

GaAs Matched SP4T Switch

0.02-2 GHz

SW-369

Features

- Internal CMOS Decoder/Driver
- Low Power Consumption
- Fast Switching Speed, 60 ns Typ
- Very High Intercept Points

Guaranteed Specifications¹

(From -55°C to +85°C)

Frequency Range	0.02 – 2.0 GHz		
Insertion Loss	0.02 – 2.0 GHz	2.8 dB Max	
	0.02 – 1.0 GHz	2.4 dB Max	
	0.02 – 0.5 GHz	1.8 dB Max	
VSWR	Common, RF1 – RF4 On	RF1 - RF4 Off	
	0.2 – 2.0 GHz	2.0:1 Max	2.0:1 Max
	0.2 – 1.0 GHz	1.6:1 Max	1.6:1 Max
	0.2 – 0.5 GHz	1.5:1 Max	1.5:1 Max
	0.1 – 0.2 GHz	1.5:1 Max	1.7:1 Max
0.02 – 0.1 GHz	1.4:1 Max	Not Specified	
Isolation	0.02 – 2.0 GHz	40 dB Min	
	0.02 – 1.0 GHz	45 dB Min	
	0.02 – 0.5 GHz	50 dB Min	

Operating Characteristics

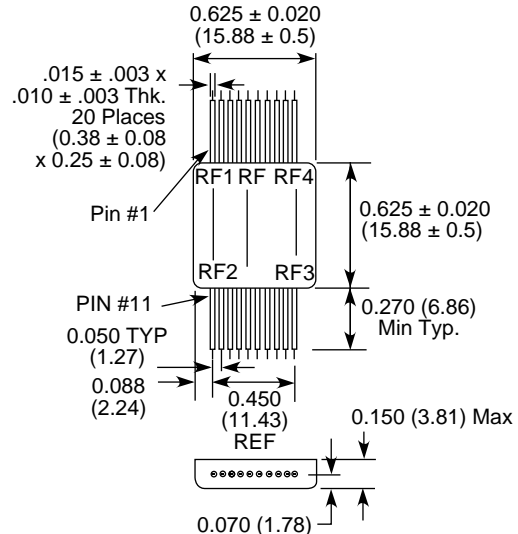
Impedance	50 Ohms Nominal			
Switching Characteristics	Trise, Tfall (10% to 90% RF)	8 ns Typ		
	Ton, Toff (50% CTL to 90/10% RF)	60 ns Typ		
	Transients (in band)	50 mV Typ		
	Input Power for 1 dB Compression			
0.5 – 2.0 GHz	+23 dBm Typ			
0.05 GHz	+17 dBm Typ			
Intermodulation Intercept Point (for two-tone input power up to +5 dBm)	Intercept Points	IP2	IP3	
	0.5 – 2.0 GHz	+72	+44	dBm Typ
	0.05 GHz	+50	+40	dBm Typ
Bias Power	+5 VDC @	2 mA Max		
Control Voltages	Vin Low (0)	0.0 to 1.5 V @ 1 µA Max		
	Vin High (1)	3.5 to 5.0 V @ 1 µA Max		

1. All specifications apply with 50 ohm impedance to all RF ports with 0 and +5 Vdc control voltages.
2. Contact the factory for standard or custom screening requirements.

Ordering Information

Model No.	Package
SW-369 PIN	Flatpack

FP-26

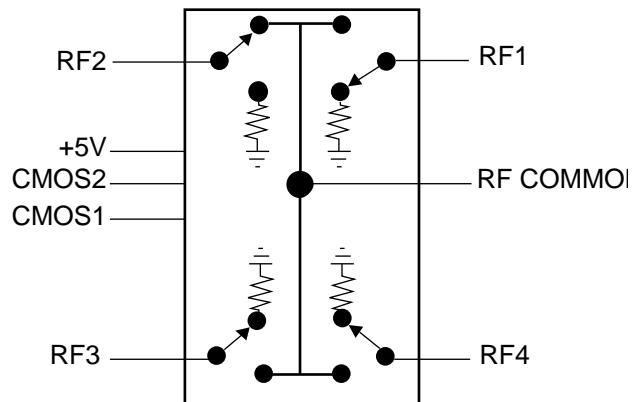


Bottom of case is AC ground.

Dimensions in () are in mm.

Unless Otherwise Noted: .xxx = ± 0.010 (.xx = ± 0.25)
.xx = ± 0.02 (.x = ± 0.5)

Functional Schematic (Top View)

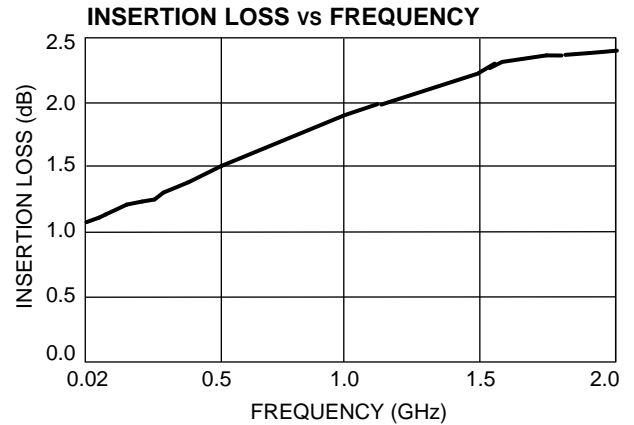


Absolute Maximum Ratings

Parameter	Absolute Maximum ¹
Max. Input Power	
0.05 GHz	+27 dBm
0.5 – 2.0 GHz ²	+34 dBm
Bias Voltage	-0.5 to +7V
Control Voltage	-0.5 to V _{CC} +0.5V
Operating Temperature	-55°C to +125°C
Storage Temperature	-65°C to +150°C

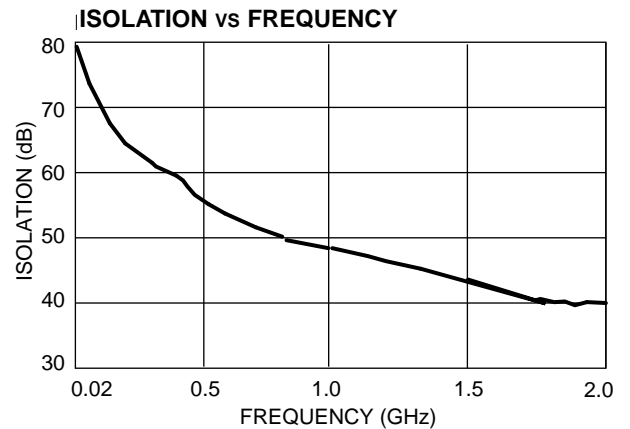
1. Operation of this device above any one of these parameters may cause permanent damage.
2. When the RF input power is applied to the terminated port, the absolute maximum is +30 dBm.

Typical Performance



Pin Configuration

Pin No.	Description	Pin No.	Description
1	RF1	11	RF2
2	GND	12	GND
3	GND	13	GND
4	GND	14	+5VDC
5	RF Common	15	CMOS 2
6	GND	16	CMOS 1
7	GND	17	N/C
8	GND	18	GND
9	GND	19	GND
10	RF4	20	RF3



Truth Table

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

