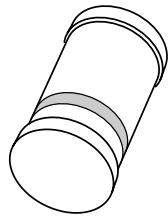


# DATA SHEET



## **BAS45AL** Low-leakage diode

Product specification  
Supersedes data of 1999 May 04

1999 May 28

# Low-leakage diode

# BAS45AL

## FEATURES

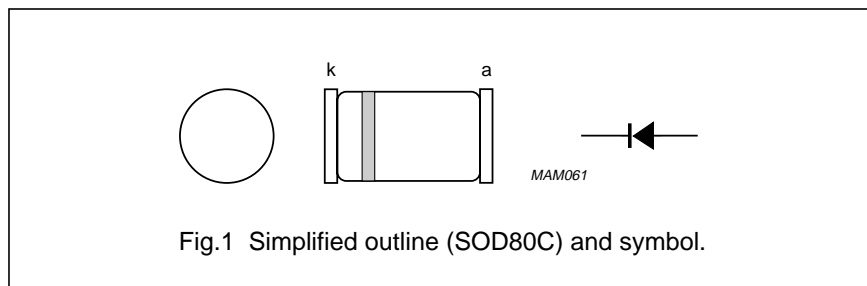
- Continuous reverse voltage: max. 125 V
- Repetitive peak forward current: max. 625 mA
- Low reverse current: max. 1 nA
- Switching time: typ. 1.5  $\mu$ s.

## APPLICATION

- Low leakage current applications.

## DESCRIPTION

Epitaxial medium-speed switching diode with a low leakage current in a small SOD80C glass SMD package.



## LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$V_{RRM}$	repetitive peak reverse voltage		–	125	V
$V_R$	continuous reverse voltage		–	125	V
$I_F$	continuous forward current	note 1; see Fig.2	–	250	mA
$I_{FRM}$	repetitive peak forward current		–	625	mA
$I_{FSM}$	non-repetitive peak forward current	square wave; $T_j = 25\text{ }^\circ\text{C}$ prior to surge; see Fig.4 $t_p = 1\text{ }\mu\text{s}$ $t_p = 1\text{ ms}$ $t_p = 1\text{ s}$	–	4 1 0.5	A A A
$P_{tot}$	total power dissipation	$T_{amb} = 25\text{ }^\circ\text{C}$ ; note 1	–	400	mW
$T_{stg}$	storage temperature		–65	+175	$^\circ\text{C}$
$T_j$	junction temperature		–	175	$^\circ\text{C}$

## Note

1. Device mounted on a FR4 printed-circuit board.

## Low-leakage diode

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**ELECTRICAL CHARACTERISTICS**

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

SYMBOL	PARAMETER	CONDITIONS	TYP.	MAX.	UNIT
$V_F$	forward voltage	see Fig.3 $I_F = 1\text{ mA}$ $I_F = 10\text{ mA}$ $I_F = 100\text{ mA}$	– – –	780 860 1000	mV mV mV
$I_R$	reverse current	see Fig.5 $V_R = 125\text{ V}; E_{\max} = 100\text{ lx}$ $V_R = 30\text{ V}; T_j = 125\text{ °C}; E_{\max} = 100\text{ lx}$ $V_R = 125\text{ V}; T_j = 125\text{ °C}; E_{\max} = 100\text{ lx}$ $V_R = 125\text{ V}; T_j = 150\text{ °C}; E_{\max} = 100\text{ lx}$	– – – –	1 300 500 2	nA nA nA $\mu\text{A}$
$C_d$	diode capacitance	$f = 1\text{ MHz}; V_R = 0$ ; see Fig.6	–	4	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 $I_R = 1\text{ mA}$ ; see Fig.7	1.5	–	$\mu\text{s}$

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-tp}$	thermal resistance from junction to tie-point		300	K/W
$R_{th\ j-a}$	thermal resistance from junction to ambient	note 1	375	K/W

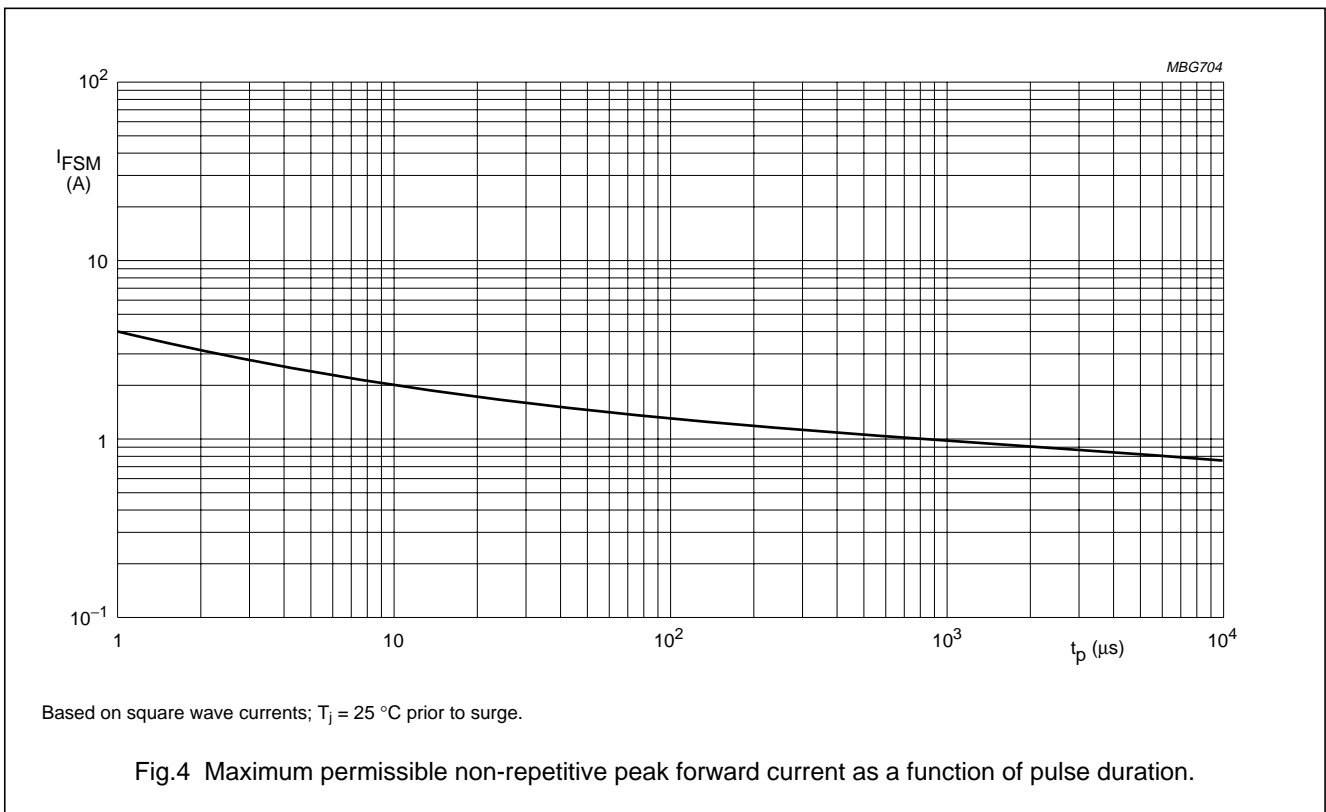
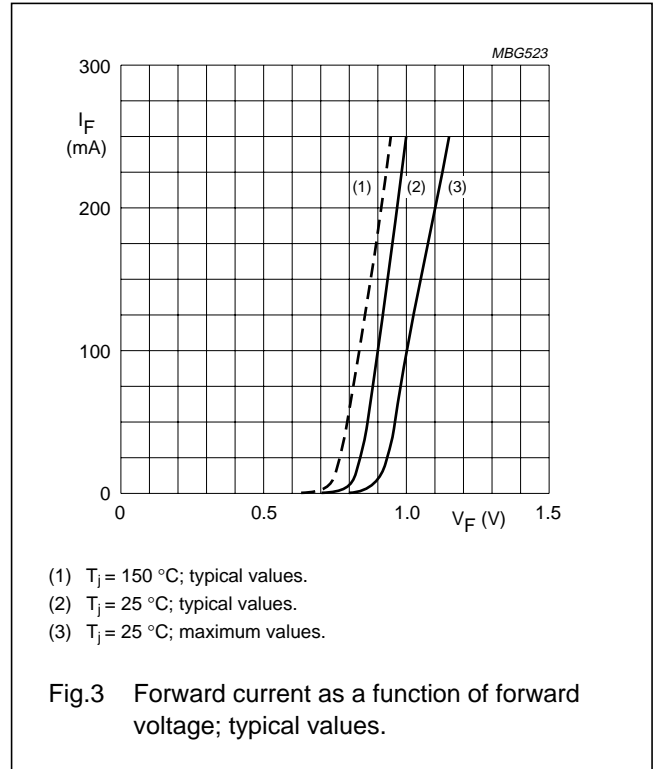
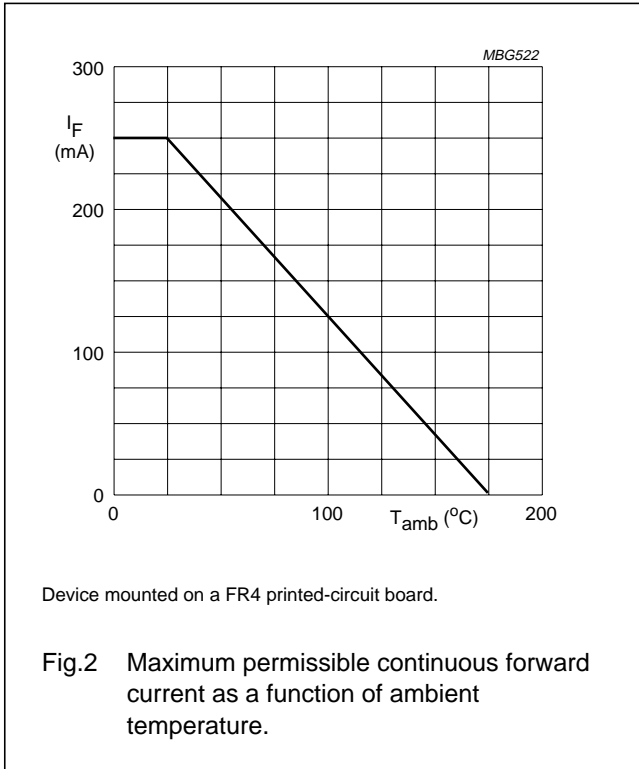
**Note**

1. Device mounted on a FR4 printed-circuit board.

Low-leakage diode

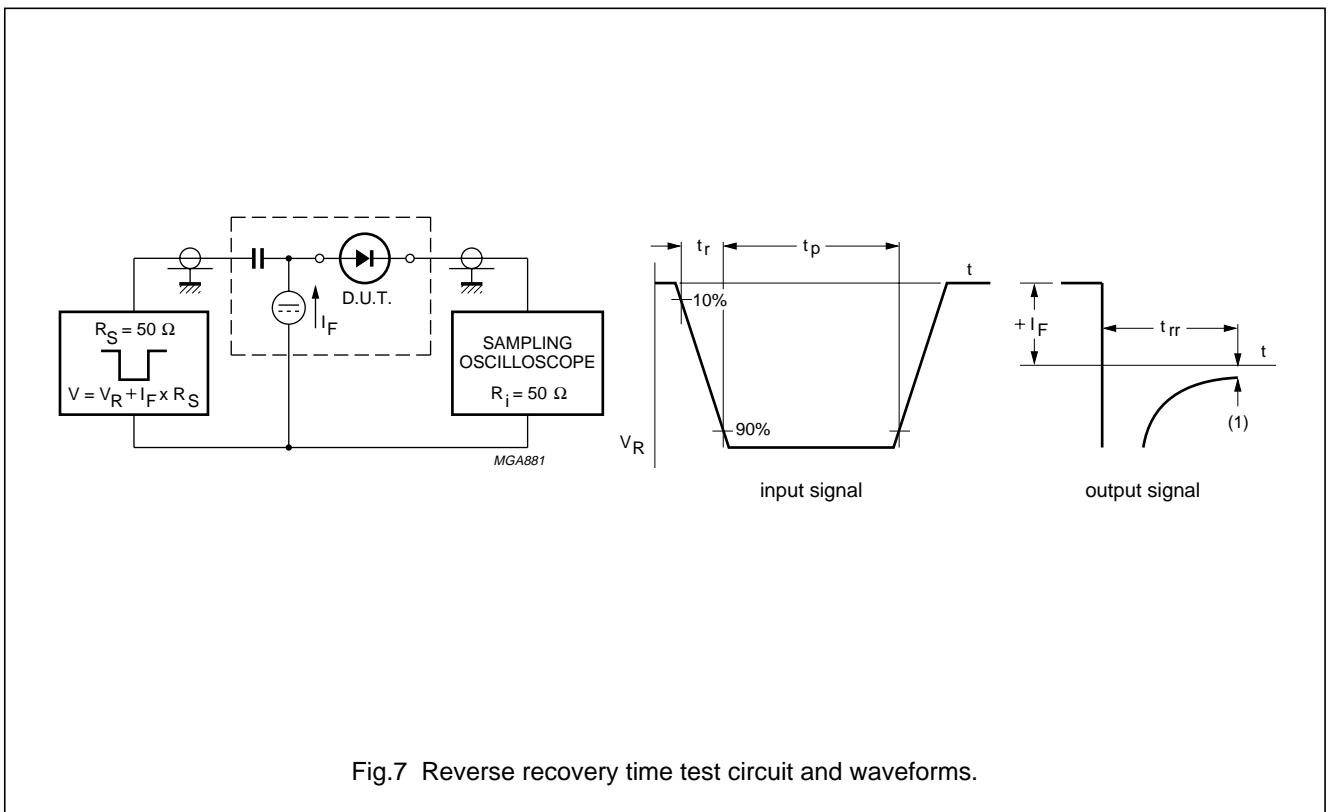
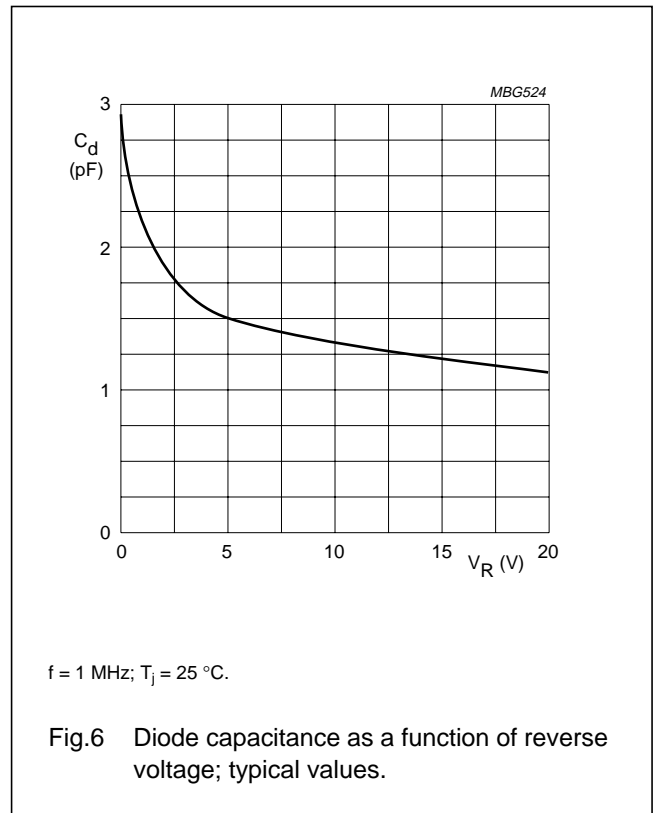
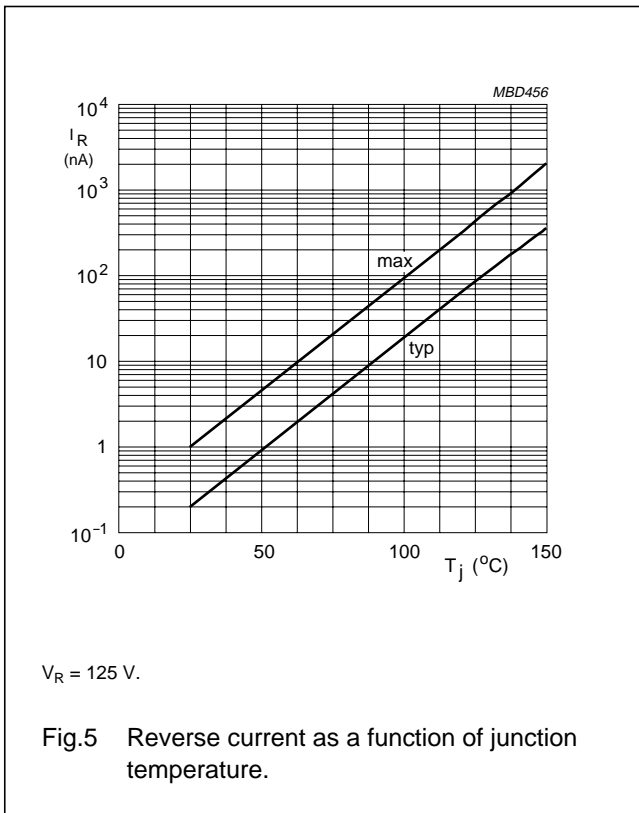
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GRAPHICAL DATA



Low-leakage diode

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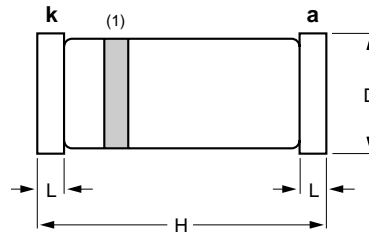
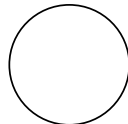
Low-leakage diode

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PACKAGE OUTLINE

Hermetically sealed glass surface mounted package; 2 connectors

SOD80C



DIMENSIONS (mm are the original dimensions)

UNIT	D	H	L
mm	1.60 1.45	3.7 3.3	0.3



Note

1. The marking band indicates the cathode.

OUTLINE VERSION	REFERENCES			EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ		
SOD80C	100H01				97-06-20

DEFINITIONS

Data Sheet Status	
Objective specification	This data sheet contains target or goal specifications for product development.
Preliminary specification	This data sheet contains preliminary data; supplementary data may be published later.
Product specification	This data sheet contains final product specifications.
Limiting values	
Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 134). Stress above one or more of the limiting values may cause permanent damage to the device. These are stress ratings only and operation of the device at these or at any other conditions above those given in the Characteristics sections of the specification is not implied. Exposure to limiting values for extended periods may affect device reliability.	
Application information	
Where application information is given, it is advisory and does not form part of the specification.	

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Low-leakage diode

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