SS32 - S310
Schottky Rectifier

Features
• Metal to Silicon Rectifiers, Majority Carrier Conduction
• Low-Forward Voltage Drop
• Easy Pick and Place
• High-Surge Current Capability

Description
The SS32-S310 series includes a high-efficiency, low power loss, general-purpose Schottky rectifiers. The clip-bonded leg structure provides high thermal performance and low electrical resistance. These rectifiers are suited for free wheeling, secondary rectification, and reverse polarity protection applications.

Ordering Information

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Marking</th>
<th>Package</th>
<th>Packing Method</th>
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<tbody>
<tr>
<td>SS32</td>
<td>SS32</td>
<td>DO-214AB</td>
<td>Tape and Reel</td>
</tr>
<tr>
<td>SS33</td>
<td>SS33</td>
<td>DO-214AB</td>
<td>Tape and Reel</td>
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<tr>
<td>S310</td>
<td>S310</td>
<td>DO-214AB</td>
<td>Tape and Reel</td>
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</table>

Absolute Maximum Ratings

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at $T_A = 25°C$ unless otherwise noted.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Parameter Description</th>
<th>Value</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>$V_{RRM}$</td>
<td>Maximum Repetitive Reverse Voltage</td>
<td>20, 30, 40, 50, 60, 80, 90, 100</td>
<td>V</td>
</tr>
<tr>
<td>$I_{F(AV)}$</td>
<td>Maximum Average Forward Current at $T_A = 75°C$</td>
<td>3.0</td>
<td>A</td>
</tr>
<tr>
<td>$I_{FSM}$</td>
<td>Non-Repetitive Peak Forward Surge Current: 8.3 ms Single Half-Sine Wave</td>
<td>100</td>
<td>A</td>
</tr>
<tr>
<td>$T_{STG}$</td>
<td>Storage Temperature Range</td>
<td>-55 to +150</td>
<td>°C</td>
</tr>
<tr>
<td>$T_J$</td>
<td>Operating Junction Temperature</td>
<td>-55 to +150</td>
<td>°C</td>
</tr>
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</table>
### Thermal Characteristics

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Parameter</th>
<th>Value</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>$P_D$</td>
<td>Power Dissipation</td>
<td>2.27</td>
<td>W</td>
</tr>
<tr>
<td>$R_{\eta JA}$</td>
<td>Thermal Resistance, Junction to Ambient(^{(1)})</td>
<td>55</td>
<td>°C/W</td>
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<tr>
<td>$R_{\eta JL}$</td>
<td>Thermal Resistance, Junction to Lead</td>
<td>17</td>
<td>°C/W</td>
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</table>

**Note:**
1. Device mounted on FE-4 PCB 0.55 x 0.55 inch (14 x 14 mm).

### Electrical Characteristics

Values are at $T_A = 25°C$ unless otherwise noted.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Parameter</th>
<th>Test Conditions</th>
<th>SS32</th>
<th>SS33</th>
<th>SS34</th>
<th>SS35</th>
<th>SS36</th>
<th>SS38</th>
<th>SS39</th>
<th>SS10</th>
</tr>
</thead>
<tbody>
<tr>
<td>$V_F$</td>
<td>Forwarded Voltage</td>
<td>$I_F = 3.0 \text{A}$</td>
<td></td>
<td></td>
<td>500</td>
<td>750</td>
<td>850</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>$I_R$</td>
<td>Reverse Current at Rated $V_R$</td>
<td>$T_A = 25°C$</td>
<td>0.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>$T_A = 100°C$</td>
<td>20</td>
<td>10</td>
<td></td>
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<td></td>
<td></td>
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</tbody>
</table>
Typical Performance Characteristics

**Figure 1.** Forward Current Derating Curve

**Figure 2.** Non-Repetitive Surge Current

**Figure 3.** Forward Voltage Characteristics

**Figure 4.** Reverse Current vs. Reverse Voltage

**Figure 5.** Total Capacitance

**Figure 6.** Thermal Impedance Characteristics
Physical Dimension

DO-214AB

Figure 7. 2-LEAD, SMC, JEDEC DO-214, VARIATION AB (ACTIVE)

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### Definition of Terms

<table>
<thead>
<tr>
<th>Datasheet Identification</th>
<th>Product Status</th>
<th>Definition</th>
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<tbody>
<tr>
<td>Advance Information</td>
<td>Formative / In Design</td>
<td>Datasheet contains the design specifications for product development. Specifications may change in any manner without notice.</td>
</tr>
<tr>
<td>Preliminary</td>
<td>First Production</td>
<td>Datasheet contains preliminary data; supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve design.</td>
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<td>Full Production</td>
<td>Datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve the design.</td>
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<tr>
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<td>Not In Production</td>
<td>Datasheet contains specifications on a product that is discontinued by Fairchild Semiconductor. The datasheet is for reference information only.</td>
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