

Features

- UNII, Hiperlan, and 802.11a Applications
- Low Insertion Loss
- Positive Control Voltages
- Fast Switching Speed
- 4 mm FQFP-N Plastic Surface Mount Package
- Production Release Scheduled for Q2, 2002

Description

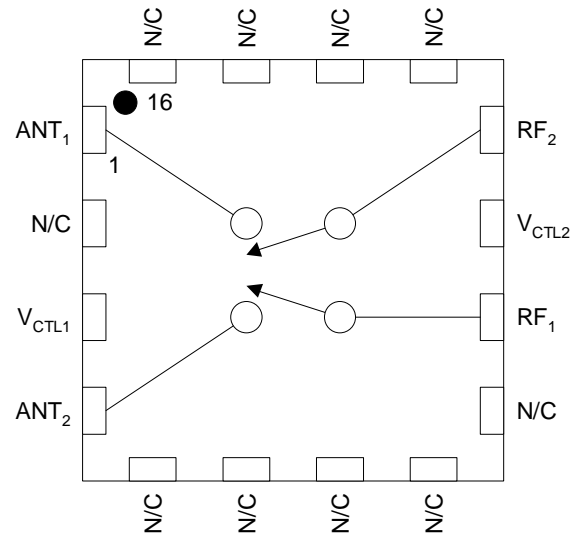
M/A-COM's MASWSM0015 is a high frequency 2 x 2 switch optimized for 802.11a WLAN and fixed wireless access applications. It has low insertion loss, making it an ideal candidate for use as a double antenna T/R switch or as a switch matrix building block. Optimized for use from 4.5 to 6.0 GHz, it requires no off chip components, and is internally DC blocked at the RF inputs.

The MASWSM0015 is fabricated using M/A-COM's P-HEMT switch technology for low insertion loss, low supply voltage, and fast switching speed.

Ordering Information

Part Number	Description
MASWSM0015TR	7 inch, 1000 piece reel
MASWSM0015TR-3000	13 inch, 3000 piece reel
MASWSM0015SMB	Sample Test Board

Functional Schematic



Pin Configuration

Pin	Function	Description
1	ANT ₁	Antenna Port 1
2	N/C	Not Connected
3	V _{CTL1}	Switch Control 1
4	ANT ₂	Antenna Port 2
5	N/C	Not Connected
6	N/C	Not Connected
7	N/C	Not Connected
8	N/C	Not Connected
9	N/C	Not Connected
10	RF ₁	RF Input Port 1
11	V _{CTL2}	Switch Control 2
12	RF ₂	RF Input Port 2
13	N/C	Not Connected
14	N/C	Not Connected
15	N/C	Not Connected
16	N/C	Not Connected
Pad	GND	RF & DC Ground

Specifications subject to change without notice.

- 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

Visit www.macom.com for additional data sheets and product information.

Electrical Specifications: $T_A = 25\text{ }^{\circ}\text{C}$, $Z_0 = 50\text{ }\Omega$ ¹

Parameter	Test Conditions	Units	Min	Typ	Max
Frequency		GHz	4.5		6.0
Insertion Loss		dB		1.2	1.6
RF Input Return Loss		dB		20	
Antenna Return Loss		dB		20	
Isolation		dB	20	25	
P1dB		dBm		31	
Input IP3		dBm		55	
Gate Leakage Current	Either state	μA		10	
Ton, Toff	50% ctl to 90% RF, 50% ctl to 10% RF	ns		190	
Trise, Tfall	10% RF to 90% RF, 90% RF to 10% RF	ns		170	

1. Test frequency is 5.25 GHz, input power is 0 dBm, and supply and control voltages are +3.0 volts unless otherwise specified.

Switch Logic Table^{1,2}

RF1 to	RF2 to	V _{CTL1}	V _{CTL2}
ANT1	ANT2	1	0
ANT2	ANT1	0	1

1. "0" = 0 +/- 0.2 volts
2. "1" = +2.7 to +5 volts

Absolute Maximum Ratings¹

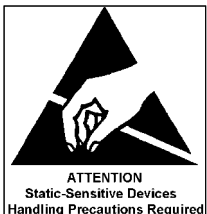
Parameter	Absolute Maximum
Max Input Power	+ 30 dBm
Operating Voltages	+5.5 volts
Operating Temperature	-40 °C to +85 °C
Channel Temperature	+150 °C
Storage Temperature	-40 °C to +150 °C

1. Exceeding any one or combination of these limits may cause permanent damage.

Application Information

Static Sensitivity

Gallium arsenide integrated circuits are ESD sensitive and can be damaged by static electricity. Use proper ESD precautions when handling these devices.



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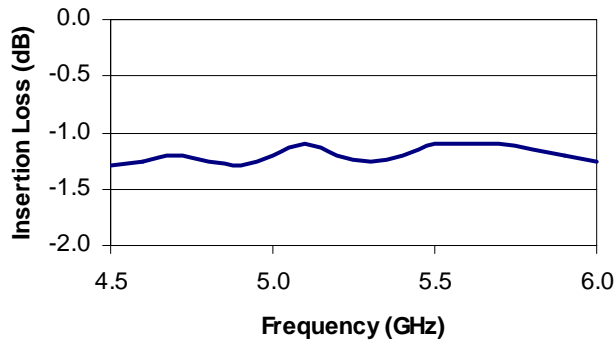
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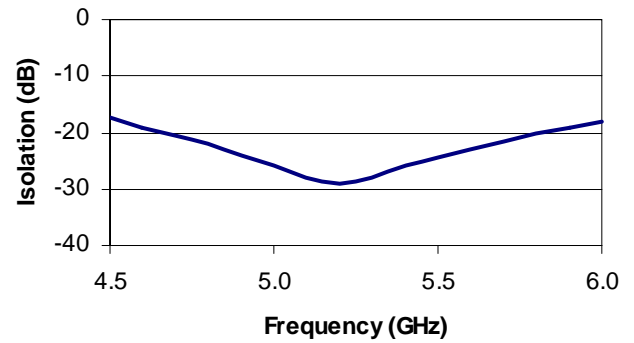
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Typical Performance Curves

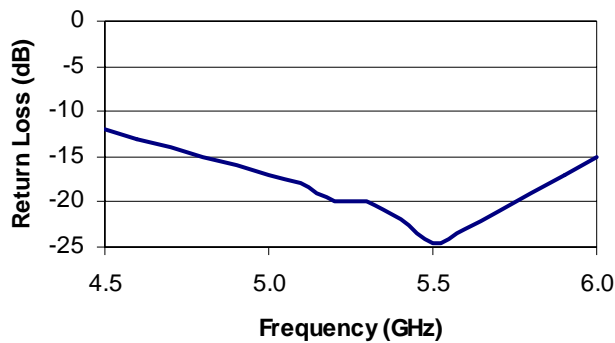
Insertion Loss vs. Frequency



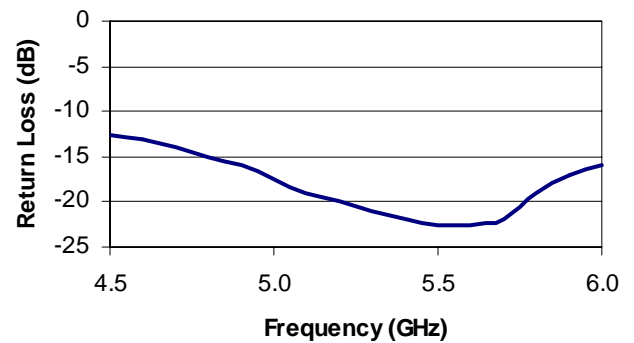
Isolation vs. Frequency



RF Input Return Loss vs. Frequency



Antenna Return Loss vs. Frequency



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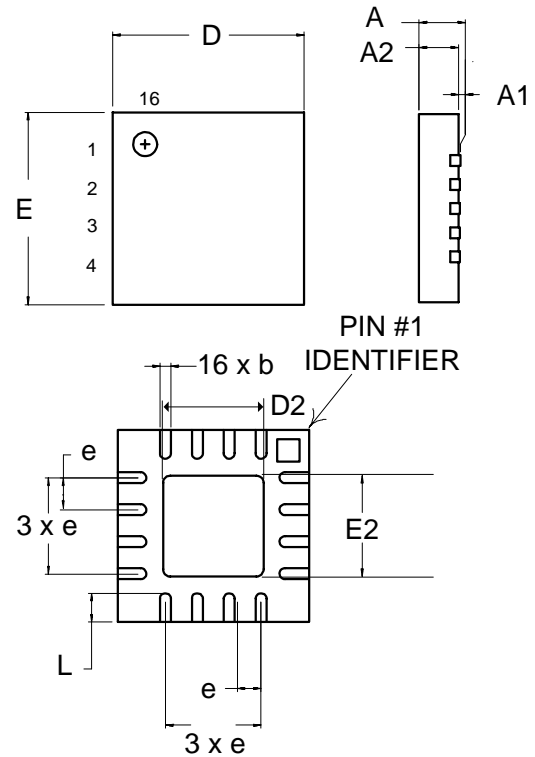
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4 mm, 16 Pin FQFP-N Package

Dimension	Measurement (mm)		
	Min.	Nom.	Max.
A	0.80	0.90	1.00
A1	0	0.02	0.05
A2	0.80	0.88	1.00
b	0.23	0.30	0.38
D		4.00	
D2	2.05	2.15	2.25
e		0.65	
E		4.00	
E2	2.00	2.15	2.25
L	0.40	0.55	0.65

Note: See JEDEC MO-220A VGGC Issue B for additional dimensional and tolerance information.



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