To learn more about ON Semiconductor, please visit our website at www.onsemi.com

Please note: As part of the Fairchild Semiconductor integration, some of the Fairchild orderable part numbers will need to change in order to meet ON Semiconductor’s system requirements. Since the ON Semiconductor product management systems do not have the ability to manage part nomenclature that utilizes an underscore (_), the underscore (_) in the Fairchild part numbers will be changed to a dash (-). This document may contain device numbers with an underscore (_). Please check the ON Semiconductor website to verify the updated device numbers. The most current and up-to-date ordering information can be found at www.onsemi.com. Please email any questions regarding the system integration to Fairchild_questions@onsemi.com.
BAS40SL
Schottky Barrier Diode

Features
- Low Forward Voltage Drop
- Fast Switching
- Very Small and Thin SMD package
- Profile Height, 0.43 mm Maximum
- Footprint, 1.0 mm x 0.6 mm

Absolute Maximum Ratings\(^{(1),(2)}\)
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 \(T_A = 25^\circ C\) unless otherwise noted.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Parameter</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>(V_{RRM})</td>
<td>Maximum Repetitive Reverse Voltage</td>
<td>40</td>
<td>V</td>
</tr>
<tr>
<td>(I_{F(AV)})</td>
<td>Average Rectified Forward Current</td>
<td>100</td>
<td>mA</td>
</tr>
<tr>
<td>(I_{FSM})</td>
<td>Forward Surge Current (8.3 ms Single Half-Sine-Wave)</td>
<td>600</td>
<td>mA</td>
</tr>
<tr>
<td>(T_J, T_{STG})</td>
<td>Operating Junction and Storage Temperature Range</td>
<td>-55 to +150</td>
<td>°C</td>
</tr>
</tbody>
</table>

Notes:
1. These ratings are based on a maximum junction temperature of 150°C.
2. These are steady-state limits. Fairchild Semiconductor should be consulted on applications involving pulsed or low-duty-cycle operations.
### Thermal Characteristics
Values are at $T_A = 25^\circ C$ unless otherwise noted.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Parameter</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>$P_D$</td>
<td>Power Dissipation</td>
<td>227</td>
<td>mW</td>
</tr>
<tr>
<td>$R_{\theta JA}$</td>
<td>Thermal Resistance, Junction-to-Ambient$^{(3)}$</td>
<td>550</td>
<td>°C/W</td>
</tr>
</tbody>
</table>

Note:

### Electrical Characteristics
Values are at $T_A = 25^\circ C$ unless otherwise noted.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Parameter</th>
<th>Conditions</th>
<th>Min.</th>
<th>Max.</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>$V_R$</td>
<td>Breakdown Voltage</td>
<td>$I_R = 10 \mu A$</td>
<td>40</td>
<td></td>
<td>V</td>
</tr>
<tr>
<td>$V_F$</td>
<td>Forward Voltage</td>
<td>$I_F = 1 mA$</td>
<td></td>
<td>380</td>
<td>mV</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$I_F = 40 mA$</td>
<td></td>
<td>1000</td>
<td>mV</td>
</tr>
<tr>
<td>$I_R$</td>
<td>Reverse Leakage</td>
<td>$V_R = 30 V$</td>
<td>0.2</td>
<td></td>
<td>μA</td>
</tr>
<tr>
<td>$t_{tr}$</td>
<td>Reverse Recovery Time</td>
<td>$I_F = I_R = 10 mA, \tau = 0.1I_R$</td>
<td>8.0</td>
<td></td>
<td>nS</td>
</tr>
<tr>
<td>$C_J$</td>
<td>Junction Capacitance</td>
<td>$V_R = 0, f = 1.0 MHz$</td>
<td>5.0</td>
<td></td>
<td>pF</td>
</tr>
</tbody>
</table>
Typical Performance Characteristics

Figure 1. Forward Current Characteristics

Figure 2. Reverse Leakage Current

Figure 3. Junction Capacitance

Figure 4. Power Derating
Physical Dimensions

NOTES:
A) THIS PACKAGE DOES NOT COMPLY
   TO ANY CURRENT PACKAGING STANDARD.
B) ALL DIMENSIONS ARE IN MILLIMETERS.
C) BODY DIMENSIONS ARE INCLUSIVE OF BURRS, AND MOLD FLASH.
D) DIMENSIONS AND TOLERANCES PER ASME Y14.5M, 2009
E) LANDPATTERN BASED ON ADJUSTED IPC GUIDELINES
F) DRAWING FILE NAME : SOD923F1REV3

Figure 5. 2-LEAD, SOD923F, 0.4 mm TALL, FLAT TERMINAL
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<th>Product Status</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
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<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>
</tr>
<tr>
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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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</tbody>
</table>

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