SPDT High Isolation PIN Diode Switch 1 GHz to 2 GHz, 90 dB, 32 dBm, 1 dB Loss and SMA

SDS-0102-SPDT-SMA is a general purpose 1.0 GHz to 2.0 GHz single pole, double throw high isolation, absorptive switch. This switch offers 90 dB typical port-to-port isolation, and a typical insertion loss of 1.0 dB at room temperature. It has a 75 ns typical switching speed, and independently TTL controlled.

### Electrical Specifications

<table>
<thead>
<tr>
<th>Description</th>
<th>Min</th>
<th>Typ</th>
<th>Max</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency Range</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>GHz</td>
</tr>
<tr>
<td>Insertion Loss</td>
<td>1</td>
<td>1.2</td>
<td>1.2</td>
<td>dB</td>
</tr>
<tr>
<td>Isolation</td>
<td>90</td>
<td>85</td>
<td>85</td>
<td>dB</td>
</tr>
<tr>
<td>VSWR</td>
<td>1.3:1</td>
<td>1.5:1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Switching Speed</td>
<td>75</td>
<td>100</td>
<td>100</td>
<td>ns</td>
</tr>
<tr>
<td>DC Bias at 5 VDC</td>
<td>70</td>
<td>80</td>
<td>80</td>
<td>mA</td>
</tr>
<tr>
<td>DC Bias at -15 VDC</td>
<td>40</td>
<td>50</td>
<td>50</td>
<td>mA</td>
</tr>
<tr>
<td>Control Input</td>
<td>TTL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power Handling</td>
<td>+32</td>
<td>+30</td>
<td>+30</td>
<td>dBm</td>
</tr>
</tbody>
</table>

### TTL Logic Table

<table>
<thead>
<tr>
<th>E1</th>
<th>E2</th>
<th>Signal Path</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>J1 - J2</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
<td>J1 - J3</td>
</tr>
</tbody>
</table>

0 = Low Loss State
1 = Isolated State

### Absolute Maximum Rating

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Rating</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive Voltage</td>
<td>+7</td>
<td>Volts</td>
</tr>
<tr>
<td>Negative Voltage</td>
<td>-14</td>
<td>Volts</td>
</tr>
<tr>
<td>RF input Power</td>
<td>+30</td>
<td>dBm</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-54 to +85</td>
<td>°C</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-55 to +100</td>
<td>°C</td>
</tr>
</tbody>
</table>

ESD Sensitive Material, Transport material in Approved ESD bags. Handle only in approved ESD Workstation.

### Mechanical Specifications

**Size**
- Length: 1.2 in [30.48 mm]
- Width/Dia.: 0.9 in [22.86 mm]
- Height: 0.35 in [8.89 mm]

### Environmental Specifications By Design

**Temperature**
- Operating Range: -54 to +85 deg C
- Humidity: Mil-STD-810 507.4
- Shock: Mil-STD-810 method 504, 516.5

---

**Features:**
- SPDT PIN Diode Absorptive Switch
- 1 GHz to 2 GHz Frequency Range
- Insertion Loss: 1.0 dB typical
- High Isolation: 90 dB typical
- VSWR: 1.3:1
- Fast Switching Speed: 75 nsec.
- Integrated TTL Driver
- Power Handling: +32 dBm
- Operating Temperature Range: -54 °C to 85°C

**Applications:**
- Electronic Warfare
- Radar
- Test & Measurements
- Military & Space
- Military Communication Systems
- PIN diode switch

---

Fairview Microwave
1130 Junction Dr. #100
Allen, TX 75013
Tel: 1-800-715-4396 / (972) 649-6678
Fax: (972) 649-6689
www.fairviewmicrowave.com
sales@fairviewmicrowave.com
Compliance Certifications (see product page for current document)

Plotted and Other Data
Notes:
• Values at +25 °C, sea level
• ESD Sensitive Material, Transport material in Approved ESD bags. Handle only in approved ESD Workstation.

Typical Performance Data

Insertion Loss
SPDT High Isolation PIN Diode Switch 1 GHz to 2 GHz, 90 dB, 32 dBm, 1 dB Loss and SMA from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Allen, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: [SPDT High Isolation PIN Diode Switch 1 GHz to 2 GHz, 90 dB, 32 dBm, 1 dB Loss and SMA SDS-0102-SPDT-SMA](https://www.fairviewmicrowave.com/high-isolation-pin-diode-switch-2-ghz-90db-1db-sds-0102-spdt-sma-p.aspx)

The information contained in this document is accurate to the best of our knowledge and representative of the part described herein. It may be necessary to make modifications to the part and/or the documentation of the part, in order to implement improvements. Fairview Microwave reserves the right to make such changes as required. Unless otherwise stated, all specifications are nominal. Fairview Microwave does not make any representation or warranty regarding the suitability of the part described herein for any particular purpose, and Fairview Microwave does not assume any liability arising out of the use of any part or documentation.
SPDT High Isolation PIN Diode Switch 1 GHz to 2 GHz, 90 dB, 32 dBm, 1 dB Loss and SMA

TTL 0 = Low Loss State
TTL 1 = Isolated State

<table>
<thead>
<tr>
<th>E1</th>
<th>E2</th>
<th>Signal Path</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>J1 - J2</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
<td>J1 - J3</td>
</tr>
</tbody>
</table>

NOTES:
1. UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE NOMINAL.
2. ALL SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE AT ANY TIME.
3. DIMENSIONS ARE IN INCHES [mm].

FAIRVIEW MICROWAVE INC.
ALLEN, TX 75013 WWW.FAIRVIEWMICROWAVE.COM