

GaAs MMIC SMT FREQUENCY DOUBLER 0.7 - 2.3 GHz INPUT

FEBRUARY 1998

Features

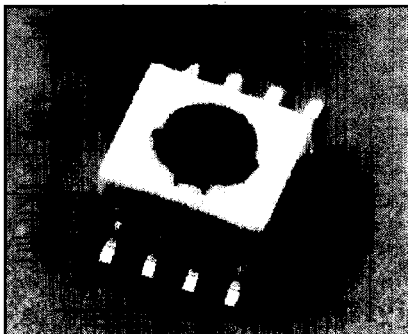
CONVERSION LOSS: 18 dB

Fo, 3Fo, 4Fo ISOLATION: > 38 dB

INPUT DRIVE LEVEL: 10 to 20 dBm

General Description

The HMC156C8 is a miniature frequency doubler in a non-hermetic ceramic surface mount package. Suppression of undesired fundamental and higher order harmonics is 38 to 60 dB with respect to input signal level and 20 to 42 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.



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

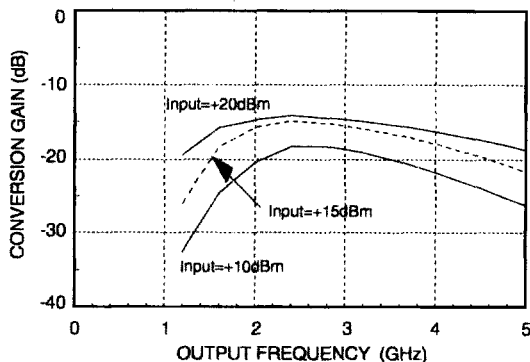
Typical Performance vs. Drive Level				
	10	15	20	dBm
Input Frequency Range	1.0-1.7	0.8-2.1	0.7-2.3	GHz
Output Frequency Range	2.0-3.4	1.6-4.2	1.4-4.6	GHz
Conversion Loss	<20	<18	<18	dB

Performance for Input Signals in the 0.8 - 2.1 GHz Band (+15dBm Drive)				
	Min	Typ	Max	
Fo Isolation (with respect to input level)	43	47		dB
3Fo Isolation (with respect to input level)	48	55		dB
4Fo Isolation (with respect to input level)	35	42		dB

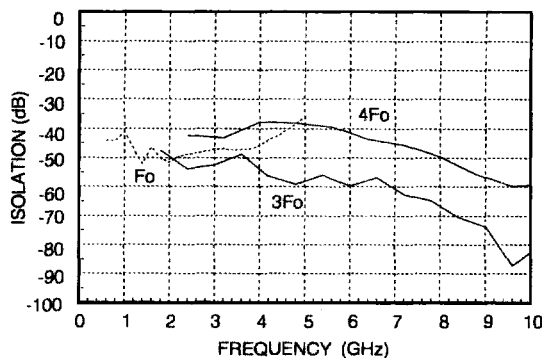
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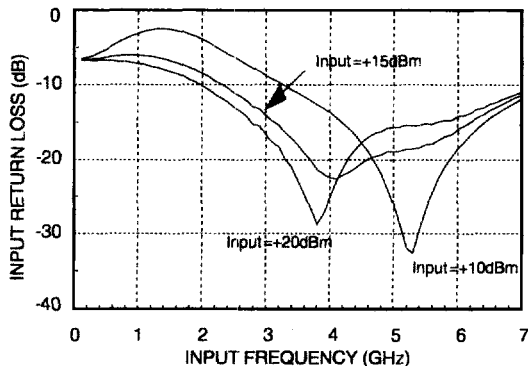
**Conversion Loss vs.
Drive Level**



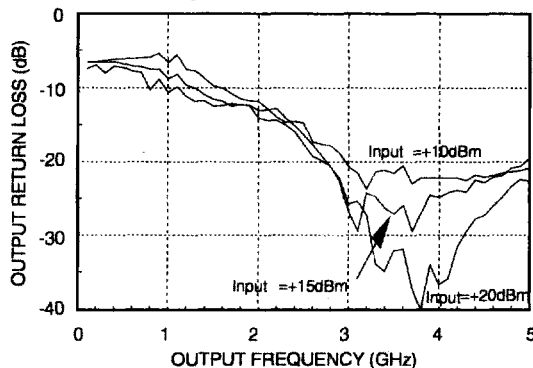
**Isolation @ +15 dBm
Drive Level**



**Input Return Loss vs.
Drive level**



**Output Return Loss vs.
Drive Level**



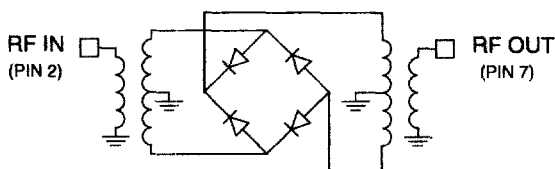
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 Frequency
Doublers

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Schematic



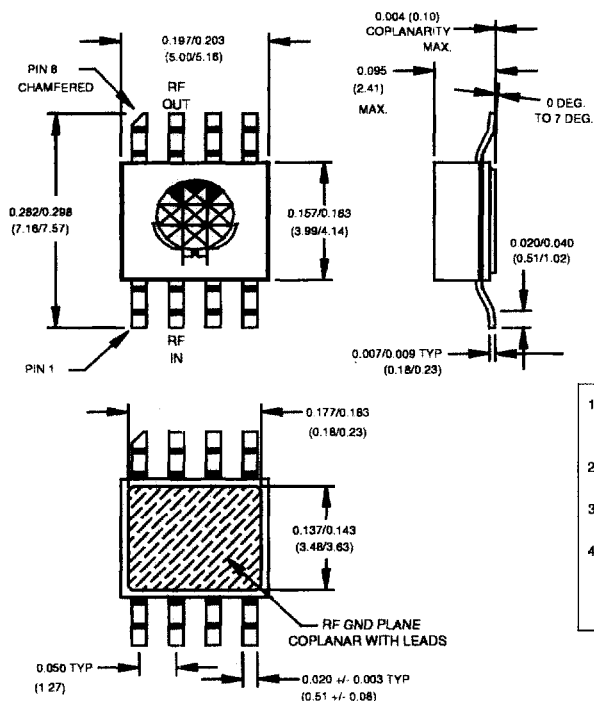
Absolute Maximum Ratings

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

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Frequency
Doublers

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 250 MICROINCHES
3. DIMENSIONS ARE IN INCHES (MILLIMETERS), UNLESS OTHERWISE SPECIFIED ALL TOLERANCES ARE ± 0.005 (± 0.13).
4. ALL UNLABELED LEADS ARE GROUND. THESE LEADS ARE CONNECTED INTERNALLY TO THE PACKAGE BOTTOM RF GROUND. THE PACKAGE BOTTOM RF GROUND MUST BE SOLDERED TO THE PCB RF GROUND.