SSW-208

DC-4 GHz, High Isolation GaAs MMIC SPDT Switch

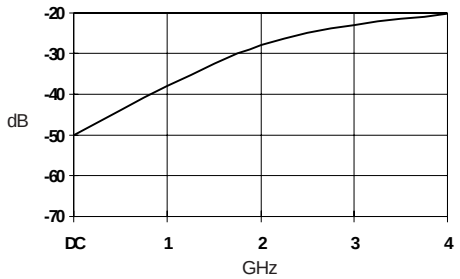
Product Description

Stanford Microdevices' SSW-208 is a high perfomance Gallium Arsenide Field Effect Transistor MMIC switch housed in a low-cost surface-mountable small outline plastic package.

This single-pole, double-throw, non-reflective switch consumes less than 50uA and operates at -5V and 0V for control bias. Its high isolation and low insertion loss makes it ideal for T/R switching in analog and digital wireless communication systems.

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

Isolation vs. Frequency
$V_{Control}$ = -5 V



Product Features

- **High Isolation: 22dB at 2GHz**
- **Low DC Power Consumption**
- **Low Insertion Loss: 0.9dB at 2GHz**
- **Broad Performance - True DC Operation**
- **Low Cost Small Outline Plastic Package**

Applications

- **Analog/Digital Wireless System**
- **Spread Spectrum**
- **GPS**

Electrical Specifications at Ta = 25C

Symbol	Parameters: Test Conditions		Units	Min.	Typ.	Max.
Ins	Insertion Loss	f = 0.05-1.0GHz f = 1.00-2.0GHz f = 2.00-4.0GHz	dB dB dB		0.8 0.9 1.4	1.3 1.4
Isol	Isolation	f = 0.05-1.0GHz f = 1.00-2.0GHz f = 2.00-4.0GHz	dB dB dB	25 20	40 30 25	
VSWRon	Input & Output VSWR (on or low loss state)	f = 0.05-1.0GHz f = 1.00-2.0GHz f = 2.00-4.0GHz			1.15 1.25 1.50	
P1dB	Output Power at 1dB Compression f = 0.5-4.0GHz	V = -5V V = -8V	dBm dBm		+26 +29	
TOIP	Third Order Intercept Point f = 0.5-4.0GHz	V = -5V V = -8V	dBm dBm		+45 +48	
Id	Device Current		uA		40	
Isw	Switching Speed 50% control to 10%/90%RF		nsec		3	

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SSW-208 DC-6 GHz Absorptive SPDT GaAs Switch

Absolute Maximum Ratings

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

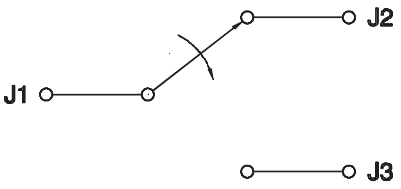
Truth Table

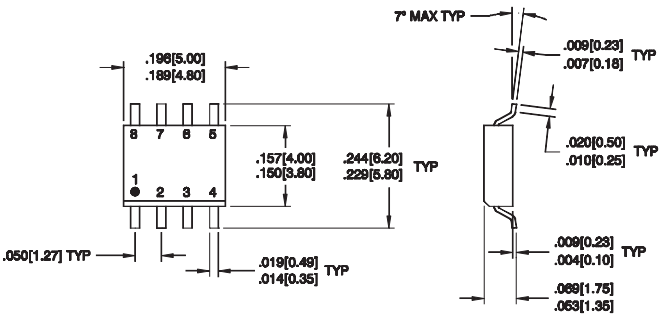
V1	V2	J1-J2	J1-J3
0	-5	Low Loss	Isolation
-5	0	Isolation	Low Loss

Pin Out

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

Switch Schematic

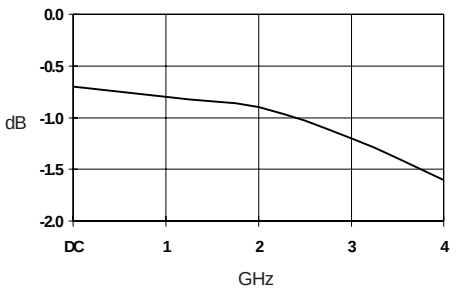




Pin numbers shown for reference only, not marked on part

Insertion Loss vs. Frequency

$V_{Control}$ = -5 V



On Port Input/Output VSWR vs. Frequency

$V_{Control}$ = -5 V