

GaAs SPDT Reflective Switch

DC - 3 GHz with TTL/CMOS Control Input SW10-0312

V4.00

Features

- Integral Driver
- Low DC Power Consumption
- TTL and CMOS Input Compatible
- Surface Mount Package
- Low Cost/High Performance

Guaranteed Specifications^{1,2} (From -40°C to +85°C)

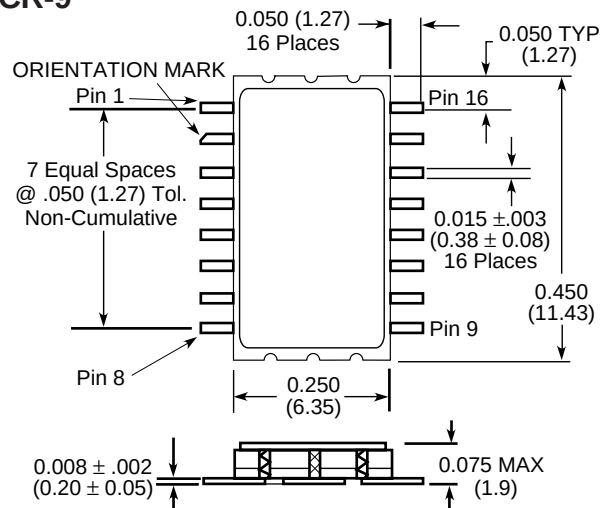
Frequency Range		DC-3000 MHz	
Insertion Loss	DC-3000 MHz	0.9 Typ.	1.2 dB Max
	DC-2000 MHz	0.8 Typ.	1.1 dB Max
	DC-1000 MHz	0.7 Typ.	0.9 dB Max
	DC- 500 MHz	0.6 Typ.	0.8 dB Max
VSWR	DC-3000 MHz	1.4 Typ.	1.5:1 Max
	DC-2000 MHz	1.3 Typ.	1.4:1 Max
	DC-1000 MHz	1.2 Typ.	1.4:1 Max
	DC- 500 MHz	1.1 Typ.	1.3:1 Max
Isolation	DC-3000 MHz	36 Typ.	27 dB Min
	DC-2000 MHz	38 Typ.	30 dB Min
	DC-1000 MHz	42 Typ.	35 dB Min
	DC- 500 MHz	45 Typ.	40 dB Min

Operating Characteristics

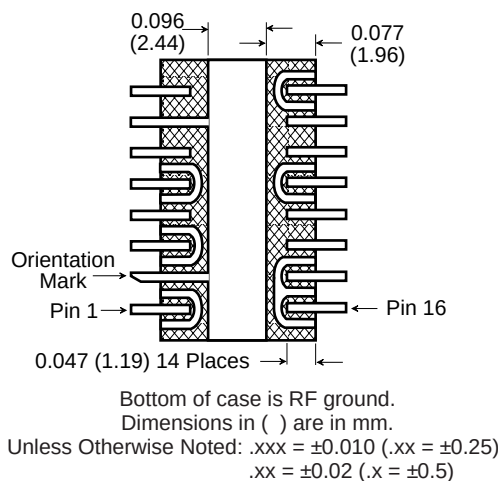
Impedance			50 Ohms Nominal
Switching Characteristics			
Trise, Tfall (10% to 90%)			50 ns Max
Ton, Toff (1.3V CTL to 90%/10%)			150 ns Max
Transients (in-Band)			50 mV Typ
Input Power for 1 dB Compression			
0.05 GHz			25 dBm Typ
0.5 GHz to 3 GHz			30 dBm Typ
Intermodulation Intercept point (for two-tone input power up to +5 dBm)			
<u>Intercept Points</u>		<u>IP2</u>	<u>IP3</u>
0.05 GHz		+60	+40
0.5 GHz to 3 GHz		+65	+46
			dBm Typ
			dBm Typ
Supply Voltage Ranges			
V _{CC}		+5.0V ±10% @ 1 mA Max	
V _{EE}		-5.0V to -8.0V @ 1 mA Max	
Control Voltage Range			
Vin Low		0V to 0.8V @ 1 µA Max	
Vin Hi		2.0V to 5.0V @ 1 µA Max	

1. All specifications apply when operated with a 50 ohm impedance at both RF ports.
2. For the switch to meet the guaranteed specifications, it is necessary to have a DC return on the RFC port. The DC return can be either a 10KΩ resistor or an RF choke.

CR-9



Bottom View



Ordering Information

Part No.	Package
SW10-0312	Ceramic

Absolute Maximum Ratings ¹

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	-40°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.

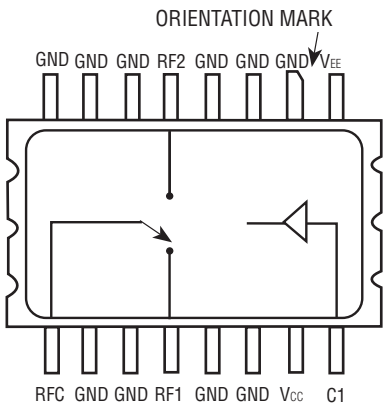
Pin Configuration

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

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

Pin Configuration (Top View)



Typical Performance @ +25°C

