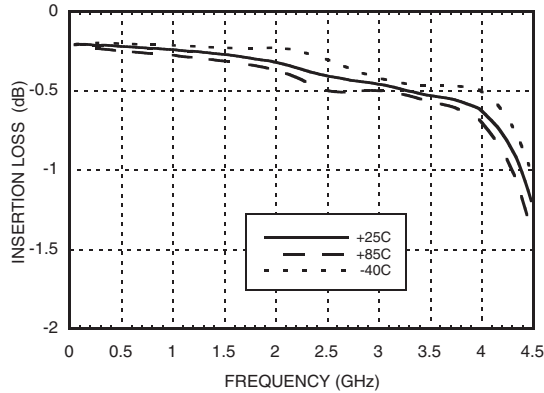




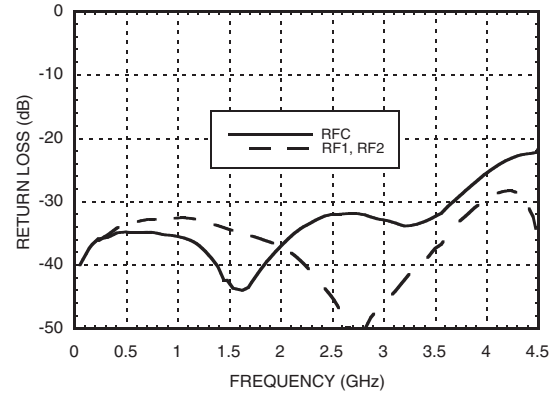
# HMC544 / 544E

## GaAs MMIC T/R SWITCH, DC - 4 GHz

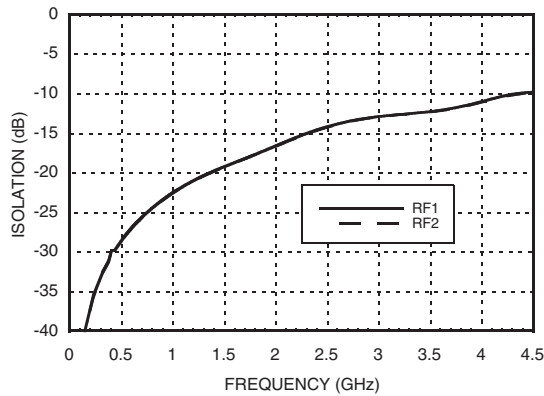
**Insertion Loss**



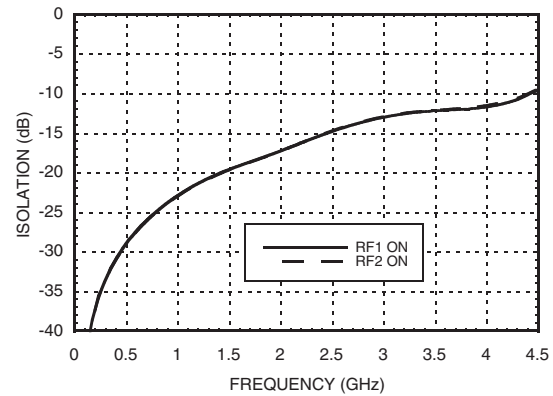
**Return Loss**



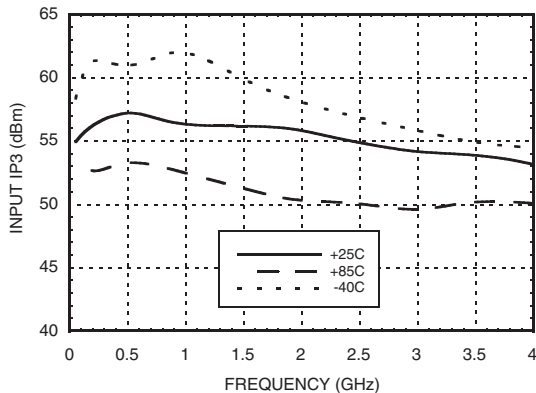
**Isolation Between Ports RFC & RF1 / RF2**



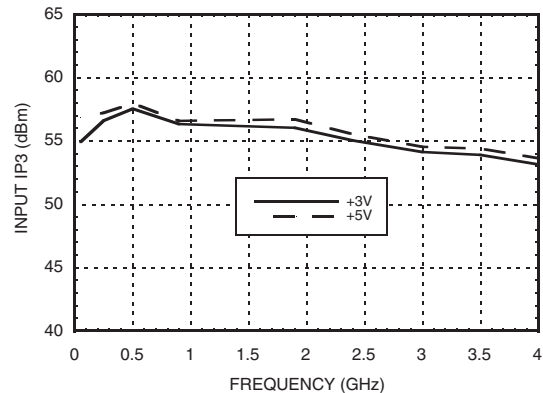
**Isolation Between Ports RF1 & RF2**



**Input IP3 vs. Temperature, Vctl = 0/+3V**

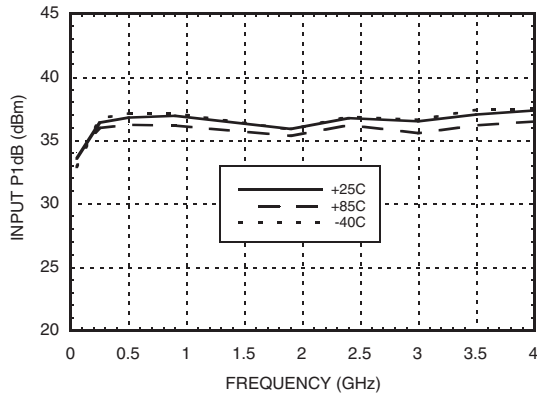
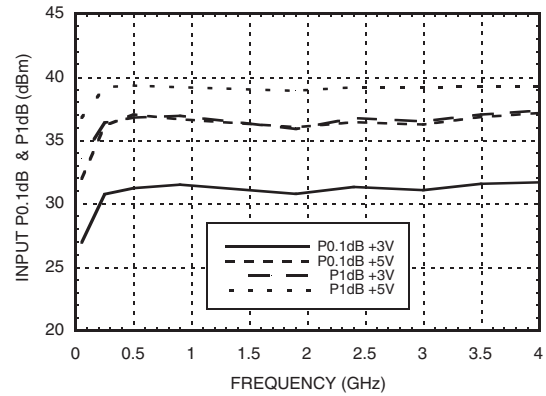


**Input IP3 vs. Vctl**



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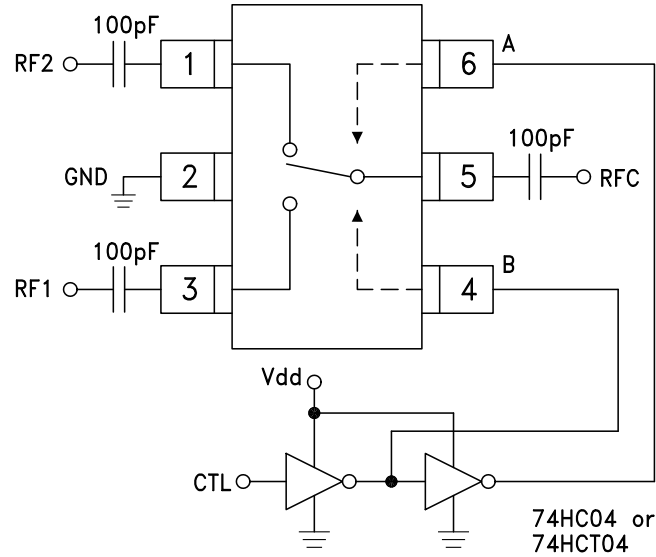
**Input P1dB vs. Temperature, Vctl = 0/+3V**

**Compression vs. Vctl**

**Truth Table**

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

**Control Voltages**


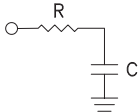
State	Bias Condition
Low	0 to 0.2 Vdc @ 1 $\mu$ A Typical
High	+3 Vdc @ 0.5 $\mu$ A Typical to +5 Vdc @ 2 $\mu$ A Typical ( $\pm$ 0.2 Vdc)




**GaAs MMIC T/R SWITCH,  
DC - 4.0 GHz**
**Typical Application Circuit**

**Notes:**

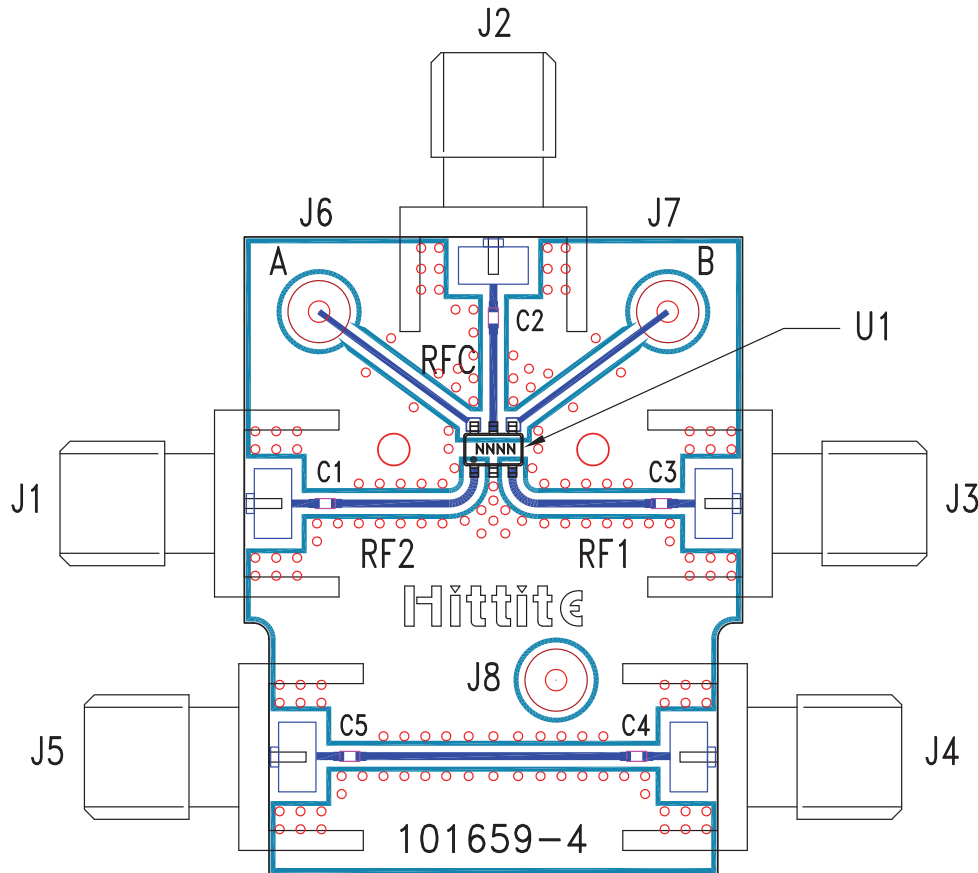
1. Set logic gate Vdd = +3V to +5V and use HCT series logic to provide a TTL driver interface.
2. Control inputs A/B can be driven directly with CMOS logic (HC) with Vdd of +3V to +5V applied to the CMOS logic gates.
3. DC Blocking capacitors are required for each RF port as shown. Capacitor value determines lowest frequency of operation.

**Pin Descriptions**

Pin Number	Function	Description	Interface Schematic
1, 3, 5	RF2, RF1, RFC	These pins are DC coupled and matched to 50 Ohms. Blocking capacitors are required.	
2	GND	This pin must be connected to RF/DC ground.	
4	B	See truth and control voltage tables.	
6	A	See truth and control voltage tables.	

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**Evaluation Circuit Board**

**List of Materials for Evaluation PCB 101675 <sup>[1]</sup>**

Item	Description
J1 - J5	PCB Mount SMA RF Connector
J6 - J8	DC Pin
C1 - C5	330 pF capacitor, 0402 Pkg.
U1	HMC544 / HMC544E SPDT Switch
PCB <sup>[2]</sup>	101659 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 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.