SMSTx & SMSDx Series

General Purpose Silicon Schottky Diodes

Rev. V1

Features
- Low Series Resistance
- Low Capacitance
- Wide Dynamic Range
- Silicon Nitride / Glass Passivation
- SOT23 and SOD323 Surface Mount Package
- RoHS* Compliant

Description
These Schottky diodes are specifically designed for commercial applications requiring devices in the SOT-23 and SOD323 surface mount packages. The series in low profile has options for bulk or tape and reel. This series offers a wide range of specifications and package configurations to give the designer wide flexibility.

Typical applications of these Schottky diodes are up converters, down converters, mixers, detectors, phase detectors, pulse and amplitude modulators, and temperature compensation circuits.

SOT23 Configurations

SOD232 Configuration

Electrical Specifications: @ +25°C, Voltage Breakdown = 2 V min. @ 10 μA

<table>
<thead>
<tr>
<th>Part #1</th>
<th>Typical Forward Voltage @ 1 mA</th>
<th>Maximum Total Capacitance @ 0 V, 1 MHz</th>
<th>Maximum Dynamic Resistance @ 10 mA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>mV</td>
<td>pF</td>
<td>Ω</td>
</tr>
<tr>
<td>SMSx3004</td>
<td>270</td>
<td>0.60</td>
<td>10</td>
</tr>
<tr>
<td>SMSx3012</td>
<td>270</td>
<td>0.25</td>
<td>15</td>
</tr>
<tr>
<td>SMSx4004</td>
<td>350</td>
<td>0.60</td>
<td>10</td>
</tr>
<tr>
<td>SMSx4012</td>
<td>350</td>
<td>0.25</td>
<td>15</td>
</tr>
<tr>
<td>SMSx6004</td>
<td>600</td>
<td>0.60</td>
<td>10</td>
</tr>
<tr>
<td>SMSx6012</td>
<td>630</td>
<td>0.25</td>
<td>15</td>
</tr>
</tbody>
</table>

1. Replace x in part number with T for SOT23 and define which configuration, or with D for SOD323.

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Absolute Maximum Ratings

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Absolute Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forward Current</td>
<td>1 A, 1 µs pulse</td>
</tr>
<tr>
<td>Peak Inverse Voltage</td>
<td>Same as $V_{BR}$</td>
</tr>
<tr>
<td>Power Dissipation</td>
<td>250 mW, derate linearly to 0 @ 150°C</td>
</tr>
<tr>
<td>Operating / Storage Temperature</td>
<td>-65°C to +150°C</td>
</tr>
</tbody>
</table>

Outline Drawing - SOT23

Outline Drawing - SOD323

<table>
<thead>
<tr>
<th>Dim.</th>
<th>Millimeters</th>
<th>Inches</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Min.</td>
<td>Max.</td>
</tr>
<tr>
<td>A</td>
<td>0.79</td>
<td>1.02</td>
</tr>
<tr>
<td>A₁</td>
<td>0.02</td>
<td>0.10</td>
</tr>
<tr>
<td>C</td>
<td>2.67</td>
<td>3.05</td>
</tr>
<tr>
<td>E</td>
<td>1.80</td>
<td>2.00</td>
</tr>
<tr>
<td>F</td>
<td>0.38</td>
<td>0.54</td>
</tr>
<tr>
<td>H</td>
<td>2.10</td>
<td>2.50</td>
</tr>
<tr>
<td>I</td>
<td>0.13</td>
<td>0.25</td>
</tr>
<tr>
<td>J</td>
<td>0.089</td>
<td>0.15</td>
</tr>
<tr>
<td>K</td>
<td>0.44</td>
<td>0.55</td>
</tr>
<tr>
<td>Ø</td>
<td>0.0</td>
<td>8.0</td>
</tr>
</tbody>
</table>

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<tr>
<th>Dim.</th>
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<tr>
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<tr>
<td>A</td>
<td>—</td>
<td>1.10</td>
</tr>
<tr>
<td>B</td>
<td>—</td>
<td>0.10</td>
</tr>
<tr>
<td>C</td>
<td>—</td>
<td>0.20</td>
</tr>
<tr>
<td>D</td>
<td>0.25</td>
<td>0.40</td>
</tr>
<tr>
<td>E</td>
<td>0.08</td>
<td>0.15</td>
</tr>
<tr>
<td>F</td>
<td>1.60</td>
<td>1.90</td>
</tr>
<tr>
<td>G</td>
<td>1.15</td>
<td>1.45</td>
</tr>
<tr>
<td>H</td>
<td>2.30</td>
<td>2.70</td>
</tr>
</tbody>
</table>

Lead Material = Alloy 42
Lead Finish = Tin-Lead, 60-40%
Maximum Soldering Temperature = 260°C for 5 sec.
Minimum Lead Strength = 2 pounds pull
Typical Package Inductance = 2 nH
Typical Package Capacitance = 0.10 pF (opposite leads)

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