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In data sheets and application notes which still contain NXP or Philips Semiconductors references, use the references to Nexperia, as shown below.


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Kind regards,

Team Nexperia
1. General description

Planar Schottky barrier diode with an integrated guard ring for stress protection, encapsulated in a very small SOD323 Surface-Mounted Device (SMD) plastic package.

2. Features and benefits

- Low forward voltage
- Low capacitance
- AEC-Q101 qualified

3. Applications

- Ultra high-speed switching
- Line termination
- Voltage clamping
- Reverse polarity protection

4. Quick reference data

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Parameter</th>
<th>Conditions</th>
<th>Min</th>
<th>Typ</th>
<th>Max</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>IF</td>
<td>forward current</td>
<td>-</td>
<td>-</td>
<td>200</td>
<td>mA</td>
<td></td>
</tr>
<tr>
<td>VR</td>
<td>reverse voltage</td>
<td>-</td>
<td>-</td>
<td>30</td>
<td>V</td>
<td></td>
</tr>
<tr>
<td>VF</td>
<td>forward voltage</td>
<td>IF = 10 mA; pulsed; tp = 300 µs; δ = 0.02 ; Tamb = 25 °C</td>
<td>-</td>
<td>-</td>
<td>400</td>
<td>mV</td>
</tr>
</tbody>
</table>

5. Pinning information

<table>
<thead>
<tr>
<th>Pin</th>
<th>Symbol</th>
<th>Description</th>
<th>Simplified outline</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>K</td>
<td>cathode[1]</td>
<td><img src="aaa-003679" alt="Simplified outline" /></td>
</tr>
<tr>
<td>2</td>
<td>A</td>
<td>anode</td>
<td><img src="aaa-003679" alt="Simplified outline" /></td>
</tr>
</tbody>
</table>

[1] The marking bar indicates the cathode.
6. Ordering information

Table 3. Ordering information

<table>
<thead>
<tr>
<th>Type number</th>
<th>Package</th>
</tr>
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<tbody>
<tr>
<td>1PS76SB10</td>
<td>SOD323</td>
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7. Marking

Table 4. Marking codes

<table>
<thead>
<tr>
<th>Type number</th>
<th>Marking code</th>
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<tbody>
<tr>
<td>1PS76SB10</td>
<td>S0</td>
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8. Limiting values

Table 5. Limiting values

In accordance with the Absolute Maximum Rating System (IEC 60134).

<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>reverse voltage</td>
<td></td>
<td>-</td>
<td>30</td>
<td>V</td>
</tr>
<tr>
<td>I_F</td>
<td>forward current</td>
<td></td>
<td>-</td>
<td>200</td>
<td>mA</td>
</tr>
<tr>
<td>I_{FRM}</td>
<td>repetitive peak forward current</td>
<td>( t_p \leq 1 \text{ s}; \delta \leq 0.5 )</td>
<td>-</td>
<td>300</td>
<td>mA</td>
</tr>
<tr>
<td>I_{FSM}</td>
<td>non-repetitive peak forward current</td>
<td>( t_p &lt; 10 \text{ ms}; T_{j(init)} = 25 \degree C )</td>
<td>-</td>
<td>600</td>
<td>mA</td>
</tr>
<tr>
<td>T_j</td>
<td>junction temperature</td>
<td></td>
<td>-</td>
<td>125</td>
<td>\degree C</td>
</tr>
<tr>
<td>T_{amb}</td>
<td>ambient temperature</td>
<td></td>
<td>-55</td>
<td>125</td>
<td>\degree C</td>
</tr>
<tr>
<td>T_{stg}</td>
<td>storage temperature</td>
<td></td>
<td>-65</td>
<td>150</td>
<td>\degree C</td>
</tr>
</tbody>
</table>

9. Thermal characteristics

Table 6. Thermal characteristics

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Parameter</th>
<th>Conditions</th>
<th>Min</th>
<th>Typ</th>
<th>Max</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>R_{th(j-a)}</td>
<td>thermal resistance from junction to ambient</td>
<td>in free air</td>
<td>[1]</td>
<td>-</td>
<td>-</td>
<td>450</td>
</tr>
</tbody>
</table>

10. Characteristics

Table 7. Characteristics

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Parameter</th>
<th>Conditions</th>
<th>Min</th>
<th>Typ</th>
<th>Max</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>$V_F$</td>
<td>forward voltage</td>
<td>$I_F = 0.1 \text{ mA}; \text{ pulsed; } t_p = 300 \mu s; \delta = 0.02 ; T_{amb} = 25 ^\circ C$</td>
<td>-</td>
<td>-</td>
<td>240</td>
<td>mV</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$I_F = 1 \text{ mA}; \text{ pulsed; } t_p = 300 \mu s; \delta = 0.02 ; T_{amb} = 25 ^\circ C$</td>
<td>-</td>
<td>-</td>
<td>320</td>
<td>mV</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$I_F = 10 \text{ mA}; \text{ pulsed; } t_p = 300 \mu s; \delta = 0.02 ; T_{amb} = 25 ^\circ C$</td>
<td>-</td>
<td>-</td>
<td>400</td>
<td>mV</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$I_F = 30 \text{ mA}; \text{ pulsed; } t_p = 300 \mu s; \delta = 0.02 ; T_{amb} = 25 ^\circ C$</td>
<td>-</td>
<td>-</td>
<td>500</td>
<td>mV</td>
</tr>
<tr>
<td>$I_R$</td>
<td>reverse current</td>
<td>$V_R = 25 \text{ V}; \text{ pulsed; } t_p = 300 \mu s; \delta = 0.02 ; T_{amb} = 25 ^\circ C$</td>
<td>-</td>
<td>-</td>
<td>2</td>
<td>µA</td>
</tr>
<tr>
<td>$C_d$</td>
<td>diode capacitance</td>
<td>$V_R = 1 \text{ V}; f = 1 \text{ MHz}; T_{amb} = 25 ^\circ C$</td>
<td>-</td>
<td>-</td>
<td>10</td>
<td>pF</td>
</tr>
</tbody>
</table>

Fig. 1. Forward current as a function of forward voltage; typical values

Fig. 2. Reverse current as a function of reverse voltage; typical values
11. Test information

11.1 Quality information
This product has been qualified in accordance with the Automotive Electronics Council (AEC) standard Q101 - Stress test qualification for discrete semiconductors, and is suitable for use in automotive applications.

12. Package outline

![Package outline SOD323](image)

Fig. 4. Package outline SOD323
13. Soldering

![Fig. 5. Reflow soldering footprint for SOD323](sod323_fr)

![Fig. 6. Wave soldering footprint for SOD323](sod323_frw)

14. Revision history

<table>
<thead>
<tr>
<th>Data sheet ID</th>
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<th>Data sheet status</th>
<th>Change notice</th>
<th>Supersedes</th>
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<td>1PS76SB10 v.4</td>
<td>20121217</td>
<td>Product data sheet</td>
<td>-</td>
<td>1PS76SB10 v.3</td>
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<tr>
<td>1PS76SB10 v.3</td>
<td>20120718</td>
<td>Product data sheet</td>
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<td>1PS76SB10 v.2</td>
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<tr>
<td>1PS76SB10 v.2</td>
<td>20040126</td>
<td>Product specification</td>
<td>-</td>
<td>1PS76SB10 v.1</td>
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<td>1PS76SB10 v.1</td>
<td>19961014</td>
<td>Product specification</td>
<td>-</td>
<td>-</td>
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</table>

**Modifications:**
- Section "Features and benefits" updated
- Section "Applications" updated
- Table 5 "Limiting values": ambient temperature $T_{\text{amb}}$ minimum value updated
- Table 7 "Characteristics": forward voltage $V_F$ conditions updated
- Figures 1, 2 and 3 updated
15. Legal information

15.1 Data sheet status

<table>
<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Objective [short] data sheet</td>
<td>Development</td>
<td>This document contains data from the objective specification for product development.</td>
</tr>
<tr>
<td>Preliminary [short] data sheet</td>
<td>Qualification</td>
<td>This document contains data from the preliminary specification.</td>
</tr>
<tr>
<td>Product [short] data sheet</td>
<td>Production</td>
<td>This document contains the product specification.</td>
</tr>
</tbody>
</table>

[1] Please consult the most recently issued document before initiating or completing a design.

[2] The term 'short data sheet' is explained in section "Definitions".

[3] The product status of device(s) described in this document may have changed since this document was published and may differ in case of multiple devices. The latest product status information is available on the Internet at URL http://www.nxp.com.

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Product data sheet 17 December 2012

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