

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			

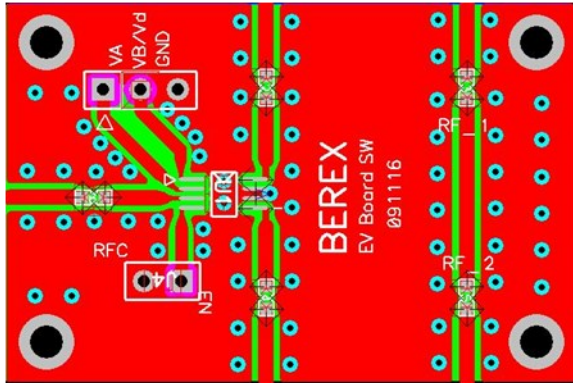
Device performance _ measured on BeRex E/B at 25°C, 50ohm system, Vctl=0/+5Vdc, DC Blocks _ required each port.

Absolute Maximum Ratings

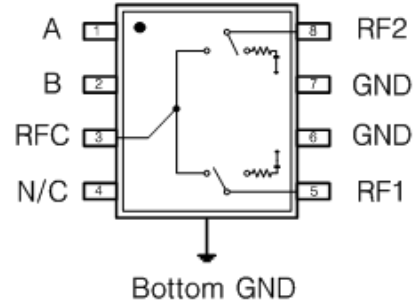
Parameter	Rating
Input Power	1W(CW)dBm
Storage Temperature	-55 to +155°C
Operating Temperature	-40 to +85°C

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

Evaluation Board Drawing



Function Block Diagram

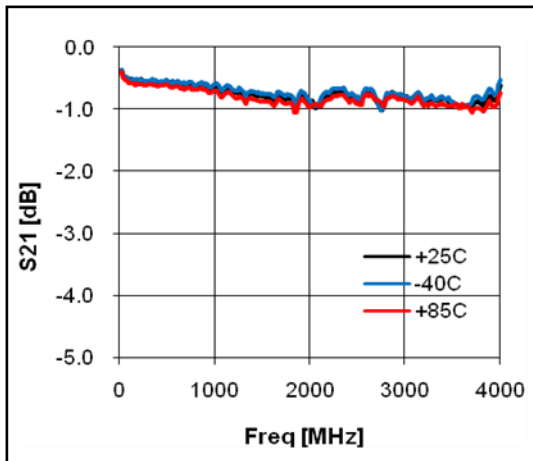


Pins 6, 7, Bottom Plate must be DC and RF grounded.

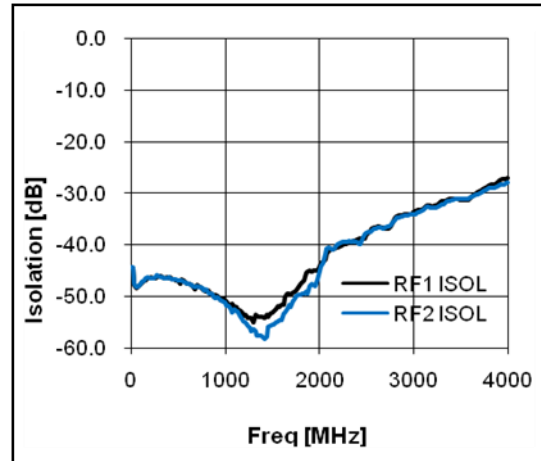
Typical Test Data

(Vctl=0/+5Vdc, T=25°C)

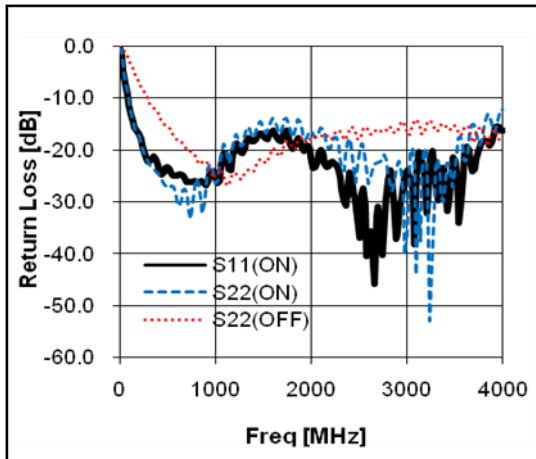
Insertion Loss vs. Frequency



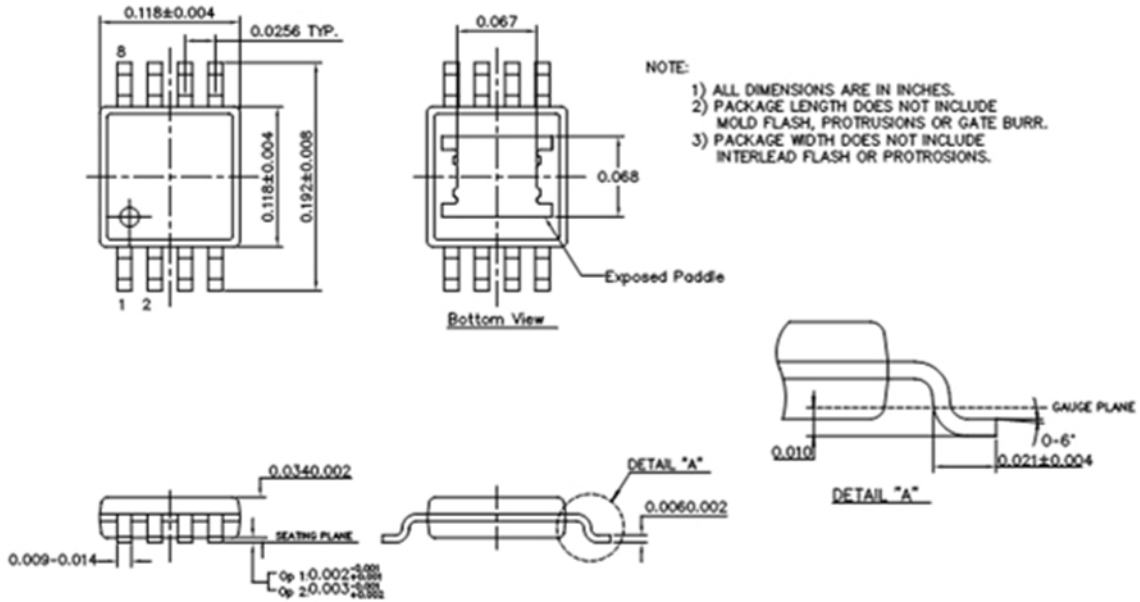
Isolation vs. Frequency



Return Loss vs. Frequency



Package Outline Drawing

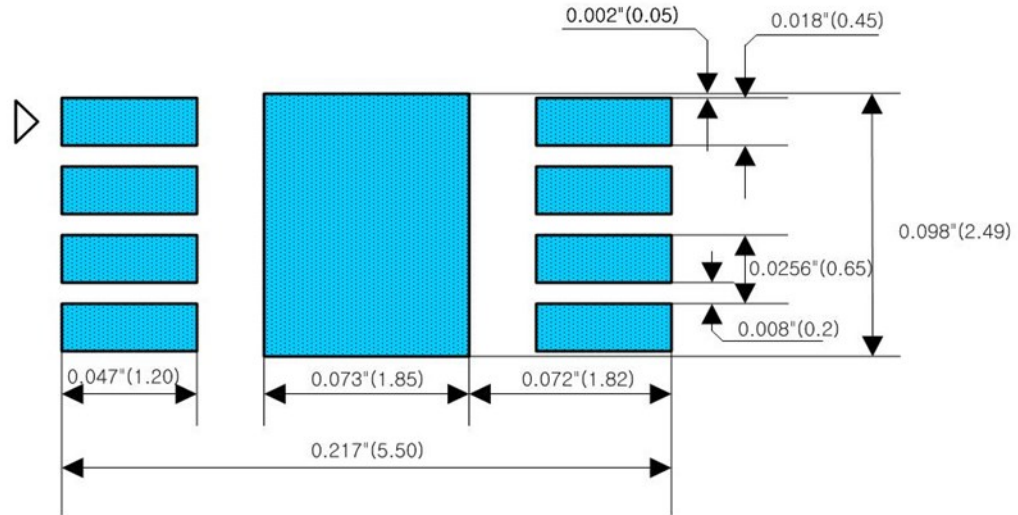


Truth Table

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

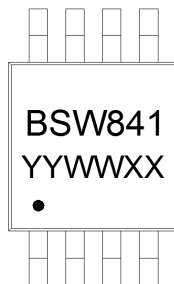
PCB Land Pattern



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



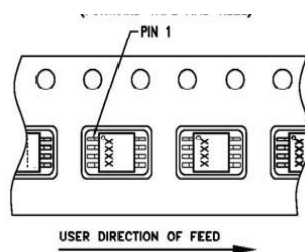
YY = Year, WW = Working Week,
XX = Wafer No.

Pin 1

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

ESD Rating:	Class 1C
Value:	Passes <2000V
Test:	Human Body Model (HBM)
Standard:	JEDEC Standard JESD22-A114
MSL Rating:	Level 1 at +260°C convection reflow
Standard:	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
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