

# SW-215-PIN / SW-216-PIN



Matched GaAs SPST Switch,  
5 - 3000 MHz

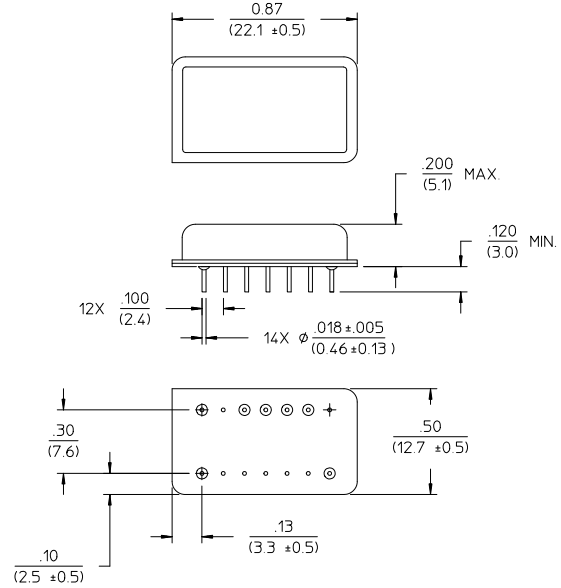
Rev. V3

## 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 (SW-215) or CMOS (SW-216) 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-215-PIN	DI-1
SW-216-PIN	DI-1

Note: Reference Application Note M513 for reel size information.

Note: Die quantity varies.

## Truth Table

TTL Control Input "1" = Logic High TTL (SW-215)/ CMOS (SW-216)	Condition of Switch RF Common to Each RF Port
	RF1 to RF2
0	ON
1	OFF

\* 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 - 3000 MHz	dB	2.9	—	—
		5 - 2000 MHz	dB	1.5	—	—
		5 - 1000 MHz	dB	1.2	—	—
		5 - 500 MHz	dB	1.1	—	—
VSWR	—	5 - 3000 MHz	Ratio	—	—	2.0:1
		5 - 2000 MHz	Ratio	—	—	1.9:1
		5 - 1000 MHz	Ratio	—	—	1.4:1
		5 - 500 MHz	Ratio	—	—	1.25:1
Isolation	—	5 - 3000 MHz	dB	27	—	—
		5 - 2000 MHz	dB	45	—	—
		5 - 1000 MHz	dB	55	—	—
		5 - 500 MHz	dB	60	—	—
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	—

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-215

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	—	70	—
1 dB Compression	Input Power	500 - 4000 MHz	dBm	—	+27	—
		50 MHz	dBm	—	+21	—
Bias Power	+5 VDC @ 0.07 mA Typ	—	mA	—	—	1

## SW-216

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	—	35	—
1 dB Compression	Input Power	500 - 4000 MHz	dBm	—	+33	—
		50 MHz	dBm	—	+26	—
Bias Power	+5 to +8 VDC @ 0.07 to 0.22 mA Typ	—	mA	—	—	1

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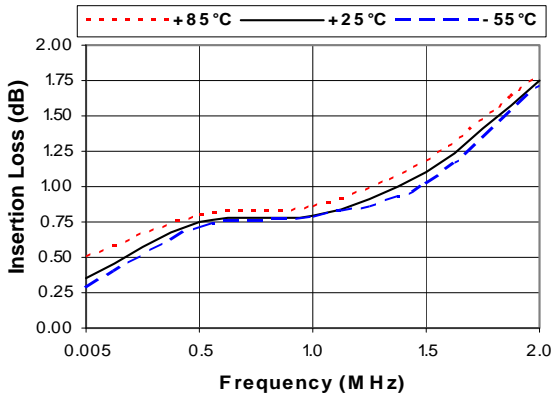


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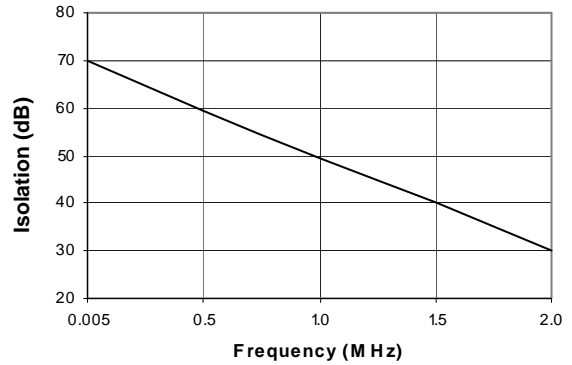
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## Typical Performance Curves

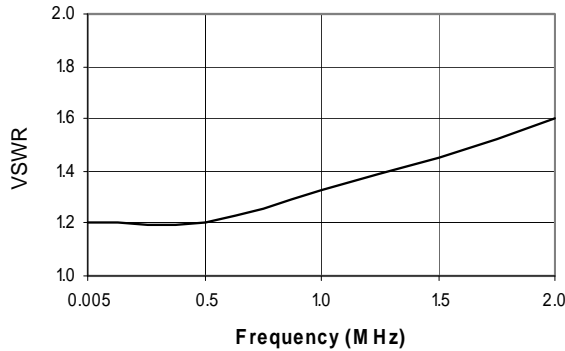
### Insertion Loss



### Isolation



### VSWR



### Schematic

