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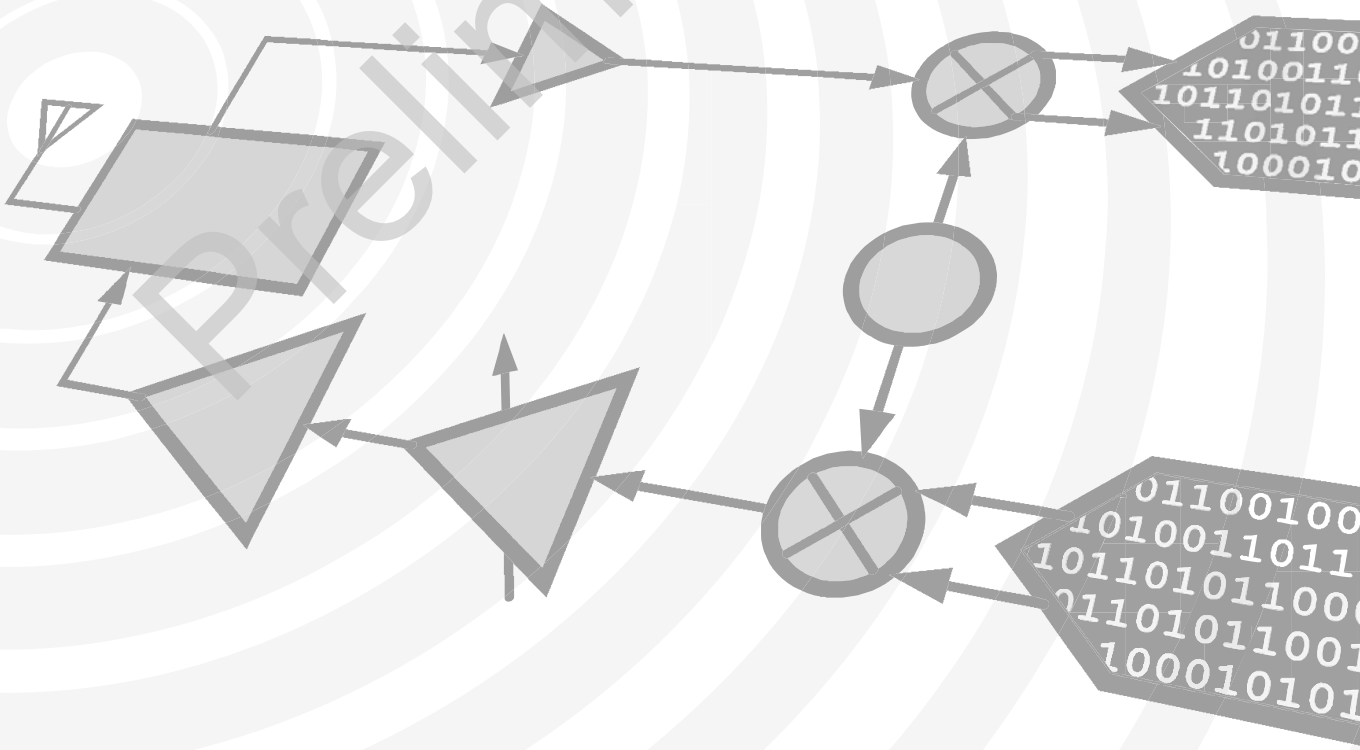

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HMC321ALP4 / 321ALP4E

v00.1115

GaAs MMIC SP8T NON-REFLECTIVE POSITIVE CONTROL SWITCH, DC* - 8 GHz

Typical Applications

This switch is suitable for usage in DC - 8.0 GHz 50-Ohm or 75-Ohm systems:

- Broadband
- Fiber Optics
- Switched Filter Banks
- Wireless below 8 GHz

Features

Broadband Performance: DC - 8 GHz

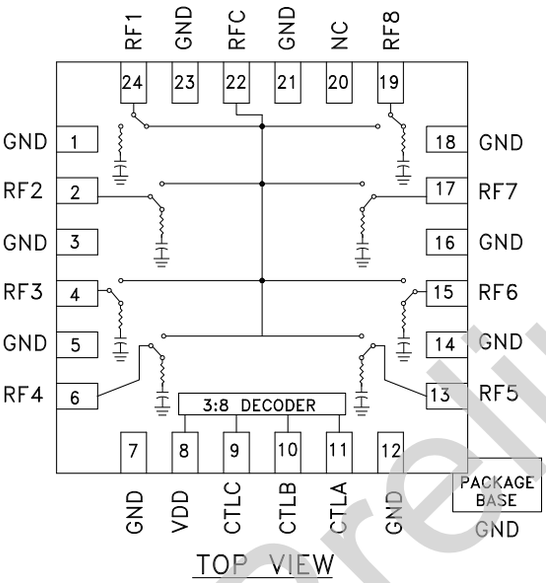
High Isolation: >30 dB@ 6 GHz

Low Insertion Loss: 2.5 dB@ 6 GHz

Integrated Positve Supply 3:8 TTL Decoder

4x4 mm SMT Package

Functional Diagram



TOP VIEW

General Description

The HMC321ALP4 & HMC321ALP4E are broadband non-reflective GaAs MESFET SP8T switches in low cost leadless surface mount packages. Covering DC to 8 GHz, this switch offers high isolation and low insertion loss. This switch also includes an on board binary decoder circuit which reduces the required logic control lines to three. The switch operates using a positive control voltage of 0/+5 volts, and requires a fixed bias of +5v. This switch is suitable for usage in 50-Ohm or 75-Ohm systems.

** DC blocking capacitors are required at ports RFC and RF1, 2, 3, 4, 5, 6, 7, 8. Their value will determine the lowest transmission frequency.*

Electrical Specifications, T_A = +25° C, With 0/+5V Control, 50 Ohm System

Parameter		Frequency	Min.	Typ.	Max.	Units
Insertion Loss		DC - 2.0 GHz DC - 4.0 GHz DC - 8.0 GHz		2.3 2.5 2.7	2.7 2.9 3.1	dB dB dB
Isolation		DC - 2.0 GHz DC - 4.0 GHz DC - 6.0 GHz DC - 8.0 GHz	35 30 25 20	40 35 30 25		dB dB dB dB
Return Loss	"On State"	DC - 4.0 GHz DC - 8.0 GHz	8 7	12 10		dB dB
Return Loss (RF1 - RF8)	"Off State"	2.0 - 8.0 GHz	7	12		dB
Input Power for 1 dB Compression		0.5 - 8.0 GHz	19	23		dBm
Input Third Order Intercept (Two-tone Input Power = +7 dBm Each Tone, 1 MHz Spacing)		0.5 - 8.0 GHz	33	40		dBm
Switching Characteristics tRISE, tFALL (10/90% RF) tON, tOFF (50% CTL to 10/90% RF)		DC - 8.0 GHz		50 150		ns ns

For price, delivery, and to place orders: Analog Devices, Inc., One Technology Way, P.O. Box 9106, Norwood, MA 02062-9106
Phone: 781-329-4700 • Order online at www.analog.com
Application Support: Phone: 1-800-ANALOG-D

GaAs MMIC SP8T NON-REFLECTIVE POSITIVE CONTROL SWITCH, DC* - 8 GHz

Absolute Maximum Ratings

Bias Voltage Range (Port Vdd)	+7.0 Vdc
Control Voltage Range (A, B, & C)	-0.5V to Vdd +1.0 Vdc
Storage Temperature	-65 to +150 °C
Operating Temperature	-40 to +85 °C
Maximum Input Power Vdd = +5V	+26 dBm
ESD Sensitivity (HBM)	Class 1A

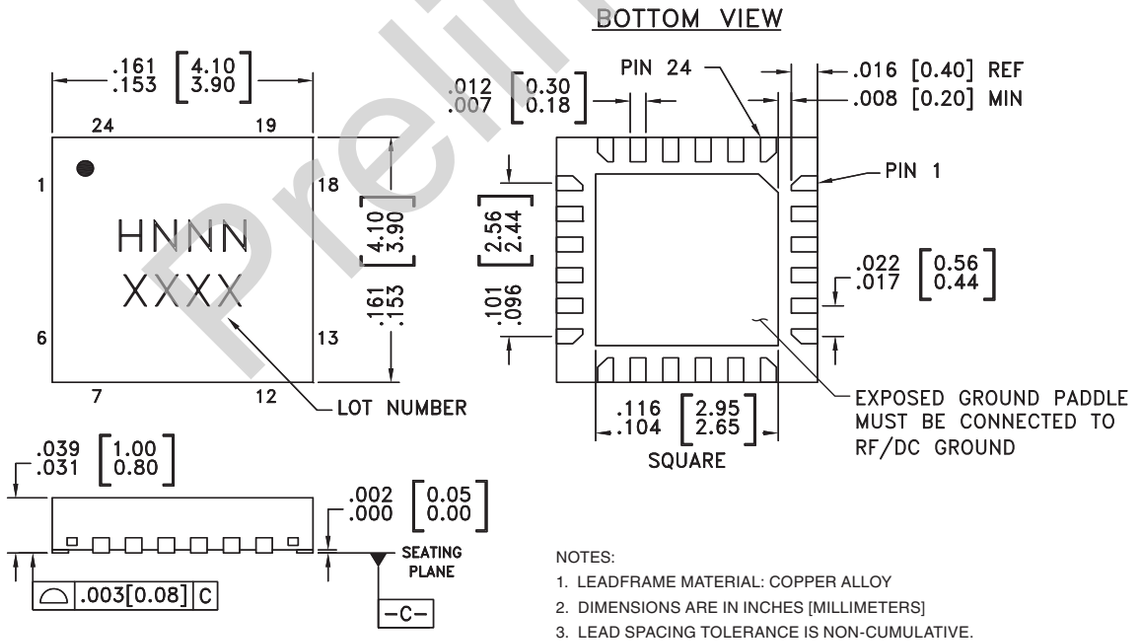
ELECTROSTATIC SENSITIVE DEVICE
OBSERVE HANDLING PRECAUTIONS

Truth Table

Control Input			Signal Path State
A	B	C	RFCOM to:
Low	Low	Low	RF1
High	Low	Low	RF2
Low	High	Low	RF3
High	High	Low	RF4
Low	Low	High	RF5
High	Low	High	RF6
Low	High	High	RF7
High	High	High	RF8

Note:
DC blocking capacitors are required at ports RFC and RF1, 2, 3, 4, 5, 6, 7, 8. Their value will determine the lowest transmission frequency.

Outline Drawing



NOTES:
1. LEADFRAME MATERIAL: COPPER ALLOY
2. DIMENSIONS ARE IN INCHES [MILLIMETERS]
3. LEAD SPACING TOLERANCE IS NON-CUMULATIVE.
4. PAD BURR LENGTH SHALL BE 0.15mm MAXIMUM. PAD BURR HEIGHT SHALL BE 0.05mm MAXIMUM.
5. PACKAGE WARP SHALL NOT EXCEED 0.05mm.
6. ALL GROUND LEADS AND GROUND PADDLE MUST BE SOLDERED TO PCB RF GROUND.
7. REFER TO HITTITE APPLICATION NOTE FOR SUGGESTED LAND PATTERN.