Matched GaAs SP4T Switch
DC - 2 GHz SW-415

Features

- Low Insertion Loss, 1.4 dB Typical
- Fast Switching Speed, 200 ns Typical
- Low DC Power Consumption
- Integral CMOS Decoder/Driver

Guaranteed Specifications[1]

(-55°C to + 85°C

Frequency Range		DC – 2.0 GHz
Insertion Loss	DC – 2.0 GHz	1.8 dB Max
	DC – 1.0 GHz	1.5 dB Max
	DC – 0.5 GHz	1.2 dB Max
VSWR	DC – 2.0 GHz	1.8:1 Max
	DC – 1.0 GHz	1.8:1 Max
	DC – 0.5 GHz	1.4:1 Max
Isolation	DC – 2.0 GHz	37 dB Min
	DC – 1.0 GHz	43 dB Min
	DC – 0.5 GHz	45 dB Min

Operating Characteristics

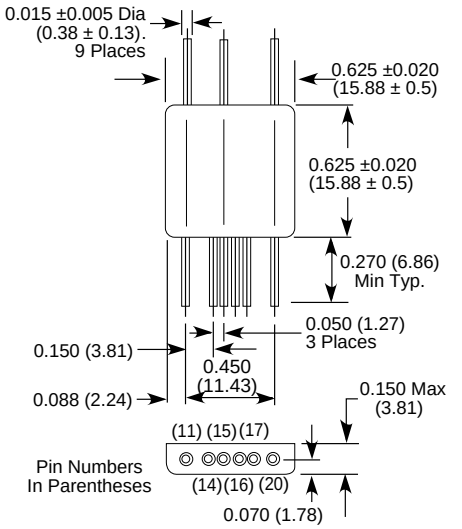
Impedance			50 Ohms Nominal
Switching Characteristics			
T_{rise}, T_{fall} (10% to 90%)			50 ns Typ
T_{on}, T_{off} (50% CTL to 90%/10% RF)			200 ns Typ
Transients (In-Band)			15 mV Typ
Input Power for 1 dB Compression			
0.5 – 2.0 GHz			+27 dBm Typ
0.05 GHz			+17 dBm Typ
Intermodulation Intercept Pt. (for two-tone input power up to +5 dBm)			
Intercept Points	IP_2	IP_3	
0.5 – 2.0 GHz	+60	+46	dBm Typ
0.05 GHz	+45	+35	dBm Typ
Control Voltages			
Vin Low (0)			0.0 to 1.5V @ 1 µA Max
Vin High (1)			3.5 to 5.0V @ 1 µA Max
Bias Power			-5 VDC @ 5 mA Max
			+5 VDC @ 1 mA Max

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

Ordering Information

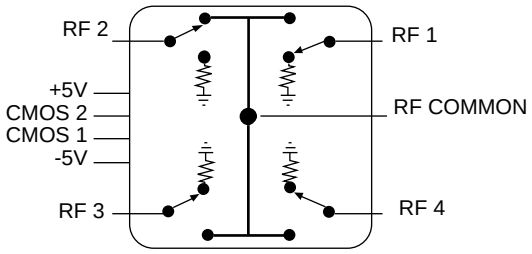
Model No.	Package
SW-415 PIN	Flatpack

FP-25



Weight (approx.): 0.12 Ounces 3.4 Grams
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



Truth Table

Control Input		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

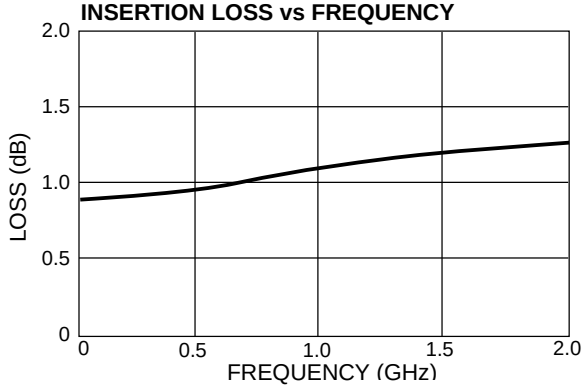
Absolute Maximum Ratings

Parameter	Absolute Maximum[1]
Max. Input Power	
0.05 GHz	+24 dBm
0.5–2.0 GHz	+30 dBm
Control Voltage	+5V, –8.5V
Operating Temperature	–55˚C to +125°C
Storage Temperature	–65˚C to +150˚C

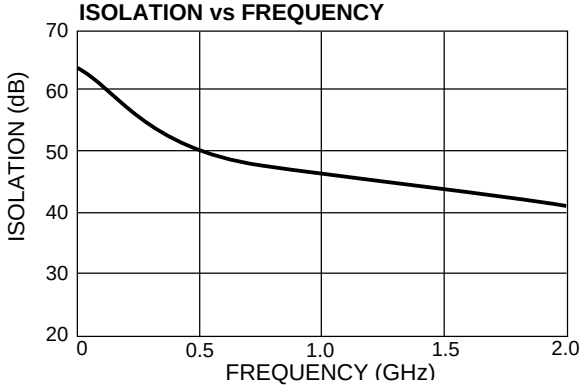
1. Operation of this device above any one of these parameters may cause permanent damage.

Typical Performance

INSERTION LOSS vs FREQUENCY



ISOLATION vs FREQUENCY



VSWR vs FREQUENCY