SW-233-PIN / SW-236-PIN

Matched GaAs SPDT Switch, 5 - 2000 MHz

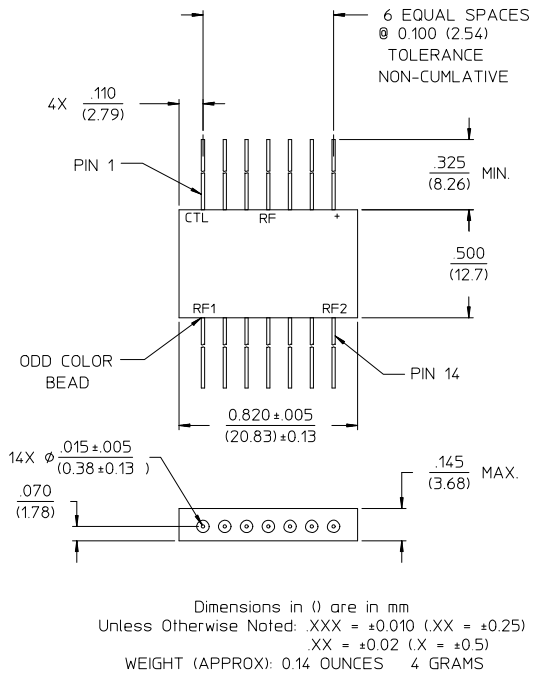
Rev. V3

Features

- Low Insertion Loss, 1.0 dB Typical
- Fast Switching Speed, 20 nS Typical
- Ultra Low DC Power Consumption, 0.12 mA Typical
- Integral TTL (SW-233) or CMOS (SW-236) Driver
- 50 Ohm Nominal Impedance
- MIL-STD-883 screening available

Description

Functional Block Diagram



Dimensions in () are in mm
Unless Otherwise Noted: .XXX = ±0.010 (.XX = ±0.25)
.XX = ±0.02 (.X = ±0.5)
WEIGHT (APPROX): 0.14 OUNCES 4 GRAMS

Truth Table

Control Input				Condition of Switch			
"1" = Logic High TTL (SW-233) CMOS (SW-236)				RF Common to Each RF Port			
CTL 1	CTL 2	CTL 3	CTL 4	RF1	RF2	RF3	RF4
1	0	0	0	ON	OFF	OFF	OFF
0	1	0	0	OFF	ON	OFF	OFF
0	0	1	0	OFF	OFF	ON	OFF
0	0	0	1	OFF	OFF	OFF	ON

Ordering Information

Part Number	Package
SW-233-PIN	FP-16
SW-236-PIN	FP-16

Note: Reference Application Note M513 for reel size information.
Note: Die quantity varies.

* Restrictions on Hazardous Substances, European Union Directive 2002/95/EC.

• **North America** Tel: 800.366.2266 • **Europe** Tel: +353.21.244.6400
• **India** Tel: +91.80.4155721 • **China** Tel: +86.21.2407.1588
Visit www.macomtech.com for additional data sheets and product information.

Electrical Specifications: T_A = -55°C to +85°C [1]

Parameter	Test Conditions	Frequency	Units	Min	Typ	Max
Insertion Loss	—	5 - 2000 MHz 5 - 1000 MHz 5 - 500 MHz	dB dB dB	1.5 1.2 1.1	— — —	— — —
VSWR	—	5 - 2000 MHz 5 - 1000 MHz 5 - 500 MHz	Ratio Ratio Ratio	— — —	— — —	1.9:1 1.5:1 1.4:1
Isolation	—	5 - 2000 MHz 5 - 1000 MHz 5 - 500 MHz	dB dB dB	40 45 53	— — —	— — —
IP_2	For two tone input power up to +13 dBm	500 - 2000 MHz 50 MHz	dBm dBm	— —	+68 +60	— —
IP_3	For two tone input power up to +13 dBm	500 - 2000 MHz 50 MHz	dBm dBm	— —	+46 +40	— —

1. All specifications apply when operated with bias voltages of +5 VDC (SW-205) or +8 VDC (SW-206) and 50 ohm impedance at all RF ports.

SW-233

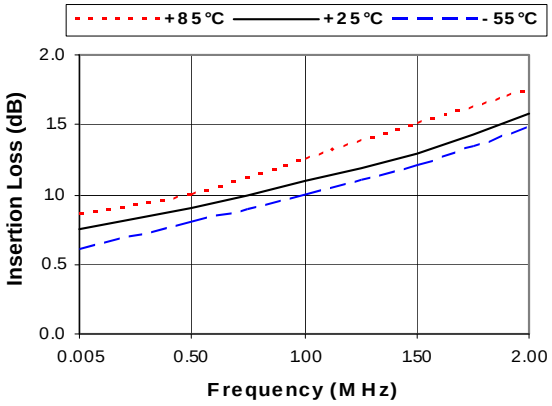
Parameter	Test Conditions	Frequency	Units	Min	Typ	Max
Trise, Tfall Ton, Toff Transients	50% CTL to 90/10% RF In-band	— — —	nS nS mV	— — —	7 20 100	— — —
1 dB Compression	Input Power	500 - 2000 MHz 50 MHz	dBm dBm	— —	+27 +21	— —
Bias Power	+5 VDC @ 0.12 mA Typ	—	mA	—	—	1

SW-236

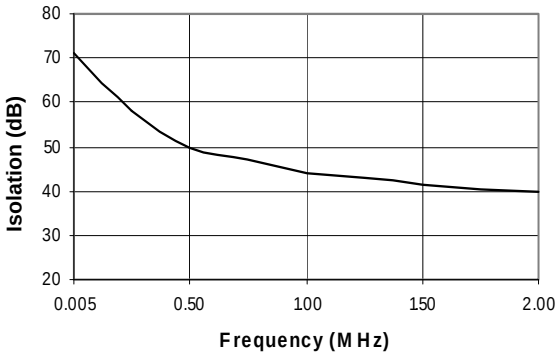
Parameter	Test Conditions	Frequency	Units	Min	Typ	Max
Trise, Tfall Ton, Toff Transients	50% CTL to 90/10% RF In-band	— — —	nS nS mV	— — —	20 40 70	— — —
1 dB Compression	Input Power	500 - 2000 MHz 50 MHz	dBm dBm	— —	+33 +26	— —
Bias Power	+5 to +8 VDC @ 0.12 to 0.40 mA Typ	—	mA	—	—	1

Typical Performance Curves

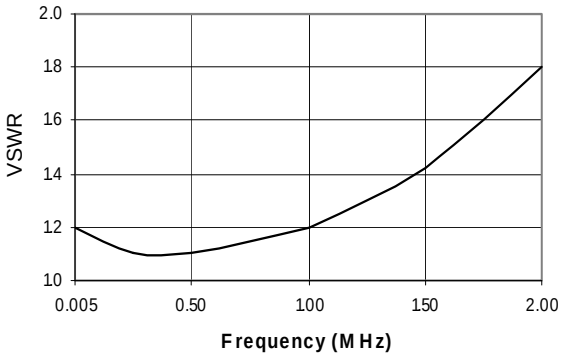
Insertion Loss



Isolation



VSWR



Schematic