GaAs MMIC SMT HIGH-ISOLATION SPDT SWITCH DC - 9 GHz

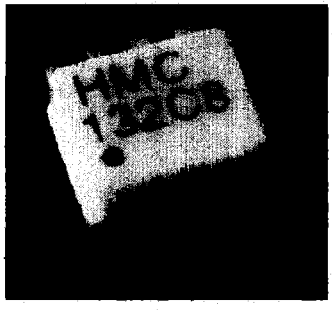
FEBRUARY 1998

Features

BANDWIDTH: DC-9 GHz

HIGH ISOLATION : > 50 dB

NON-REFLECTIVE DESIGN



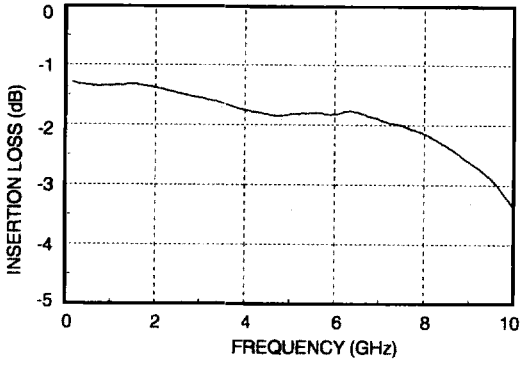
General Description

The HMC132C8 is a surface mount, low cost, non-hermetic packaged version of the HMC132G7 MMIC SPDT switch. The device is a fast, broadband SPDT switch featuring high (> 42 dB) isolation over the entire band. The switch is non-reflective at both RF1 and RF2 ports. Applications for this device include T/R switching for 5.2 GHz UNII, 5.8 GHz ISM circuits, WLAN, and S,C and X-Band Telecom radios.

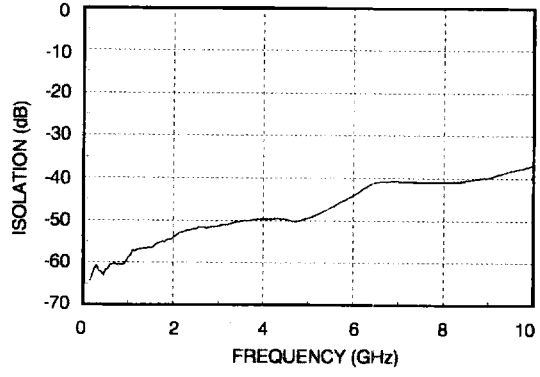
Electrical Performance, *With 0/-5V control, 50 Ohm System, -55 to +85 deg C*

Parameter	Frequency	Min.	Typ.	Max.	Units
Insertion Loss	DC - 2 GHz DC - 6 GHz DC - 9 GHz		1.4 1.8 2.6	1.7 2.2 3.0	dB dB dB
Isolation	DC - 2 GHz DC - 6 GHz DC - 9 GHz	50 38 36	54 45 40		dB dB dB
Return Loss (on state)	DC - 2 GHz DC - 6 GHz DC - 9 GHz	14 10 8	19 14 13		dB dB dB
Input Power for 0.1 dB Compression	0.5 - 9 GHz	+20	+25		dBm
Input Power for 1dB Compression (0/-5V Ctl)	0.5 - 9 GHz	+22	+27		dBm
Input Third Order Intercept	0.5 - 9 GHz	+38	+42		dBm
Switching Characteristics tRISE, tFALL (10/90% RF) tON, tOFF (50% CTL to 10/90% RF)	DC - 9 GHz		 3 6		 ns ns

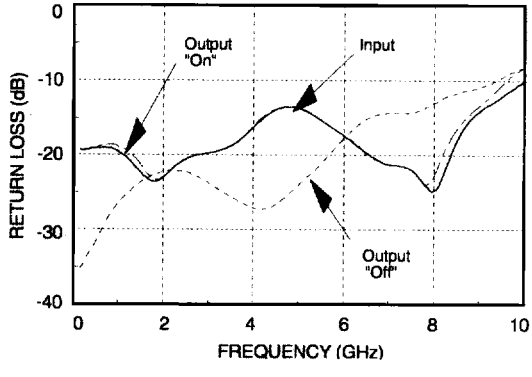
Insertion Loss



Isolation



Return Loss

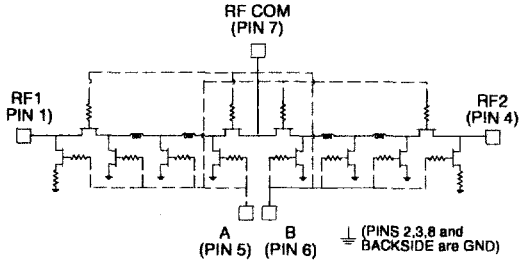


S - Parameter data is available On-Line at ***www.hittite.com***

GaAs MMIC SMT HIGH-ISOLATION SPDT SWITCH DC - 9 GHz

FEBRUARY 1998

Schematic



Truth Table

Control Input		Signal Path State	
A	B	RF to RF1	RF to RF2
High	Low	ON	OFF
Low	High	OFF	ON

Do not "HOT" switch power levels > +15 dBm (V_{ctl} = 0/-5Vdc)

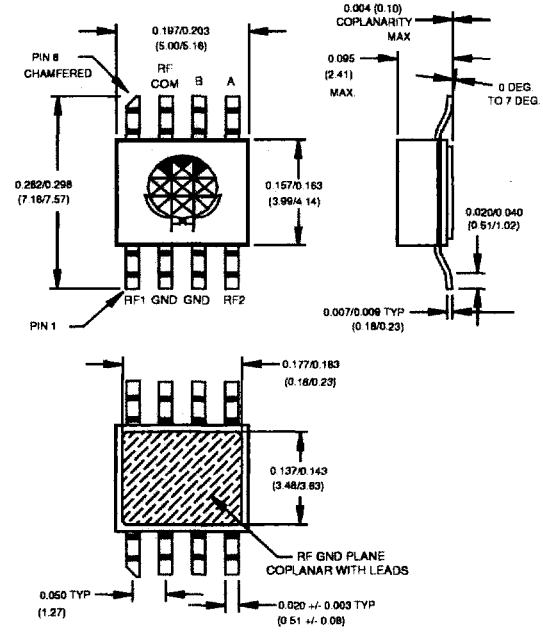
Absolute Maximum Ratings

Control Voltage Range	+0.5 to -7.5 Vdc
Storage Temperature	-65 to +175 deg C
Operating Temperature	-55 to +85 deg C

Control Voltages

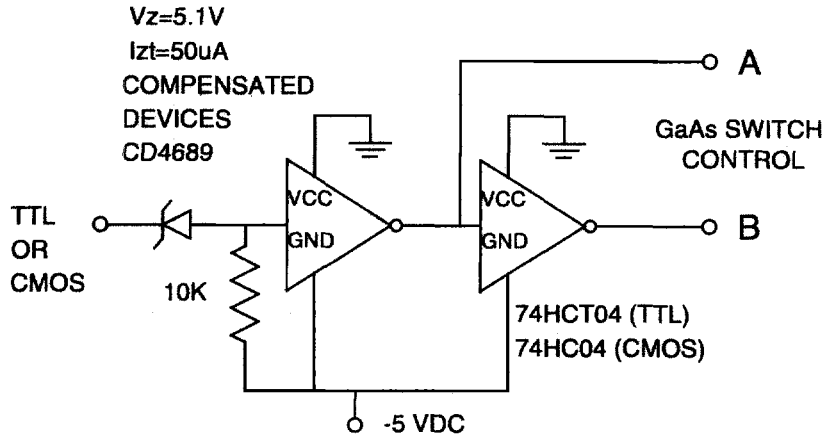
State	Bias Condition
Low	0 to -0.2V @ 20uA Max.
High	-5V@200uA Typ to -7V@600uA Max

Outline: HMC132C8



1. MATERIAL:
   A) PACKAGE BODY: WHITE ALUMINA (92%)
   B) LEADS & PACKAGE BOTTOM: COPPER
   C) COVER: PLASTIC
2. PLATING(LEADS): ELECTROLYTIC GOLD 100 - 200 MICRONICHES. OVER ELECTROLYTIC NICKEL 100 TO 200 MICROINCHES
3. DIMENSIONS ARE IN INCHES (MILLIMETERS), UNLESS OTHERWISE SPECIFIED TOL. ARE ±0.005(±0.13).
4. ALL UNLABELED LEADS ARE GROUND. THESE LEADS ARE CONNECTED INTERNALLY TO THE PACKAGED BOTTOM GROUND. THE PACKAGE BOTTOM RF GROUND **MUST** BE SOLDERED TO THE PCB RF GROUND.

Suggested Driver Circuit for HMC132C8



Simple driver using inexpensive standard logic ICs provides fast switching using minimum DC current.