SPDT Switch

DC~4GHz Wide Band Single Pole Double Throw Switch

Device Features and Description

- 43.0dB Typical Isolation at 2GHz
- 0.6dB Typical Insertion Loss at 1GHz
- Small Size and Low Profile
- MSOP8 Surface Mount Package
- Lead-free/Green/RoHS compliant
- Application
  ;commercial, space, military wireless system

Electrical specifications

Parameters	Frequency	Unit	Min	Typ	Max	Remark
Insertion Loss	DC-1GHz DC-2GHz DC-3GHz DC-4GHz	dB		0.6 0.7 0.8 0.9		
Isolation	DC-1GHz DC-2GHz DC-3GHz DC-4GHz	dB		50.0/51.5 43.5/45.0 33.0/34.0 27.0/27.5		RF1/RF2
Return Loss / On State	DC-1GHz DC-2GHz DC-3GHz DC-4GHz	dB		26.0 21.0 23.5 16.1		
Return Loss / Off State	0.5-4GHz	dB		17.0		
Input P1dB	0.5-1GHz 0.5-2GHz 0.5-3GHz 0.5-4GHz	dBm		24.0 23.0 22.0 22.0		
Input IP3 (Two-Tone Input Power is 5dBm/ Each Tone)	0.5-1GHz 0.5-2GHz 0.5-3GHz 0.5-4GHz	dBm		47.0 48.0 47.0 46.0		
Switching Speed	DC-4GHz	ns		40 60		tRISE, tFALL (10/90%RF) tON, tOFF (50% CTL to 10/90%RF)

All specifications apply with the following test conditions,

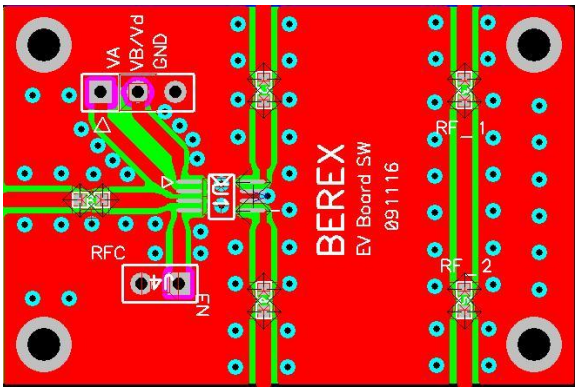
1. Device performance is measured on BeRex evaluation board at 25˚C, 50 ohm system
2. Vctl=0/+5Vdc,
3. DC Blocks are required each port.

Absolute Maximum Ratings

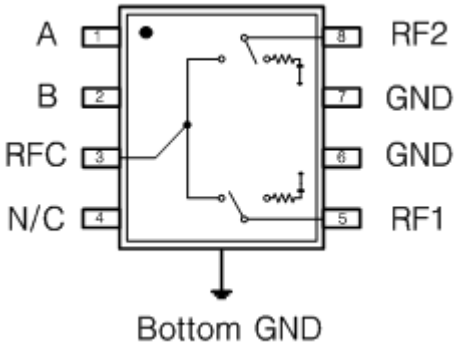
Parameters	Rating
Input Power	1W CW
Storage Temperature	-55 to +155°C
Operating Temperature	-40C to +85°C

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

Evaluation Board Drawing



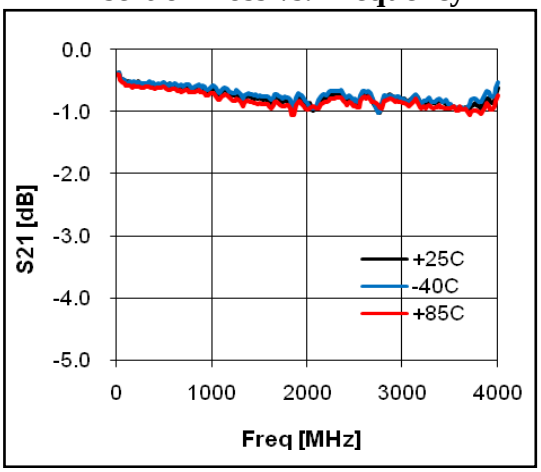
Function Block Diagram



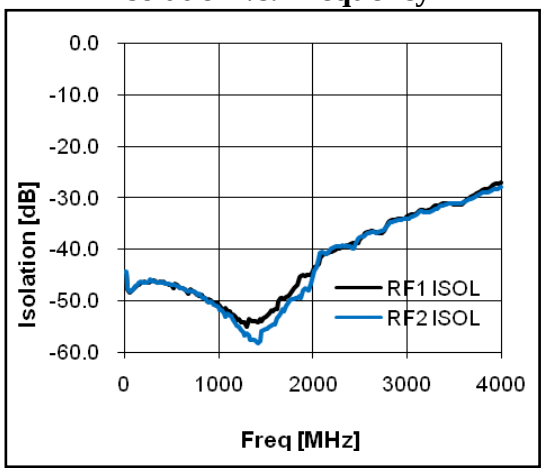
Pins 6,7, Bottom Plate must be DC and RF grounded.

Typical Test Data

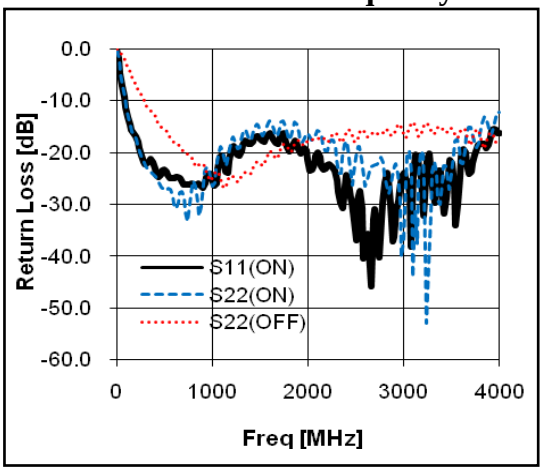
Insertion Loss vs. Frequency



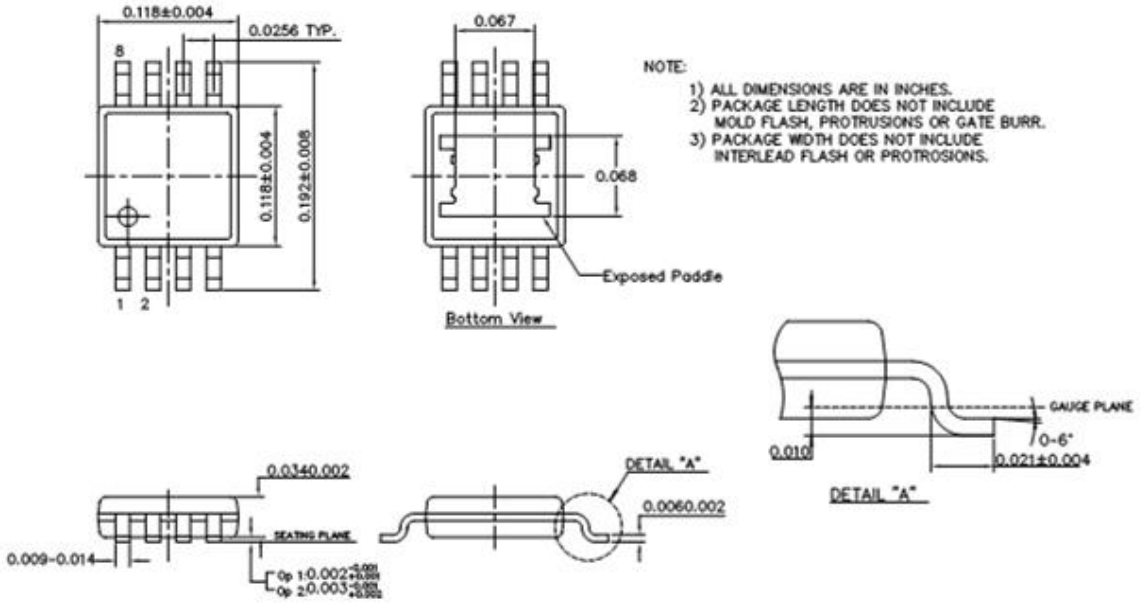
Isolation vs. Frequency



Return Loss vs. Frequency



Package Outline Dimension

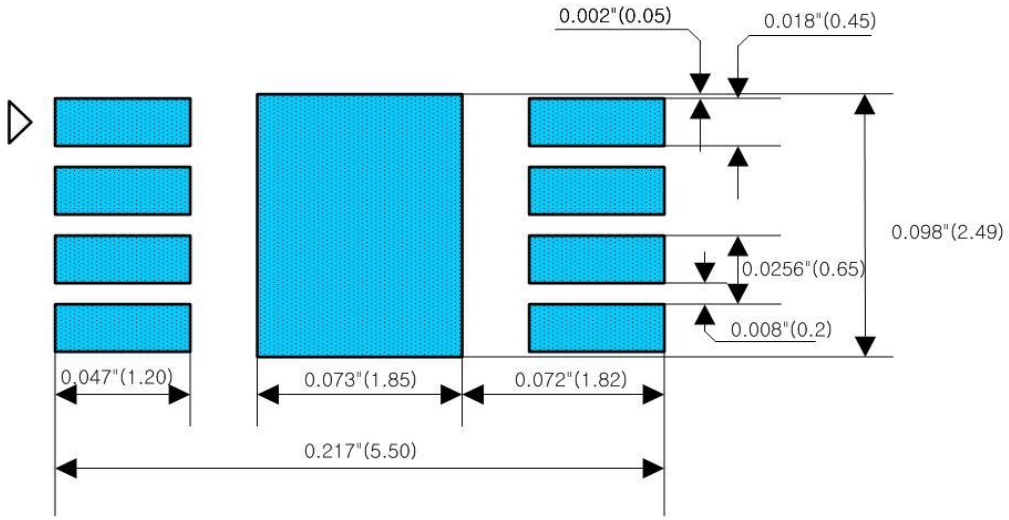


Truth Table

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

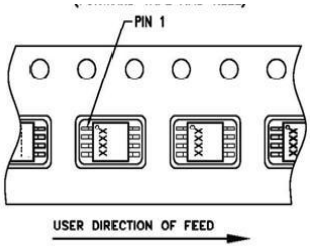


Notes : 1. Connection to Bottom Ground with multiple via holes.
2. Via holes as many as possible
3. Dimensions are in inches (millimeters).

Visit http://www.berex.com for PCB layout

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**

NOTICE

BeRex Corporation reserves the right to make changes of product specification or to discontinue product at any time without notice.