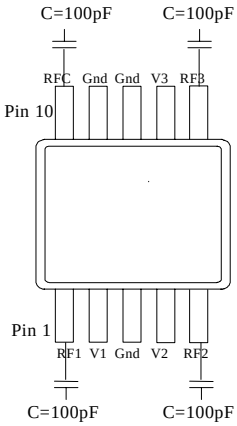
4 Watt SP3T GaAs Switch
500 - 2000 MHz

Features

- P_{1dB} Greater than 36 dBm
- Low Insertion Loss: < 1.1 dB @ 2 GHz
- Positive or Negative 3 to 5 V Control
- Low Power Consumption: < 200 µA
- Low Cost Plastic MSOP-10 Package

MSOP-10



Description

M/A-COM's SW-449 is a GaAs MMIC SP3T switch in a low cost MSOP-10 surface mount plastic package. The SW-449 is ideally suited for applications where very low current consumption (<200µA), low intermodulation products, moderate power handling and low cost are required. Typical applications include switching for mobile handsets, radio cellular equipment, wireless LANs and other RF control circuits.

The SW-449 is fabricated using a 0.5 micron gate length GaAs pHEMT process. The process features full passivation for increased performance and reliability.

Ordering Information

Part Number	Package
SW-449	MSOP 10-Lead Plastic
SW-449TR	Tape and Reel

Electrical Specifications: T_A = +25°C[1], Voltage = 3.0V

Parameter	Test Conditions		Units	Min.	Typ.	Max.
Insertion Loss	0.5 - 1.0 GHz		dB		0.6	
	1.0 - 2.0 GHz		dB		1.1	
Isolation	0.5 - 1.0 GHz		dB		23	
	1.0 - 2.0 GHz		dB		17	
Return Loss	0.5 - 1.0 GHz		dB		25	
	1.0 - 2.0 GHz		dB		16	
0.1 dB Compression	Input Power, +3V Control/Supply	0.5 - 1.0 GHz	dBm		35	
		1.0 - 2.0 GHz	dBm		33	
1.0 dB Compression	Input Power, -3V Control/Supply	0.5 - 1.0 GHz	dBm		38	
		1.0 - 2.0 GHz	dBm		36	

V1.00

Absolute Maximum Ratings[1]

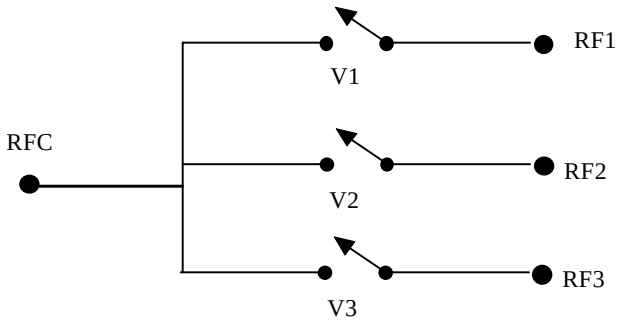
Parameter	Absolute Maximum
Input Power	+38 dBm
Operating Voltage	+8.5 Volts
Operating Temperature	-40°C to +85°C
Storage Temperature	-65°C to +150°C

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

Pin Configuration

PIN No.	Function	Description
1	RF1	RF Port 1
2	V1	Control 1
3	GND	Ground
4	V2	Control 2
5	RF2	RF Port 2
6	RF3	RF Port 3
7	V3	Control 3
8	GND	Ground
9	GND	Ground
10	RFC	RF Common Port

Functional Schematic[1]



1. External blocking capacitors are required on all RF ports for positive control voltages. 100 pF recommended.

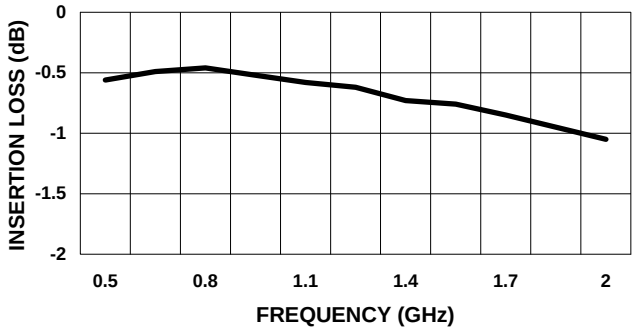
Truth Table

Mode (Control)	Control V1	Control V2	Control V3	Thru Port
Positive[1,2]	1	0	0	Port 1
	0	1	0	Port 2
	0	0	1	Port 3
Negative[3]	1	0	0	Port 1
	0	1	0	Port 2
	0	0	1	Port 3

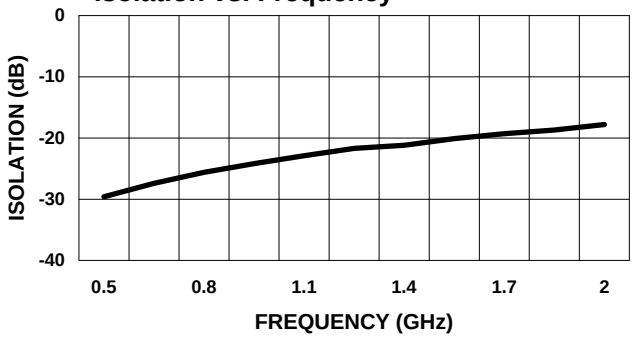
1. External DC blocking capacitors are required on all RF ports.
2. "1" = +3 to +8V, "0" = 0V.
3. "1" = 0 ±0.2V, "0" = -3 to -8V.

Typical Performance Curves

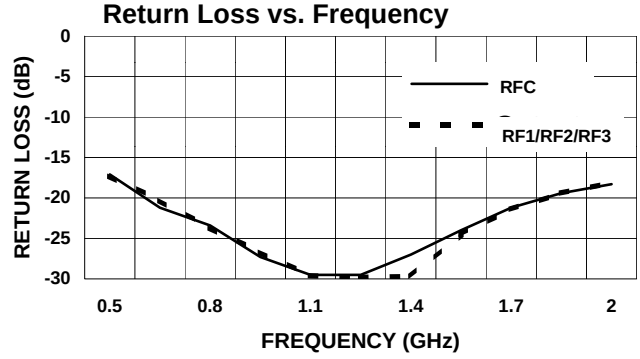
Insertion Loss vs. Frequency



Isolation vs. Frequency



Return Loss vs. Frequency



M/A-COM Division of AMP Incorporated ■ North America: Tel. (800) 366-2266, Fax (800) 618-8883 ■ Asia/Pacific: Tel.+85 2 2111 8088, Fax +85 2 2111 8087
■ Europe: Tel. +44 (1344) 869 595, Fax+44 (1344) 300 020

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