

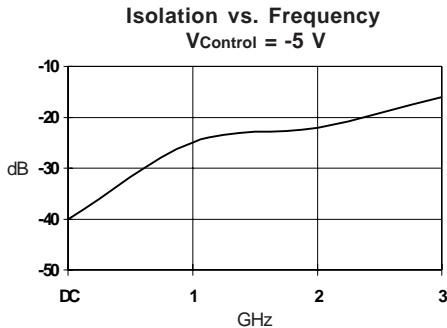
Product Description

Stanford Microdevices' SSW-308 is a high performance Gallium Arsenide Field Effect Transistor MMIC switch housed in a low-cost surface-mountable small outline plastic package.

This single-pole, double-throw, reflective switch consumes less than 40uA and operates with 0V/-5V control voltages. This switch can be used in both analog and digital wireless communication systems including AMPS, PCS, DECT, and GSM.

Typical output power at 1dB compression is +28dBm. 1dB output power over 1 watt may be achieved with higher control voltages.

The die is fabricated using 0.5 micron FET process with gold metallization and silicon nitride passivation to achieve excellent performance and reliability.



Electrical Specifications at Ta = 25C

Symbol	Parameters: Test Conditions: Z ₀ = 50 ohms		Units	Min.	Typ.	Max.
Ins	Insertion Loss	f = 0.05-1.0GHz	dB		0.6	0.9
		f = 1.00-2.0GHz	dB		0.9	1.3
		f = 1.00-3.0GHz	dB		1.2	
Isol	Isolation	f = 0.05-1.0GHz	dB	20	25	
		f = 1.00-2.0GHz	dB	17	22	
		f = 1.00-3.0GHz	dB		16	
VSWRon	Input & Output VSWR (low loss state)	f = 0.05-1.0GHz		-	1.2:1	
		f = 1.00-2.0GHz		-	1.4:1	
		f = 1.00-3.0GHz		-	1.7:1	
P _{1dB}	1dB Compression at 0.5-2.0GHz	V = -8V	dBm		+31	
		V = -5V	dBm		+28	
IP ₃	Third Order Intercept	V = -8V	dBm		+50	
		V = -5V	dBm		+47	
I _D	Device Current		uA		35	
IsW	Switching Speed 50% control to 10%/90% RF		nsec		3	

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SSW-308

DC-3 GHz Low Cost GaAs MMIC SPDT Switch



Product Features

- Fast Switching Speed : 3nsec
- High Linearity : +47dBm IP3
- Ultra Low DC Power Consumption
- Low Insertion Loss : 0.7dB at 1GHz
- Low Cost Small Outline Plastic Package

Applications

- Digital Cellular
- Spread Spectrum

SSW-308 DC-3 GHz GaAs MMIC SPDT Switch

Absolute Maximum Ratings

RF Input Power	2W Max>500MHz
Control Voltage	-10V
Operating Temperature	-45Cto +85C
Storage Temperature	-65C to +150C
Thermal Resistance	20 deg C/W

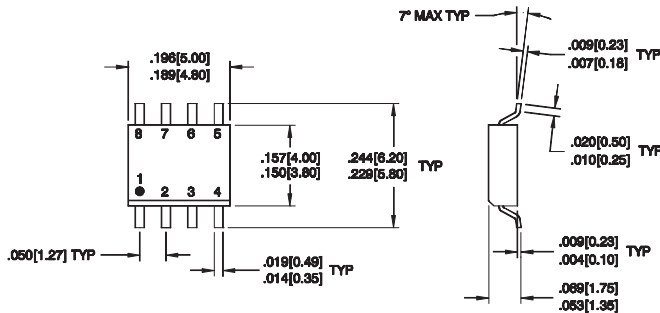
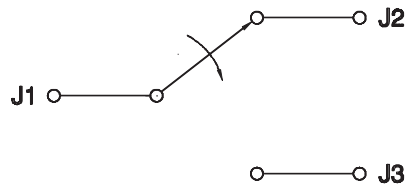
Truth Table

V1	V2	J1-J2	J1-J3
0	-5	Low Loss	Isolation
-5	0	Isolation	Low Loss

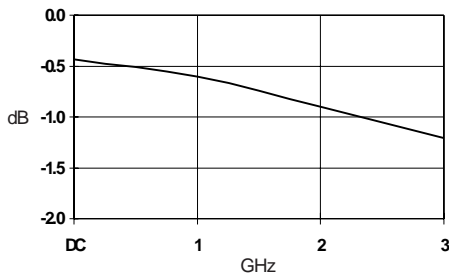
Pin Out

Pin	Function
1	V1
2	J1
3	GND
4	V2
5	J3
6	GND
7	GND
8	J2

Switch Schematic



Insertion Loss vs. Frequency
V_{Control} = -5 V



On Port VSWR vs. Frequency
V_{Control} = -5 V

