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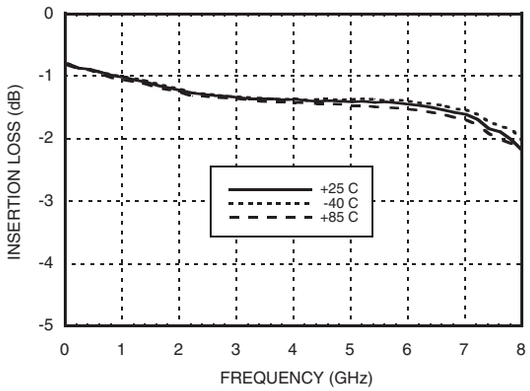
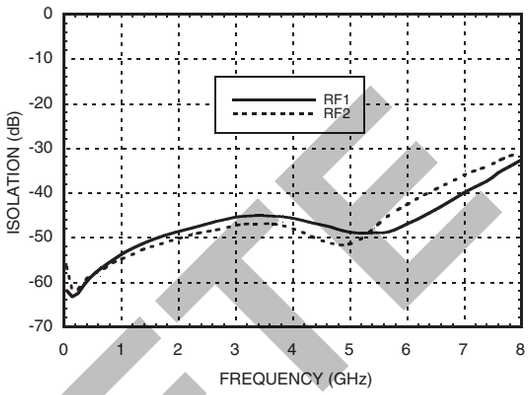
GaAs MMIC SPDT NON-REFLECTIVE POSITIVE CONTROL SWITCH, DC* - 6 GHz

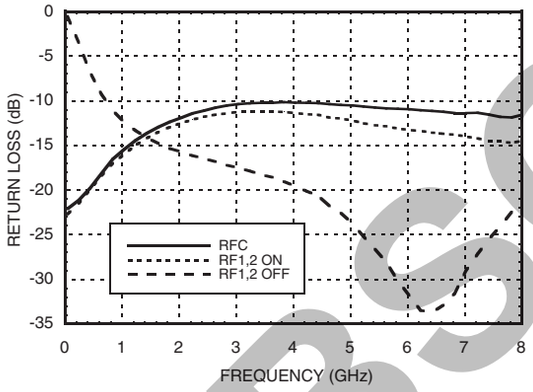
Insertion Loss vs. Temperature



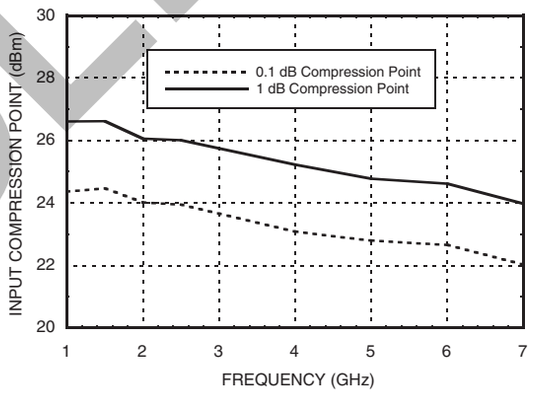
Isolation



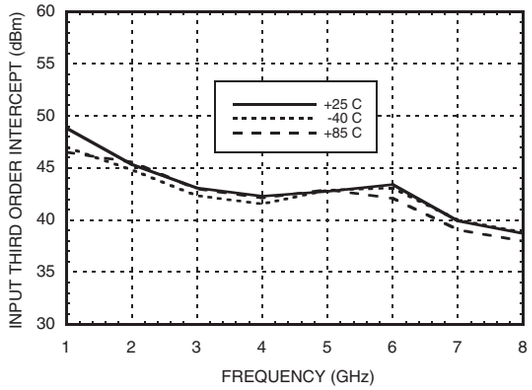
Return Loss



0.1 and 1 dB Input Compression Point



Input Third Order Intercept Point



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Absolute Maximum Ratings

Bias Voltage Range (Vdd)	+7.0 Vdc
Control Voltage Range (A & B)	-0.5V to Vdd +1.0 Vdc
Storage Temperature	-65 to +150 °C
Operating Temperature	-40 to +85 °C
Maximum Input Power	+28 dBm
ESD Sensitivity (HBM)	Class 1A

Note:
DC blocking capacitors are required at ports RFC and RF1, 2. Their value will determine the lowest transmission frequency.

ELECTROSTATIC SENSITIVE DEVICE
OBSERVE HANDLING PRECAUTIONS

Bias Voltage & Current

Vdd (Vdc)	Idd (Typ.) (µA)	Idd (Max.) (µA)
+5.0	35	100

Control Voltages

State	Bias Condition
Low	0 to 0.2 Vdc @ 35 µA Typical
High	+5 Vdc @ 10 µA Typical

Truth Table

Control Input		Signal Path State
A	B	RFCOM to:
Low	High	RF1
High	Low	RF2

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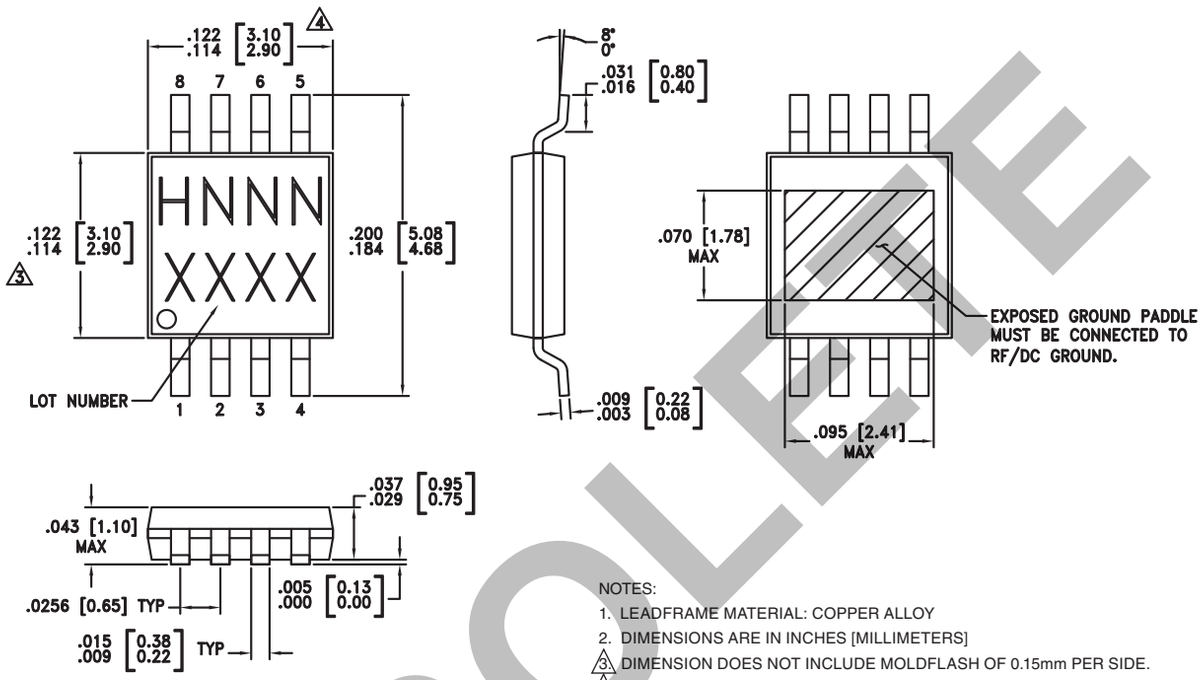
Outline Drawing



NOTES:

1. LEADFRAME MATERIAL: COPPER ALLOY
2. DIMENSIONS ARE IN INCHES [MILLIMETERS]
3. DIMENSION DOES NOT INCLUDE MOLDFLASH OF 0.15mm PER SIDE.
4. DIMENSION DOES NOT INCLUDE MOLDFLASH OF 0.25mm PER SIDE.
5. 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 [3]
HMC336MS8G	Low Stress Injection Molded Plastic	Sn/Pb Solder	MSL1 [1]	H336 XXXX
HMC336MS8GE	RoHS-compliant Low Stress Injection Molded Plastic	100% matte Sn	MSL1 [2]	H336 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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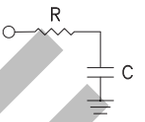
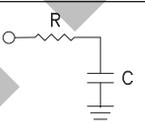
Pin Descriptions

Pin Number	Function	Description	Interface Schematic
1	CTLA	See truth table and control voltage table.	
2	CTLB	See truth table and control voltage table.	
3, 5, 8	RFC, RF1, RF2	This pin is DC coupled and matched to 50 Ohm. Blocking capacitors are required.	
4	VDD	Supply Voltage. This pin may be left floating with degradation of power performance by approximately 1.5 dB.	
6, 7	GND	Package bottom has exposed metal paddle that must also be connected to PCB RF ground.	

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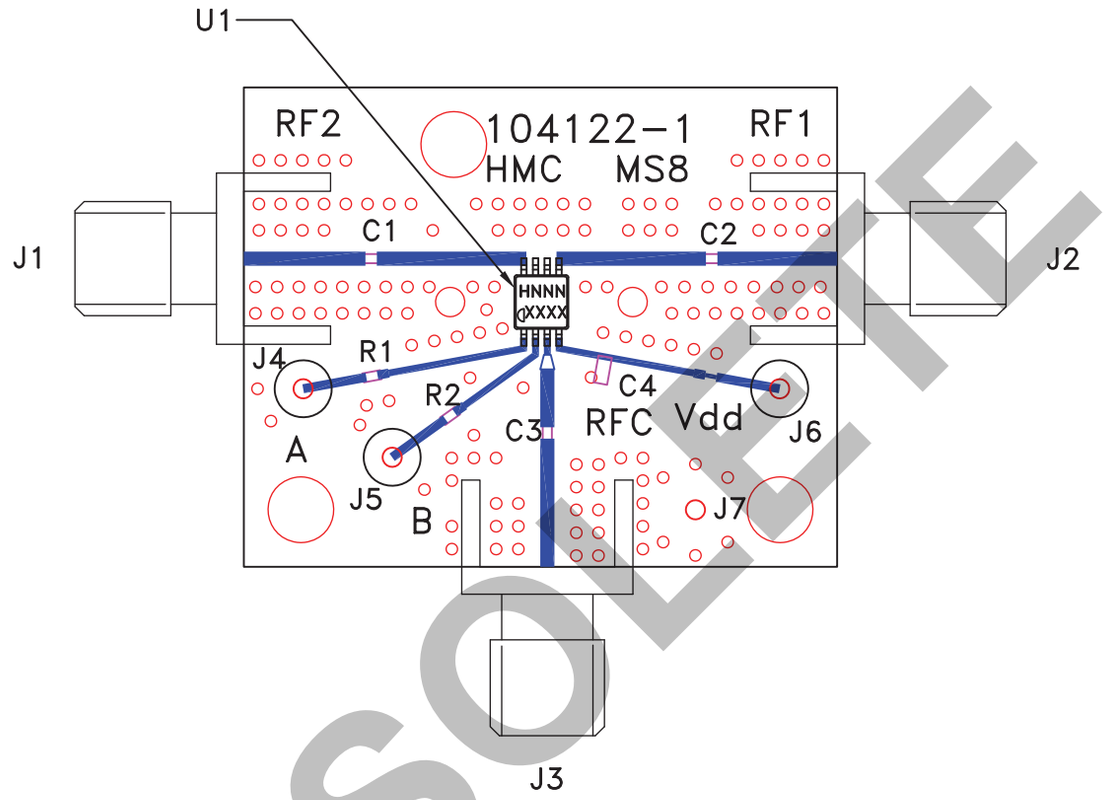
Evaluation PCB



List of Materials for Evaluation PCB 104124 [1]

Item	Description
J1 - J3	PCB Mount SMA RF Connector
J4 - J7	DC Pin
C1 - C3	100 pF Capacitor, 0402 Pkg.
C4	10k pF Capacitor, 0603 Pkg.
R1 - R2	100 Ohm Resistor, 0402 Pkg.
U1	HMC336MS8G / HMC336MS8GE SPDT Switch
PCB [2]	104122 Evaluation PCB 1.05"x1.30"

[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 at the RF port should have 50 ohm impedance and the package ground leads and backside ground slug should be connected directly to the ground plane similar to that shown above. The evaluation circuit board shown above is available from Hittite Microwave Corporation upon request.

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