HMC1084* PRODUCT PAGE QUICK LINKS

Last Content Update: 02/23/2017

COMPARABLE PARTS

View a parametric search of comparable parts.

EVALUATION KITS

- HMC1084LC4 Evaluation Board

DOCUMENTATION

Data Sheet

- HMC1084 Data Sheet

TOOLS AND SIMULATIONS

- HMC1084 S-Parameters

REFERENCE MATERIALS

Quality Documentation

- Package/Assembly Qualification Test Report: LC3, LC3B, LC3C (QTR: 2014-00376 REV: 01)
- Semiconductor Qualification Test Report: PHEMT-J (QTR: 2013-00285)

DESIGN RESOURCES

- HMC1084 Material Declaration
- PCN-PDN Information
- Quality And Reliability
- Symbols and Footprints

DISCUSSIONS

View all HMC1084 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

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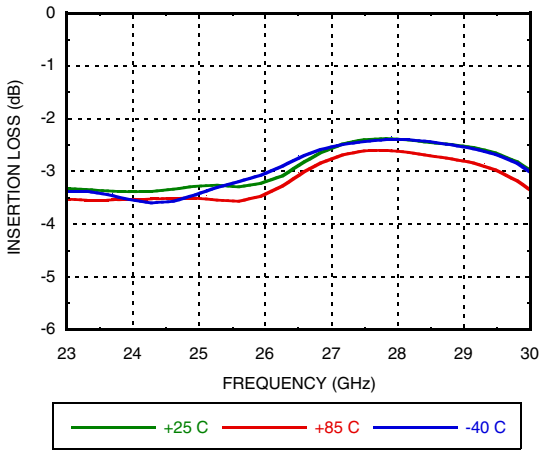
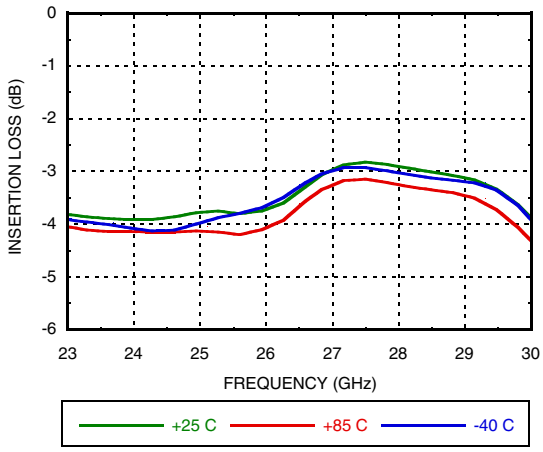
GaAs MMIC SP4T REFLECTIVE SWITCH 23 - 30 GHz

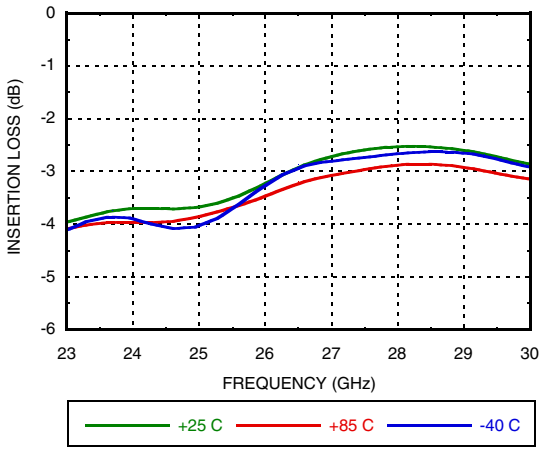
Insertion Loss RFIN to RF1 vs. Temperature



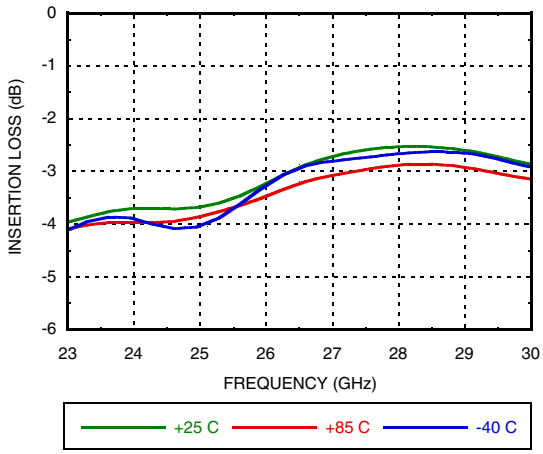
Insertion Loss RFIN to RF4 vs. Temperature



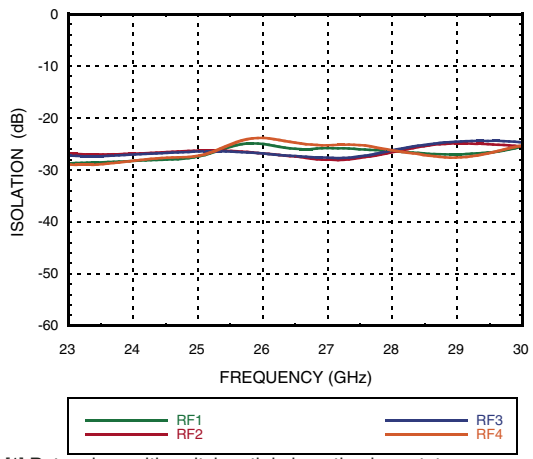
Insertion Loss RFIN to RF2 vs. Temperature



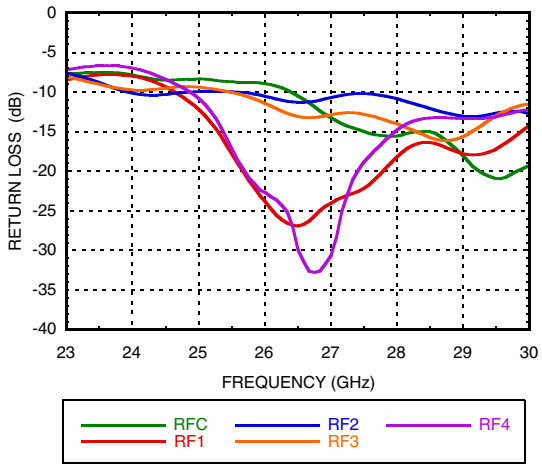
Insertion Loss RFIN to RF3 vs. Temperature



Isolation, Worst Case



Return Loss On State [1]



[1] Return loss with switch path in insertion loss state.

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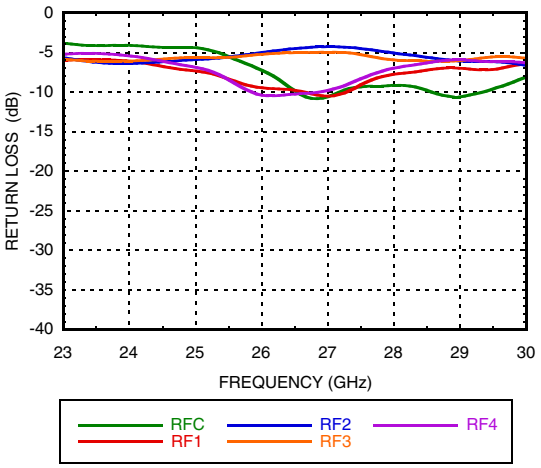
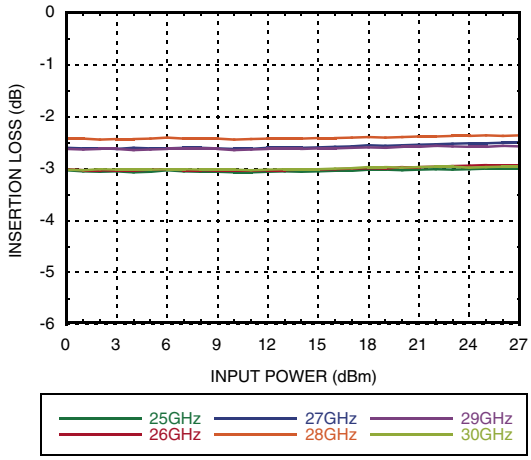
GaAs MMIC SP4T REFLECTIVE SWITCH 23 - 30 GHz

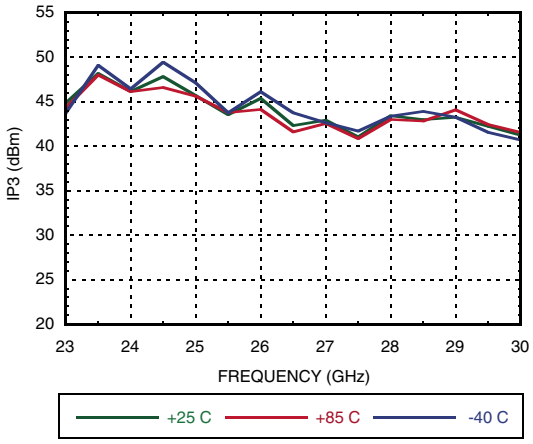
Return Loss Off State [1]



Insertion Loss vs. Input Power



Input IP3 vs. Temperature @ 10dBm/tone



[1] Return loss with switch path in isolation state.

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GaAs MMIC SP4T REFLECTIVE SWITCH 23 - 30 GHz

Absolute Maximum Ratings

Control Voltage Range (VC1, VC2, VC3, VC4)	+5V
Maximum Input Power	30 dBm
Channel Temperature	175 °C
Thermal Resistance Channel to die bottom (Insertion Loss Path)	24 °C/W
Storage Temperature	-65 to +150 °C
Operating Temperature	-55 to +85 °C
ESD Sensitivity (HBM)	Class1A

Bias Voltage & Current

VC (V)	IC (µA)
VC1 = -3V	IC1 < 10 µA
VC2 = -3V	IC2 < 10 µA
VC3 = -3V	IC3 < 10 µA
VC4 = -3V	IC4 < 10 µA

Truth Table

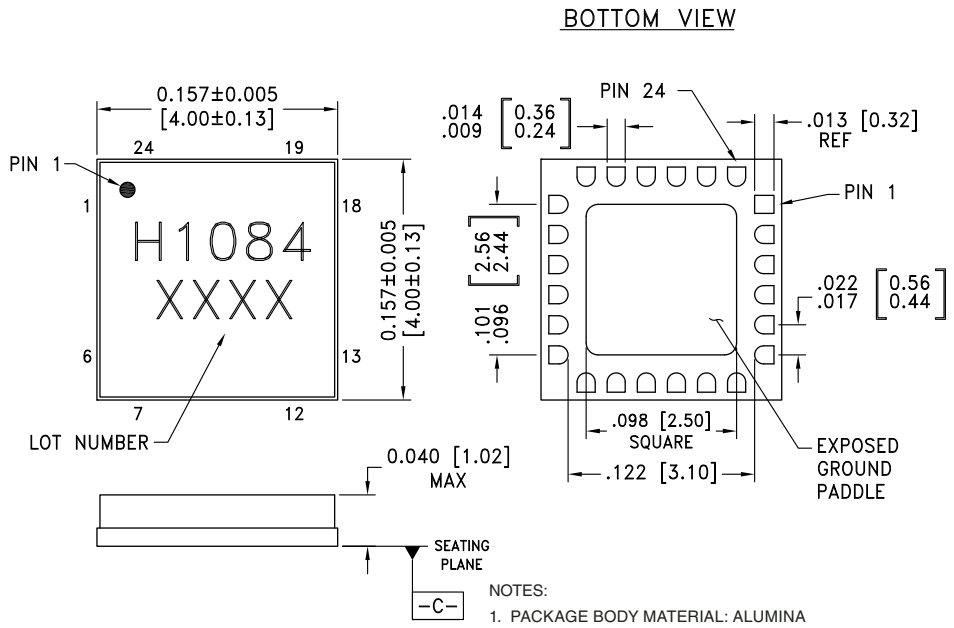
VC1	VC2	VC3	VC4	RFIN to:
-3V	0V	0V	0V	RF1
0V	-3V	0V	0V	RF2
0V	0V	-3V	0V	RF3
0V	0V	0V	-3V	RF4

ELECTROSTATIC SENSITIVE DEVICE
OBSERVE HANDLING PRECAUTIONS

Control Voltages

State	Bias Condition
Low	+1V to -0.25V
High	-2.75V to -5V, < 10 µA

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.
7. CLASSIFIED AS MOISTURE SENSITIVITY LEVEL (MSL) 1.

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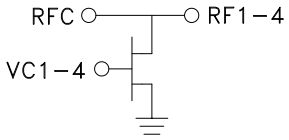
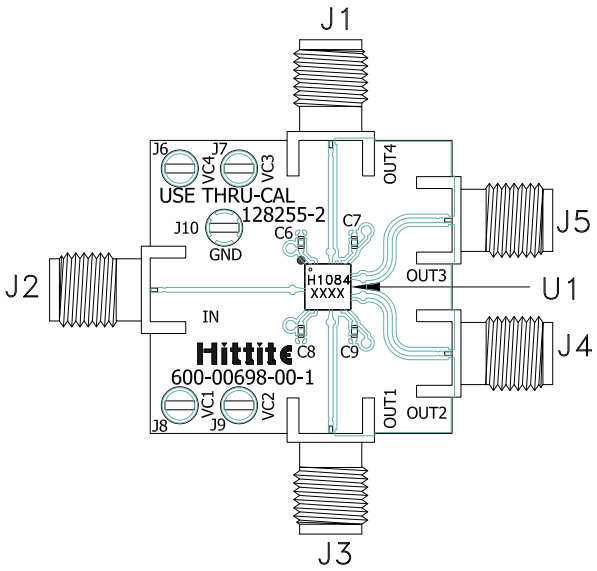
Pin Descriptions

Pin Number	Function	Description	Interface Schematic
1, 2, 6, 8, 23	N/C	These pins are not connected internally; however, all data shown herein was measured with these pins connected to RF/DC ground externally	
3, 5, 9, 11, 13, 15, 16, 18, 20, 22	GND	These pins and the exposed ground paddle must be connected to RF/DC ground.	
4, 10, 14, 17, 21	RFIN, RF1, RF2, RF3, RF4	These pins are DC coupled (to GND) and matched to 50 Ohms	
7, 12, 19, 24	VC1, VC2, VC3, VC4	See Truth Table	

Evaluation PCB



List of Materials for Evaluation PCB EVAL01-HMC1084LC4[1]

Item	Description
J1 - J5	PCB Mount K connector
C6 - C9	1000pF Capacitor, 0402 Pkg.
U1	HMC1084LC4, Switch
PCB [2]	600-00698-00, Evaluation PCB

[1] Reference this number when ordering complete evaluation PCB

[2] Circuit Board Material: Rogers 4350 or Arlon FR4

The circuit board used in the 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.

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Notes:

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