

HMC573* PRODUCT PAGE QUICK LINKS

Last Content Update: 02/23/2017

COMPARABLE PARTS

View a parametric search of comparable parts.

EVALUATION KITS

- HMC573LC3B Evaluation Board

DOCUMENTATION

Data Sheet

- HMC573 Data Sheet

TOOLS AND SIMULATIONS

- HMC573 S-Parameter

REFERENCE MATERIALS

Quality Documentation

- Package/Assembly Qualification Test Report: LC3, LC3B, LC3C (QTR: 2014-00376 REV: 01)
- Semiconductor Qualification Test Report: PHEMT-F (QTR: 2013-00269)

DESIGN RESOURCES

- HMC573 Material Declaration
- PCN-PDN Information
- Quality And Reliability
- Symbols and Footprints

DISCUSSIONS

View all HMC573 EngineerZone Discussions.

SAMPLE AND BUY

Visit the product page to see pricing options.

TECHNICAL SUPPORT

Submit a technical question or find your regional support number.

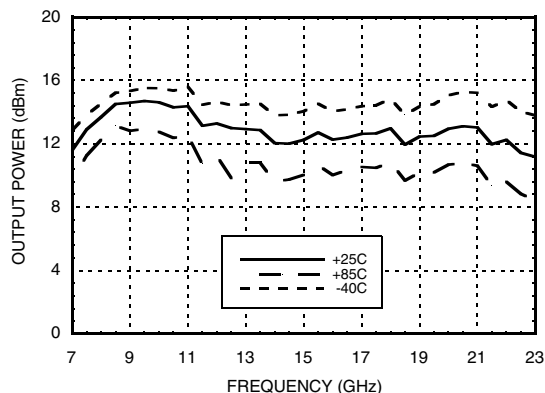
DOCUMENT FEEDBACK

Submit feedback for this data sheet.

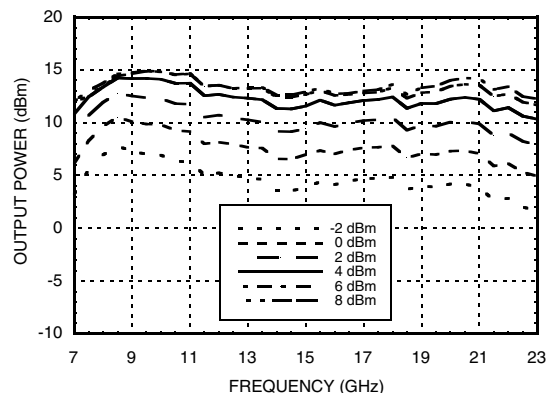


SMT GaAs MMIC x2 ACTIVE FREQUENCY MULTIPLIER, 8 - 22 GHz OUTPUT

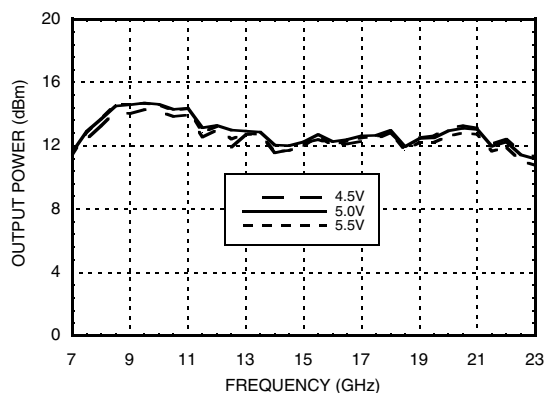
**Output Power vs.
Temperature @ 5 dBm Drive Level**



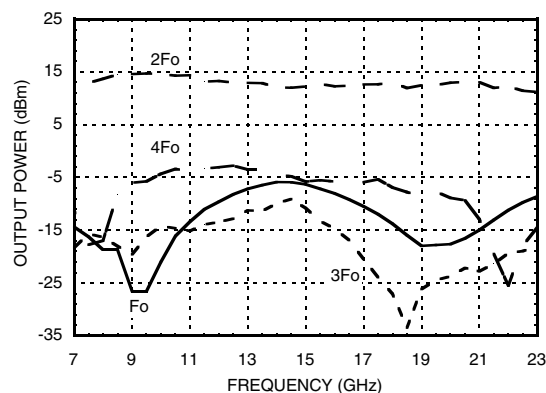
Output Power vs. Drive Level



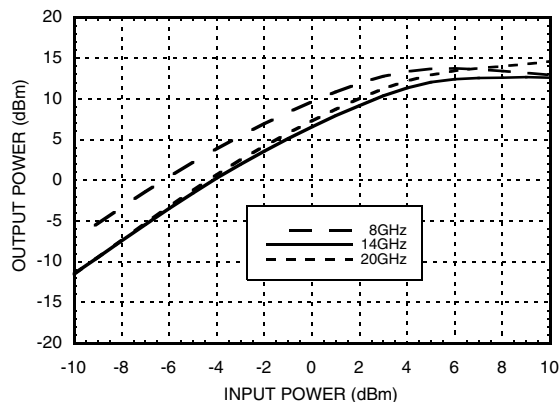
**Output Power vs.
Supply Voltage @ 5 dBm Drive Level**



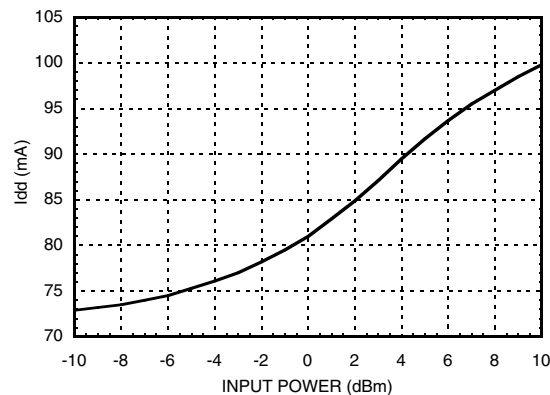
Isolation @ 5 dBm Drive Level



Output Power vs. Input Power



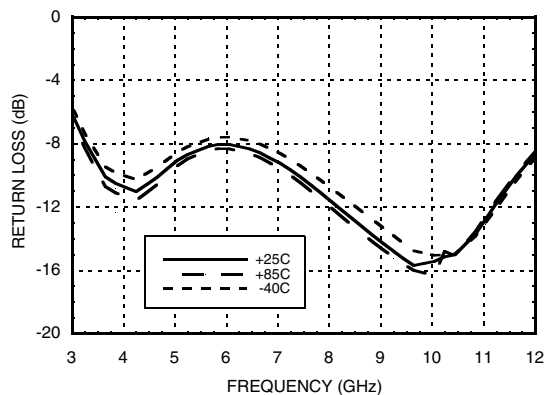
Supply Current vs. Input Power



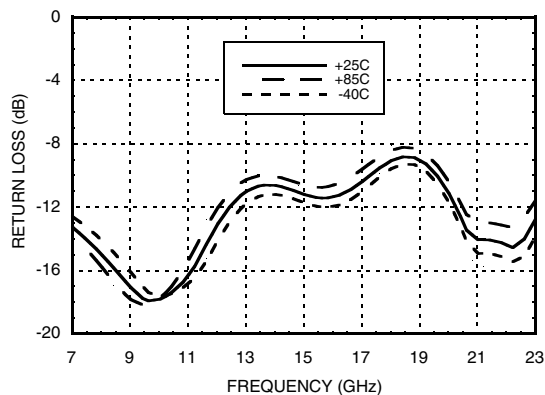


**SMT GaAs MMIC x2 ACTIVE FREQUENCY
MULTIPLIER, 8 - 22 GHz OUTPUT**

Input Return Loss vs. Temperature



Output Return Loss vs. Temperature





SMT GaAs MMIC x2 ACTIVE FREQUENCY MULTIPLIER, 8 - 22 GHz OUTPUT

Absolute Maximum Ratings

RF Input (Vdd = +5V)	+10 dBm
Supply Voltage (Vdd)	+6.0 Vdc
Channel Temperature	175 °C
Continuous Pdiss (T= 85 °C) (derate 8.0 mW/°C above 85 °C)	719 mW
Thermal Resistance (channel to ground paddle)	125 °C/W
Storage Temperature	-65 to +150 °C
Operating Temperature	-40 to +85 °C
ESD Sensitivity (HBM)	Class 1A

Typical Supply Current vs. Vdd

Vdd (Vdc)	Idd (mA)
4.5	90
5.0	92
5.5	94

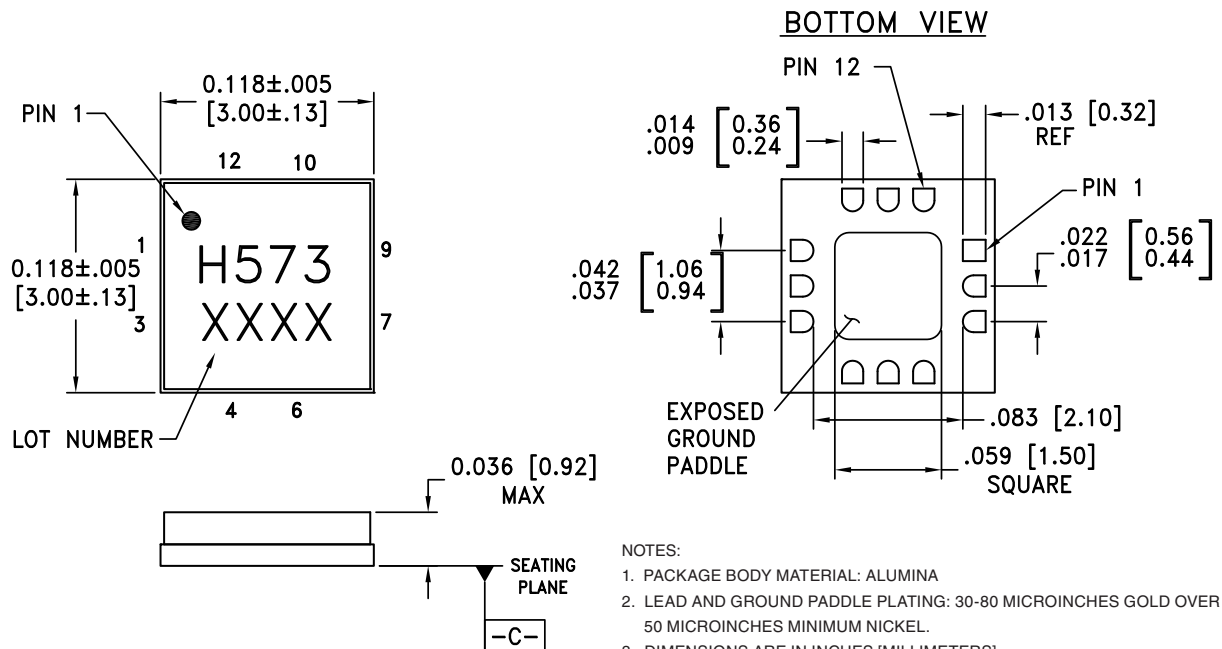
Note:

Multiplier will operate over full voltage range shown above.



ELECTROSTATIC SENSITIVE DEVICE
OBSERVE HANDLING PRECAUTIONS

Outline Drawing



NOTES:

1. PACKAGE BODY MATERIAL: ALUMINA
2. LEAD AND GROUND PADDLE PLATING: 30-80 MICROINCHES GOLD OVER 50 MICROINCHES MINIMUM NICKEL.
3. DIMENSIONS ARE IN INCHES [MILLIMETERS].
4. LEAD SPACING TOLERANCE IS NON-CUMULATIVE
5. PACKAGE WARP SHALL NOT EXCEED 0.05mm DATUM [-C-]
6. 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]
HMC573LC3B	Alumina, White	Gold over Nickel	MSL3 ^[1]	H573 XXXX

[1] Max peak reflow temperature of 260 °C

[2] 4-Digit lot number XXXX


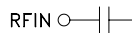
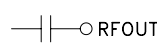
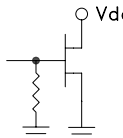
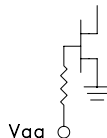
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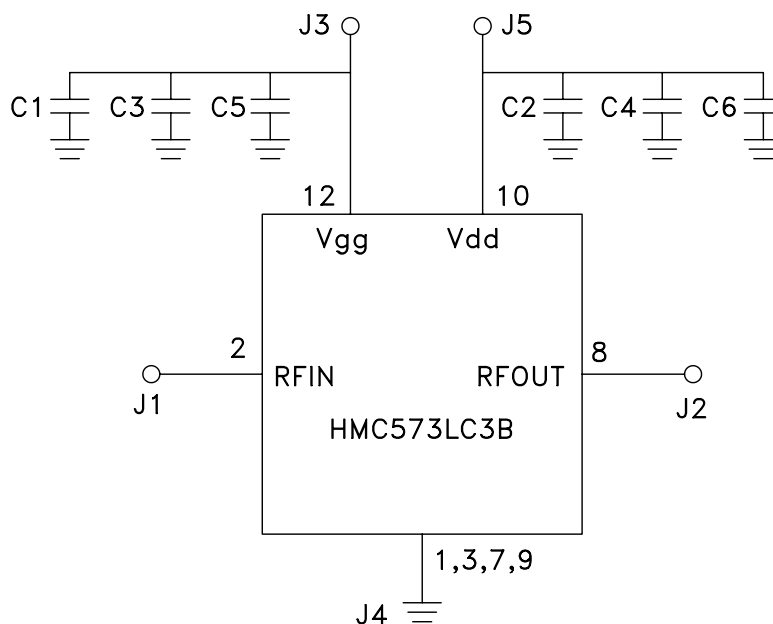
SMT GaAs MMIC x2 ACTIVE FREQUENCY MULTIPLIER, 8 - 22 GHz OUTPUT

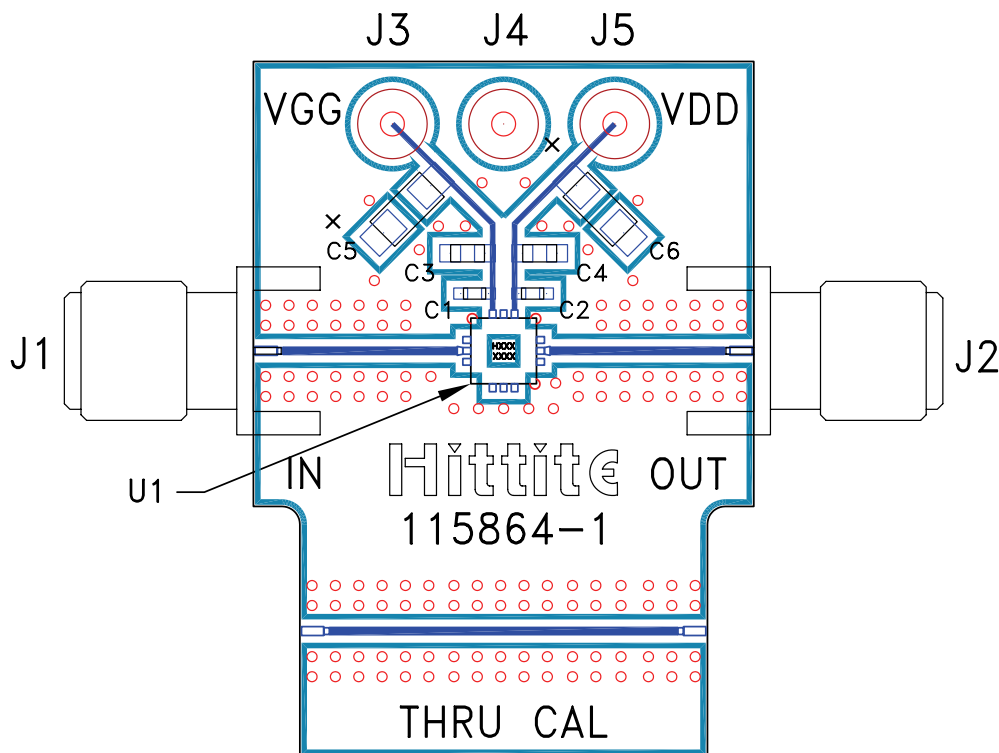
Pin Description

Pin Number	Function	Description	Interface Schematic
1, 3, 7, 9	GND	Package bottom must also be connected to RF/DC ground.	
2	RFIN	Pin is AC coupled and matched to 50 Ohms.	
4 - 6, 11	N/C	These pins are internally not connected; however, this product was specified with these pins connected to RF/DC ground.	
8	RFOUT	Pin is AC coupled and matched to 50 Ohms.	
10	Vdd	Supply voltage 5V ± 0.5V. External bypass capacitors of 100 pF, 1,000 pF and 2.2 µF are required.	
12	Vgg	Gate control for amplifier. Adjust to achieve Idd of 92 mA. Please follow "MMIC Amplifier Biasing Procedure" Application note.	

Application Circuit

Component	Value
C1, C2	100 pF
C3, C4	1,000 pF
C5, C6	2.2 µF




**SMT GaAs MMIC x2 ACTIVE FREQUENCY
MULTIPLIER, 8 - 22 GHz OUTPUT**
Evaluation PCB

List of Materials for Evaluation PCB 115739 [1]

Item	Description
J1, J2	PCB Mount SRI K Connector
J3 - J5	DC Pin
C1, C2	100 pF Capacitor, 0402 Pkg.
C3, C4	1,000 pF Capacitor, 0603 Pkg.
C5, C6	2.2 μ F Tantalum Capacitor
U1	HMC573LC3B x2 Active Multiplier
PCB [2]	115864 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 be generated with proper 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 circuit board shown is available from Hittite upon request.