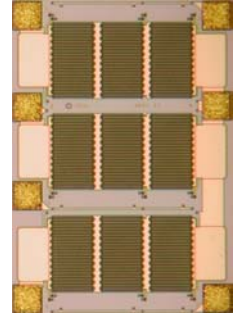


SP3T Reflective pHEMT MMIC Switch

Description

The FMS2002QFN is a linear high power Single-Pole Three-Throw MMIC Antenna Switch designed for use in Dual-band handsets GSM900 and GSM1800/1900 combinations. The switch is designed with one antenna port that can be routed to any one of the three RF ports.



Features

- Low insertion loss (0.5dB @ 900 MHz)
- Operation down to 2V control
- 3 control lines. Single positive voltage supply
- Low harmonics (Typical -73dBc at Pin=+34.5dBm)
- High Isolation (30 dB @ 900 MHz)
- Filtronic Advanced GaAs pHEMT Technology

Electrical Characteristics (at 25°C, [V_{ctrl} 0,+2.7V], 50 Ohm system, under CW)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Insertion Loss	IL	1		0.45		dB
		2		0.55		dB
		3		0.5		dB
Isolation – RF – Ant on.	ISO	1		35		dB
		2		26		dB
S11	S11	1		-25		dB
S11	S11	2		-18		dB
Harmonics	2fo	3		-74		dBc
	3fo	3		-73		dBc
Leakage Current - Tx	I _{lKTx}	3		2.9		μA
Leakage Current – Rx	I _{lKRx}	3		3.2		μA

Condition

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

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

Truth Table

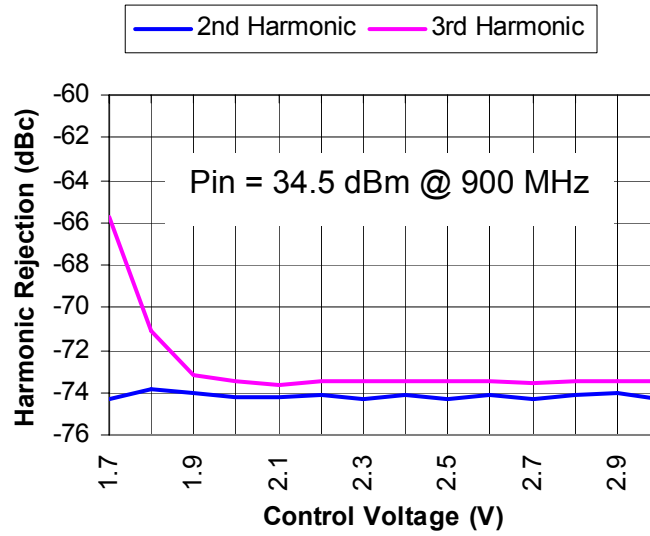
Operation	Control Voltage		
	V _{ctrl} 1	V _{ctrl} 2	V _{ctrl} 3
RF1-Ant	HIGH	0	0
RF2-Ant	0	HIGH	0
RF3-Ant	0	0	HIGH

Control values

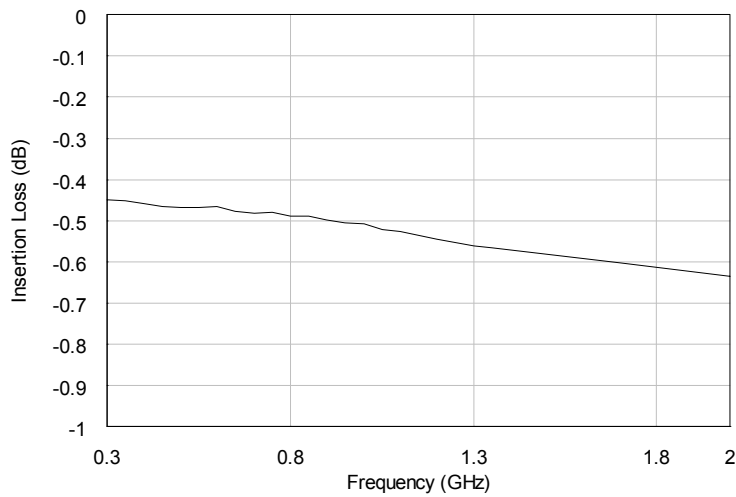
Control	Min	Typ.	Max	Unit
High	-	2.7	-	V
Low	-	0.0	-	V

Typical Jig Measurements

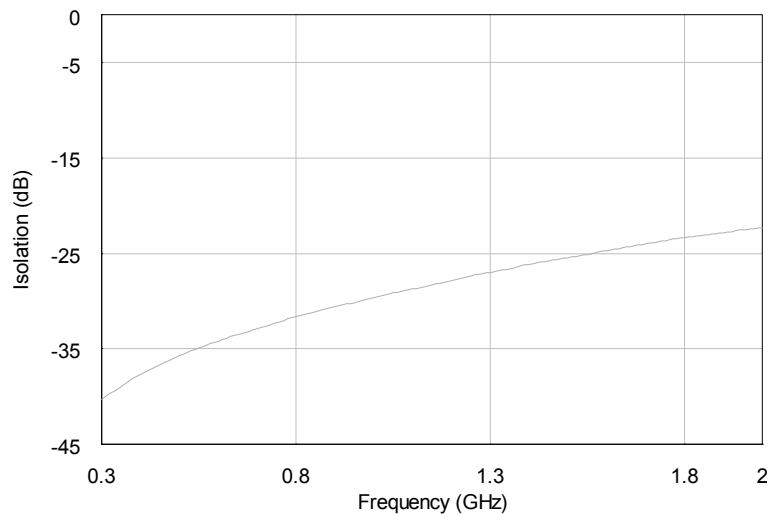
Harmonic Rejection vs. Control Voltage



Insertion Loss vs. Frequency



Isolation vs. Frequency



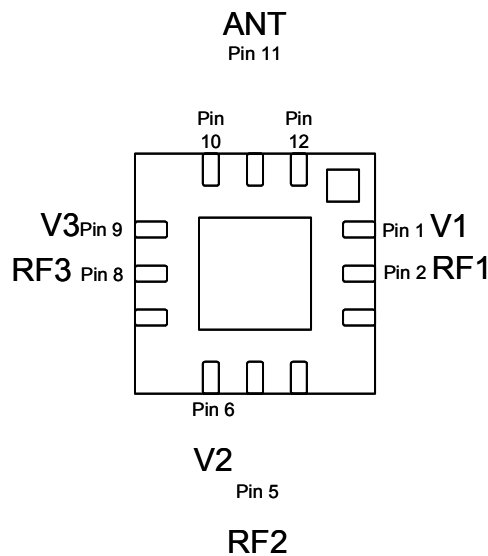
Preliminary specifications subject to change without notice

SP3T Bonding Configuration

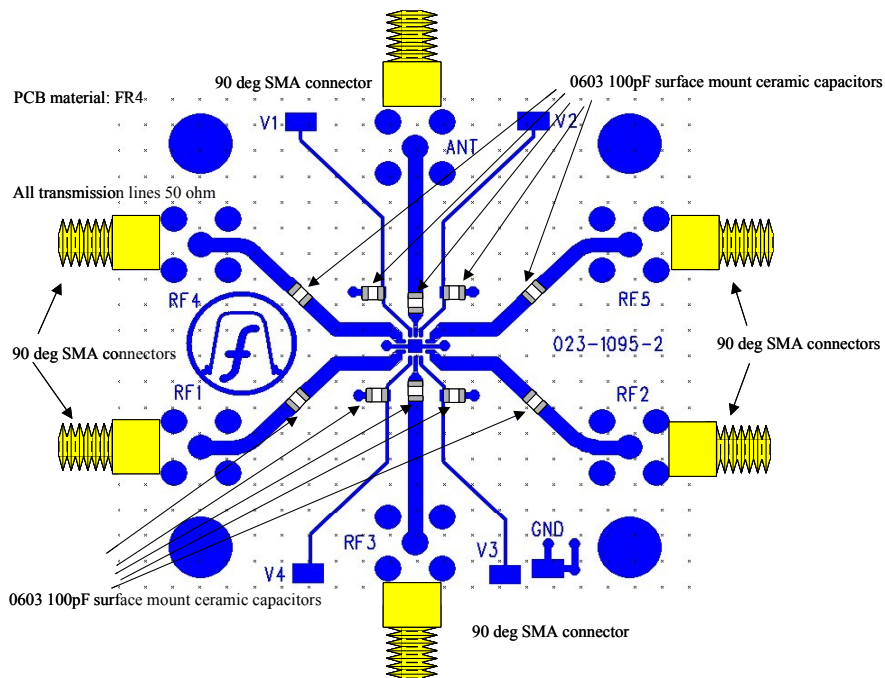
Pad Number	Port	Symbol	Connection on Board*
1	RF input port 1	RF 1	RF1
2	RF input port 2	RF 2	RF3
3	DC Control line 2	Vctrl 2	V3
4	RF input port 3	RF 3	RF2
5	DC Control line 1	Vctrl 1	V1
6	Antenna	ANT	ANT
7	DC Control line 3	Vctrl 3	V2

* RF4, RF 5, V4 and V5 lines are unused.

Bonding Pad Layout



Suggested Application Board Layout



Generic SPDT, 3T and 4T Evaluation Board Layout