

#### Device Features

- Typical Isolation = 43.0 dB @ 2GHz
- Typical Insertion Loss = 0.6 dB @ 1GHz
- MSL 1, MSOP 8, Green / RoHS2 compliant
- Commercial, Industrial, Military wireless system, RFID



#### Product Description

BeRex's SPDT(Wide Band Single Pole Double Throw) Switch BSW841 is designed for Cellular & GSM band with low Insertion Loss and Isolation. This chip is fully passivated for enhanced performance and reliability and packaged in RoHS2-compliant with MSOP8 surface mount package.

It must be used with back side ground soldering.

#### Typical Performance

Parameter	Frequency	Min	Typical	Max	Unit	Remark
Insertion Loss	DC ~ 1 GHz		0.6		MHz	
	DC ~ 2 GHz		0.7			
	DC ~ 3 GHz		0.8			
	DC ~ 4 GHz		0.9			
Isolation	DC ~ 1 GHz		50.1/51.5		dB	RF1/RF2
	DC ~ 2 GHz		43.5/45.0			
	DC ~ 3 GHz		33.0/34.0			
	DC ~ 4 GHz		27.0/27.5			
Return Loss / On State	DC ~ 1 GHz		26.0		dB	
	DC ~ 2 GHz		21.0			
	DC ~ 3 GHz		23.5			
	DC ~ 4 GHz		16.0			
Return Loss / Off State	0.5 ~ 4 GHz		17.0		dB	
Input P1 dB	DC ~ 1 GHz		24.0		dBm	
	DC ~ 2 GHz		23.0			
	DC ~ 3 GHz		22.0			
	DC ~ 4 GHz		22.0			
Input IP3	DC ~ 1 GHz		47.0		dBm	Two-Tone Input Power_5dBm/tone
	DC ~ 2 GHz		48.0			
	DC ~ 3 GHz		47.0			
	DC ~ 4 GHz		46.0			
Switching Speed	DC ~ 4 GHz		40		ns	$t_{RISE}, t_{FALL}$ (10/90%RF) $t_{ON}, t_{OFF}$ (50%CTL to 10/90%RF)
	DC ~ 4 GHz		60			

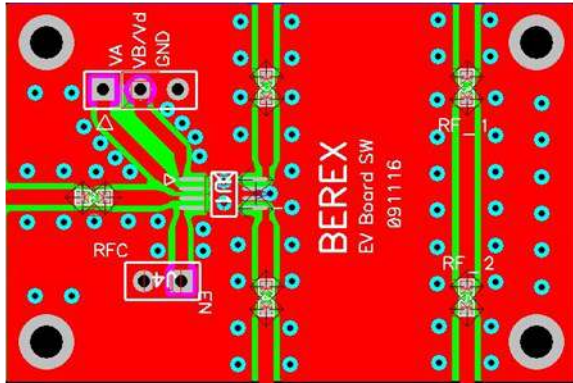
Device performance \_ measured on BeRex E/B at 25°C, 50ohm system, Vctl=0/+5Vdc, DC Blocks \_ required each port.

#### Absolute Maximum Ratings

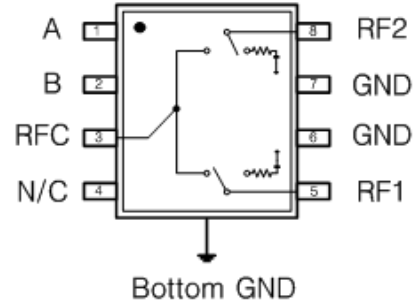
Parameter	Rating
Input Power	1W(CW)dBm
Storage Temperature	-55 to +155°C
Operating Temperature	-40 to +85°C

Operation of this device above any of these parameters may result in permanent damage.

**Evaluation Board Drawing**



**Function Block Diagram**

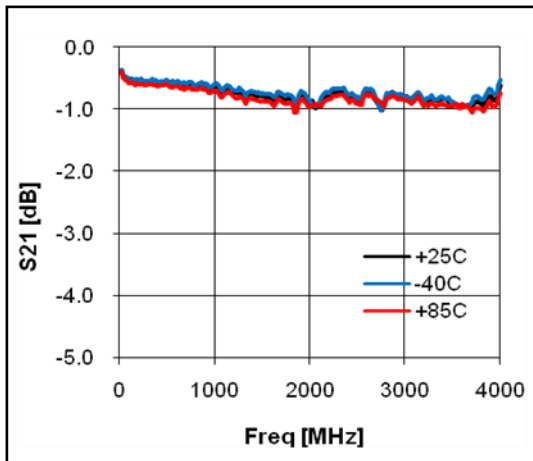


Pins 6, 7, Bottom Plate must be DC and RF grounded.

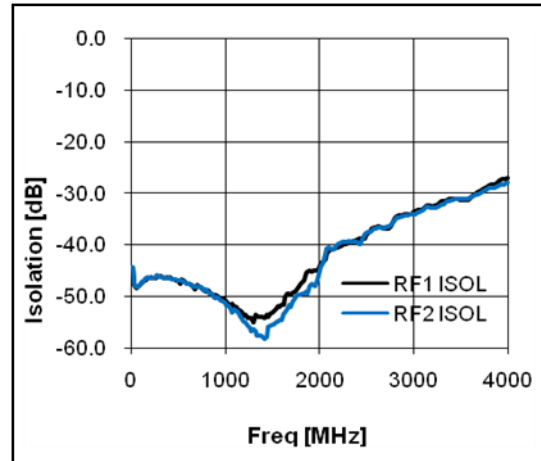
### Typical Test Data

(Vctl=0/+5Vdc, T=25°C)

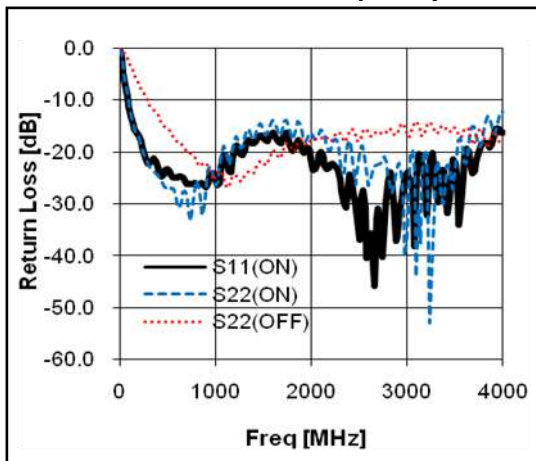
**Insertion Loss vs. Frequency**



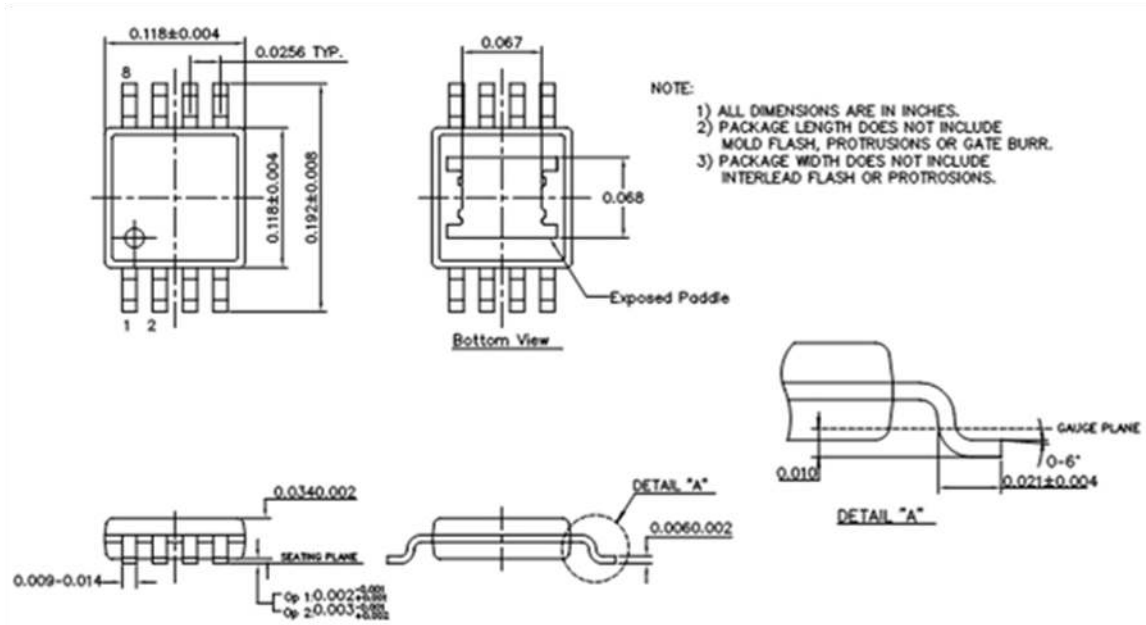
**Isolation vs. Frequency**



**Return Loss vs. Frequency**



### Package Outline Drawing

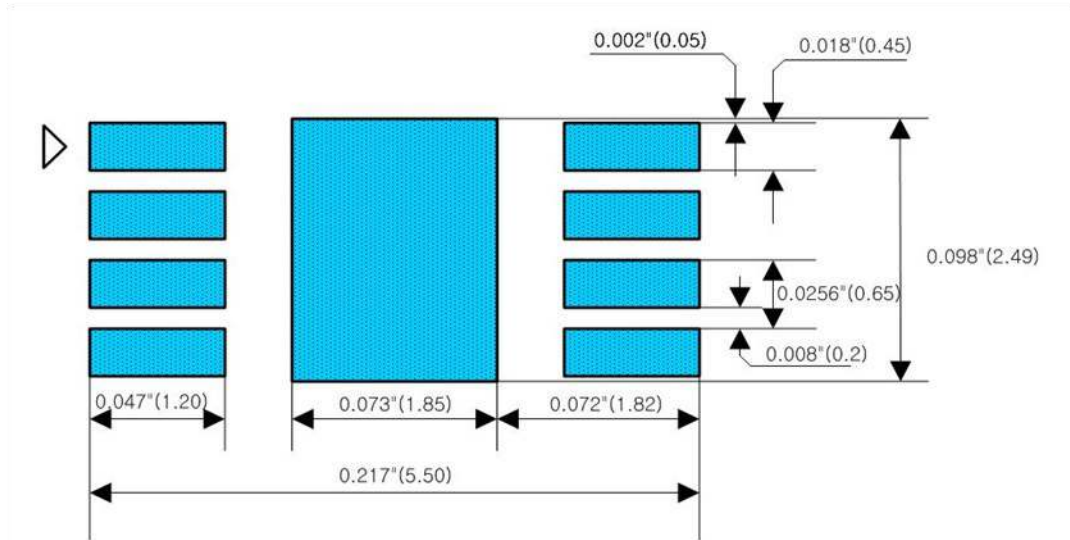


### Truth Table

Control Voltage		Signal Path State	
A (Vdc)	B (Vdc)	RFC to RF1	RFC to RF2
0	+5	ON	OFF
+5	0	OFF	ON

## Suggested PCB Land Pattern and PAD Layout

### PCB Land Pattern



Note : 1. Connection to Bottom Ground with multiple via holes.

2. Via holes \_ as many as possible.
3. All Dimensions \_ millimeters.
4. PCB lay out \_ on BeRex website.

### Package Marking

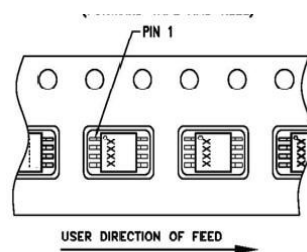


YY = Year, WW = Working Week,  
XX = Wafer No.

### Tape & Reel

MSOP8

Packaging information:



Tape Width (mm): 12  
Reel Size (inches): 7  
Device Cavity Pitch (mm): 8  
Devices Per Reel: 1000EA

**Lead plating finish****100% Tin Matte finish**

(All BeRex products undergoes a 1 hour, 150 degree C, Anneal bake to eliminate thin whisker growth concerns.)

**MSL / ESD Rating**

<b>ESD Rating:</b>	Class 1C
<b>Value:</b>	<b>Passes &lt;2000V</b>
<b>Test:</b>	Human Body Model (HBM)
<b>Standard:</b>	JEDEC Standard JESD22-A114
<b>MSL Rating:</b>	<b>Level 1 at +260°C convection reflow</b>
<b>Standard:</b>	JEDEC Standard J-STD-020



Proper ESD procedures should be followed when handling this device.

**RoHS Compliance**

This part is compliant with Restrictions on the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) Directive 2011/65/EU as amended by Directive 2015/863/EU.

This product also is compliant with a concentration of the Substances of Very High Concern (SVHC) candidate list which are contained in a quantity of less than 0.1%(w/w) in each components of a product and/or its packaging placed on the European Community market by the BeRex and Suppliers.

**NATO CAGE code:**

2	N	9	6	F
---	---	---	---	---