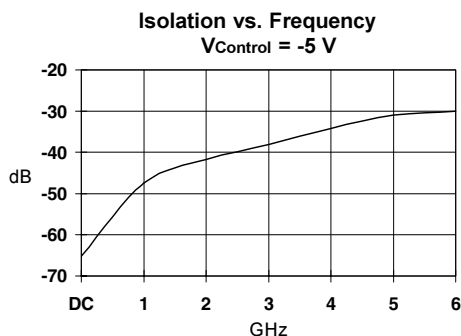


Product Description

Stanford Microdevices' SSW-224 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, double-throw, 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.



SSW-224

DC-6 GHz High Isolation SPDT GaAs MMIC Switch



Product Features

- High Isolation : 40dB at 2GHz, 30dB at 6GHz
- Low DC Power Consumption
- Broadband Performance - True DC Operation
- Low Cost Surface-Mountable Ceramic Package

Applications

- Analog/Digital Wireless System
- Spread Spectrum
- GPS

Electrical Specifications at $T_a = 25^\circ\text{C}$

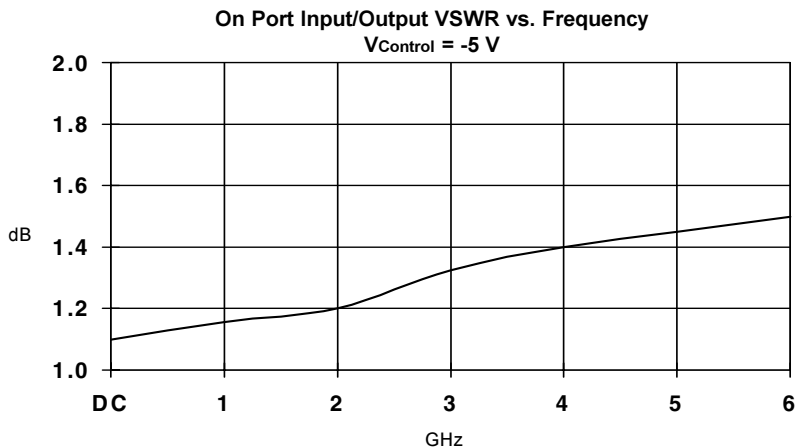
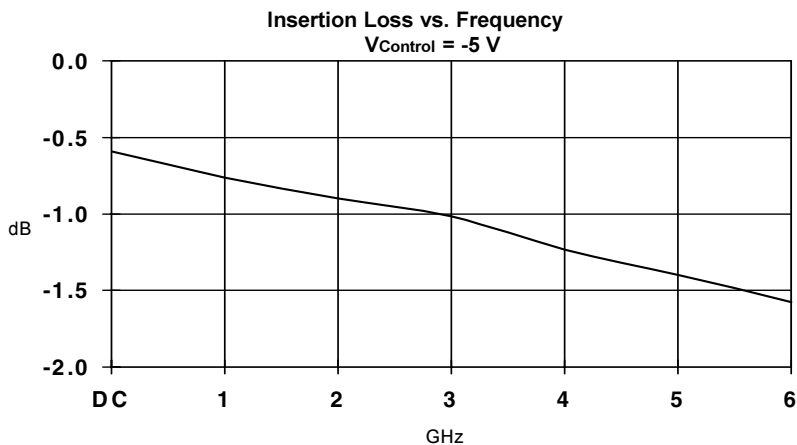
Symbol	Parameters: Test Conditions: $Z_0=50\Omega$		Units	Min.	Typ.	Max.
Ins	Insertion Loss	$f = 0.05\text{-}2.0\text{GHz}$ $f = 2.00\text{-}4.0\text{GHz}$ $f = 4.05\text{-}6.0\text{GHz}$	dB dB dB		0.7 1.1 1.5	1.1 1.5
Isol	Isolation	$f = 0.05\text{-}2.0\text{GHz}$ $f = 2.00\text{-}4.0\text{GHz}$ $f = 4.00\text{-}6.0\text{GHz}$	dB dB dB	37 30 27	47 40 35	
VSWR on	Input & Output VSWR (on or low loss state)	$f = 0.05\text{-}2.0\text{GHz}$ $f = 2.00\text{-}4.0\text{GHz}$ $f = 4.00\text{-}6.0\text{GHz}$			1.15 1.25 1.50	
P1dB	Output Power at 1dB Compression $f = 0.5\text{-}6.0\text{GHz}$	$V = -5\text{V}$ $V = -8\text{V}$	dBm dBm		+26 +29	
TOIP	Third Order Intercept Point $f = 0.5\text{-}6.0\text{GHz}$	$V = -5\text{V}$ $V = -8\text{V}$	dBm dBm		+45 +48	
I_d	Device Current		μA		40	
IsW	Switching Speed 50% control to 10%/90%RF		nsec		3	

SSW-224 DC-6.0 GHz GaAs MMIC Switches

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

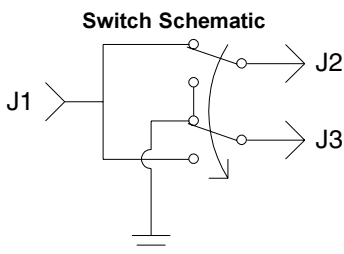


SSW-224 DC-6.0 GHz GaAs MMIC Switches



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-224	500	7"

Truth Table

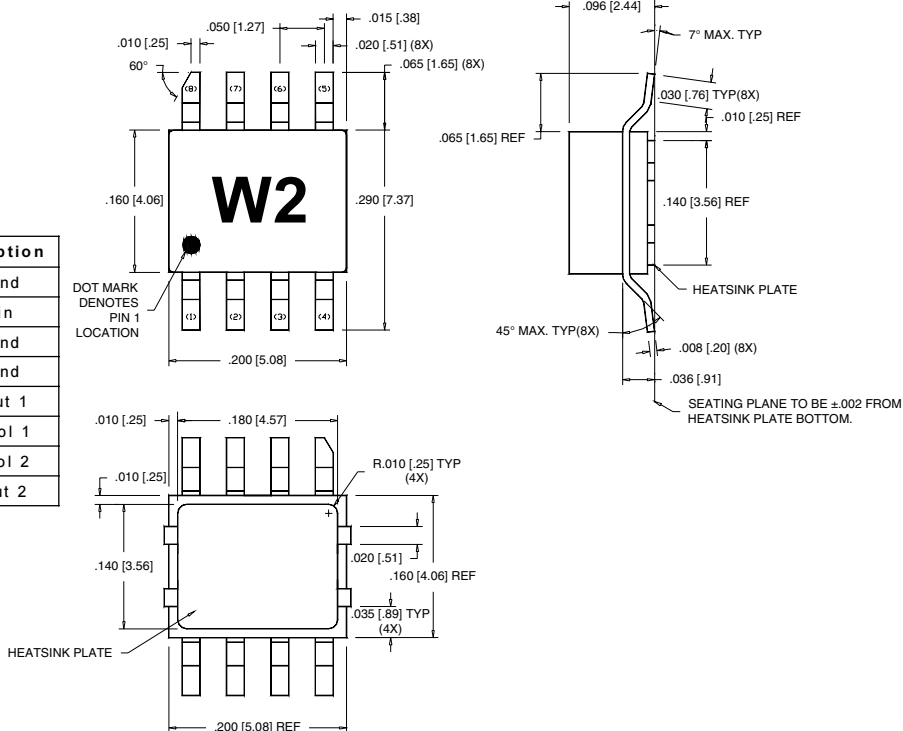
V1	V2	J1-J2	J1-J3
0	-5	Low Loss	Isolation
-5	0	Isolation	Low Loss

Part Symbolization

The part will be symbolized with a “W2” designator on the top surface of the package.

Package Dimensions

Pin	Function	Description
1	GND	Ground
2	J1	RF in
3	GND	Ground
4	GND	Ground
5	J2	RF out 1
6	V1	Control 1
7	V2	Control 2
8	J3	RF out 2



DIMENSIONS ARE IN INCHES [MM]