SPDT Reflective pHEMT MMIC Switch

Description

The FMS2001QFN is a low loss linear Single-Pole Double-Throw Antenna Switch designed for use in mobile handset applications. The switch is designed with one antenna port that can be routed to any one of the two RF ports.

Features

- Low insertion loss (0.6dB @ 900 MHz)
- Operation down to 2V control
- 2 control lines. Single positive voltage supply
- Low harmonics (Typical -70dBc at Pin=+34.5dBm)
- High Isolation (30 dB @ 900 MHz)
- Low cost QFN 12 lead 3*3 package
- Filtronic Advanced GaAs 0.5 µm pHEMT Technology

Electrical Characteristics (at 25C°, [Vc 0,+2.7V], 50Ω system, CW)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Insertion Loss	IL	1		0.5		dB
		2		0.6		dB
		3		0.5		dB
Isolation – RF – Ant on.	ISO	1		35		dB
		2		25		dB
S11	S11	1		-23		dB
S11	S11	2		-15		dB
Harmonics	2fo	3		-70		dBc
	3fo	3		-70		dBc
Leakage Current - Tx	I_{lkTx}	3		2		µA
Leakage Current – Rx	I_{lkRx}	3		2		µA

Condition

1 Small signal, DC – 1GHz, Vc = 2.7V/0V
2 Small signal, 1-2 GHz, Vc = 2.7V/0V
3 Input power=34.5dBm, EGSM Tx 880-915MHz, Vc=2.7V/0V

GaAs MMIC's are ESD sensitive devices. Special handling precautions are required.

Truth Table

Operation	Control Voltage	
	V 1	V 2
RF1-ANT	HIGH	0
RF2-ANT	0	HIGH

Control Levels

Control	Typ.
HIGH	+2.7 to +5.0V
LOW	0.0 to +0.2V

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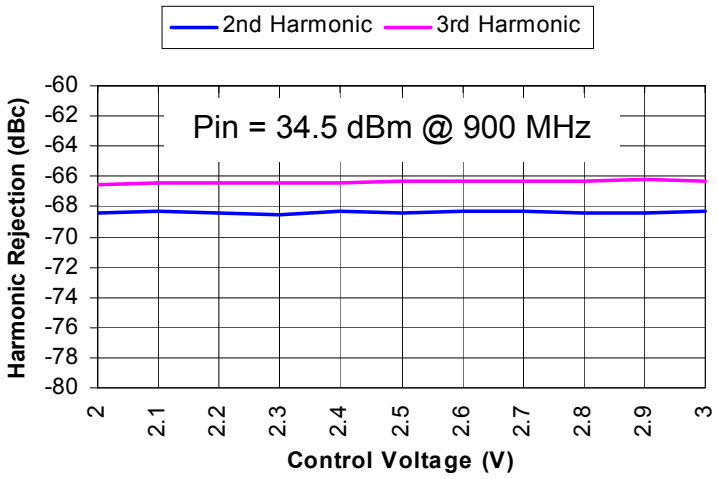
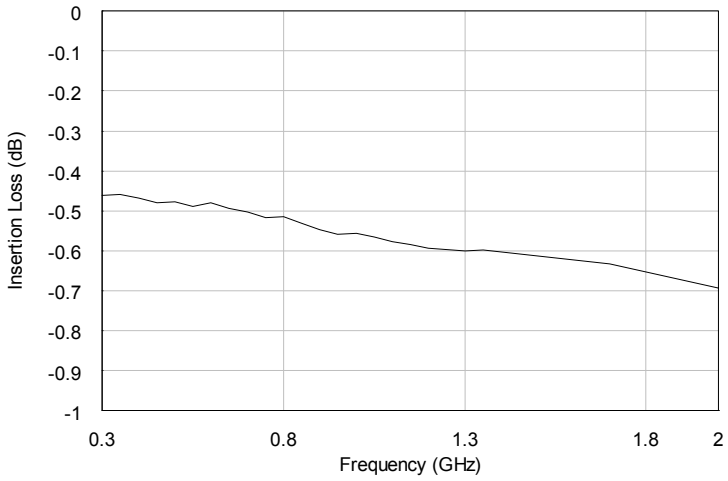
Typical Jig Measurements

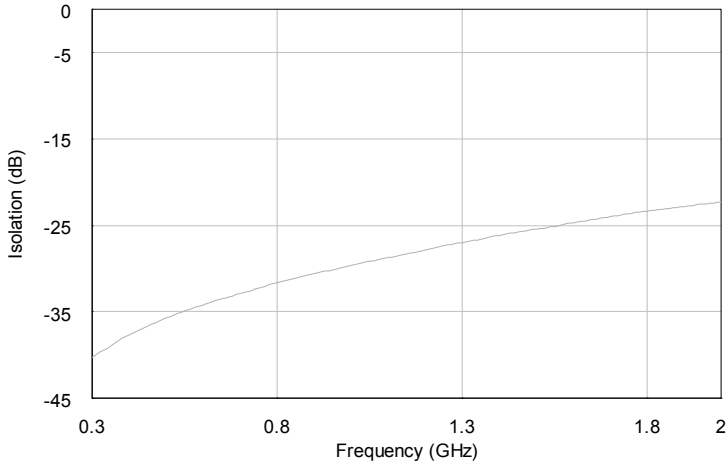
Harmonic Rejection vs. Control Voltage



Insertion Loss vs. Frequency



Isolation vs. Frequency



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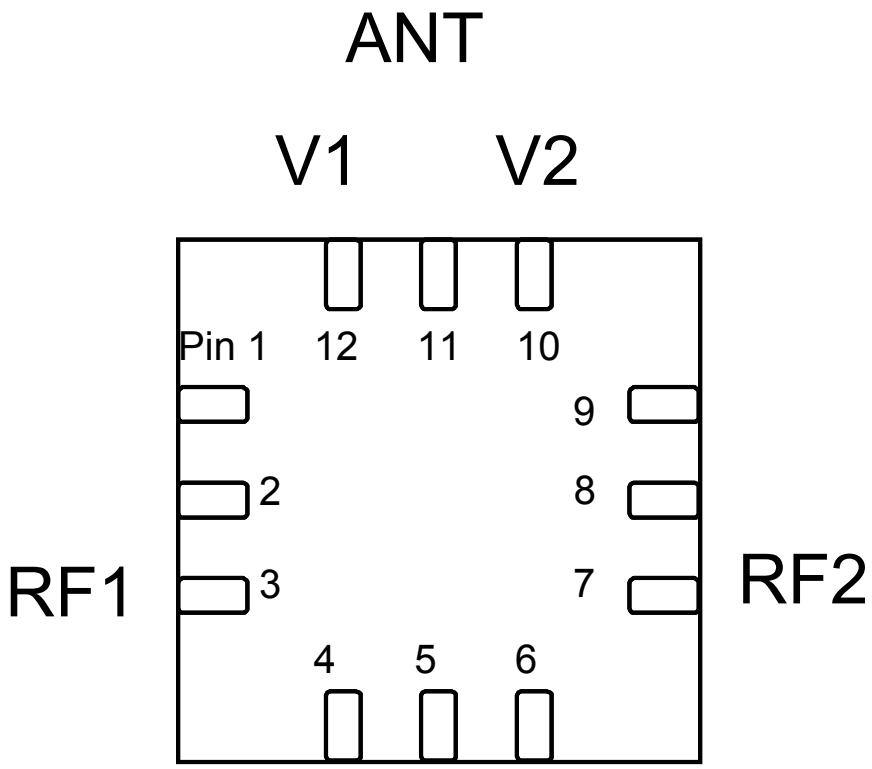
Pin out Diagram (top view)



DC BLOCKING CAPACITORS ARE REQUIRED ON ALL RF LINES

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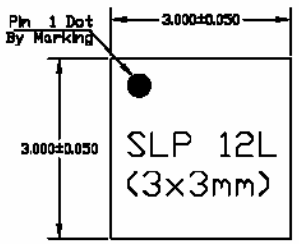
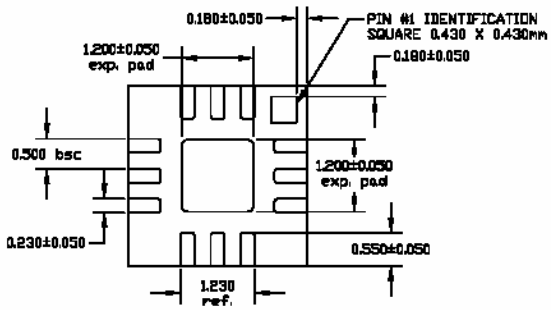
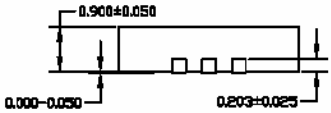
QFN 12 LEAD 3*3 PACKAGE OUTLINE



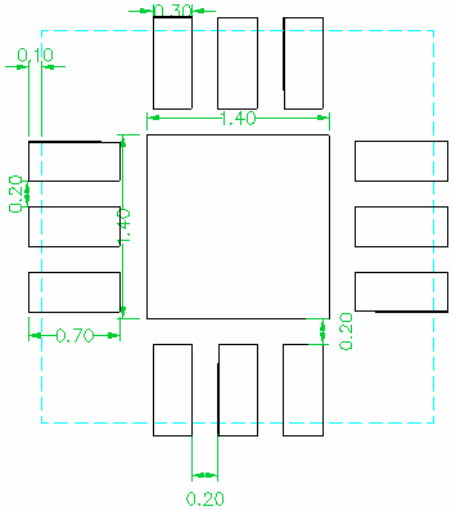
Top View



Btm View



Side View



PCB pad layout reference

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