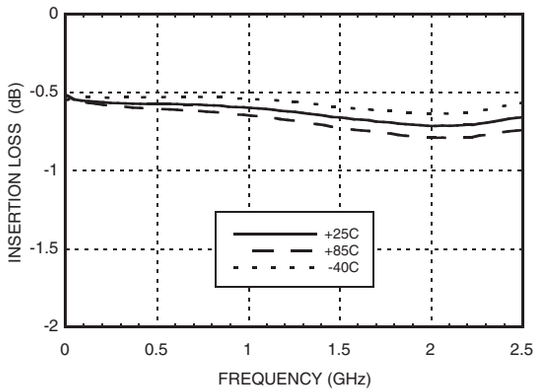
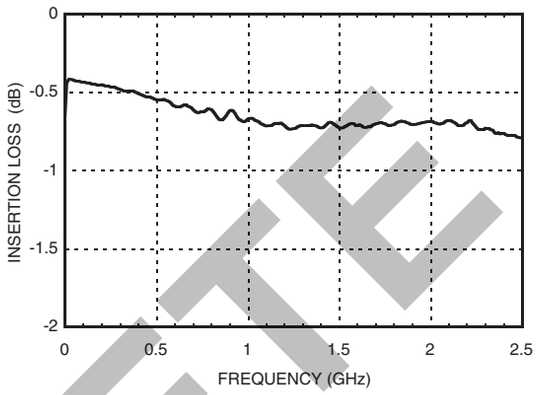
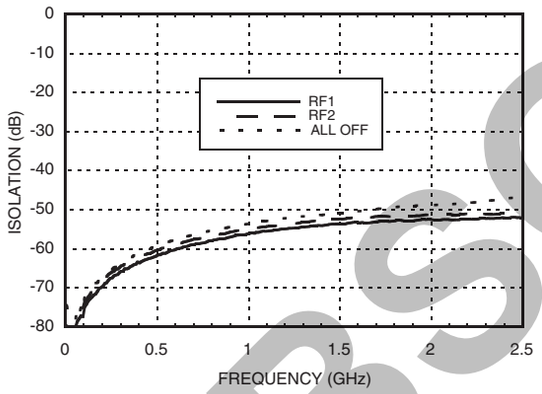
Insertion Loss, 50 Ohm System



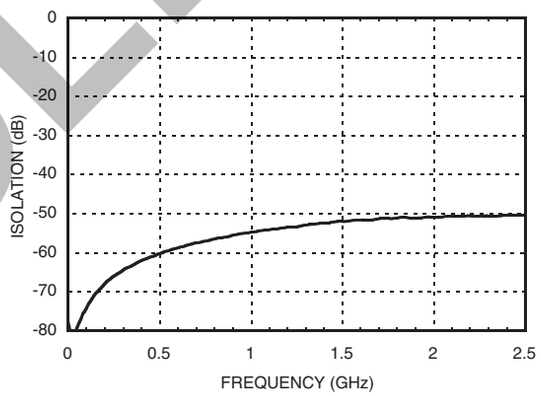
Insertion Loss, 75 Ohm System



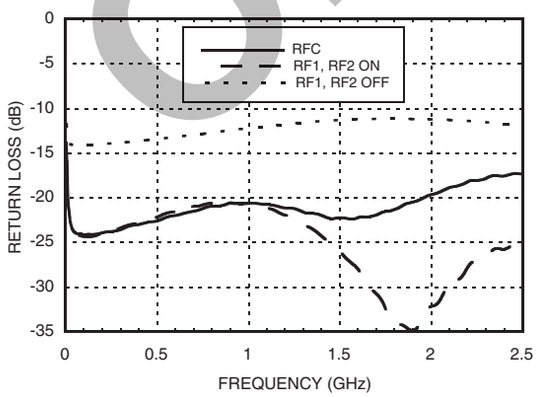
Isolation, 50 Ohm System



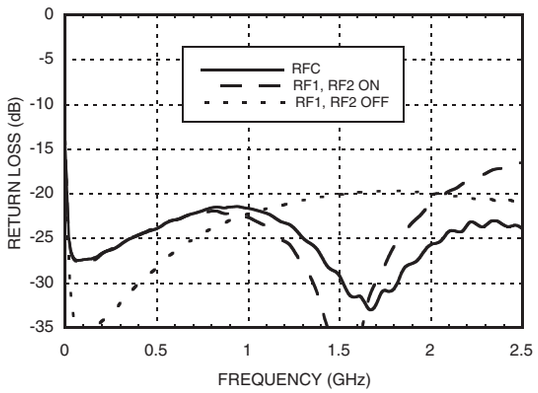
Isolation, 75 Ohm System



Return Loss, 50 Ohm System



Return Loss, 75 Ohm System



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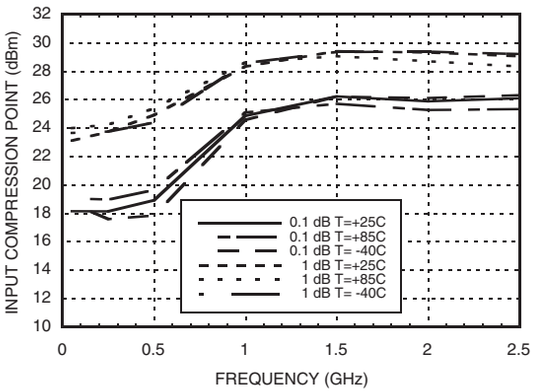
GaAs MMIC SPDT NON-REFLECTIVE CATV SWITCH, DC - 2.5 GHz

Input Compression Point, 50 Ohm System



Absolute Maximum Ratings

Bias Voltage Range (Vdd)	+7.0 Vdc
RF Input Power	+30 dBm
Control Voltage Range (A & B)	+0.5V to Vdd + 1.0 Vdc
Channel Temperature	150 °C
Continuous Pdiss (T = 85 °C) (derate 4 mW/°C above 85 °C)	0.3 W
Thermal Resistance (Insertion Loss Path)	104 °C/W
Thermal Resistance (Terminated Path)	240 °C/W
Storage Temperature	-65 to +150 °C
Operating Temperature	-40 to +85 °C
ESD Sensitivity (HBM)	Class 1A

ELECTROSTATIC SENSITIVE DEVICE
OBSERVE HANDLING PRECAUTIONS

Bias Voltage & Current

Vdd Range = +5.0 Vdc ±10%		
Vdd (Vdc)	Idd (Typ.) (mA)	Idd (Max.) (mA)
+5.0	1.1	2.2

Truth Table

Control Input		Signal Path State	
A	B	RFC to RF1	RFC to RF2
High	Low	On	Off
Low	High	Off	On
Low	Low	Off	Off

Control Voltages

State	Bias Condition
Low	0 to +0.8V @ 5 uA Typical
High	+2.0 to +5.0 Vdc @ 35 uA Typical

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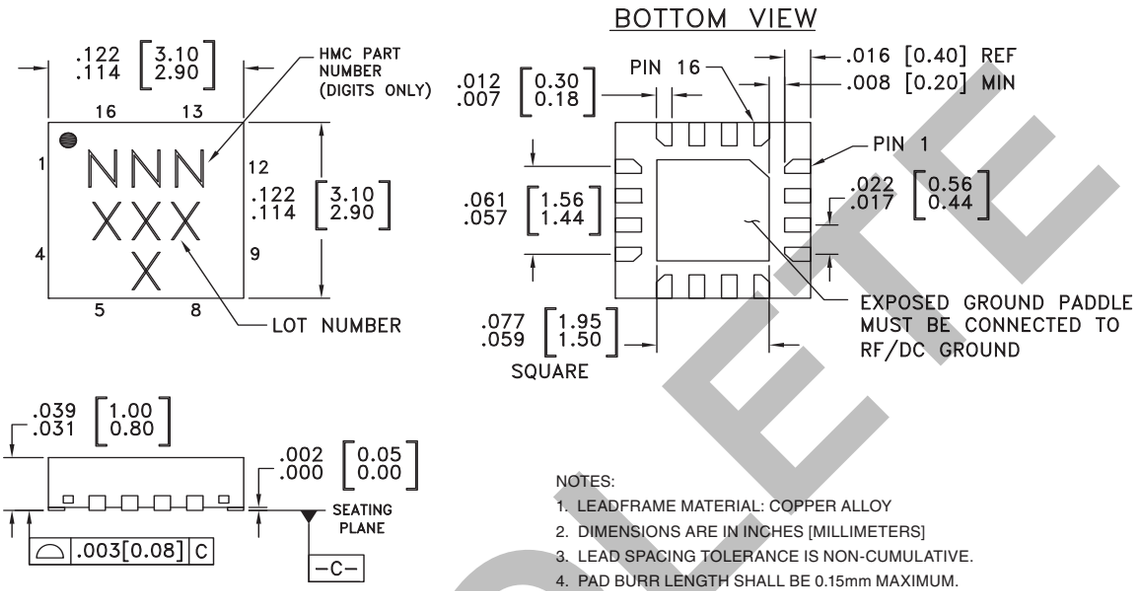
RoHS✓ EARTH FRIENDLY

Outline Drawing



NOTES:

1. LEADFRAME MATERIAL: COPPER ALLOY
2. DIMENSIONS ARE IN INCHES [MILLIMETERS]
3. LEAD SPACING TOLERANCE IS NON-CUMULATIVE.
4. PAD BURR LENGTH SHALL BE 0.15mm MAXIMUM. PAD BURR HEIGHT SHALL BE 0.05mm MAXIMUM.
5. PACKAGE WARP SHALL NOT EXCEED 0.05mm.
6. ALL GROUND LEADS AND GROUND PADDLE MUST BE SOLDERED TO PCB RF GROUND.
7. REFER TO HITTITE APPLICATION NOTE FOR SUGGESTED LAND PATTERN.

Package Information

Part Number	Package Body Material	Lead Finish	MSL Rating	Package Marking [3]
HMC348LP3	Low Stress Injection Molded Plastic	Sn/Pb Solder	MSL1 [1]	348 XXXX
HMC348LP3E	RoHS-compliant Low Stress Injection Molded Plastic	100% matte Sn	MSL1 [2]	348 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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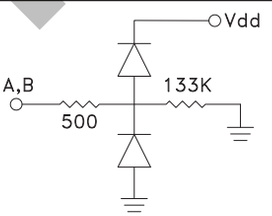
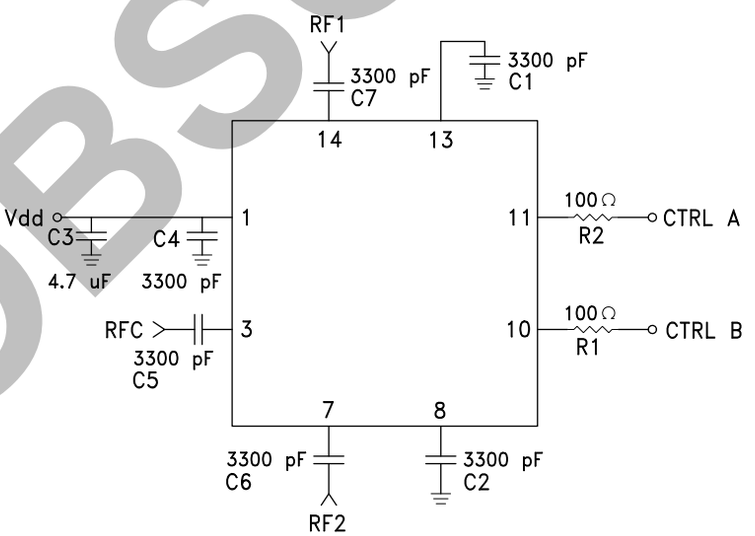
Pin Descriptions

Pin Number	Function	Description	Interface Schematic
1	Vdd	Supply Voltage +5V ±10%	
2, 4, 5, 6, 9, 12, 15,16	N/C	These pins should be connected to PCB RF ground to maximize isolation.	
3, 7, 14	RFC, RF1, RF2	These pins are DC coupled and matched to 75 Ohms. Blocking capacitors are required.	
8, 13	ACG1, ACG2	External capacitors to ground are required. Select value for optimal isolation below 500 MHz.	
10	B	See truth table and control voltage table.	
11	A	See truth table and control voltage table.	

Application Circuit



The value of capacitors C1 & C2 are critical for low frequency isolation performance below 500 MHz. 3300 pF 0402 size capacitors are recommended for optimal isolation down to 5 MHz. If the frequency of operation is above 500 MHz then 100 pF to 300 pF 0402 capacitors will be sufficient.

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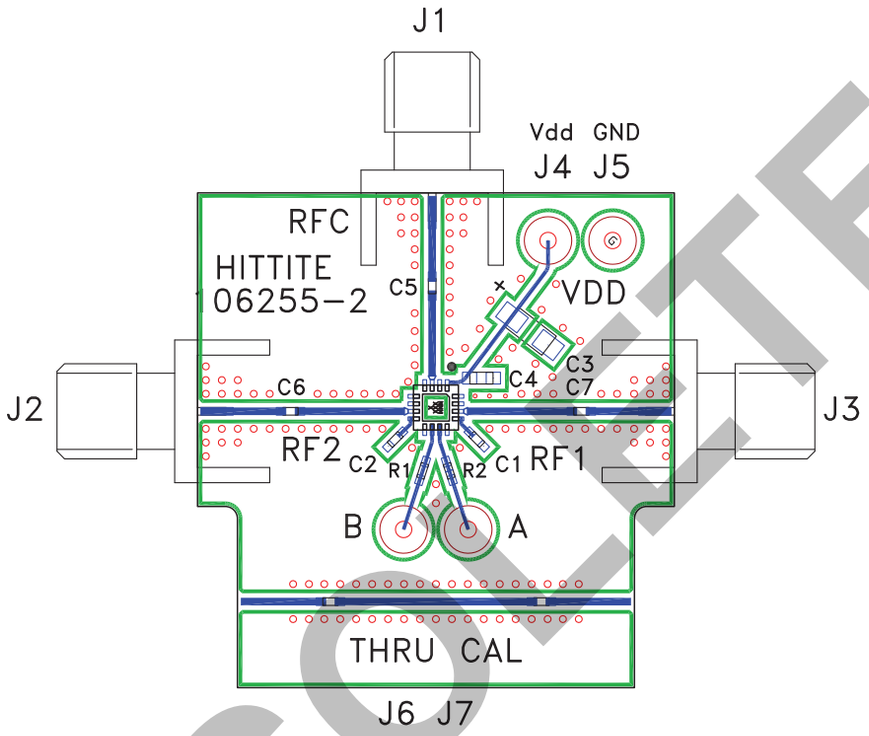
Evaluation PCB (50 Ohms)



List of Materials for Evaluation PCB 106343 [1]

Item	Description
J1 - J3	PCB Mount SMA RF Connector
J4 - J7	DC Pin
R1 - R2	100 Ohm Resistor, 0402 Pkg.
C1, C2, C4 - C7	3300 pF Capacitor, 0402 Pkg.
C3	4.7 uF Tantalum Capacitor
U1	HMC348LP3 / HMC348LP3E SPDT Switch
PCB [2]	106255 Evaluation PCB

[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 package bottom 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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