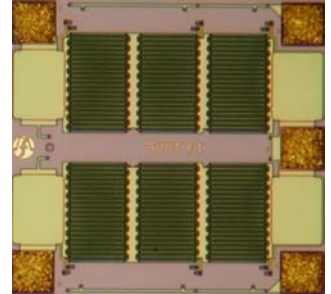


## Low Loss SPDT Reflective pHEMT MMIC Switch

### 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

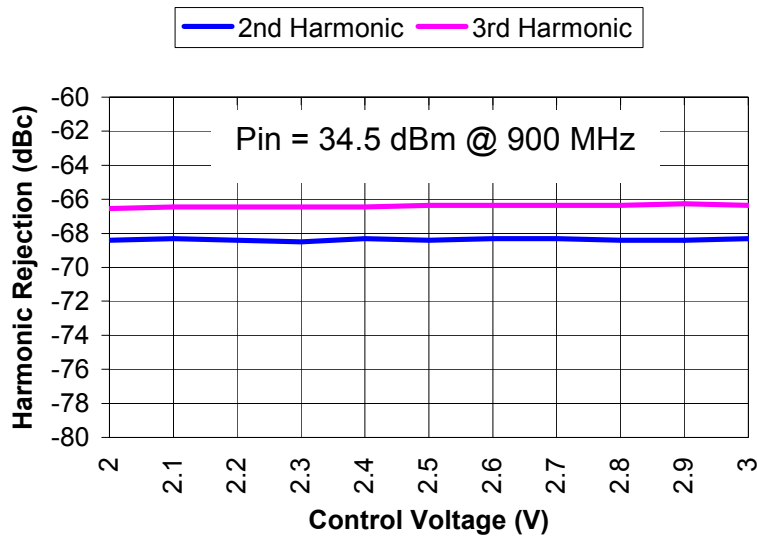
Operation	Control Voltage	
	V <sub>ctrl</sub> 1	V <sub>ctrl</sub> 2
RF1-Ant	High	Low
RF2-Ant	Low	High

### Control Levels

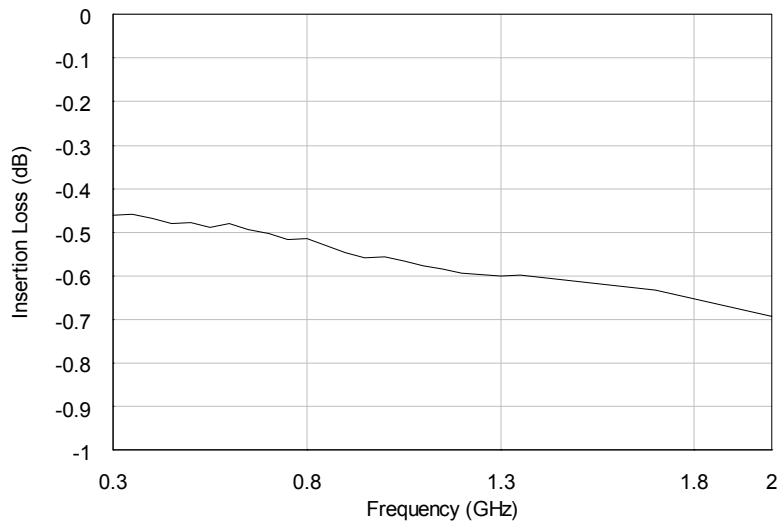
Control	Min	Typ.	Max	Unit
High		2.7		V
Low		0		V

### Typical Jig Measurements

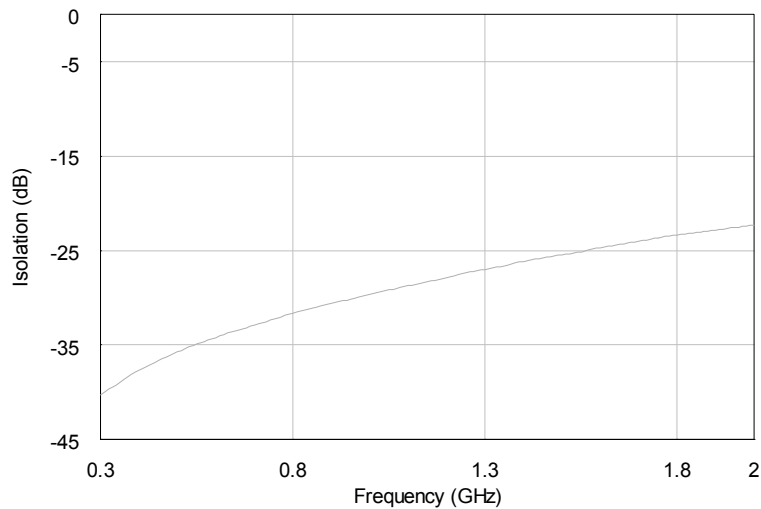
#### Harmonic Rejection vs. Control Voltage



#### Insertion Loss vs. Frequency



#### Isolation vs. Frequency

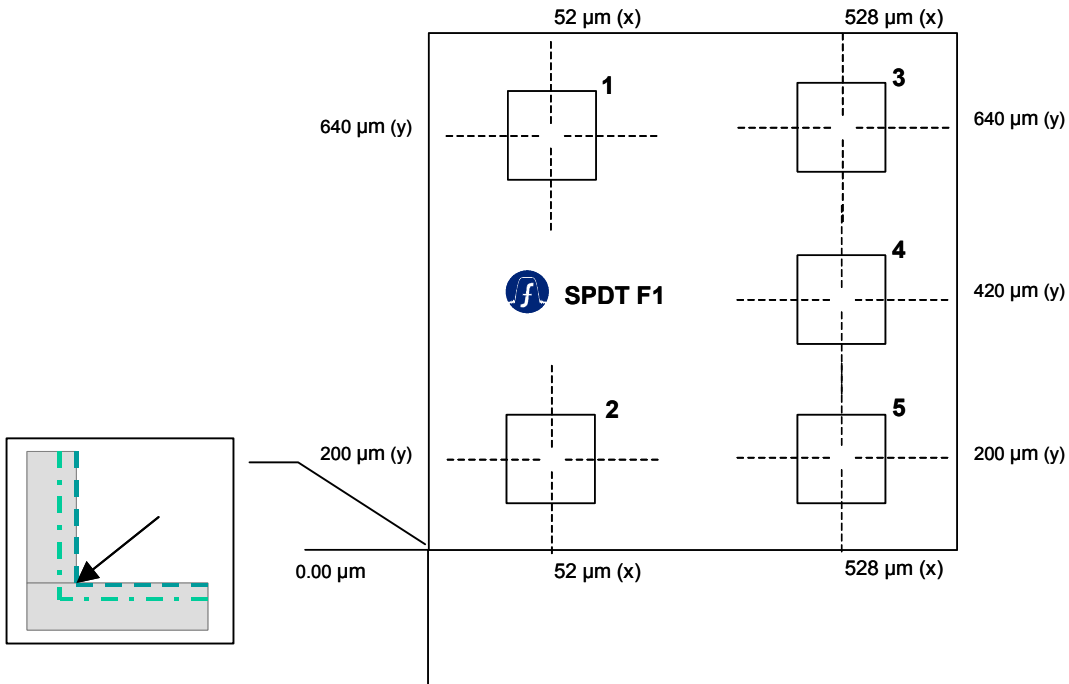


**SPDT Bonding Configuration**

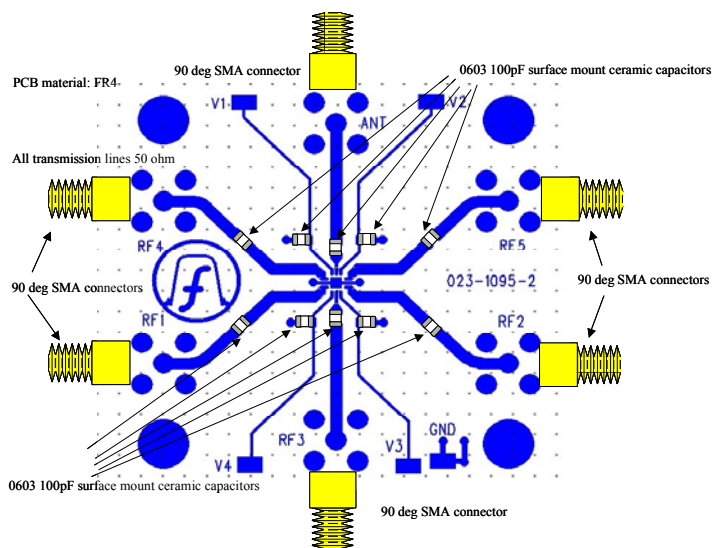
Pad Number	Port	Symbol	Connection on Board*
1	RF input port1	RF 1	RF1
2	RF input port 2	RF 2	RF2
3	DC Control line 1	Vctrl 1	V1
4	Antenna	ANT	ANT
5	DC Control line 2	Vctrl 2	V2

\*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

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