Fast Silicon Mesa Rectifiers

Features
- Glass passivated junction
- Hermetically sealed package
- Low reverse current
- Soft recovery characteristics

Applications
Fast rectifiers and switches

Absolute Maximum Ratings
$T_j = 25^\circ C$

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Test Conditions</th>
<th>Type</th>
<th>Symbol</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reverse voltage $=\text{Repetitive peak reverse voltage}$</td>
<td></td>
<td>BYT52A $V_R=V_{RRM}$</td>
<td>50</td>
<td>V</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>BYT52B $V_R=V_{RRM}$</td>
<td>100</td>
<td>V</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>BYT52D $V_R=V_{RRM}$</td>
<td>200</td>
<td>V</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>BYT52G $V_R=V_{RRM}$</td>
<td>400</td>
<td>V</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>BYT52J $V_R=V_{RRM}$</td>
<td>600</td>
<td>V</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>BYT52K $V_R=V_{RRM}$</td>
<td>800</td>
<td>V</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>BYT52M $V_R=V_{RRM}$</td>
<td>1000</td>
<td>V</td>
<td></td>
</tr>
<tr>
<td>Peak forward surge current $I_p=10\text{ms, half sinewave}$</td>
<td></td>
<td>$I_{FSM}$</td>
<td>50</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>Average forward current $I_{FAV}$</td>
<td>on PC board</td>
<td>$I_{FAV}$</td>
<td>0.85</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>Average forward current $I_{FAV}$</td>
<td>$L=10\text{mm, }T_L=25^\circ C$</td>
<td>$I_{FAV}$</td>
<td>1.4</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>Junction and storage temperature range</td>
<td></td>
<td></td>
<td>$T_j=T_{stg}$</td>
<td>$-65\ldots+175$</td>
<td>$^\circ C$</td>
</tr>
</tbody>
</table>

Maximum Thermal Resistance
$T_j = 25^\circ C$

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Test Conditions</th>
<th>Symbol</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Junction ambient</td>
<td>$L=10\text{mm, }T_L=\text{constant}$</td>
<td>$R_{THJA}$</td>
<td>45</td>
<td>K/W</td>
</tr>
<tr>
<td></td>
<td>on PC board with spacing 25mm</td>
<td>$R_{THJA}$</td>
<td>100</td>
<td>K/W</td>
</tr>
</tbody>
</table>

Electrical Characteristics
$T_j = 25^\circ C$

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Test Conditions</th>
<th>Type</th>
<th>Symbol</th>
<th>Min</th>
<th>Typ</th>
<th>Max</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forward voltage $I_F=1A$</td>
<td></td>
<td>$V_F$</td>
<td>1.3</td>
<td>1.3</td>
<td>V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reverse current $V_R=V_{RRM}$</td>
<td></td>
<td>$I_R$</td>
<td>5</td>
<td>5</td>
<td>μA</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>$V_R=V_{RRM}, T_j=150^\circ C$</td>
<td>$I_R$</td>
<td>150</td>
<td>μA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reverse recovery time $I_F=0.5A, I_R=1A, I_R=0.25A$</td>
<td></td>
<td>$t_r$</td>
<td>200</td>
<td>200</td>
<td>ns</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Characteristics \( (T_j = 25^\circ C \text{ unless otherwise specified}) \)

- **Figure 1.** Max. Thermal Resistance vs. Lead Length
- **Figure 2.** Max. Average Forward Current vs. Ambient Temperature
- **Figure 3.** Max. Average Forward Current vs. Ambient Temperature
- **Figure 4.** Reverse Current vs. Junction Temperature
- **Figure 5.** Forward Current vs. Forward Voltage
- **Figure 6.** Typ. Diode Capacitance vs. Reverse Voltage
Dimensions in mm

Sintered Glass Case
SOD 57
Weight max. 0.5 g

Cathode Identification

Ø 3.6 max.

Ø 0.82 max.

typical drawings
according to DIN
specifications

94 9538

26 min. 4.2 max. 26 min.
Ozone Depleting Substances Policy Statement

It is the policy of Vishay Semiconductor GmbH to

1. Meet all present and future national and international statutory requirements.

2. Regularly and continuously improve the performance of our products, processes, distribution and operating systems
   with respect to their impact on the health and safety of our employees and the public, as well as their impact on
   the environment.

It is particular concern to control or eliminate releases of those substances into the atmosphere which are known as
ozone depleting substances (ODSs).

The Montreal Protocol (1987) and its London Amendments (1990) intend to severely restrict the use of ODSs and
forbid their use within the next ten years. Various national and international initiatives are pressing for an earlier ban
on these substances.

Vishay Semiconductor GmbH has been able to use its policy of continuous improvements to eliminate the use of
ODSs listed in the following documents.

2. Class I and II ozone depleting substances in the Clean Air Act Amendments of 1990 by the Environmental
   Protection Agency (EPA) in the USA

Vishay Semiconductor GmbH can certify that our semiconductors are not manufactured with ozone depleting
substances and do not contain such substances.

We reserve the right to make changes to improve technical design and may do so without further notice.
Parameters can vary in different applications. All operating parameters must be validated for each customer application
by the customer. Should the buyer use Vishay-Telefunken products for any unintended or unauthorized application, the
buyer shall indemnify Vishay-Telefunken against all claims, costs, damages, and expenses, arising out of, directly or
indirectly, any claim of personal damage, injury or death associated with such unintended or unauthorized use.

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