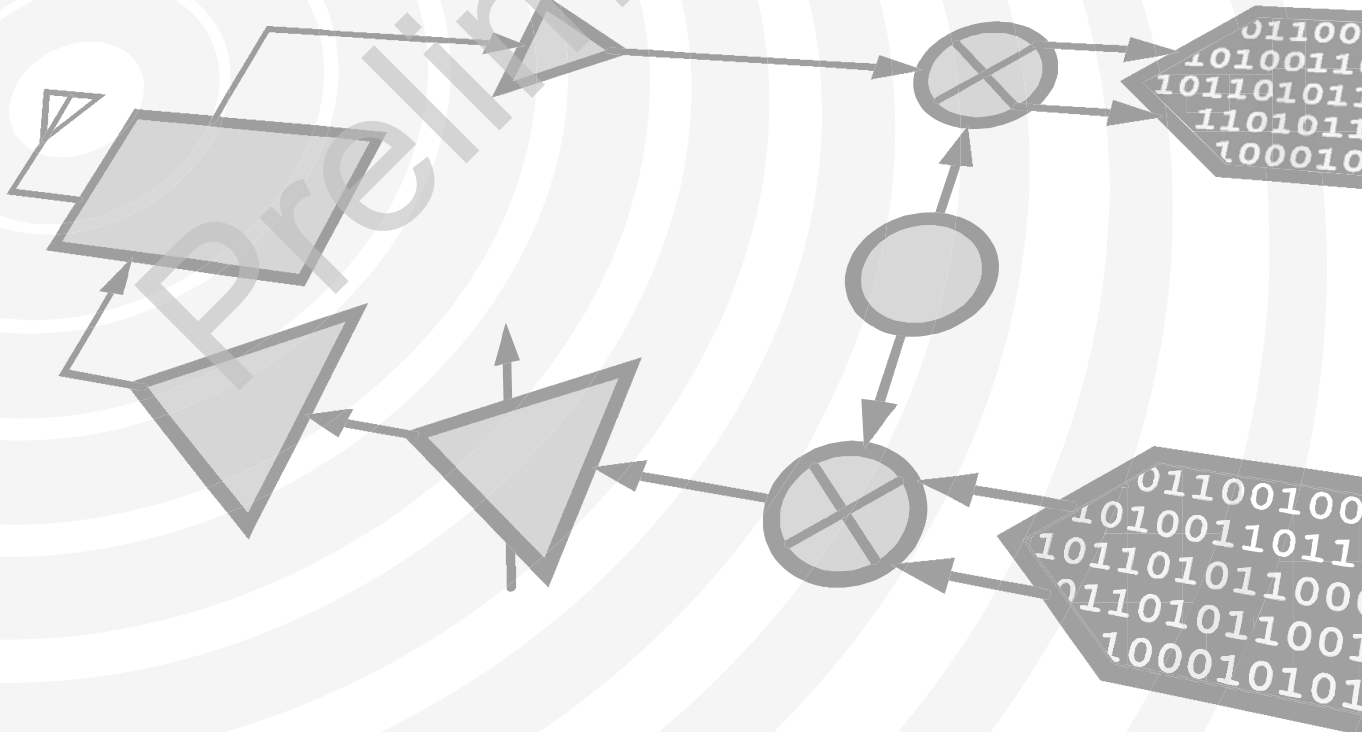


# Analog Devices Welcomes Hittite Microwave Corporation



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Preliminary

## GaAs MMIC SPDT NON-REFLECTIVE SWITCH, DC - 20 GHz

### Typical Applications

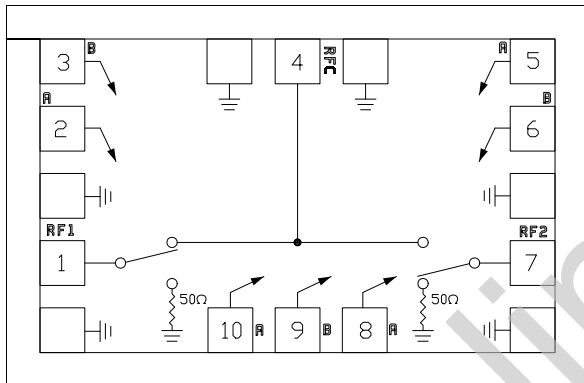
This switch is suitable DC - 20 GHz applications:

- Fiber Optics
- Microwave Radio
- Military
- Space
- VSAT

### Features

- High Isolation: >40 dB @ 20 GHz
- Low Insertion Loss: 1.6 dB @ 20 GHz
- Non-Reflective Design
- Small Size: 1.3 x 0.8 x 0.1 mm

### Functional Diagram



### General Description

The HMC347A is a broadband non-reflective GaAs MESFET SPDT MMIC chip. Covering DC to 20 GHz, the switch offers high isolation and low insertion loss. The switch features over 50 dB isolation at lower frequencies and over 40 dB at higher frequencies due to the implementation of on-chip via hole structures. The switch operates using two negative control voltage logic lines of -5/0V, requires no Vee and has no current consumption. The switch operates down to DC. The chip features coplanar I/Os that allow 100% RF testing prior to delivery to the customer.

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

Parameter	Frequency	Min.	Typ.	Max.	Units
Insertion Loss	DC - 20.0 GHz		1.7	2.2	dB
Isolation	DC - 20.0 GHz	40	45		dB
Return Loss	"On State"	10	13		dB
Return Loss RF1, RF2	"On State"	8	10		dB
Input Power for 1 dB Compression	0.5 - 20.0 GHz	19	23		dBm
Input Third Order Intercept	0.5 - 20.0 GHz	38	43		dBm
Switching Characteristics					
tRISE, tFALL (10/90% RF)	DC - 20.0 GHz		3		ns
tON, tOFF (50% CTL to 10/90% RF)			6		ns

