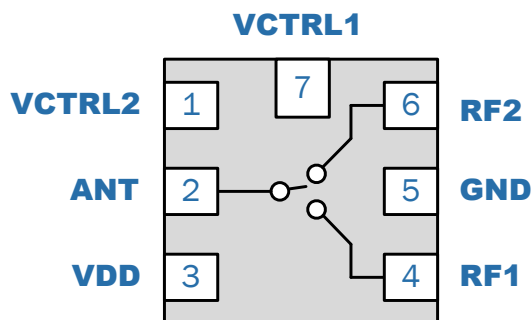


RFSW8008

Wi-Fi SPDT Switch
300MHz to 5925MHz

The RFSW8008 is a single-pole double-throw switch (SPDT) designed for Wi-Fi 802.11a/b/g/n/ac systems. The small package size minimizes layout area in the customer's application and wide frequency range of operation enables a breadth of applications in typical systems. The device is provided in a 1.0mm x 1.075mm x 0.5mm, 7-pin QFN package.



Functional Block Diagram



Package: QFN, 7-pin,
1.0mm x 1.075mm x 0.5mm max

Features

- Insertion Loss =
 - 0.3 dB typical at 900MHz
 - 0.4 dB typical at 2.5GHz
 - 0.75 dB typical at 5GHz
- Isolation = 27dB
- P_{0.1dB} > 27dBm
- Switch Control Logic > 1.2V
- High ESD 2kV HBM

Applications

- Wireless Routers
- Access Points
- Residential Gateways
- Consumer Premise Equipment
- Small Cell
- Internet of Things

Ordering Information

RFSW8008SB	Sample bag with 5 pieces
RFSW8008SQ	Sample bag with 25 pieces
RFSW8008SR	7" Reel with 100 pieces
RFSW8008TR7	7" Reel with 2500 pieces
RFSW8008PCK-410	5 GHz Evaluation Board plus 5 loose pieces

Absolute Maximum Ratings

Parameter	Rating	Unit
Supply Voltage	5.0	V
Storage Temperature	-40 to +150	°C
Moisture Sensitivity	MSL1	



Caution! ESD sensitive device.



RFMD Green: RoHS status based on EU Directive 2011/65/EU (at time of this document revision), halogen free per IEC 61249-2-21, < 1000ppm each of antimony trioxide in polymeric materials and red phosphorus as a flame retardant, and <2% antimony in solder.

Exceeding any one or a combination of the Absolute Maximum Rating conditions may cause permanent damage to the device. Extended application of Absolute Maximum Rating conditions to the device may reduce device reliability. Specified typical performance or functional operation of the device under Absolute Maximum Rating conditions is not implied.

Nominal Operating Parameters

Parameter	Specification			Unit	Condition
	Min	Typ	Max		
Compliance					
Operating Frequency	0.3		5.925	GHz	
Operating Temperature	-40		+85	°C	
Power Supply V_{DD}	2.7		5	V	
Control Voltage-High	1.2	1.8	V_{DD}	V	CTRL
Control Voltage-Low		0	0.2	V	
300-1000MHz					
$V_{DD}=3.6V, T=+25^{\circ}C$; Unless otherwise noted					
Insertion Loss		0.3	0.5	dB	
$p_{0.1dB}$		29		dBm	
Input Return Loss		20	15	dB	
Output Return Loss		20	15	dB	
RF1-ANT in RF2 Isolation	24			dB	
RF2-ANT in RF1 Isolation	24			dB	
1000-2500MHz					
$V_{DD}=3.6V, T=+25^{\circ}C$; Unless otherwise noted					
Insertion Loss		0.4	0.8	dB	
Linear Output Power		21		dBm	
11ac 40MHz Dynamic EVM		-45	-40	dB	
		0.6	1	%	
Input Return Loss		20	15	dB	
Output Return Loss		20	15	dB	
RF1-ANT in RF2 Isolation	24			dB	
RF2-ANT in RF1 Isolation	24			dB	

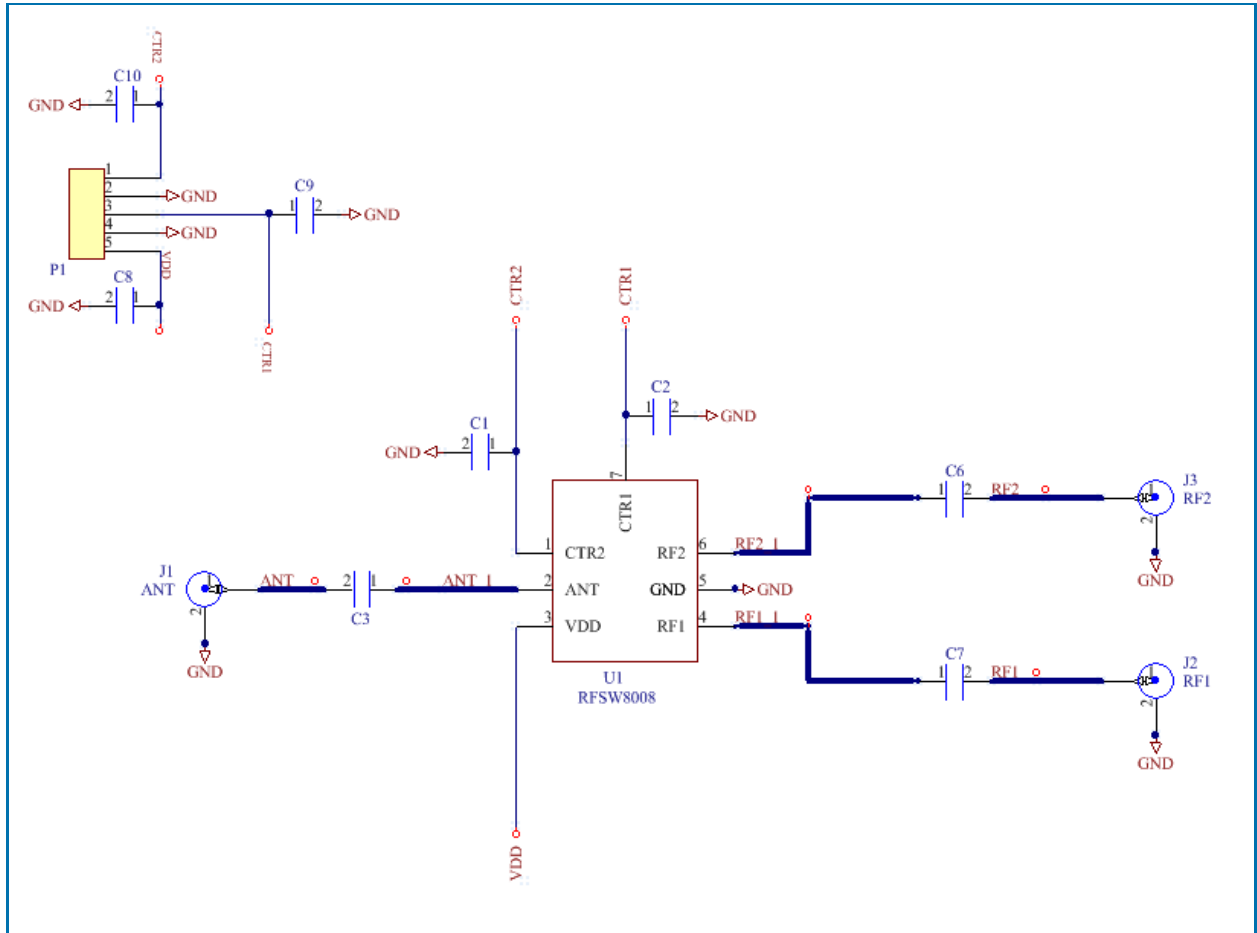
Parameter	Specification			Unit	Condition
	Min	Typ	Max		
5000-6000MHz					V_{DD}=3.6V, T=+25°C; Unless otherwise noted
Insertion Loss		0.8	1.5	dB	
Linear Output Power		21		dBm	
11ac 80MHz Dynamic EVM		-45	-40	dB	
		0.6	1	%	
Output Return Loss		15	10	dB	
RF1-ANT in RF2 Isolation	20			dB	
RF2-ANT in RF1 Isolation	20			dB	
General Specifications					
Passband Ripple	-0.1		0.1	dB	Across any 100MHz BW
Input P ^{0.1dB}	27	29		dBm	CW
Switch Control Current		25		nA	
Total Operating Current: High State		60	150	μA	
Total Operating Current: Low State		1.5		μA	
Switch Time - 50 to 90% RF Output		200	500	nS	V _{CONTROL} =0 to 3.3V, CTRL = High
Switch Time - 50 to 10% RF Output		200	500	nS	
ESD – Human Body Model			2000	V	

Switch Control Logic Truth Table

Operating Mode	VCTRL1	VCNTRL2
RF1-ANT	High	High
RF2-ANT	High	Low
Shutdown	Low	Low

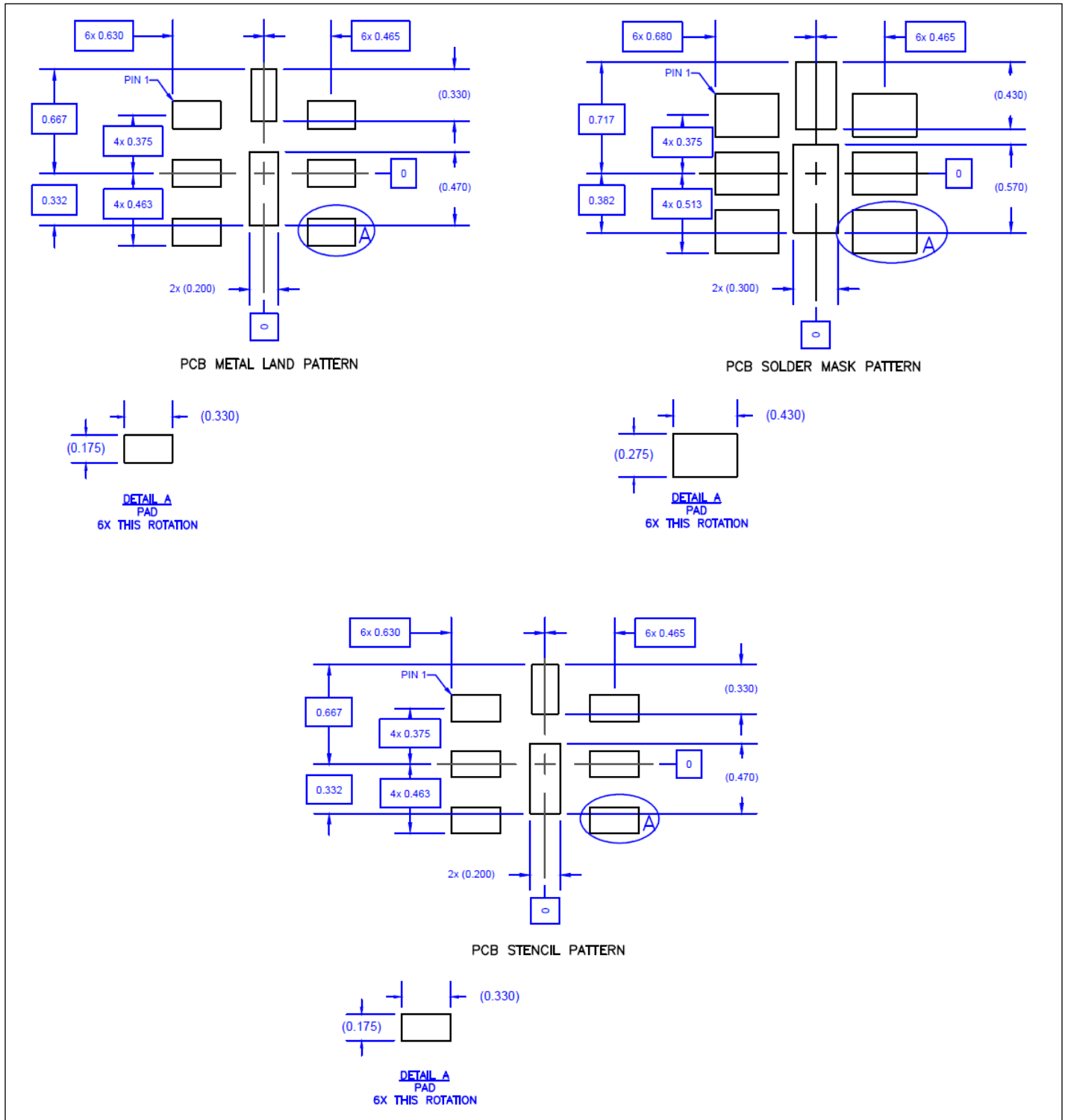
Note: High > 1.2V to V_{DD}. Low = 0V to 0.2V.

Applications Schematic

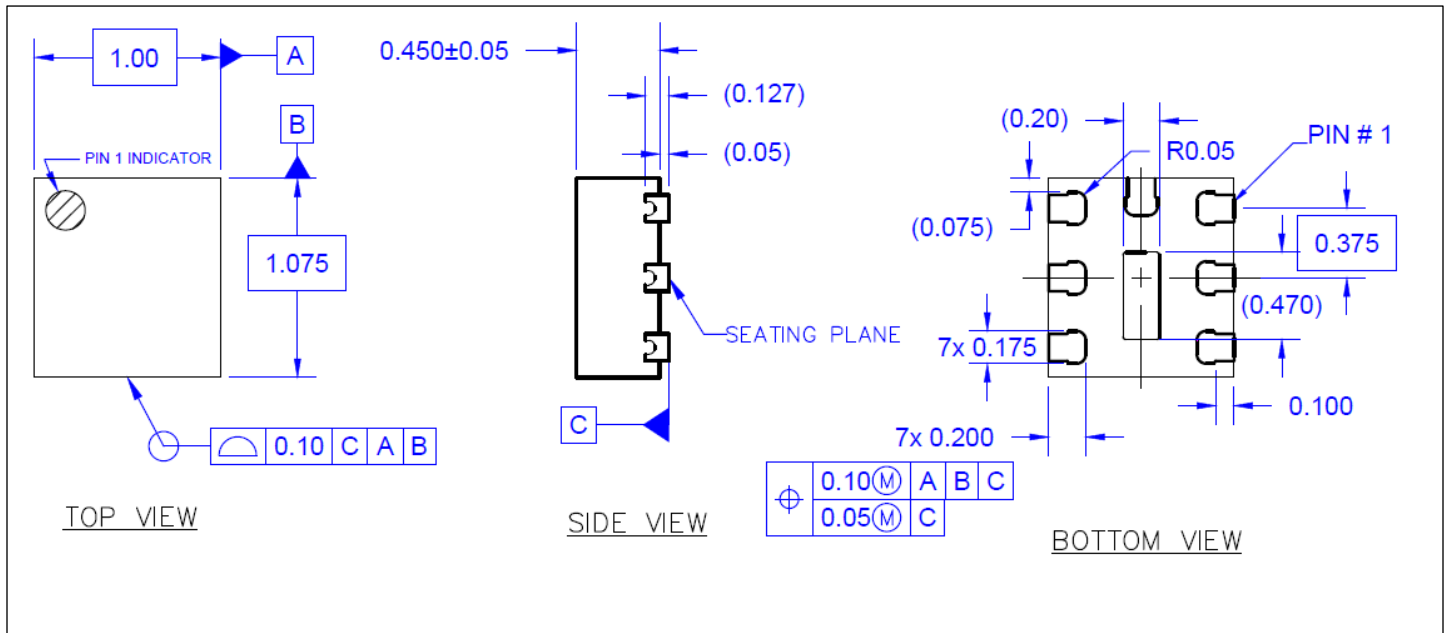


Frequency	C1	C2	C3	C6	C7	C8-10
<2500MHz	82pF	220pF	100pF	100pF	100pF	DNI
>5000MHz	82pF	220pF	10pF	10pF	10pF	DNI

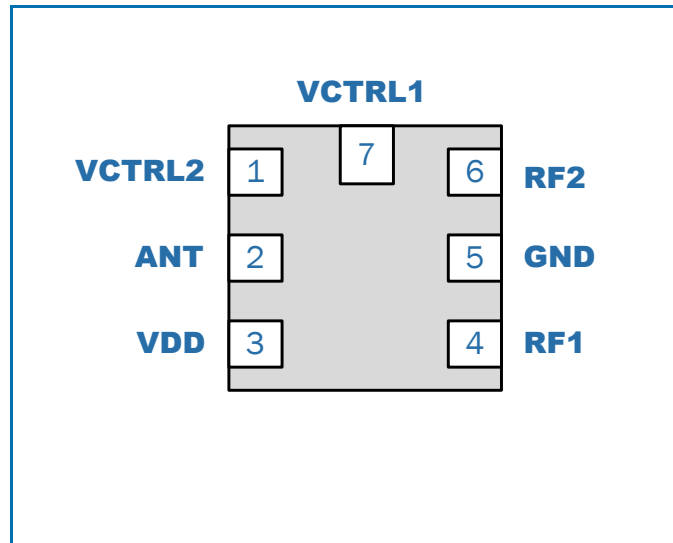
PCB Patterns



Package Outline (Dimensions in millimeters)



Pin Out



Pin Names and Descriptions

Pin	Name	Description
1	VCTRL2	Control voltage to enable RF2 port (RF2-ANT)
2	ANT	Antenna or common RF Port. External DC blocking required
3	VDD	Drain voltage supply.
4	RF1	RF Port 1. External DC blocking required
5	GND	Ground connection.
6	RF2	RF Port 2. External DC blocking required
7	VCTRL1	Control voltage to enable RF1 port (RF1-ANT)

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