



**THE DATASHEET OF  
BAS716,115**



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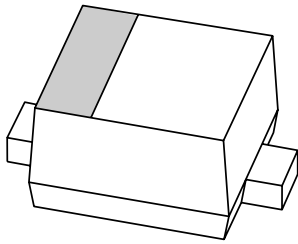
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Kind regards,

Team Nexperia

# DATA SHEET



## **BAS716** Low-leakage diode

Product data sheet

2003 Nov 07

# Low-leakage diode

# BAS716

### FEATURES

- Plastic SMD package
- Low leakage current: typ. 0.2 nA
- Switching time: typ. 0.6  $\mu$ s
- Continuous reverse voltage: max. 75 V
- Repetitive peak reverse voltage: max. 85 V
- Repetitive peak forward current: max. 500 mA.

### APPLICATION

- Low leakage current applications in surface mounted circuits.

### DESCRIPTION

Epitaxial medium-speed switching diode with a low leakage current in an ultra small SOD523 (SC-79) SMD plastic package.

### PINNING

PIN	DESCRIPTION
1	cathode
2	anode

Top view

MAM408

**Marking code:** S1.  
The marking bar indicates the cathode.

Fig.1 Simplified outline (SOD523; SC-79) and symbol.

### ORDERING INFORMATION

TYPE NUMBER	PACKAGE		
	NAME	DESCRIPTION	VERSION
BAS716	-	plastic surface mounted package; 2 leads	SOD523

### LIMITING VALUES

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

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	-	200	mA
$I_{FRM}$	repetitive peak forward current		-	500	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	-	250	mW
$T_{stg}$	storage temperature		-65	+150	$^\circ\text{C}$
$T_j$	junction temperature		-	150	$^\circ\text{C}$

### 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	$I_F = 1\text{ mA}$	0.77	0.9	V
		$I_F = 10\text{ mA}$	0.85	1	V
		$I_F = 50\text{ mA}$	0.92	1.1	V
		$I_F = 150\text{ mA}$	1.02	1.25	V
$I_R$	reverse current	$V_R = 75\text{ V}$	0.2	5	nA
		$V_R = 75\text{ V}; T_j = 150\text{ °C}$	3	80	nA
		$V_R = 100\text{ V}$	0.3	–	nA
$C_d$	diode capacitance	$V_R = 0\text{ V}; f = 1\text{ MHz};$ see Fig.6	2	–	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 $I_R = 1\text{ mA}$	0.6	3	$\mu\text{s}$

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-a}$	thermal resistance from junction to ambient	note 1	450	K/W
$R_{th\ j-s}$	thermal resistance from junction to soldering point	note 2	120	K/W

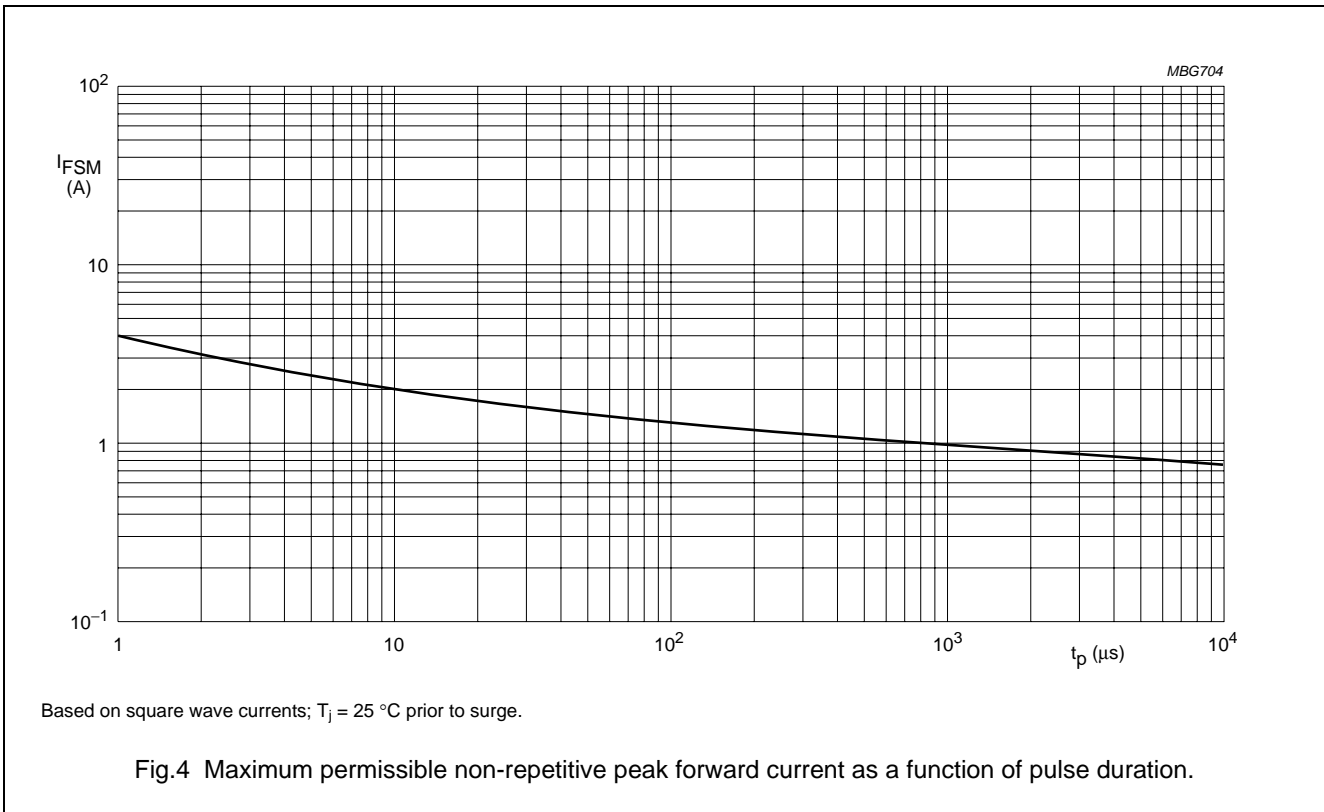
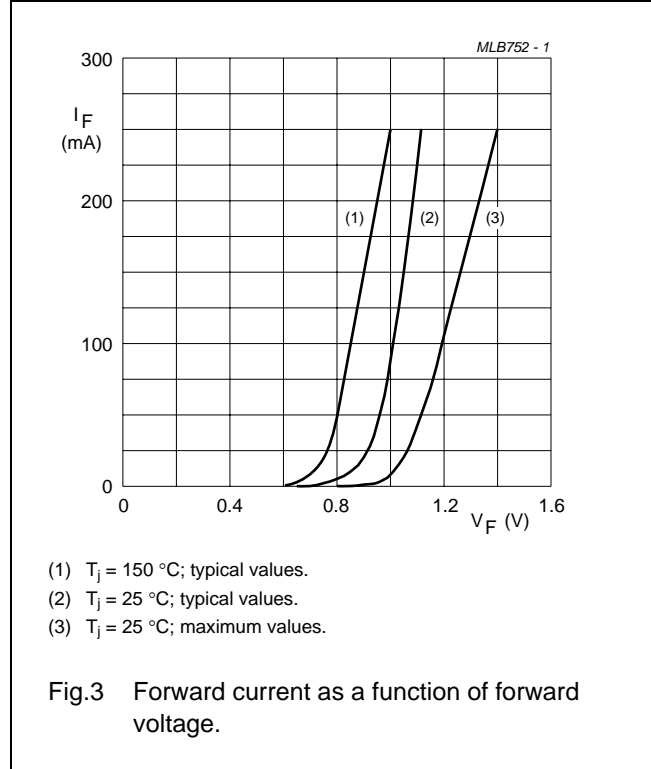
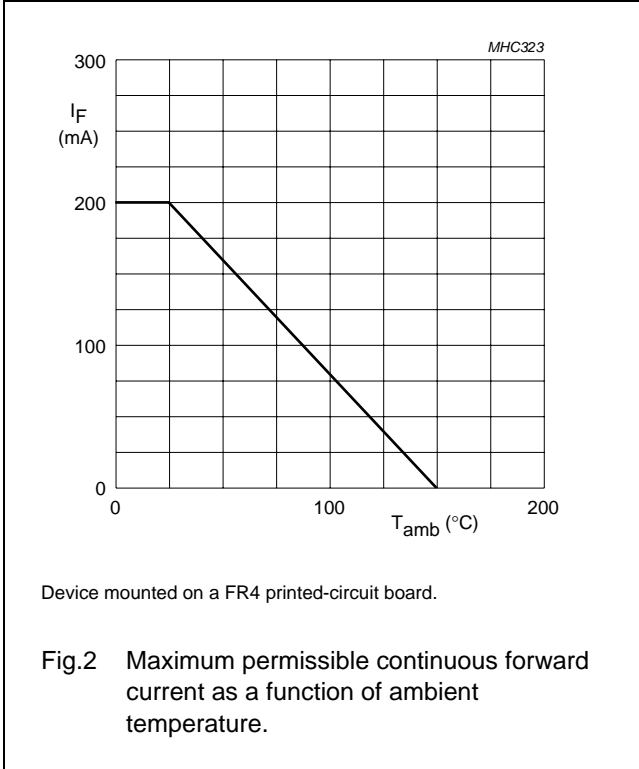
**Notes**

1. Device mounted on a FR4 printed-circuit board. Refer to SOD523 (SC-79) standard mounting conditions.
2. Soldering point of the cathode tab.

Low-leakage diode

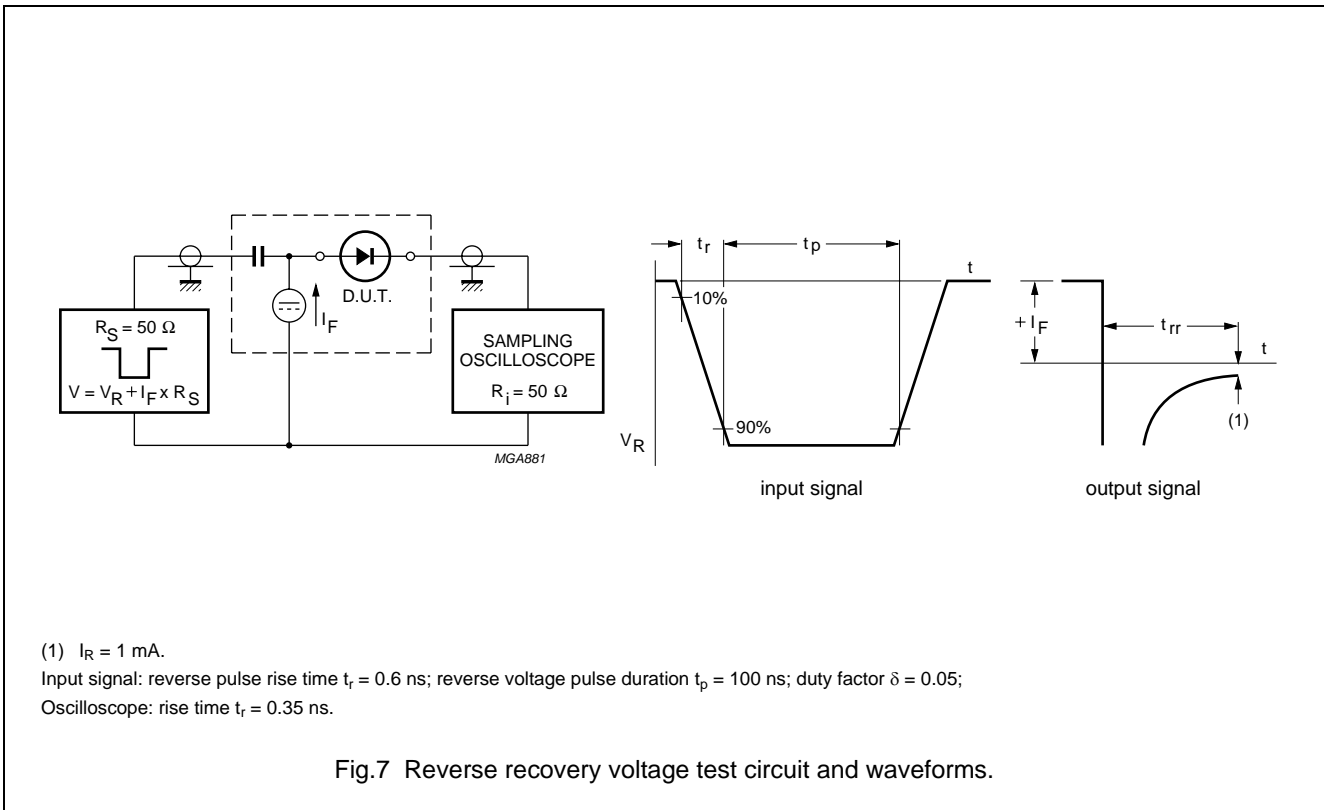
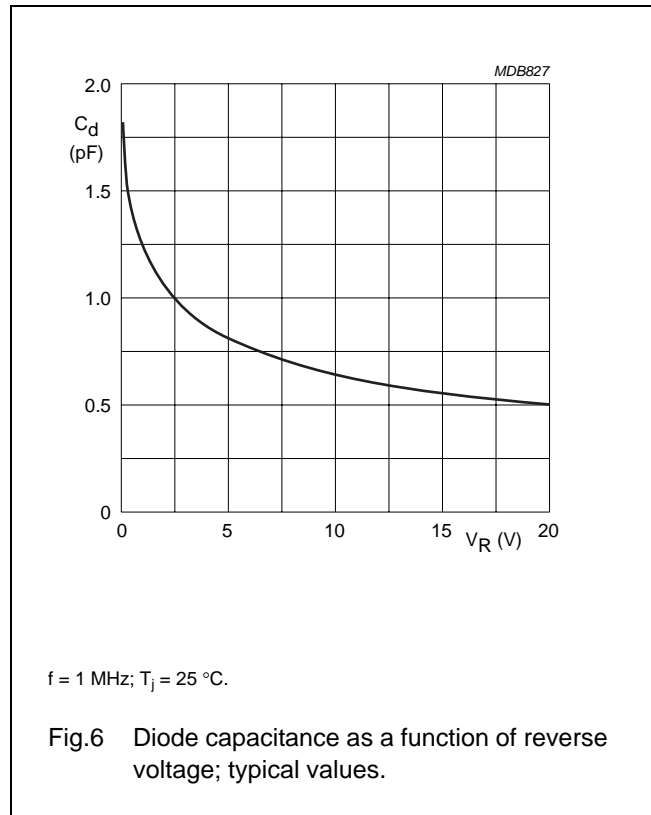
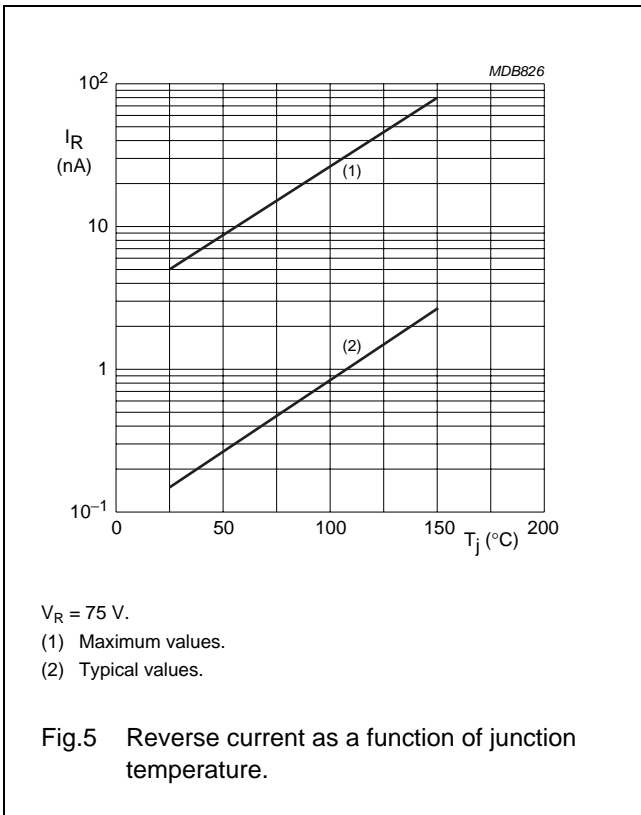
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GRAPHICAL DATA



Low-leakage diode

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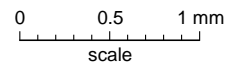
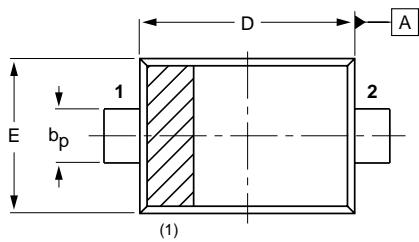
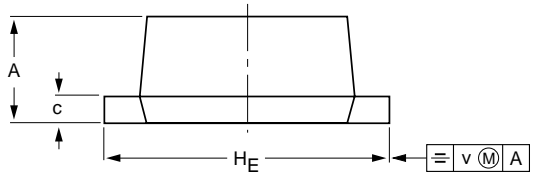
Low-leakage diode

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PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

SOD523



DIMENSIONS (mm are the original dimensions)

UNIT	A	bp	c	D	E	HE	v
mm	0.65 0.58	0.34 0.26	0.17 0.11	1.25 1.15	0.85 0.75	1.65 1.55	0.1

Note

1. The marking bar indicates the cathode.

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	JEITA			
SOD523			SC-79			<del>98-11-25</del> 02-12-13

# Low-leakage 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.

### Notes

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# ***NXP Semiconductors***

## **Customer notification**

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## **Contact information**

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

For sales offices addresses send e-mail to: **[salesaddresses@nxp.com](mailto:salesaddresses@nxp.com)**

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