

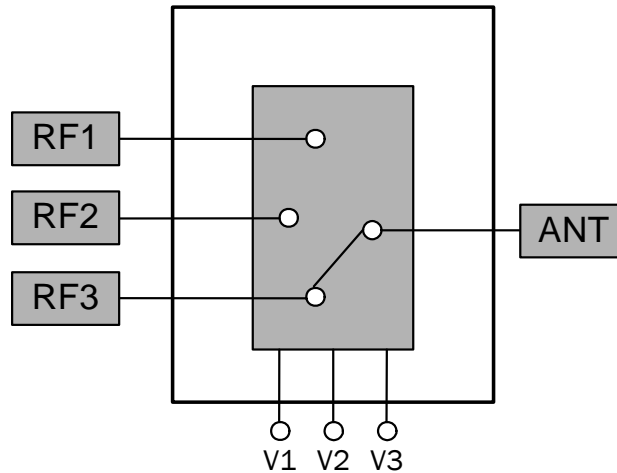


Features

- Broadband Performance
Low Frequency - 2.5GHz
- Low Insertion Loss
0.48dB Typ at 0.90GHz
0.68dB Typ at 1.90GHz
- Good Isolation:
23dB Typ at 1.90GHz
- Excellent Cross-Modulation Performance:
-102dBm Typ @ 0.90GHz
-100dBm Typ @ 1.90GHz
- PO.1dB > 34dBm
- Compact Footprint
(2.0mmx2.0mmx0.55mm,
12-pin QFN)

Applications

- CDMA Handset Applications
- Antenna Tuning Applications
- IEEE802.11b/g WLAN Applications
- Multi-mode GSM/W-CDMA Applications
- GSM/GPRS/EDGE Switch Applications



Functional Block Diagram

Product Description

The RF1132 is a single-pole triple-throw (SP3T) switch designed for CDMA Handset Applications and general purpose switching applications which require very low insertion loss and high power handling capability. The RF1132 is ideally suited for battery operated applications requiring high performance switching with very low DC power consumption. The RF1132 features low insertion loss, excellent cross-modulation performance, and good isolation. It is fabricated with 0.5µm GaAs pHEMT process, and is packaged in a very compact 2mmx2mm, 12-pin, leadless QFN package.

Ordering Information

RF1132 Broadband High Power SP3T Switch
 RF1132PCBA-410 Fully Assembled Evaluation Board

Optimum Technology Matching® Applied

- | | | | |
|--------------------------------------|--------------------------------------|--|-----------------------------------|
| <input type="checkbox"/> GaAs HBT | <input type="checkbox"/> SiGe BiCMOS | <input checked="" type="checkbox"/> GaAs pHEMT | <input type="checkbox"/> GaN HEMT |
| <input type="checkbox"/> GaAs MESFET | <input type="checkbox"/> Si BiCMOS | <input type="checkbox"/> Si CMOS | |
| <input type="checkbox"/> InGaP HBT | <input type="checkbox"/> SiGe HBT | <input type="checkbox"/> Si BJT | |

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Absolute Maximum Ratings

Parameter	Rating	Unit
Voltage	6.0	V
Maximum Input Power (0.6GHz to 2.5GHz), RF1, RF2, RF3	+36	dBm
Operating Temperature	-30 to +85	°C
Storage Temperature	-65 to +100	°C



Caution! ESD sensitive device.

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.

RoHS status based on EUDirective2002/95/EC (at time of this document revision).

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Parameter	Specification			Unit	Condition
	Min.	Typ.	Max.		
					$V_{CONTROL} = 0/2.6V$, Nominal Test Conditions Unless Otherwise Specified: $Z_0 = 50\Omega$. Temp = 25 °C. Need external DC blocking capacitors on all RF ports.
Operating Frequency	0.6		2.5	GHz	
Insertion Loss					
Cellular		0.48	0.58	dB	ANT to RFx ON, 824 MHz to 894 MHz
GPS		0.60	0.70	dB	ANT to RFx ON, 1574 MHz to 1577 MHz
PCS		0.68	0.78	dB	ANT to RFx ON, 1850 MHz to 1990 MHz
RF>ANT Isolation					
Cellular	28	30		dB	RFxOFF to RFx ON, 824 MHz to 894 MHz
GPS	23	25		dB	RFxOFF to RFx ON, 1574 MHz to 1577 MHz
PCS	21	23		dB	RFxOFF to RFx ON, 1850 MHz to 1990 MHz
Second Harmonics					
Cellular		-82	-78	dBc	+26 dBm input
PCS		-84	-80	dBc	+26 dBm input
Third Harmonics					
Cellular		-91	-80	dBc	+26 dBm input
PCS		-95	-82.5	dBc	+26 dBm input
IIP3					
IIP3 - Cellular (IMT, PCS, AWS)	64	65		dBm	Two tones: +23 dBm, 837 MHz and 838 MHz
		67		dBm	Two tones: +23 dBm, 837 MHz and 838 MHz, $V_{CONTROL} = 3V$
IIP3 - PCS	61	63		dBm	Two tones: +23 dBm, 1880 MHz and 1881 MHz
		65		dBm	Two tones: +23 dBm, 1880 MHz and 1881 MHz, $V_{CONTROL} = 3V$
Cross-Modulation					
Cellular		-102	-101	dBm	PTx1 = 23 dBm @ 836 MHz, PTx2 = 23 dBm @ 837 MHz; $P_{INT} = -23$ dBm @ 881.5 MHz
		-105		dBm	PTx1 = 23 dBm @ 836 MHz, PTx2 = 23 dBm @ 837 MHz; $P_{INT} = -23$ dBm @ 881.5 MHz, $V_{CONTROL} = 3V$
PCS		-100	-96	dBm	PTx1 = 23 dBm @ 1879.5 MHz, PTx2 = 23 dBm @ 1880.5 MHz; $P_{INT} = -23$ dBm @ 1960 MHz
		-102		dBm	PTx1 = 23 dBm @ 1879.5 MHz, PTx2 = 23 dBm @ 1880.5 MHz; $P_{INT} = -23$ dBm @ 1960 MHz, $V_{CONTROL} = 3V$

Parameter	Specification			Unit	Condition
	Min.	Typ.	Max.		
RF Port Return Loss					
RF>ANT		-24	-15	dB	0.5GHz to 2.0GHz
Input Power at 0.1dB Compression Point					
Cellular		>+35		dBm	
PCS		>+35		dBm	
Switching Speed					
T _{RISE} , T _{FALL}		0.80	1	us	10% to 90% RF, 90% to 10% RF
T _{ON} , T _{OFF}		0.80	1	μs	50% control to 90% RF, 50% control to 90% RF
DC Controls					
V _{HIGH} (V1, V2, V3)		2.6	3.6	V	
V _{LOW} (V1, V2, V3)	0		0.4	V	
Control Current		10		μA	
Leakage Current		10		μA	

Switch Control Settings

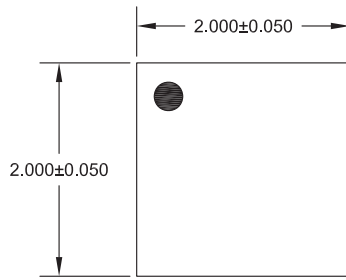
V1	V2	V3	ANT-RF1	ANT-RF2	ANT-RF3
1	0	0	ON	OFF	OFF
0	1	0	OFF	ON	OFF
0	0	1	OFF	OFF	ON

0: Logic level low, 0V to 0.4V

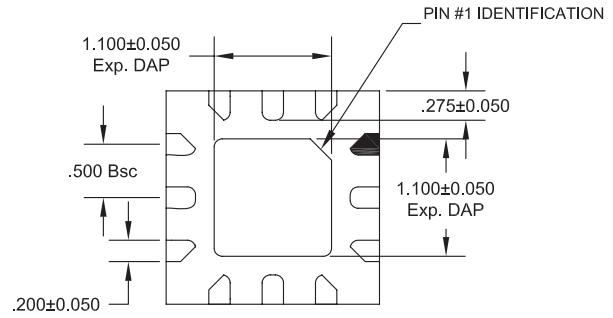
1: Logic level high, 2.6V to 3.6V

Note: Indeterminate states would lead to degraded performance.

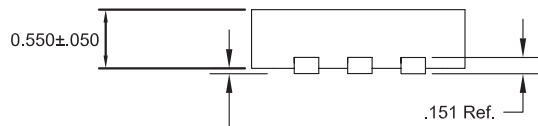
Package Drawing



TOP VIEW



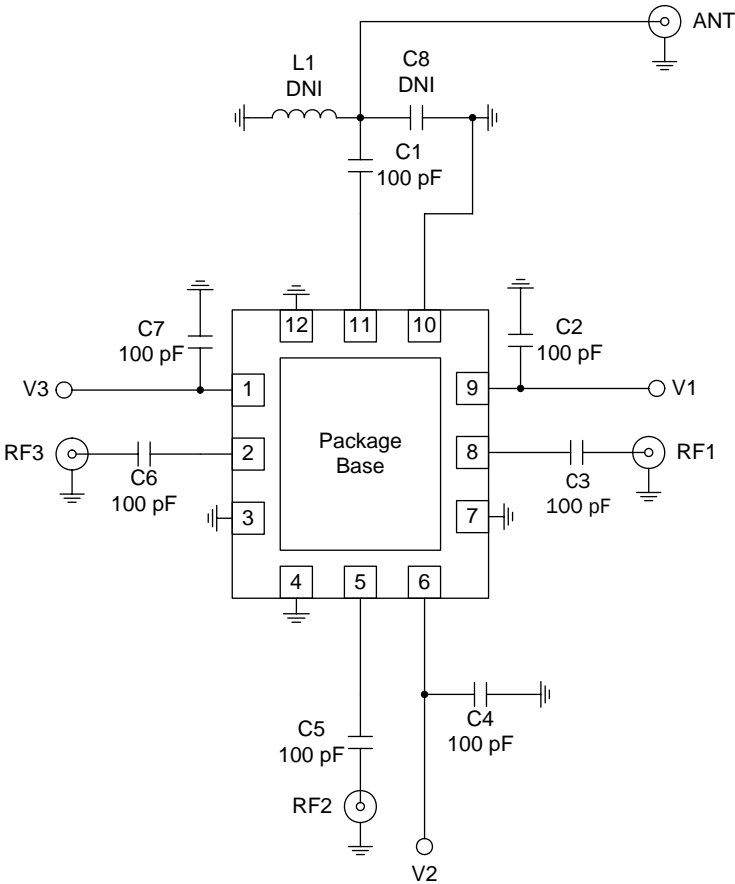
BOTTOM VIEW



SIDE VIEW

- Notes:
1) Pin 1 Shaded Area

Evaluation Board Schematic



Note: Package Base needs to be left floating for best Isolation performance.

Typical Performance

