

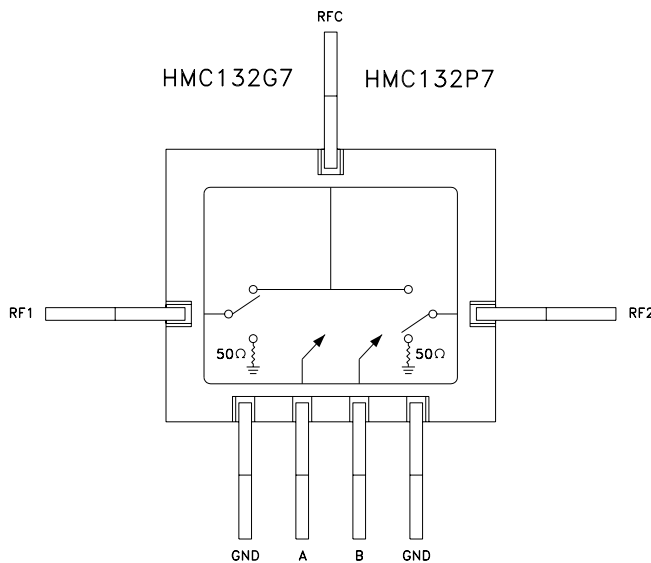
## GaAs MMIC HIGH-ISOLATION SPDT SWITCH, DC - 6 GHz

### Typical Applications

The HMC132G7 and HMC132P7 are ideal for:

- Military
- Space
- Test Equipment

### Functional Diagram



### Features

- Bandwidth: DC - 6 GHz
- High Isolation: >40 dB
- Non-Reflective Design

### General Description

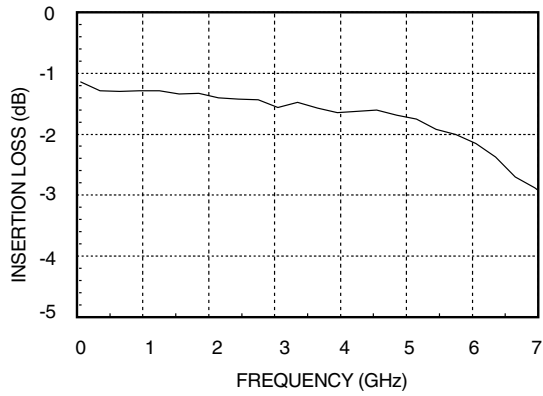
The HMC132G7 and HMC132P7 are the packaged versions of the HMC132 MMIC SPDT switch. Both use the same 7-pin ceramic package but with modified lead configurations. The G7 suffix designates package leads configured for surface mount while the P7 suffix designates package leads configured for microstrip insertion. The device is a fast, broadband SPDT switch featuring high (> 40 dB) isolation over the entire band. The switch is non-reflective at both the RF1 and RF2 ports.

### Electrical Specifications, $T_A = +25^\circ C$ , With 0/-5V control, 50 Ohm System

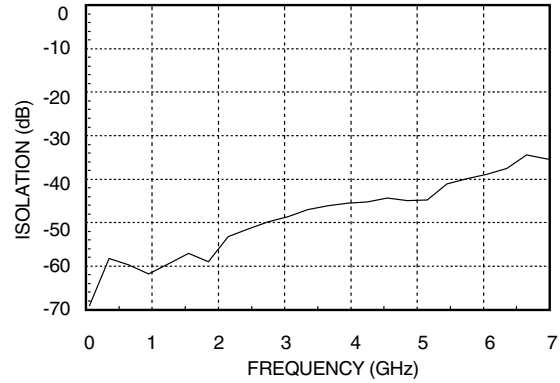
Parameter	Frequency	Min.	Typ.	Max.	Units
Insertion Loss	DC - 3 GHz		1.5	1.9	dB
	DC - 6 GHz		2.2	2.6	dB
Isolation	DC - 3 GHz	45	50		dB
	DC - 6 GHz	35	40		dB
Return Loss (on state)	DC - 3 GHz	14	18		dB
	DC - 6 GHz	5	8		dB
Input Power for 0.1 dB Compression	0.5 - 6 GHz	+20	+25		dBm
Input Power for 1dB Compression	0.5 - 6 GHz	+22	+27		dBm
Input Third Order Intercept	0.5 - 6 GHz	+38	+42		dBm
Switching Characteristics	DC - 6 GHz				
		tRISE, tFALL (10/90% RF) tON, tOFF (50% CTL to 10/90% RF)		3 6	ns ns

**GaAs MMIC HIGH-ISOLATION  
SPDT SWITCH, DC - 6 GHz**

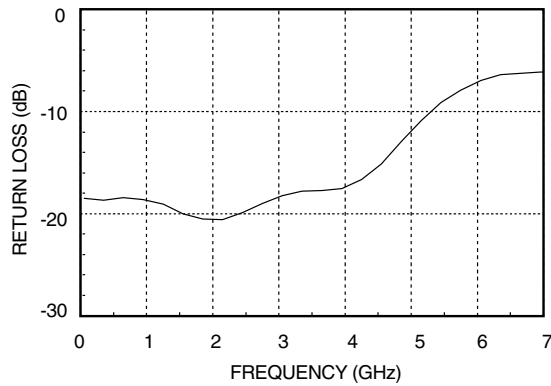
**Insertion Loss**



**Isolation**



**Return Loss**



## GaAs MMIC HIGH-ISOLATION SPDT SWITCH, DC - 6 GHz

### Truth Table

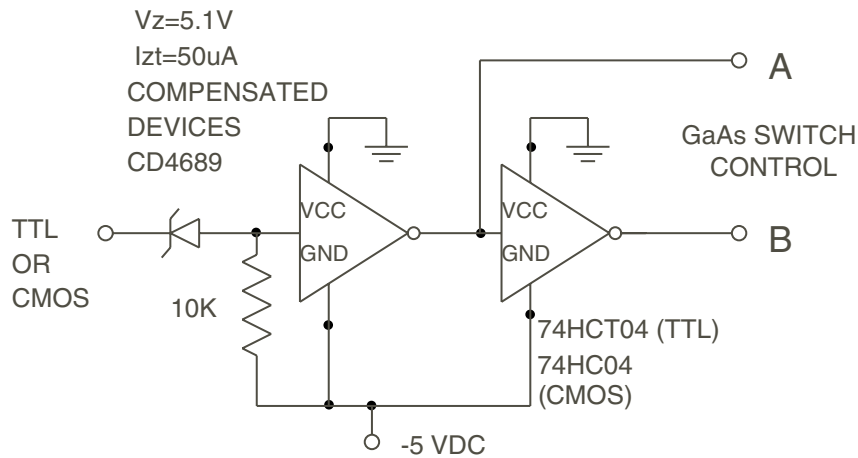
Control Input		Single Path State	
A	B	RF to RF1	RF to RF2
HIGH	LOW	ON	OFF
LOW	HIGH	OFF	ON

### Control Voltages

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

Do not "HOT" switch power levels > +15 dBm (VCTL = 0/-5 Vdc).

### Suggested Driver Circuit for HMC132G7/P7



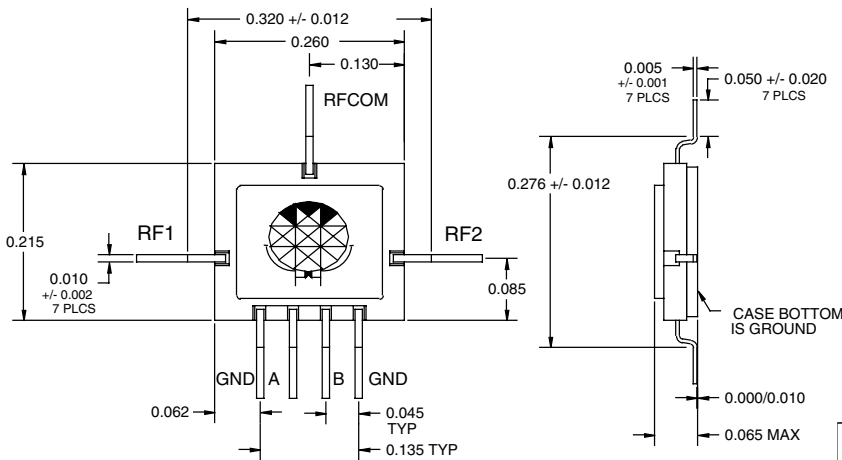
Simple driver using inexpensive standard logic ICs provides fast switching using minimum DC current.

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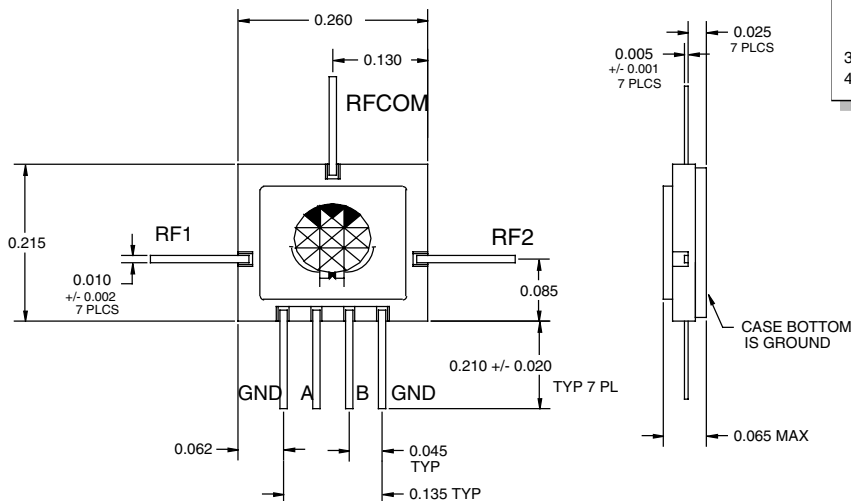
**Absolute Maximum Ratings**

Control Voltage Range	+0.5 to -7.5 Vdc
Storage Temperature	-65 to +150 deg C
Operating Temperature	-55 to +125 deg C

**Outline: HMC132G7**



**Outline: HMC132P7**



1. MATERIAL
  - A. PACKAGE BODY: WHITE ALUMINA (92%)
  - B. LEADS - PACKAGE COVER: KOVAR (tm)
  - C. CONDUCTOR TRACES - THICKFILM TUNGSTEN
2. PLATING (LEADS): ELECTROLYTIC GOLD 50 MICROINCHES MINIMUM OVER ELECTROLYTIC NICKEL 50 MICROINCHES MINIMUM.
3. ALL UNLABELED PINS ARE GROUND.
4. ALL DIMENSIONS ARE IN INCHES.