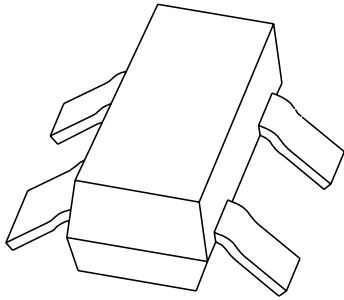


# DATA SHEET



**BAS28**

High-speed double diode

Product data sheet  
Supersedes data of April 1996

1996 Sep 10

## High-speed double diode

## BAS28

## FEATURES

- Small plastic SMD package
- High switching speed: max. 4 ns
- Continuous reverse voltage: max. 75 V
- Repetitive peak reverse voltage: max. 85 V
- Repetitive peak forward current: max. 500 mA .

## APPLICATIONS

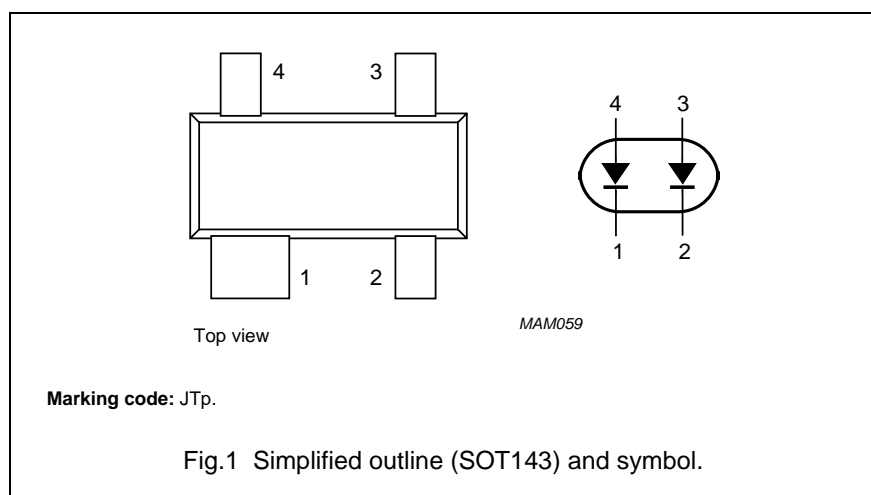
- High-speed switching in e.g. surface mounted circuits.

## DESCRIPTION

The BAS28 consists of two high-speed switching diodes, fabricated in planar technology, and encapsulated in the small plastic SMD SOT143 package. The diodes are not connected.

## PINNING

PIN	DESCRIPTION
1	cathode (k1)
2	cathode (k2)
3	anode (a2)
4	anode (a1)



## LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$V_{RRM}$	repetitive peak reverse voltage		–	85	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 $t = 1\text{ }\mu\text{s}$ $t = 1\text{ ms}$ $t = 1\text{ s}$	– – –	4 1 0.5	A A 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. Device mounted on an FR4 printed-circuit board.

## High-speed double diode

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**ELECTRICAL CHARACTERISTICS**T<sub>j</sub> = 25 °C; unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V <sub>F</sub>	forward voltage	see Fig.3 I <sub>F</sub> = 1 mA I <sub>F</sub> = 10 mA I <sub>F</sub> = 50 mA I <sub>F</sub> = 150 mA	– – – –	715 855 1 1.25	mV mV V V
I <sub>R</sub>	reverse current	see Fig.5 V <sub>R</sub> = 25 V V <sub>R</sub> = 75 V V <sub>R</sub> = 25 V; T <sub>j</sub> = 150 °C V <sub>R</sub> = 75 V; T <sub>j</sub> = 150 °C	– – – –	30 1 30 50	nA μA μA μA
C <sub>d</sub>	diode capacitance	f = 1 MHz; V <sub>R</sub> = 0; see Fig.6	–	1.5	pF
t <sub>rr</sub>	reverse recovery time	when switched from I <sub>F</sub> = 10 mA to I <sub>R</sub> = 10 mA; R <sub>L</sub> = 100 Ω; measured at I <sub>R</sub> = 1 mA; see Fig.7	–	4	ns
V <sub>fr</sub>	forward recovery voltage	when switched from I <sub>F</sub> = 10 mA; t <sub>r</sub> = 20 ns; see Fig.8	–	1.75	V

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
R <sub>th j-tp</sub>	thermal resistance from junction to tie-point		360	K/W
R <sub>th j-a</sub>	thermal resistance from junction to ambient	note 1	500	K/W

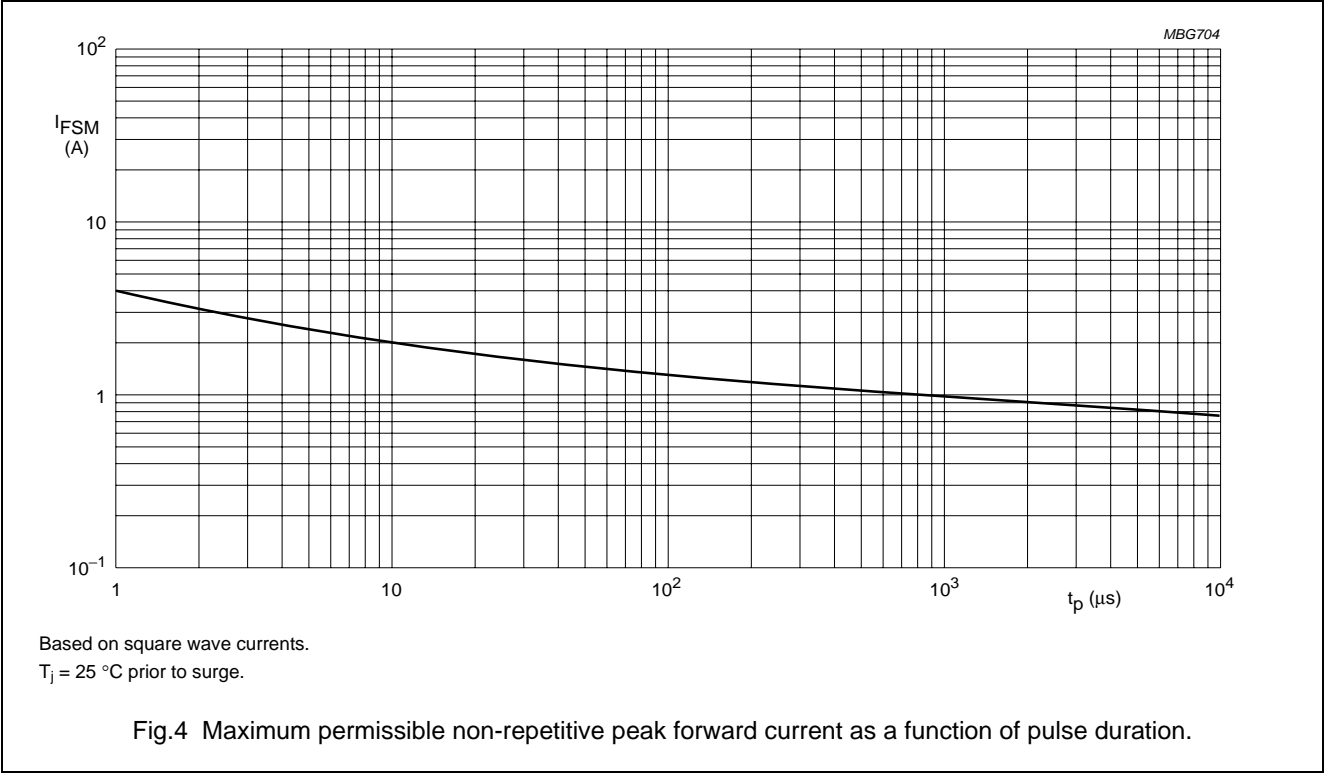
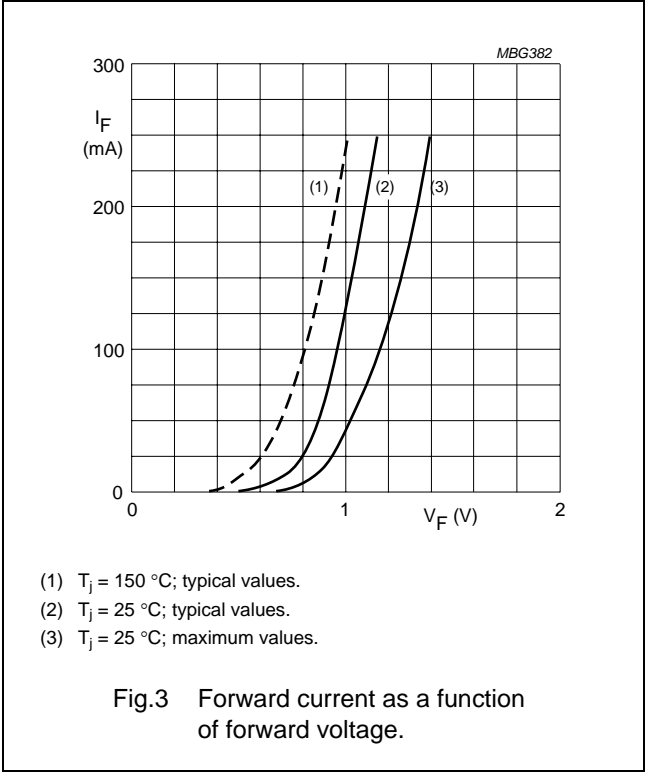
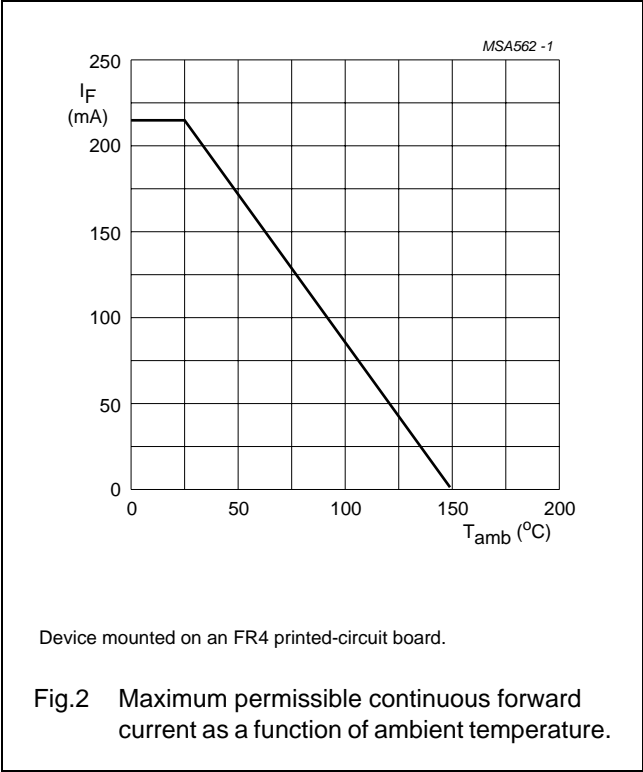
**Note**

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

High-speed double diode

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GRAPHICAL DATA



High-speed double diode

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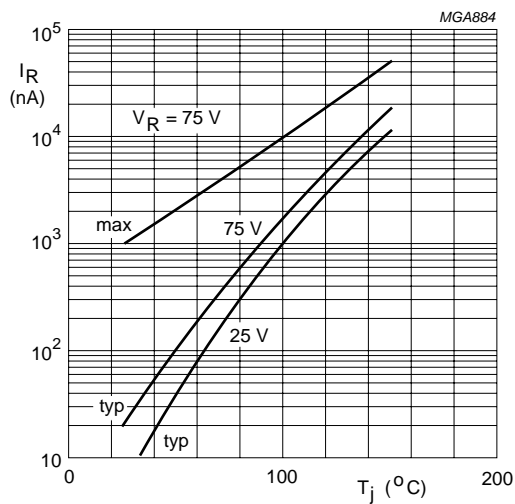
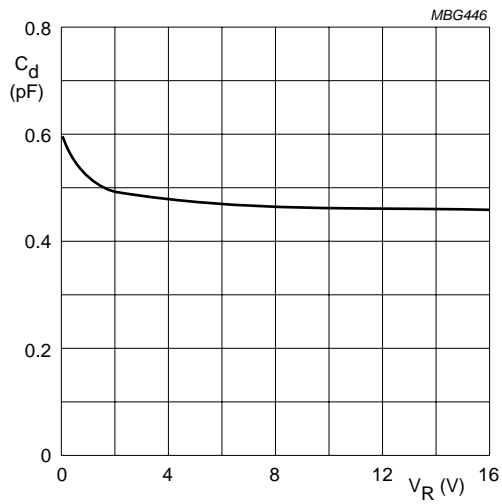


Fig.5 Reverse current as a function of junction temperature.

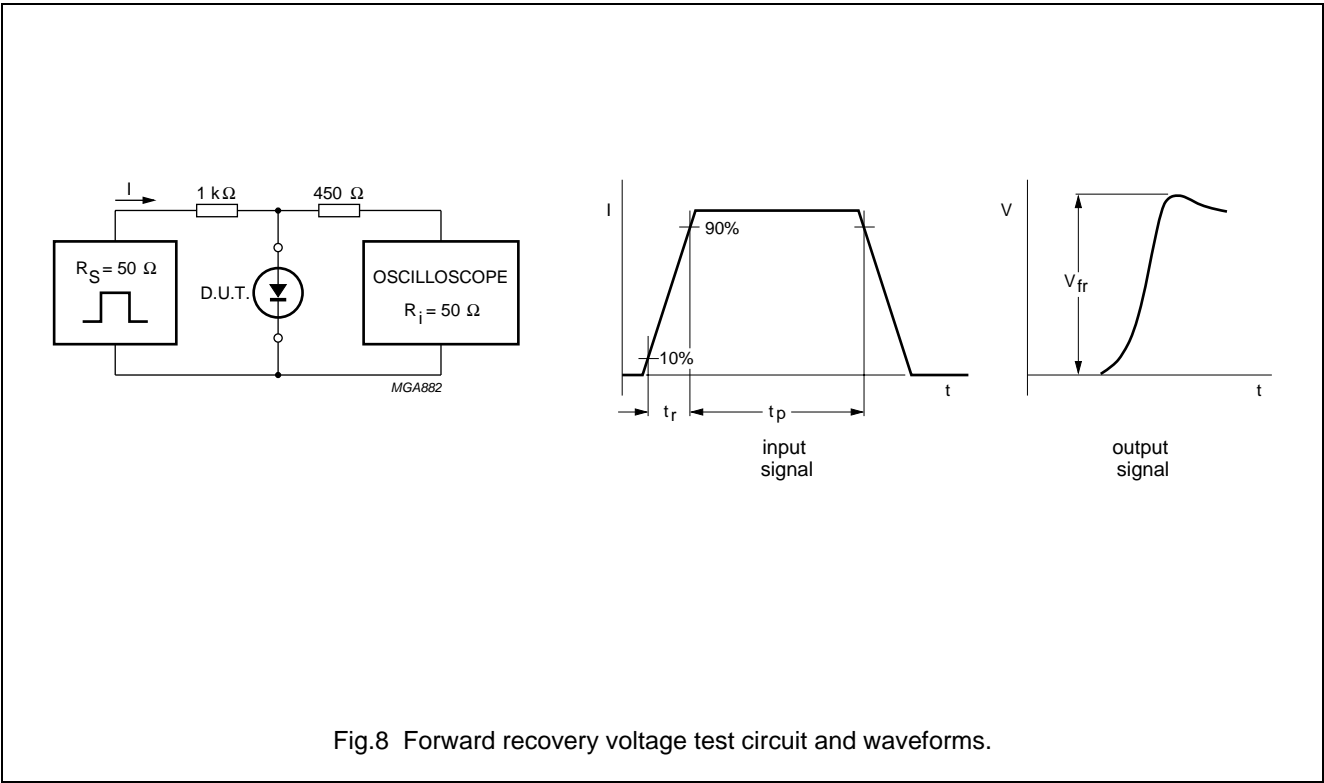
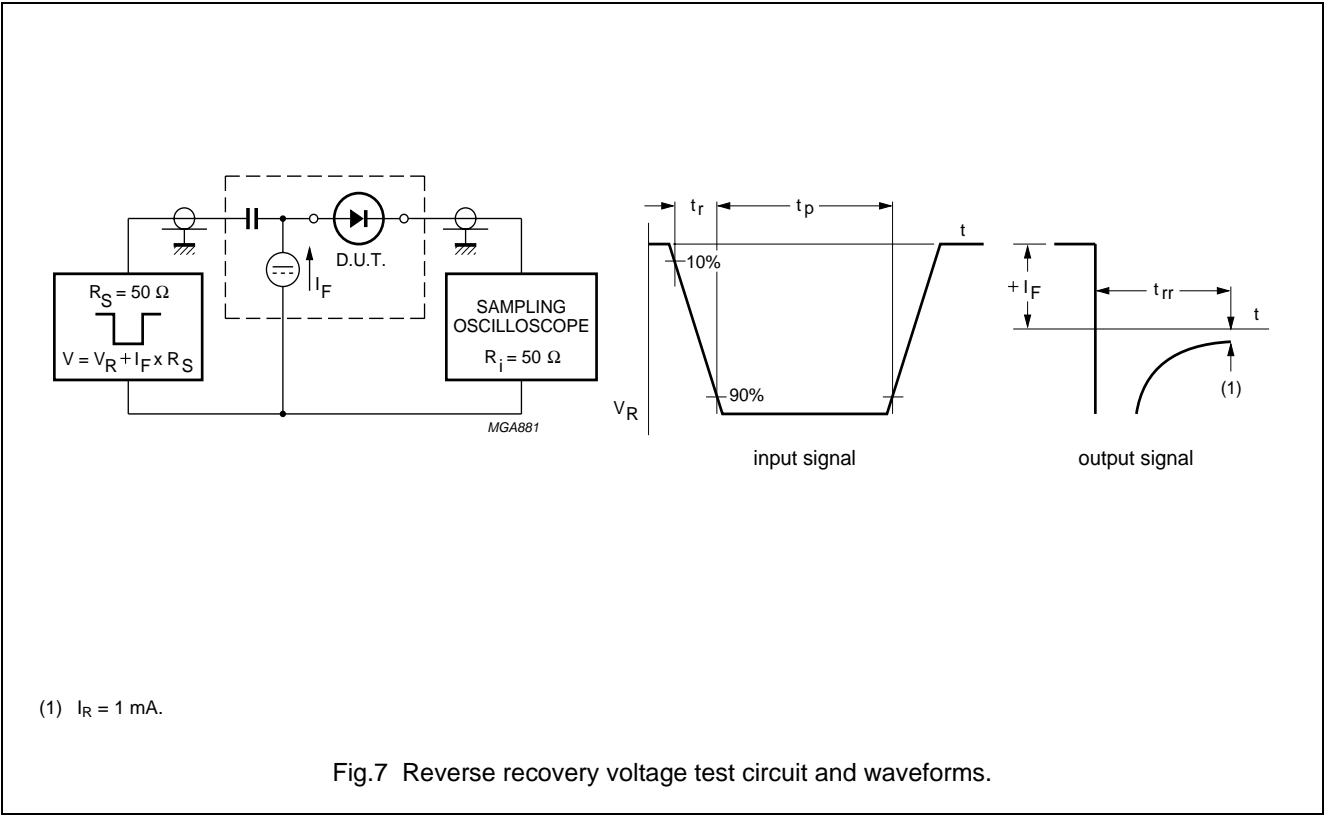


$f = 1\text{ MHz}$ ;  $T_j = 25\text{ }^{\circ}\text{C}$ .

Fig.6 Diode capacitance as a function of reverse voltage; typical values.

High-speed double diode

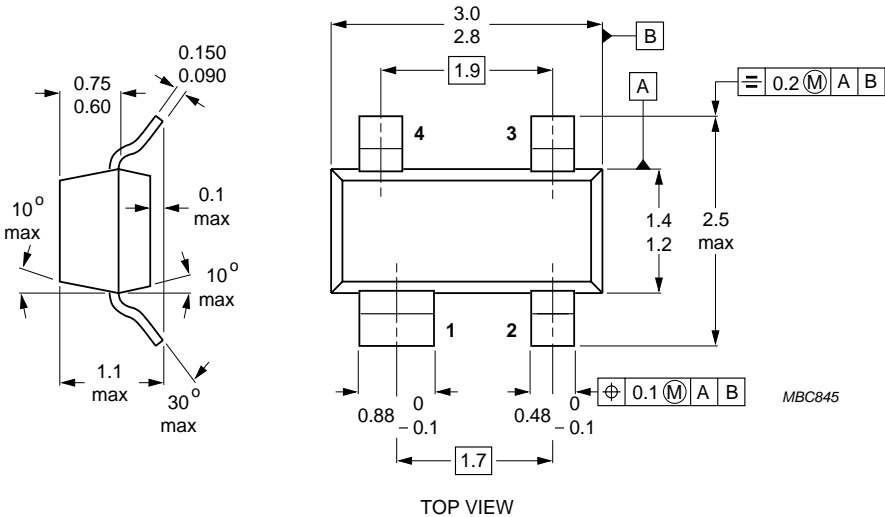
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High-speed double diode

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PACKAGE OUTLINE



Dimensions in mm.

Fig.9 SOT143.

## High-speed double diode

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## DATA SHEET STATUS

DOCUMENT STATUS <sup>(1)</sup>	PRODUCT STATUS <sup>(2)</sup>	DEFINITION
Objective data sheet	Development	This document contains data from the objective specification for product development.
Preliminary data sheet	Qualification	This document contains data from the preliminary specification.
Product data sheet	Production	This document contains the product specification.

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For additional information please visit: **<http://www.nxp.com>**

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Printed in The Netherlands

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