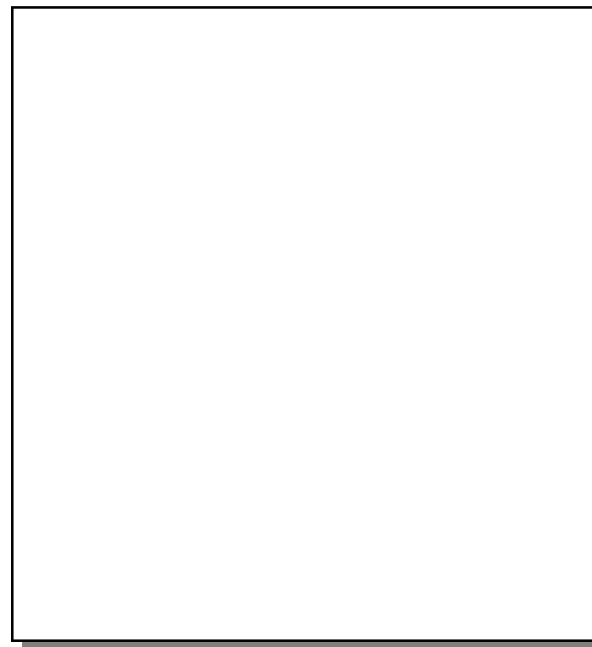


**Matched GaAs SP4T Switch,
DC - 2 GHz**
**SW-415-PIN
V3**
Features

- Low Insertion Loss
- Fast Switching Speed, 200 ns Typical
- Low DC Power Consumption
- Integral CMOS Decoder/Driver
- 50 Ohm Nominal Impedance

Description
Functional Block Diagram

Ordering Information

Part Number	Package
SW-415-PIN	FP-25

Note: Reference Application Note M513 for reel size information.

Note: Die quantity varies.

Absolute Maximum Ratings ³

Parameter	Absolute Maximum
Max Input Power 0.05 GHz 0.5 - 2.0 GHz	+24 dBm +30 dBm
Control Voltage	+5V, -8.5V
Operating Temperature	-55°C to +125°C
Storage Temperature	-65°C to +150°C

3. Operation of this device above any one of these parameters may cause permanent damage.

Truth Table

Control Inputs		Condition of Switch			
"1" = Logic High (CMOS)		RF Common to Each RF Port			
CMOS 2	CMOS 1	RF1	RF2	RF3	RF4
0	0	ON	OFF	OFF	OFF
0	1	OFF	ON	OFF	OFF
1	0	OFF	OFF	ON	OFF
1	1	OFF	OFF	OFF	ON

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

**Matched GaAs SP4T Switch,
 DC - 2 GHz**
**SW-415-PIN
 V3**
Electrical Specifications: $T_A = -55^{\circ}\text{C}$ to $+85^{\circ}\text{C}$ ¹

Parameter	Test Conditions	Frequency	Units	Min	Typ	Max
Insertion Loss	—	DC - 2.0 GHz	dB	—	—	1.8
		DC - 1.0 GHz	dB	—	—	1.5
		DC - 0.5 GHz	dB	—	—	1.2
VSWR	—	DC - 2.0 GHz	Ratio	—	—	1.8:1
		DC - 1.0 GHz	Ratio	—	—	1.8:1
		DC - 0.5 GHz	Ratio	—	—	1.4:1
Isolation	—	DC - 2.0 GHz	dB	37	—	—
		DC - 1.0 GHz	dB	43	—	—
		DC - 0.5 GHz	dB	45	—	—
Trise, Tfall Ton, Toff Transients	10% to 90% RF 50% CTL to 90/10% RF In-band	—	nS	—	50	—
		—	nS	—	200	—
		—	mV	—	15	—
1 dB Compression	Input Power	0.5 - 2.0 GHz 0.05 GHz	dBm	—	+27	—
			dBm	—	+17	—
IP ₂	For two tone input power up to +5 dBm	0.5 - 2.0 GHz 0.05 GHz	dBm	—	+60	—
			dBm	—	+45	—
IP ₃	For two tone input power up to +5 dBm	0.5 - 2.0 GHz 0.05 GHz	dBm	—	+46	—
			dBm	—	+35	—
Bias Power	-5 VDC +5 VDC	—	mA	—	—	5
		—	mA	—	—	1
Vin Low (0) Vin High (1)	0.0 to 1.5V 3.5 to 5.0V	—	μA	—	—	1
		—	μA	—	—	1

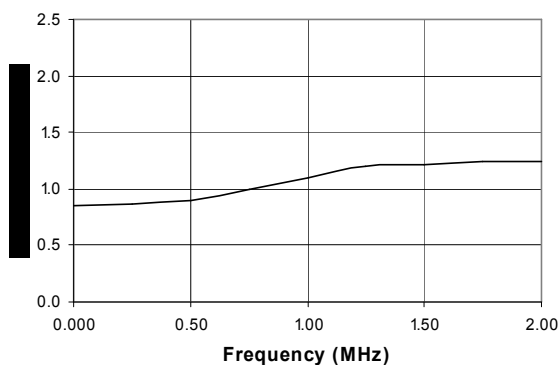
1. All specifications apply with 50 ohm impedance at all RF Ports.
2. Contact the factory for standard or customer screening requirements.

**Matched GaAs SP4T Switch,
DC - 2 GHz**

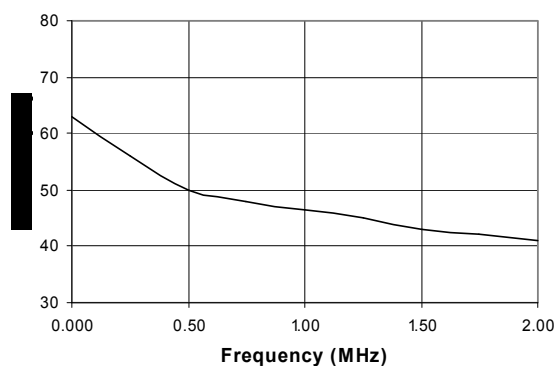
**SW-415-PIN
V3**

Typical Performance Curves

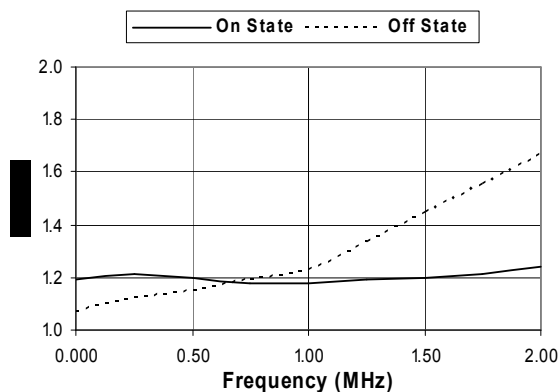
Insertion Loss



Isolation



VSWR



Functional Schematic (Top View)

