SSW-524

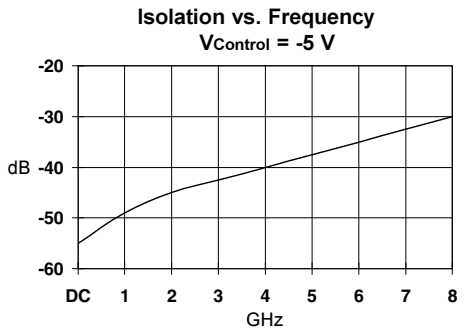
DC-8 GHz GaAs MMIC SPST Switch

Product Description

Stanford Microdevices' SSW-524 is a high performance Gallium Arsenide Field Effect Transistor MMIC switch housed in a low-cost surface-mountable 8-pin ceramic package.

This single-pole, single-throw, non-reflective switch consumes less than 50uA and operates at -5V and 0V for control bias. P1db at -5V is +25dBm typical and can be increased to +28dBm with -8V supply.

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



Product Features

- **High Isolation : 40dB at 2GHz, 30dB at 8GHz**
- **Low DC Power Consumption**
- **Low Insertion Loss : 0.9dB at 2GHz**
- **Non-Reflective (50 Ohm termination) when Isolated**
- **Low Cost Surface-Mountable Ceramic Package**

Applications

- **Analog/Digital Wireless Communications**
- **AMPS, PCS, DEC and GSM**

Electrical Specifications at Ta = 25C

Symbol	Parameters & Test Conditions: Zo = 50 ohms, $V_{Control}$ = -5V, Ta = 25°C		Units	Min.	Typ.	Max.
Ins	Insertion Loss	f = 0.05-2.0 GHz f = 2.0-6.0 GHz f = 6.0-8.0 GHz	dB dB dB		0.9 1.5 1.8	1.3 1.9
Isol	Isolation	f = 0.05-2.0 GHz f = 2.0-6.0 GHz f = 6.0-8.0 GHz	dB dB dB	35 25	45 35 30	
VSWR on	Input & Output VSWR (on or low loss state)	f = 0.05-2.0 GHz f = 2.0-6.0 GHz f = 6.0-8.0 GHz			1.3:1 1.5:1 1.7:1	
VSWR off	Input & Output VSWR (off or isolated state)	f = 0.05-2.0 GHz f = 2.0-6.0 GHz f = 6.0-8.0 GHz			1.3:1 1.5:1 1.7:1	
P1dB	Output Power at 1dB Compression at 2 GHz	V = -5V V = -8V	dBm dBm		+25 +28	
TOIP	Third Order Intercept Point	V = -5V V = -8V	dBm dBm		+44 +47	
Id	Device Current		uA		40	
Isw	Switching Speed 10% to 90% or 90% to 10%		nsec		10	

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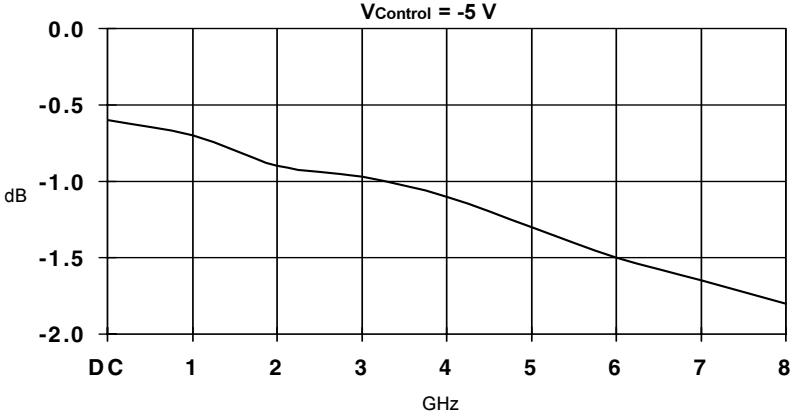
Absolute Maximum Ratings

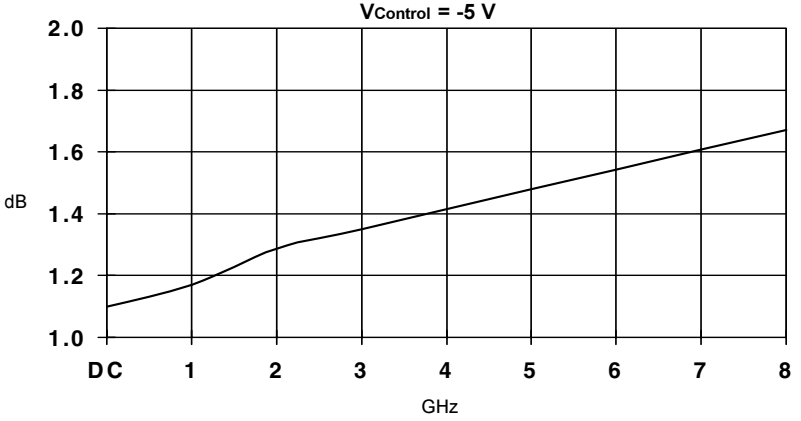
Operation of this device above any one of these parameters may cause permanent damage.

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

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



On Port Input/Output VSWR vs. Frequency
$V_{Control}$ = -5 V



SSW-524 DC-8.0 GHz GaAs MMIC Switches

Caution ESD Sensitive:
Appropriate precautions in handling, packaging and testing devices must be observed.

Part Number Ordering Information

Part Number	Devices Per Reel	Reel Size
SSW-524	500	7"

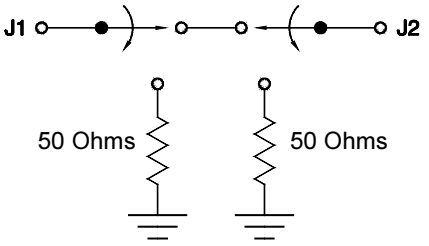
Truth Table

V1	V2	J1-J2
0	$V_{control}$	Low Loss
$V_{control}$	0	Isolation

$V_{Control}$ = -5 to -8

Switch Schematic

Switch shown in "Low Loss" state (V1=0, V2=$V_{control}$)



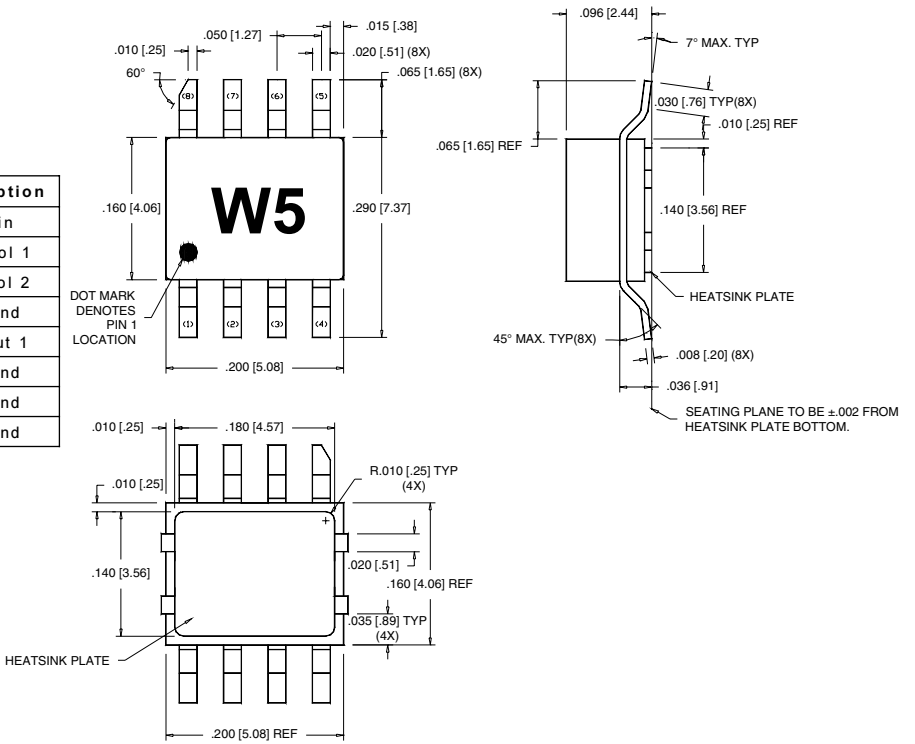
Part Symbolization

The part will be symbolized with a "W5" designator on the top surface of the package.

Pin Out

Pin	Function	Description
1	J1	RF in
2	V1	Control 1
3	V2	Control 2
4	GND	Ground
5	J2	RF out 1
6	GND	Ground
7	GND	Ground
8	GND	Ground

Package Dimensions



DIMENSIONS ARE IN INCHES [MM]