

NLTL Comb Generator

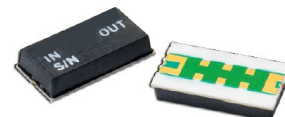
Rev. V7

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

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^{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

Ordering Information

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

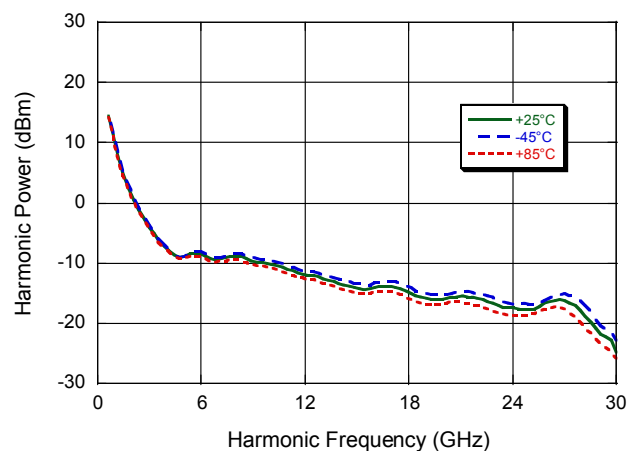
* Restrictions on Hazardous Substances, compliant to current RoHS EU directive.

3. Exceeding any one or combination of these limits may cause permanent damage to this device.

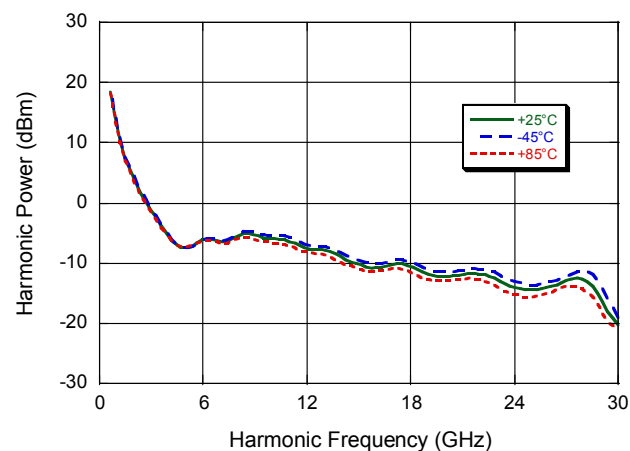
4. MACOM does not recommend sustained operation near these survivability limits.

Typical Performance Curves using SMA package @ 600 MHz:

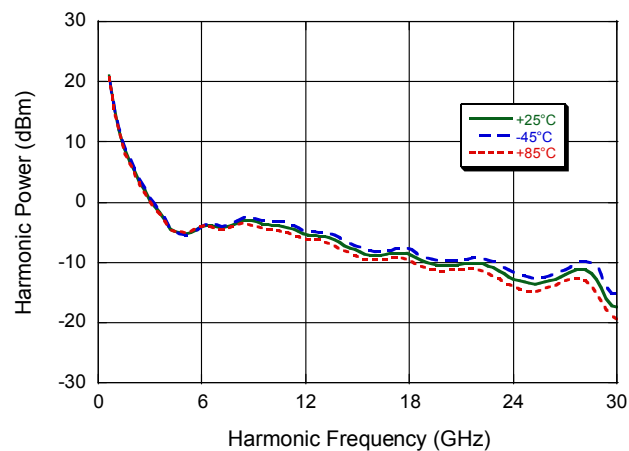
Harmonic Output, @ $P_{IN} = 19$ dBm



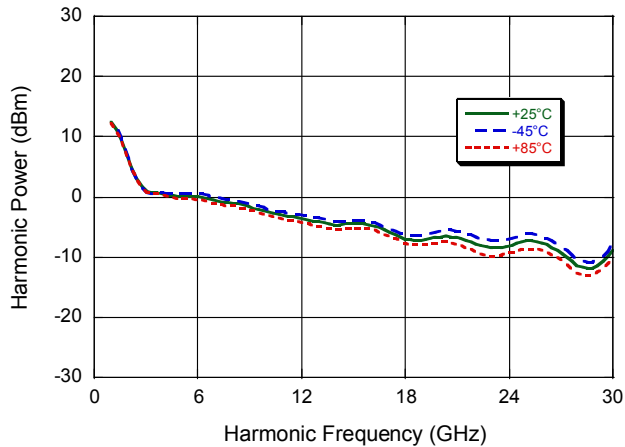
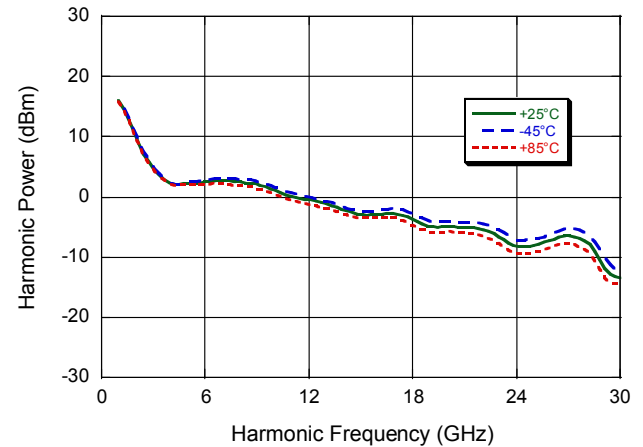
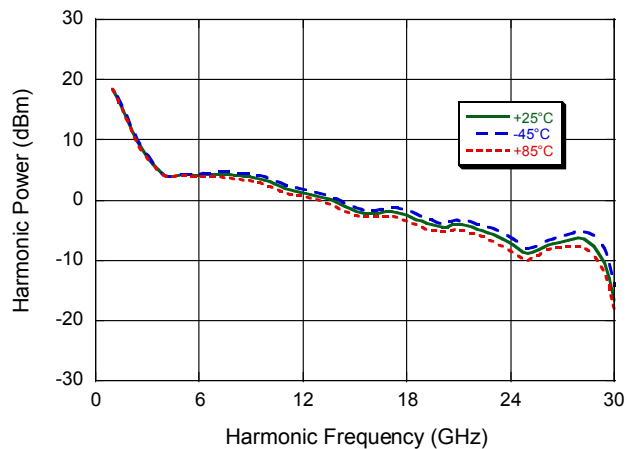
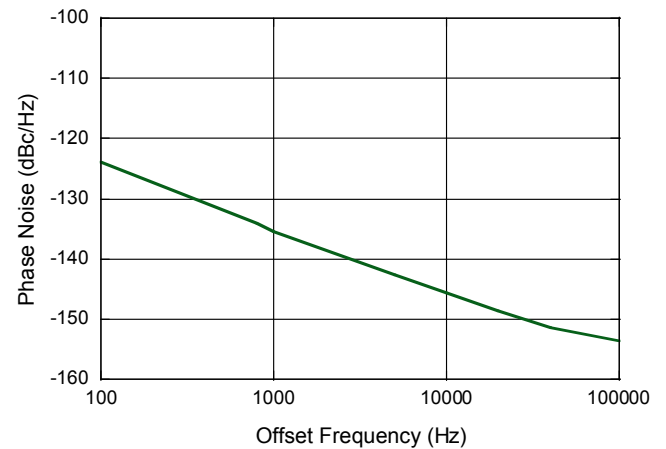
Harmonic Output, @ $P_{IN} = 22$ dBm



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

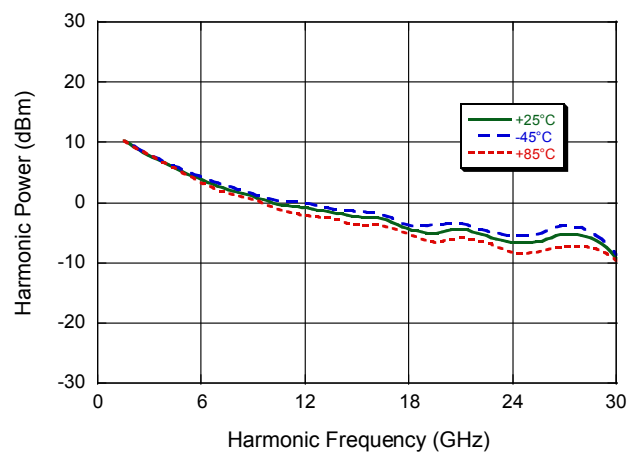


Typical Performance Curves using SMA package @ 1000 MHz:

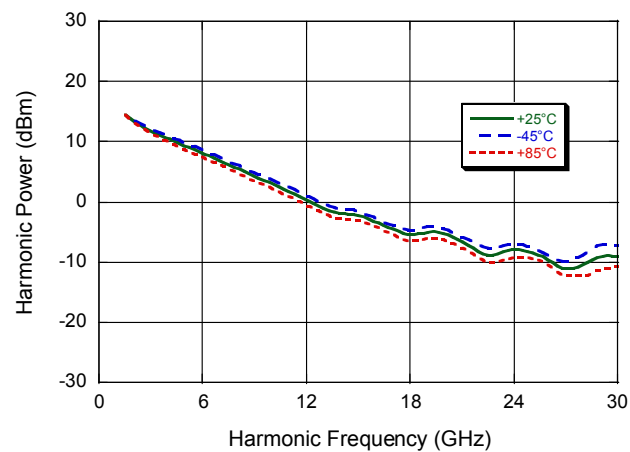
Harmonic Output, @ $P_{IN} = 19$ dBmHarmonic Output, @ $P_{IN} = 22$ dBmHarmonic Output, @ $P_{IN} = 24$ dBmPhase Noise, @ 12 GHz Output, $P_{IN} = 22$ dBm

Typical Performance Curves using SMA package @ 1500 MHz:

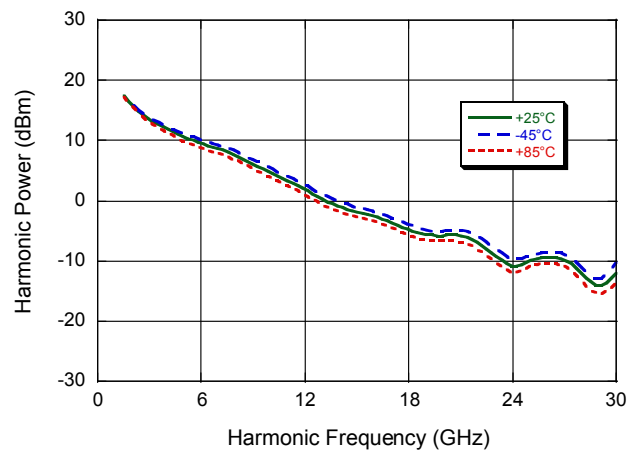
Harmonic Output, @ $P_{IN} = 19$ dBm



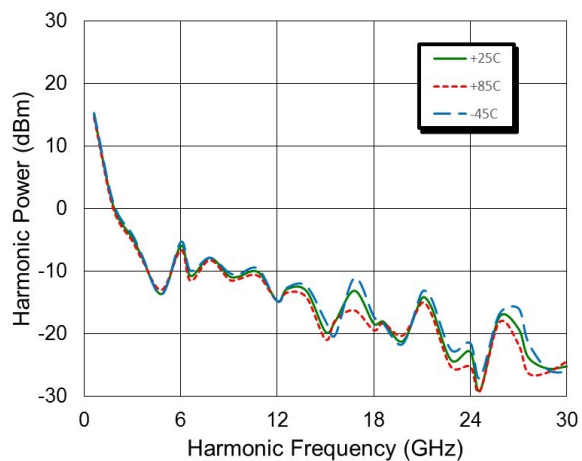
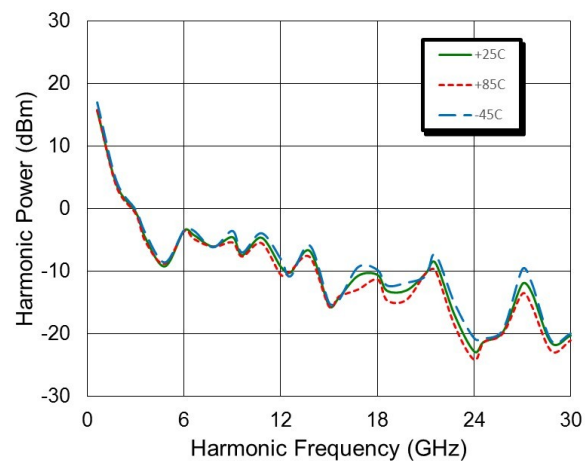
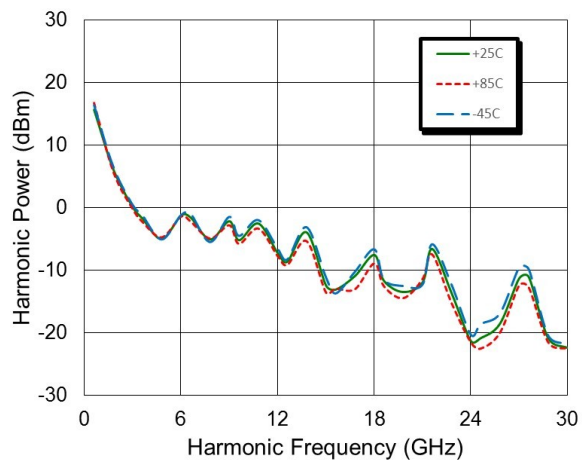
Harmonic Output, @ $P_{IN} = 22$ dBm



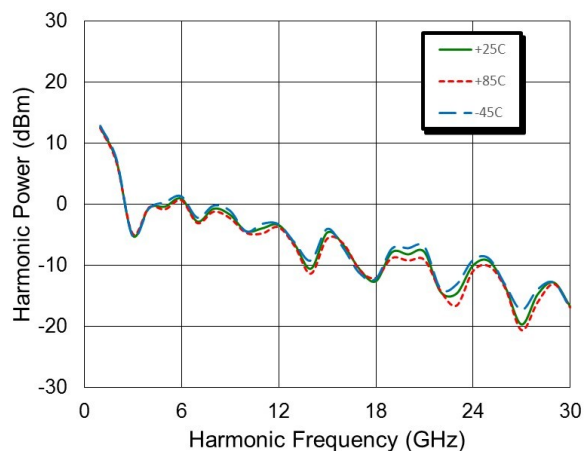
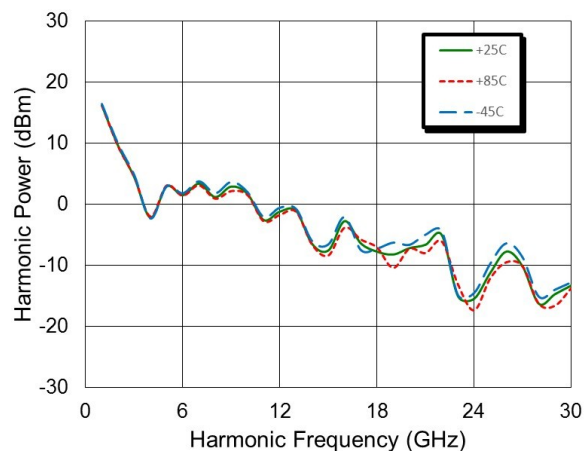
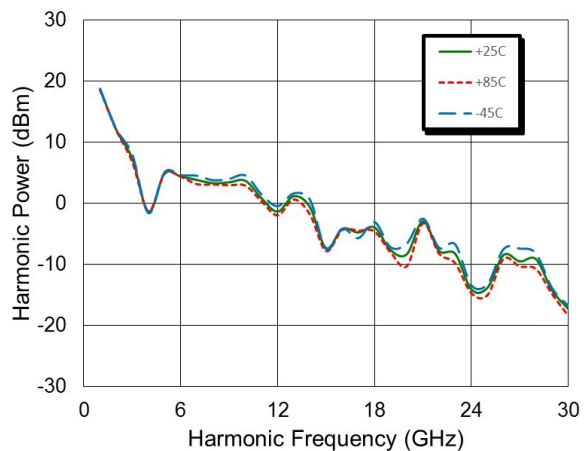
Harmonic Output, @ $P_{IN} = 24$ dBm



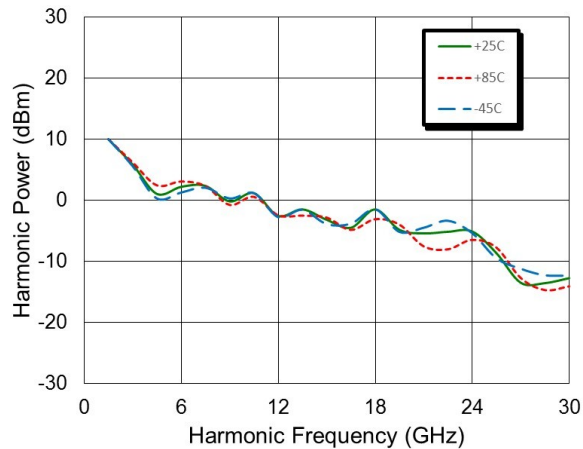
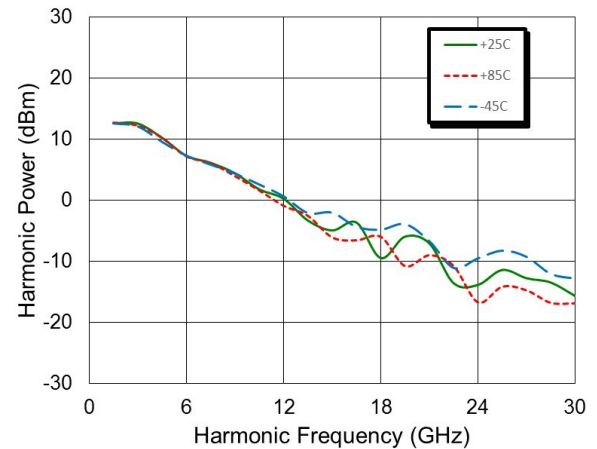
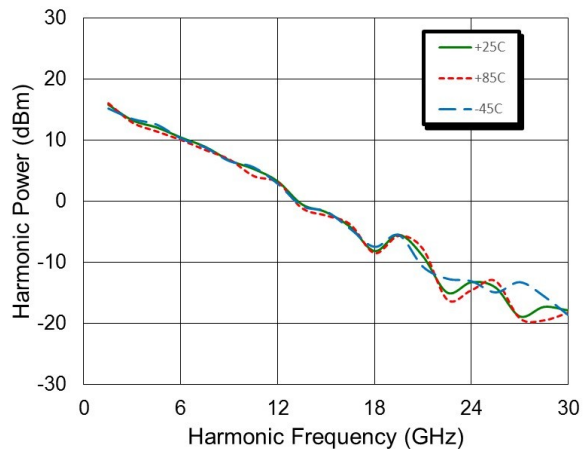
Typical Performance Curves using SMT package @ 600 MHz:

Harmonic Output, @ $P_{IN} = 19$ dBmHarmonic Output, @ $P_{IN} = 22$ dBmHarmonic Output, @ $P_{IN} = 24$ dBm

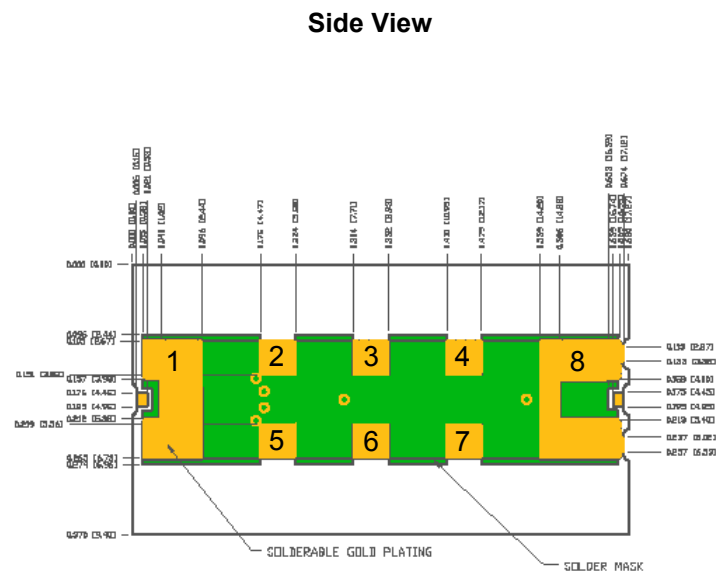
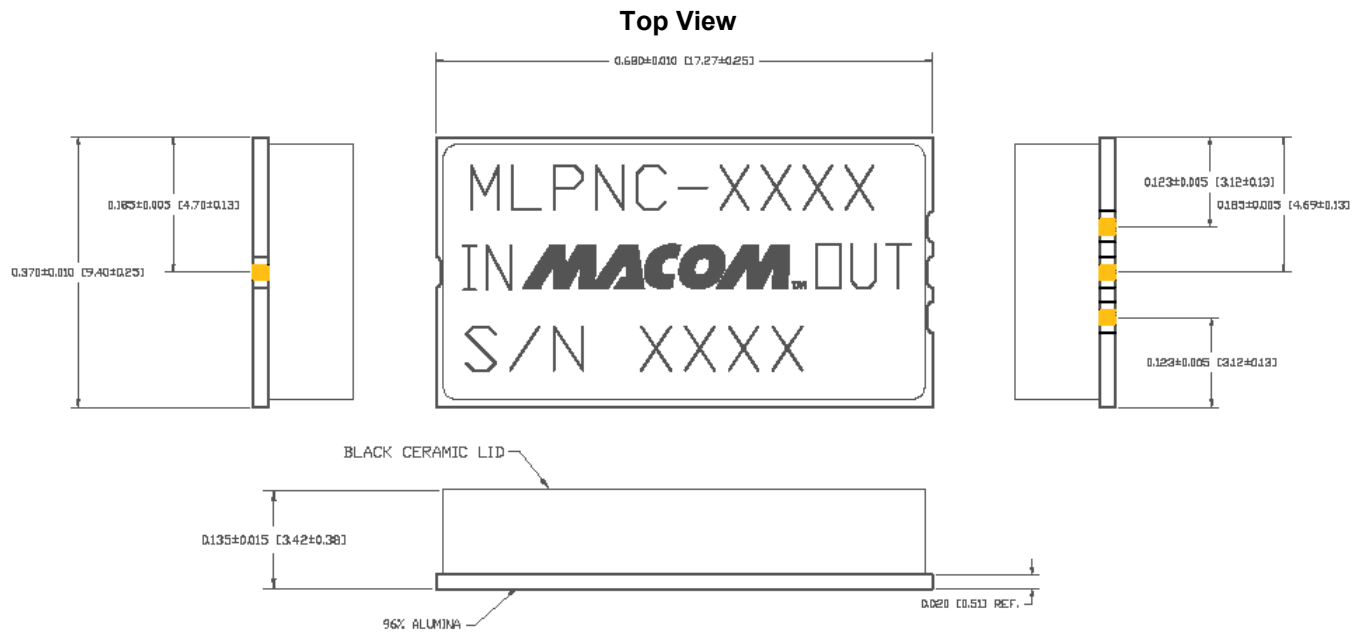
Typical Performance Curves using SMT package @ 1000 MHz:

Harmonic Output, @ $P_{IN} = 19$ dBmHarmonic Output, @ $P_{IN} = 22$ dBmHarmonic Output, @ $P_{IN} = 24$ dBm

Typical Performance Curves using SMT package @ 1500 MHz:

Harmonic Output, @ $P_{IN} = 19$ dBmHarmonic Output, @ $P_{IN} = 22$ dBmHarmonic Output, @ $P_{IN} = 24$ dBm

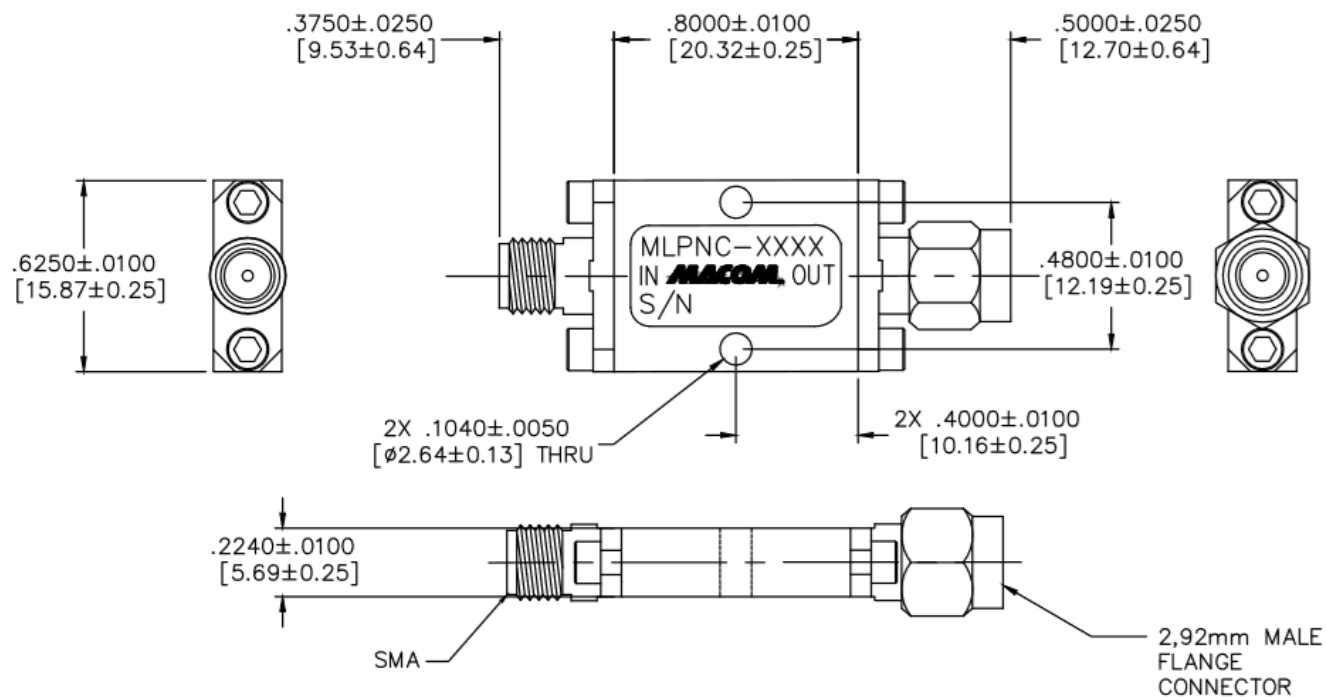
Outline: SMT680



Pins 1 thru 8 DC and RF ground

Dimensions in inches [mm]

Outline: SMA800, hermetic



Dimensions in inches [mm]

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