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

V 5.00

SW65-0014

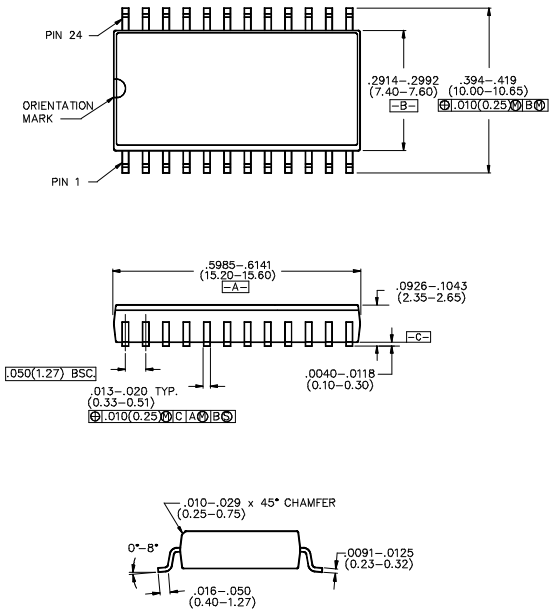
Features

- Typical Isolation: 42 dB (2,000 MHz)
- Typical Insertion Loss: 1.8 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 SW65-0014 is a GaAs MMIC absorptive SPST 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 SW65-0014 is ideally suited for wireless infrastructure applications. Also available in ceramic package with improved performance.

SOW-24



Package outline conforms to JEDEC standard MS-013AD.

Electrical Specifications: T_A = 25°C

Parameter	Test Conditions	Units	Min	Typical	Max
Insertion Loss	DC - 3.0 GHz	dB	—	1.8	2.2
Isolation (All arms off)	DC - 3.0 GHz	dB	35	42	—
VSWR	DC - 3.0 GHz	—	—	**On** 1.6:1 **Off** 2.0:1	2.1:1
T_{rise} T_{fall} T_{on} T_{off} Transients	10%/90%, 90%/10% [1] 50% TTL to 90%/10% RF In-band (peak to peak)	nS nS mV	—- — —	15 50 50	50 150 150
1 dB Compression	.05 GHz .5 - 3.0 GHz	dBm dBm	— —	+20 +27	— —
Input IP_3	Two tone inputs 0.05 GHz Up to +5 dBm 0.5 - 3.0 GHz	dBm dBm	— —	+35 +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	—	—	4
I_{EE}	V_{EE} = -5.0V	mA	—	—	-1
Logic “0”	I_{in} = 20 µA max	V	0.0	—	0.8
Logic “1”	I_{in} = 20 µA max	V	2.0	—	5.0

1. Decoupling capacitors (.01 µF) 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	GND
3	GND	15	GND
4	GND	16	GND
5	GND	17	GND
6	GND	18	GND
7	GND	19	RF1
8	V_{EE}	20	GND
9	GND	21	GND
10	V_{CC}	22	GND
11	GND	23	GND
12	GND	24	GND

Truth Table

TTL Control Input	RF Common To:
C1	RF1
1	On
0	Off

Ordering Information

Part Number	Package
SW65-0014	Bulk Packaging
SW65-0014TR	Tape and Reel (1K Reel)
SW65-0014-TB	Units Mounted on Test Board

- **North America:** Tel. (800) 366-2266
- **Asia/Pacific:** Tel.+81-44-844-8296, Fax +81-44-844-8298
- **Europe:** Tel. +44 (1344) 869 595, Fax+44 (1344) 300 020

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