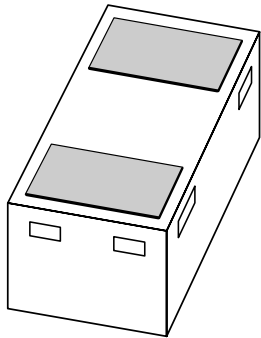


# DATA SHEET



## **BAS16L** High-speed diode

Product specification

2003 Jun 23

# High-speed diode

# BAS16L

## FEATURES

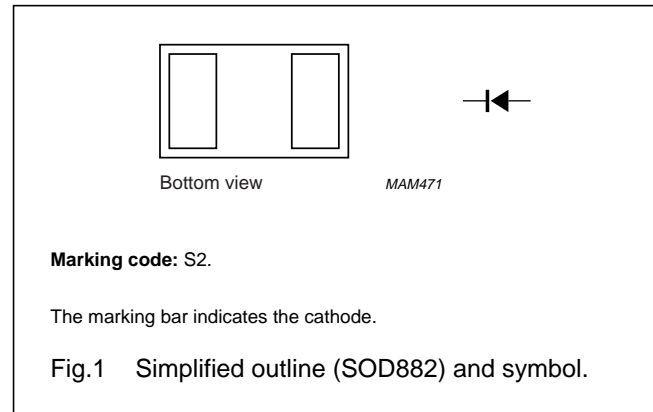
- High switching speed: max. 4 ns
- Continuous reverse voltage: max. 75 V
- Repetitive peak reverse voltage: max. 100 V
- Repetitive peak forward current: max. 500 mA
- Leadless ultra small plastic package (1 mm × 0.6 mm × 0.5 mm)
- Board space 1.17 mm<sup>2</sup> (approx. 10% of SOT23)
- Power dissipation comparable to SOT23.

## APPLICATIONS

- General purpose switching in surface mounted circuits
- Mobile communication, digital (still) cameras, PDA and PCMCIA cards.

## DESCRIPTION

The BAS16L is a high-speed switching diode fabricated in planar technology and encapsulated in a SOD882 leadless ultra small plastic package.



## LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$V_{RRM}$	repetitive peak reverse voltage		–	100	V
$V_R$	continuous reverse voltage		–	75	V
$I_F$	continuous forward current	see Fig.2; note 1	–	215	mA
$I_{FRM}$	repetitive peak forward current		–	500	mA
$I_{FSM}$	non-repetitive peak forward current	square wave; $T_j = 25\text{ °C}$ prior to surge; see Fig.4			
		$t = 1\ \mu\text{s}$	–	4	A
		$t = 1\ \text{ms}$	–	1	A
		$t = 1\ \text{s}$	–	0.5	A
$P_{tot}$	total power dissipation	$T_{amb} = 25\text{ °C}$ ; note 1	–	250	mW
$T_{stg}$	storage temperature		–65	+150	°C
$T_j$	junction temperature		–	150	°C

## Note

1. Refer to SOD882 standard mounting conditions (footprint), FR4 printed-circuit board with 60  $\mu\text{m}$  copper strip line.

## High-speed diode

## BAS16L

**ELECTRICAL CHARACTERISTICS**

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

SYMBOL	PARAMETER	CONDITIONS	MAX.	UNIT
$V_F$	forward voltage	see Fig.3		
		$I_F = 1\text{ mA}$	715	mV
		$I_F = 10\text{ mA}$	855	mV
		$I_F = 50\text{ mA}$	1	V
$I_R$	reverse current	see Fig.5		
		$V_R = 25\text{ V}$	30	nA
		$V_R = 75\text{ V}$	1	$\mu\text{A}$
		$V_R = 25\text{ V}; T_j = 150\text{ °C}$	30	$\mu\text{A}$
		$V_R = 75\text{ V}; T_j = 150\text{ °C}$	50	$\mu\text{A}$
$C_d$	diode capacitance	$V_R = 0\text{ V}; f = 1\text{ MHz};$ see Fig.6	1.5	pF
$t_{rr}$	reverse recovery time	when switched from $I_F = 10\text{ mA}$ to $I_R = 10\text{ mA}; R_L = 100\ \Omega;$ measured at $I_R = 1\text{ mA};$	4	ns
$V_{fr}$	forward recovery voltage	when switched from $I_F = 10\text{ mA};$ $t_r = 20\text{ ns}$	1.75	V

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-a}$	thermal resistance from junction to ambient	note 1	500	K/W

**Note**

1. Refer to SOD882 standard mounting conditions (footprint), FR4 printed-circuit board with 60  $\mu\text{m}$  copper strip line.

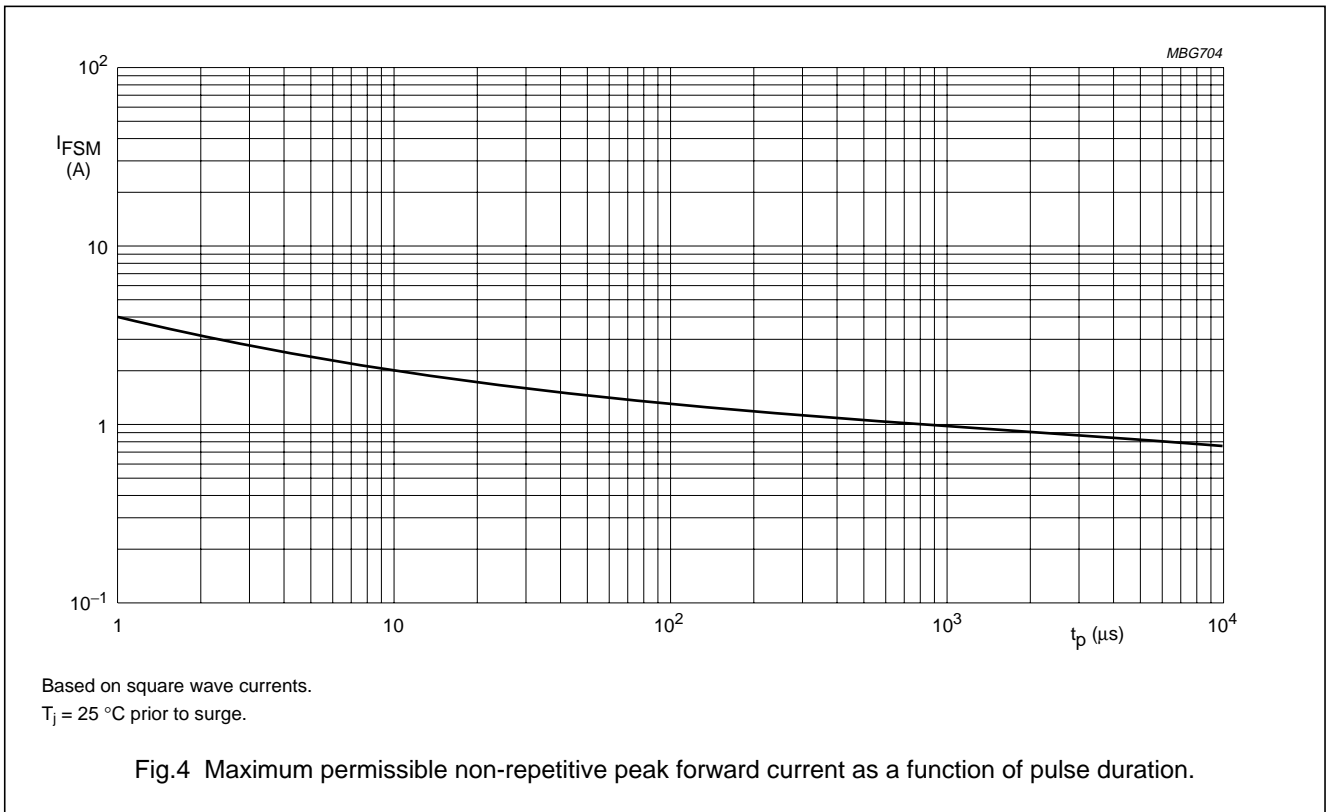
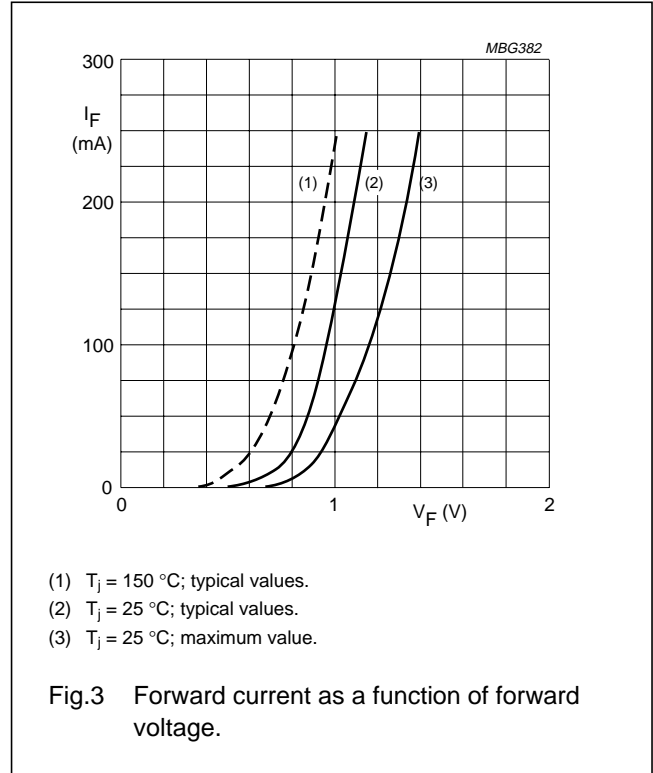
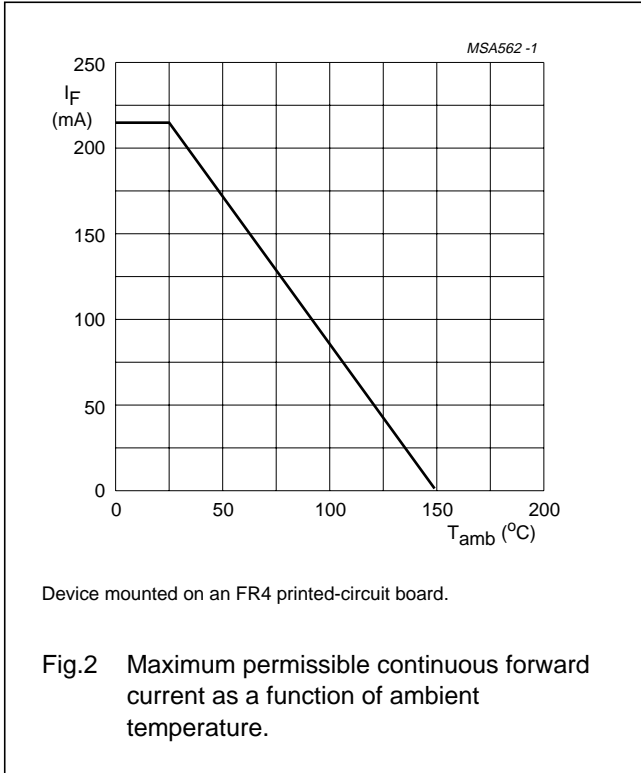
**Soldering**

Reflow soldering is the only recommended soldering method.

High-speed diode

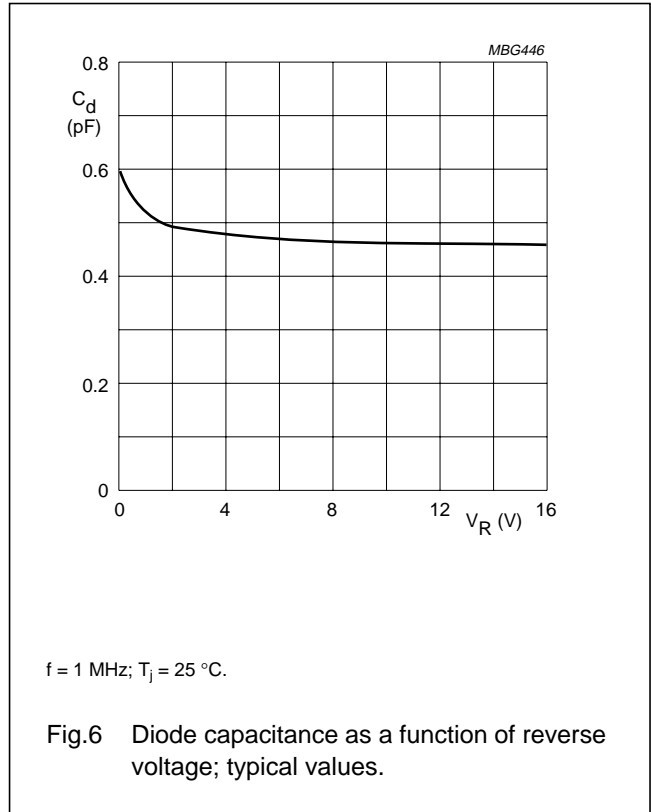
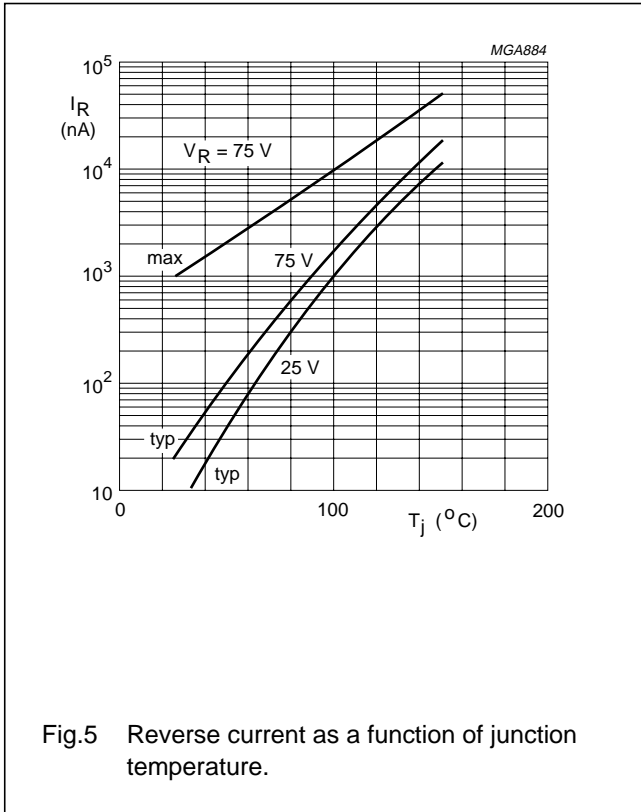
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GRAPHICAL DATA



High-speed diode

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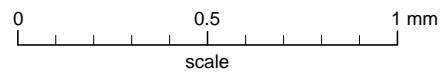
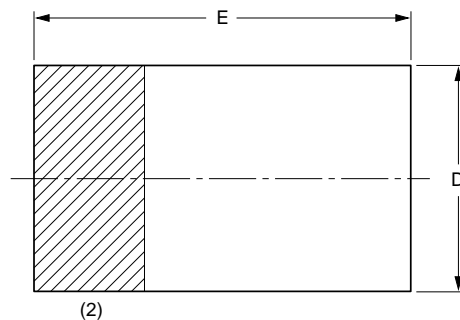
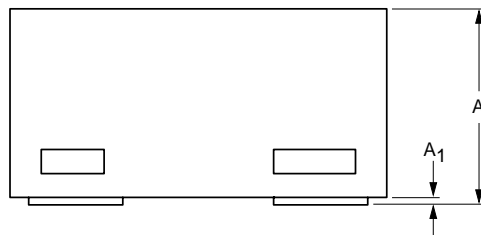
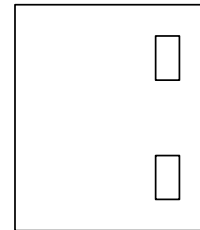
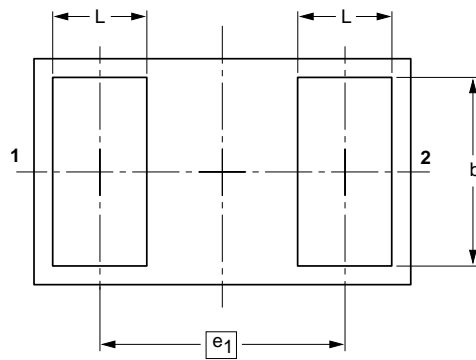
High-speed diode

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PACKAGE OUTLINE

Leadless ultra small plastic package; 2 terminals; body 1.0 x 0.6 x 0.5 mm

SOD882



DIMENSIONS (mm are the original dimensions)

UNIT	A <sup>(1)</sup>	A <sub>1</sub> max.	b	D	E	e <sub>1</sub>	L
mm	0.50 0.46	0.03	0.55 0.47	0.62 0.55	1.02 0.95	0.65	0.30 0.22

Notes

- Including plating thickness
- The marking bar indicates the cathode

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	JEITA			
SOD882						03-04-16 03-04-17

## High-speed diode

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## DATA SHEET STATUS

LEVEL	DATA SHEET STATUS <sup>(1)</sup>	PRODUCT STATUS <sup>(2)(3)</sup>	DEFINITION
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Printed in The Netherlands

613514/01/pp8

Date of release: 2003 Jun 23

Document order number: 9397 750 11306

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