

Matched GaAs SPST Switch, 5 - 4000 MHz

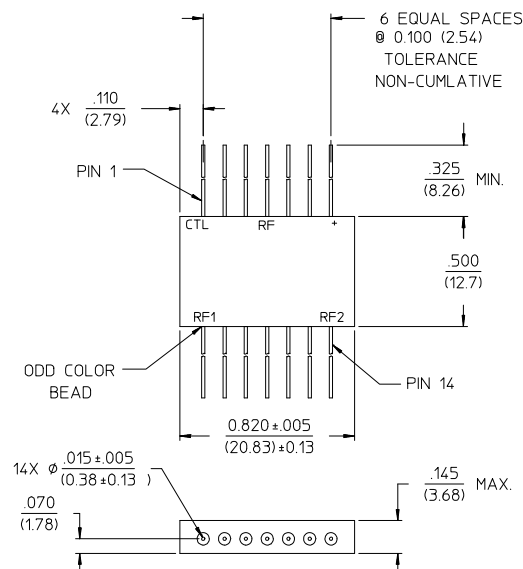
SW-231-PIN
V3

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 TTL	Condition of Switch
	RF1 to RF2
1	ON
2	OFF

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

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Electrical Specifications: $T_A = -55^{\circ}\text{C}$ to $+85^{\circ}\text{C}$ ¹

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

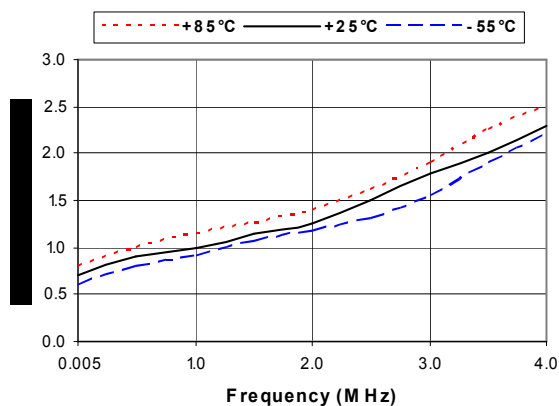
1. All specifications apply when operated with bias voltages of +5 VDC and 50 ohm impedance at all RF ports.

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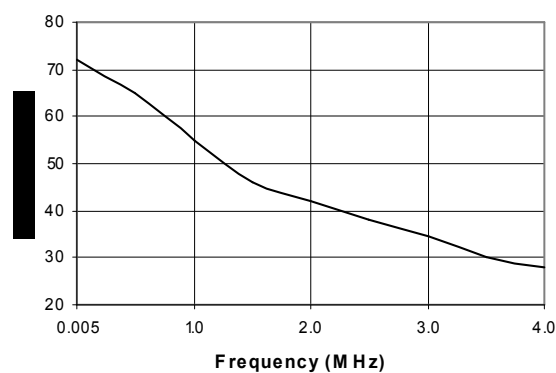
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Typical Performance Curves

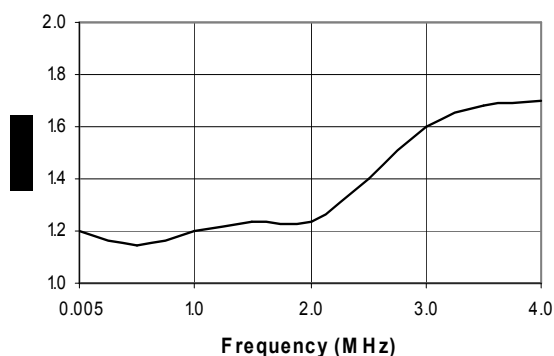
Insertion Loss



Isolation



VSWR



Schematic

