

# SW-231-PIN



**Matched GaAs SPST Switch,  
5 - 4000 MHz**

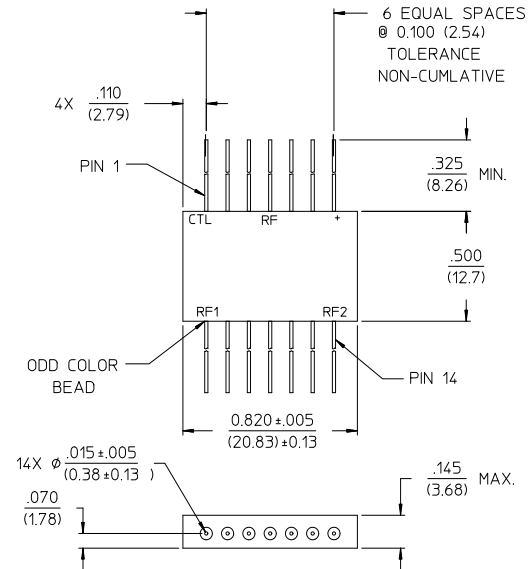
Rev. V3

## Features

- Low Insertion Loss: 1.0 dB Typical
- Fast Switching Speed: 20 ns Typical
- Ultra Low DC Power Consumption: 0.07 mA Typical
- Integral TTL
- 50 Ohm Nominal Impedance
- MIL-STD-883 Screening Available

## Description

## Functional Block Diagram



Dimensions in ( ) are in mm  
 Unless Otherwise Noted: .XXX = ±0.010 (.XX = ±0.25)  
 .XX = ±0.02 (.X = ±0.5)  
 WEIGHT (APPROX): 0.14 OUNCES 4 GRAMS

## Ordering Information

Part Number	Package
SW-231-PIN	FP-16

Note: Reference Application Note M513 for reel size information.

Note: Die quantity varies.

## Truth Table

TTL Control Input "1" = Logic High TTL	Condition of Switch
	RF1 to RF2
1	ON
2	OFF

\* Restrictions on Hazardous Substances, European Union Directive 2002/95/EC.

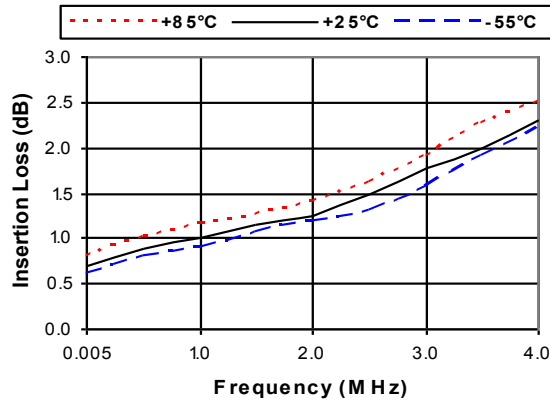
**Electrical Specifications:  $T_A = -55^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$  <sup>1</sup>**

Parameter	Test Conditions	Frequency	Units	Min	Typ	Max
Insertion Loss	—	5 - 4000 MHz	dB	—	—	2.8
		5 - 2000 MHz	dB	—	—	1.5
		5 - 1000 MHz	dB	—	—	1.2
		5 - 500 MHz	dB	—	—	1.1
VSWR	—	5 - 4000 MHz	Ratio	—	—	2.3:1
		5 - 2000 MHz	Ratio	—	—	1.9:1
		5 - 1000 MHz	Ratio	—	—	1.5:1
		5 - 500 MHz	Ratio	—	—	1.4:1
Isolation	—	5 - 4000 MHz	dB	22	—	—
		5 - 2000 MHz	dB	37	—	—
		5 - 1000 MHz	dB	50	—	—
		5 - 500 MHz	dB	60	—	—
Ton, Toff Ton, Toff Transients	50% CTL to 90/10% RF	—	nS	—	7	—
	In-band	—	nS	—	20	—
		—	mV	—	70	—
1 dB Compression	Input Power	500 - 4000 MHz	dBm	—	+27	—
		50 MHz	dBm	—	+21	—
IP <sub>2</sub>	For two tone input power up to +13 dBm	500 - 4000 MHz	dBm	—	+68	—
		50 MHz	dBm	—	+60	—
IP <sub>3</sub>	For two tone input power up to +13 dBm	500 - 4000 MHz	dBm	—	+46	—
		50 MHz	dBm	—	+40	—
Bias Power	+5 VDC @ 0.07 mA Typical	—	mA	—	—	1

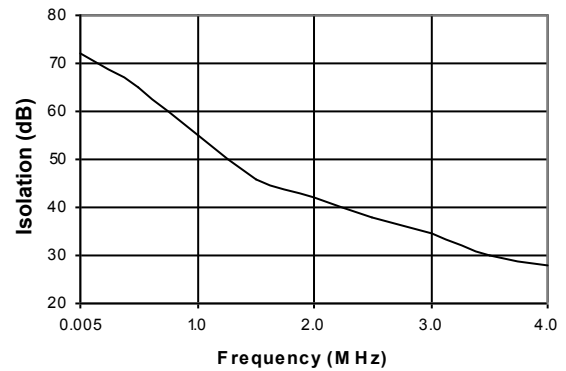
1. All specifications apply when operated with bias voltages of +5 VDC and 50 ohm impedance at all RF ports.

## Typical Performance Curves

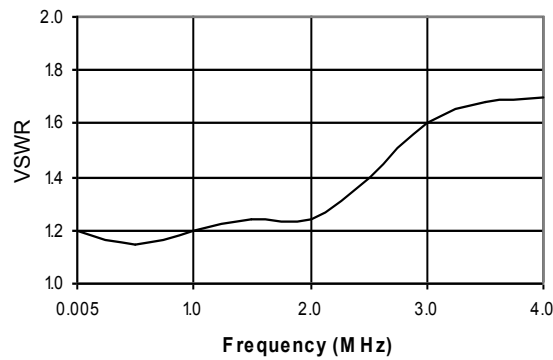
**Insertion Loss**



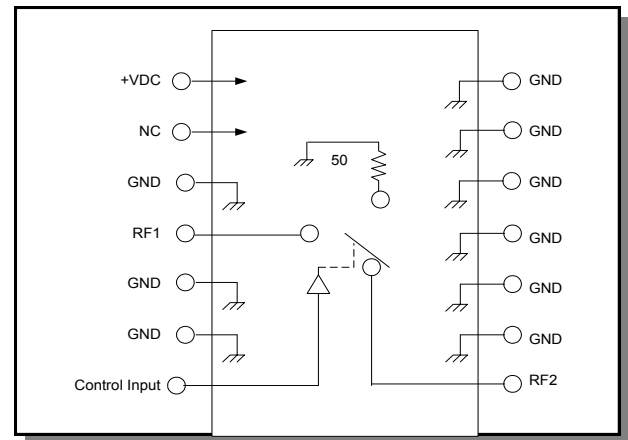
**Isolation**



**VSWR**



**Schematic**



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