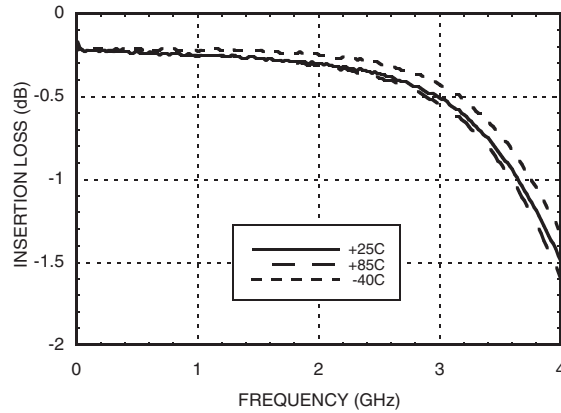
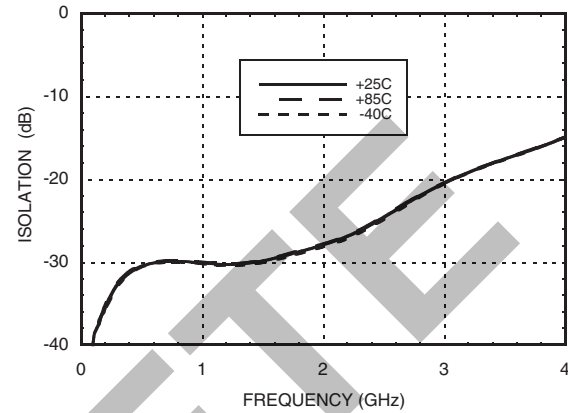
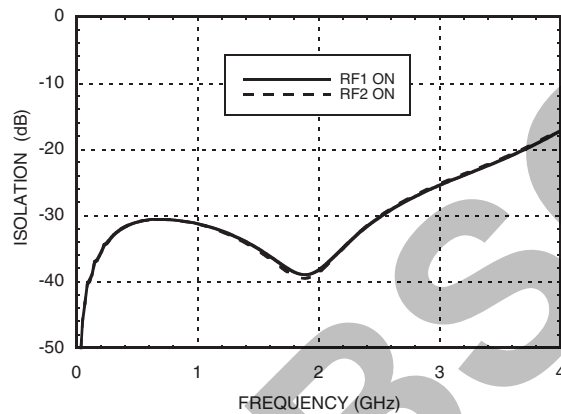
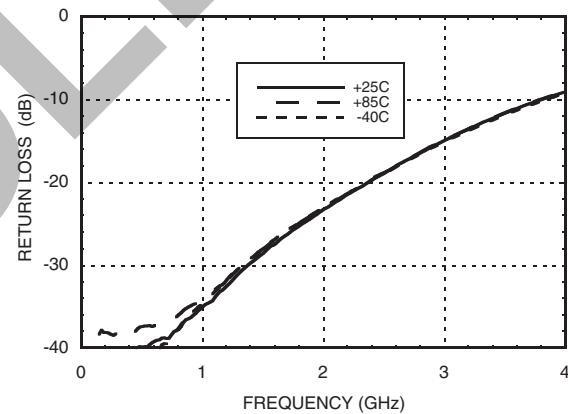
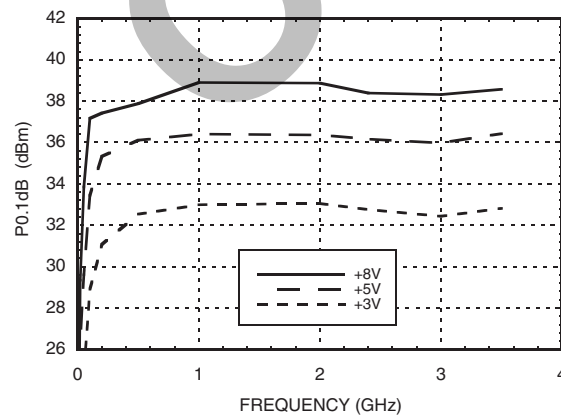
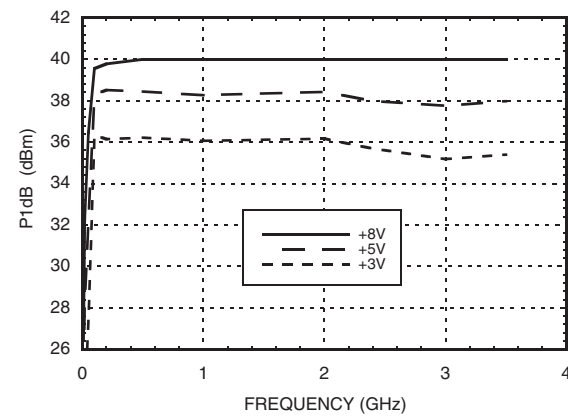




HMC574MS8 / 574MS8E

GaAs MMIC 5 WATT T/R SWITCH DC - 3 GHz

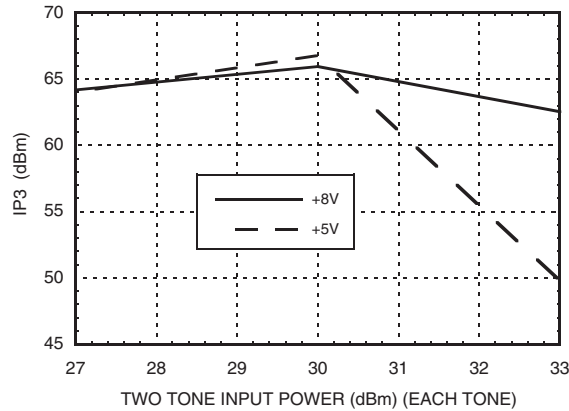
Insertion Loss

Isolation Between RFC & RF1/RF2

RF1 to RF2 Isolation

Return Loss

Input P0.1dB vs. Vdd

Input P1dB vs. Vdd




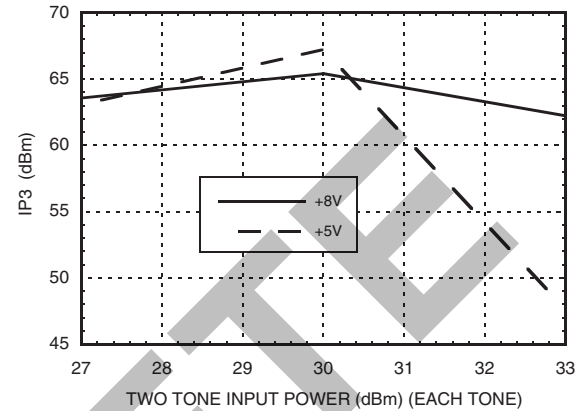
HMC574MS8 / 574MS8E

GaAs MMIC 5 WATT T/R SWITCH DC - 3 GHz

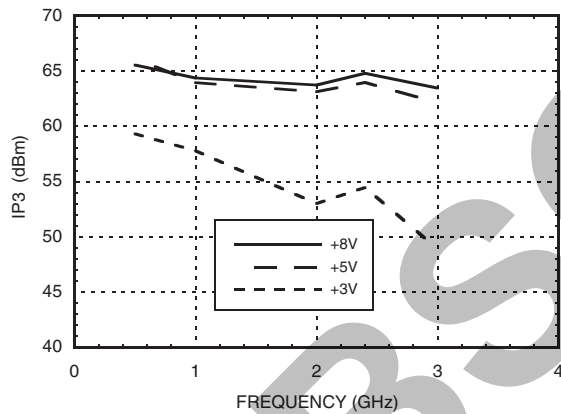
Input IP3 vs. Input Power @ 900 MHz



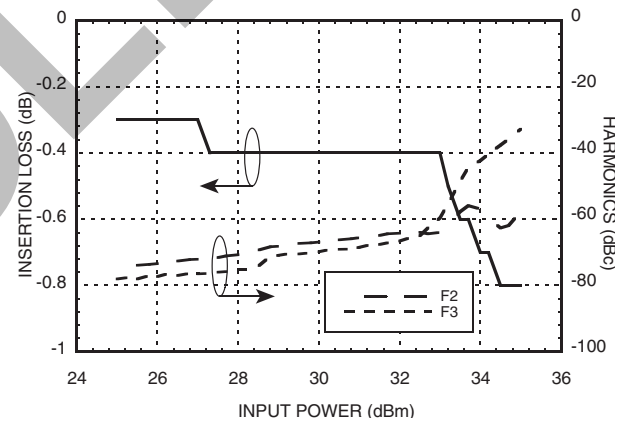
Input IP3 vs. Input Power @ 1900 MHz



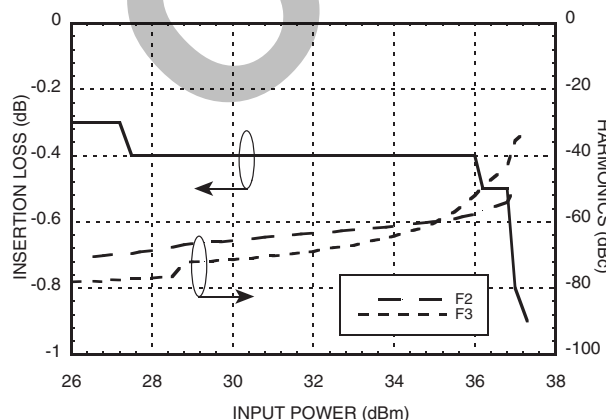
Input Third Order Intercept



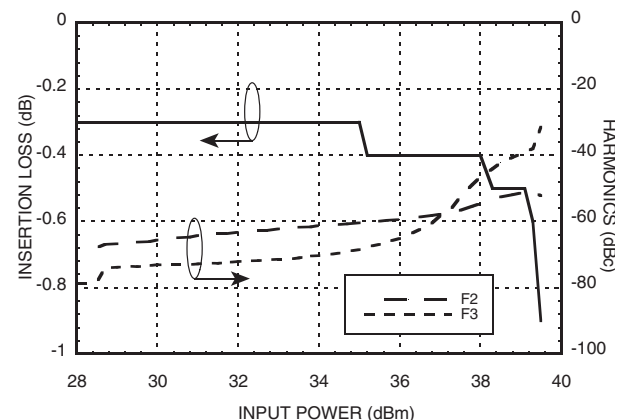
**2nd & 3rd Harmonics @ 900 MHz
Vdd = +3 Volts**

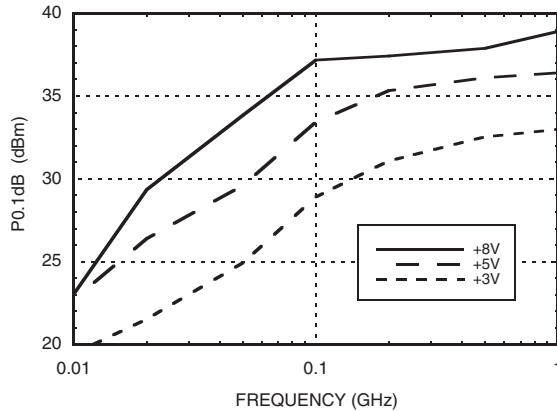
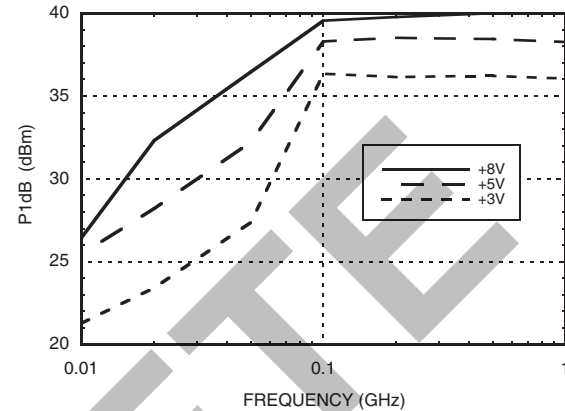


**2nd & 3rd Harmonics @ 900 MHz
Vdd = +5 Volts**



**2nd & 3rd Harmonics @ 900 MHz
Vdd = +8 Volts**



Input P0.1dB vs. Vdd

Input P1dB vs. Vdd

Absolute Maximum Ratings

Max. Input Power $V_{dd} = 0/+8V$	0.5 - 2.5 GHz	39 dBm
Bias Voltage Range (Vdd)	-0.2 to +10 Vdc	
Control Voltage Range (A & B)	-0.2 to +Vdd Vdc	
Hot Switching Power Level $V_{dd} = +8V$	39 dBm	
Channel Temperature	150 °C	
Continuous P _{diss} (T = + 85 °C) (derate 10 mW/°C above 85 °C)	0.65W	
Thermal Resistance	100 °C/W	
Storage Temperature	-65 to +150 °C	
Operating Temperature	-40 to +85 °C	
ESD Sensitivity (HBM)	Class 1A	

DC Blocks are required at ports RFC, RF1 and RF2


**ELECTROSTATIC SENSITIVE DEVICE
OBSERVE HANDLING PRECAUTIONS**
Bias Voltage & Current

Vdd (Vdc)	Typical I _{dd} (μA)
+3	2
+5	10
+8	40

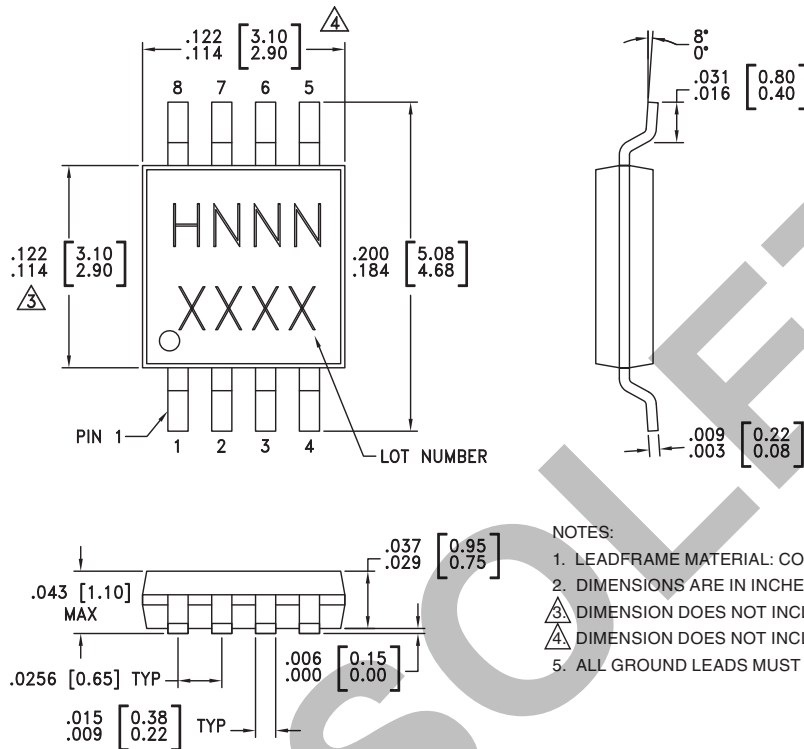
Control Voltages

State	Bias Condition
Low	0 to +0.2 Vdc @ 10 μA Typical
High	Vdd ± 0.2 Vdc @ 10 μA Typical

Truth Table

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

Outline Drawing



Package Information

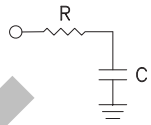

Part Number	Package Body Material	Lead Finish	MSL Rating	Package Marking ^[3]
HMC574MS8	Low Stress Injection Molded Plastic	Sn/Pb Solder	MSL1 ^[1]	H574 XXXX
HMC574MS8E	RoHS-compliant Low Stress Injection Molded Plastic	100% matte Sn	MSL1 ^[2]	H574 XXXX

[1] Max peak reflow temperature of 235 °C

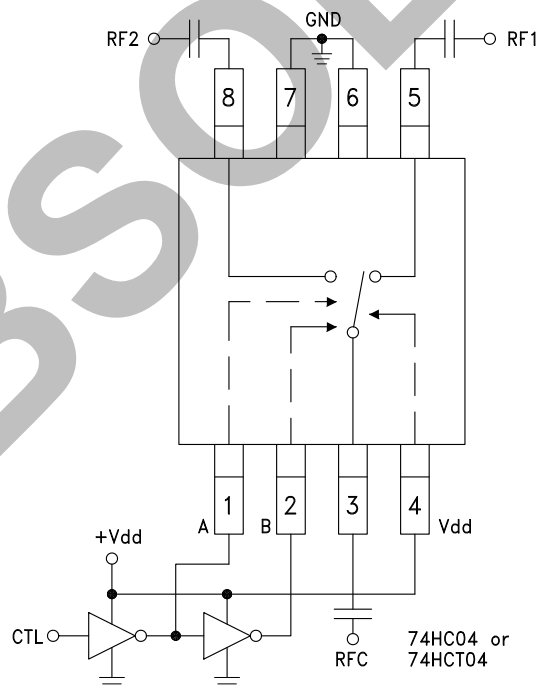
[2] Max peak reflow temperature of 260 °C

[3] 4-Digit lot number XXXX

Pin Descriptions

Pin Number	Function	Description	Interface Schematic
1	A	See truth table and control voltage table.	
2	B	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.	
6, 7	GND	This pin must be connected to RF/DC ground.	

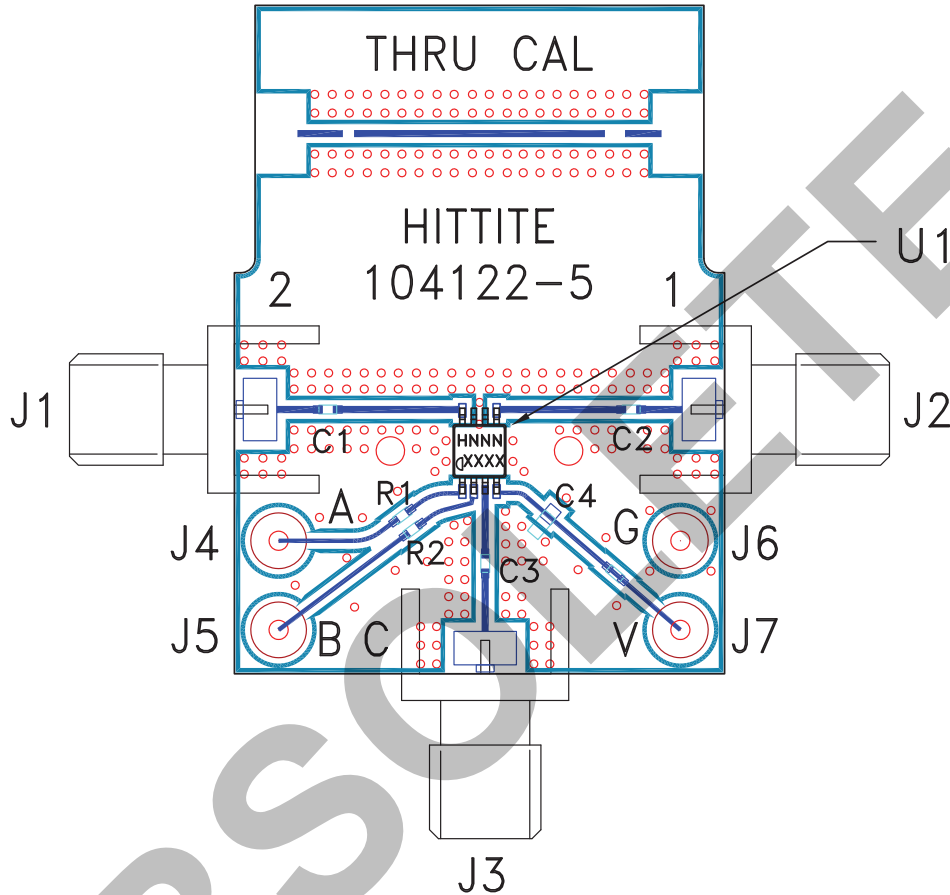
Typical Application Circuit



Notes:

1. Set logic gate and switch Vdd = +3V to +5V and use HCT series logic to provide a TTL driver interface.
2. Control inputs A/B can be driven directly with CMOS logic (HC) with Vdd of +3 to +8 Volts applied to the CMOS logic gates and to pin 4 of the RF switch.
3. DC Blocking capacitors are required for each RF port as shown. Capacitor value determines lowest frequency of operation.
4. Highest RF signal power capability is achieved with Vdd set to +8V. The switch will operate properly (but at lower RF power capability) at bias voltages down to +3V.

Evaluation Circuit Board



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	10,000 pF capacitor, 0603 Pkg.
R1, R2	100 Ohm resistor, 0402 Pkg.
U1	HMC574MS8 / HMC574MS8E T/R Switch
PCB ^[2]	104122 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.

**HMC574MS8 / 574MS8E****GaAs MMIC 5 WATT T/R SWITCH
DC - 3 GHz****Notes:**

OBSOLETE

10**SWITCHES - SMT**