SVC276

Varactor Diode
Monolithic dual Varactor Diode for FM Tuning
16V, 50nA, CR=3.1, Q=100, MCPH3

Features

• Twin type with a good linearity of C-V characteristic. Excels in large input characteristic
• Small package permits SVC276-applied sets to be compact and slim
• High capacitance ratio (VR=2.0 to 8.0V)
• High Quality Factor

Specifications

Absolute Maximum Ratings at Ta=25°C

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Conditions</th>
<th>Ratings</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reverse Voltage</td>
<td>VR</td>
<td></td>
<td>16</td>
<td>V</td>
</tr>
<tr>
<td>Junction Temperature</td>
<td>TJ</td>
<td></td>
<td>125</td>
<td>°C</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>Tstg</td>
<td></td>
<td>-55 to +125</td>
<td>°C</td>
</tr>
</tbody>
</table>

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

Package Dimensions

unit : mm (typ)
7019A-002

Product & Package Information

• Package : MCPH3
• JEITA, JEDEC : SC-70, SOT-323
• Minimum Packing Quantity : 3,000 pcs./reel

Packing Type : TL

Marking

Electrical Connection

1: Anode
2: Anode
3: Cathode
MCPH3
**Electrical Characteristics at Ta=25°C**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Conditions</th>
<th>Ratings</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breakdown Voltage</td>
<td>V_{BR}</td>
<td>I_R = 10μA</td>
<td>16</td>
<td>V</td>
</tr>
<tr>
<td>Reverse Current</td>
<td>I_R</td>
<td>V_R = 10V</td>
<td>50</td>
<td>nA</td>
</tr>
<tr>
<td>Interterminal Capacitance*</td>
<td>C</td>
<td></td>
<td></td>
<td>pF</td>
</tr>
<tr>
<td></td>
<td>C_{2.0V}</td>
<td>V_R = 2.0V, f=1MHz</td>
<td>73.72</td>
<td>79.77</td>
</tr>
<tr>
<td></td>
<td>C_{6.0V}</td>
<td>V_R = 6.0V, f=1MHz</td>
<td>25.50</td>
<td>33.61</td>
</tr>
<tr>
<td></td>
<td>C_{8.0V}</td>
<td>V_R = 8.0V, f=1MHz</td>
<td>18.04</td>
<td>23.78</td>
</tr>
<tr>
<td>Quality Factor</td>
<td>Q</td>
<td></td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Capacitance Ratio</td>
<td>C_{R}</td>
<td>C_{2.0V} / C_{8.0V}</td>
<td>3.1</td>
<td></td>
</tr>
</tbody>
</table>

Note)* : Capacitance value per each diode

**Ordering Information**

<table>
<thead>
<tr>
<th>Device</th>
<th>Package</th>
<th>Shipping</th>
<th>memo</th>
</tr>
</thead>
<tbody>
<tr>
<td>SVC276-TL-E</td>
<td>MCPH3</td>
<td>3,000pcs./reel</td>
<td>Pb Free</td>
</tr>
</tbody>
</table>
Capacitance Ratio

Ambient Temperature, Ta °C

f=1MHz
VREF=20mVrms

2V
4V
6V
8V

0.97
0.98
0.99
1.00
1.01
1.02
1.03
Taping Specification
SVC276-TL-E

1. Packing Format

<table>
<thead>
<tr>
<th>Package Name</th>
<th>Carrier Tape Type</th>
<th>Maximum Number of Devices contained (box)</th>
<th>Packing Format</th>
<th>Packing Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCPH3</td>
<td>MCPH3</td>
<td>3,000 15,000 90,000</td>
<td>5 reels contained, Dimensions: mm (external) 183 x 72 x 185</td>
<td>It is a label at the time of factory shipment. The form of a label may change in physical distribution process.</td>
</tr>
</tbody>
</table>

Reel label, inner box label (unit: mm)

Outer box label

NOTE (1) The LEAD FREE # description shows that the surface treatment of the terminal is lead free.

<table>
<thead>
<tr>
<th>Label</th>
<th>JEITA Phase</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEAD FREE 3</td>
<td>JEITA Phase 3A</td>
</tr>
<tr>
<td>LEAD FREE 4</td>
<td>JEITA Phase 3</td>
</tr>
</tbody>
</table>

2. Taping configuration

2-1. Carrier tape size (unit: mm)

When a device is mounted:

- Width: 1.5 ± 0.1
- Length: 4.0 ± 0.1
- Thickness: 1.1 ± 0.1
- Height: 2.0 ± 0.05

Device mounting recess square hole

2-2. Device placement direction

- Reel: Feed round hole
- Pin 1 index: Feed direction

Those with pin 1 index on the feed hole side... TL
Outline Drawing
SVC276-TL-E

Land Pattern Example

<table>
<thead>
<tr>
<th>Mass (g)</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.007</td>
<td>mm</td>
</tr>
</tbody>
</table>

Unit: mm