GaAs Broadband SPDT Switch
DC - 6.0 GHz

Features
- 802.11a + b/g Dual Band Applications
- Broadband Performance: DC - 6.0 GHz
- Low Insertion Loss: 0.75 dB @ 5.8 GHz
- High Isolation: 22 dB @ 5.8 GHz
- Fast Switching Speed: 0.5 µm GaAs PHEMT
- Lead-Free 3 mm 12-Lead PQFN Package
- 100% Matte Tin Plating over Copper
- Halogen-Free “Green” Mold Compound
- 260°C Reflow Compatible
- RoHS* Compliant Version of MASWSS0070

Description
M/A-COM’s MASWSS0202 is a broadband GaAs PHEMT MMIC SPDT switch in a lead-free 3 mm 12-lead PQFN package. The MASWSS0202 is ideally suited for applications where very small size and low cost are required.

Typical applications are for WLAN IEEE 802.11a and 802.11b/g PC cards and access points. Other applications include cordless phones and base stations. Designed for high power, this SPDT switch maintains high linearity up to 6.0 GHz.

The MASWSS0202 is fabricated using a 0.5 micron gate length GaAs PHEMT process. The process features full passivation for performance and reliability.

Ordering Information

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Package</th>
</tr>
</thead>
<tbody>
<tr>
<td>MASWSS0202TR-3000</td>
<td>3000 piece reel</td>
</tr>
<tr>
<td>MASWSS0202SMB</td>
<td>Sample Test Board (Includes 5 Samples)</td>
</tr>
</tbody>
</table>

1. Reference Application Note M513 for reel size information.

2. The exposed pad centered on the package bottom must be connected to RF and DC ground.

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Electrical Specifications: \( T_A = 25^\circ C, Z_0 = 50 \, \Omega, V_c = 0 \, V/3 \, V, 8 \, pF \) Capacitor

### Truth Table

<table>
<thead>
<tr>
<th>Control V1</th>
<th>Control V2</th>
<th>RFC—RF1</th>
<th>RFC—RF2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>On</td>
<td>Off</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>Off</td>
<td>On</td>
</tr>
</tbody>
</table>

5. \( 1 = +2.9 \, V \) to \(+5 \, V, 0 = 0 \, V \pm 0.2 \, V \).
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**Lead-Free 3 mm 12-Lead PQFN†**

† Reference Application Note M538 for lead-free solder reflow recommendations.

**Evaluation Board**

**Application Schematic**

**Application #1:**
Optimized for 802.11a (5-6 GHz)

<table>
<thead>
<tr>
<th>Qty.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Capacitor, 3.0 pF, 0402, SMT, 5% (C1-C3)</td>
</tr>
</tbody>
</table>

**Application #2:**
Optimized for 802.11b/g (2.4 GHz)

<table>
<thead>
<tr>
<th>Qty.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Capacitor, 8.0 pF, 0402, SMT, 5% (C1-C3)</td>
</tr>
</tbody>
</table>
Typical Performance Curves with 0 / 3 V Control, 8 pF Capacitors

**Insertion Loss**

![Insertion Loss Graph]

**Isolation**

![Isolation Graph]

**Return Loss**

![Return Loss Graph]

**Qualification**


**Handling Procedures**

Please observe the following precautions to avoid damage:

**Static Sensitivity**

Gallium Arsenide Integrated Circuits are sensitive to electrostatic discharge (ESD) and can be damaged by static electricity. Proper ESD control techniques should be used when handling these devices.
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