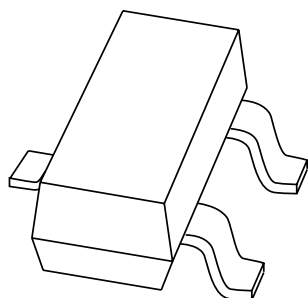


DATA SHEET



BAV199

Low-leakage double diode

Product specification
Supersedes data of 1999 May 11

2001 Oct 12

Low-leakage double diode

BAV199

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.

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 connected in series.

MARKING

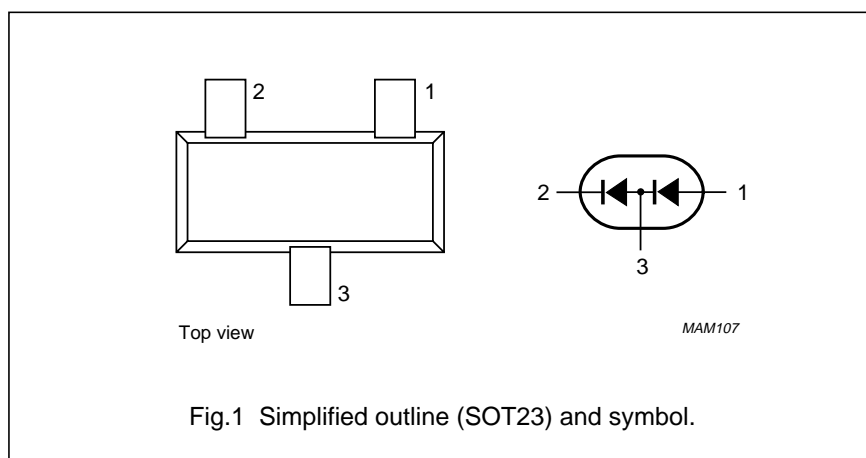
TYPE NUMBER	MARKING CODE ⁽¹⁾
BAV199	JY*

Note

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

PINNING

PIN	DESCRIPTION
1	anode
2	cathode
3	anode; cathode



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	—	160	mA
		double diode loaded; note 1; see Fig.2	—	140	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			
		$t_p = 1\text{ }\mu\text{s}$	—	4	A
		$t_p = 1\text{ ms}$	—	1	A
		$t_p = 1\text{ s}$	—	0.5	A
P_{tot}	total power dissipation	$T_{amb} = 25\text{ }^{\circ}\text{C}$; note 1	—	250	mW
T_{stg}	storage temperature		−65	+150	$^{\circ}\text{C}$
T_j	junction temperature		—	150	$^{\circ}\text{C}$

Note

- Device mounted on a FR4 printed-circuit board.

Low-leakage double diode

BAV199

ELECTRICAL CHARACTERISTICS $T_j = 25\text{ }^{\circ}\text{C}$ 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
		$I_F = 150\text{ mA}$	—	1250	mV
I_R	reverse current	see Fig.5 $V_R = 75\text{ V}$	0.003	5	nA
		$V_R = 75\text{ V}; T_j = 150\text{ }^{\circ}\text{C}$	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

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

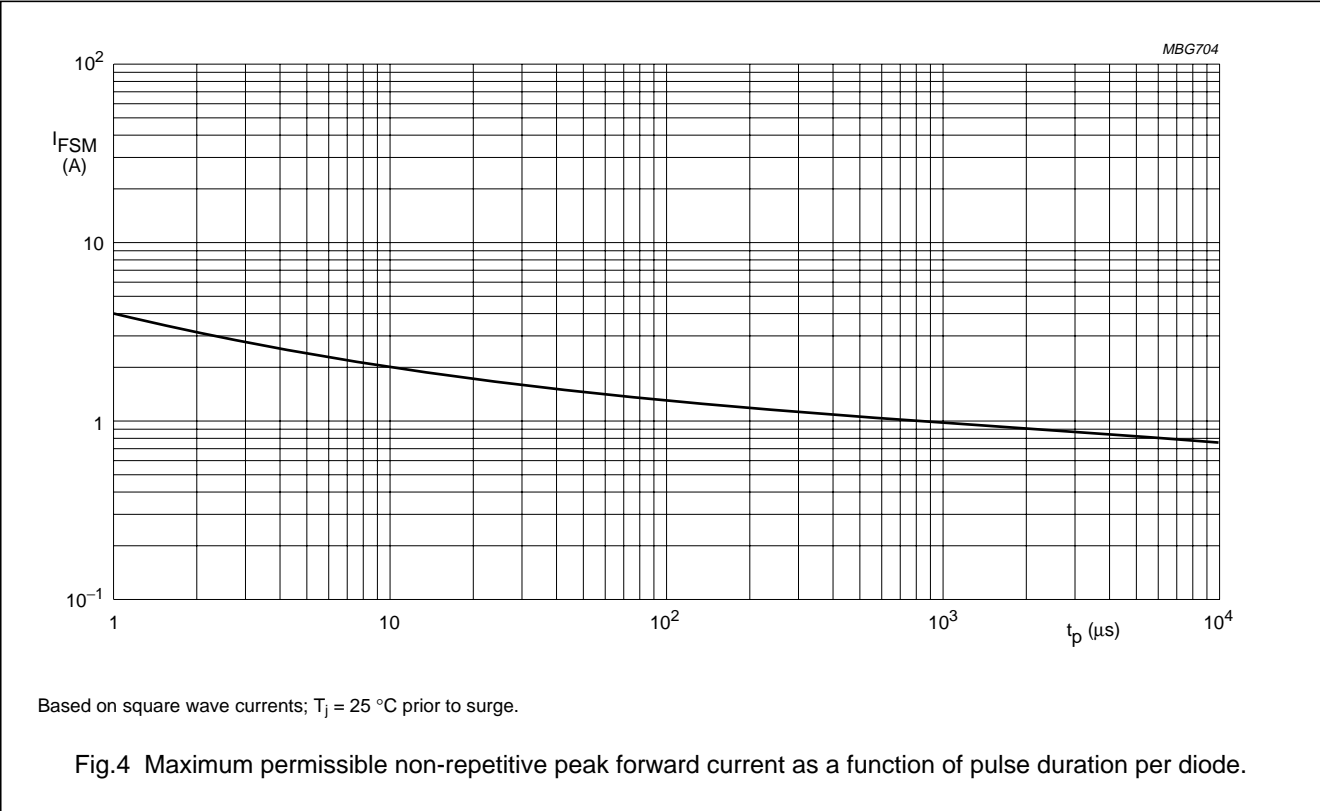
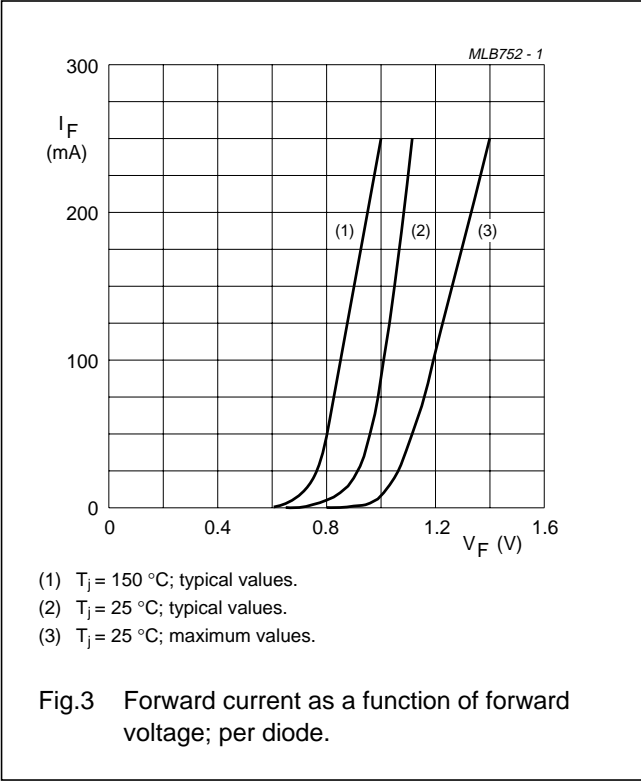
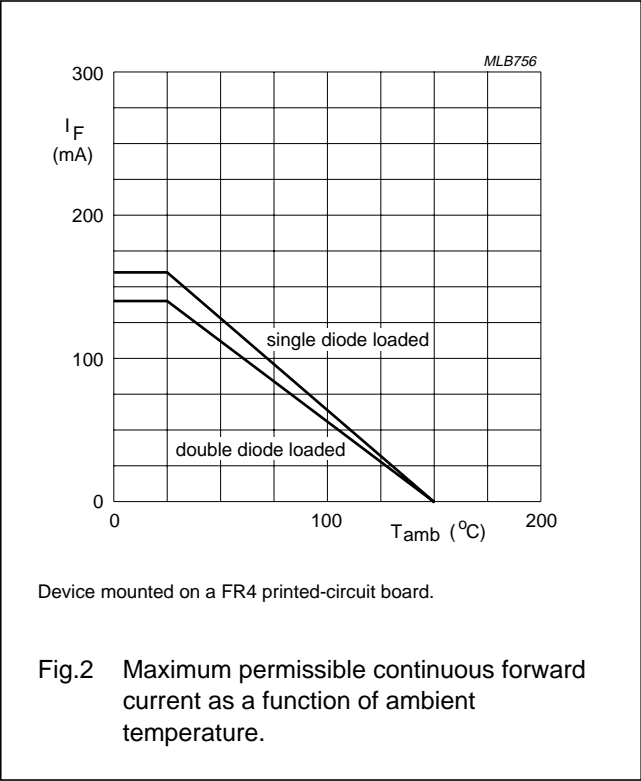
Note

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

Low-leakage double diode

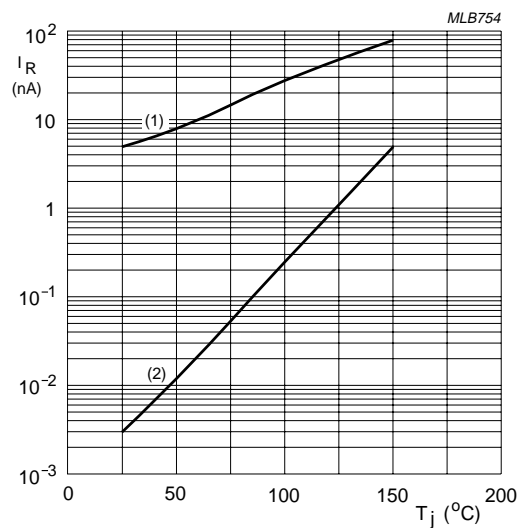
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GRAPHICAL DATA



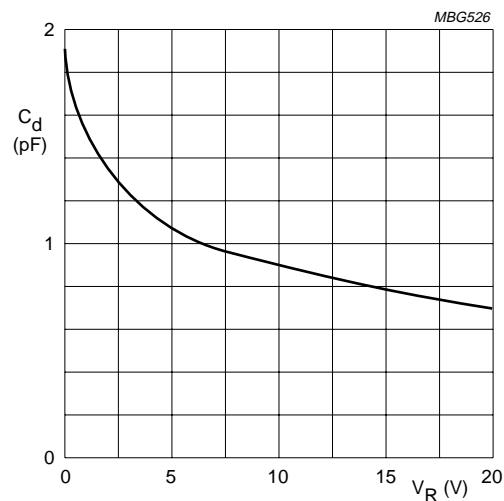
Low-leakage double diode

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$V_R = 75\text{ V}$.
(1) Maximum values.
(2) Typical values.

Fig.5 Reverse current as a function of junction temperature; per diode.



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

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

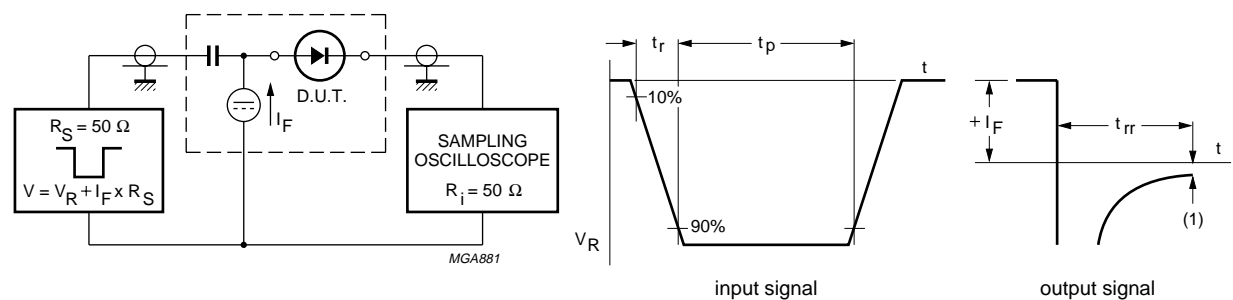


Fig.7 Reverse recovery time test circuit and waveforms.

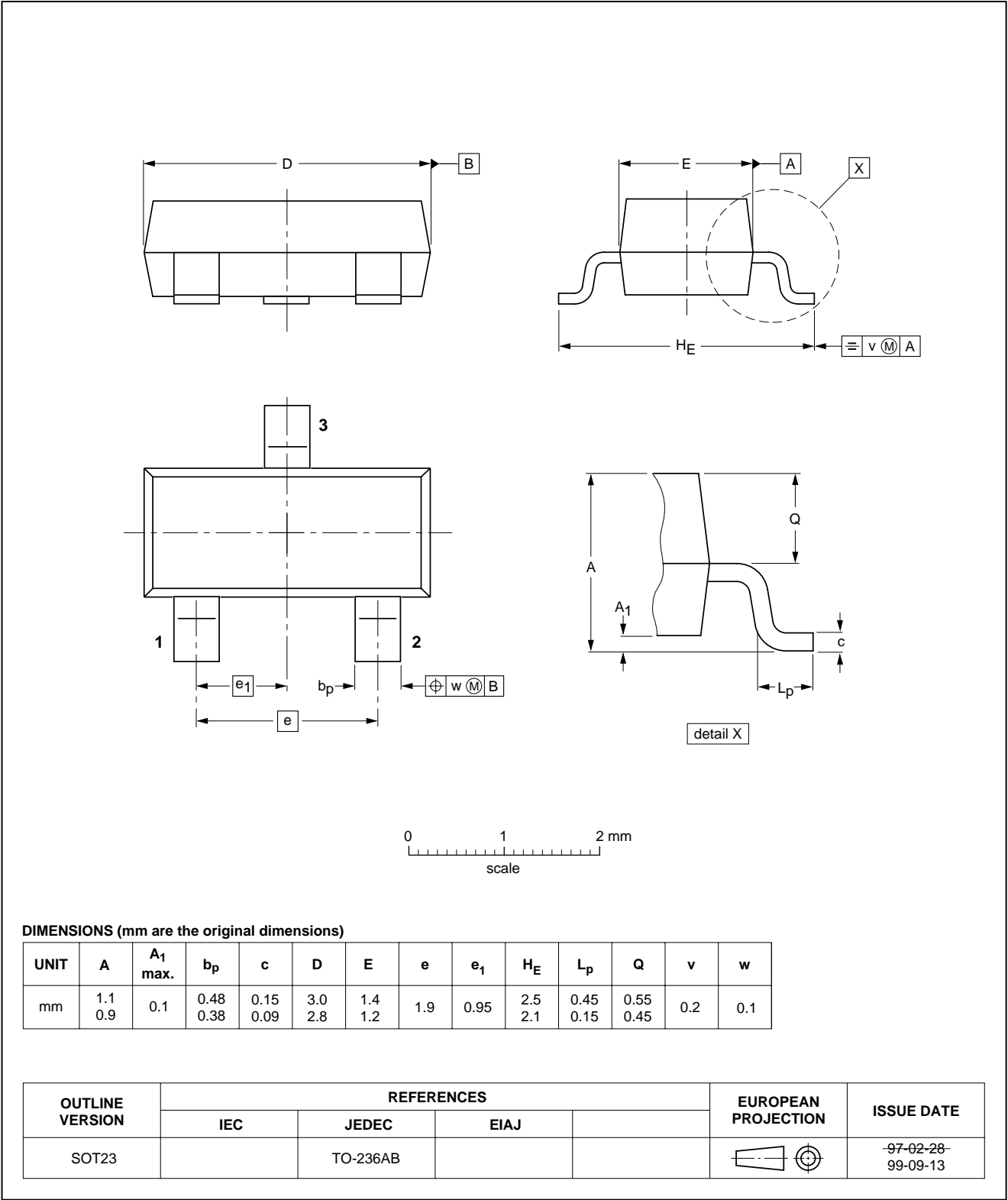
Low-leakage double diode

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PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT23



Low-leakage double diode

BAV199

DATA SHEET STATUS

DATA SHEET STATUS ⁽¹⁾	PRODUCT STATUS ⁽²⁾	DEFINITIONS
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General description

Epitaxial, medium-speed switching, double diode in a small SOT23 plastic SMD package. The diodes are connected in series.


Features

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

❑ Applications

- Low-leakage current applications in surface mounted circuits.



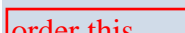
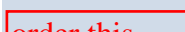
❑ Datasheet

<u>Type number</u>	<u>Title</u>	<u>Publication release date</u>	<u>Datasheet status</u>	<u>Page count</u>	<u>File size</u> (kB)	<u>Datasheet</u>
BAV199	Low-leakage double diode	12-Oct-01	Product specification	8	57	 Download


❑ Parametrics

<u>Type number</u>	<u>Package</u>	V_R max(V)	$I_{F(AV)}$ max.(mA)	I_{FSM} max.(A)	V_F max(mV)	I_R max(nA)	C_D max.(pF)	<u>Configuration</u>	t_{rr} max(ns)	I_{FRM} (mA)
BAV199	SOT23 (SST3)	75	160	4	1 @ IF=10mA	5 @ VR max.	2	2 ser.	3	500

❑ Products, packages, availability and ordering

<u>Type number</u>	<u>North American type number</u>	<u>Ordering code</u> (12NC)	<u>Marking/Packing</u>  Discretes packing info	<u>Package</u>	<u>Device status</u>	<u>Buy online</u>
BAV199	BAV199 /T4	9340 326 40185	Standard Marking * Multi-Reel Pack, SMD, Pitch 4mm	SOT23 (SST3)	Full production	 -
	BAV199 T/R	9340 326 40215	Standard Marking * Reel Pack, SMD, Low Profile	SOT23 (SST3)	Full production	 -
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