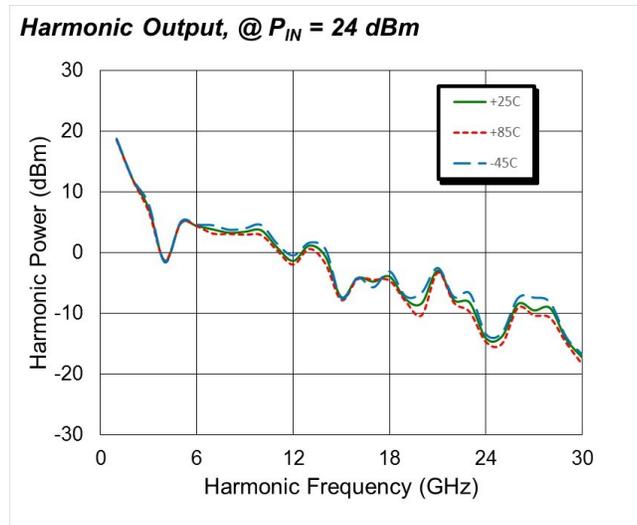
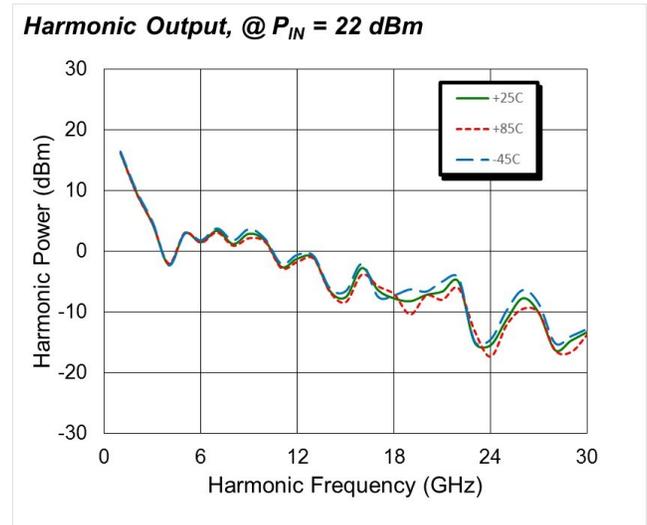
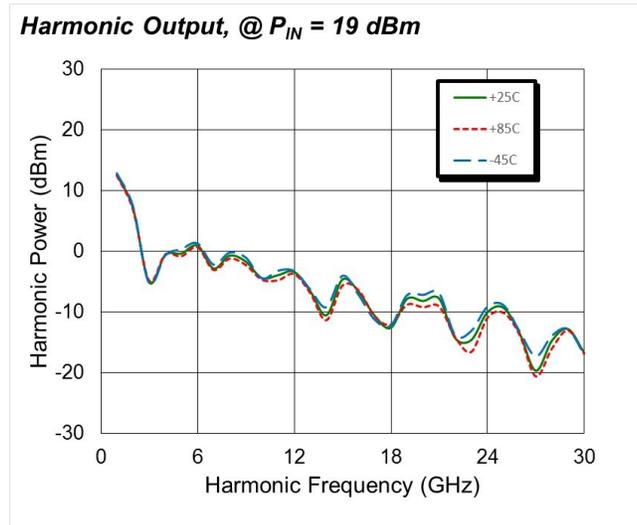
Harmonic Output, @  $P_{IN} = 24$  dBm



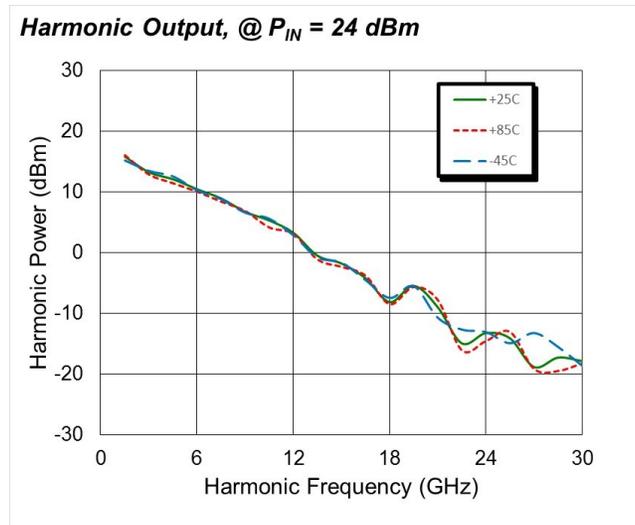
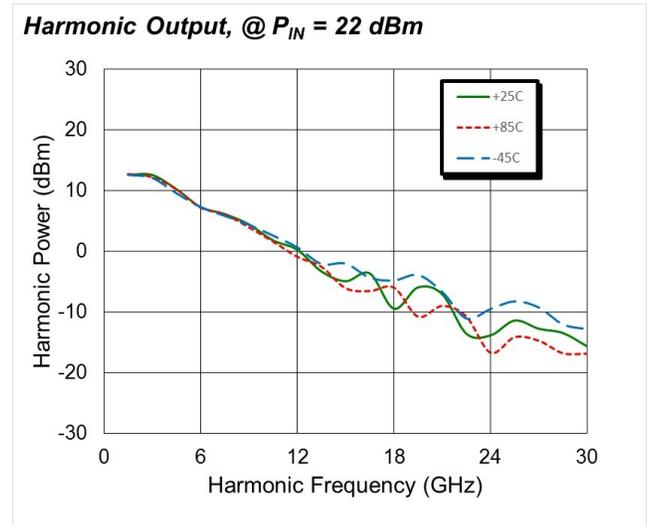
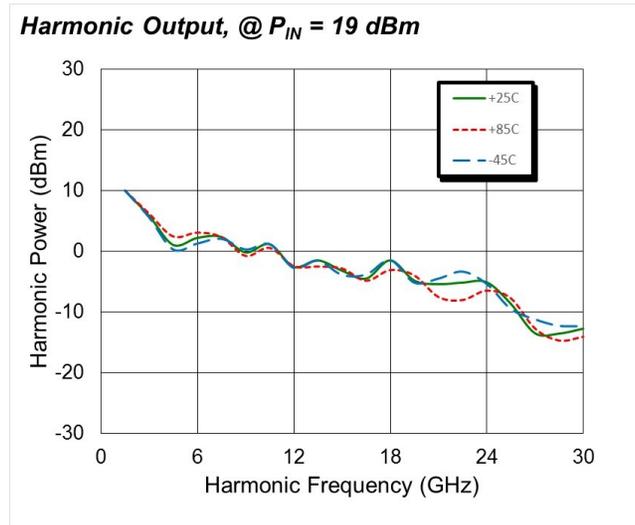
### Typical Performance Curves using SMT package @ 600 MHz:



### Typical Performance Curves using SMT package @ 1000 MHz:



### Typical Performance Curves using SMT package @ 1500 MHz:



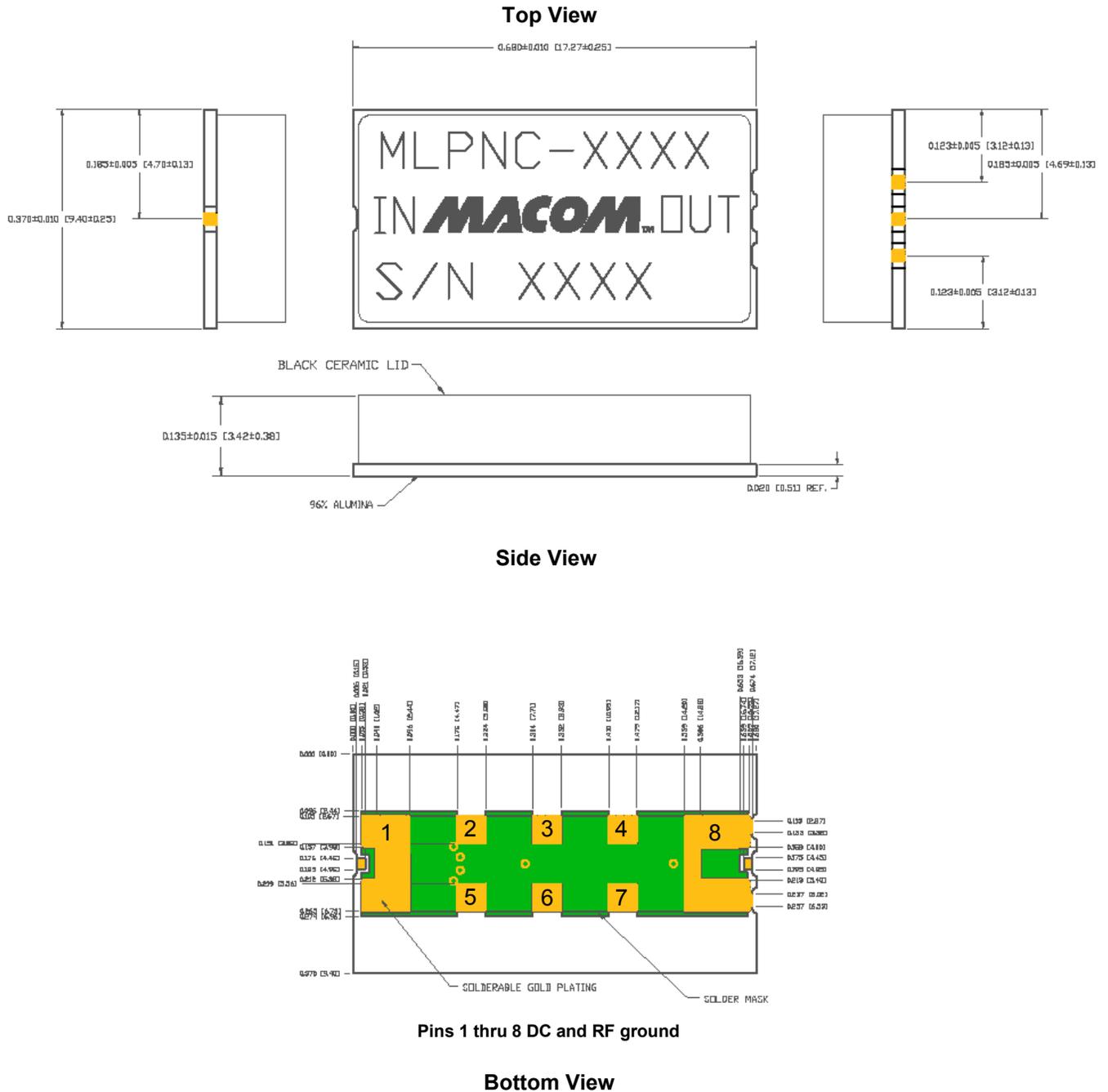
# MLPNC-7103



## NLTL Comb Generator

Rev. V7

Outline: SMT680



Dimensions in inches [mm]

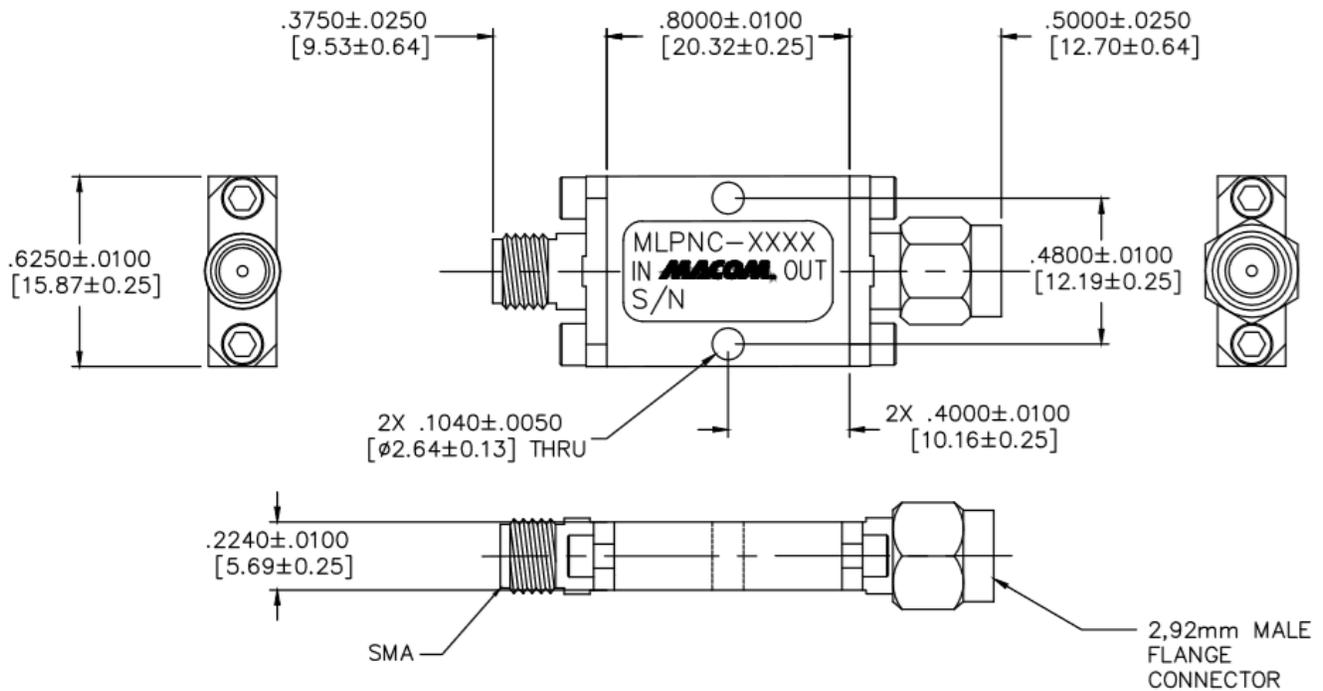
# MLPNC-7103



## NLTL Comb Generator

Rev. V7

Outline: SMA800, hermetic



Dimensions in inches [mm]

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