Stanford Microdevices

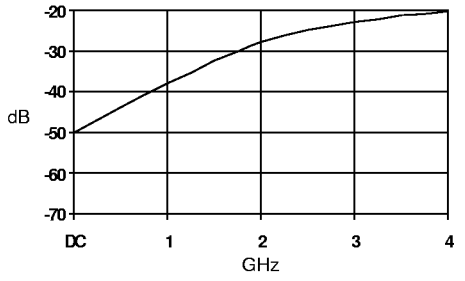
Product Description

Stanford Microdevices' SSW-207 is a high perfomance Gallium Arsenide Field Effect Transistor MMIC switch housed in a low-cost surface-mountable miniature 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.

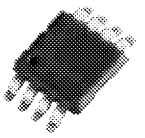
The die is fabricated using 0.5 micron FET process with gold metallization and silicon nitride passivation to achieve excellent performance and reliability.

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



SSW-207

DC-4 GHz, High Isolation GaAs MMIC SPDT Switch



Product Features

- **High Isolation: 30dB at 2GHz**
- **Low DC Power Consumption**
- **Low Insertion Loss: 0.8dB 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 0.8 1.4	1.0 1.1
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	

Switches

522 Almanor Ave., Sunnyvale, CA 94086 Phone: (800) SMI-MMIC http://www.stanfordmicro.com

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SSW-207 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

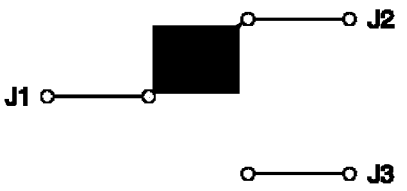
Truth Table

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

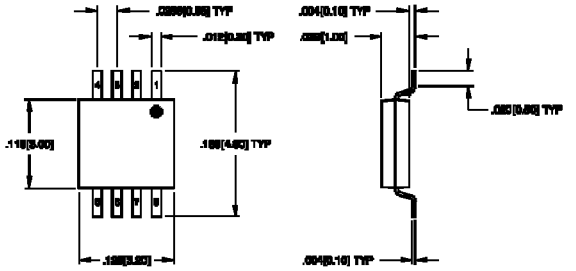
Pin Out

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

Switch Schematic



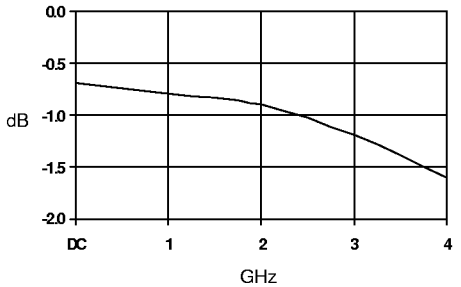
Switches



Dimensions are in inches [mm]

Insertion Loss vs. Frequency

VControl = -5 V



On Port Input/Output VSWR vs. Frequency

VControl = -5 V