

## 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 25°C, [V<sub>c</sub> 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 <sub>IKTx</sub> | 3         |      | 2    |      | μA   |
| Leakage Current – Rx     | I <sub>IKRx</sub> | 3         |      | 2    |      | μA   |

#### Condition

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

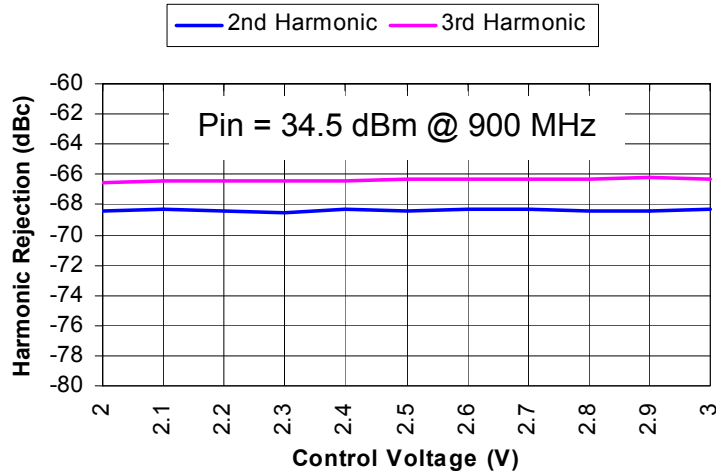
### Control Levels

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

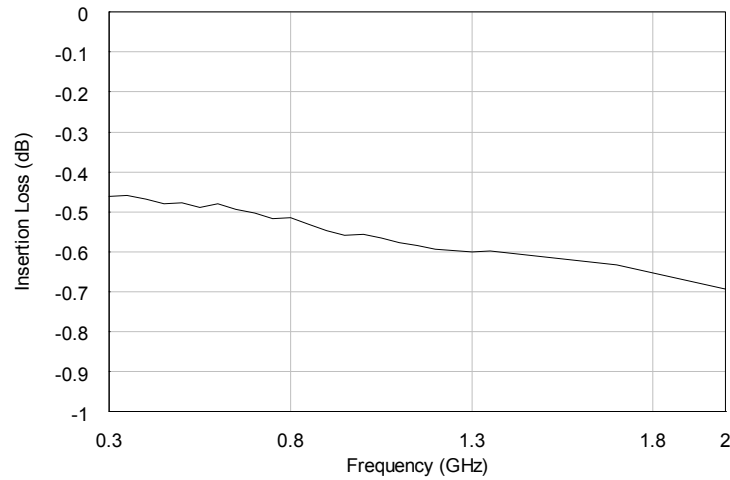
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### Typical Jig Measurements

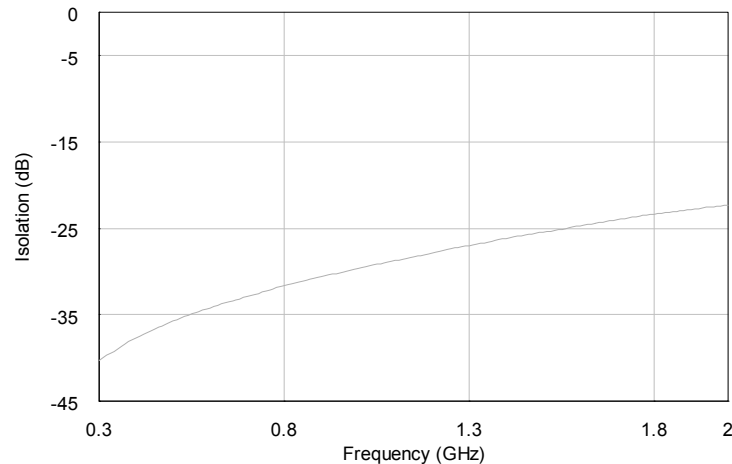
#### Harmonic Rejection vs. Control Voltage



#### Insertion Loss vs. Frequency



#### Isolation vs. Frequency

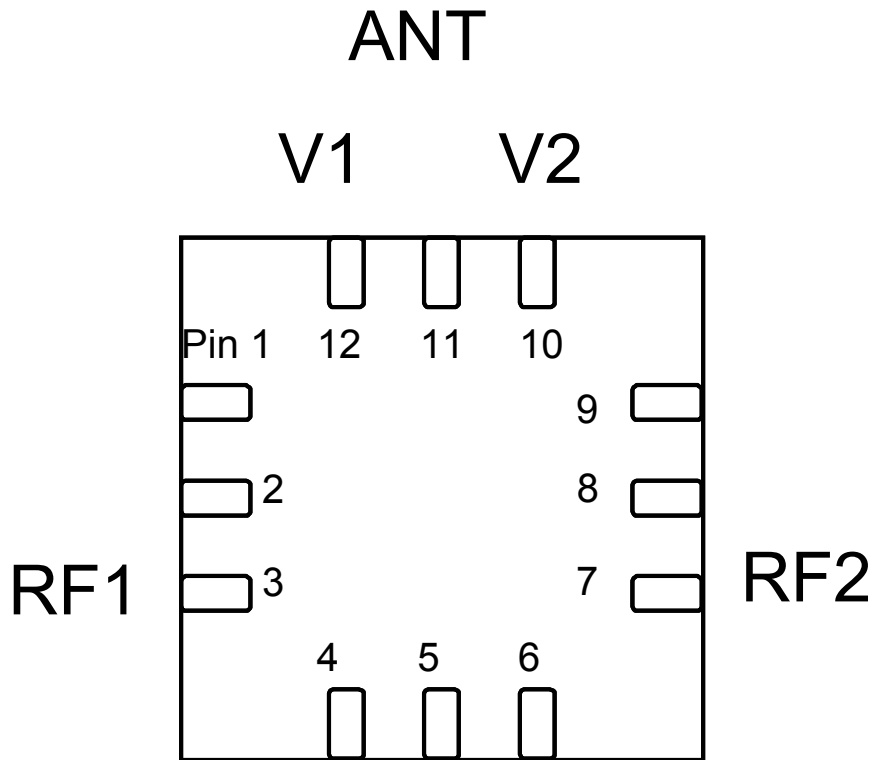


Preliminary specifications subject to change without notice

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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

