## SW-233-PIN / SW-236-PIN



Matched GaAs SPDT Switch, 5 - 2000 MHz

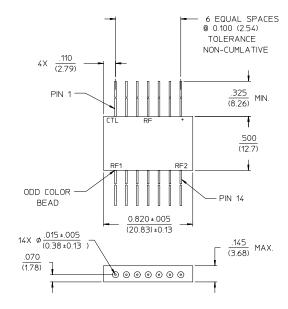
Rev. V3

#### **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 =  $\pm 0.010$  (XX =  $\pm 0.25$ ) XX =  $\pm 0.02$  (X =  $\pm 0.05$ ) WEIGHT (APPROX): 0.14 OUNCES 4 GRAMS

## **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.

#### **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	

<sup>\*</sup> Restrictions on Hazardous Substances, European Union Directive 2002/95/EC.

ADVANCED: Data Sheets contain information regarding a product M/A-COM Technology Solutions is considering for development. Performance is based on target specifications, simulated results, and/or prototype measurements. Commitment to develop is not guaranteed.

PRELIMINARY: Data Sheets contain information regarding a product M/A-COM Technology Solutions has under development. Performance is based on engineering tests. Specifications are typical. Mechanical outline has been fixed. Engineering samples and/or test data may be available. Commitment to produce in volume is not guaranteed.

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Rev. V3

## Electrical Specifications: $T_A = -55$ °C to +85°C <sup>1</sup>

Parameter	Test Conditions	Frequency	Units	Min	Тур	Max
Insertion Loss	_	5 - 2000 MHz	dB	1.5	_	_
		5 - 1000 MHz	dB	1.2	_	_
		5 - 500 MHz	dB	1.1	_	_
VSWR	_	5 - 2000 MHz	Ratio	_	_	1.9:1
		5 - 1000 MHz	Ratio	_		1.5:1
		5 - 500 MHz	Ratio	_	_	1.4:1
Isolation	_	5 - 2000 MHz	dB	40	_	_
		5 - 1000 MHz	dB	45	_	_
		5 - 500 MHz	dB	53	_	_
IP <sub>2</sub>	For two tone input power up to +13 dBm	500 - 2000 MHz	dBm	_	+68	_
		50 MHz	dBm	_	+60	_
IP <sub>3</sub>	For two tone input power up to +13 dBm	500 - 2000 MHz	dBm	_	+46	_
		50 MHz	dBm	_	+40	_

<sup>1.</sup> 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	Тур	Max
Trise, Tfall		_	nS	_	7	_
Ton, Toff	50% CTL to 90/10% RF	_	nS	_	20	_
Transients	In-band	_	mV	_	100	_
1 dB Compression	Input Power	500 - 2000 MHz	dBm	_	+27	_
		50 MHz	dBm	_	+21	_
Bias Power	+5 VDC @ 0.12 mA Typ	_	mA	_	_	1

#### SW-236

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

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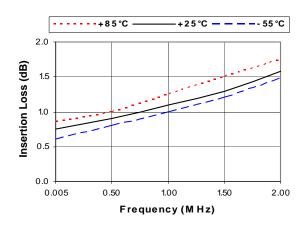


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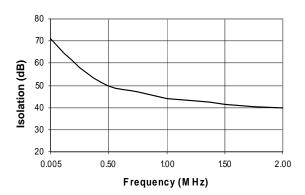
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### **Typical Performance Curves**

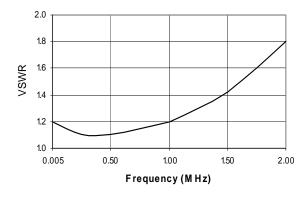
#### **Insertion Loss**



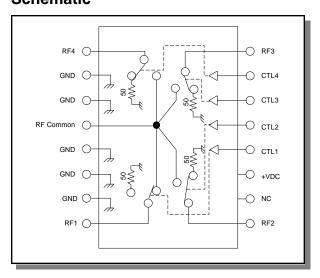
#### Isolation



#### **VSWR**



#### **Schematic**



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