SVC230

Varactor Diode
Monolithic dual Varactor Diode for FM Tuning
16V, 50nA, CR=1.65, Q=100, CP

Features
- Twin type varactor diode having an excellent large input characteristic, for use in FM electronic tuning applications
- Small CP package permits SVC230 applied sets to be compact and slim
- Possible to be shipped in tape reel packaging, which facilitates automatic insertion
- High Q

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>V_R</td>
<td></td>
<td>16</td>
<td>V</td>
</tr>
<tr>
<td>Junction Temperature</td>
<td>T_j</td>
<td></td>
<td>125</td>
<td>°C</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>T_stg</td>
<td>-55 to +125</td>
<td></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)
7013A-006

Product & Package Information
- Package : CP
- JEITA, JEDEC : SC-59, TO-236, SOT-23, TO-236AB
- Minimum Packing Quantity : 3,000 pcs./reel

Packing Type: TB

Marking

Electrical Connection
## Electrical Characteristics at $Ta=25^\circ C$

<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>$I_R=10\mu A$</td>
<td>min</td>
<td>16</td>
</tr>
<tr>
<td>Reverse Current</td>
<td>$I_R$</td>
<td>$V_R=10V$</td>
<td>typ</td>
<td>50</td>
</tr>
<tr>
<td>Interterminal Capacitance $^1$</td>
<td>$C_{2V}$</td>
<td>$V_R=2.0V, f=1MHz$</td>
<td>max</td>
<td>46.5</td>
</tr>
<tr>
<td></td>
<td>$C_{8V}$</td>
<td>$V_R=8.0V, f=1MHz$</td>
<td></td>
<td>28.2</td>
</tr>
<tr>
<td>Quality Factor</td>
<td>$Q$</td>
<td>$V_R=3.0V, f=100MHz$</td>
<td></td>
<td>100</td>
</tr>
<tr>
<td>Capacitance Ratio</td>
<td>$C_R$</td>
<td>$C_{2.0V} / C_{8.0V}$</td>
<td></td>
<td>1.65</td>
</tr>
<tr>
<td>Matching Tolerance $^2$</td>
<td>$\Delta C_m$</td>
<td>$V_R=2.0V, f=1MHz, (C_{max}+C_{min}) / C_{min}$</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

Note) $^1$: Capacitance value of one diode  
$^2$: Matching Tolerance is valid for the devices in one taping reel.

### Ordering Information

<table>
<thead>
<tr>
<th>Device</th>
<th>Package</th>
<th>Shipping</th>
<th>memo</th>
</tr>
</thead>
<tbody>
<tr>
<td>SVC230-TB-E</td>
<td>CP</td>
<td>3,000pcs./reel</td>
<td>Pb Free</td>
</tr>
</tbody>
</table>
1. Packing Format

<table>
<thead>
<tr>
<th>Package Name</th>
<th>Carrier Tape Type</th>
<th>Maximum Number of Devices (reel/box)</th>
<th>Packing Format</th>
</tr>
</thead>
<tbody>
<tr>
<td>CP</td>
<td>CP</td>
<td>3,000 15,000 90,000</td>
<td>Inner BOX (C-1)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5 reels contained</td>
<td>Dimensions:mm (external)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5 inner boxes contained</td>
<td>Dimensions:mm (external)</td>
</tr>
</tbody>
</table>

Reel label, Inner box label

Outer box label

[Diagram of packing method]

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

- $\phi 1.5^{\circ}$
- $\phi 1.1^{\circ}$
- 4.0 mm
- 2.0 mm
- 3.5 mm
- 8.5 mm
- 3.25 mm
- 3.15 mm
- 4.0 mm

Device mounting recess square hole

2-2. Device placement direction

[Diagram of device placement direction]

Reel
Feed round hole

TB
Carrier tape

Those with one electrode terminal on the feed hole side......TB
Outline Drawing
SVC230-TB-E

Land Pattern Example

Mass (g) Unit
0.013 mm

* For reference mm

Unit: mm

0.8

0.95

0.95

2.4