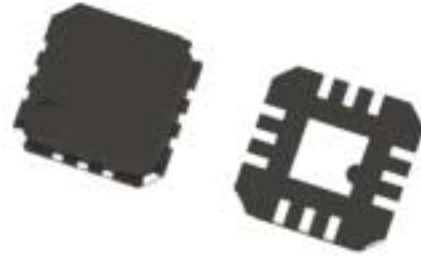


FEATURES

- Low Insertion Loss: 0.55 dB at 2.4 GHz
: 0.75 dB at 5.9 GHz
- High Isolation : 25 dB at 2.4 GHz
: 20 dB at 5.9 GHz
- GaAs PHEMT technology
- Miniature QFN-12 Plastic Package



3.0 mm x 3.0 mm x 0.9mm

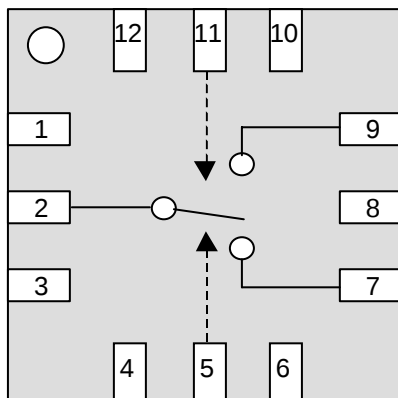
Lead Free Package

APPLICATIONS

- WLAN 802.11a,b,g / WiMAX 802.16d
T/R Switching

DESCRIPTION

HS/M69SPDT312 is a single-pole double-throw (SPDT) GaAs PHEMT switch designed WLAN and WiMAX transmit / receive switching application. HS/M69SPDT312 is ideally suited for applications where low profile and small size are critical. It also features high linearity, low control voltage, low insertion loss, and high isolation. The device is in low-cost miniature 12-lead 3.0mm x 3.0mm package.



Function Block Diagram (Top View)

Pin No.	Pin Name	Description
1	N.C	Ground
2	RFC	RF Common Port
3	N.C	Ground
4	N.C	Ground
5	V1	Control 1
6	N.C	Ground
7	RF1	RF port 1
8	N.C	Ground
9	RF2	RF port 2
10	N.C	Ground
11	V2	Control 2
12	N.C	Ground
13 ^(*1)	paddle	Ground

Pin Configuration

Note: *1: 13 pin is exposed paddle on the package bottom, and it must be connected to ground by via hole.



ARGET SPECIFICATIONS

ABSOLUTE MAXIMUM RATINGS (Ambient Temperature $T_a=25^{\circ}\text{C}$)

Parameter	Symbol	Rating	Unit
DC Input Voltage	V1, V2	+6	V
Input Power	Pin	+36	dBm
Storage Temperature	Tstg	-40 to +140	$^{\circ}\text{C}$
Operating Case Temperature	Top	-40 to +85	$^{\circ}\text{C}$

ELECTRICAL SPECIFICATIONS (Case Temperature $T_c=25^{\circ}\text{C}$)

Parameter	Symbol	Condition/comments	Min	Typ	Max	Unit
Frequency range	F		0.1		6.0	GHz
Insertion Loss	I.L.	2.3 – 3.9 GHz	-	0.55	0.75	dB
		5.1 – 5.9 GHz	-	0.75	0.95	
Isolation	ISO	2.3 – 3.9 GHz	-	25	-	dB
		5.1 – 5.9 GHz	-	20	-	
Return Loss	RL	2.3 – 3.9 GHz	-	20	-	dB
		5.1 – 5.9 GHz	-	20	-	
Control Voltage V1 V2	Vhigh	High	2.5	2.8	3.3	V
	Vlow	Low	-0.2	0	+0.2	
Input P0.1dB	P0.1dB	Vhigh=2.8V, Vlow=0V	-	34	-	dBm
Control Current	Icontrol	Vhigh=2.8V, Vlow=0V	-	15	-	uA

(Unless otherwise specified $Z_{\text{source}}=Z_{\text{load}}=50\Omega$ System, $T_c=25^{\circ}\text{C}$)

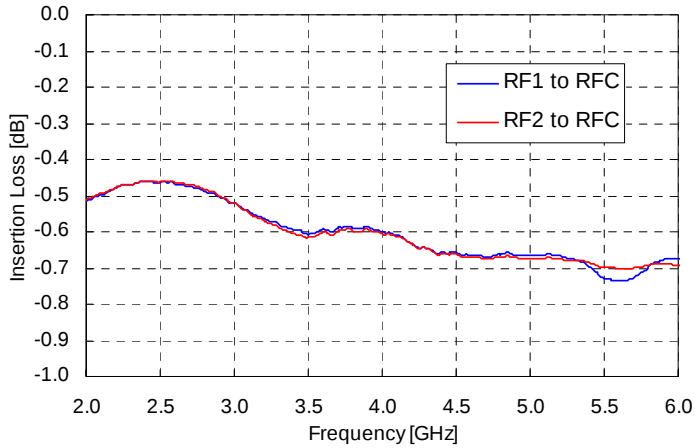
TRUTH TABLE

V1	V2	ANT – RF1	ANT – RF2
High	Low	ON	OFF
Low	High	OFF	ON

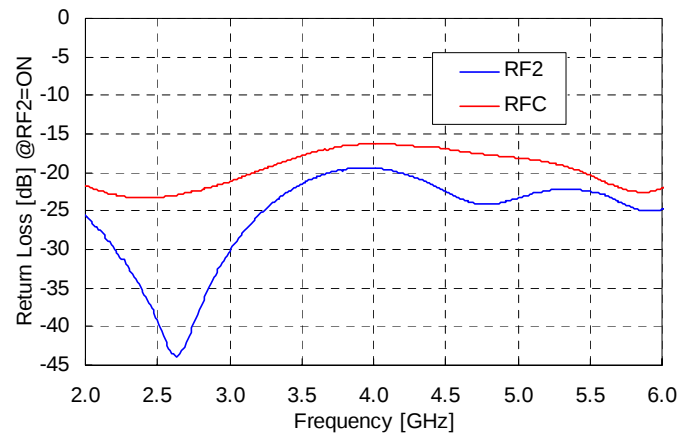
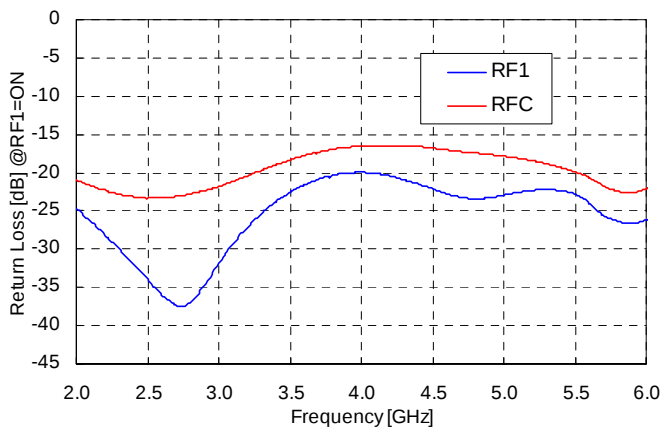
Specifications are subject to change without notice.

Typical Performance Curves

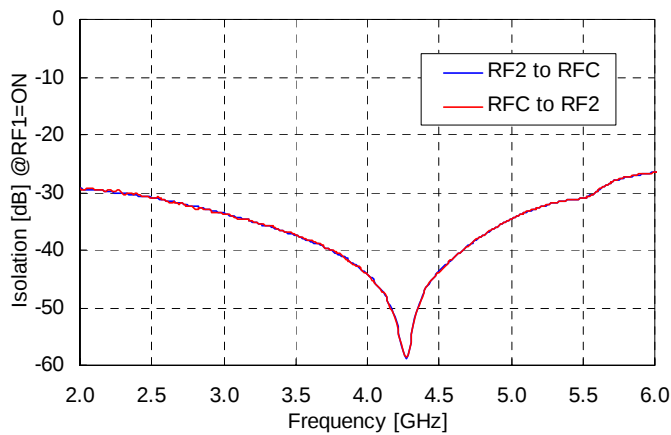
Insertion Loss



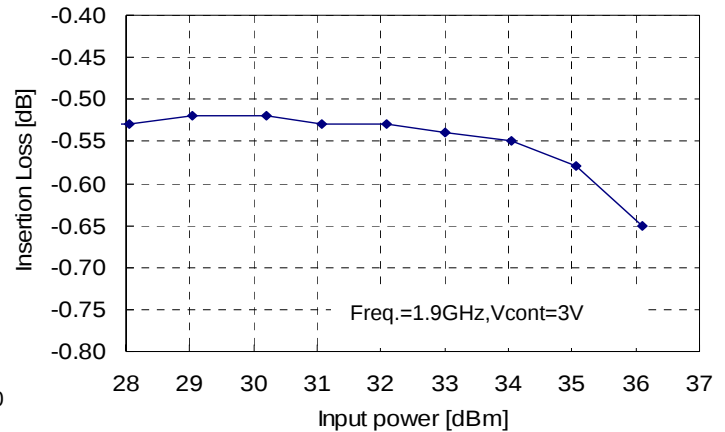
Return Loss



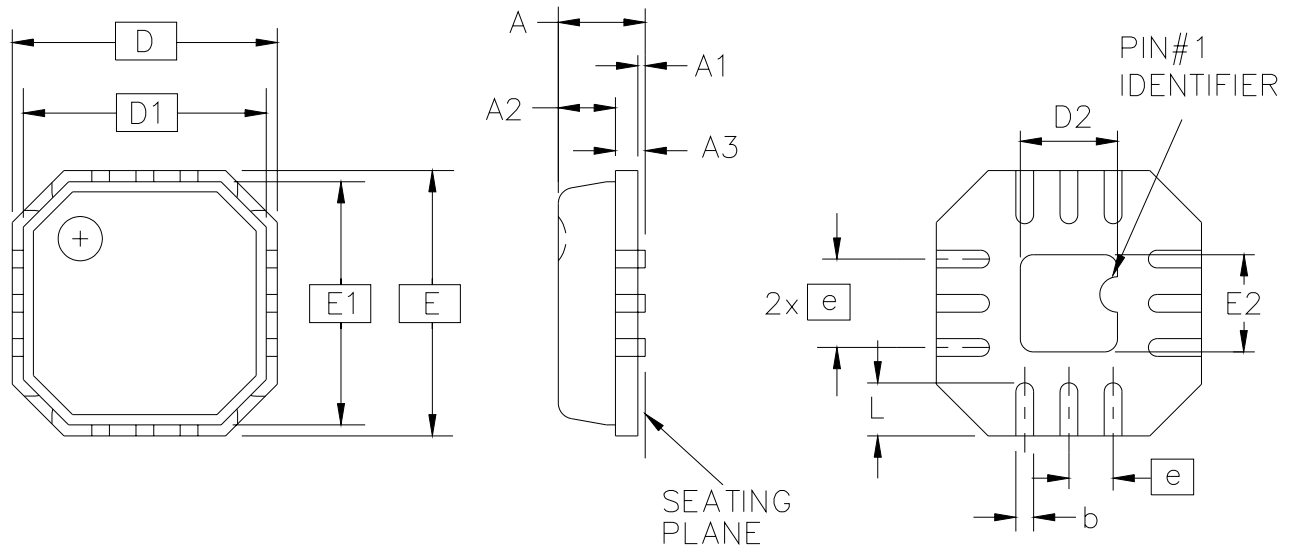
Isolation



P0.1dB



PACKAGE DIMENSIONS



Dimension Symbol	Measurement (mm)		
	Min	Nom	Max
A	-	0.85	0.90
A1	0.00	0.01	0.05
A2	-	0.65	0.70
A3	0.20 REF		
b	0.18	0.23	0.30
D	3.00 BSC		
D1	2.75 BSC		
D2	1.15	1.30	1.45
E	3.00 BSC		
E1	2.75 BSC		
E2	1.15	1.30	1.45
e	0.50 BSC		
L	0.50	0.60	0.75