

GaAs SPDT Reflective Switch

DC - 3 GHz with TTL/CMOS Control Input

SW-312

V2.00

Features

- Integral Silicon Driver
- Ultra Low Power Consumption
- TTL and CMOS Input Compatible
- Fast Switching Speed: 7 ns Typical
- Surface Mount Package

Guaranteed Specifications¹

(From -55°C to +85°C)

Frequency Range		DC-3000 MHz
Insertion Loss	DC-3000 MHz	1.2 dB Max
	DC-2000 MHz	1.1 dB Max
	DC-1000 MHz	0.9 dB Max
	DC- 500 MHz	0.8 dB Max
VSWR	DC-3000 MHz	1.5:1 Max
	DC-2000 MHz	1.4:1 Max
	DC-1000 MHz	1.4:1 Max
	DC- 500 MHz	1.3:1 Max
Isolation	DC-3000 MHz	30 dB Min
	DC-2000 MHz	35 dB Min
	DC-1000 MHz	40 dB Min
	DC- 500 MHz	45 dB Min

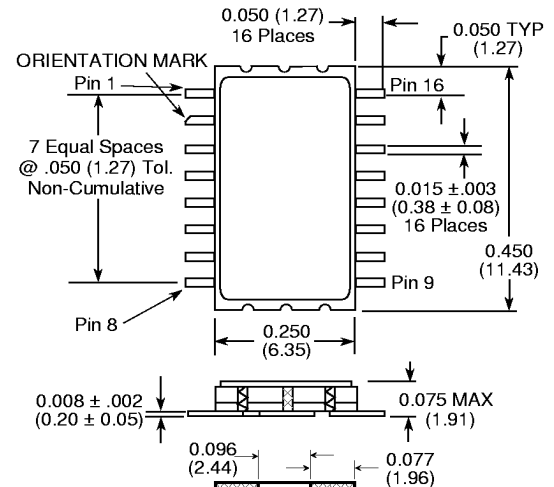
Operating Characteristics

Impedance		50 Ohms Nominal	
Switching Characteristics			
Trise, Tfall (10% to 90%)		7 ns Typ	
Ton, Toff (1.3V CTL to 90%/10%)		18 ns Typ	
Transients (In-Band)		25 mV Typ	
Input Power for 1 dB Compression			
0.05 GHz		25 dBm Typ	
0.5 GHz to 3 GHz		30 dBm Typ	
Intermodulation Intercept point (for two-tone input power up to +5 dBm)			
Intercept Points		IP2	IP3
0.05 GHz		+60	+40
0.5 GHz to 3 GHz		+65	+46
		dBm Typ	
		dBm Typ	
Supply Voltage Range			
V _{CC}		+5.0 V ±10% @ 1 mA Max	
V _{EE}		-5.0 V to -8.0 V @ 1 mA Max	
Control Voltage Range			
Vin Low		0 V to 0.8 V @ 1 μA Max	
Vin Hi		2.0 V to 5.0 V @ 1 μA Max	

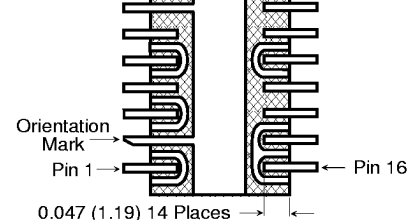
Environmental
MIL-STD-883 screening available.

1. All specifications apply when operated with a 50 ohm impedance at both RF ports.

CR-9



Bottom View



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)

Ordering Information

Part Number	Package
SW-312 PIN	Ceramic

Absolute Maximum Ratings

Parameter	Absolute Maximum
Max. Input Power	
50 MHz	+27 dBm
500-2000 MHz	+34 dBm
Supply Voltages	
V_{CC}	+5.5 V
V_{EE}	-8.5 V
Control Voltage	-0.5 V, to $V_{CC} + 0.5$ V
Operating Temperature	-55°C to +125°C
Storage Temperature	-65°C to +150°C

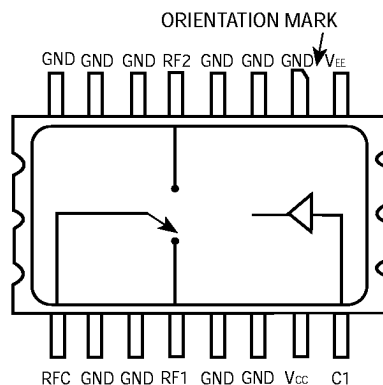
Pin Configuration

Pin No.	Description	Pin No.	Description
1	V_{EE}	9	RFC
2	GND	10	GND
3	GND	11	GND
4	GND	12	RF1
5	RF2	13	GND
6	GND	14	GND
7	GND	15	V_{CC}
8	GND	16	C1

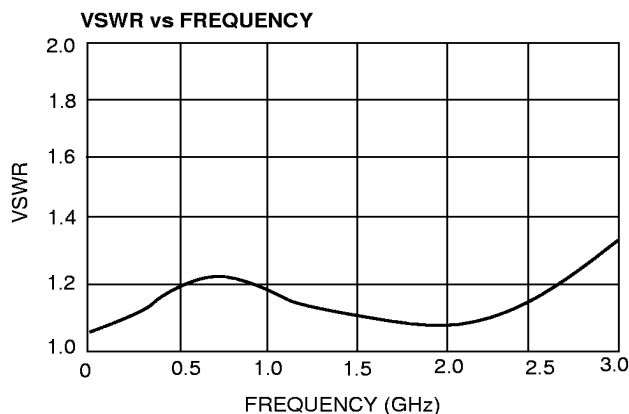
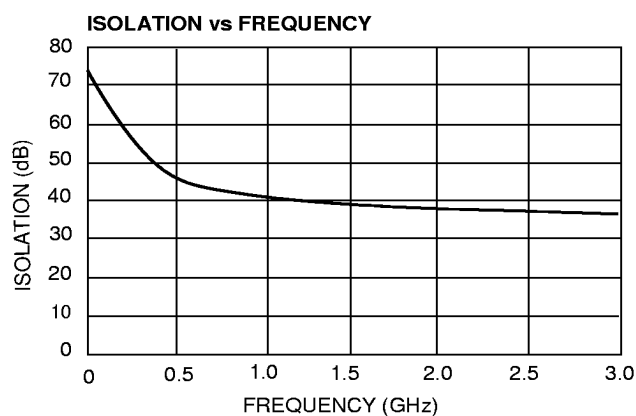
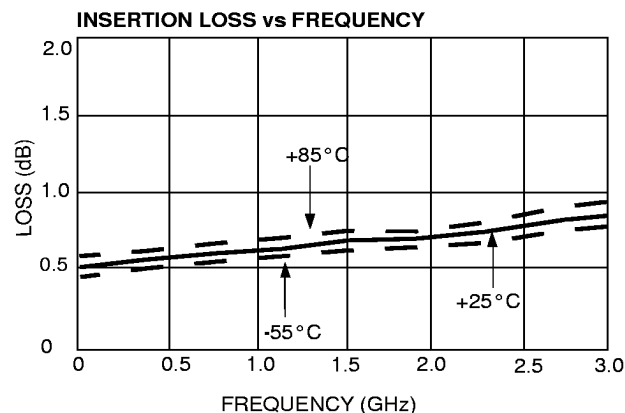
Truth Table

Control Input	Condition of Switch	
	RF Common to Each RF Port	
C1	RF1	RF2
LO	ON	OFF
HIGH	OFF	ON

Pin Configuration (Top View)



Typical Performance



Specifications Subject to Change Without Notice.

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