

# MACOM SPDT Switch with Integral CMOS Driver 800 - 2000 MHz

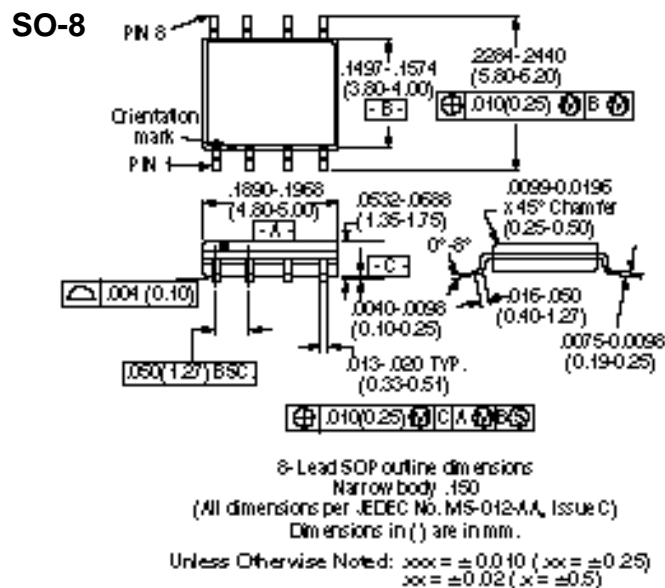
## Features

- Low Cost Plastic SOIC-8 Package<sup>1</sup>
- Integral TTL/CMOS Compatible Driver
- Matched Input and Output
- Low Distortion: > 40 dBm IP<sub>3</sub> @ 900 MHz  
and > 62 dBm IP<sub>2</sub> @ 900 MHz
- Low DC Current: < 1.5 mA Typical Per Supply

## Description

The SW-335 is a GaAs MMIC matched SPDT with an on-chip TTL/CMOS driver in a low-cost, SOIC 8-lead plastic package. The SW-335 is ideally suited for use in TTL/CMOS environment applications where low power consumption and small size are required. Typical applications include switch matrices, filter banks and general switching applications, in systems such as cellular, PCN/PCS, GPS and 900 MHz ISM band applications.

The SW-335 is fabricated with a monolithic GaAs MMIC using a mature 1-micron process. The process features full passivation for increased performance and reliability.



## Ordering Information

Part Number	Package
SW-335 PIN	SOIC 8-Lead Plastic
SW-335TR	Forward Tape & Reel*
SW-335RTR	Reverse Tape & Reel*

\* If specific reel size is required, consult factory for part number assignment.

## Electrical Specifications, T<sub>A</sub> = +25°C, V<sub>DD</sub> = 5.0 V<sub>GG</sub> = -5.0 V

Parameter	Test Conditions	Units	Min.	Typ.	Max.
Insertion Loss	800-2000 MHz	dB		0.9	1.1
Isolation	800-1000 MHz	dB	35	45	
	1000-1500 MHz	dB	35	38	
	1500-2000 MHz	dB	30	32	
VSWR	800-1000 MHz			1.2:1	1.3:1
	1000-2000 MHz			1.2:1	1.3:1
Trise, Tfall Ton, Toff Transient	10%-90% RF, 90% - 10% RF	nS		75	
	50% Control to 90% RF, 50% Control to 10% RF	nS		200	
	In-Band	mV		20	
1 dB Compression	900 MHz	dBm		29	
Input IP <sub>3</sub>	2-Tone, 10 dBm (13 dBm total)	900 MHz	dBm	40	45
Input IP <sub>2</sub>	2-Tone, 10 dBm (13 dBm total)	900 MHz	dBm	62	70
Current	V <sub>DD</sub> @ 5.0 V	mA		1.1	1.5
	V <sub>GG</sub> @ -5.0 V	mA		-0.8	-1.5
	V <sub>CTL</sub> @ 0 V	µA		-5	-10
	V <sub>CTL</sub> @ 5 V	µA		10	20

1. Available in tape and reel packaging.  
2. All measurements are in a 50 Ω system.  
Specifications subject to change without notice.

3. Replaces SW-329.  
4. DC blocks required on RF ports.

■ North America: Tel. (800) 366-2266, Fax (800) 618-8883  
■ Asia/Pacific: Tel. +81-44-844-8296, Fax +81-44-844-8298  
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**Absolute Maximum Ratings<sup>1</sup>**

Parameter	Absolute Maximum
RF Input Power	+31 dBm
Max. Control Voltages	
V <sub>DD</sub>	+6 VDC
V <sub>GG</sub>	-6 VDC
V <sub>CTL</sub> Maximum	+6 VDC
V <sub>CTL</sub> Minimum	-1 VDC
Operating Temperature	-40°C to +85°C
Storage Temperature	-65°C to +150°C

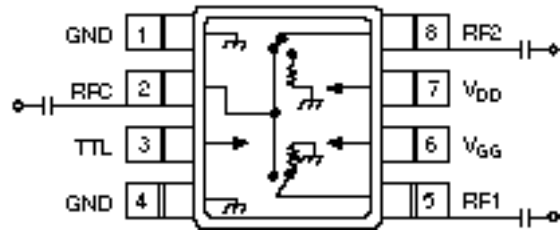
1.Operation of this device outside these limits may cause permanent damage.

**Truth Table**

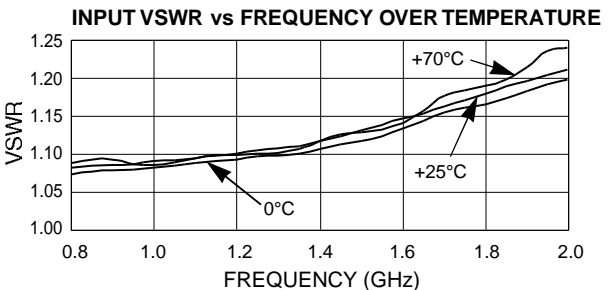
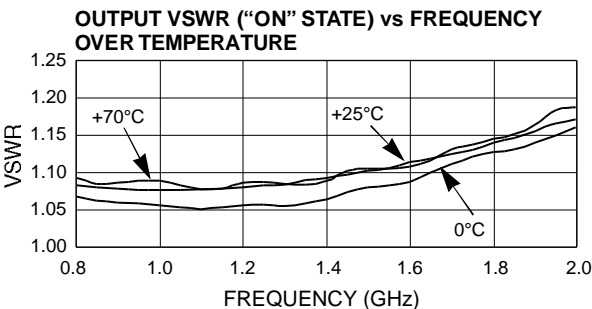
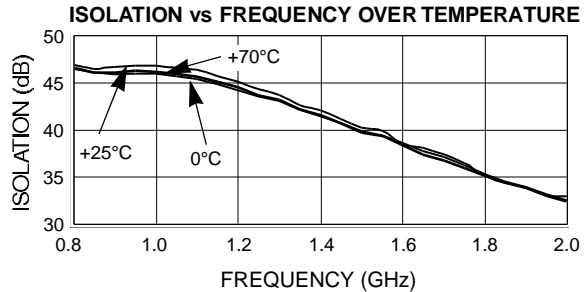
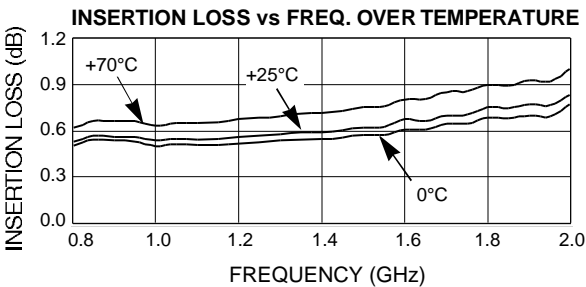
Control Input		
TTL/CMOS	RFC-RF1	RFC-RF2
1	OFF	ON
0	ON	OFF

Logic 0 = 0 to 1 V                      V<sub>DD</sub> = 5 ±0.5 V @ < 1.5 mA typ.  
 Logic 1 = 3.5 to 5 V, 10 µA typ.      V<sub>GG</sub> = -5 ±0.25 V @ < 1.5 mA

**Functional Schematic**



**Typical Performance**



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