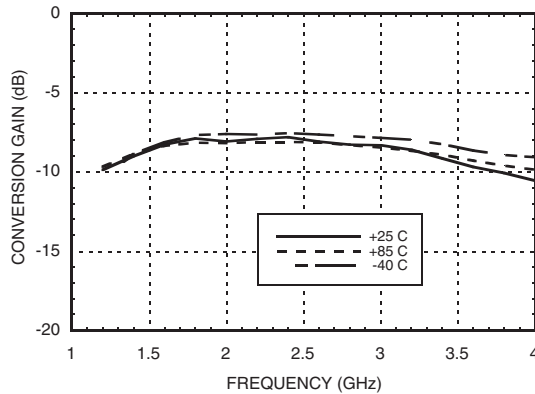


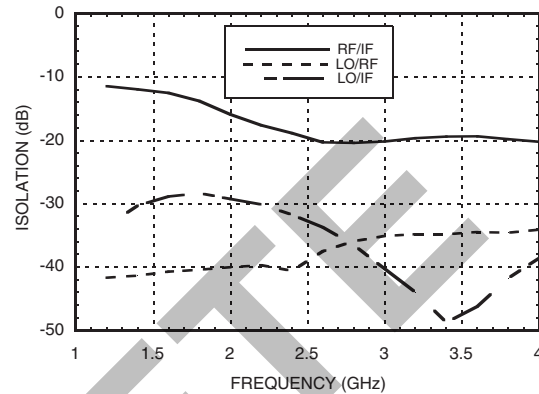


GaAs MMIC HIGH IP3 DOUBLE-BALANCED MIXER, 1.5 - 3.8 GHz

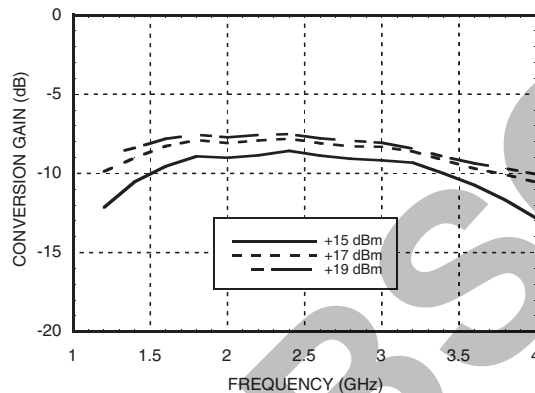
**Conversion Gain vs.
Temperature @ LO = +17 dBm**



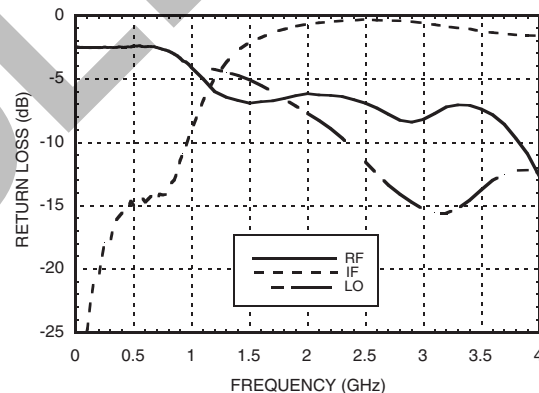
Isolation @ LO = +17 dBm



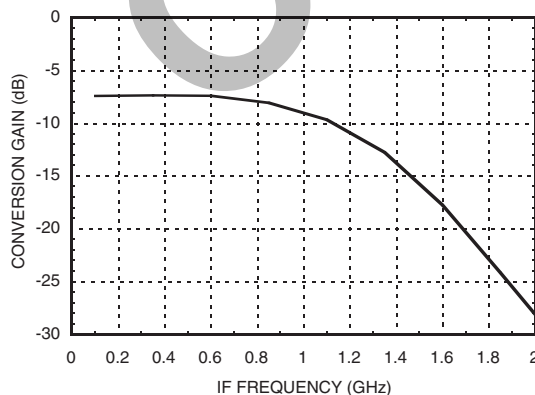
Conversion Gain vs. LO Drive



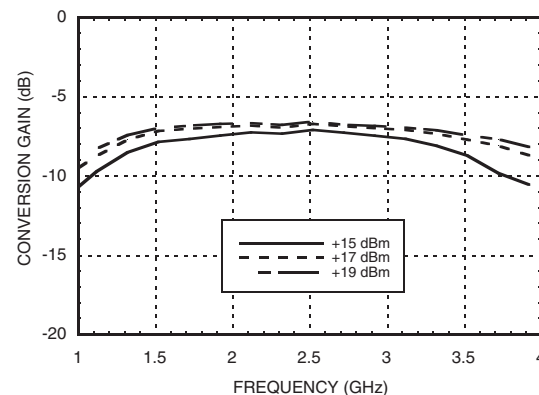
Return Loss @ LO = +17 dBm



If Bandwidth @ LO = +17 dBm



Upconverter Performance vs. LO Drive

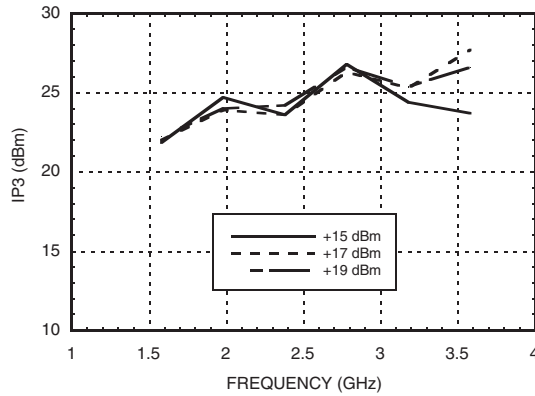




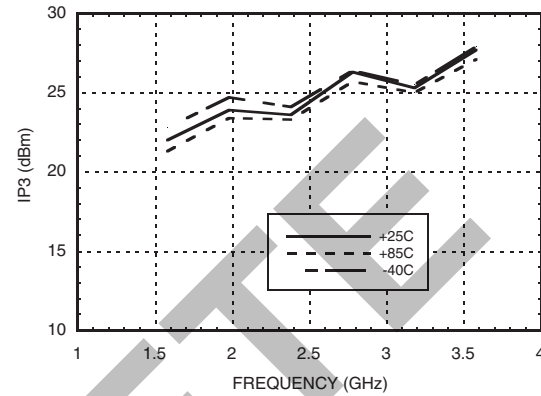
HMC316MS8 / 316MS8E

GaAs MMIC HIGH IP3 DOUBLE-BALANCED MIXER, 1.5 - 3.8 GHz

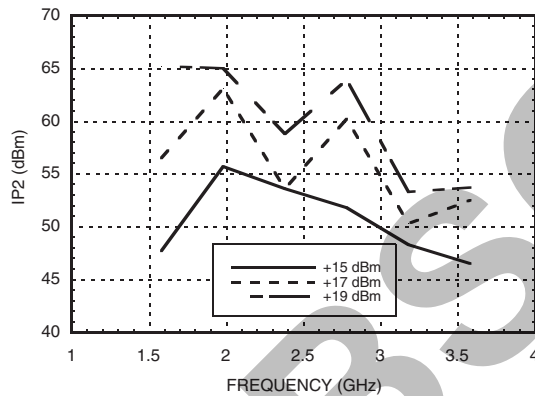
Input IP3 vs. LO Drive*



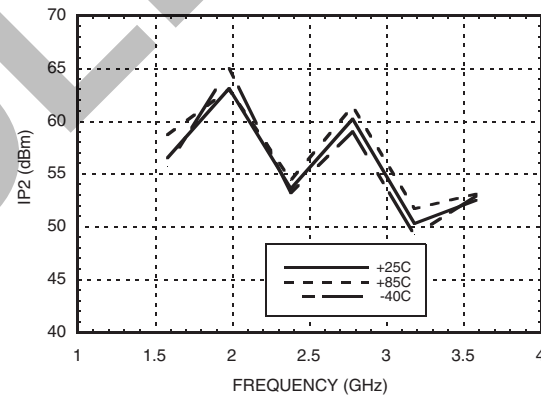
Input IP3 vs. Temperature @ LO = +17dBm*



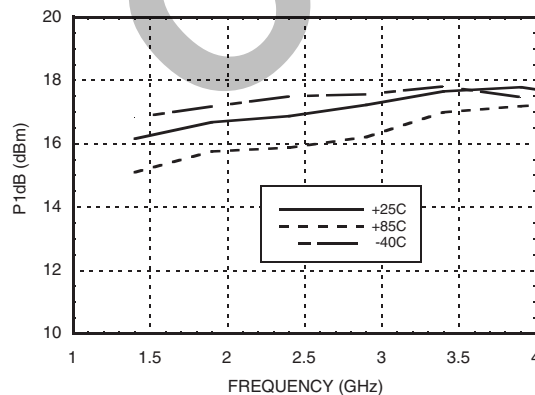
Input IP2 vs. LO Drive*



Input IP2 vs. Temperature @ LO = +17 dBm*



Input P1dB vs. Temperature @ LO = +17 dBm



MxN Spurious Outputs

mRF	nLO				
	0	1	2	3	4
0	xx	-8	3.6	1.1	29
1	10	0	22	44	48
2	71	72	77	60	85
3	>110	>110	>110	91	91
4	>110	>110	>110	>110	>110

RF = 2.08 GHz @ -10 dBm
LO = 1.9 GHz @ +17 dBm
All values in dBc relative to the IF output power.

* Two-tone input power = 0 dBm each tone, 1 MHz spacing.

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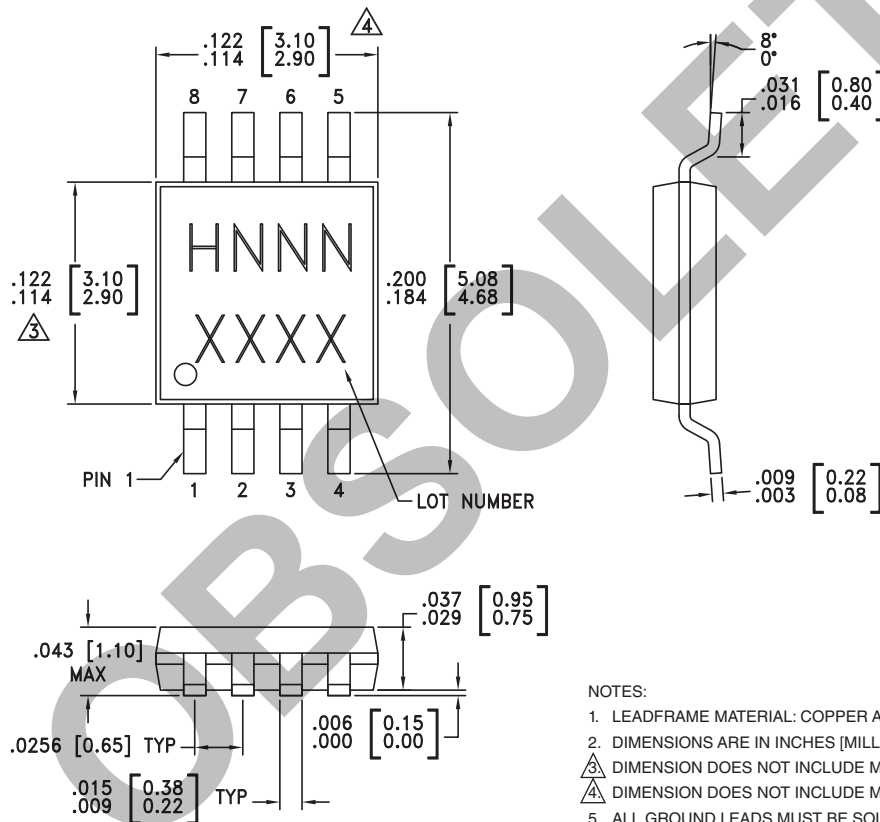
Absolute Maximum Ratings

RF / IF Input	+22 dBm
LO Drive	+27 dBm
Storage Temperature	-65 to +150 °C
Operating Temperature	-40 to +85 °C
IF DC Current	±18 mA
ESD Sensitivity (HBM)	Class 1A



ELECTROSTATIC SENSITIVE DEVICE
OBSERVE HANDLING PRECAUTIONS

Outline Drawing



Package Information

Part Number	Package Body Material	Lead Finish	MSL Rating	Package Marking ^[3]
HMC316MS8	Low Stress Injection Molded Plastic	Sn/Pb Solder	MSL1 ^[1]	H316 XXXX
HMC316MS8E	RoHS-compliant Low Stress Injection Molded Plastic	100% matte Sn	MSL1 ^[2]	H316 XXXX

[1] Max peak reflow temperature of 235 °C

[2] Max peak reflow temperature of 260 °C

[3] 4-Digit lot number XXXX

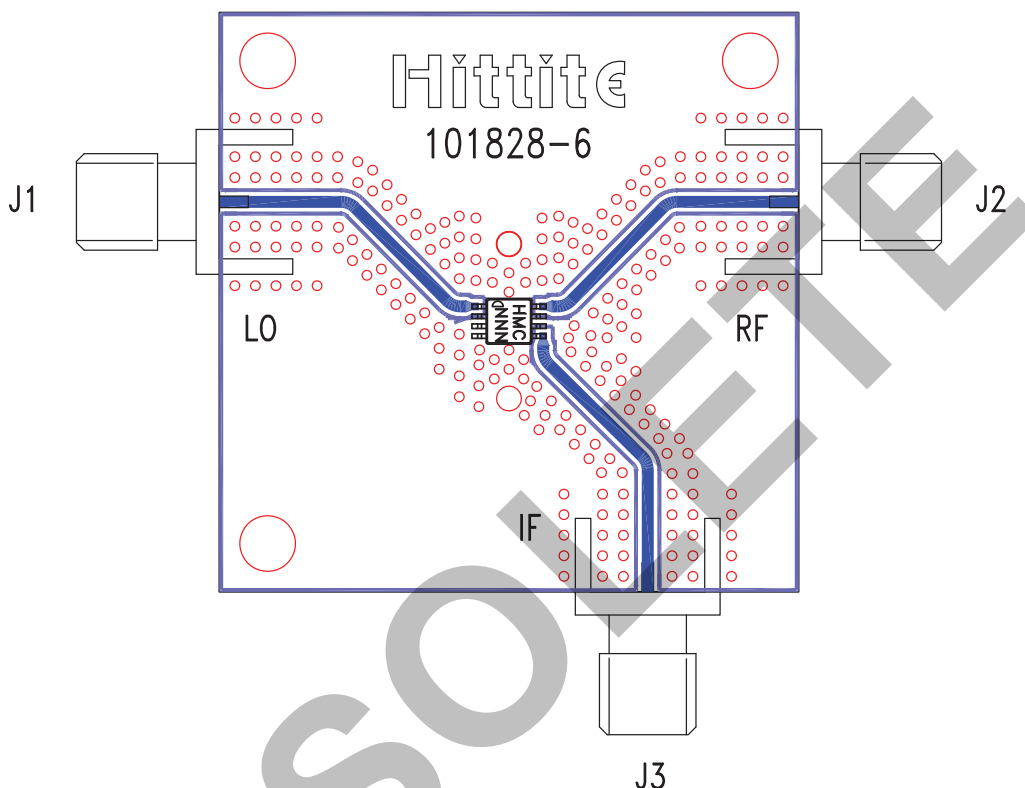
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**GaAs MMIC HIGH IP3 DOUBLE-
BALANCED MIXER, 1.5 - 3.8 GHz**

Evaluation PCB



List of Materials for Evaluation PCB 101830 [1]

Item	Description
J1 - J3	PCB Mount SMA RF Connector
U1	HMC316MS8 / HMC316MS8E Mixer
PCB [2]	101828 Eval Board

[1] Reference this number when ordering complete evaluation PCB

[2] Circuit Board Material: Rogers 4350

The circuit board used in the final application should use RF circuit design techniques. Signal lines should have 50 ohm impedance while the package ground leads should be connected directly to the ground plane similar to that shown below. A sufficient number of via holes should be used to connect the top and bottom ground planes. The evaluation circuit board as shown is available from Hittite upon request.

Notes:

OBSOLETE