

Features

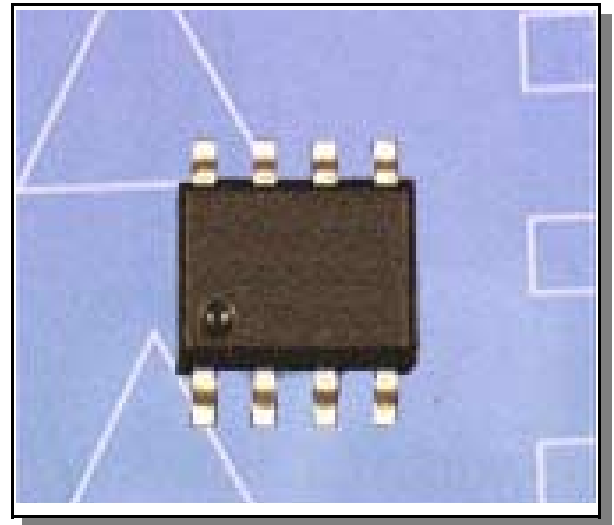
- Terminated RF Output
- High Isolation: 35 dB up to 2 GHz
- Positive Control
- Nanosecond Switching Speed
- CMOS Compatible Logic
- Low Cost SOIC 8 Plastic Package

Description

M/A-COM's SW-394 is a GaAs monolithic SPDT terminated switch in a low cost SOIC 8-lead plastic package. The SW-394 is ideally suited for use where low power consumption and high isolation are required. Typical applications include transmit/receive switching, switch matrices and switched filter banks in systems such as radio and cellular equipment.

The SW-394 is fabricated using a mature 1-micron gate length GaAs MESFET process. The process features full chip passivation for increased performance and reliability.

SOIC-8



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

Parameter	Test Conditions	Frequency	Units	Min	Typ	Max
Insertion Loss		0.5 - 2.0 GHz	dB	—	1.3	1.5
Isolation		0.5 - 1.0 GHz	dB	37	40	—
		1.0 - 2.0 GHz	dB	32	35	—
VSWR		0.5 - 1.5 GHz	Ratio	—	1.6:1	—
1 dB Compression	Input Power, +5V Control/Supply	0.5 GHz	dBm	—	24	—
		0.9 GHz	dBm	—	24	—
		1.5 GHz	dBm	—	25	—
Trise, Tfall	10% to 90% RF, 90% to 10% RF		ns	—	34	—
Ton, Toff	50% Control to 90% RF, 50% Control to 10% RF		ns	—	36	—
Transients	In-Band		mV	—	22	—
Input IP_2	2-Tone, 5 MHz spacing, +10 dBm each	0.5 GHz	dBm	—	67	—
		0.9 GHz	dBm	—	72	—
Input IP_3	2-Tone, 5 MHz spacing, +10 dBm each	0.5 GHz	dBm	—	47	—
		0.9 GHz	dBm	—	47	—
Control Current	—	—	μA	—	10	50

Pin Configuration

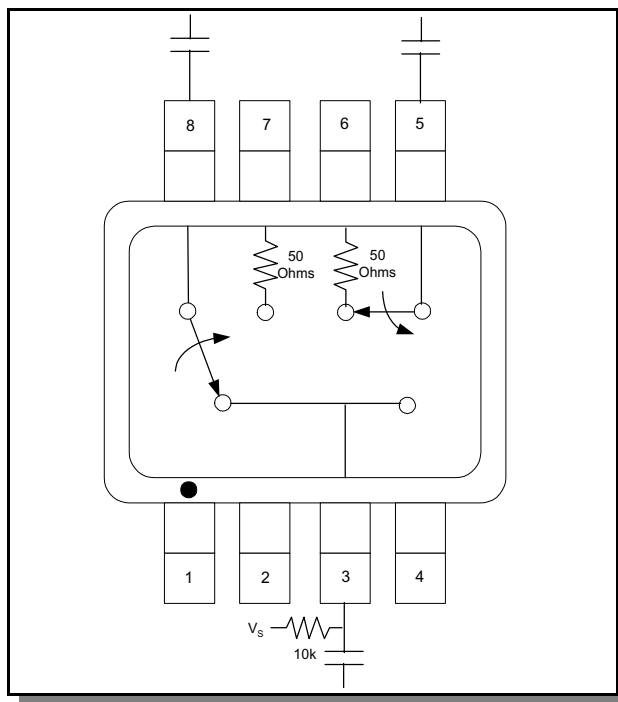
Pin No.	Function	Pin No.	Function
1	A	5	RF1
2	GND	6	GND
3	RFC	7	GND
4	B	8	RF2

Absolute Maximum Ratings ¹

Parameter	Absolute Maximum
Input Power	+34 dBm
Operating Voltage (V_S , V_A , V_B)	+8.5 Volts
Operating Temperature	-40°C to +85°C
Storage Temperature	-65°C to +150°C

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

Functional Schematic



Blocking capacitors are required on all RF ports. V_S can be applied at any RF port using 10K or greater pull-up resistor.

Truth Table

Control Input A	Control Input B	RFC-RF2	RFC-RF1
0	1	Off	On
1	0	On	Off

"0" = 0 ± 0.2 VDC, "1" = $+5 \pm 0.2$ VDC, V_S = $+5 \pm 0.2$ VDC, 50 μ A Max. Current Total

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

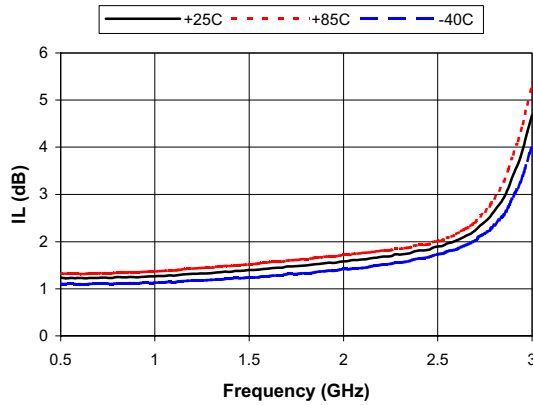
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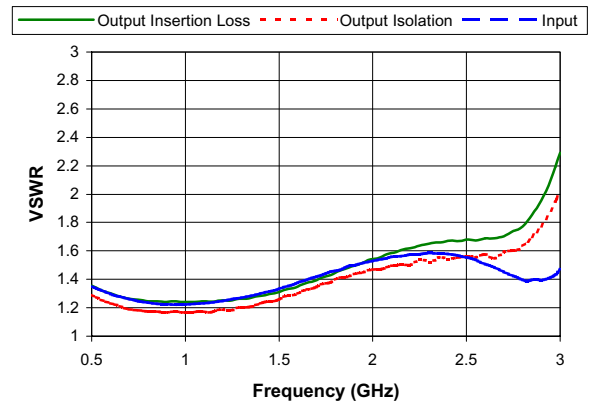
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Typical Performance Curves

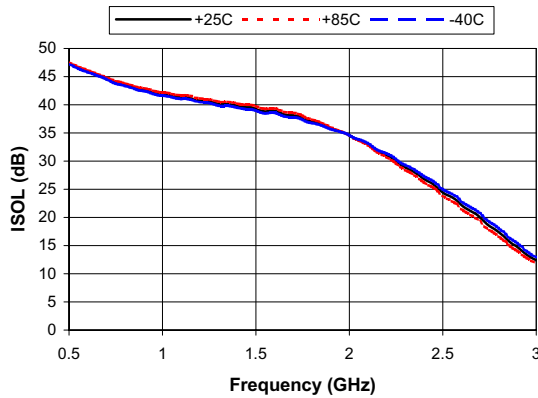
Insertion Loss vs. Frequency



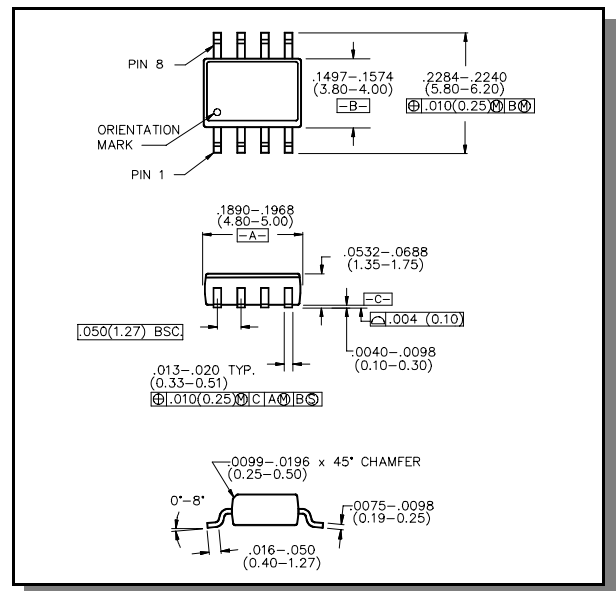
VSWR vs. Frequency



Isolation vs. Frequency



OUTLINE DRAWING



Ordering Information

Part Number	Package
SW-394 PIN	SOIC 8-Lead Plastic Package
SW-394TR	Tape and Reel ³
SW-394SMB	Sample Board

3. Refer to Application Note M513 for reel size information.

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