

Rev. V3

Matched GaAs SPST Switch, 5 - 4000 MHz

Features

- Low Insertion Loss: 1.0 dB Typical
- Fast Switching Speed: 20 ns Typical
- Ultra Low DC Power Consumption: 0.07 mA Typical
- Integral TTL
- 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

Ordering Information

Part Number	Package
SW-231-PIN	FP-16

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

Truth Table

TTL Control Input "1" = Logic High	Condition of Switch
TTĽ	RF1 to RF2
1	ON
2	OFF

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

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Electrical Specifications: $T_A = -55^{\circ}C$ to +85°C¹

Parameter	Test Conditions	Frequency	Units	Min	Тур	Мах
Insertion Loss	_	5 - 4000 MHz 5 - 2000 MHz 5 - 1000 MHz 5 - 500 MHz	dB dB dB dB	 	 	2.8 1.5 1.2 1.1
VSWR	_	5 - 4000 MHz 5 - 2000 MHz 5 - 1000 MHz 5 - 500 MHz	Ratio Ratio Ratio Ratio	 	 	2.3:1 1.9:1 1.5:1 1.4:1
Isolation	_	5 - 4000 MHz 5 - 2000 MHz 5 - 1000 MHz 5 - 500 MHz	dB dB dB dB	22 37 50 60	 	
Ton, Toff Ton, Toff Transients	50% CTL to 90/10% RF In-band	 	nS nS mV		7 20 70	
1 dB Compression	Input Power	500 - 4000 MHz 50 MHz	dBm dBm	_	+27 +21	_
IP ₂	For two tone input power up to +13 dBm	500 - 4000 MHz 50 MHz	dBm dBm		+68 +60	_
IP ₃	For two tone input power up to +13 dBm	500 - 4000 MHz 50 MHz	dBm dBm		+46 +40	_
Bias Power	+5 VDC @ 0.07 mA Typical	_	mA	—	—	1

1. All specifications apply when operated with bias voltages of +5 VDC and 50 ohm impedance at all RF ports.

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Typical Performance Curves

Insertion Loss



Isolation



VSWR



Schematic



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