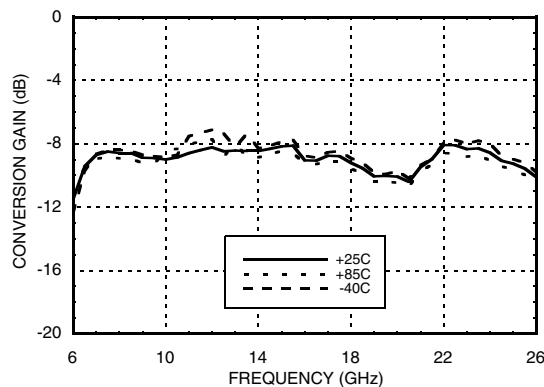


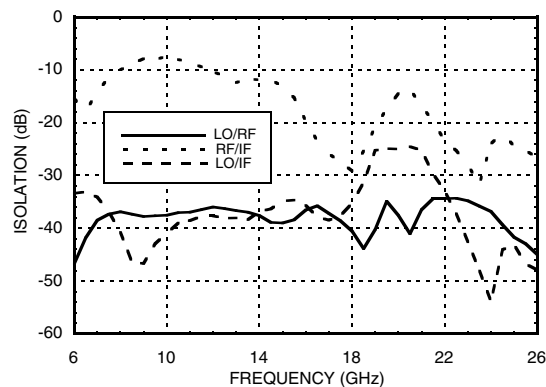


**GaAs MMIC FUNDAMENTAL
MIXER, 6 - 26 GHz**

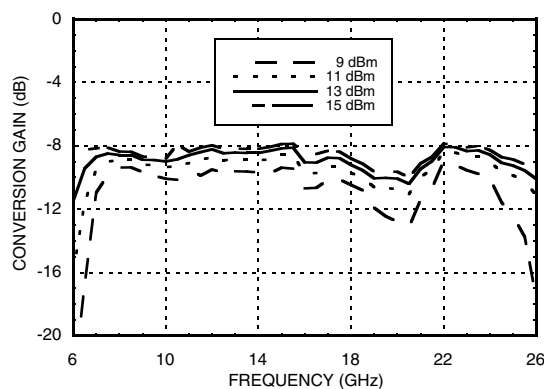
Conversion Gain vs. Temperature



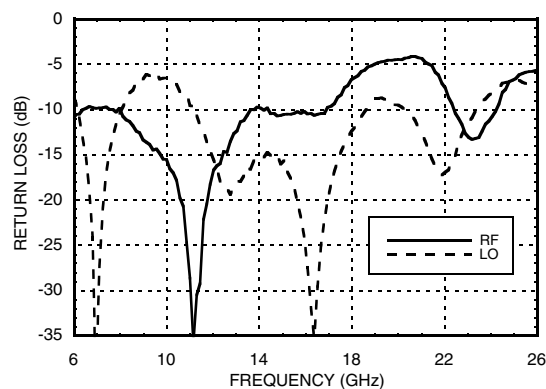
Isolation



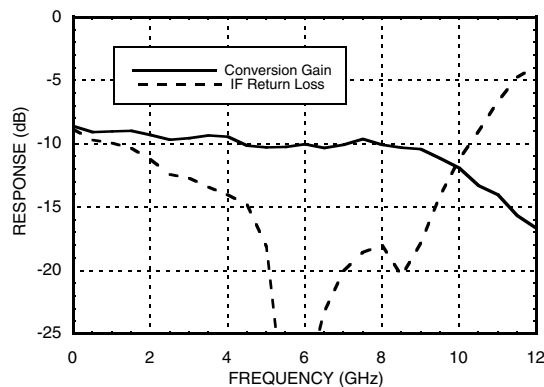
Conversion Gain vs. LO Drive



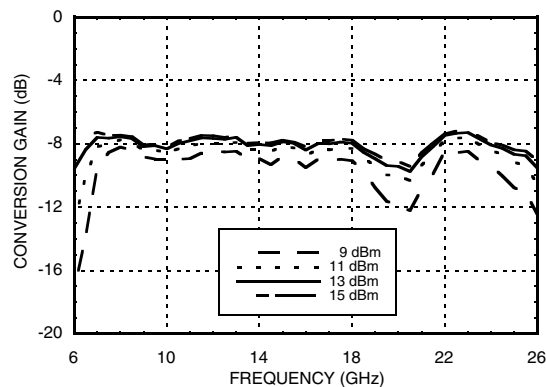
Return Loss



IF Bandwidth



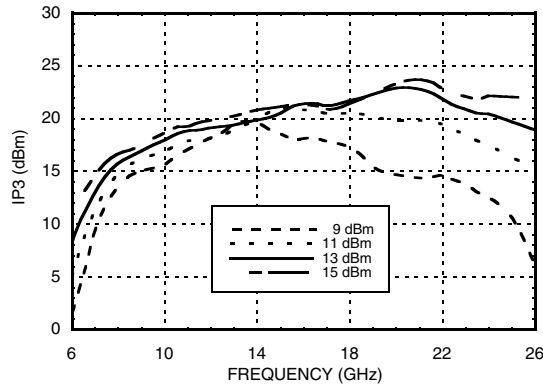
**Upconverter Performance
Conversion Gain vs. LO Drive**



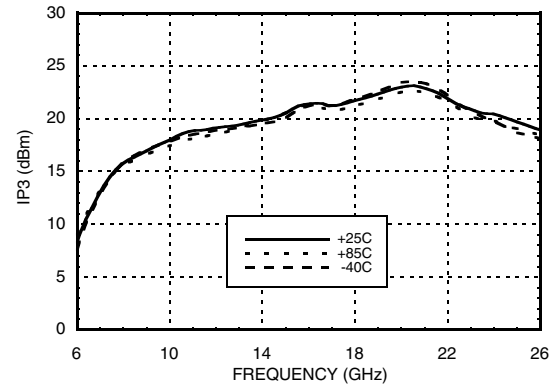


GaAs MMIC FUNDAMENTAL MIXER, 6 - 26 GHz

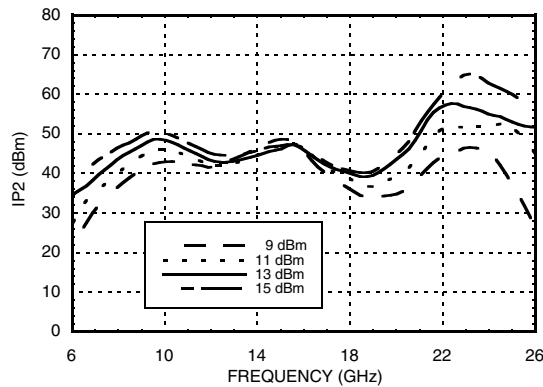
Input IP3 vs. LO Drive *



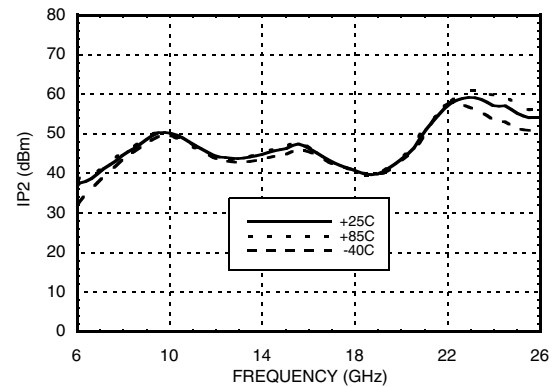
Input IP3 vs. Temperature*



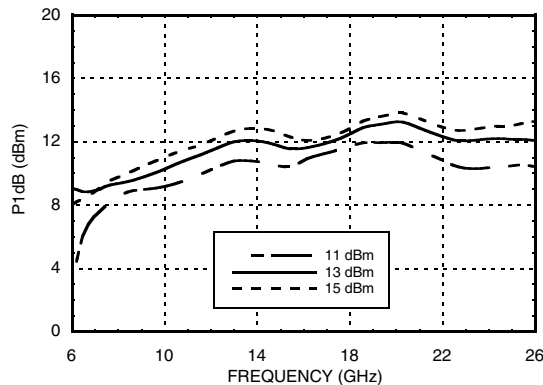
Input IP2 vs. LO Drive *



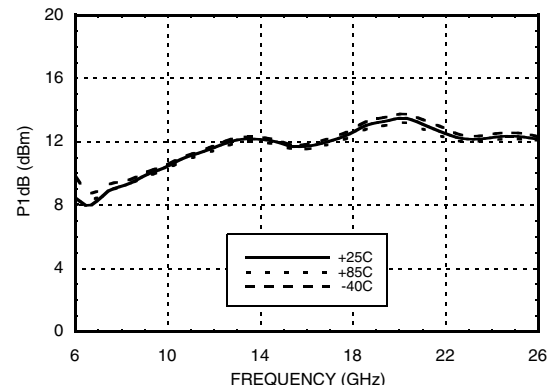
Input IP2 vs. Temperature *



Input P1dB vs. LO Drive



Input P1dB vs. Temperature



* Two-tone input power = -5 dBm each tone, 1 MHz spacing.

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GaAs MMIC FUNDAMENTAL MIXER, 6 - 26 GHz

MxN Spurious Outputs

	nLO				
mRF	0	1	2	3	4
0	XX	14.5	30.3	31.3	53.3
1	0	0	21.6	22.5	46.7
2	69.0	61.7	62.5	63.7	74.6
3	>100	79.4	65.8	68.2	59.6

RF = 9 GHz @ -10 dBm
LO = 8 GHz @ +13 dBm
All values in dBc below the IF output power level.

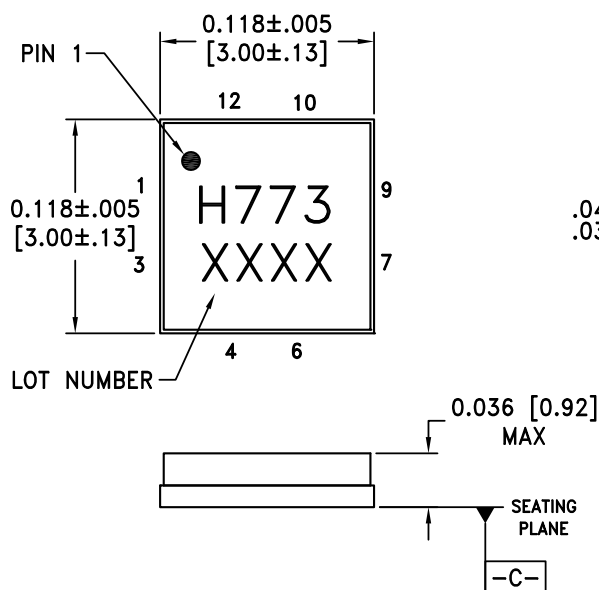
Absolute Maximum Ratings

RF / IF Input	+21 dBm
LO Drive	+21 dBm
Channel Temperature	150 °C
Continuous Pdiss (Ta = 85 °C) (derate 3.3 mW/°C above 85 °C)	210 mW
Thermal Resistance (junction to ground paddle)	170 °C/W
Storage Temperature	-65 to +150 °C
Operating Temperature	-40 to +85 °C

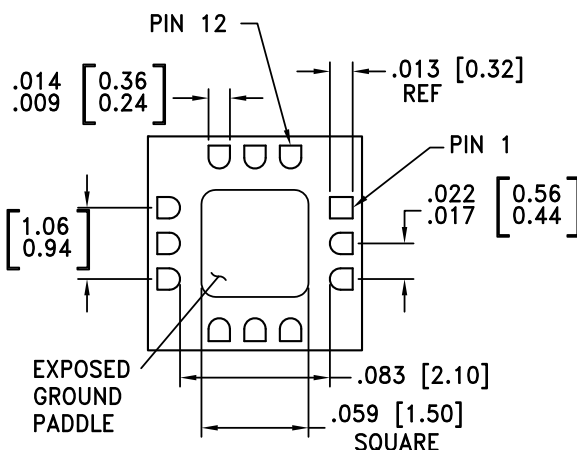


ELECTROSTATIC SENSITIVE DEVICE
OBSERVE HANDLING PRECAUTIONS

Outline Drawing



BOTTOM VIEW



NOTES:

1. PACKAGE BODY MATERIAL: ALUMINA.
2. LEAD AND GROUND PADDLE PLATING: GOLD FLASH OVER NICKEL.
3. DIMENSIONS ARE IN INCHES (MILLIMETERS).
4. LEAD SPACING TOLERANCE IS NON-CUMULATIVE.
5. CHARACTERS TO BE HELVETICA MEDIUM, .025 HIGH, BLACK INK, OR LASER MARK LOCATED APPROX. AS SHOWN.
6. PACKAGE WARP SHALL NOT EXCEED 0.05MM DATUM - C -
7. ALL GROUND LEADS AND GROUND PADDLE MUST BE SOLDERED TO PCB RF GROUND.

Package Information

Part Number	Package Body Material	Lead Finish	MSL Rating	Package Marking [2]
HMC773LC3B	Alumina, White	Gold over Nickel	MSL3 [1]	H773 XXXX



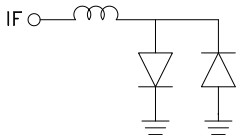
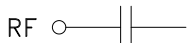
[1] Max peak reflow temperature of 260 °C

[2] 4-Digit lot number XXXX

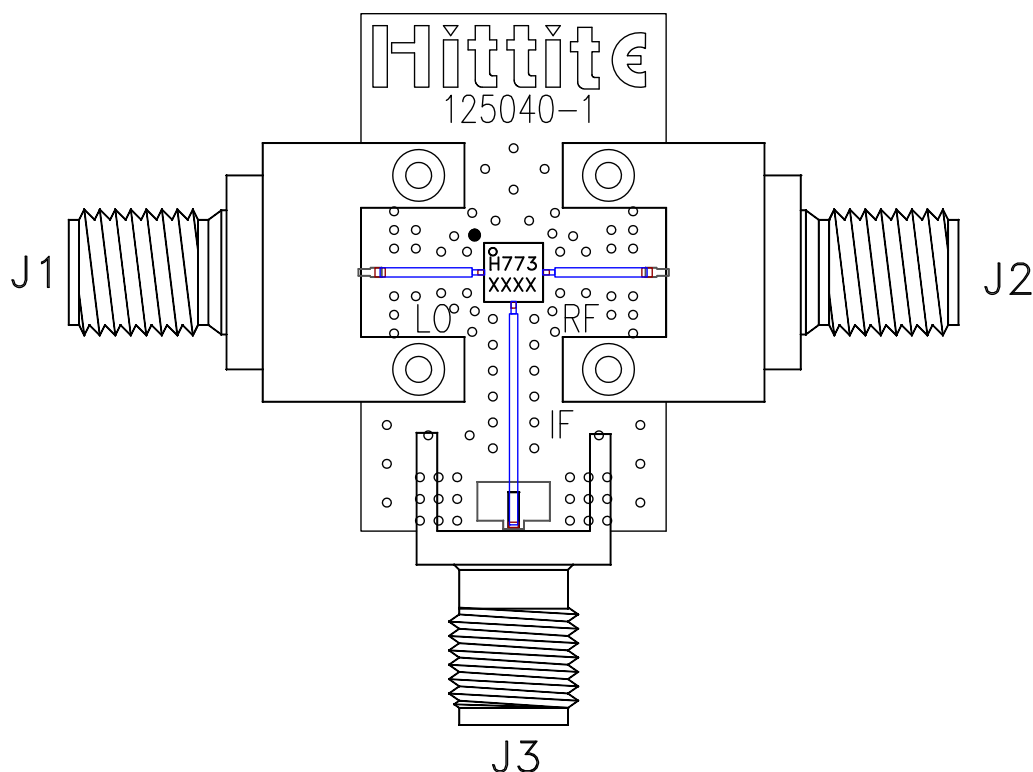
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**GaAs MMIC FUNDAMENTAL
MIXER, 6 - 26 GHz**
Pin Descriptions

Pin Number	Function	Description	Interface Schematic
1, 3, 7, 9, 10, 12	GND	These pins and package bottom must also be connected to RF/DC ground.	
2	LO	This pin is AC coupled and matched to 50 Ohms.	
5	IF	This pin is DC coupled. For applications not requiring operation to DC, this port should be DC blocked externally using a series capacitor whose value has been chosen to pass the necessary IF frequency range. For operation to DC, this pin must not source or sink more than 2 mA of current or part non-function and possible part failure will result.	
8	RF	This pin is AC coupled and matched to 50 Ohms.	
4, 6, 11	N/C	These pins are not connected internally; however, all data shown herein was measured with these pins connected to RF/DC ground externally.	

Evaluation PCB



List of Materials for Evaluation PCB 125042 [1]

Item	Description
J1 - J2	SRI SMA Connector
J3	2.92mm PCB Mount K-Connector
U1	HMC773LC3B Mixer
PCB [2]	125040 Evaluation PCB

[1] Reference this number when ordering complete evaluation PCB

[2] Circuit Board Material: Arlon 25FR or Rogers 4350

The circuit board used in this application should use RF circuit design techniques. Signal lines should have 50 Ohm impedance while the package ground leads and exposed paddle should be connected directly to the ground plane similar to that shown. A sufficient number of via holes should be used to connect the top and bottom ground planes. The evaluation board should be mounted to an appropriate heat sink. The evaluation circuit board shown is available from Hittite upon request.