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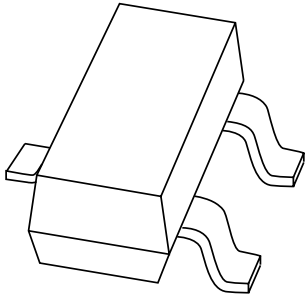
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If you have any questions related to the data sheet, please contact our nearest sales office via e-mail or telephone (details via **salesaddresses@nexperia.com**). Thank you for your cooperation and understanding,

Kind regards,

Team Nexperia

DATA SHEET



BAV170

Low-leakage double diode

Product data sheet
Supersedes data of 1999 May 11

2003 Mar 25

Low-leakage double diode

BAV170

FEATURES

- Plastic SMD package
- Low leakage current: typ. 3 pA
- Switching time: typ. 0.8 μ s
- Continuous reverse voltage: max. 75 V
- Repetitive peak reverse voltage: max. 85 V
- Repetitive peak forward current: max. 500 mA.

DESCRIPTION

Epitaxial, medium-speed switching, double diode in a small SOT23 plastic SMD package. The diodes are in common cathode configuration.

PINNING

PIN	DESCRIPTION
1	anode
2	anode
3	common cathode

APPLICATION

- Low-leakage current applications in surface mounted circuits.

MARKING

TYPE NUMBER	MARKING CODE ⁽¹⁾
BAV170	JX*

Note

1. * = p : Made in Hong Kong.
* = t : Made in Malaysia.
* = W : Made in China.

The figure shows two representations of the BAV170 component. On the left is a 'Top view' of the SOT23 package, a rectangular chip with three leads labeled 1, 2, and 3. Leads 1 and 2 are at the top, and lead 3 is at the bottom. On the right is the circuit symbol, which is an oval containing two diode symbols pointing towards each other, with terminals 1, 2, and 3. Terminal 3 is the common cathode. The text 'MAM108' is printed below the symbol.

Fig.1 Simplified outline (SOT23) and symbol.

Low-leakage double diode

BAV170

LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
Per diode					
V_{RRM}	repetitive peak reverse voltage		—	85	V
V_R	continuous reverse voltage		—	75	V
I_F	continuous forward current	single diode loaded; note 1; see Fig.2	—	215	mA
		double diode loaded; note 1; see Fig.2	—	125	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			
		$t_p = 1\text{ }\mu\text{s}$	—	4	A
		$t_p = 1\text{ ms}$	—	1	A
		$t_p = 1\text{ s}$	—	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. Device mounted on a FR4 printed-circuit board.

ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	TYP.	MAX.	UNIT
Per diode					
V_F	forward voltage	see Fig.3			
		$I_F = 1\text{ mA}$	—	900	mV
		$I_F = 10\text{ mA}$	—	1000	mV
		$I_F = 50\text{ mA}$	—	1100	mV
I_R	reverse current	$I_F = 150\text{ mA}$	—	1250	mV
		see Fig.5			
C_d	diode capacitance	$V_R = 75\text{ V}$	0.003	5	nA
		$V_R = 75\text{ V}$; $T_j = 150\text{ °C}$	3	80	nA
C_d	diode capacitance	$f = 1\text{ MHz}$; $V_R = 0$; see Fig.6	2	—	pF
t_{rr}	reverse recovery time	when switched from $I_F = 10\text{ mA}$ to $I_R = 10\text{ mA}$; $R_L = 100\text{ }\Omega$; measured at $I_R = 1\text{ mA}$; see Fig.7	0.8	3	μs

Low-leakage double diode

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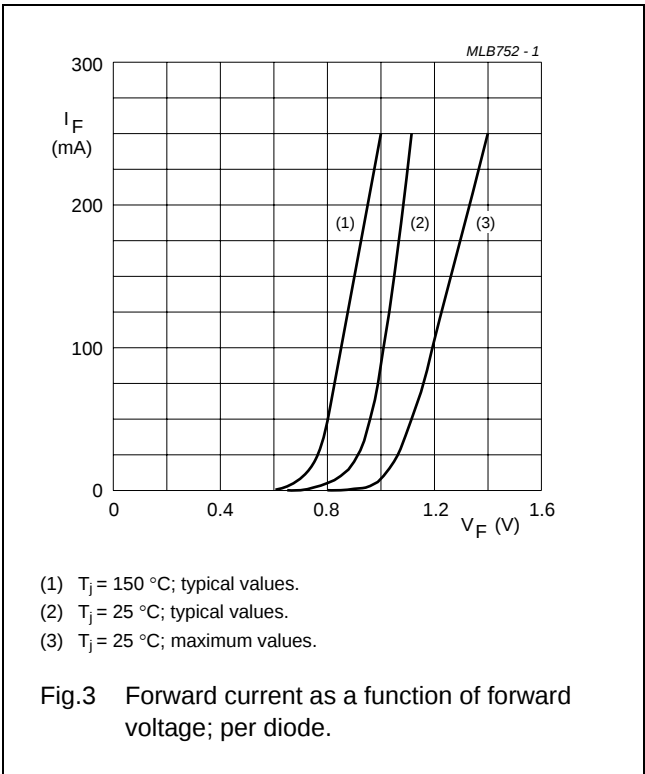
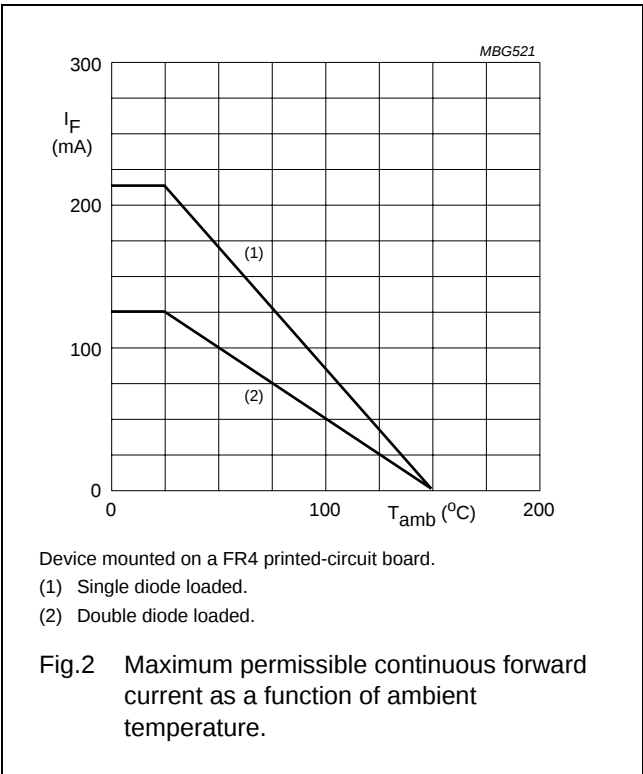
THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-tp}$	thermal resistance from junction to tie-point		360	K/W
$R_{th\ j-a}$	thermal resistance from junction to ambient	note 1	500	K/W

Note

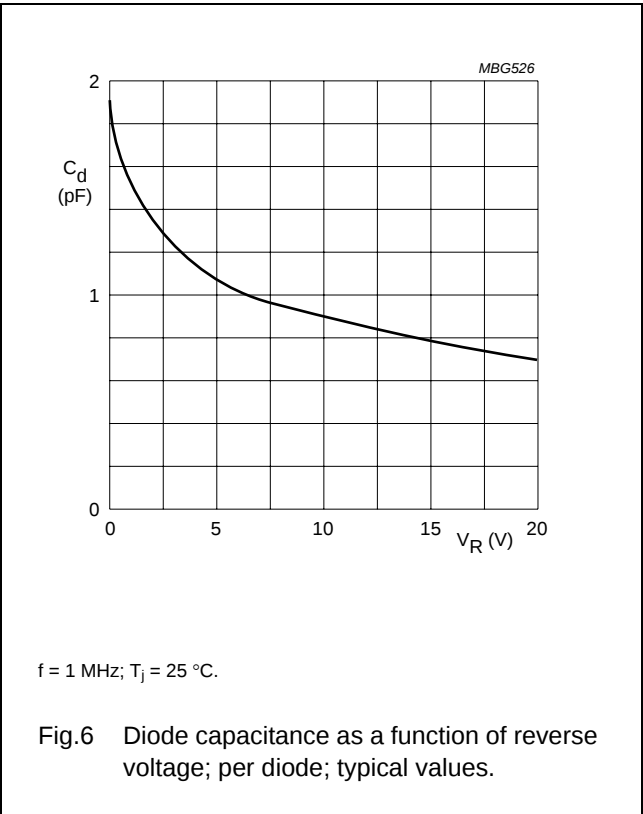
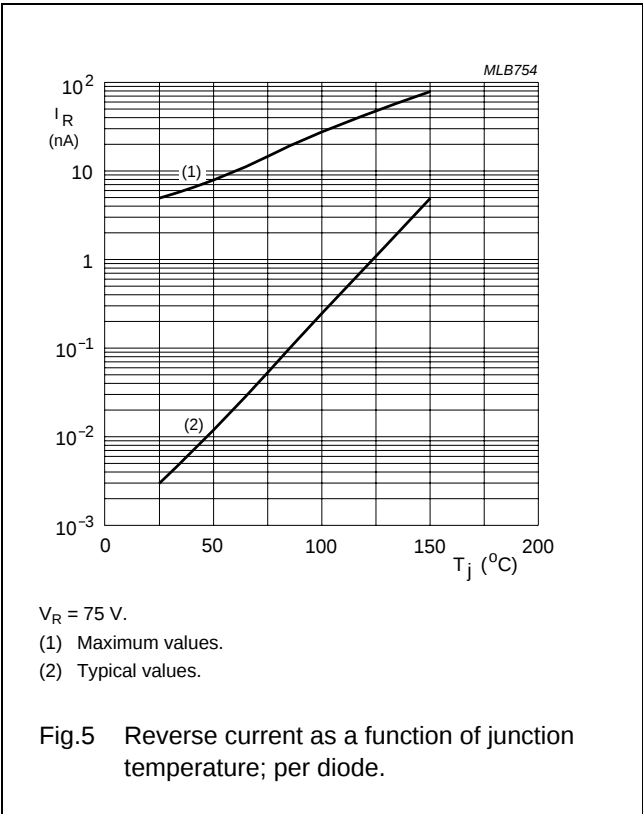
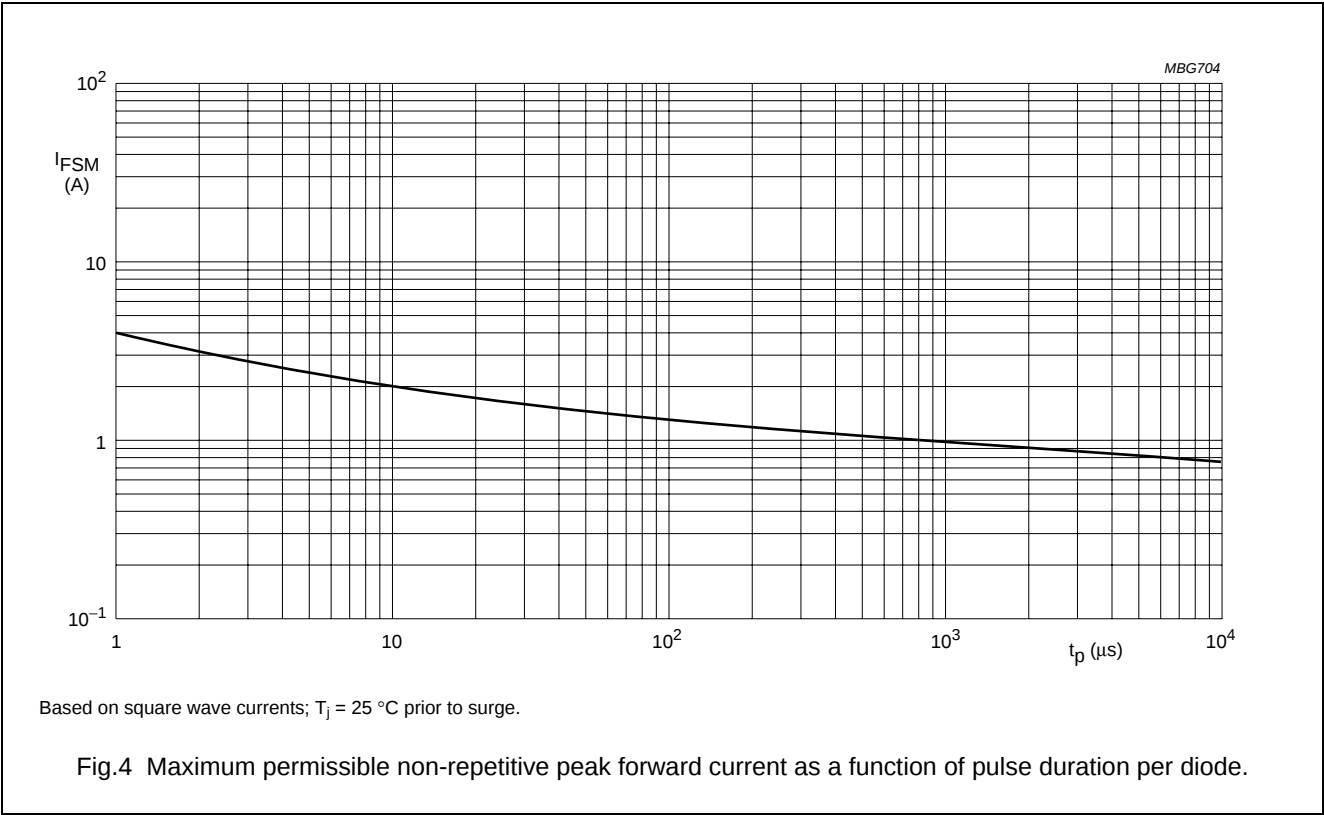
1. Device mounted on a FR4 printed-circuit board.

GRAPHICAL DATA



Low-leakage double diode

BAV170



Low-leakage double diode

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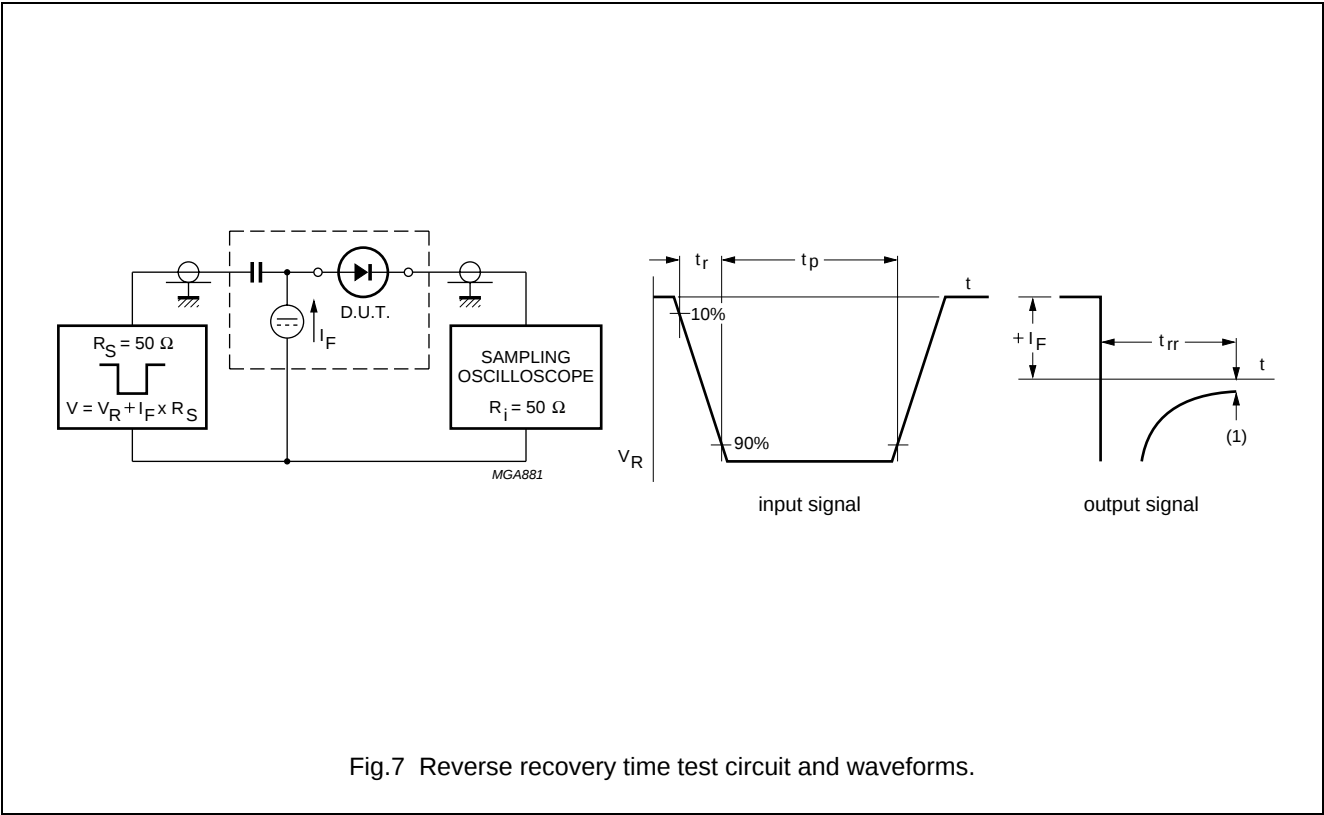


Fig.7 Reverse recovery time test circuit and waveforms.

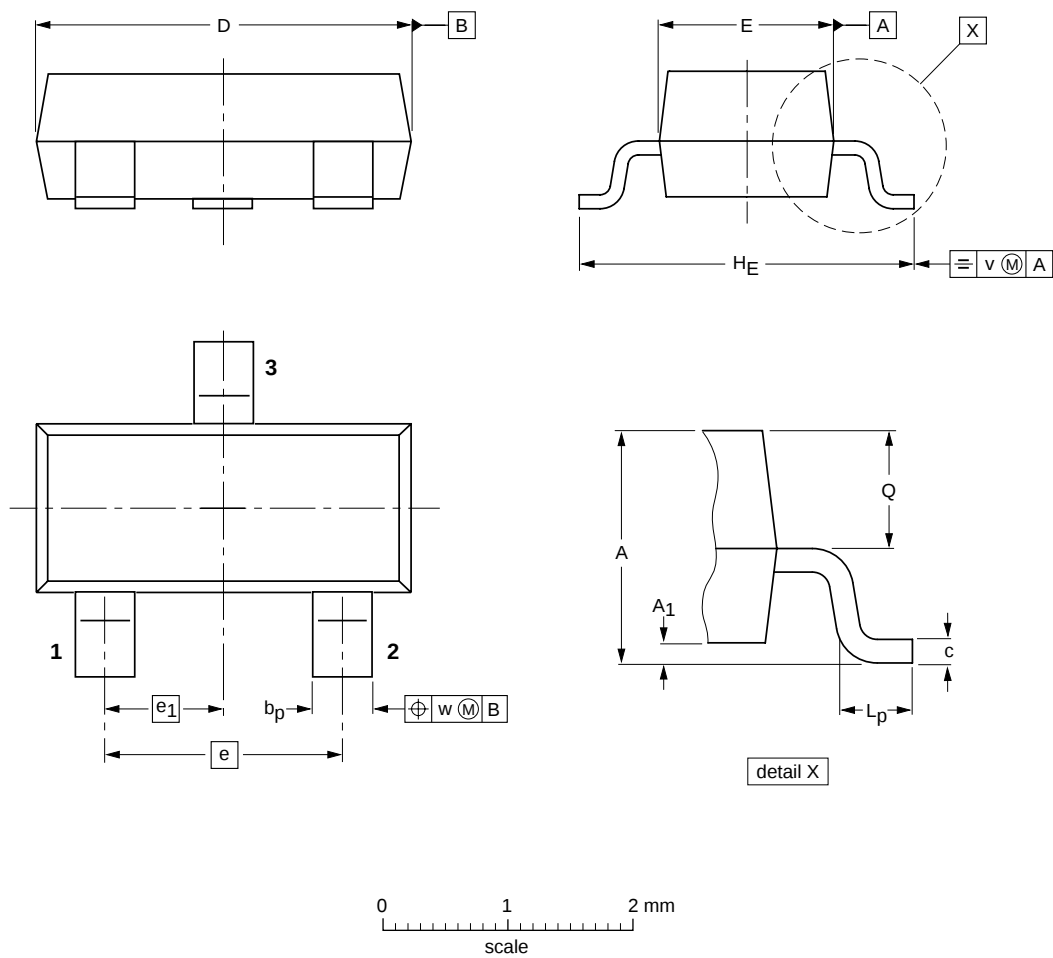
Low-leakage double diode

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PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT23



DIMENSIONS (mm are the original dimensions)

UNIT	A	A ₁ max.	b _p	c	D	E	e	e ₁	H _E	L _p	Q	v	w
mm	1.1 0.9	0.1	0.48 0.38	0.15 0.09	3.0 2.8	1.4 1.2	1.9	0.95	2.5 2.1	0.45 0.15	0.55 0.45	0.2	0.1

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOT23		TO-236AB				97-02-28 99-09-13

Low-leakage double diode

BAV170

DATA SHEET STATUS

DOCUMENT STATUS ⁽¹⁾	PRODUCT STATUS ⁽²⁾	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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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**

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Printed in The Netherlands

613514/04/pp

Date of release: 2003 Mar 25

Document order number: 9397 750 10965

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