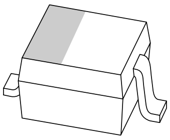


BAT760

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

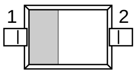
Table 1. Quick reference data

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

[1] Pulse test: $t_p \leq 300$ µs; $\delta \leq 0.02$.

2. Pinning information

Table 2. Pinning

Pin	Description	Simplified outline	Graphic symbol
1	cathode [1]		 sym001
2	anode		

[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 × 10 mm^2.

[2] Device mounted on an FR4 PCB, single-sided copper, tin-plated, mounting pad for cathode 40 × 40 mm^2.

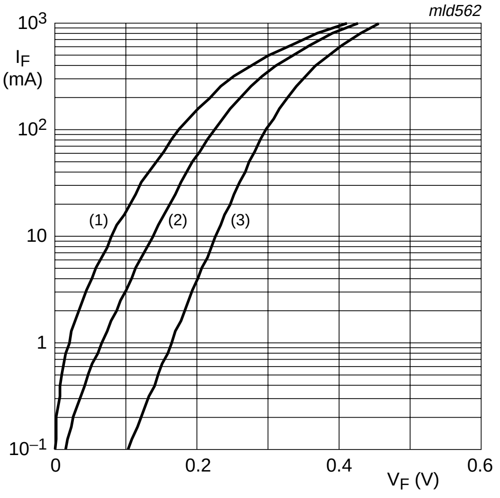
7. Characteristics

Table 7. Characteristics

T_{amb} = 25 °C unless otherwise specified.

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

[1] Pulse test: $t_p \leq 300$ µs; $\delta \leq 0.02$.

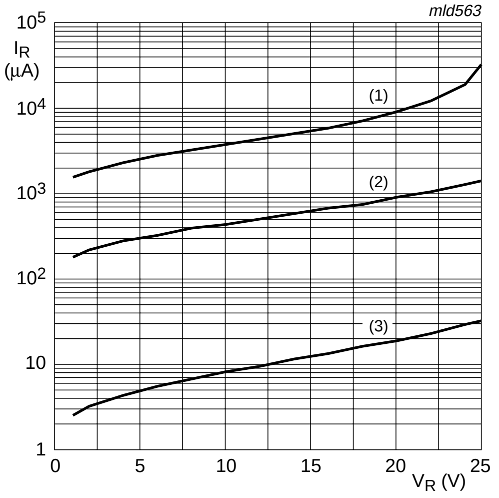


(1) T_{amb} = 125 °C

(2) T_{amb} = 85 °C

(3) T_{amb} = 25 °C

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

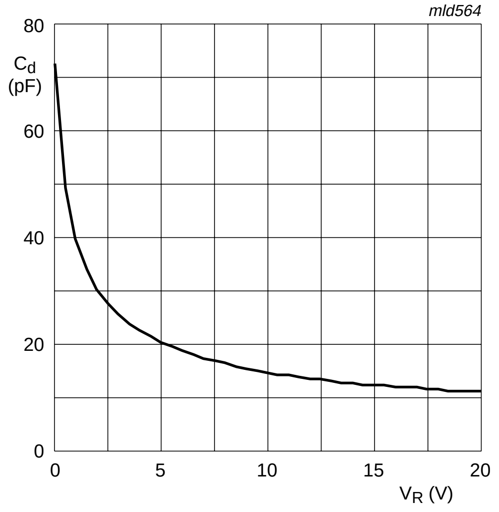


(1) T_{amb} = 125 °C

(2) T_{amb} = 85 °C

(3) T_{amb} = 25 °C

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



f = 1 MHz; T_{amb} = 25 °C

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

8. Package outline

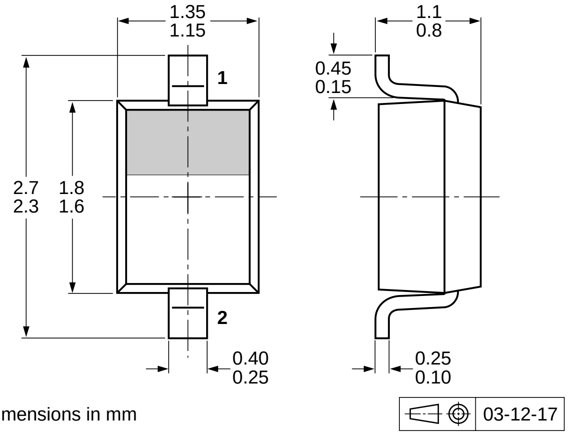


Fig 4. Package outline SOD323 (SC-76)

9. Packing information

Table 8. Packing methods

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

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

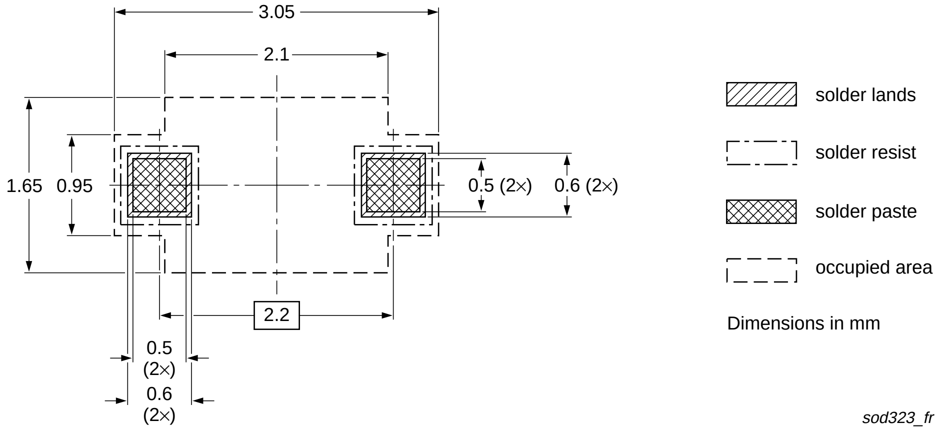


Fig 5. Reflow soldering footprint SOD323 (SC-76)

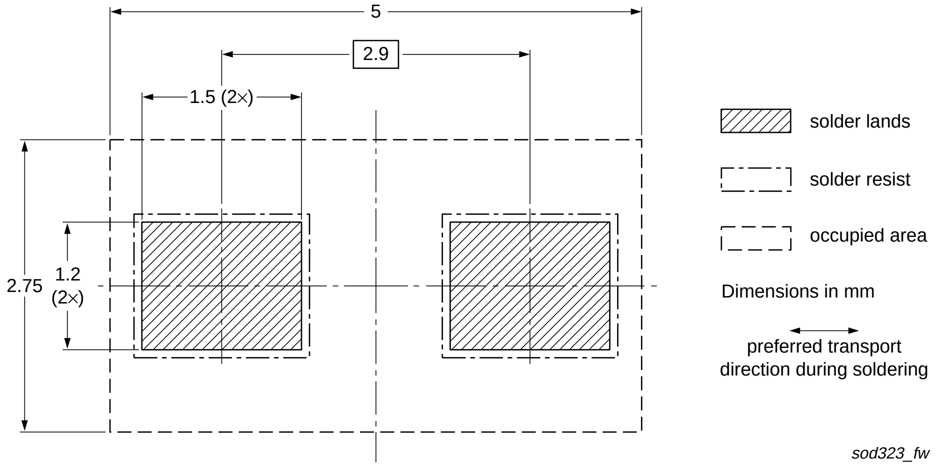


Fig 6. Wave soldering footprint SOD323 (SC-76)

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:	• The format of this data sheet has been redesigned to comply with the new identity guidelines of NXP Semiconductors. • Legal texts have been adapted to the new company name where appropriate. • Table 1 “Quick reference data”: added • Figure 4: superseded by minimized package outline drawing • Section 9 “Packing information”: added • Section 10 “Soldering”: added • Section 12 “Legal information”: updated			
BAT760_2	20040126	Product specification	-	BAT760_1
BAT760_1	20010312	Product specification	-	-

12. Legal information

12.1 Data sheet status

Document status[1][2]	Product status[3]	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”.

[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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14. Contents

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