

# GaAs SPDT Terminated Switch, DC - 2.5 GHz

SW-338

## Features

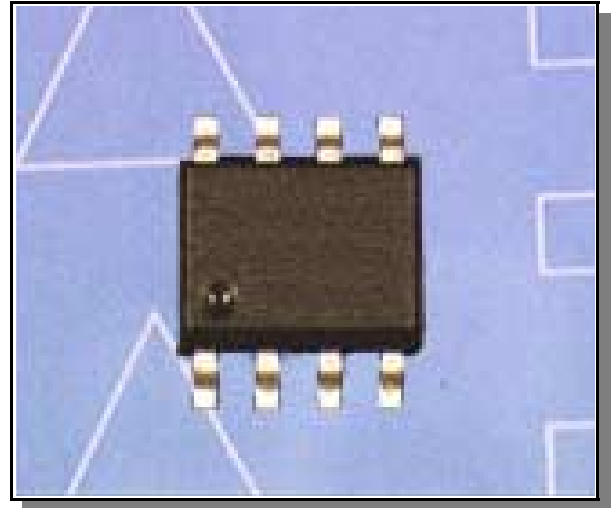
- Very Low Power Consumption: 17  $\mu$ W
- Low Insertion Loss: 0.5 dB
- High Isolation: 33 dB up to 2 GHz
- Very High Intercept Point: 46 dBm IP<sub>3</sub>
- Nanosecond Switching Speed
- Temperature Range: -40°C to +85°C
- Low Cost SOIC8 Plastic Package
- Tape and Reel Packaging Available

## Description

M/A-COM's SW-338 is a GaAs MMIC SPDT terminated switch in a low cost SOIC 8-lead surface mount plastic package. The SW-338 is ideally suited for use where very low power consumption is required. Typical applications include transmit/receive switching, switch matrices, and filter banks in systems such as: radio and cellular equipment, PCM, GPS, fiber optic modules, and other battery powered radio equipment.

The SW-338 is fabricated with monolithic GaAs MMICs using a mature 1-micron process. The process features full chip passivation for increased performance and reliability.

## SO-8



## Electrical Specifications<sup>1</sup>: T<sub>A</sub> = 25°C

Parameter	Test Conditions	Frequency	Units	Min	Typ	Max
Insertion Loss	—	DC - 0.1 GHz	dB	—	0.4	0.6
		DC - 0.5 GHz	dB	—	0.5	0.7
		DC - 1.0 GHz	dB	—	0.5	0.7
		DC - 2.0 GHz	dB	—	0.7	0.9
Isolation	—	DC - 0.1 GHz	dB	50	53	—
		DC - 0.5 GHz	dB	43	46	—
		DC - 1.0 GHz	dB	36	39	—
		DC - 2.0 GHz	dB	30	33	—
VSWR	On/Off	DC - 2.0 GHz	Ratio	—	1.2:1	—
Trise, Tfall	10% to 90% RF, 90% to 10% RF	—	nS	—	30	—
Ton, Toff	50% Control to 90% RF, 50% Control to 10% RF	—	nS	—	10	—
Transients	In-Band	—	mV	—	25	—
1 dB Compression Point	Input Power	0.05 GHz	dBm	—	25	—
		0.5 - 2.0 GHz	dBm	—	30	—
2nd Order Intercept	Measured Relative to Input Power (for two-tone input power up to +5 dBm)	0.05 GHz	dBm	—	60	—
		0.5 - 2.0 GHz	dBm	—	65	—
3rd Order Intercept	Measured Relative to Input Power (for two-tone input power up to +5 dBm)	0.05 GHz	dBm	—	40	—
		0.5 - 2.0 GHz	dBm	—	46	—

1. All measurements with 0, -5 control voltages at 1 GHz in a 50 Ohm system, unless otherwise specified.

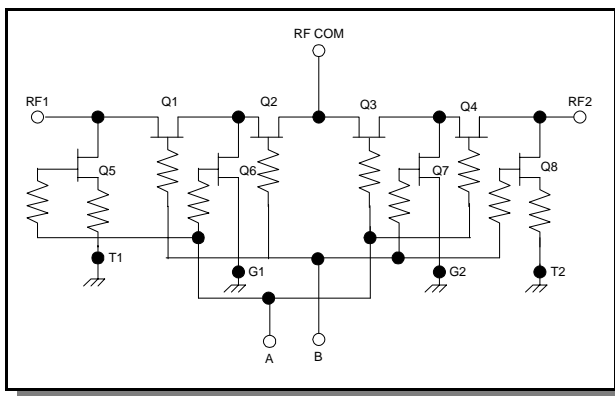
## Pin Configuration

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

## Truth Table

Control Inputs		Condition of Switch RF Common to Each RF Port	
A	B	RF1	RF2
1	0	ON	OFF
0	1	OFF	ON

## Electrical Schematic

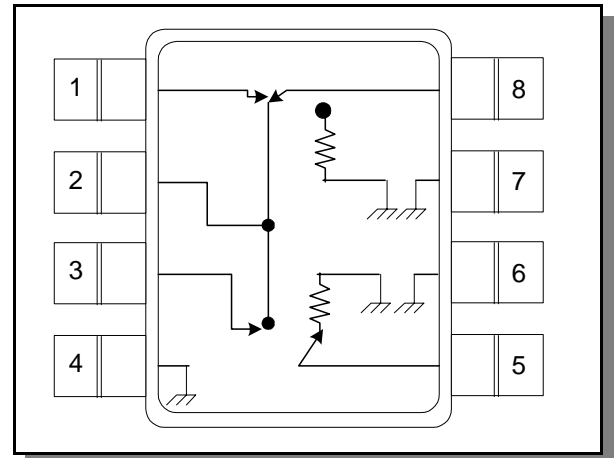


## Absolute Maximum Ratings<sup>2</sup>

Parameter	Absolute Maximum
Max Input Power 0.05 GHz 0.5 - 2.0 GHz	+27 dBm +34 dBm
Control Voltage	+5V, -8.5V
Operating Temperature	-40°C to +85°C
Storage Temperature	-65°C to +150°C

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

## Functional Schematic



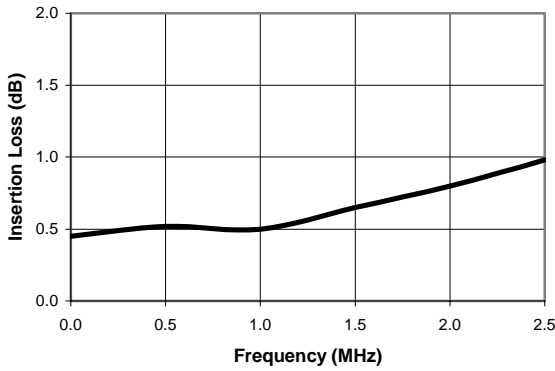
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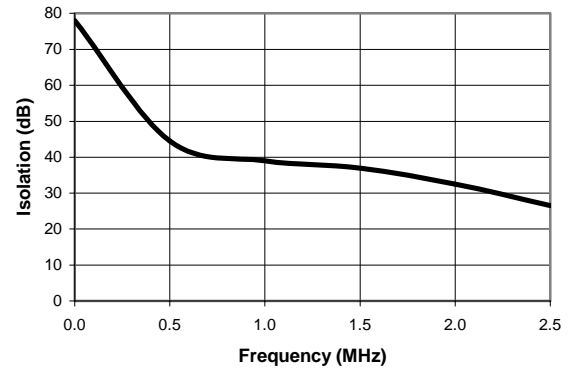
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Typical Performance Curves @ +25°C

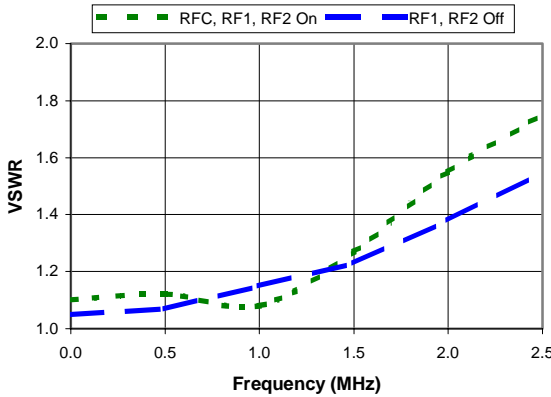
Insertion Loss vs. Frequency



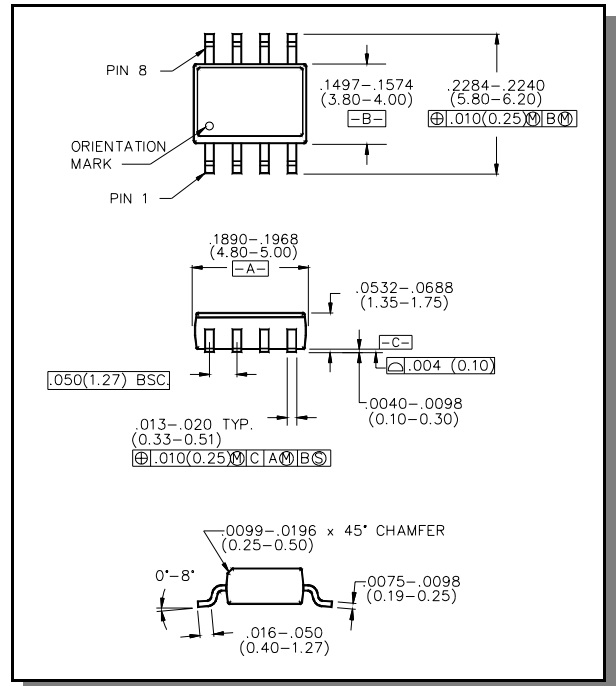
Isolation vs. Frequency



VSWR vs. Frequency



SO-8



Ordering Information

Part Number	Package
SW-338 PIN	SOIC 8 Lead
SW-338TR	Forward Tape and Reel
SW-338RTR	Reverse Tape and Reel

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