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



Matched GaAs SPDT Switch, 5 - 2000 MHz

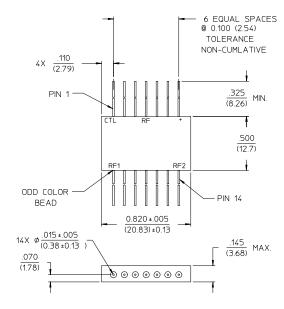
Rev. V3

#### **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 =  $\pm 0.25$ )  $.XX = \pm 0.02 (.X = \pm 0.5)$ 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) MOS (SW-236)			RF Common to Each RF Port			
CTL 1	CTL 2	CTL 3	CTL 4	RF1	RF2	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.

<sup>•</sup> North America Tel: 800.366.2266 • Europe Tel: +353.21.244.6400

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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 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 <sub>2</sub>	For two tone input power up to +13 dBm	500 - 2000 MHz 50 MHz	dBm dBm	_	+68 +60	_
IP <sub>3</sub>	For two tone input power up to +13 dBm	500 - 2000 MHz 50 MHz	dBm dBm	_	+46 +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 Ton, Toff	50% CTL to 90/10% RF	_	nS nS	_	7 20	
Transients  1 dB Compression	In-band Input Power	500 - 2000 MHz 50 MHz	mV dBm dBm		100 +27 +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 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

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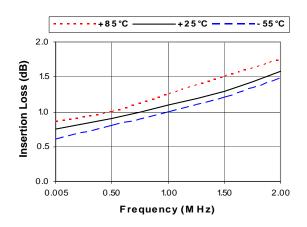


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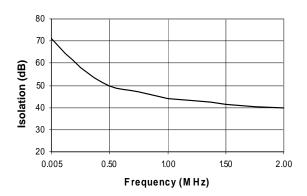
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### **Typical Performance Curves**

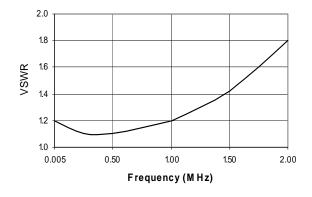
#### **Insertion Loss**



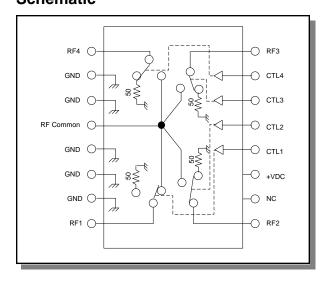
#### Isolation



#### **VSWR**



#### **Schematic**



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