



GaAs SP4T Absorptive Switch with ASIC Driver, DC - 3.0 GHz

V 6.00

SW65-0314

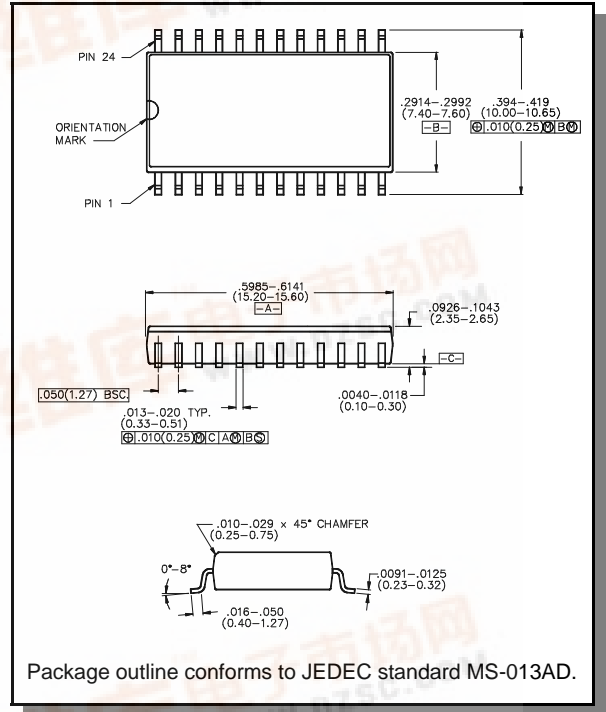
Features

- Typical Isolation: 33 dB (2,000 MHz)
- Typical Insertion Loss: 1.6 dB (2,000 MHz)
- Integral ASIC TTL/CMOS Driver
- Plastic, 50 mil Pitch, SOW-24 Lead, Wide Body
- Low DC Power Consumption
- 50 Ohm Nominal Impedance
- Tape and Reel Packaging Available
- Test Boards Available

Description

M/A-COM's SW65-0314 is a GaAs MMIC absorptive SP4T switch with an integral silicon ASIC driver. This device is in a 24-lead plastic package. This switch offers excellent broadband performance and repeatability from DC to 3 GHz, while maintaining low DC power dissipation. The SW65-0314 is ideally suited for wireless infrastructure applications. Also available in a ceramic package with improved performance.

SOW-24



Electrical Specifications: $T_A = 25^\circ\text{C}$

Parameter	Test Conditions	Units	Min	Typical	Max
Insertion Loss	DC - 1.0 GHz	dB	—	1.5	1.7
	DC - 2.0 GHz	dB	—	1.6	1.8
	DC - 3.0 GHz	dB	—	2.0	2.3
Isolation (All arms off)	DC - 1.0 GHz	dB	35	38	—
	DC - 2.0 GHz	dB	30	33	—
	DC - 3.0 GHz	dB	25	27	—
VSWR	DC - 1.0 GHz	—	—	On 1.3:1	Off 1.3:1
	DC - 2.0 GHz	—	—	1.5:1	1.7:1
	DC - 3.0 GHz	—	—	1.7:1	2.2:1
T_{rise} T_{fall} T_{on} T_{off} Transients	10%/90%, 90%/10% ¹	nS	—	15	50
	50% TTL to 90%/10% RF	nS	—	50	150
	In-band (peak to peak)	mV	—	50	150
1 dB Compression	.05 GHz	dBm	—	+20	—
	.5 - 3.0 GHz	dBm	—	+27	—
Input IP ₃	Two tone inputs 0.05 GHz	dBm	—	+35	—
	Up to +5 dBm 0.5 - 3.0 GHz	dBm	—	+46	—
V _{cc}	—	V	+4.5	+5.0	+5.5
V _{EE}	—	V	-8.0	-5.0	-4.75
I _{cc}	V _{cc} = +5.0V	mA	—	0.2	6
I _{EE}	V _{EE} = -5.0V	mA	—	-0.2	-1
Logic "0"	I _{in} = 20 μ A max	V	0.0	—	0.8
Logic "1"	I _{in} = 20 μ A max	V	2.0	—	5.0

1. Decoupling capacitors (.01 μ F) are required on the power supply lines.



Absolute Maximum Ratings ^{2,3}

Parameter	Absolute Maximum
Max. Input Power 0.05 GHz 0.5 - 3.0 GHz	+27 dBm +34 dBm
Bias Voltages V_{EE} V_{CC} Control Voltage ⁴	-8.5V +5.5V -0.5V to V_{CC} +0.5V
Operating Temperature	-40°C to +85°C
Storage Temperature	-65°C to +125°C

2. Operation of this device above any one of these parameters may cause permanent damage.
3. When the RF input is applied to the terminated port, the absolute maximum power is +30 dBm.
4. Standard CMOS TTL interface, latch-up will occur if logic signal is applied prior to power supply.

Pin Configuration

Pin #	Function	Pin #	Function
1	RFc	13	C1
2	GND	14	C3
3	RF4	15	GND
4	GND	16	GND
5	GND	17	GND
6	RF2	18	GND
7	GND	19	RF1
8	V_{EE}	20	GND
9	GND	21	GND
10	V_{CC}	22	RF3
11	C4	23	GND
12	C2	24	GND

Truth Table

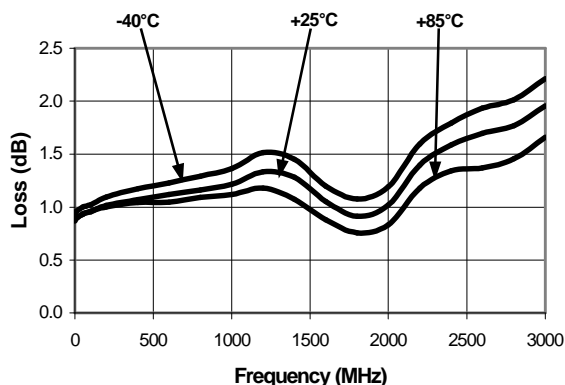
TTL Control Input				RF Common To:			
C1	C2	C3	C4	RF1	RF2	RF3	RF4
1	0	0	0	On	Off	Off	Off
0	1	0	0	Off	On	Off	Off
0	0	1	0	Off	Off	On	Off
0	0	0	1	Off	Off	Off	On

Ordering Information

Part Number	Package
SW65-0314	Bulk Packaging
SW65-0314TR	Tape and Reel (1K Reel)
SW65-0314-TB	Units Mounted on Test Board

Typical Performance Curves

Typical Insertion Loss Variation at Temperature - Jx-J0



Specifications subject to change without notice.

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