MLPNC-7100S1

NLTL Comb Generator

Rev. V2

Features

- Ultra-Low Phase Noise
- Variable Input Frequency 75 - 250 MHz
- Variable Input Power from 18 - 24 dBm
- Output Harmonics to 6 GHz
- SMT580 Surface Mount & SMA800 Packages
- No Bias or Tuning Required
- RoHS* Compliant

SMA800
hermetic

SMT580

Description

The MLPNC-7100S1 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[1]

Parameter	Units	Recommended Input		
		Min.	Typ.	Max.
Frequency	MHz	75	100	250
Power	dBm	18	22	24

1. The model 7100S does not abruptly stop working at the recommended min and max Frequencies and Powers. The conversion efficiency drops outside recommended limits.

Production Test Limits[2]

Input	Units	Output Harmonics		
		Up to 1 GHz	1 - 2 GHz	2 - 4 GHz
75 MHz, 22 dBm	dBm	> -21	> -15	> -24
100 MHz, 22 dBm	dBm	> -10	> -10	> -18
250 MHz, 22 dBm	dBm	> -3	> -7	> -19

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.

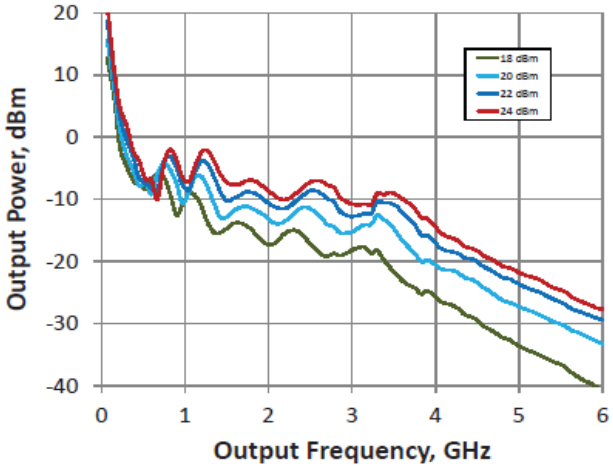
Ordering Information

Part Number	Package
MLPNC-7100S1-SMA800	ESD Box with Foam
MLPNC-7100S1-SMT580	ESD Box with Foam

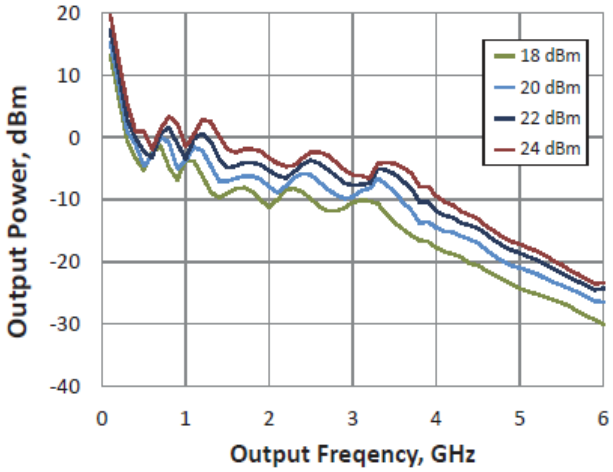
* Restrictions on Hazardous Substances, European Union Directive 2011/65/EU.

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

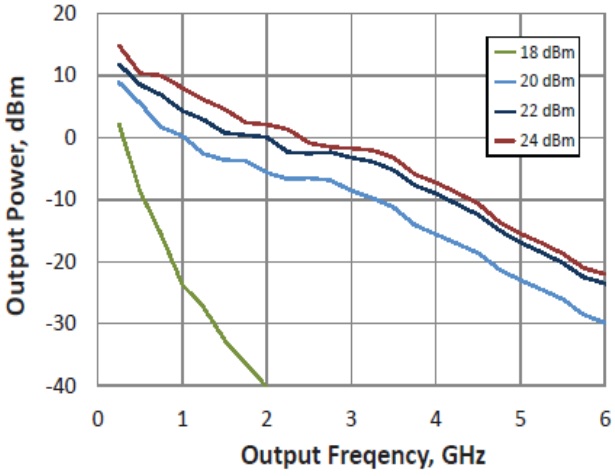
Harmonic Output, 75 MHz Input Frequency



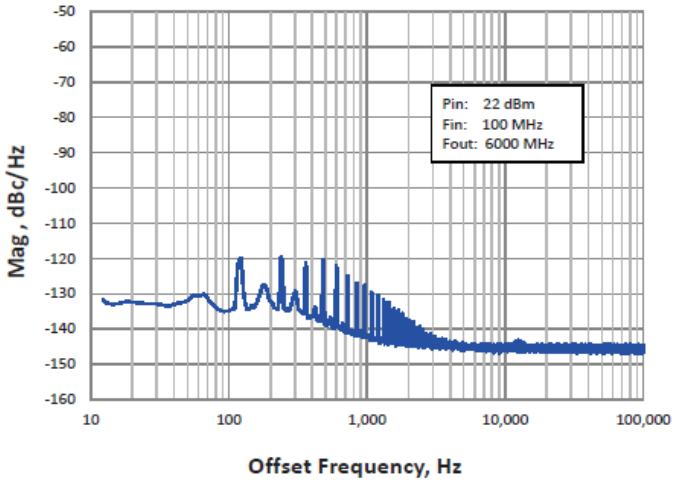
Harmonic Output, 100 MHz Input Frequency



Harmonic Output, 250 MHz Input Frequency

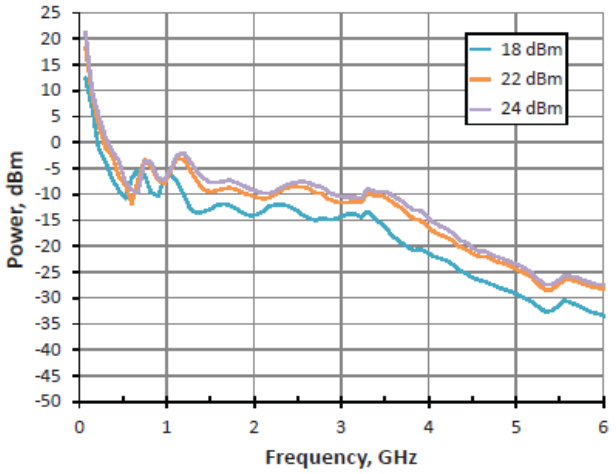


Phase Noise, 100 MHz Input Frequency

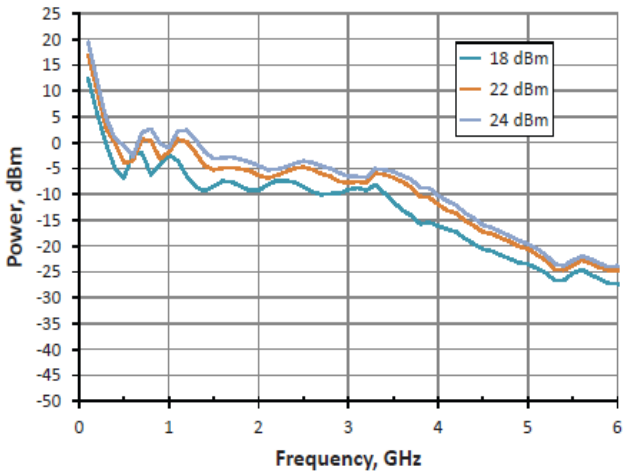


Typical Performance Curves @ +25°C using SMT580 package:

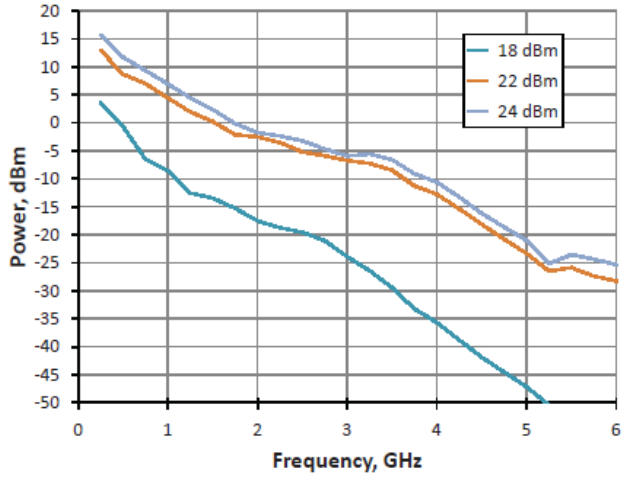
Harmonic Output, 75 MHz Input Frequency



Harmonic Output, 100 MHz Input Frequency

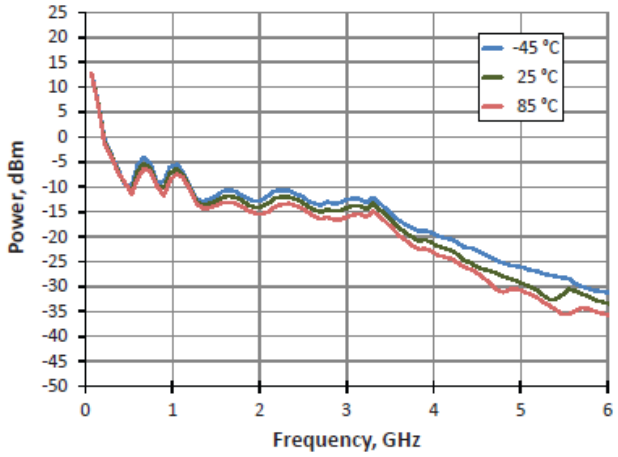


Harmonic Output, 250 MHz Input Frequency

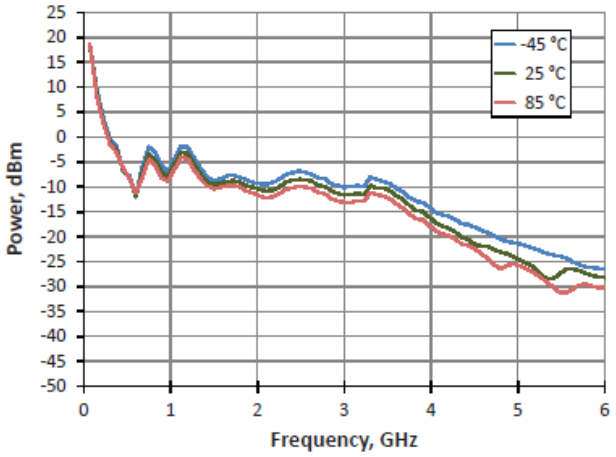


Typical Performance Curves over temperature @ 75 MHz Input Frequency using SMT580 package:

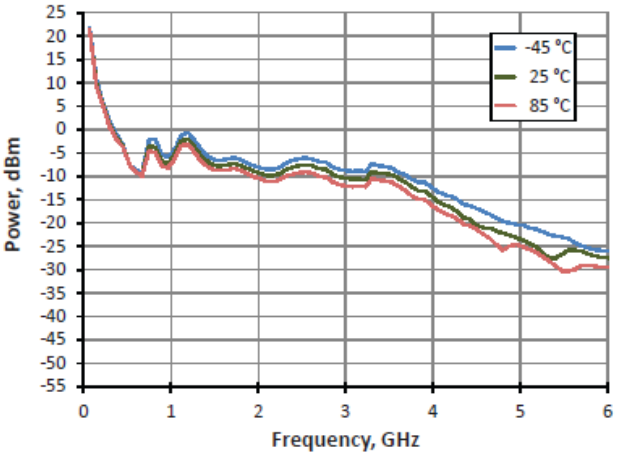
Harmonic Output, 18 dBm Input Power



Harmonic Output, 22 dBm Input Power

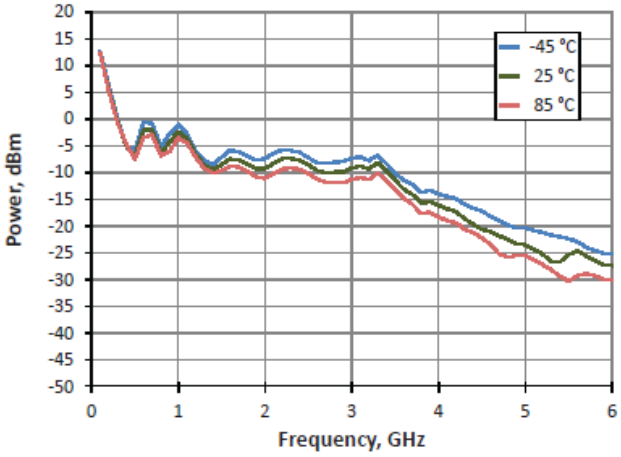


Harmonic Output, 24 dBm Input Power

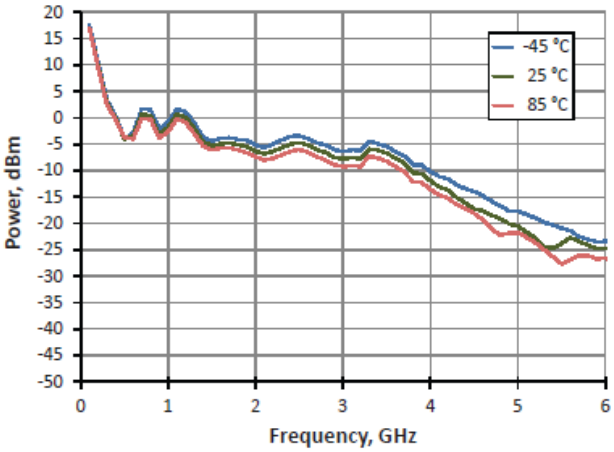


Typical Performance Curves over temperature @ 100 MHz Input Frequency using SMT580 package:

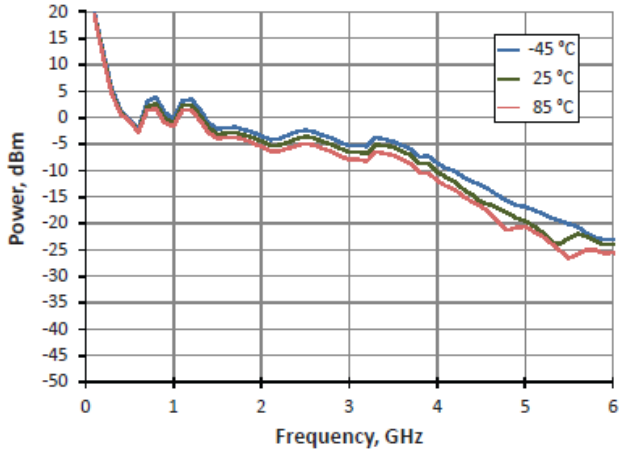
Harmonic Output, 18 dBm Input Power



Harmonic Output, 22 dBm Input Power

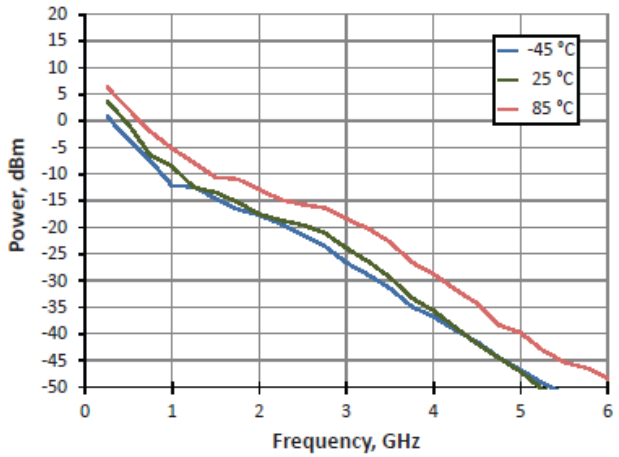


Harmonic Output, 24 dBm Input Power

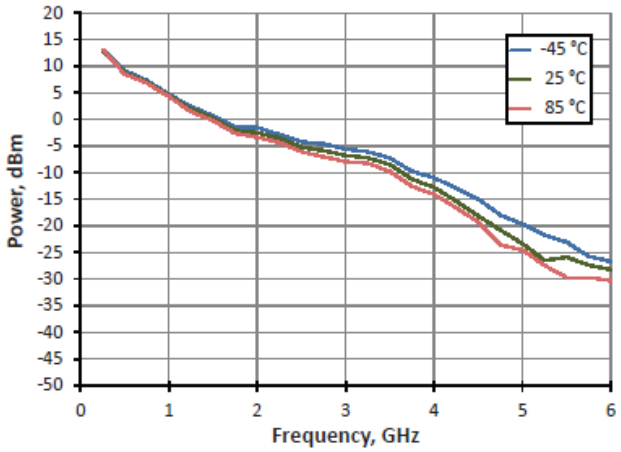


Typical Performance Curves over temperature @ 250 MHz Input Frequency using SMT580 package:

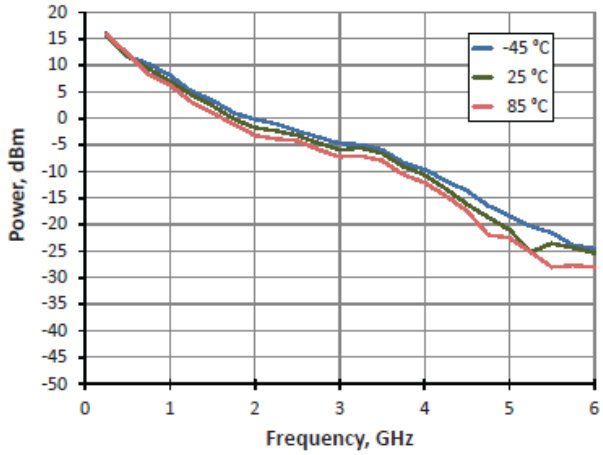
Harmonic Output, 18 dBm Input Power



Harmonic Output, 22 dBm Input Power

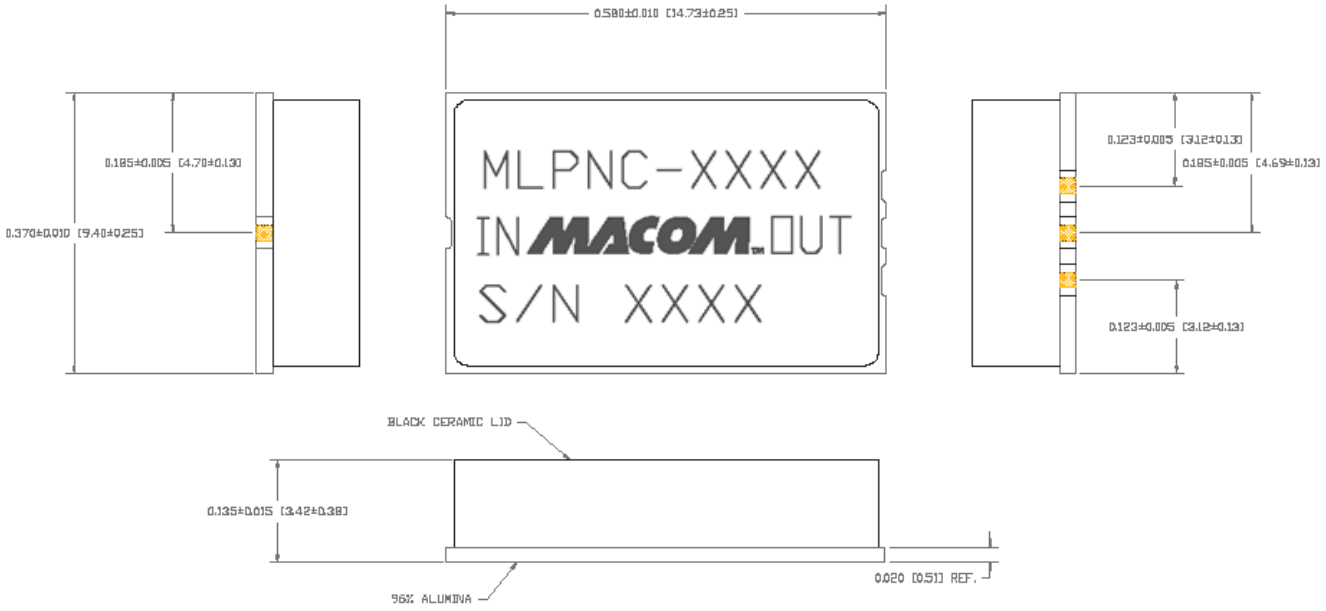


Harmonic Output, 24 dBm Input Power

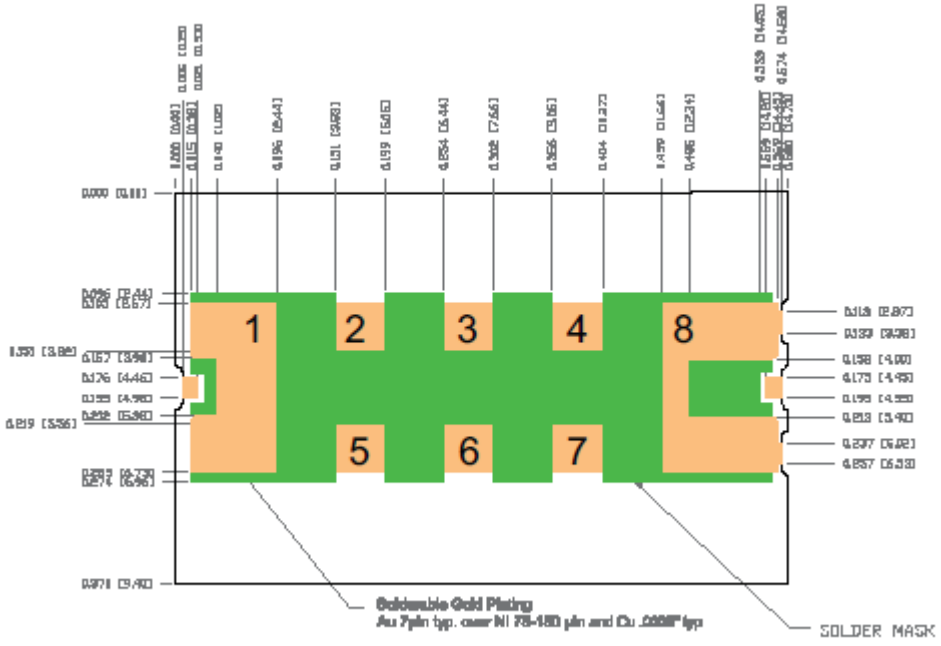


Outline: SMT580

Top View



Side View

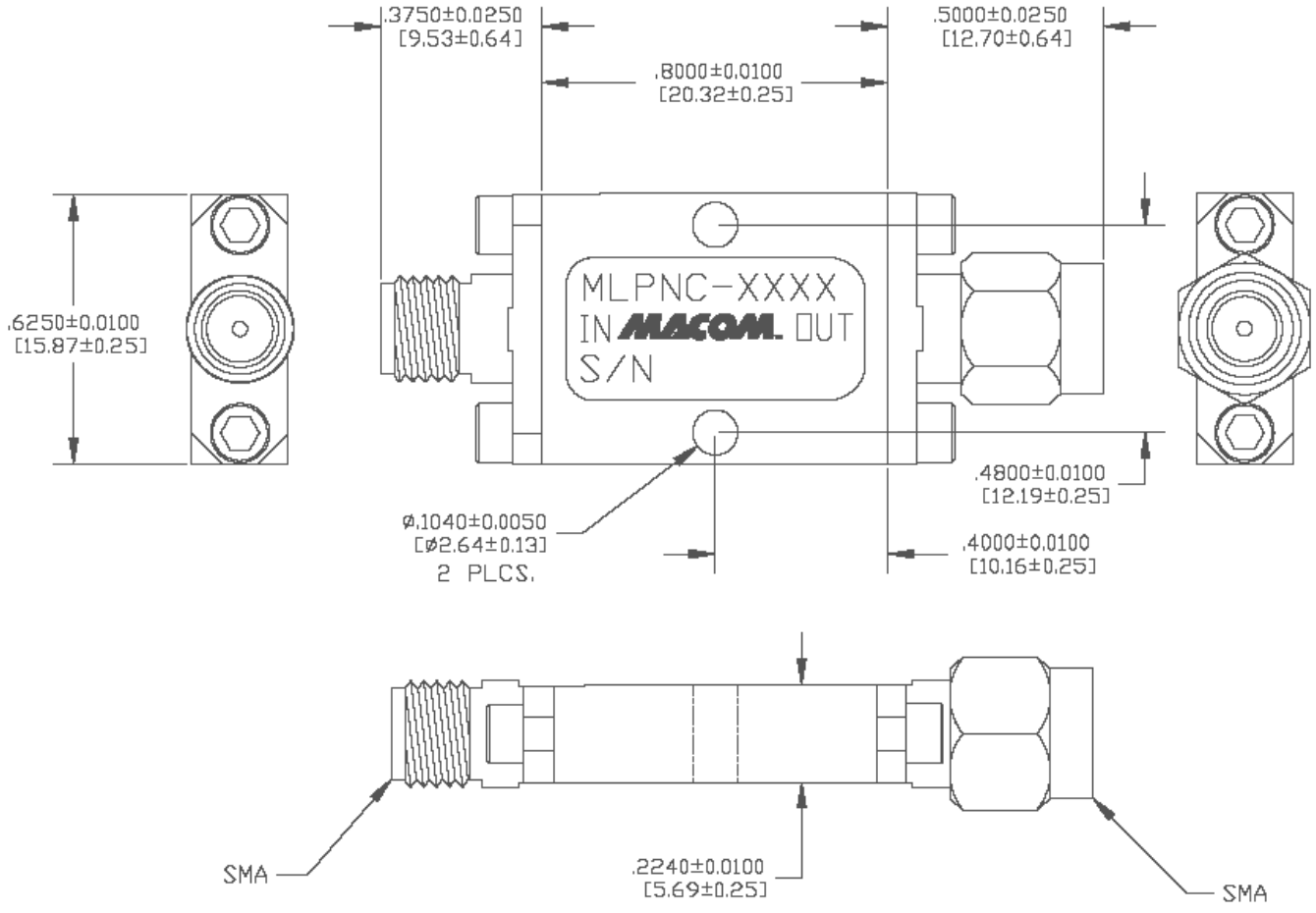


Pins 1 thru 8 DC and RF ground

Bottom View

7 Dimensions in inches [mm]

Outline: SMA800, hermetic



Dimensions in inches [mm]