GaAs SPDT RF Switch
DC - 3 GHz

SW-219

V 2.00

Features

- Fast Switching Speed, 6 ns Typical
- Ultra Low DC Power Consumption
- Small Package Size, 0.180" (4.6mm) Sq.

Guaranteed Specifications[1]

(-55°Cto +85°C)

Frequency Range		DC – 3.0 GHz
Insertion Loss	DC – 3.0 GHz	0.9 dB Max
	DC – 2.0 GHz	0.8 dB Max
	DC – 1.0 GHz	0.8 dB Max
	DC – 0.5 GHz	0.7 dB Max
VSWR	DC – 3.0 GHz	1.6:1 Max
	DC – 2.0 GHz	1.3:1 Max
	DC – 1.0 GHz	1.2:1 Max
	DC – 0.5 GHz	1.2:1 Max
Isolation	DC – 3.0 GHz	23 dB Min
	DC – 2.0 GHz	28 dB Min
	DC – 1.0 GHz	38 dB Min
	DC – 0.5 GHz	43 dB Min

Operating Characteristics

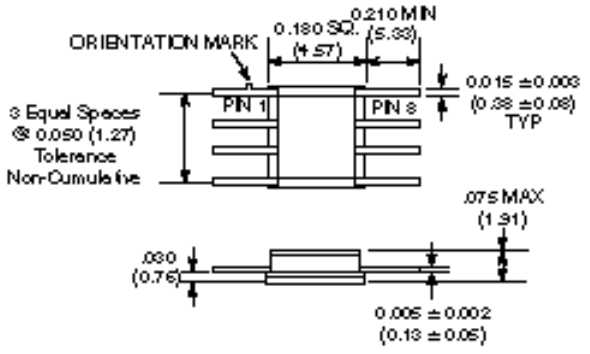
Impedance			50 Ohms Nominal
Switching Characteristics			
T_{rise}, T_{fall}			3 ns Typ
T_{on}, T_{off} (50% CTL to 90%/10% RF)			6 ns Typ
Transients (In-Band)			10 mV Typ
Input Power for 1 dB Compression			
Control Voltages (Vdc)	0/-5	0/-8	
0.5 – 3.0 GHz	+27	+33	dBm Typ
0.05 GHz	+21	+26	dBm Typ
Intermodulation Intercept Pt. (for two-tone input power up to +13 dBm)			
Intercept Points	IP_2	IP_3	
0.5 – 3.0 GHz	+62	+40	dBm Typ
0.05 GHz	+68	+46	dBm Typ
Control Voltages (Complementary Logic)			
Vin Low			0 to -0.2V @ 20 µA Max
Vin High			-5V @ 50 µA Typ to -8V @ 300 µA Max

1. All specifications apply with 50 ohm impedance connected to all RF ports with 0 and -5 Vdc control voltages.
2. See Appendix for MIL-STD-883 screening option.

Ordering Information

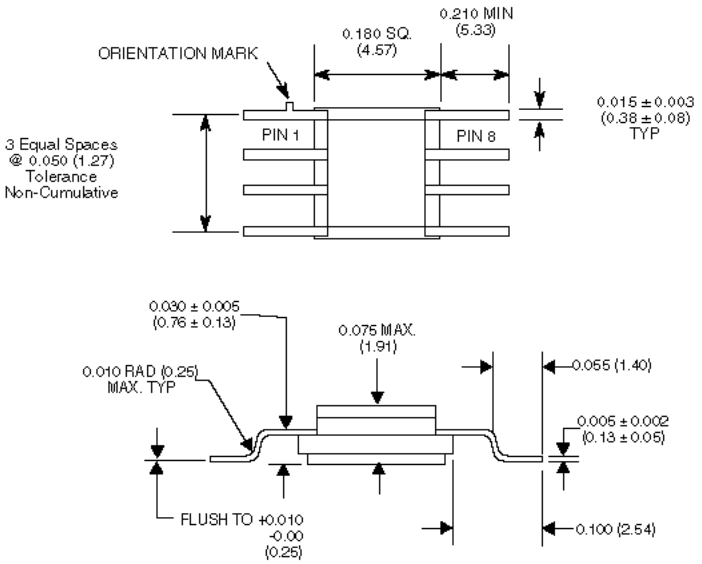
Part Number	Package
SW-219 PIN	Ceramic (CR-3)
SW-219G PIN	Ceramic Gull Winged (CR-10)
SW-219B PIN	Screened to MIL-STD-883C, Method 5008.4, Table VII Class B Hybrid (CR-3)

CR-3



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)

CR-10



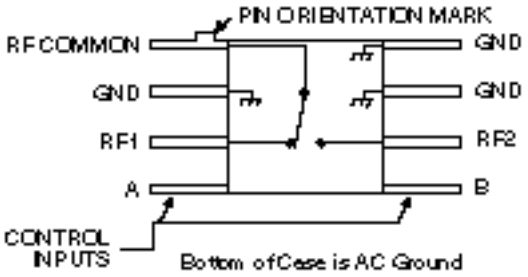
Bottom of case is AC ground.
Dimensions in ( ) are in mm.
Unless Otherwise Noted: .xxx = ±0.010 (.xx = ±0.25)
.xx = 0.02 (.x = ±0.5)

Absolute Maximum Ratings[1]

Parameter	Absolute Maximum
Max. Input Power	
0.05 GHz	+27 dBm
0.5–2.0 GHz	+34 dBm
Control Voltage	+5 V, –8.5 V
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.

Functional Schematic



Truth Table

Control Input		Condition of Switch	
		RF Common to each RF Port	
A	B	RF1	RF2
High	Low	ON	OFF
Low	High	OFF	ON

When an RF output is off, it is shorted to ground.

Typical Performance