SW-369-PIN

Matched GaAs SP4T Switch, 0.02 - 2 GHz

Features

- Internal CMOS Decoder/Driver
- Low Power Consumption
- Fast Switching Speed, 60 ns Typical
- Very High Intercept Points
- 50 Ohm Nominal Impedance

Description



Rev. V3

Functional Block Diagram



Ordering Information

Part Number	Package	
SW-369-PIN	FP-26	

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

Absolute Maximum Ratings ³

Parameter	Absolute Maximum		
Max Input Power 0.05 GHz 0.5 - 2.0 GHz	+27 dBm +34 dBm		
Bias Voltages	-0.5 to +7V		
Control Voltage	-0.5V to Vcc +0.5V		
Operating Temperature	-55°C to +125°C		
Storage Temperature	-65°C to +150°C		

3. Operation of this device above any one of these parameters may cause permanent damage.

4. When the RF input power is applied to the terminated port, the absolute maximum is +32 dBm.

Truth Table

Control Inputs		Condition of Switch			ch	
"1" = Logic High (CMOS)		RF Common to Each RF Port				
CMOS 1	CMOS 2	RF1 RF2 RF3 R				
0	0	ON	OFF	OFF	OFF	
1	0	OFF	ON	OFF	OFF	
0	1	OFF	OFF	ON	OFF	
1	1	OFF	OFF	OFF	ON	

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

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Matched GaAs SP4T Switch, 0.02 - 2 GHz

Rev. V3

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

Parameter	Test Conditions	Frequency	Units	Min	Тур	Max
Insertion Loss	_	0.02 - 2.0 GHz 0.02 - 1.0 GHz 0.02 - 0.5 GHz	dB dB dB	2.8 2.4 1.8		
VSWR	Common, RF1 - RF4 On	0.2 - 2.0 GHz 0.2 - 1.0 GHz 0.2 - 0.5 GHz 0.1 - 0.2 GHz 0.02 - 0.1 GHz	Ratio Ratio Ratio Ratio Ratio			2.0:1 1.6:1 1.5:1 1.5:1 1.4:1
VSWR	RF1 - RF4 Off	0.2 - 2.0 GHz 0.2 - 1.0 GHz 0.2 - 0.5 GHz 0.1 - 0.2 GHz 0.02 - 0.1 GHz	Ratio Ratio Ratio Ratio Ratio	 	 	2.0:1 1.6:1 1.5:1 1.7:1 Not Specified
Isolation	_	0.02 - 2.0 GHz 0.02 - 1.0 GHz 0.02 - 0.5 GHz	dB dB dB	40 45 50		
Trise, Tfall Ton, Toff Transients	10% to 90% RF 50% CTL to 90/10% RF In-band		nS nS mV		3.0 180 150	
1 dB Compression	Input Power	0.5 - 2.0 GHz 0.05 GHz	dBm dBm	_	+23 +17	_

1. All specifications apply when operated with bias voltages of 0 and +5 VDC and 50 ohm impedance at all RF Ports.

2. Contact the factory for standard or customer screening requirements.

Parameter	Test Conditions	Frequency	Units	Min	Тур	Max
IP ₂	For two tone input power up to +5 dBm	0.5 - 2.0 GHz 0.05 GHz	dBm dBm		+72 +50	_
IP ₃	For two tone input power up to +5 dBm	0.5 - 2.0 GHz 0.05 GHz	dBm dBm		+44 +40	_
Bias Power	+5 VDC	_	mA	_	—	2
Vin Low (0) Vin High (1)	0.0 to 1.5V 3.5 to 5.0V		μΑ μΑ			1 1

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SW-369-PIN

Matched GaAs SP4T Switch, 0.02 - 2 GHz

Typical Performance Curves

Insertion Loss



VSWR

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Pin Configuration

Isolation

Pin No.	Description	Pin No.	Description
1	RF1	11	RF2
2	GND	12	GND
3	GND	13	GND
4	GND	14	+5 VDC
5	RF Common	15	CMOS 2
6	GND	16	CMOS 1
7	GND	17	N/C
8	GND	18	GND
9	GND	19	GND
10	RF4	20	RF3

Functional Schematic (Top View)



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