

**GaAs SPST Switch,  
DC - 3 GHz**

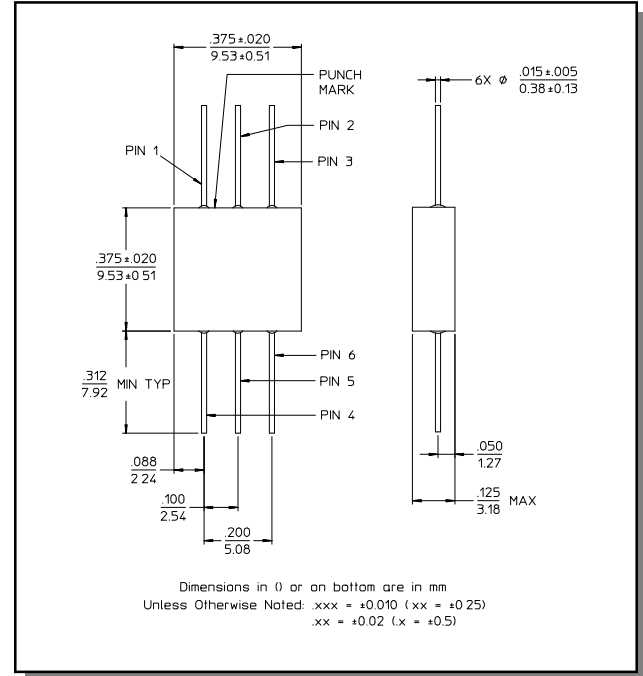
**SW-214-PIN  
V3**

**Features**

- Fast Switching Speed: 6 nS Typical
- Ultra Low DC Power Consumption
- Terminated
- 50 Ohm Nominal Impedance
- MIL-STD-883 screening available

**Description**

**Functional Block Diagram**



**Ordering Information**

Part Number	Package
SW-214-PIN	FP-13

Note: Reference Application Note M513 for reel size information.

Note: Die quantity varies.

**Truth Table**

Control Input		Condition of Switch
A	B	RF1 to RF2
Hi	Lo	On
Lo	Hi	Off

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

**GaAs SPST Switch,  
DC - 3 GHz**

**SW-214-PIN  
V3**

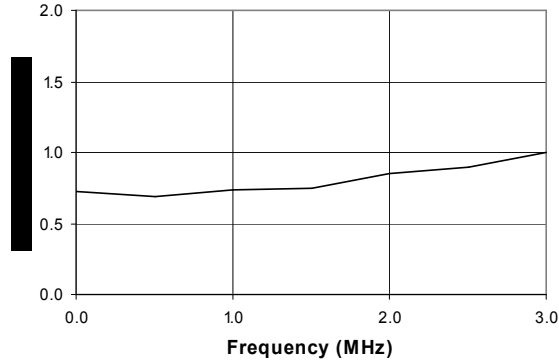
**Electrical Specifications:  $T_A = 25^\circ\text{C}$  <sup>1,2,3</sup>**

Parameter	Test Conditions	Frequency	Units	Min	Typ	Max
Insertion Loss	—	DC - 3 GHz	dB	—	—	1.3
		DC - 2 GHz	dB	—	—	1.2
		DC - 1 GHz	dB	—	—	0.9
		DC - 0.5 GHz	dB	—	—	0.9
Isolation	—	DC - 3 GHz	dB	25	—	—
		DC - 2 GHz	dB	38	—	—
		DC - 1 GHz	dB	45	—	—
		DC - 0.5 GHz	dB	50	—	—
VSWR	—	DC - 3 GHz	Ratio	—	—	2.0:1
		DC - 2 GHz	Ratio	—	—	1.7:1
		DC - 1 GHz	Ratio	—	—	1.3:1
		DC - 0.5 GHz	Ratio	—	—	1.3:1
Trise, Tfall Ton, Toff Transients	50% CTL to 90/10% RF In-Band	—	nS	—	3	—
		—	nS	—	6	—
		—	mV	—	30	—
1 dB Compression	Control Voltage 0/-5 VDC	0.5 - 3 GHz	dBm	—	+27	—
		0.05 GHz	dBm	—	+21	—
	Control Voltage 0/-8 VDC	0.5 - 3 GHz	dBm	—	+33	—
		0.05 GHz	dBm	—	+26	—
IP <sub>2</sub>	For two-tone Input power up to +13 dBm	0.5 - 3 GHz	dBm	—	+68	—
		0.05 GHz	dBm	—	+62	—
IP <sub>3</sub>	For two-tone Input power up to +13 dBm	0.5 - 3 GHz	dBm	—	+46	—
		0.05 GHz	dBm	—	+40	—
Control Voltages	V <sub>IN</sub> Low: 0 to -0.2V V <sub>IN</sub> High: -5V @ 50 $\mu$ A Typ to -8V	—	—	—	—	20 $\mu$ A 300 $\mu$ A

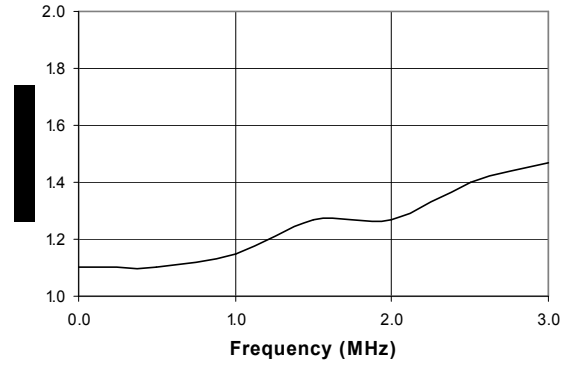
1. All specifications apply with 50 ohm impedance connected to all RF ports with 0 and -5 VDC control voltages.
2. Faster switching speed can be achieved with enhanced driver waveform.

**Typical Performance Curves**

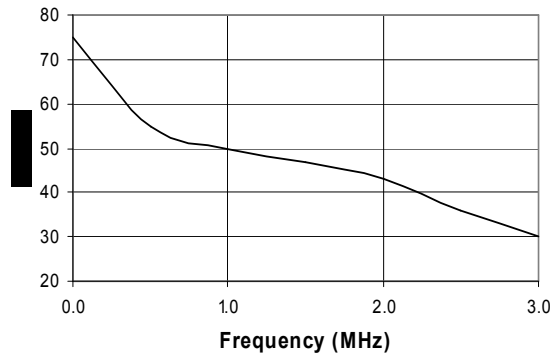
**Insertion Loss**



**Isolation**



**VSWR**



**Pin Configuration**

