

# Matched GaAs SP3T Switch

## 5-2000 MHz

# SW-247/251

V 2.01

### Features

- Low Insertion Loss, 1.0 dB Typical
- Fast Switching Speed, 20 ns Typical
- Ultra Low DC Power Consumption, 0.22 mA Typical
- Integral TTL (SW-247) or CMOS (SW-251) Driver

### Guaranteed Specifications \*

(From -55°C to +85°C)

Frequency Range	5 - 2000 MHz	
Insertion Loss	5-2000 MHz	1.8 dB Max
	5-1000 MHz	1.4 dB Max
	5- 500 MHz	1.2 dB Max
VSWR	5-2000 MHz	2.0:1 Max
	5-1000 MHz	1.6:1 Max
	5- 500 MHz	1.4:1 Max
Isolation	5-2000 MHz	35 dB Min
	5-1000 MHz	42 dB Min
	5- 500 MHz	52 dB Min

### Operating Characteristics

Impedance 50 Ohms Nominal

Switching Characteristics	SW-247	SW-251
	(TTL)	(CMOS)
Trise, Tfall	7 ns	20 ns Typ
Ton, Toff (50% CTL to 90/10% RF)	20 ns	40 ns Typ
Transients (In-Band)	80 mV	40 mV Typ

### Input Power for 1 dB Compression

Model #s	SW-247	SW-251	
500-2000 MHz	+27	+33	dBm Typ
50 MHz	+21	+26	dBm Typ

### Intermodulation Intercept Point (for two-tone input power up to +13 dBm)

Intercept Points	IP <sub>2</sub>	IP <sub>3</sub>	
500-2000 MHz	+68	+46	dBm Typ
50 MHz	+60	+40	dBm Typ

### Bias Power

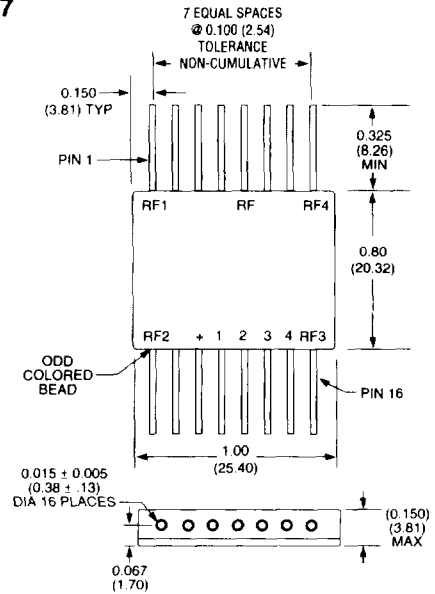
SW-247	+5 VDC @ 0.22 mA Typ, 1 mA Max
SW-251	+5 to +8 VDC @ 0.22 to 0.40 mA Typ, 1 mA Max

### Environmental

See Appendix for MIL-STD-883 screening option.

- \* All specifications apply when operated with bias voltages of +5 VDC (SW-247) or +8 VDC (SW-251) and 50 ohm impedance at all RF ports.

### FP-17



Dimensions in ( ) are in mm.  
Unless Otherwise Noted: .xxx = ±0.010 (.xx = ±0.25)  
.xx = ±0.02 (.x = ±0.5)

### Ordering Information

Model No.	Package
SW-247 PIN	Flatpack
SW-251 PIN	Flatpack

Specifications Subject to Change Without Notice.

15-108

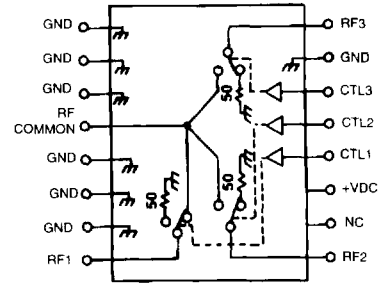
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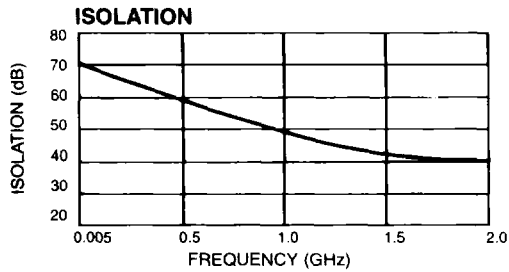
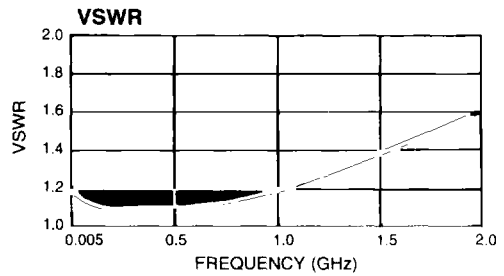
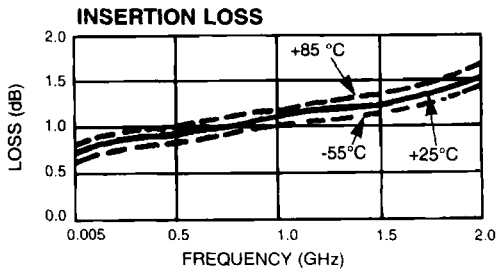
**Truth Table**

Control Input			Condition of Switch		
"1" = Logic High TTL (SW-247)/CMOS(SW-251)			RF Common To Each RF PORT		
CTL1	CTL2	CTL3	RF1	RF2	RF3
1	0	0	ON	OFF	OFF
0	1	0	OFF	ON	OFF
0	0	1	OFF	OFF	ON

**Schematic**



**Typical Performance**



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