# 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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www.DataSheet4U.com

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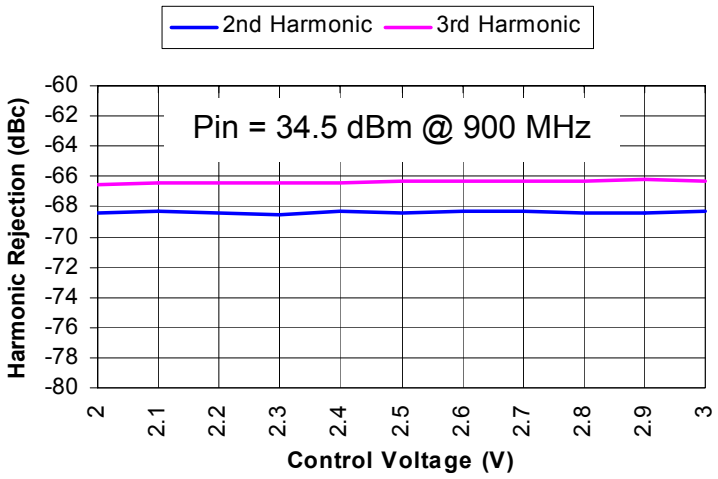
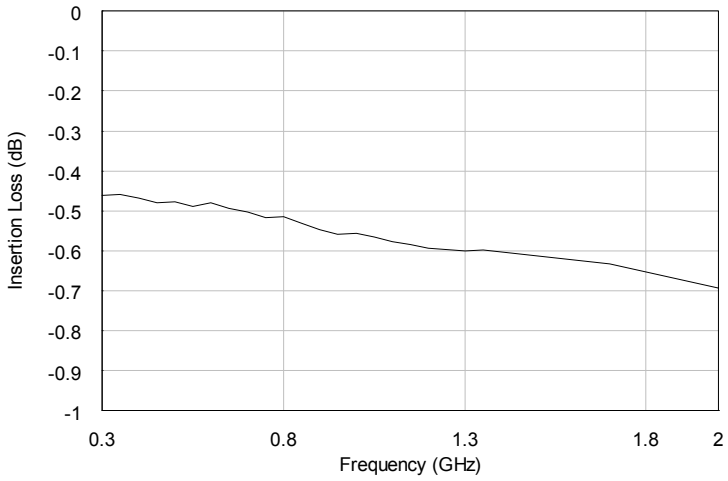
## Typical Jig Measurements

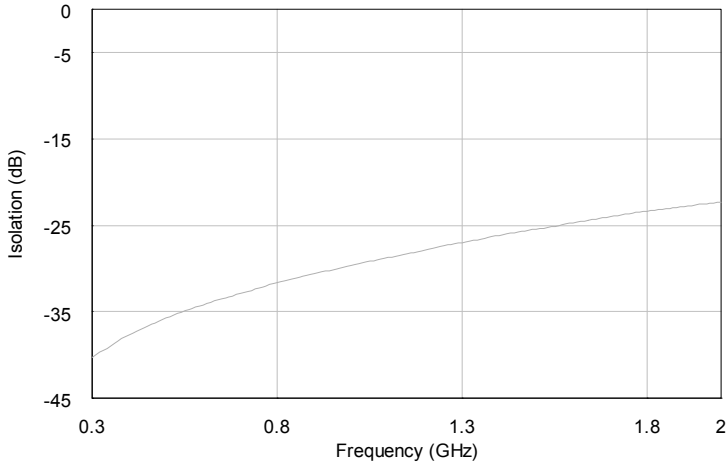
### Harmonic Rejection vs. Control Voltage




### Insertion Loss vs. Frequency




### Isolation vs. Frequency



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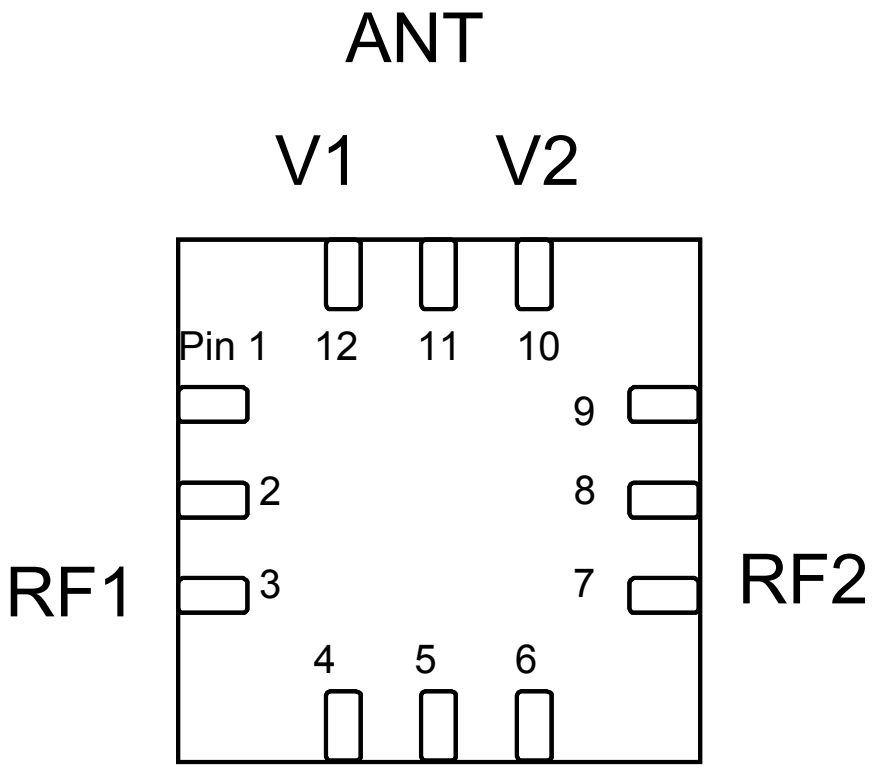
## Pin out Diagram (top view)




DC BLOCKING CAPACITORS ARE REQUIRED ON ALL RF LINES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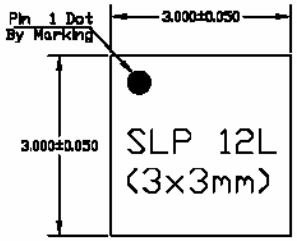
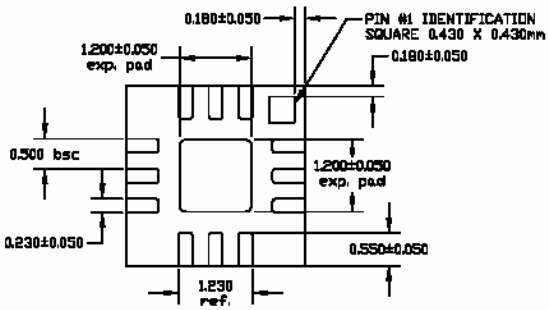
# SPDT Reflective pHEMT MMIC Switch

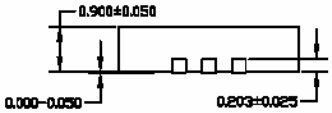
## QFN 12 LEAD 3*3 PACKAGE OUTLINE



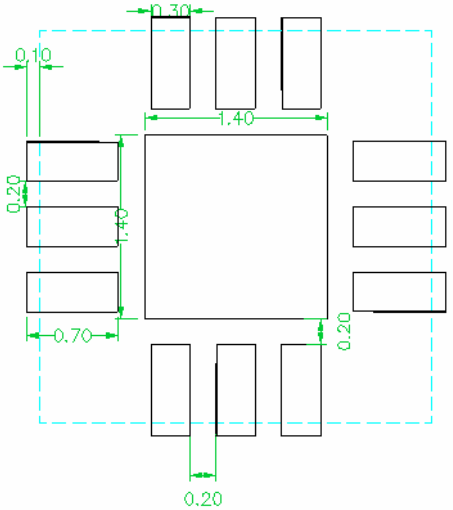

Top View




Btm View




Side View




PCB pad layout reference



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