



GaAs SPDT RF Switch

DC-3 GHz

SW-219

Features

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

Guaranteed Specifications¹ (-55°C to +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)

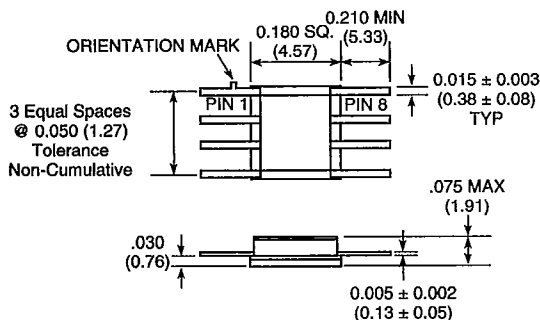
Vin Low	0 to -0.2V @ 20 μ A Max
Vin High	-5V @ 50 μ A Typ to -8V @ 300 μ A Max

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

Model No.	Package
SW-219 PIN	Ceramic (CR-3)
SW-219G	Ceramic Gull Winged (CR-10)

CR-3

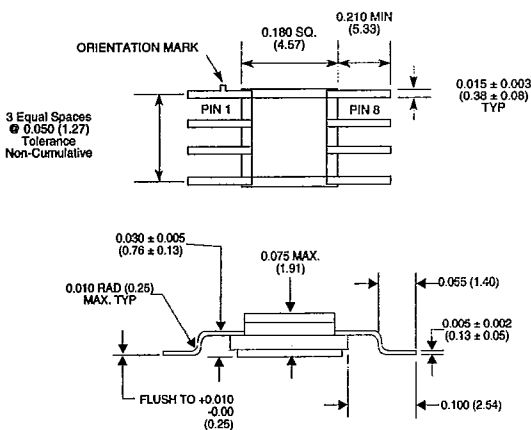


Bottom of case is AC ground.

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)

Specifications Subject to Change Without Notice

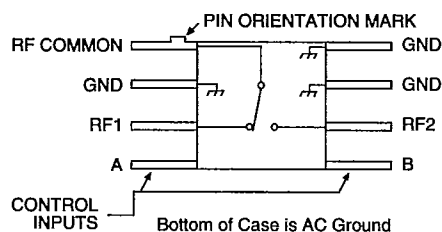
M/A-COM Inc. ■ 1011 Pawtucket Boulevard, Lowell, MA 01853 USA

■ Telephone: 800-366-2266

GaAs SPDT RF Switch

SW-219

Functional Schematic



Absolute Maximum Ratings

Parameter	Absolute Maximum ¹
Max. Input Power	
0.05 GHz	+27 dBm
0.5–2.0 GHz	+34 dBm
Control Voltage	+5V, –8.5V
Operating Temperature	–55°C to +125°C
Storage Temperature	–65°C to +150°C

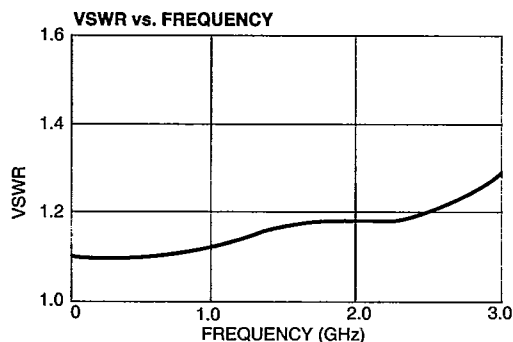
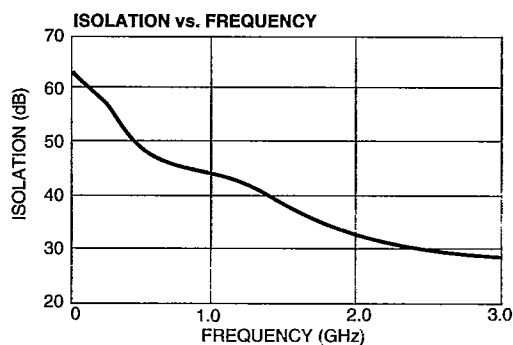
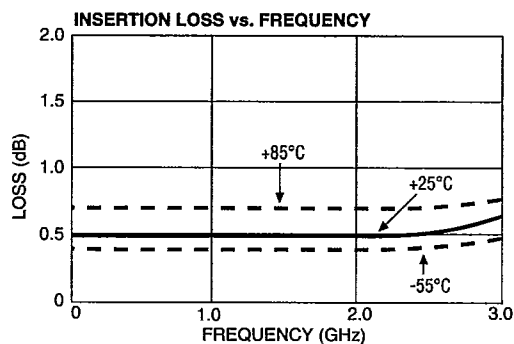
Note: 1. Operation of this device above any one of these parameters may cause permanent damage.

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



Specifications Subject to Change Without Notice

M/A-COM Inc. ■ 1011 Pawtucket Boulevard, Lowell, MA 01853 USA

■ Telephone: 800-366-2266