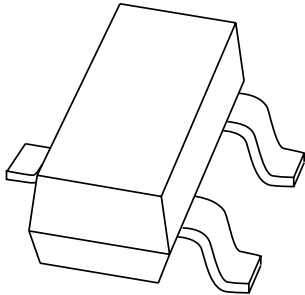


# DATA SHEET



## **BAV170** Low-leakage double diode

Product specification  
Supersedes data of 1996 Mar 13

1999 May 11

# Low-leakage double diode

# BAV170

## FEATURES

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

## APPLICATION

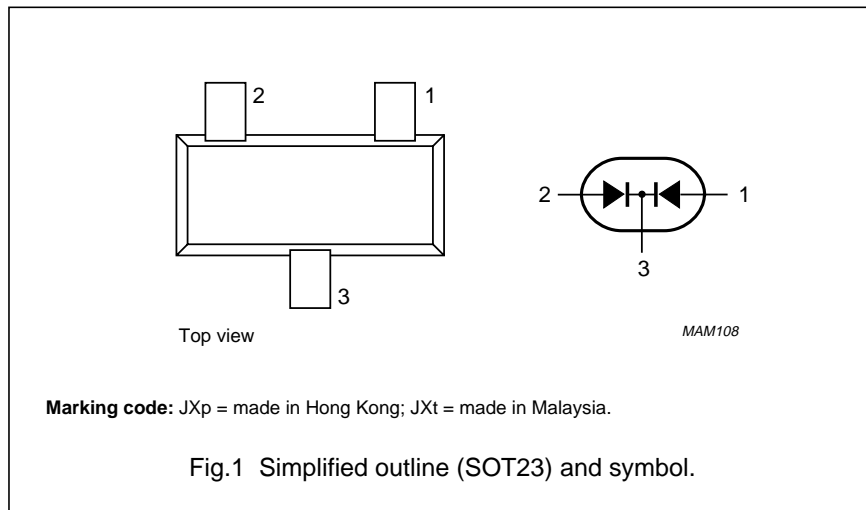
- Low-leakage current applications in surface mounted circuits.

## DESCRIPTION

Epitaxial, medium-speed switching, 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



## LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
<b>Per diode</b>					
V <sub>RRM</sub>	repetitive peak reverse voltage		–	85	V
V <sub>R</sub>	continuous reverse voltage		–	75	V
I <sub>F</sub>	continuous forward current	single diode loaded; note 1; see Fig.2	–	215	mA
		double diode loaded; note 1; see Fig.2	–	125	mA
I <sub>FRM</sub>	repetitive peak forward current		–	500	mA
I <sub>FSM</sub>	non-repetitive peak forward current	square wave; T <sub>j</sub> = 25 °C prior to surge; see Fig.4			
		t <sub>p</sub> = 1 μs	–	4	A
		t <sub>p</sub> = 1 ms	–	1	A
		t <sub>p</sub> = 1 s	–	0.5	A
P <sub>tot</sub>	total power dissipation	T <sub>amb</sub> = 25 °C; note 1	–	250	mW
T <sub>stg</sub>	storage temperature		–65	+150	°C
T <sub>j</sub>	junction temperature		–	150	°C

## Note

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

## Low-leakage double diode

BAV170

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

SYMBOL	PARAMETER	CONDITIONS	TYP.	MAX.	UNIT
<b>Per diode</b>					
$V_F$	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
		$I_F = 150\text{ mA}$	–	1250	mV
$I_R$	reverse current	see Fig.5			
		$V_R = 75\text{ V}$	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 $I_R = 10\text{ mA}; R_L = 100\ \Omega$ ; measured at $I_R = 1\text{ mA}$ ; see Fig.7	0.8	3	$\mu\text{s}$

**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

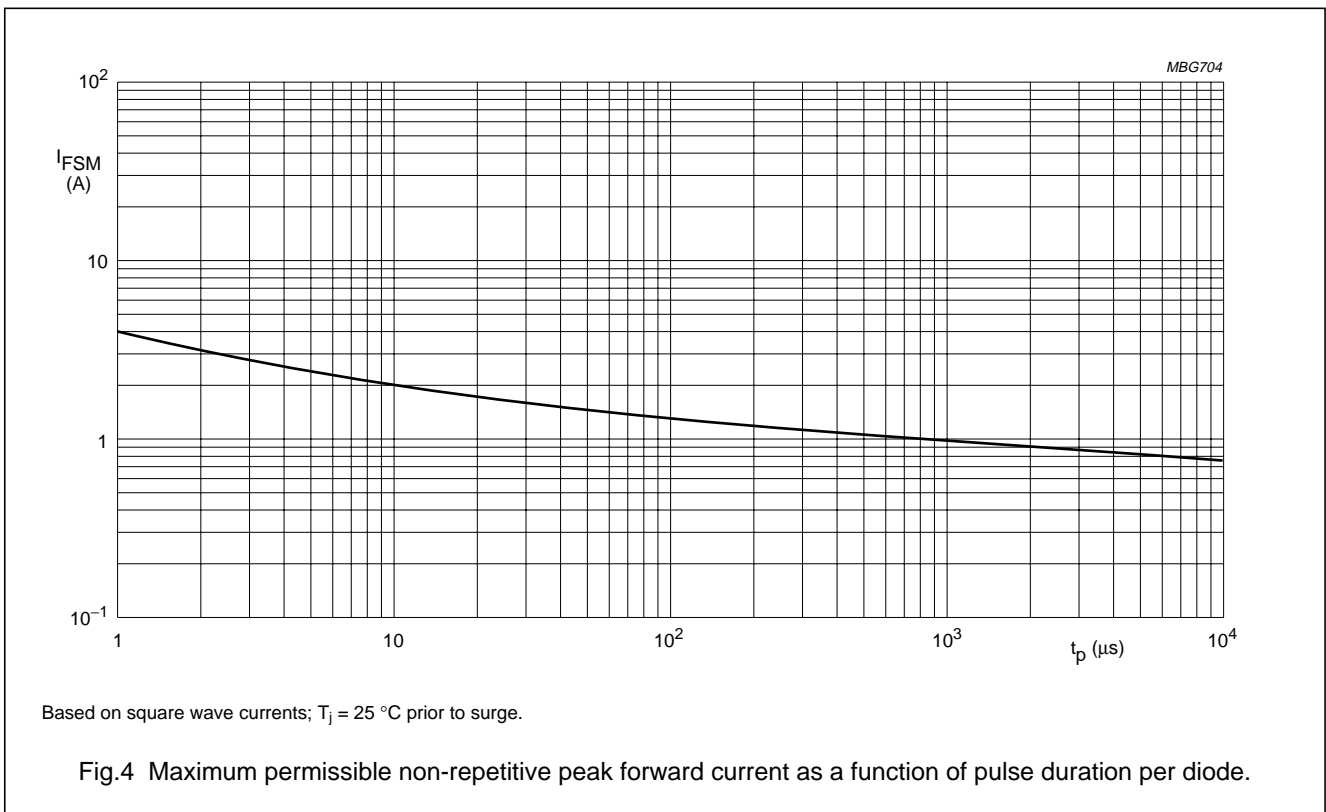
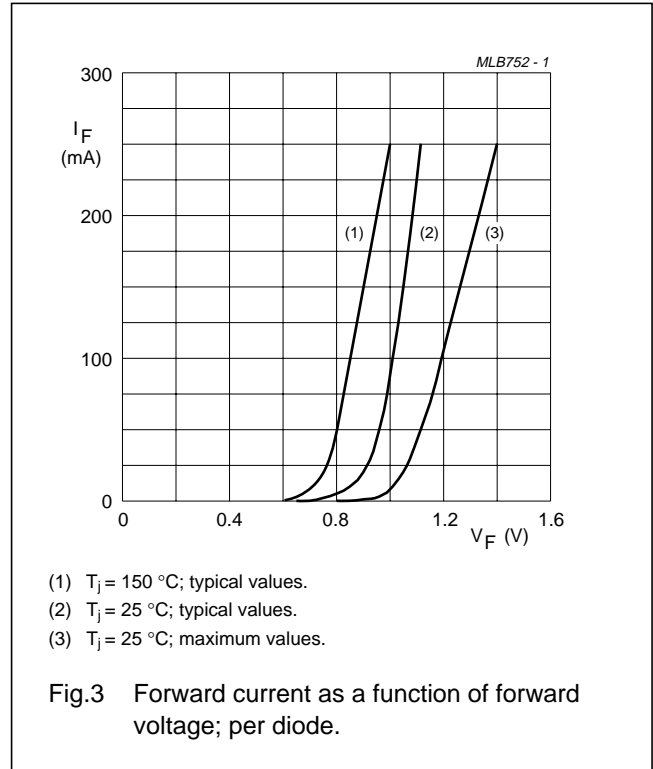
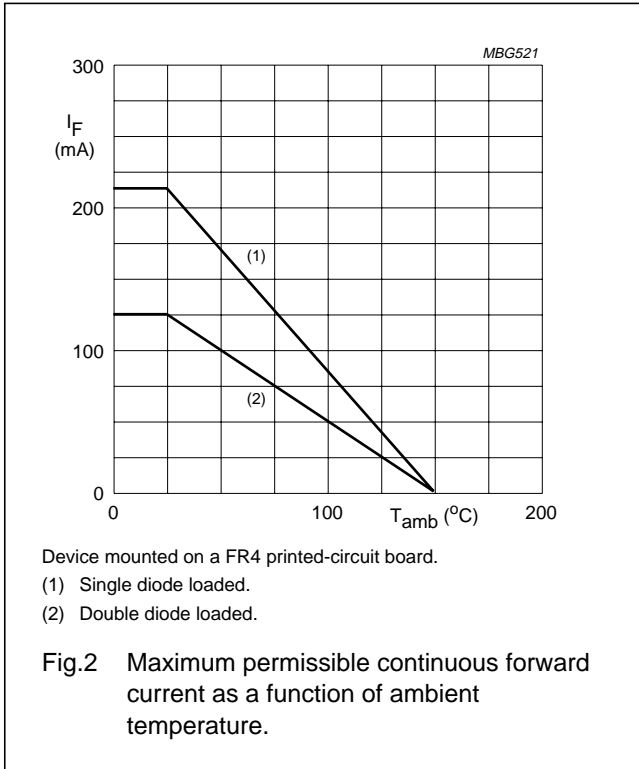
**Note**

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

Low-leakage double diode

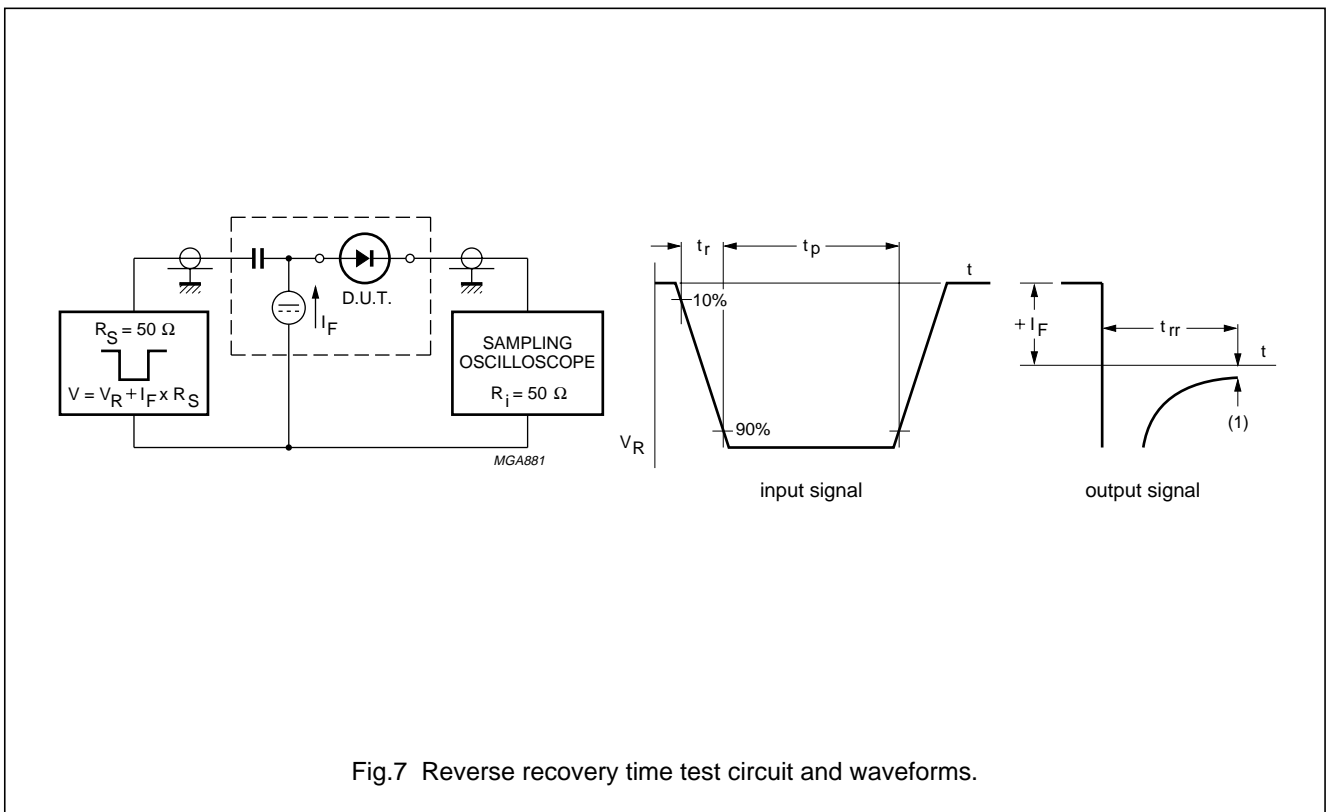
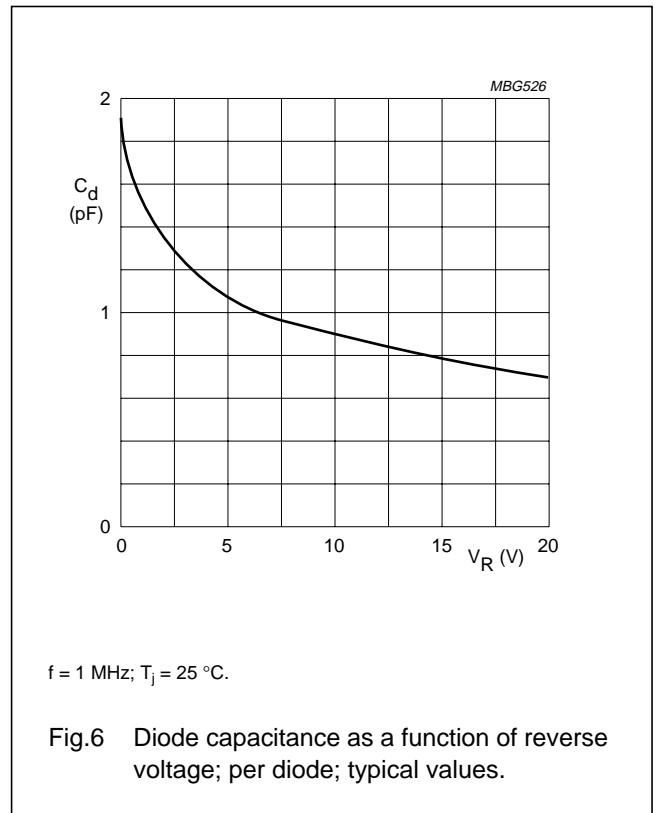
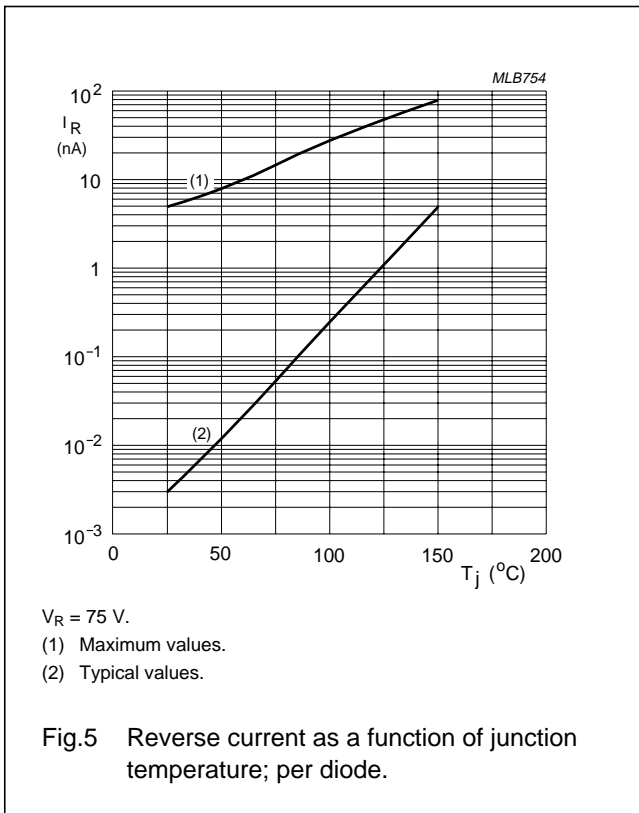
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GRAPHICAL DATA



Low-leakage double diode

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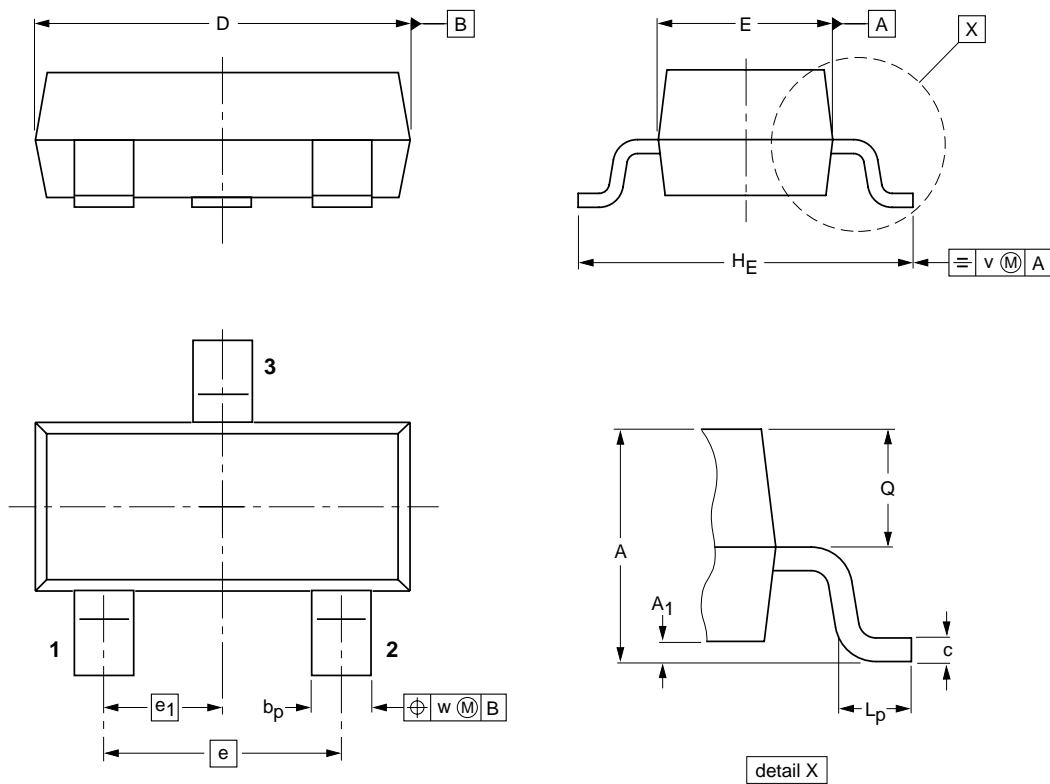
Low-leakage double diode

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PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT23



DIMENSIONS (mm are the original dimensions)

UNIT	A	A <sub>1</sub> max.	b <sub>p</sub>	c	D	E	e	e <sub>1</sub>	H <sub>E</sub>	L <sub>p</sub>	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						97-02-28

## Low-leakage double diode

BAV170

**DEFINITIONS**

<b>Data Sheet Status</b>	
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.
<b>Limiting values</b>	
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.	
<b>Application information</b>	
Where application information is given, it is advisory and does not form part of the specification.	

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