

GaAs MMIC SMT FREQUENCY DOUBLER 1.3 - 4.0 GHz INPUT

FEBRUARY 2001

Features

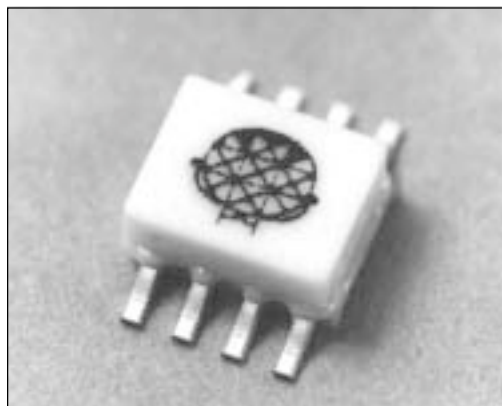
CONVERSION LOSS: 15 dB

F₀, 3F₀, 4F₀ ISOLATION: > 34 dB

INPUT DRIVE LEVEL: 10 to 20 dBm

General Description

The HMC158C8 is a miniature frequency doubler MMIC in a non-hermetic ceramic surface mount non-hermetic package. Suppression of undesired fundamental and higher order harmonics is 34 to 58 dB with respect to input signal level and 19 to 45 dB with respect to the desired output signal level. The doubler uses the same diode/balun technology used in Hittite MMIC mixers, features small size and requires no DC bias. Applications include Telecom radios 5.2 GHz UNII and 5.8 GHz ISM Band circuits.



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Guaranteed Performance, 50 Ohm system -55 to +85 deg C

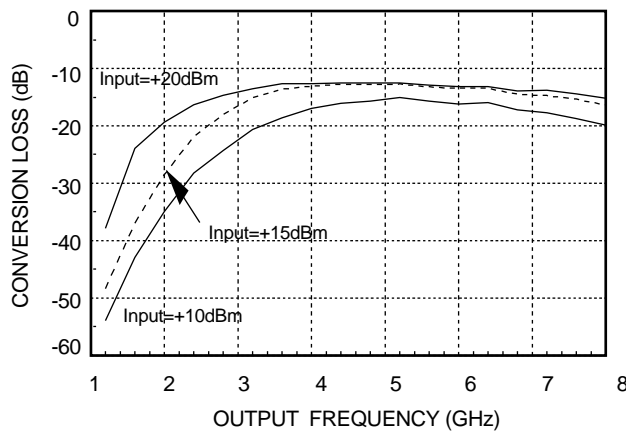
Typical Performance vs. Drive Level				
	10	15	20	dBm
Input Frequency Range	1.7-4.0	1.7-3.5	1.3-4.0	GHz
Output Frequency Range	3.4-8.0	3.4-7.0	2.6-8.0	GHz
Conversion Loss	<20	<15	<15	dB

Performance for Input Signals in the 1.7 - 3.5 GHz Band (+15dBm Drive)				
	Min.	Typ.	Max.	
F ₀ Isolation (with respect to input level)	37	45		dB
3F ₀ Isolation (with respect to input level)	40	50		dB
4F ₀ Isolation (with respect to input level)	32	40		dB

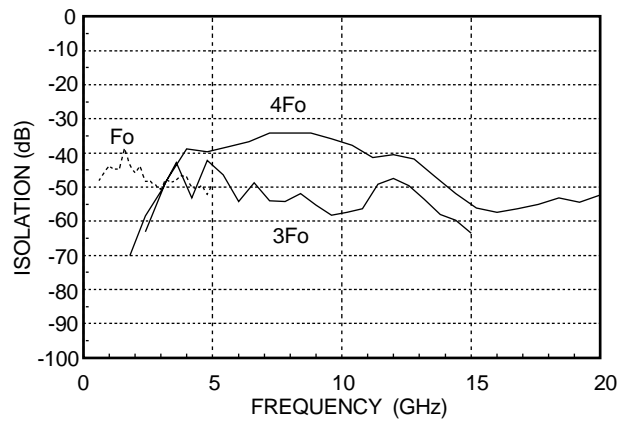
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Conversion Loss vs. Drive Level

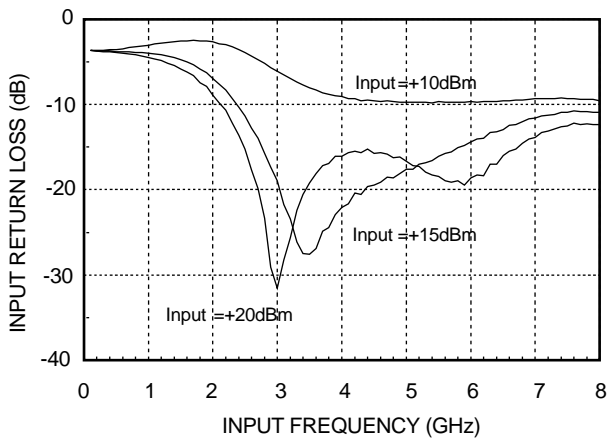


Isolation @ +15 dBm Drive Level *

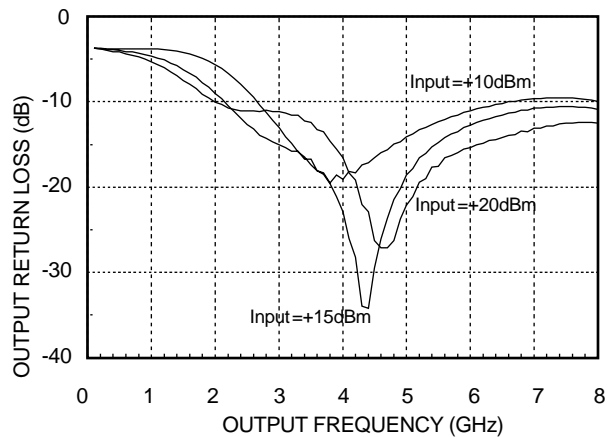


* With respect to input level

Input Return Loss vs. Drive level



Output Return Loss vs. Drive Level



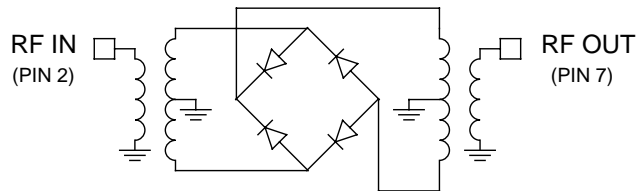
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Schematic

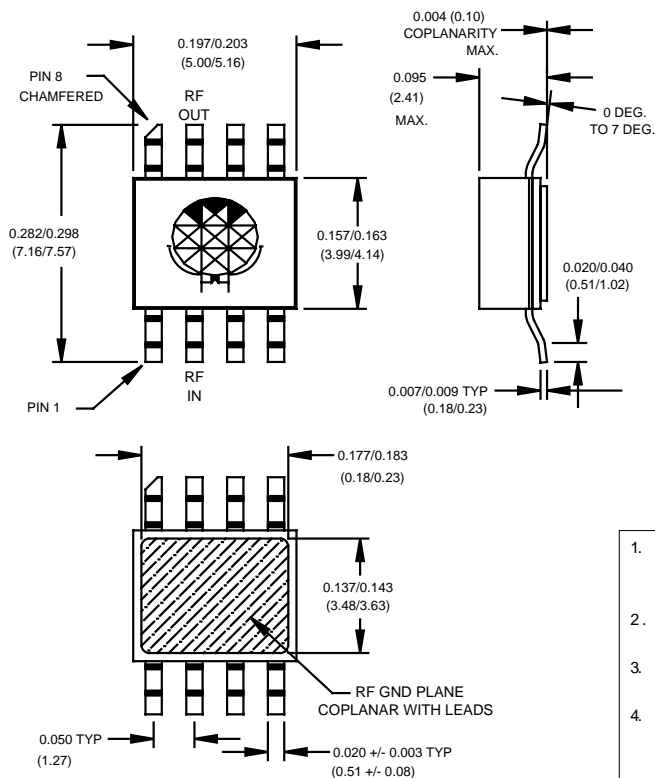


Absolute Maximum Ratings

Input Drive	+27 dBm
Storage Temperature	-65 to +150 deg C
Operating Temperature	-55 to +125 deg C

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Outline Drawing



1. MATERIAL:
 - A) PACKAGE BODY & COVER : WHITE ALUMINA (92%)
 - B) LEADS & PACKAGE BOTTOM: COPPER
2. PLATING: ELECTROLYTIC GOLD 100 - 200 MICROINCHES OVER ELECTROLYTIC NICKEL 100 TO 200 MICROINCHES. DIMENSIONS ARE IN INCHES (MILLIMETERS). UNLESS OTHERWISE SPECIFIED TOL. ARE ± 0.005 (± 0.13).
3. ALL UNLABELED LEADS ARE GROUND. THESE LEADS ARE CONNECTED INTERNALLY TO THE PACKAGED BOTTOM GROUND. THE PACKAGE BOTTOM RF GROUND **MUST** BE SOLDERED TO THE PCB RF GROUND.
4. PACKAGE LENGTH AND WIDTH DIMENSIONS SHOWN DO NOT INCLUDE LID SEAL PROTRUSION. ALLOWABLE PROTRUSION SHALL BE 0.005 (0.127MM) PER SIDE.

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NOTES:

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