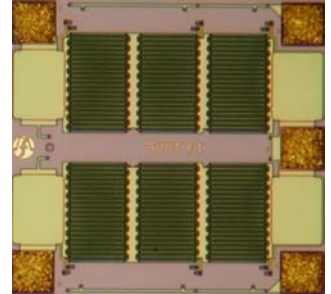


## Low Loss SPDT Reflective pHEMT MMIC Switch

### Description

The FMS2001 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 -68dBc at Pin=+34.5dBm)
- High Isolation (30 dB @ 900 MHz)
- Filtronic Advanced GaAs pHEMT Technology

### Electrical Characteristics (at 25°C, [V<sub>ctrl</sub> 0,+2.7V], 50 Ohm system, under CW )

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Insertion Loss	IL	1		0.5		dB
		2		0.6		dB
		3		0.6		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		-68		dBc
Leakage Current - Tx	I <sub>IKTx</sub>	3		1.7		µA
Leakage Current – Rx	I <sub>IKRx</sub>	3		1.8		µA

#### Condition

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

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

### Truth Table

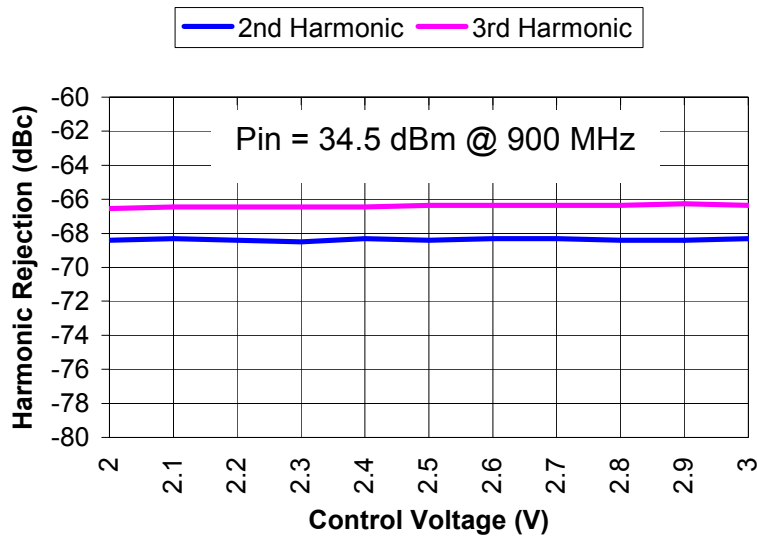
Operation	Control Voltage	
	V <sub>ctrl</sub> 1	V <sub>ctrl</sub> 2
RF1-Ant	High	Low
RF2-Ant	Low	High

### Control Levels

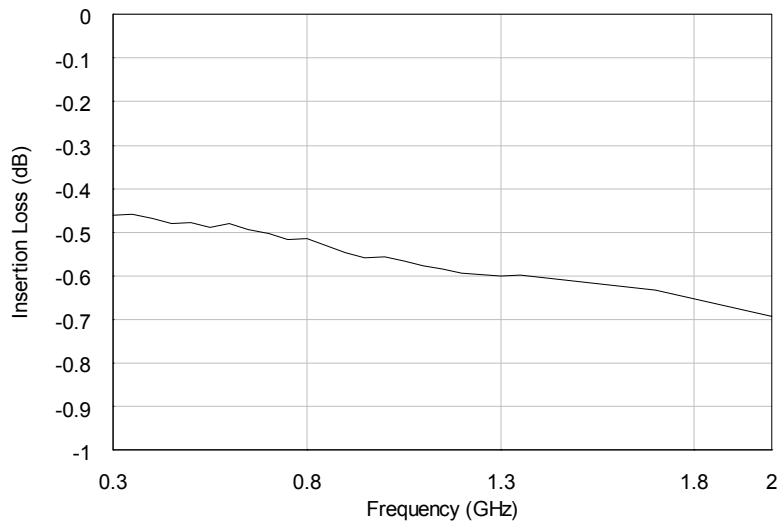
Control	Min	Typ.	Max	Unit
High		2.7		V
Low		0		V

### Typical Jig Measurements

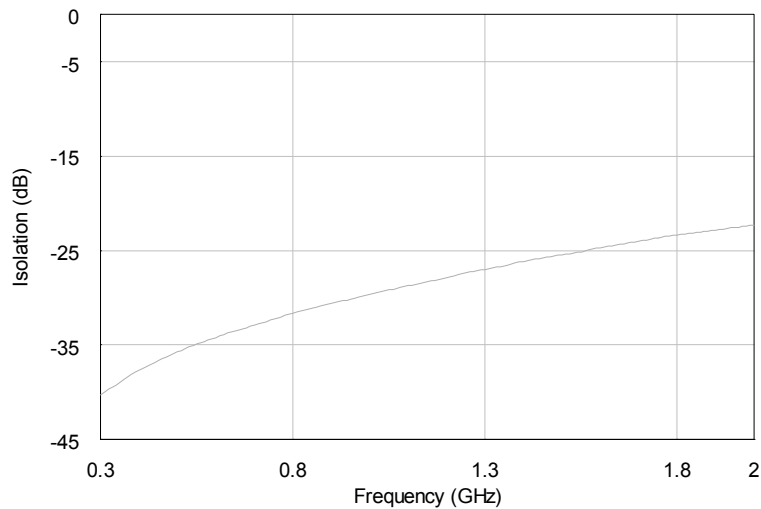
#### Harmonic Rejection vs. Control Voltage



#### Insertion Loss vs. Frequency



#### Isolation vs. Frequency

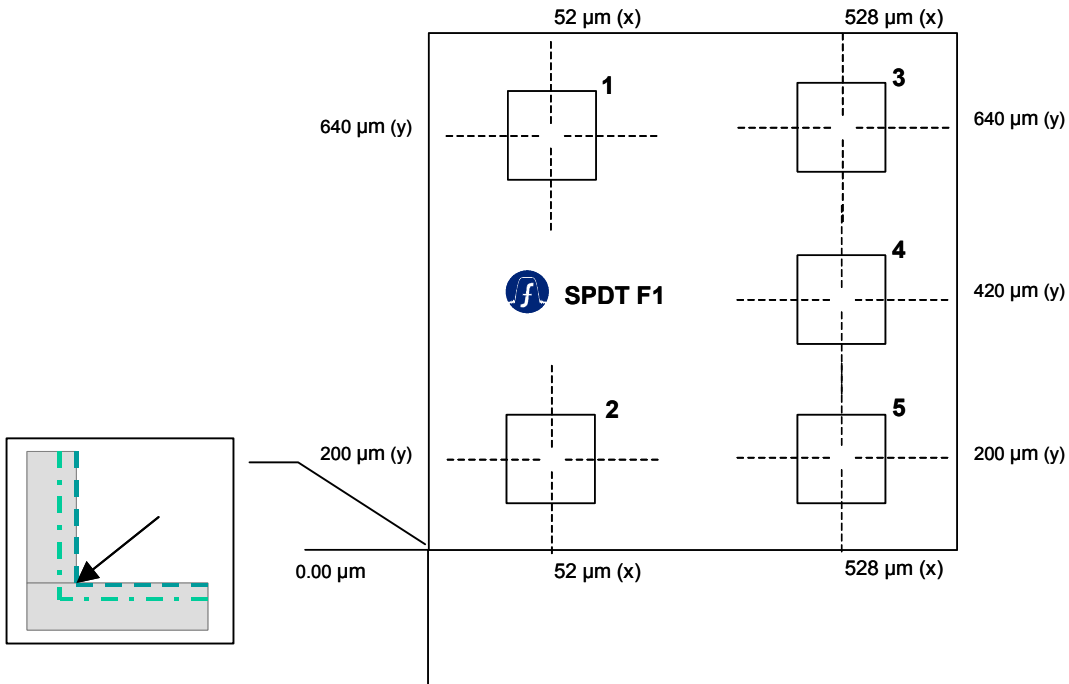


### SPDT Bonding Configuration

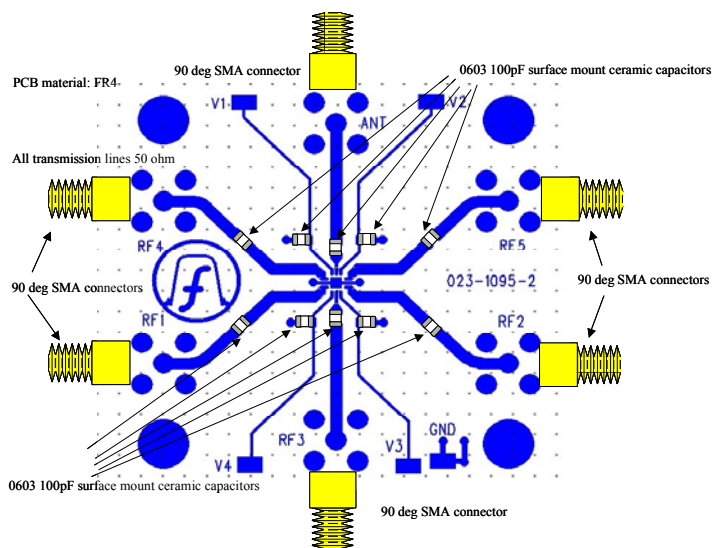
Pad Number	Port	Symbol	Connection on Board*
1	RF input port1	RF 1	RF1
2	RF input port 2	RF 2	RF2
3	DC Control line 1	Vctrl 1	V1
4	Antenna	ANT	ANT
5	DC Control line 2	Vctrl 2	V2

\*RF 3, RF4, RF 5, V3, V4, lines are unused.

### Bonding Pad Diagram



### Suggested Application Board Layout



### Generic SPDT, 3T and 4T Evaluation Board Layout

Preliminary specifications subject to change without notice

Filtron Compound Semiconductors Ltd, Heighington Lane Business Park, Newton Aycliffe, Co Durham. DL5 6JW.  
 Contact Details: Tel: +44 (0) 1325 301111 Fax: +44 (0) 1325 306177 Email: [sales@filcs.com](mailto:sales@filcs.com) Website: [www.filcs.com](http://www.filcs.com)