

# SW-233-PIN / SW-236-PIN



Matched GaAs SPDT Switch,  
5 - 2000 MHz

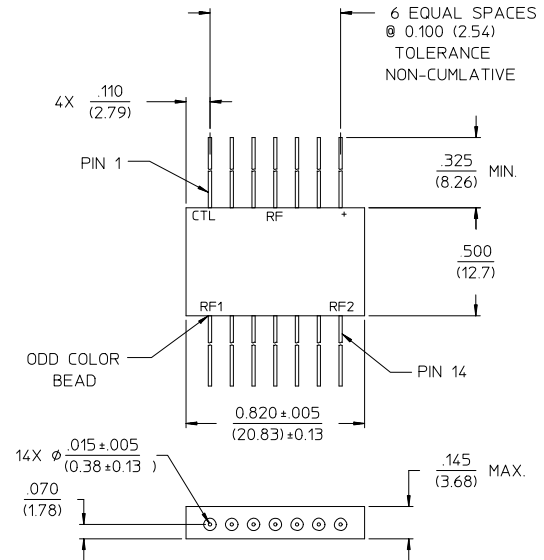
Rev. V3

## Features

- Low Insertion Loss, 1.0 dB Typical
- Fast Switching Speed, 20 nS Typical
- Ultra Low DC Power Consumption, 0.12 mA Typical
- Integral TTL (SW-233) or CMOS (SW-236) Driver
- 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-233-PIN	FP-16
SW-236-PIN	FP-16

Note: Reference Application Note M513 for reel size information.

Note: Die quantity varies.

## Truth Table

Control Input				Condition of Switch			
"1" = Logic High TTL (SW-233) CMOS (SW-236)				RF Common to Each RF Port			
CTL 1	CTL 2	CTL 3	CTL 4	RF1	RF2	RF3	RF4
1	0	0	0	ON	OFF	OFF	OFF
0	1	0	0	OFF	ON	OFF	OFF
0	0	1	0	OFF	OFF	ON	OFF
0	0	0	1	OFF	OFF	OFF	ON

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

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## 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 - 2000 MHz	dB	1.5	—	—
		5 - 1000 MHz	dB	1.2	—	—
		5 - 500 MHz	dB	1.1	—	—
VSWR	—	5 - 2000 MHz	Ratio	—	—	1.9:1
		5 - 1000 MHz	Ratio	—	—	1.5:1
		5 - 500 MHz	Ratio	—	—	1.4:1
Isolation	—	5 - 2000 MHz	dB	40	—	—
		5 - 1000 MHz	dB	45	—	—
		5 - 500 MHz	dB	53	—	—
IP <sub>2</sub>	For two tone input power up to +13 dBm	500 - 2000 MHz	dBm	—	+68	—
		50 MHz	dBm	—	+60	—
IP <sub>3</sub>	For two tone input power up to +13 dBm	500 - 2000 MHz	dBm	—	+46	—
		50 MHz	dBm	—	+40	—

1. All specifications apply when operated with bias voltages of +5 VDC (SW-205) or +8 VDC (SW-206) and 50 ohm impedance at all RF ports.

### SW-233

Parameter	Test Conditions	Frequency	Units	Min	Typ	Max
Trise, Tfall Ton, Toff Transients	50% CTL to 90/10% RF In-band	—	nS	—	7	—
		—	nS	—	20	—
		—	mV	—	100	—
1 dB Compression	Input Power	500 - 2000 MHz	dBm	—	+27	—
		50 MHz	dBm	—	+21	—
Bias Power	+5 VDC @ 0.12 mA Typ	—	mA	—	—	1

### SW-236

Parameter	Test Conditions	Frequency	Units	Min	Typ	Max
Trise, Tfall Ton, Toff Transients	50% CTL to 90/10% RF In-band	—	nS	—	20	—
		—	nS	—	40	—
		—	mV	—	70	—
1 dB Compression	Input Power	500 - 2000 MHz	dBm	—	+33	—
		50 MHz	dBm	—	+26	—
Bias Power	+5 to +8 VDC @ 0.12 to 0.40 mA Typ	—	mA	—	—	1

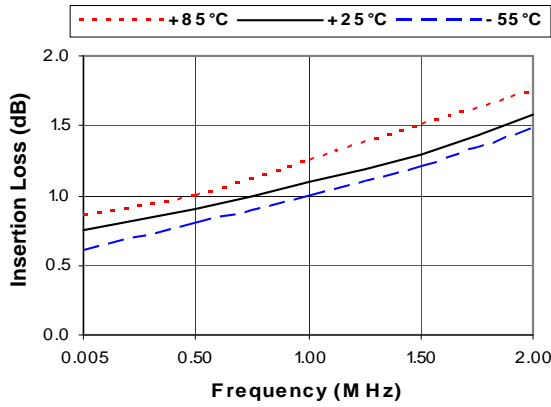
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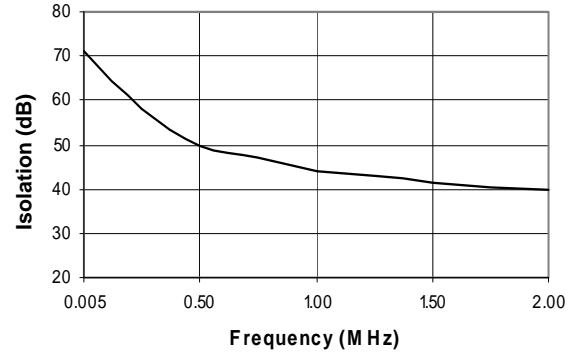
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## Typical Performance Curves

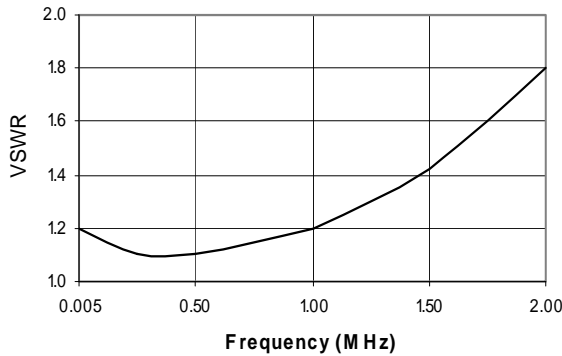
### Insertion Loss



### Isolation



### VSWR



### Schematic

