Wenzel Associates, Inc.

"Quietly the Best"

LNHD

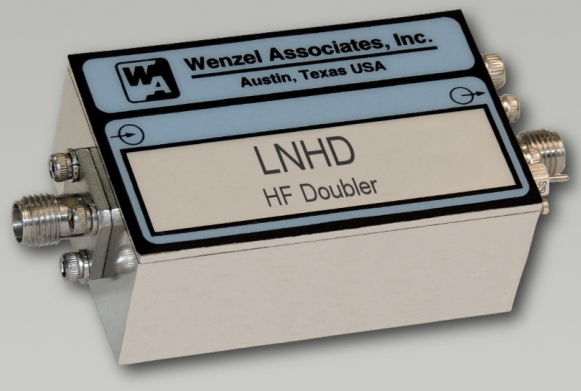
Blue Tops RF Modules > Low Noise High Frequency Doubler

Features:

- Output Frequency to 30 MHz
- Multiplication Factor: x2
- Low Conversion Loss
- Intrinsic Phase Noise to -178 dBc/Hz
- Integral Bandpass Filter
- Low Power Consumption

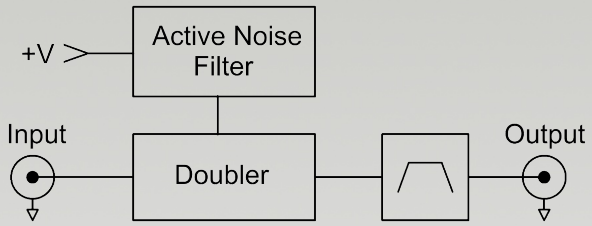
Applications:

- Synthesizer Building Block
- Communication Systems
- Radar Systems
- Electronic Warfare Systems



Description:

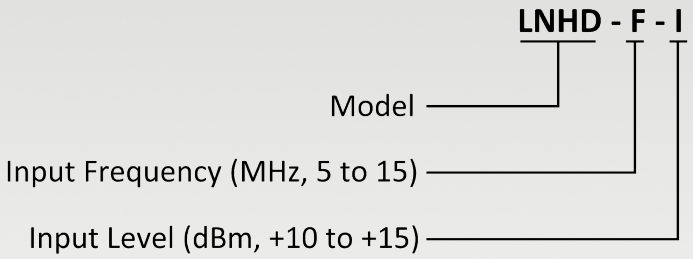
The LNHD is a fixed frequency HF doubler based on a public-domain design developed by the National Institute of Standards and Technology (NIST) for superlative phase noise performance. Our unique implementation incorporates an output bandpass filter and specially selected FETs. With a total power consumption of only 30 mA, the LNHD is particularly useful in HF x2 multiplication applications where power is limited.



Electrical Specifications	
Multiplication Factor	x2
Input Frequency	5 MHz to 15 MHz, fixed
Input Level	+10 dBm to +15 dBm, fixed (±1 dB)
Output Frequency	to 30 MHz
Conversion Loss	0 dB, typical (±2 dB)
Phase Noise, Residual (Intrinsic, Input Referred, 5 MHz Model)	-155 dBc/Hz (10 Hz offset) -178 dBc/Hz (100 kHz offset)
Harmonics	≤ -30 dBc
Sub-Harmonics	≤ -45 dBc
Spurious (Excluding Supply Line Related Spurs)	≤ -80 dBc
Supply Voltage	+15 VDC ±2%
Current Draw	≤ 30 mA
Operating Temperature	0 to +50°C
Storage Temperature	-40 to +85°C
Mechanical	
Dimensions	2" x 1.25" x 0.8"
DC Supply	Feed Thru Capacitor Solder Pin
Ground	Turret Terminal Solder Pin
RF Input / Output	SMA female *

* SMA female connectors are used unless otherwise specifed. Other options include SMA male, right angle SMAs, BNC female and others. Contact factory for custom configurations.

Ordering Information:



Standard P/N	Input Frequency	Multiplier Factor	Input Level	Output Level	Output Frequency	Input Referred Residual Phase Noise (100 kHz offset)	Supply Voltage
LNHD-5-10	5 MHz	x2	+10 dBm	+10 dBm	10 MHz	≤ -178 dBc/Hz	+15 VDC
LNHD-5-13	5 MHz	x2	+13 dBm	+13 dBm	10 MHz	≤ -178 dBc/Hz	+15 VDC
LNHD-5-15	5 MHz	x2	+15 dBm	+15 dBm	10 MHz	≤ -178 dBc/Hz	+15 VDC
LNHD-10-10	10 MHz	x2	+10 dBm	+10 dBm	20 MHz	≤ -177 dBc/Hz	+15 VDC
LNHD-10-13	10 MHz	x2	+13 dBm	+13 dBm	20 MHz	≤ -177 dBc/Hz	+15 VDC
LNHD-10-15	10 MHz	x2	+15 dBm	+15 dBm	20 MHz	≤ -177 dBc/Hz	+15 VDC
LNHD-15-10	15 MHz	x2	+10 dBm	+10 dBm	30 MHz	≤ -176 dBc/Hz	+15 VDC
LNHD-15-13	15 MHz	x2	+13 dBm	+13 dBm	30 MHz	≤ -176 dBc/Hz	+15 VDC
LNHD-15-15	15 MHz	x2	+15 dBm	+15 dBm	30 MHz	≤ -176 dBc/Hz	+15 VDC

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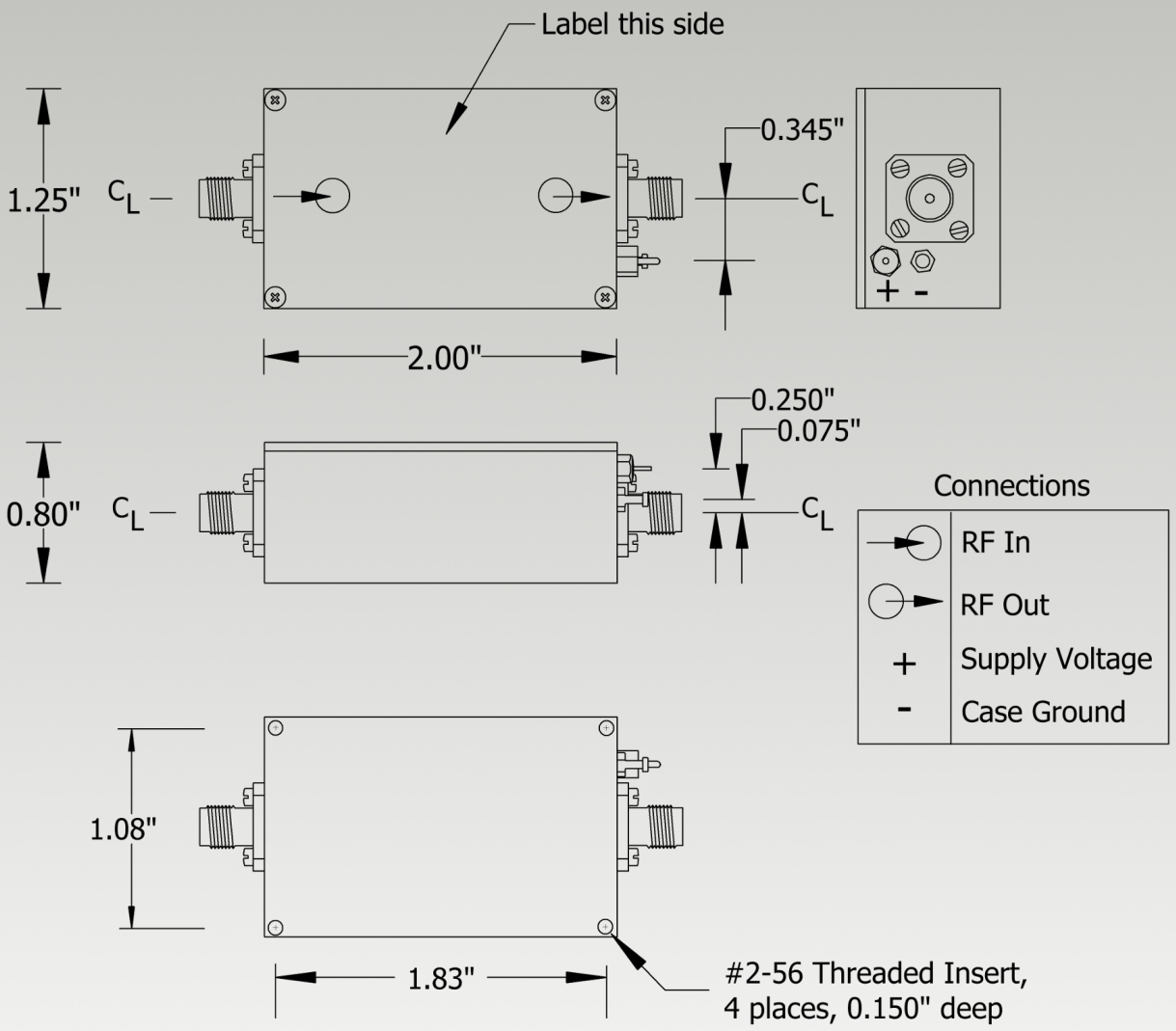

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