BSW841

SPDT Switch

DC~4GHz Wide Band Single Pole Double Throw Switch

Device Features

- Typical Isolation = 43.0 dB @ 2GHz
- Typical Insertion Loss = 0.6 dB @ 1GHz
- MSL 1, MSOP 8, Lead-free / Green / RoHS 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 RoHS-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 DC ~ 2 GHz DC ~ 3 GHz DC ~ 4 GHz		0.6 0.7 0.8 0.9		MHz	
Isolation	DC ~ 1 GHz DC ~ 2 GHz DC ~ 3 GHz DC ~ 4 GHz		50.1/51.5 43.5/45.0 33.0/34.0 27.0/27.5		dB	RF1/RF2
Return Loss / On State	DC ~ 1 GHz DC ~ 2 GHz DC ~ 3 GHz DC ~ 4 GHz		26.0 21.0 23.5 16.0		dB	
Return Loss / Off State	0.5 ~ 4 GHz		17.0		dB	
Input P1 dB	DC ~ 1 GHz DC ~ 2 GHz DC ~ 3 GHz DC ~ 4 GHz		24.0 23.0 22.0 22.0		dBm	
Input IP3	DC ~ 1 GHz DC ~ 2 GHz DC ~ 3 GHz DC ~ 4 GHz		47.0 48.0 47.0 46.0		dBm	Two-Tone Input Power_5dBm/tone
Switching Speed	DC ~ 4 GHz DC ~ 4 GHz		40 60		ns	tRISE, tFALL (10/90%RF) tON, tOFF(50%CTL to 10/90%RF)

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.

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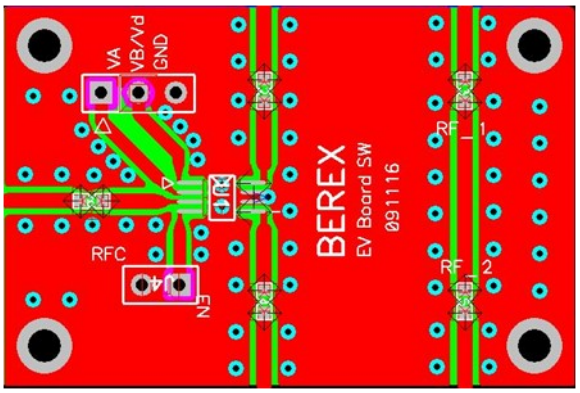
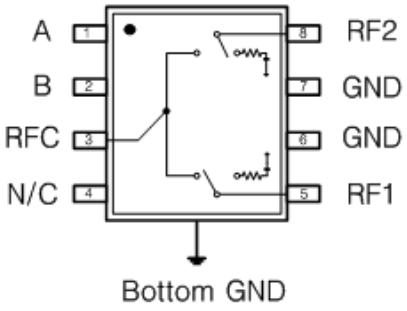
Evaluation Board Drawing



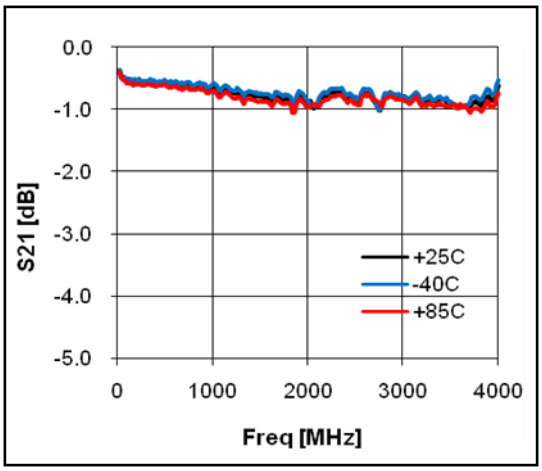
Function Block Diagram



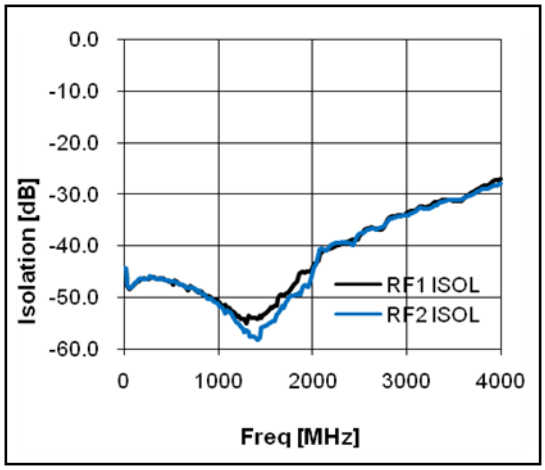
Pins 6 , 7, Bottom Plate must be DC and RF grounded.

Typical Test Data

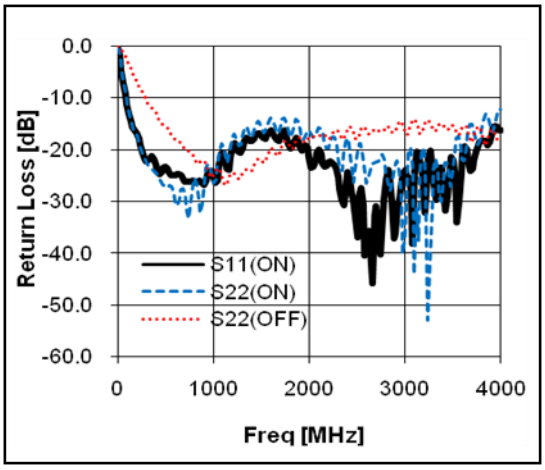
Insertion Loss vs. Frequency



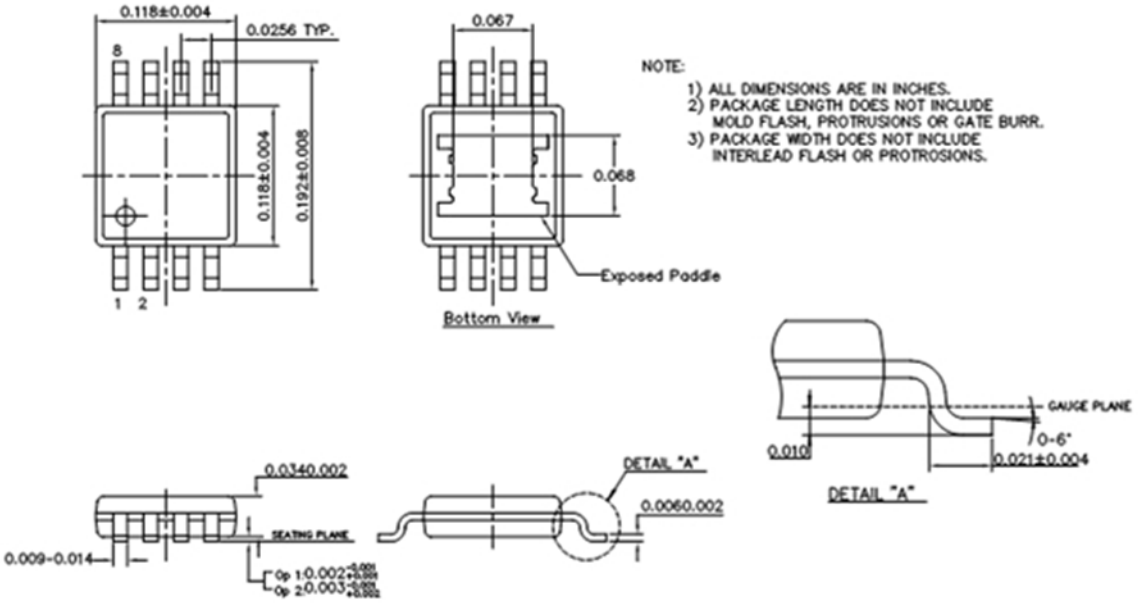
Isolation vs. Frequency



Return Loss vs. Frequency



Package Outline Drawing

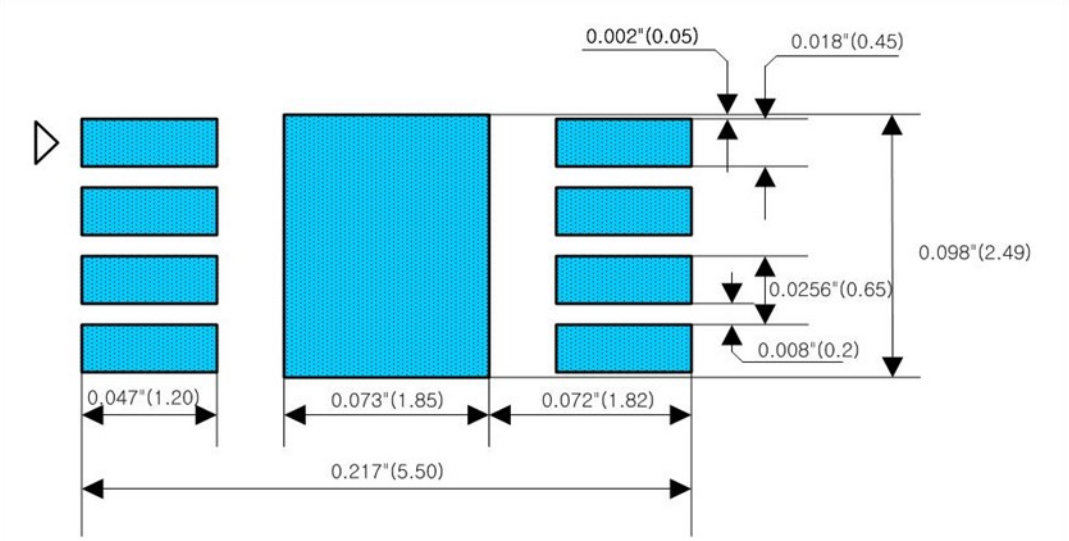


Truth Table

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



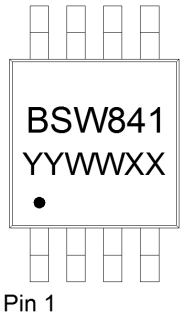
Note : 1. Connection to Bottom Ground with multiple via holes.

2. Via holes _ as many as possible.

3. All Dimensions _ millimeters.

4. PCB lay out _ on BeRex website.

Package Marking

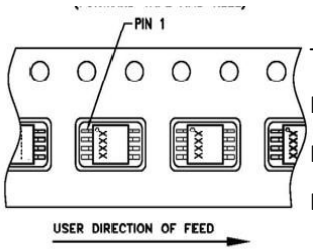


YY = Year, WW = Working Week,
XX = Wafer No.

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

ESD Rating:	Class 1C
Value:	**Passes <2000V**
Test:	Human Body Model (HBM)
Standard:	JEDEC Standard JESD22-A114B

MSL Rating:	**Level 1 at +265°C convection reflow**
Standard:	JEDEC Standard J-STD-020

Proper ESD procedures should be followed when handling this device.

NATO CAGE code:

2	**N**	**9**	**6**	**F**