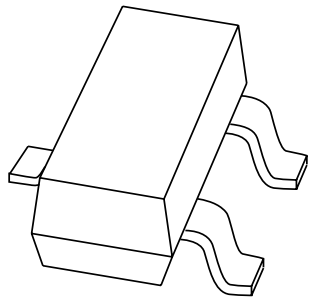


DATA SHEET



勝特力材料 886-3-5753170
勝特力電子 86-755-83289527
[Http://www.100y.com.tw](http://www.100y.com.tw)

BAV99 High-speed double diode

Product specification
Supersedes data of 1996 Sep 17

1999 May 11

High-speed double diode

BAV99

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. 450 mA.

APPLICATIONS

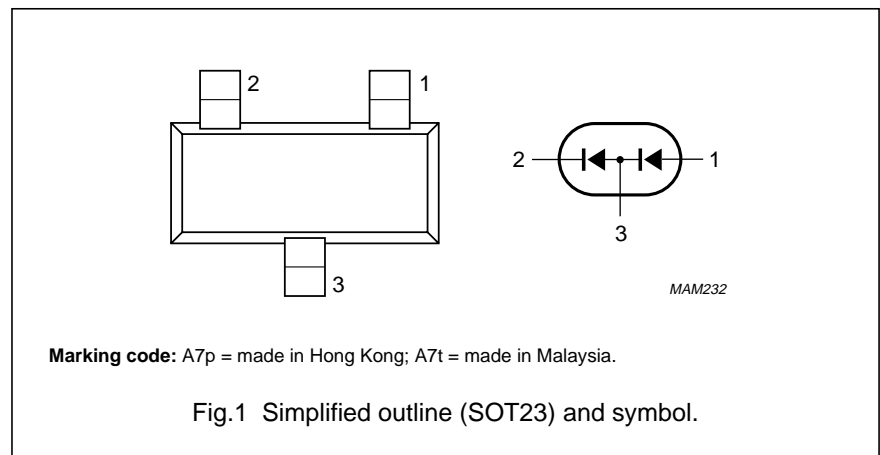
- High-speed switching in thick and thin-film circuits.

DESCRIPTION

The BAV99 consists of two high-speed switching diodes connected in series, fabricated in planar technology, and encapsulated in the small SOT23 plastic SMD package.

PINNING

PIN	DESCRIPTION
1	anode
2	cathode
3	common connection



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LIMITING VALUES

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

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; see Fig.2; note 1	–	215	mA
		double diode loaded; see Fig.2; note 1	–	125	mA
I_{FRM}	repetitive peak forward current		–	450	mA
I_{FSM}	non-repetitive peak forward current	square wave; $T_j = 25\text{ °C}$ prior to surge; see Fig.4			
		$t = 1\ \mu\text{s}$	–	4	A
		$t = 1\ \text{ms}$	–	1	A
		$t = 1\ \text{s}$	–	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 an FR4 printed-circuit board.

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ELECTRICAL CHARACTERISTICST_j = 25 °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MAX.	UNIT
Per diode				
V _F	forward voltage	see Fig.3 I _F = 1 mA I _F = 10 mA I _F = 50 mA I _F = 150 mA	715 855 1 1.25	mV mV V V
I _R	reverse current	see Fig.5 V _R = 25 V V _R = 75 V V _R = 25 V; T _j = 150 °C V _R = 75 V; T _j = 150 °C	30 1 30 50	nA μA μA μA
C _d	diode capacitance	f = 1 MHz; V _R = 0; see Fig.6	1.5	pF
t _{rr}	reverse recovery time	when switched from I _F = 10 mA to I _R = 10 mA; R _L = 100 Ω; measured at I _R = 1 mA; see Fig.7	4	ns
V _{fr}	forward recovery voltage	when switched from I _F = 10 mA; t _r = 20 ns; see Fig.8	1.75	V

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

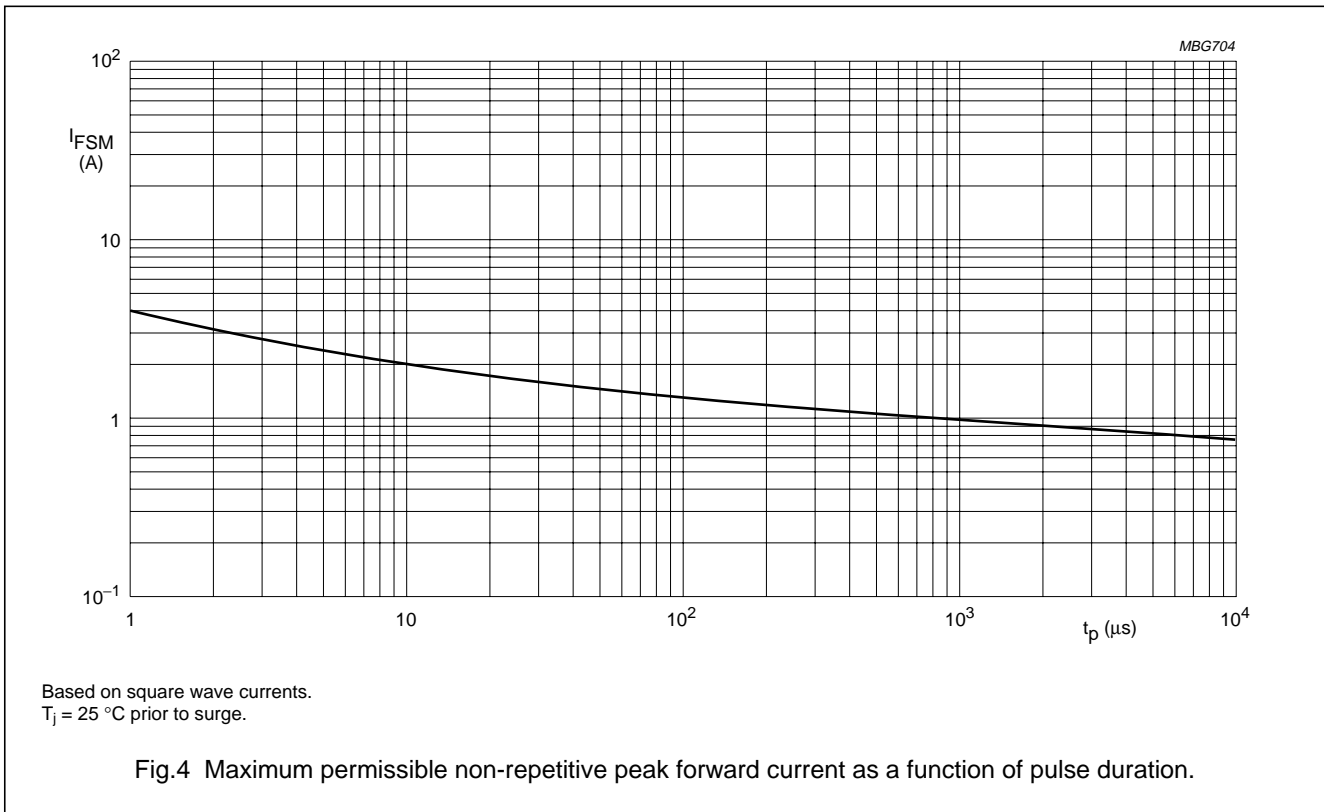
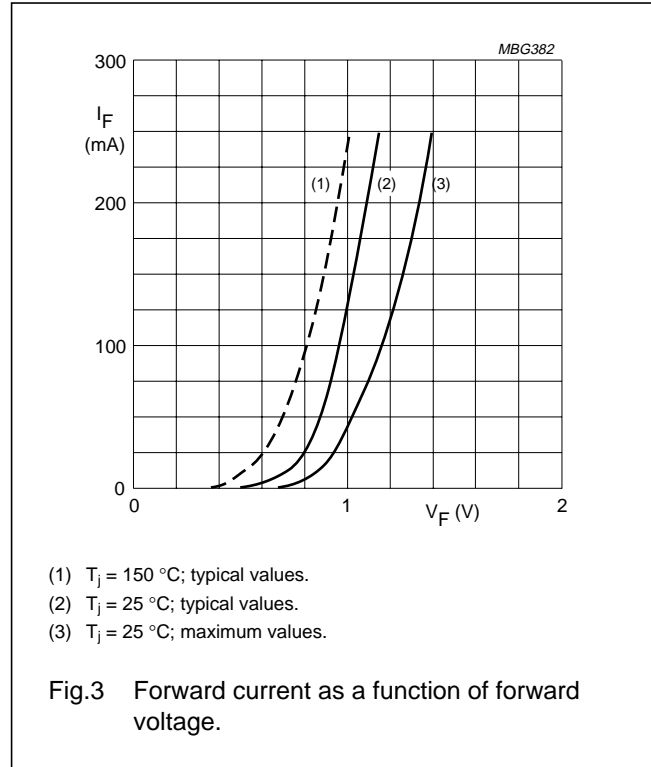
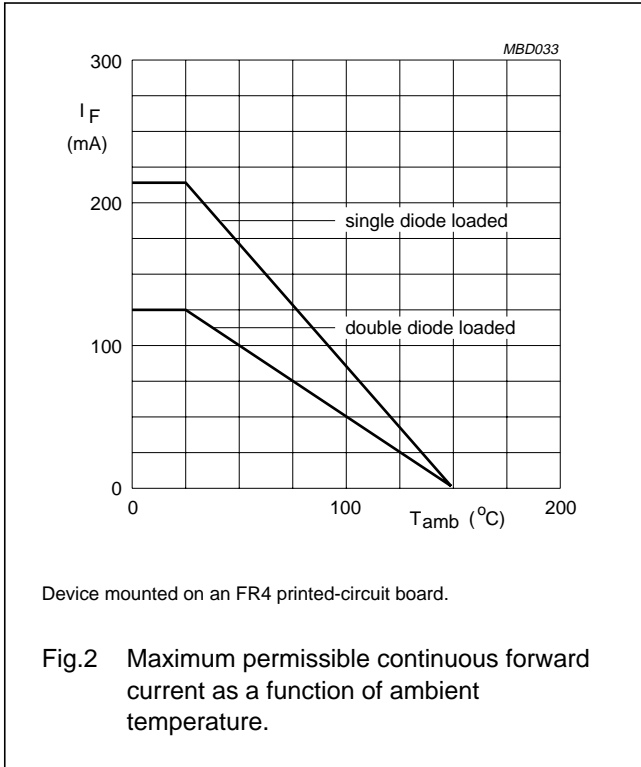
1. Device mounted on an FR4 printed-circuit board.

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GRAPHICAL DATA



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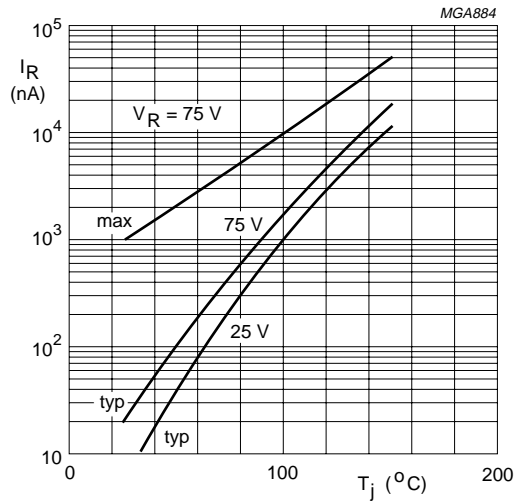
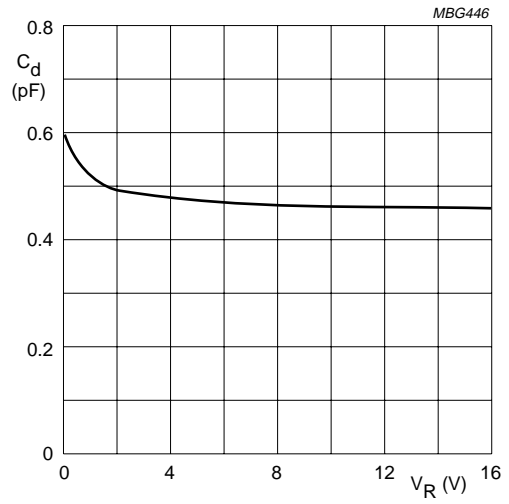


Fig.5 Reverse current as a function of junction temperature.



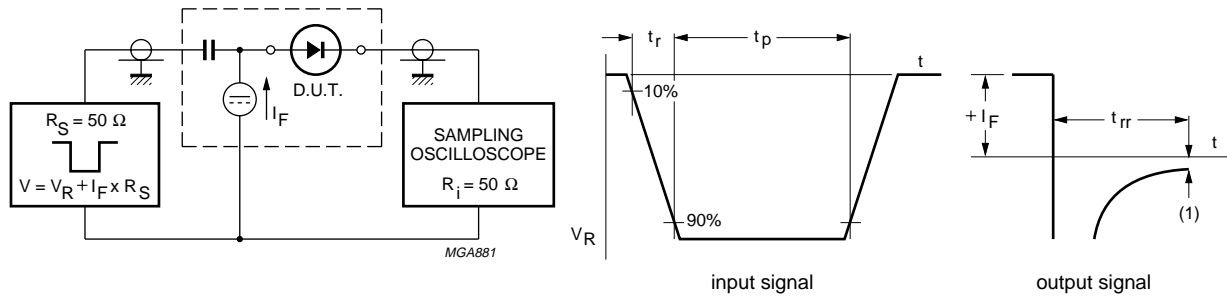
$f = 1$ MHz; $T_j = 25$ °C.

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

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(1) $I_R = 1 \text{ mA}$.

Fig.7 Reverse recovery voltage test circuit and waveforms.

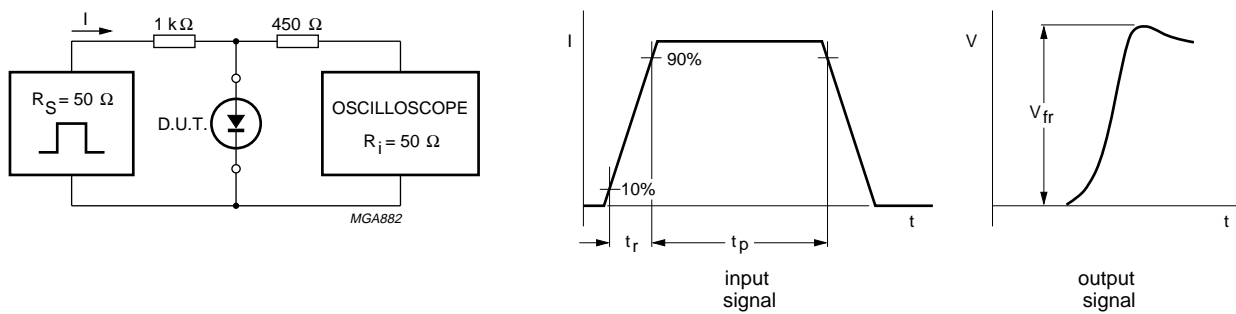


Fig.8 Forward recovery voltage test circuit and waveforms.

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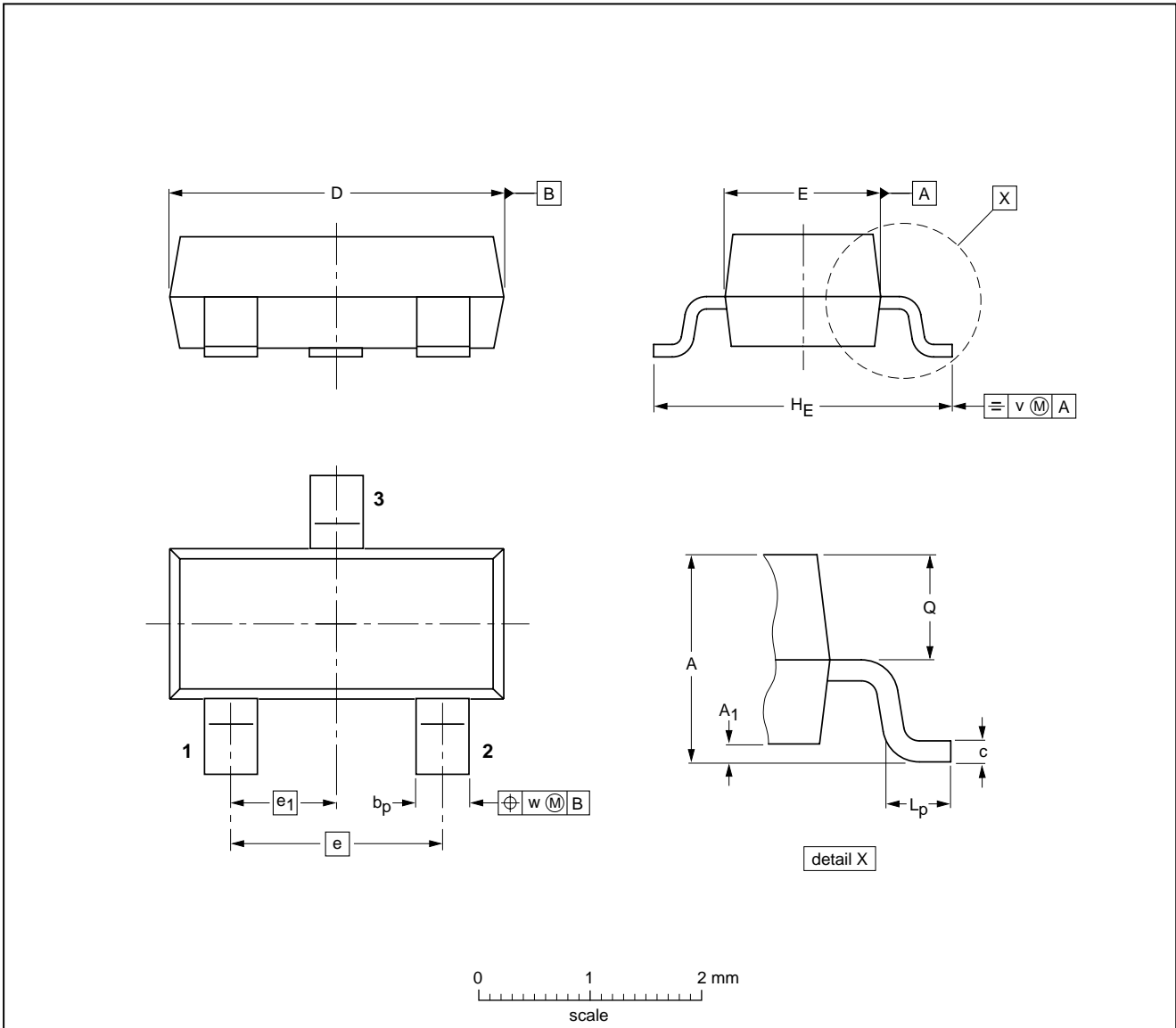
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PACKAGE OUTLINE

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						97-02-28

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DEFINITIONS

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

LIFE SUPPORT APPLICATIONS

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