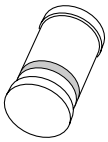


BAS85

Schottky barrier diode

Rev. 05 — 25 March 2009 Product data sheet

1. Product profile

1.1 General description

Planar Schottky barrier diode with an integrated guard ring for stress protection, encapsulated in a small hermetically sealed glass SOD80C Surface-Mounted Device SMD package with tin-plated metal discs at each end. It is suitable for “automatic placement” and as such it can withstand immersion soldering.

1.2 Features

- Low forward voltage
- High breakdown voltage
- Guard-ring protected
- Hermetically sealed glass SMD package

1.3 Applications

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

1.4 Quick reference data

Table 1. Quick reference data

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
I_F	forward current		-	-	200	mA
V_R	reverse voltage		-	-	30	V
V_F	forward voltage	I_F = 100 mA	-	-	800	mV

2. Pinning information

Table 2. Pinning

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

[1] The marking band indicates the cathode.

3. Ordering information

Table 3. Ordering information

Type number	Package		
	Name	Description	Version
BAS85	-	hermetically sealed glass surface-mounted package; 2 connectors	SOD80C

4. Marking

Table 4. Marking codes

Type number	Marking code[1]
BAS85	marking band

[1] grey: made in Philippines
purple: made in China

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		-	30	V
I_F	forward current		-	200	mA
$I_{F(AV)}$	average forward current	[1]	-	200	mA
I_{FRM}	repetitive peak forward current	$t_p \leq 1$ s; $\delta \leq 0.5$	-	300	mA
I_{FSM}	non-repetitive peak forward current	$t_p = 10$ ms	-	5	A
T_j	junction temperature		-	125	°C
T_{amb}	ambient temperature		–65	+125	°C
T_{stg}	storage temperature		–65	+150	°C

[1] Device mounted on an FR4 Printed-Circuit Board (PCB), single-sided copper, tin-plated and standard footprint.

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]	-	-	320	K/W

[1] Device mounted on an FR4 PCB, single-sided copper, tin-plated and standard footprint.

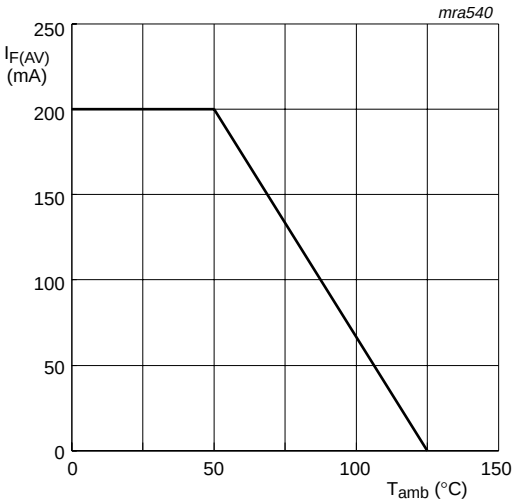
7. Characteristics

Table 7. Characteristics

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

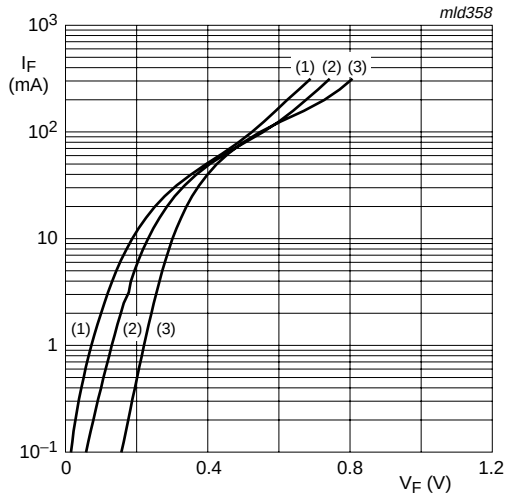
Symbol	Parameter	Conditions		Min	Typ	Max	Unit
V_F	forward voltage	I_F = 0.1 mA		-	-	240	mV
		I_F = 1 mA		-	-	320	mV
		I_F = 10 mA		-	-	400	mV
		I_F = 30 mA		-	-	500	mV
		I_F = 100 mA		-	-	800	mV
I_R	reverse current	V_R = 25 V	[1]	-	-	2.3	µA
C_d	diode capacitance	V_R = 1 V; f = 1 MHz		-	-	10	pF

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



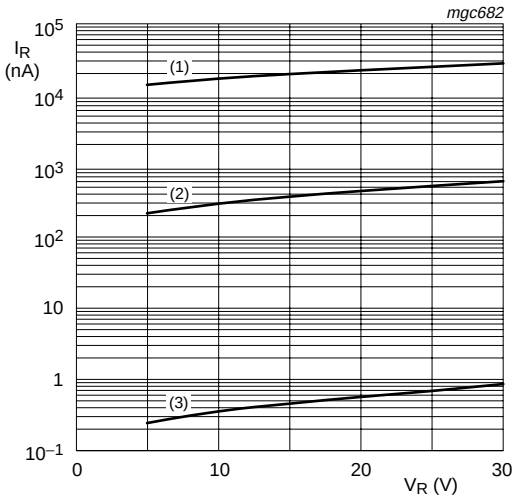
FR4 PCB, standard footprint

Fig 1. Average forward current as a function of ambient temperature; derating curve



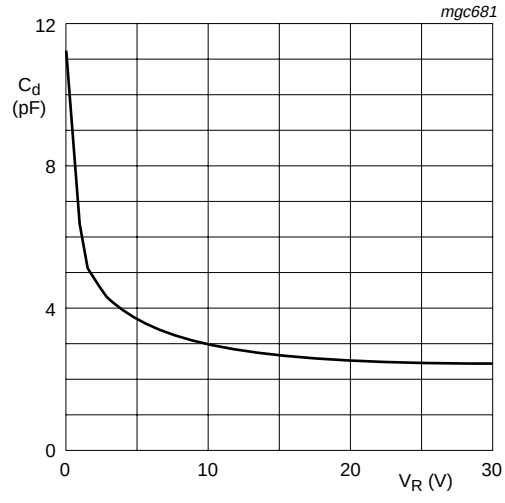
(1) T_{amb} = 125 °C
(2) T_{amb} = 85 °C
(3) T_{amb} = 25 °C

Fig 2. Forward current as a function of forward voltage; typical values



(1) T_{amb} = 85 °C
(2) T_{amb} = 25 °C
(3) T_{amb} = –40 °C

Fig 3. Reverse current as a function of reverse voltage; typical values



f = 1 MHz; T_{amb} = 25 °C

Fig 4. Diode capacitance as a function of reverse voltage; typical values

8. Package outline

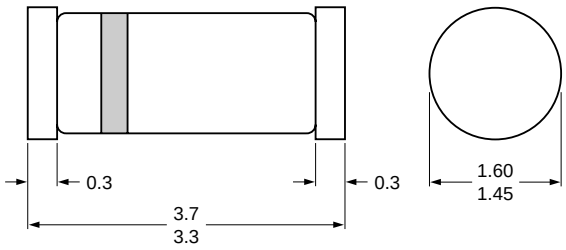


Fig 5. Package outline SOD80C

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	
			2500	10000
BAS85	SOD80C	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

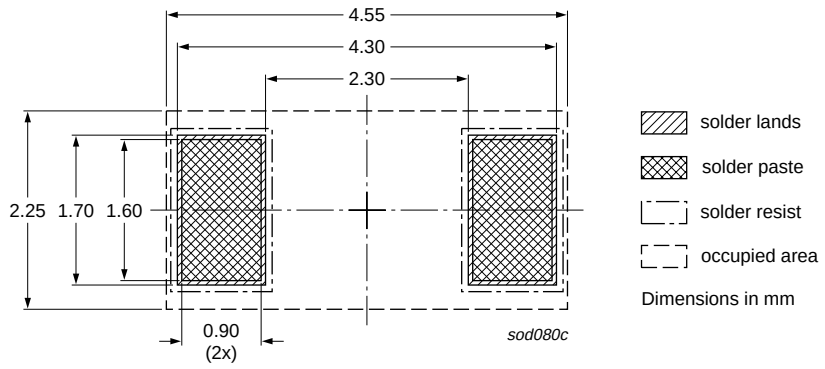


Fig 6. Reflow soldering footprint SOD80C

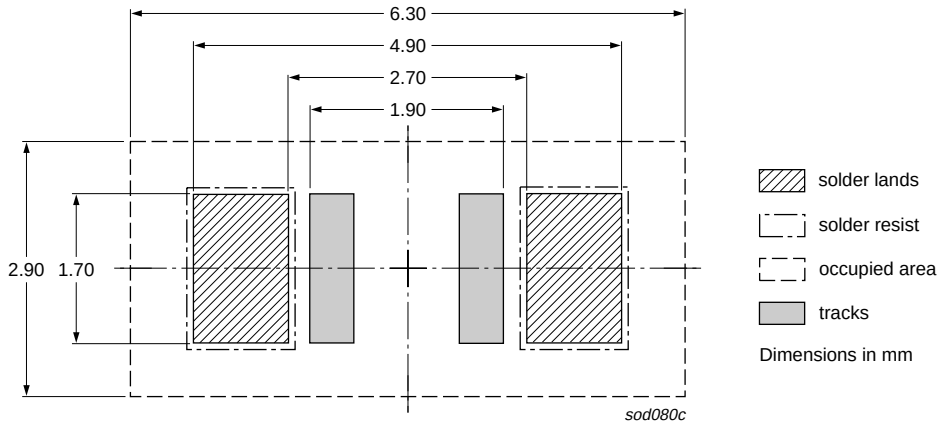


Fig 7. Wave soldering footprint SOD80C

11. Revision history

Table 9. Revision history

Document ID	Release date	Data sheet status	Change notice	Supersedes
BAS85_5	20090325	Product data sheet	-	BAS85_4
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 • Section 4 “Marking”: enhanced • Figure 5: superseded by minimized package outline drawing • Section 9 “Packing information”: added • Section 10 “Soldering”: added • Section 12 “Legal information”: updated			
BAS85_4	20000525	Product specification	-	BAS85_3
BAS85_3	19961001	Product specification	-	BAS85_2
BAS85_2	19960320	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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