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Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

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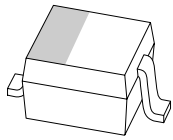
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Kind regards,

Team Nexperia



# BAT760

## Medium power Schottky barrier single diode

Rev. 03 — 17 October 2008

Product data sheet

## 1. Product profile

### 1.1 General description

Planar medium power Schottky barrier single diode with an integrated guard ring for stress protection, encapsulated in a SOD323 (SC-76) very small Surface-Mounted Device SMD plastic package.

### 1.2 Features

- Ultra high-speed switching
- Very low forward voltage
- Guard-ring protected
- Very small SMD plastic package

### 1.3 Applications

- Ultra high-speed switching
- Voltage clamping
- Protection circuits

### 1.4 Quick reference data



Table 1. Quick reference data

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
$V_R$	reverse voltage		-	-	20	V
$I_F$	forward current		-	-	1	A
$V_F$	forward voltage	$I_F = 1\text{ A}$	[1] -	480	550	mV

[1] Pulse test:  $t_p \leq 300\ \mu\text{s}$ ;  $\delta \leq 0.02$ .

## 2. Pinning information

Table 2. Pinning

Pin	Description	Simplified outline	Graphic symbol
1	cathode	[1]	
2	anode		<i>sym001</i>

[1] The marking bar indicates the cathode.

## 3. Ordering information

Table 3. Ordering information

Type number	Package		
	Name	Description	Version
BAT760	SC-76	plastic surface-mounted package; 2 leads	SOD323

## 4. Marking

Table 4. Marking codes

Type number	Marking code
BAT760	A4

## 5. Limiting values

Table 5. Limiting values

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

Symbol	Parameter	Conditions	Min	Max	Unit
$V_R$	reverse voltage		-	20	V
$I_F$	forward current		-	1	A
$I_{FSM}$	non-repetitive peak forward current	$t_p = 8.3$ ms; half-sine wave; JEDEC method	-	5	A
$T_j$	junction temperature		-	125	°C
$T_{amb}$	ambient temperature		-65	+125	°C
$T_{stg}$	storage temperature		-65	+150	°C

## 6. Thermal characteristics

**Table 6. Thermal characteristics**

Symbol	Parameter	Conditions	Min	Typ	Max	Unit	
$R_{th(j-a)}$	thermal resistance from junction to ambient	in free air	[1]	-	-	220	K/W
			[2]	-	-	180	K/W

[1] Device mounted on an FR4 Printed-Circuit Board (PCB), single-sided copper, tin-plated, mounting pad for cathode  $10 \times 10 \text{ mm}^2$ .

[2] Device mounted on an FR4 PCB, single-sided copper, tin-plated, mounting pad for cathode  $40 \times 40 \text{ mm}^2$ .

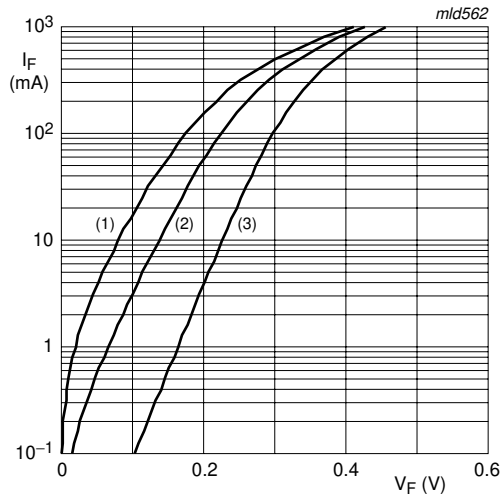
## 7. Characteristics

**Table 7. Characteristics**

$T_{amb} = 25^\circ\text{C}$  unless otherwise specified.

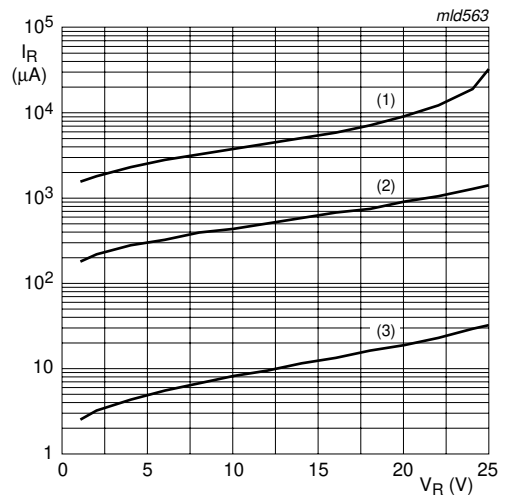
Symbol	Parameter	Conditions	Min	Typ	Max	Unit
$V_F$	forward voltage	[1]				
		$I_F = 10 \text{ mA}$	-	240	270	mV
		$I_F = 100 \text{ mA}$	-	300	350	mV
		$I_F = 1 \text{ A}$	-	480	550	mV
$I_R$	reverse current	[1]				
		$V_R = 5 \text{ V}$	-	5	10	$\mu\text{A}$
		$V_R = 8 \text{ V}$	-	7	20	$\mu\text{A}$
		$V_R = 15 \text{ V}$	-	10	50	$\mu\text{A}$
$C_d$	diode capacitance	$V_R = 5 \text{ V}; f = 1 \text{ MHz}$	-	19	25	pF

[1] Pulse test:  $t_p \leq 300 \mu\text{s}; \delta \leq 0.02$ .



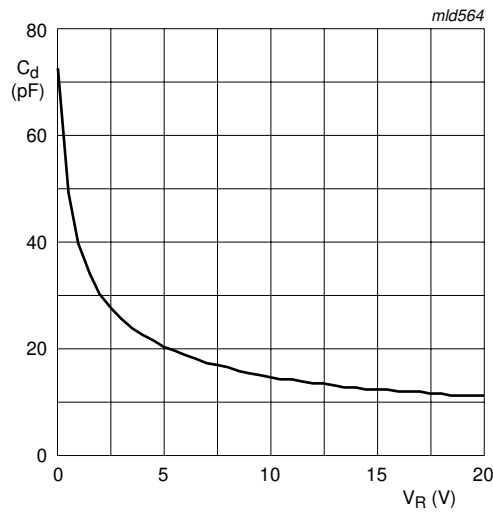
- (1)  $T_{amb} = 125\text{ °C}$
- (2)  $T_{amb} = 85\text{ °C}$
- (3)  $T_{amb} = 25\text{ °C}$

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



- (1)  $T_{amb} = 125\text{ °C}$
- (2)  $T_{amb} = 85\text{ °C}$
- (3)  $T_{amb} = 25\text{ °C}$

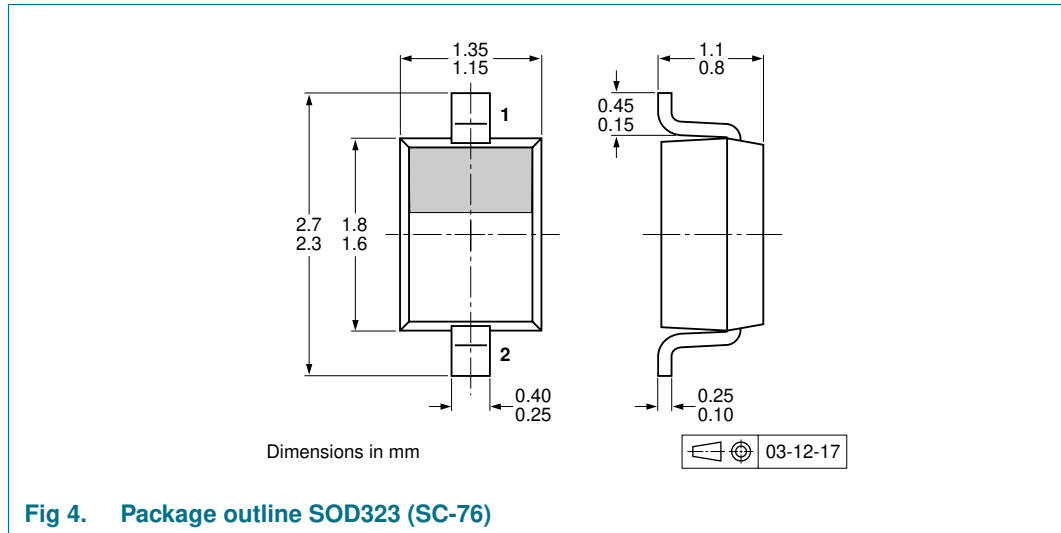
**Fig 2. Reverse current as a function of reverse voltage; typical values**



$f = 1\text{ MHz}; T_{amb} = 25\text{ °C}$

**Fig 3. Diode capacitance as a function of reverse voltage; typical values**

## 8. Package outline



## 9. Packing information

**Table 8. Packing methods**

The indicated -xxx are the last three digits of the 12NC ordering code.<sup>[1]</sup>

Type number	Package	Description	Packing quantity	
			3000	10000
BAT760	SOD323	4 mm pitch, 8 mm tape and reel	-115	-135

[1] For further information and the availability of packing methods, see [Section 13](#).

10. Soldering

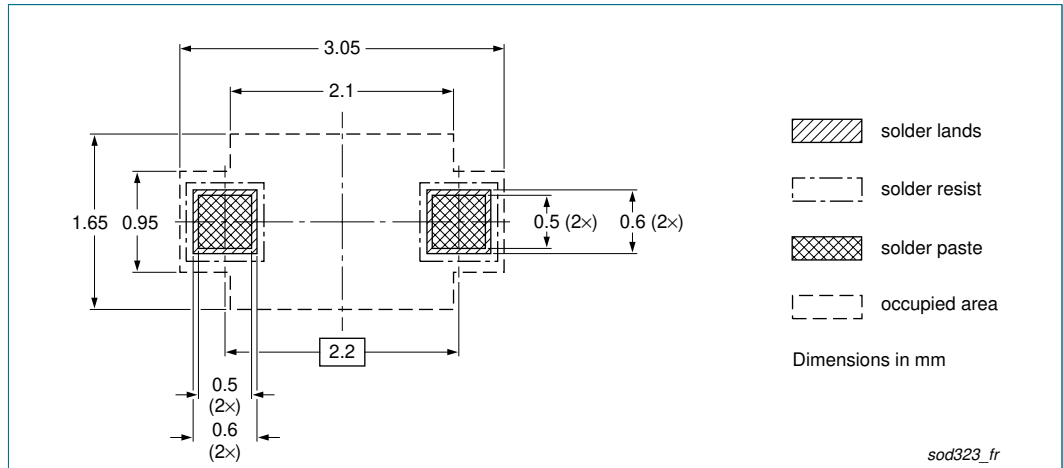


Fig 5. Reflow soldering footprint SOD323 (SC-76)

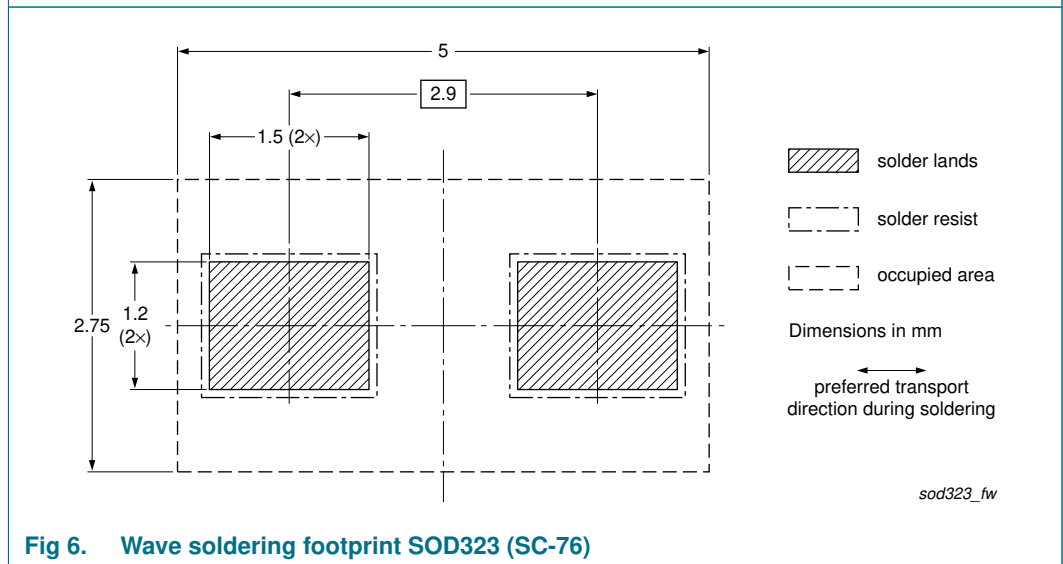


Fig 6. Wave soldering footprint SOD323 (SC-76)



## 11. Revision history

Table 9. Revision history

Document ID	Release date	Data sheet status	Change notice	Supersedes
BAT760_3	20081017	Product data sheet	-	BAT760_2
Modifications:				
				<ul style="list-style-type: none"><li>• The format of this data sheet has been redesigned to comply with the new identity guidelines of NXP Semiconductors.</li><li>• Legal texts have been adapted to the new company name where appropriate.</li><li>• <a href="#">Table 1 “Quick reference data”</a>: added</li><li>• <a href="#">Figure 4</a>: superseded by minimized package outline drawing</li><li>• <a href="#">Section 9 “Packing information”</a>: added</li><li>• <a href="#">Section 10 “Soldering”</a>: added</li><li>• <a href="#">Section 12 “Legal information”</a>: updated</li></ul>
BAT760_2	20040126	Product specification	-	BAT760_1
BAT760_1	20010312	Product specification	-	-

## 12. Legal information

### 12.1 Data sheet status

Document status <sup>[1][2]</sup>	Product status <sup>[3]</sup>	Definition
Objective [short] data sheet	Development	This document contains data from the objective specification for product development.
Preliminary [short] data sheet	Qualification	This document contains data from the preliminary specification.
Product [short] data sheet	Production	This document contains the product specification.

[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".

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For sales office addresses, please send an email to: [salesaddresses@nxp.com](mailto:salesaddresses@nxp.com)

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