MASWSS0162

GaAs SPST Switch
DC - 2.5 GHz

Features
- Very Low Power Consumption: 50 µW
- Low Insertion Loss: 1.0 dB
- High Isolation: 35 dB up to 2 GHz
- Very High Intercept Point: 46 dBm IP3
- Nanosecond Switching Speed
- Temperature Range: -40°C to +85°C
- Lead-Free SOIC-8 Plastic Package
- 100% Matte Tin Plating over Copper
- Halogen-Free “Green” Mold Compound
- 260°C Reflow Compatible
- RoHS* Compliant Version of SW-259

Description
The MASWSS0162 is a GaAs MMIC SPST switch in a lead-free SOIC-8 lead surface mount plastic package.

The MASWSS0162 is ideally suited for use where low power consumption is required. Typical applications include transmit/receive switching, switch matrices and switched filter banks in systems such as radio and cellular equipment, PCM, GPS, fiber optic modules, and other battery powered radio equipment.

The MASWSS0162 is fabricated using a monolithic GaAs MMIC using a mature 1 micron process. The process features full chip passivation for increased performance and reliability.

Ordering Information

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Package</th>
</tr>
</thead>
<tbody>
<tr>
<td>MASWSS0162</td>
<td>Bulk Packaging</td>
</tr>
<tr>
<td>MASWSS0162TR</td>
<td>1000 piece reel</td>
</tr>
</tbody>
</table>

1. Reference Application Note M513 for reel size information.

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Absolute Maximum Ratings\textsuperscript{4,5}

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Absolute Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Power\textsuperscript{5}</td>
<td>27 dBm</td>
</tr>
<tr>
<td>0.05 GHz</td>
<td>34 dBm</td>
</tr>
<tr>
<td>0.5 - 2.0 GHz</td>
<td></td>
</tr>
<tr>
<td>Control Voltage</td>
<td>+5 V, -8.5 V</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-40°C to +85°C</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-65°C to +150°C</td>
</tr>
</tbody>
</table>

Truth Table\textsuperscript{7,8}

<table>
<thead>
<tr>
<th>Control Inputs</th>
<th>Condition of Switch</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

2. All measurements with 0 - 5 V control voltages at 1.0 GHz in a 50 Ω system, unless otherwise specified.
3. Typical values listed are based on average of frequency range noted.

4. Exceeding any one or combination of these limits may cause permanent damage to this device.
5. MACOM does not recommend sustained operation near these survivability limits.
6. When the RF Input power is applied to a terminated port, the absolute maximum is +32 dBm.

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GaAs SPST Switch
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Electrical Schematic

Typical Performance Curves

**Insertion Loss**

![Insertion Loss Graph]

**Isolation**

![Isolation Graph]

**VSWR**

![VSWR Graph]
**Lead-Free SOIC-8†**

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