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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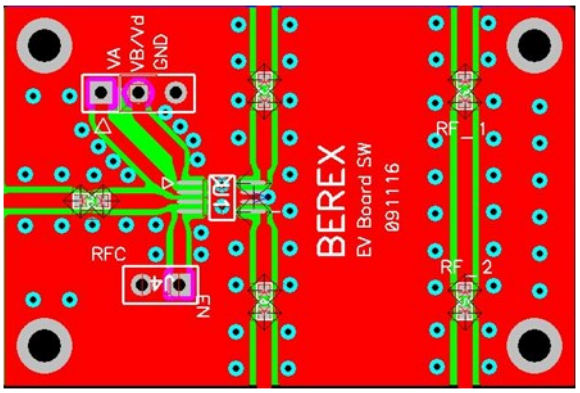
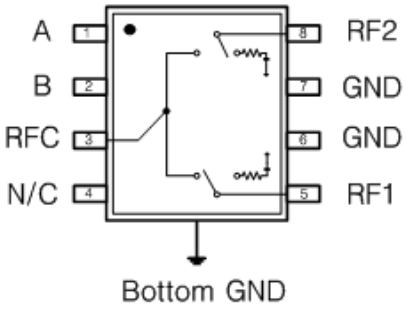
Evaluation Board Drawing



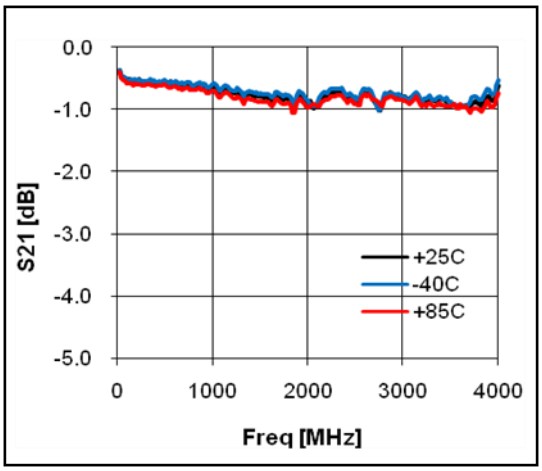
Function Block Diagram



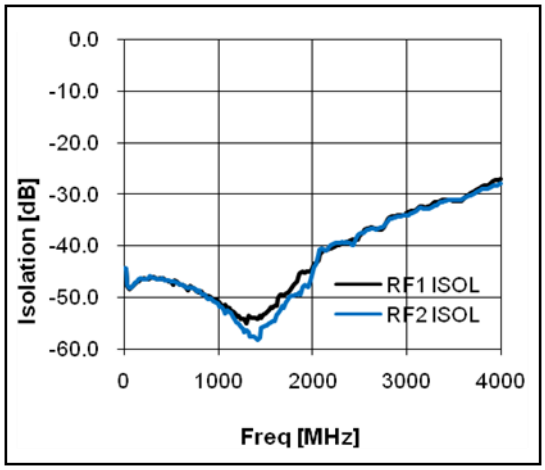
Pins 6 , 7, Bottom Plate must be DC and RF grounded.

Typical Test Data

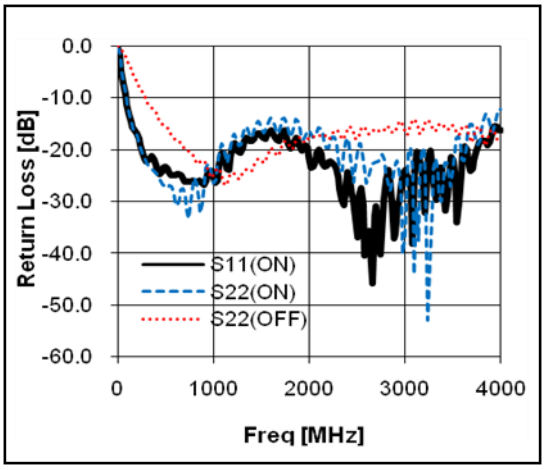
Insertion Loss vs. Frequency



Isolation vs. Frequency



Return Loss vs. Frequency



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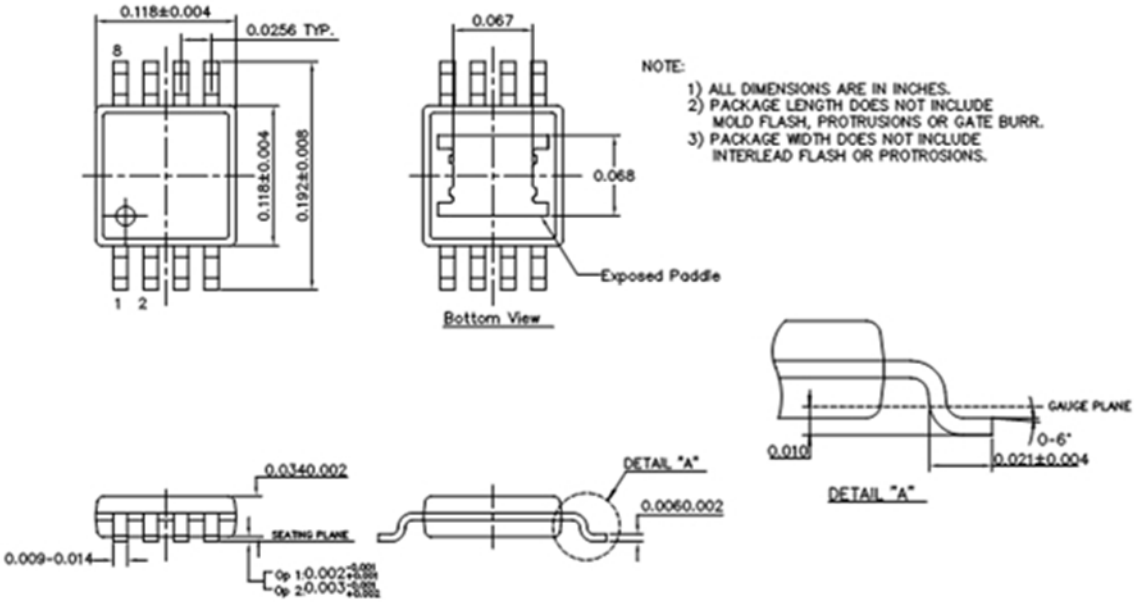
Package Outline Drawing

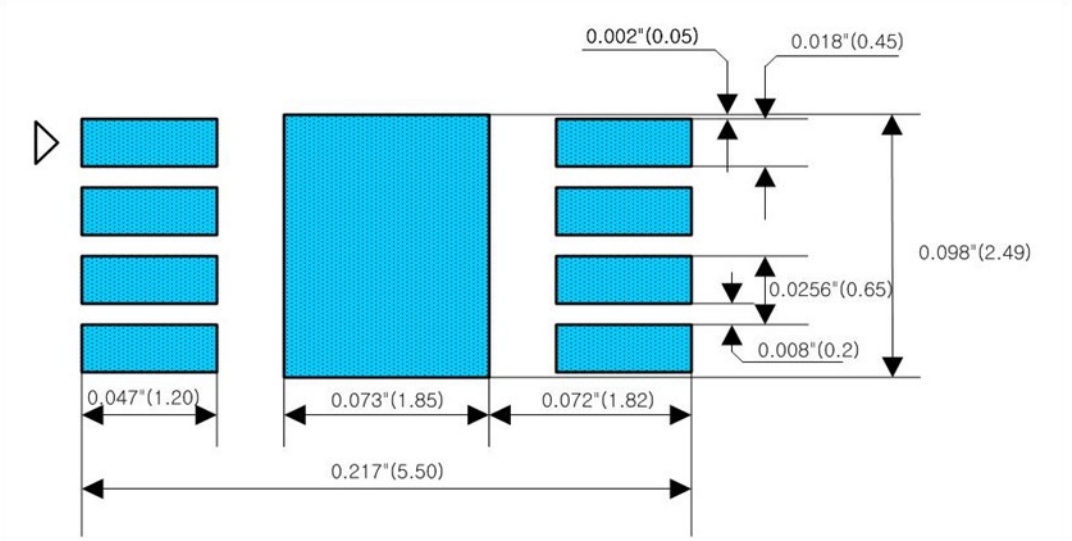


Truth Table

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



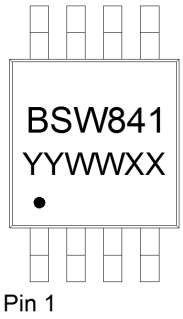
Note : 1. Connection to Bottom Ground with multiple via holes.

2. Via holes _ as many as possible.

3. All Dimensions _ millimeters.

4. PCB lay out _ on BeRex website.

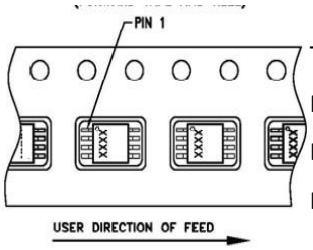
Package Marking



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

NATO CAGE code:

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