

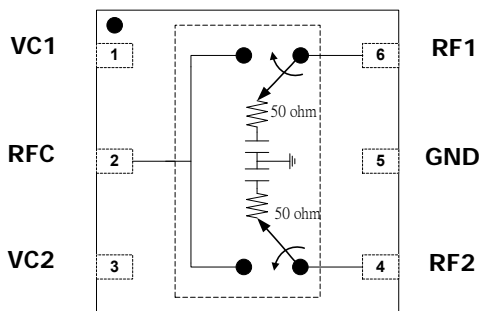
**RFIC Preliminary 2014.10 Update**

**DESCRIPTION**

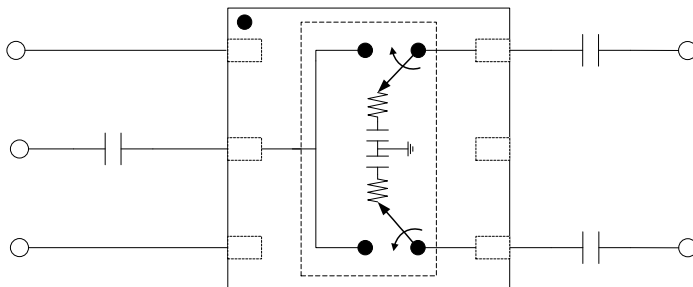
The SW470 is a SPDT GaAs switch, and designed for DC to 6GHz frequency band application. The switch can be used for Tx/Rx selection or antenna diversity function in a variety of wireless communication systems.

The SW470 is housed in a miniature 1.5 x 1.5 (mm), 6-pin, DFN leadless package (Pb free), and features low insertion loss, high isolation and high linearity, particularly suitable for WiMAX, WLAN AP, and S-band wireless applications where high power switching is required.

**Pin & Block Diagram**



**Evaluation Board Schematic**



DC blocking capacitors are necessary for all RF ports (typical is 47 pF for >1GHz application). All unused ports are terminated in 50 Ω.

**KEY FEATURES**

- **Low Insertion:**  
0.6dB (Typ.) @ 2.5GHz  
1.1dB (Typ.) @ 5.8GHz
- **High Linearity**  
P1dB ~ 38dBm
- **Low Control Current ~ 5uA**
- **Lead-Free and RoHS compliant**
- **Non-Reflective switch**

**Pin Details**

Pin No.	Name	Description
1	VC1	RF1 On/Off logic control
2	RFC	RF Common Port
3	VC2	RF2 On/Off logic control
4	RF2	RF Port2
5	GND	GND
6	RF1	RF Port1
Central Paddle	GND	GND

**Logic Control Table**

VC1	VC2	RFC-RF1	RFC-RF2
High	Low	On	Off
Low	High	Off	On

High = +1.8V to +5V

Low = +0V to +0.2V

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### Absolute Maximum Ratings

Parameter	Rating	Unit
Gate-Source Voltage ( $V_{GS}$ )	+6	V
RF Input Power (under acceptable bias state, > 500MHz)	+40	dBm
Operating Ambient Temperature	-40 to +85	°C
Storage Temperature	-40 to +125	°C
Moisture Level	MSL1	
ESD Level	Class 1A HBM	

### Important Note:

The information provided in this datasheet is deemed to be accurate and reliable only at present time. RFIC Technology Corp. reserves the right to make any changes to the specifications in this datasheet without prior notice.



**Caution: ESD Sensitive**  
Appropriate precaution in handling, packaging  
And testing devices must be observed.

### Electrical Characteristics for 25 °C Ambient Temperature

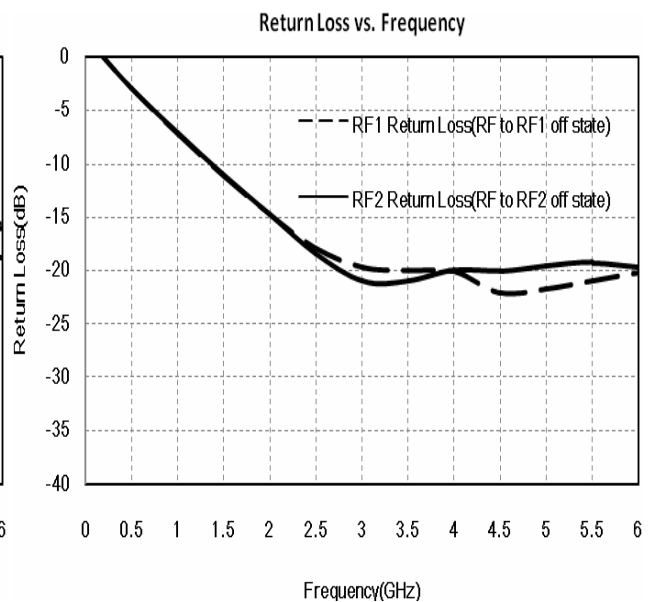
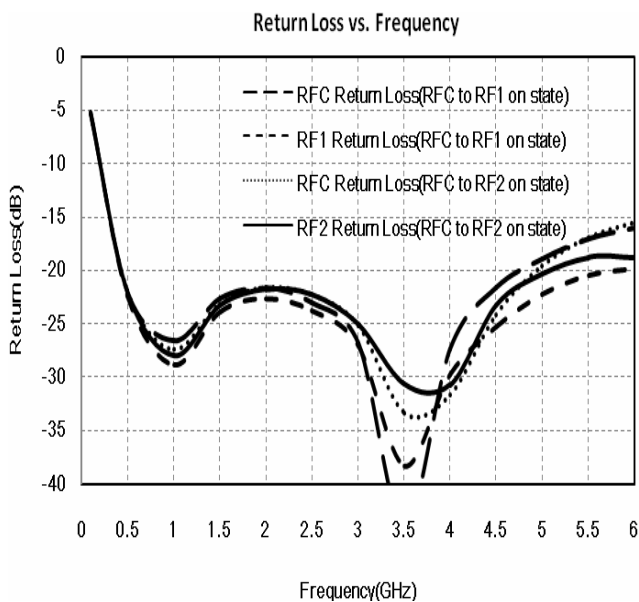
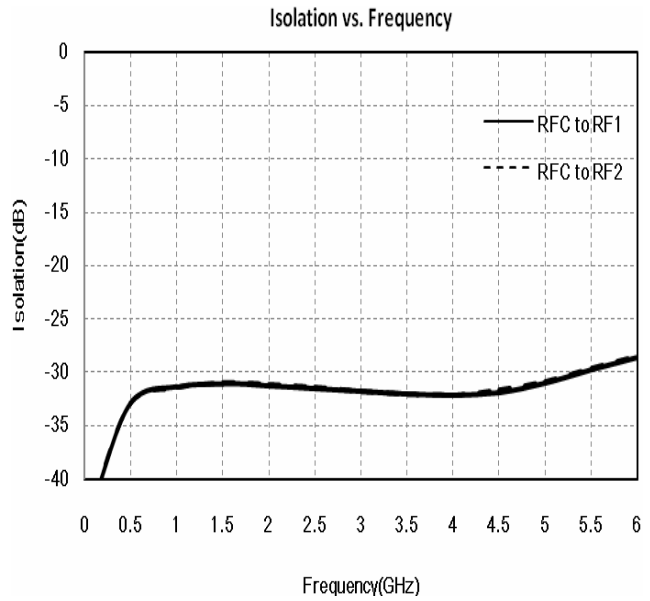
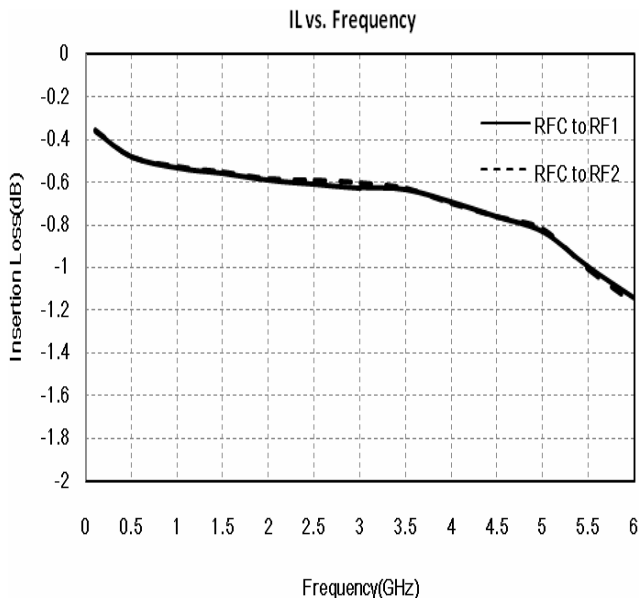
Logic High = 3V; Logic Low = 0V;  $T_A = 25^\circ\text{C}$ ; unless otherwise noted.

Parameter	Specification			Units	Notes
	Min	Typ.	Max		
Insertion Loss (IL)		0.6 0.65 0.7 1.1	0.7 0.8 1.0 1.3	dB	DC – 1.0GHz 1.0 – 3.0GHz 3.0 – 5.0GHz 5.0 – 6.0GHz
Isolation (ISO)	29 29 28 27	32 31 30 30		dB	DC – 1.0GHz 1.0 – 3.0GHz 3.0 – 5.0GHz 5.0 – 6.0GHz
VSWR		1.2:1	1.5:1	dB	1.0 – 6.0GHz
IP1dB	36		38	dBm	1.0 – 6.0GHz, $V_{High}=3V$ , $V_{Low}=0V$
IIP3		55		dBm	1.0 – 6.0GHz, $V_{High}=3V$ , $V_{Low}=0V$ $\Delta F = 1 \text{ MHz}$ , $P_{in}=+15\text{dBm}/\text{tone}$
Switching Speed $T_{RISE}/T_{FALL}$ $T_{ON}/T_{OFF}$		150 300		ns ns	10% to 90% RF and 90% to 10% RF 50% control to 90% RF and 50% control to 10% RF
Control Current		5	10	uA	

Note: All measurements made in a 50 ohm system.

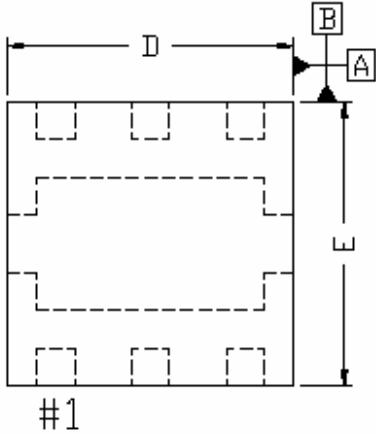
## Typical Characteristic Chart

(RFC to RF1, RF2 (0, 2.7 V), TOP = +25°C)

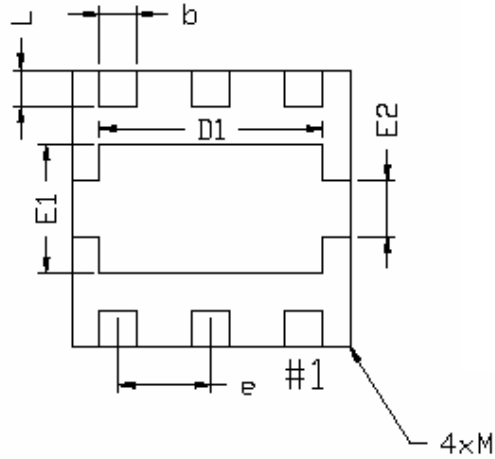


## Package Outline

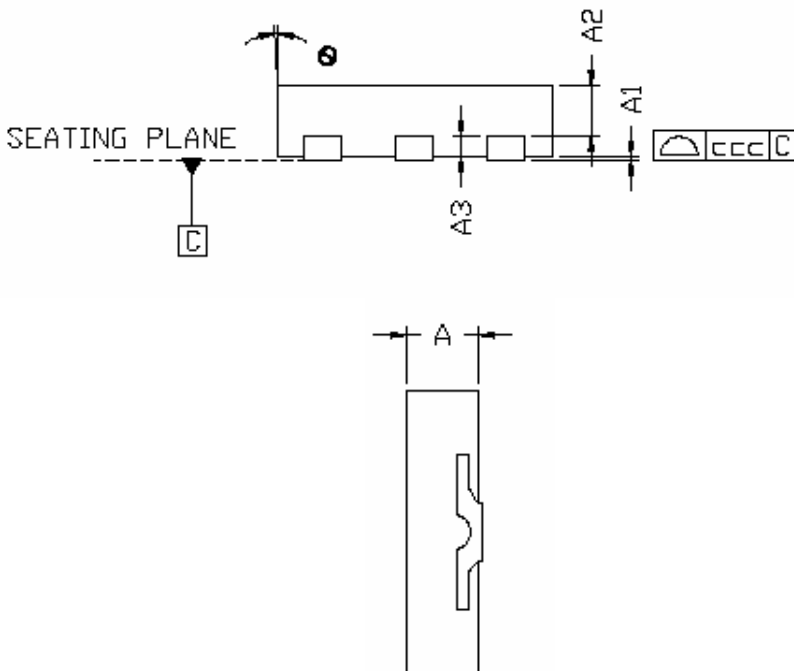
**Top View**



**Bottom View**

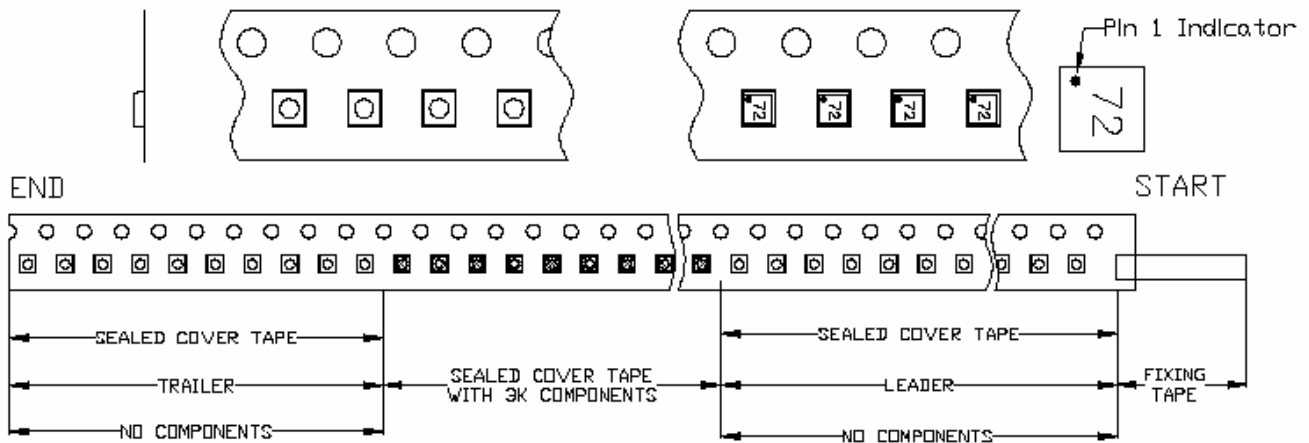


**Side View**



Symbol	Dimensions in Millimeters		
	MIN	NOM	MAX
A	0.35	---	0.40
A1	0.00	---	0.05
A2	0.223	---	0.273
A3	---	0.127REF	---
b	0.15	0.20	0.25
D	1.45	1.50	1.55
D1	---	1.2BSC	---
E	1.45	1.50	1.55
E1	---	0.70BSC	---
E2	---	0.30BSC	---
e	---	0.50BSC	---
L	0.15	0.20	0.25
$\theta$	-12	---	0
CCC	---	0.08	---
M	---	---	0.05
Burr	0.00	0.03	0.06

## Packing



ITEM		SPECIFICATION (mm)(minimum)
LEADER	COVER TAPE WITH EMPTY CAVITIES	840(210格)
TRAILER	COVER TAPE WITH EMPTY CAVITIES	400(100格)
FIXING TAPE		100
PROTECTIVE BAND (t=1.0mm)		1200

PKG TYPE	Tape Width (mm)	Reel Size	Devices Per Reel
3K(XSDN 1.5x1.5x0.55-8L)	8	7"	3000

