

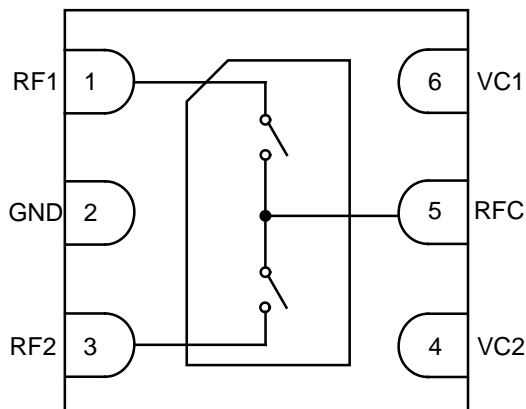
Features

Pb-free & RoHS Product

- 0.1~4.0GHz Frequency Range
- Low Insertion Loss (0.5dB@2.4GHz)
- High Isolation (25dB@2.4GHz)
- 36dBm P1dB
- 2.5~5V Operation Voltage
- Ultra miniature DFN-6 Package

Applications

- IEEE 802.11a/n WLAN
- Cellular Communication
- ISM



Function Block Diagram

Product Description

The YS36 is a high-power GaAs pHEMT SPDT switch designed for high performance wireless application. This wideband switch has been designed for use from 100MHz to 4GHz, where extremely low insertion loss, high isolation, high power and ultra miniature package size are required. Switching for the YS36 is controlled by two control voltage inputs. The YS36 is housed inside a miniature 6-lead, 2mm × 2mm, DFN package.

Ordering Information

- YS36-SB Sample bag with 10 pieces YS36
- YS36-EVB 0.1~4.0GHz YS36 Evaluation Board

Pin Description

Pin No.	Symbol	Description
1	RF1	RF port 1
2	GND	Ground connect
3	RF1	RF port 2
4	VC2	Control voltage for port 2
5	RFC	RF common port
6	VC1	Control voltage for port 1
Pkg Base	GND	Ground connect



Caution! ESD sensitive device.

ESD Rating: Class1C

Value: Passes $\geq 1000V$ min.

Test: Human Body Model (HBM)

Standard: JEDEC Standard JESD22-A114

ESD Rating: Class IV

Value: Passes $\geq 1000V$ min.

Test: Charged Device Model (CDM)

Standard: JEDEC Standard JESD22-C101

MSL Rating: Level 3 at +260 °C convection reflow

Standard: JEDEC Standard J-STD-020

Absolute Maximum Ratings

Parameter	Rating	Unit
Input RF Power	+36	dBm
Supply Voltage	-0.5 to +5.0	V
Operating Ambient Temperature	-40 to +85	°C
Storage Temperature	-55 to +150	°C

Electrical Specifications

Parameter	Specification			Unit	Condition
	Min.	Typ.	Max.		
Typical Condition					<i>VC=3.3V, Temp=+25°C</i>
Operating Frequency	100		4000	MHz	
Insertion Loss		0.5		dB	
Isolation		25		dB	
Input return loss		23		dB	
Input P1dB		36		dBm	
Switch time		20		ns	
Control Voltage					
Control voltage high	2.7	3.3	5	V	
Control voltage low			0.2	V	
Control current		5		uA	

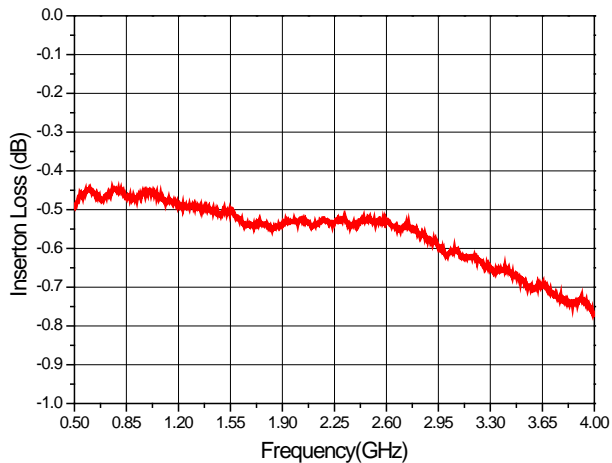
SPDT Truth Table

VC1	VC2	RFC-RF1	RFC-RF2
High	Low	Isolation	Insertion Loss
Low	High	Insertion Loss	Isolation

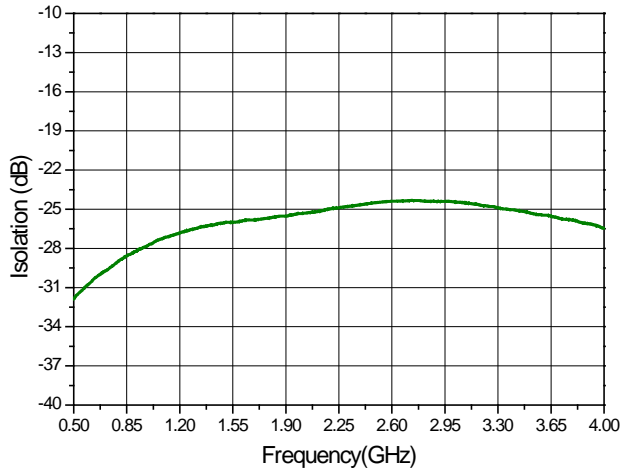
Typical Performance

(Test Condition: VC=3.3V, T=+25°C)

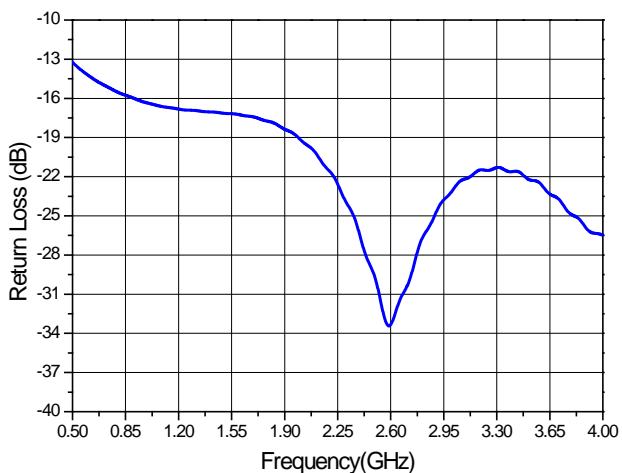
Insertion Loss vs. Frequency



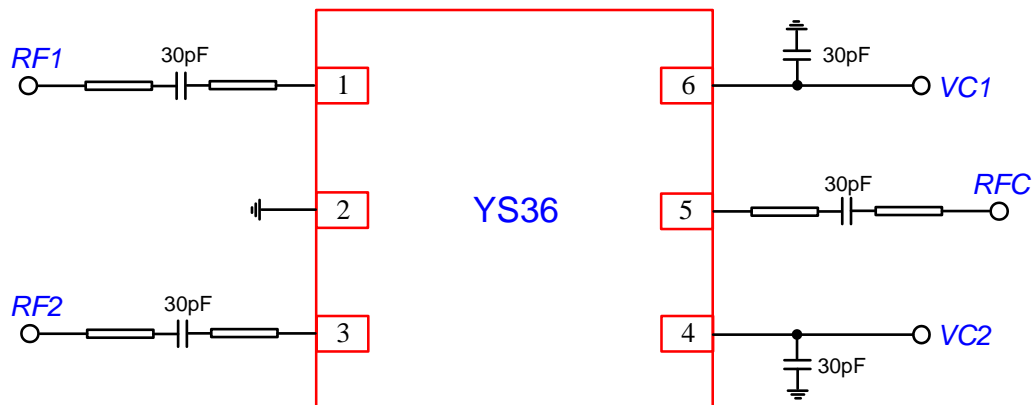
Isolation vs. Frequency



Return Loss vs. Frequency

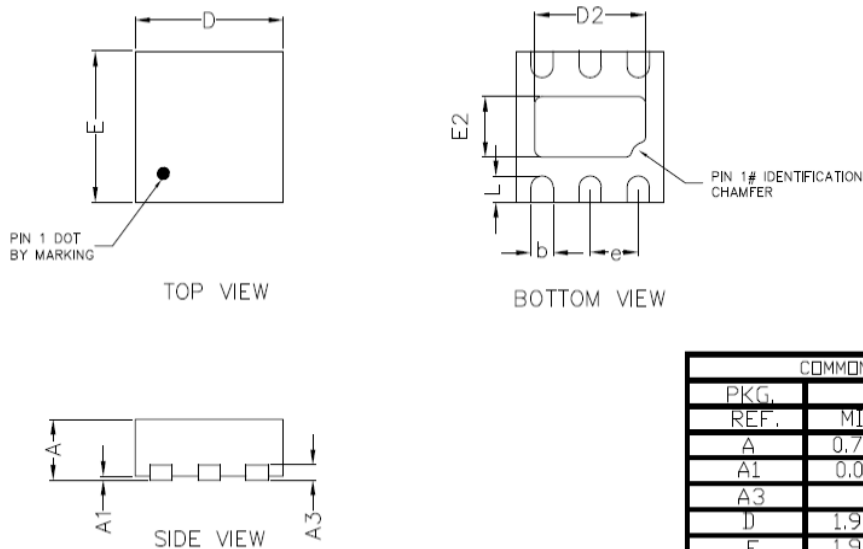


Evaluation Board Schematic



Package Diagram

(Units: millimeters)



COMMON DIMENSIONS(MM)			
PKG.	W:VERY VERY THIN		
REF.	MIN.	NOM.	MAX
A	0.70	0.75	0.80
A1	0.00	-	0.05
A3	0.2 REF.		
D	1.95	2.00	2.05
F	1.95	2.00	2.05
D2	1.35	1.50	1.60
E2	0.65	0.80	0.90
L	0.25	0.35	0.45
b	0.25	0.30	0.35
e	0.65 BSC		