GaAs SP4T Absorptive Switch
DC-2 GHz

SW-411

Features

- Low Insertion Loss
- Low Power Consumption
- Fast Switching Speed, 8 ns Typ
- Very High Intercept Points

Guaranteed Specifications[1]

(From -55°C to +85°C)

Frequency Range			DC – 2.0 GHz
Insertion Loss	DC – 2.0 GHz		1.6 dB Max
	DC – 1.0 GHz		1.4 dB Max
	DC – 0.5 GHz		1.2 dB Max
VSWR		Common, RF1 – RF4 On	RF1 - RF4 Off
	DC – 2.0 GHz	1.8:1 Max	1.8:1 Max
	DC – 1.0 GHz	1.6:1 Max	1.6:1 Max
	DC – 0.5 GHz	1.4:1 Max	1.4:1 Max
Isolation	DC – 2.0 GHz		40 dB Min
	DC – 1.0 GHz		45 dB Min
	DC – 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)	16 ns Typ
Transients (In band)	15 mV Typ
Output Power for 1 dB Compression	
0.5 – 2.0 GHz	+27 dBm Typ
0.05 GHz	+21 dBm Typ

Intermodulation Intercept Point (for two-tone input power up to +5 dBm)

Intercept Points	IP2	IP3	
0.5 – 2.0 GHz	+60	+46	dBm Typ
0.05 GHz	+45	+35	dBm Typ

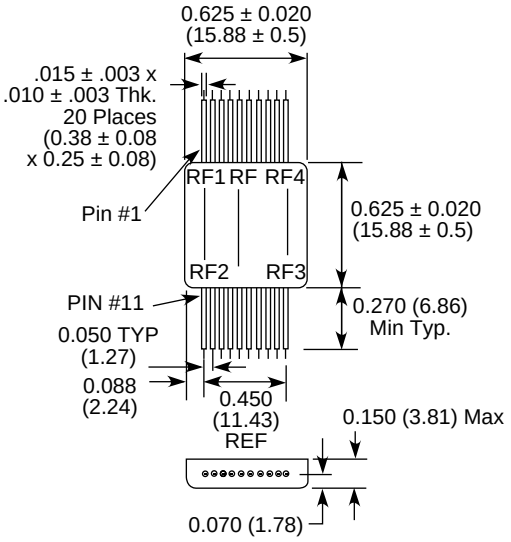
Control Voltages	
Vin Low (0)	0.0 to -0.2 V @ 20 µA Max
Vin High (1)	-5.0 V to -8.0 V @ 300 µA Max

1. All specifications apply with 50 ohm impedance to all RF ports.
2. Contact the factory for standard or custom screening.

Ordering Information

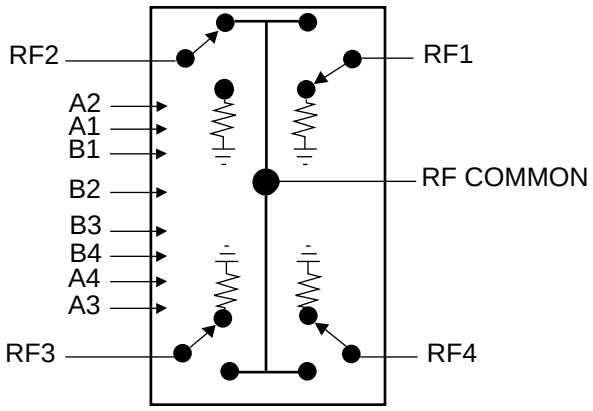
Model No.	Package
SW-411 PIN	Flatpack

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
Control Voltage	+5V, -8.5V
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.

Pin Configuration

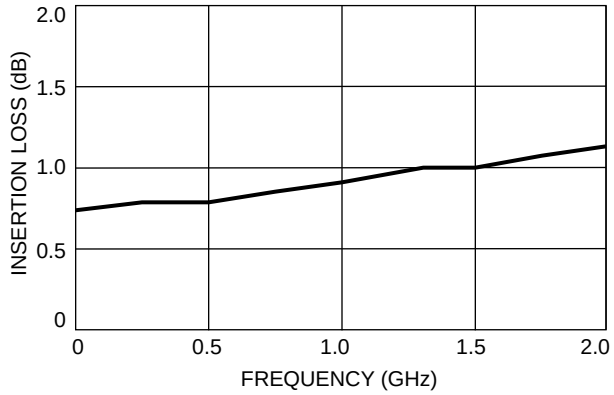
Pin No.	Description	Pin No.	Description
1	RF1	11	RF2
2	GND	12	A2
3	GND	13	A1
4	GND	14	B1
5	RF Common	15	B2
6	GND	16	B3
7	GND	17	B4
8	GND	18	A4
9	GND	19	A3
10	RF4	20	RF3

Truth Table

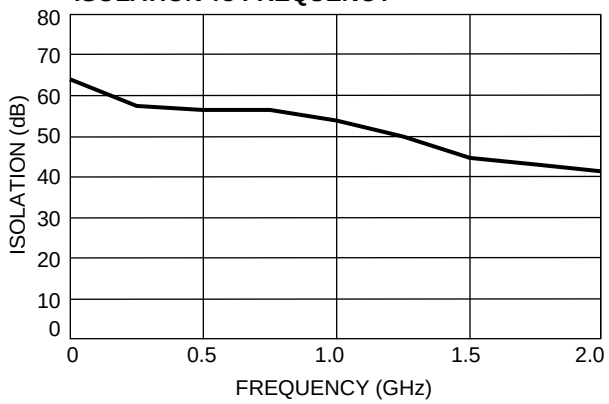
Control Input								Condition of Switch RF Common to Each RF Port			
A1	B1	A2	B2	A3	B3	A4	B4	RF1	RF2	RF3	RF4
1	0	0	1	0	1	0	1	On	Off	Off	Off
0	1	1	0	0	1	0	1	Off	On	Off	Off
0	1	0	1	1	0	0	1	Off	Off	On	Off
0	1	0	1	0	1	1	0	Off	Off	Off	On

Typical Performance

INSERTION LOSS vs FREQUENCY



ISOLATION vs FREQUENCY



VSWR vs FREQUENCY