

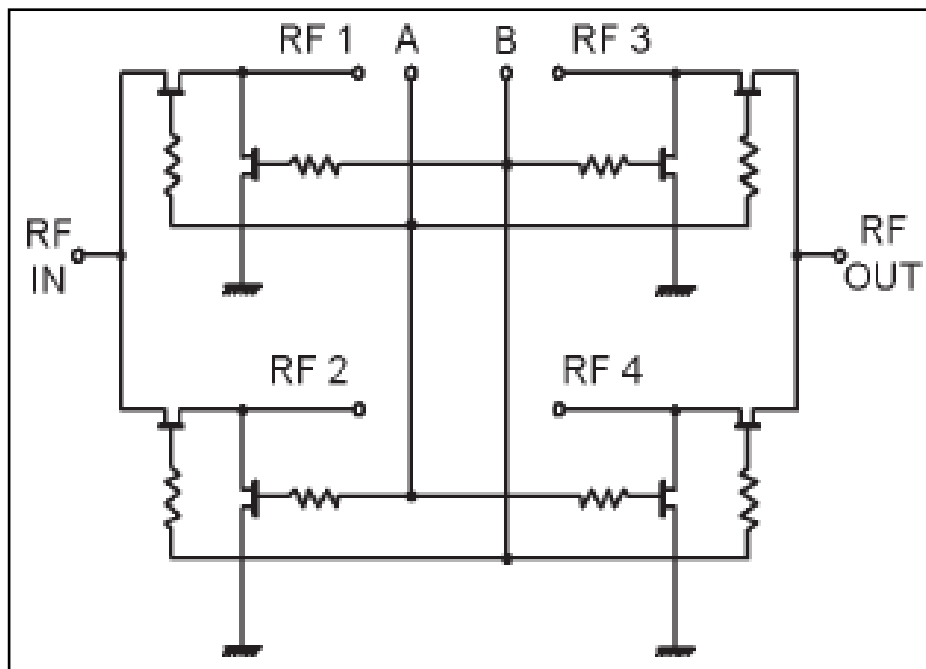
Product Description

The RBS641 is a high performance Gallium Arsenide Double pole double throw broad band RF switch. It is suitable for use in broadband communications and instrumentation applications. A short circuit reflective termination is presented at the isolated outputs of the switch. The switch is controlled by the application of complimentary 0V/-5V or 0/-8V signals to the control lines in accordance with the truth table below.

Features

- Broadband performance
- Low Insertion Loss; 0.6 dB typ at 2 GHz
- Ultra low DC power consumption

Functional Block Diagram



Specifications

Absolute Maximum Ratings

Name	Description
Max Control Voltage	-8 V
RF I/P Power	+30 dBm
Operating Temperature Range	-40 to +85° C

Electrical Performance

Typical performance at 25°C

Ambient temperature = 25±3°C, Zo = 50 Ω, Control voltage = 0V/-5V unless otherwise stated

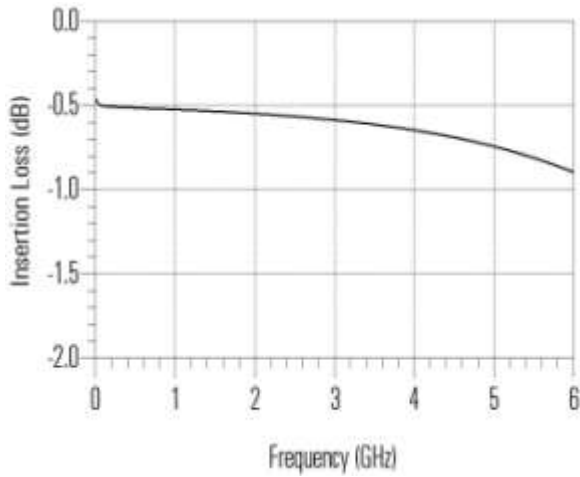
Parameter	Condition	Min.	Typ.	Max.	Units
Insertion Loss ¹	DC – 3 GHz	-	0.57	0.6	dB
	3 – 6 GHz	-	0.85	0.9	dB
Isolation ¹	DC – 3 GHz	68	70	-	dB
	3 – 6 GHz	63	64	-	dB
Input Return Loss ²	DC – 3 GHz	25	29	-	dB
	3 – 6 GHz	16	25	-	dB
Output Return Loss ²	DC – 3 GHz	25.6	28	-	dB
	3 – 6 GHz	18	25	-	dB
P1dB power compression point ³	0/-5 V control; 50 MHz	-	19.5	-	dBm
	0/-5 V control; 0.5 - 4 GHz	-	25.5	-	dBm
	0/-8 V control; 50 MHz	-	21.5	-	dBm
	0/-8 V control; 0.5 - 4GHz	-	28	-	dBm
Switching Speed	50% control to 10%90% RF	-	2.2	-	ns

Notes

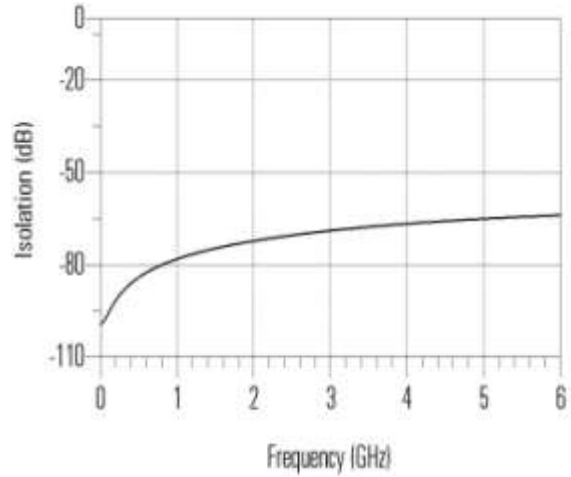
1. Insertion loss and Isolation measured between RF Input and any output.
2. Return Loss measured in low loss switch state.
3. Input power at which insertion loss compresses by 1dB.

Preliminary Data

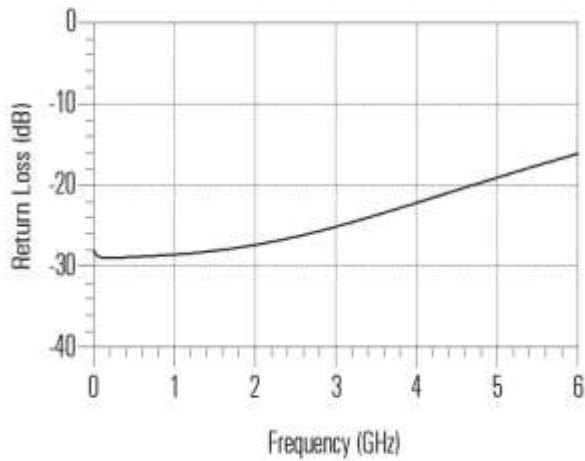
Insertion Loss



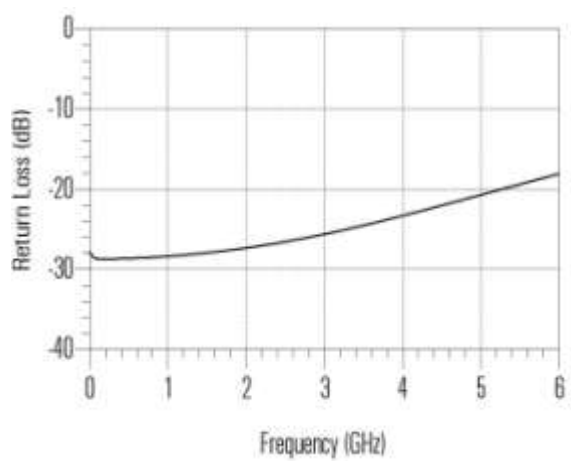
Isolation

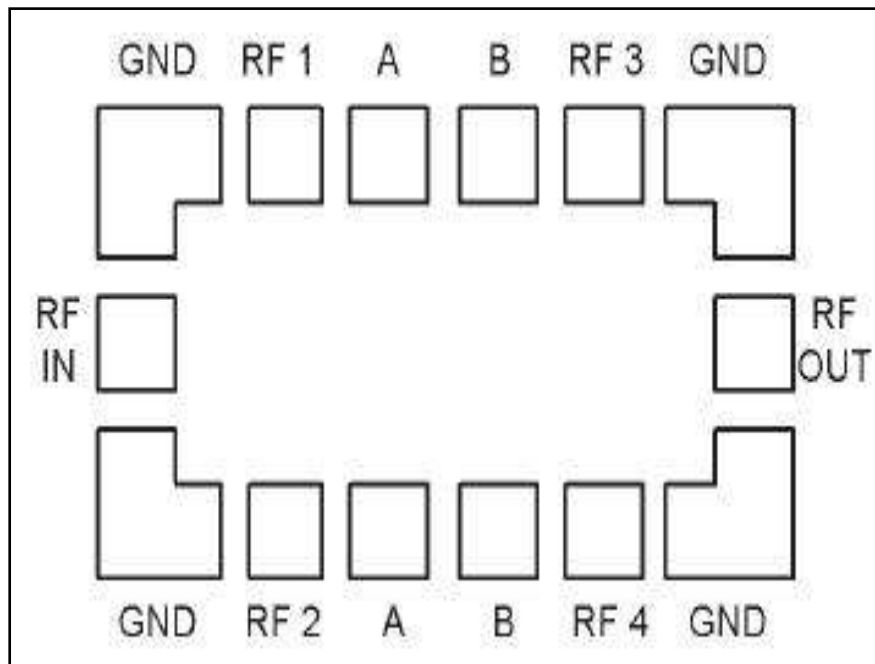


Input Return Loss



Output Return Loss



Chip Outline Diagram


Die size: 1.2 X 1.5 mm
 Minimum Bond pad size: 120 μ m x 120 μ m
 Die thickness: 200 μ m

Switching Truth Table

A	B	RF IN-RF1	RF IN-RF2
		RF3-RF OUT	RF4-RF OUT
0 V	-5 V	Low Loss	Isolated
-5 V	0 V	Isolated	Low Loss

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Product Preview

The document contains information from the product concept specification. RF Arrays Inc. reserves the right to change information at any time without notification.

Preliminary Information

The document contains information from the design target specification. RF Arrays Inc. reserves the right to change information at any time without notification.

Production testing may not include testing of all parameters.

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