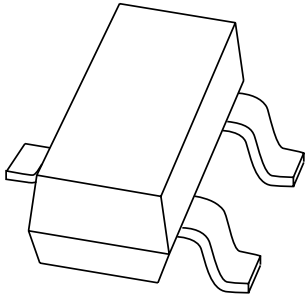


DATA SHEET



BAW156

Low-leakage double diode

Product data sheet
Supersedes data of 1996 Mar 13

1999 May 11

Low-leakage double diode

BAW156

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

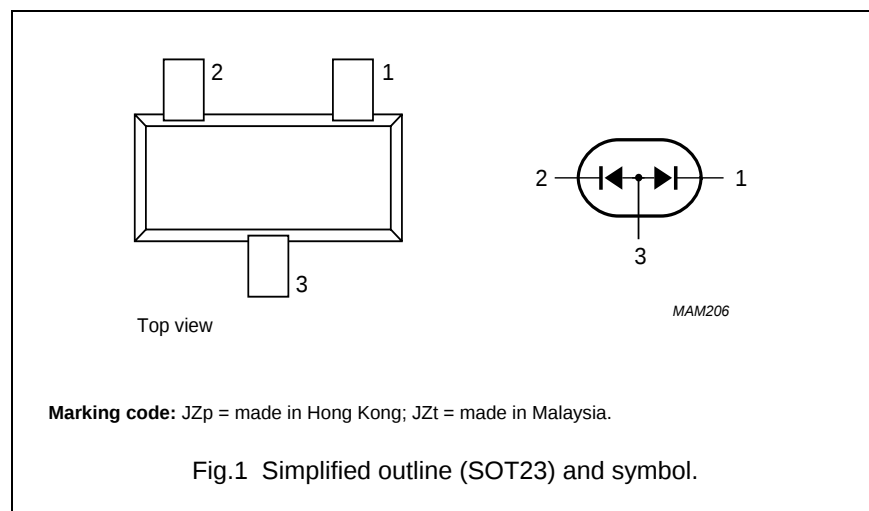
- Low-leakage current applications in surface mounted circuits.

DESCRIPTION

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

PINNING

PIN	DESCRIPTION
1	cathode
2	cathode
3	common anode



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; 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	$T_{amb} \leq 25\text{ }^{\circ}\text{C}$; 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 double diode

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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 $I_F = 1\text{ mA}$ $I_F = 10\text{ mA}$ $I_F = 50\text{ mA}$ $I_F = 150\text{ mA}$	— — — —	900 1000 1100 1250	mV mV mV mV
I_R	reverse current	see Fig.5 $V_R = 75\text{ V}$ $V_R = 75\text{ V}; T_j = 150\text{ }^{\circ}\text{C}$	0.003 3	5 80	nA nA
C_d	diode capacitance	$f = 1\text{ MHz}; V_R = 0$; see Fig.6	3	—	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

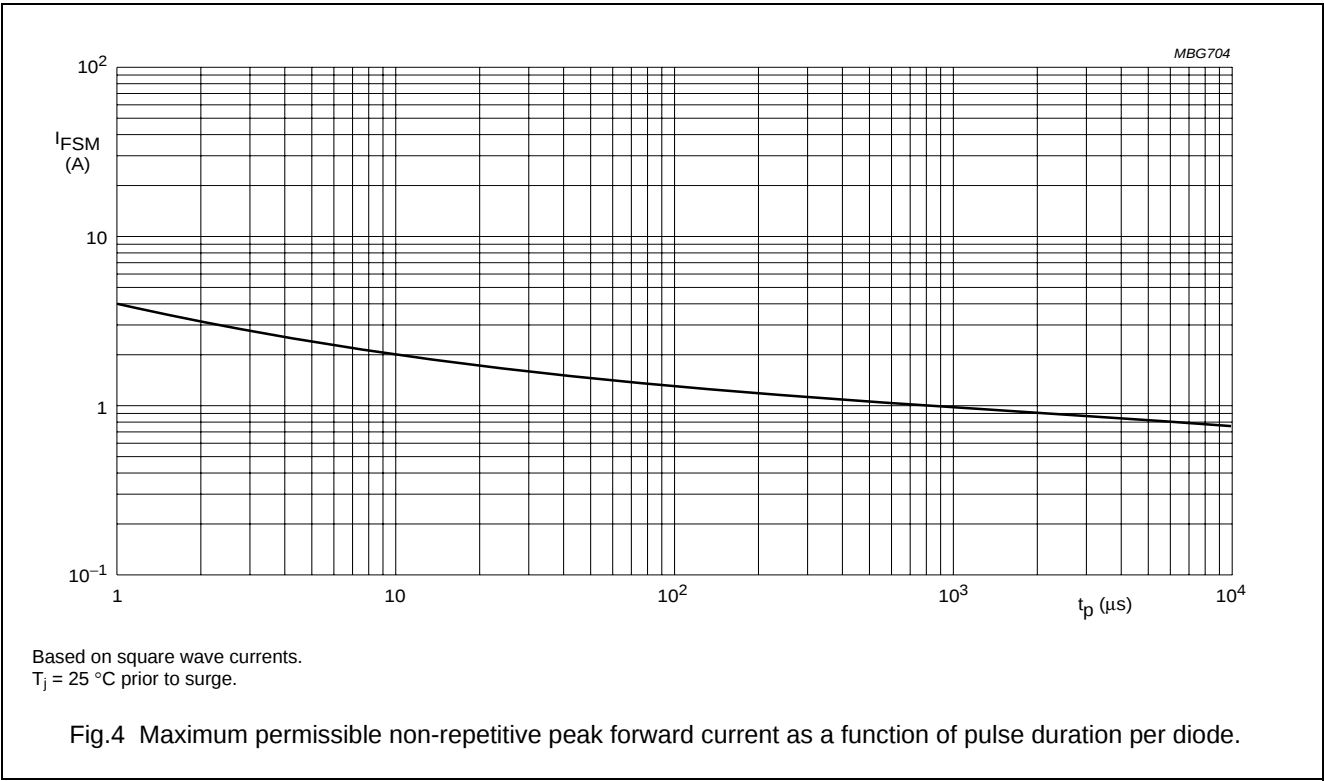
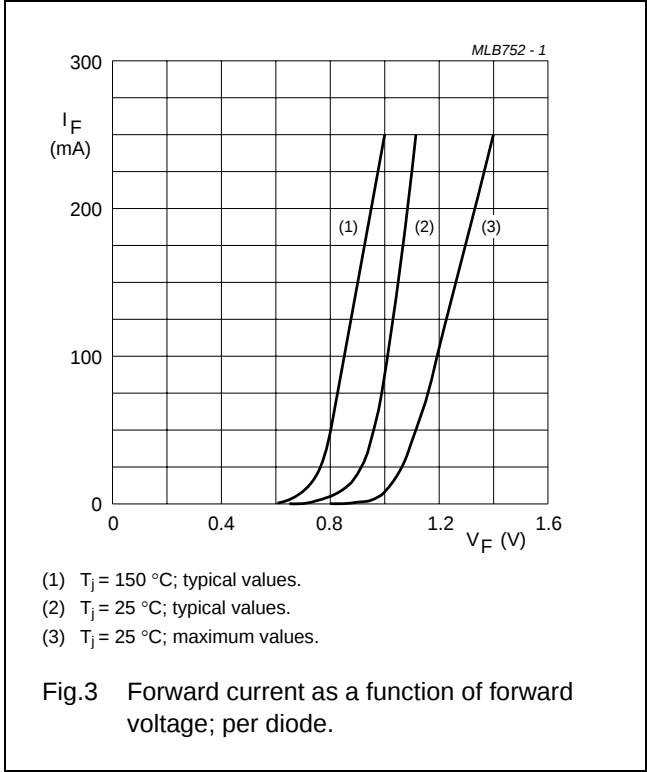
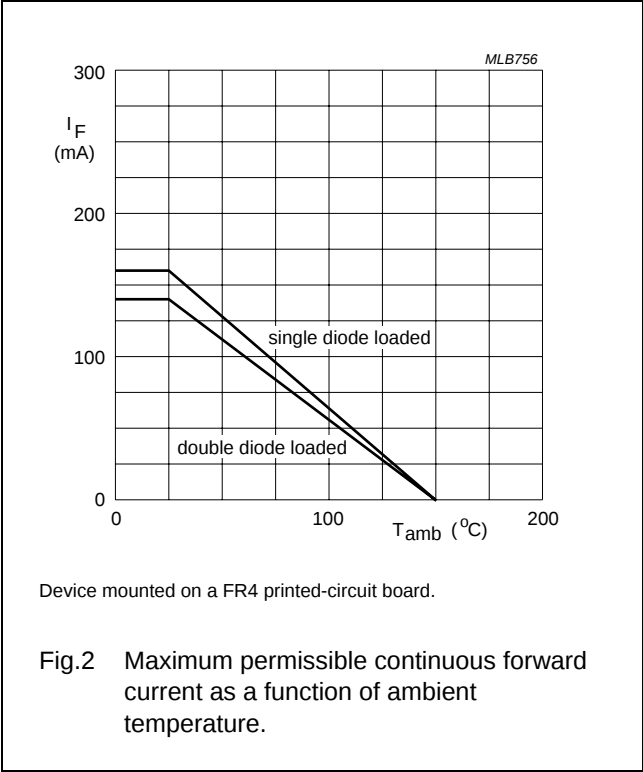
Note

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

Low-leakage double diode

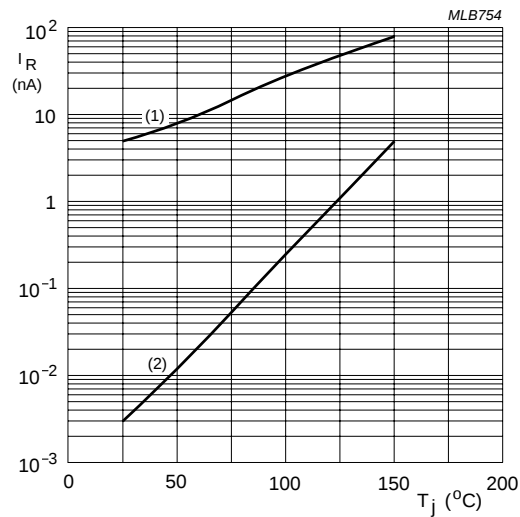
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GRAPHICAL DATA



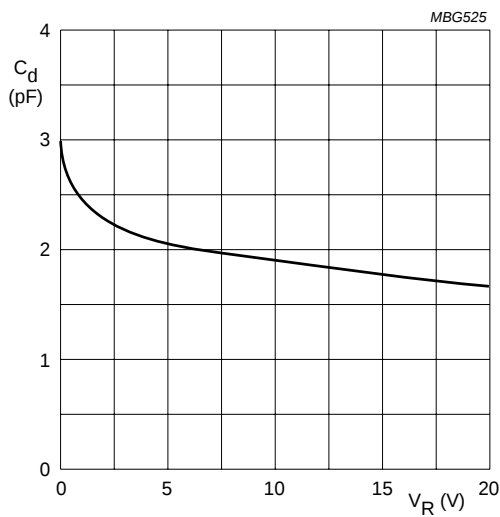
Low-leakage double diode

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$V_R = 75\text{ V}$.

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.

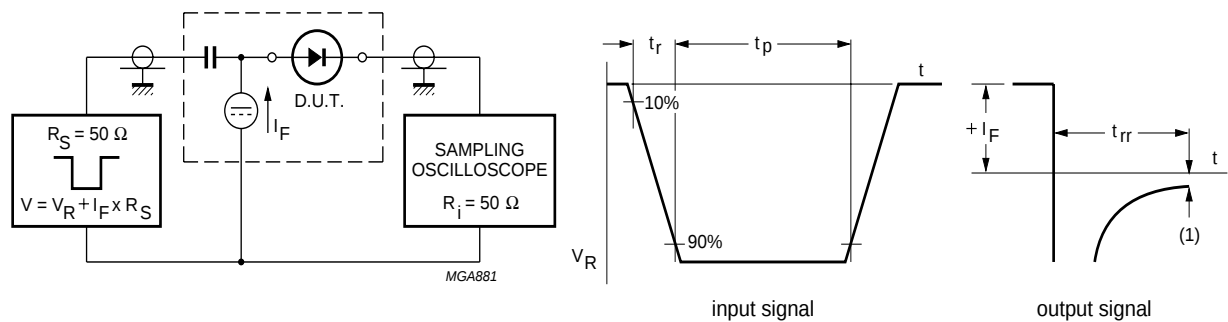


Fig.7 Reverse recovery time test circuit and waveforms.

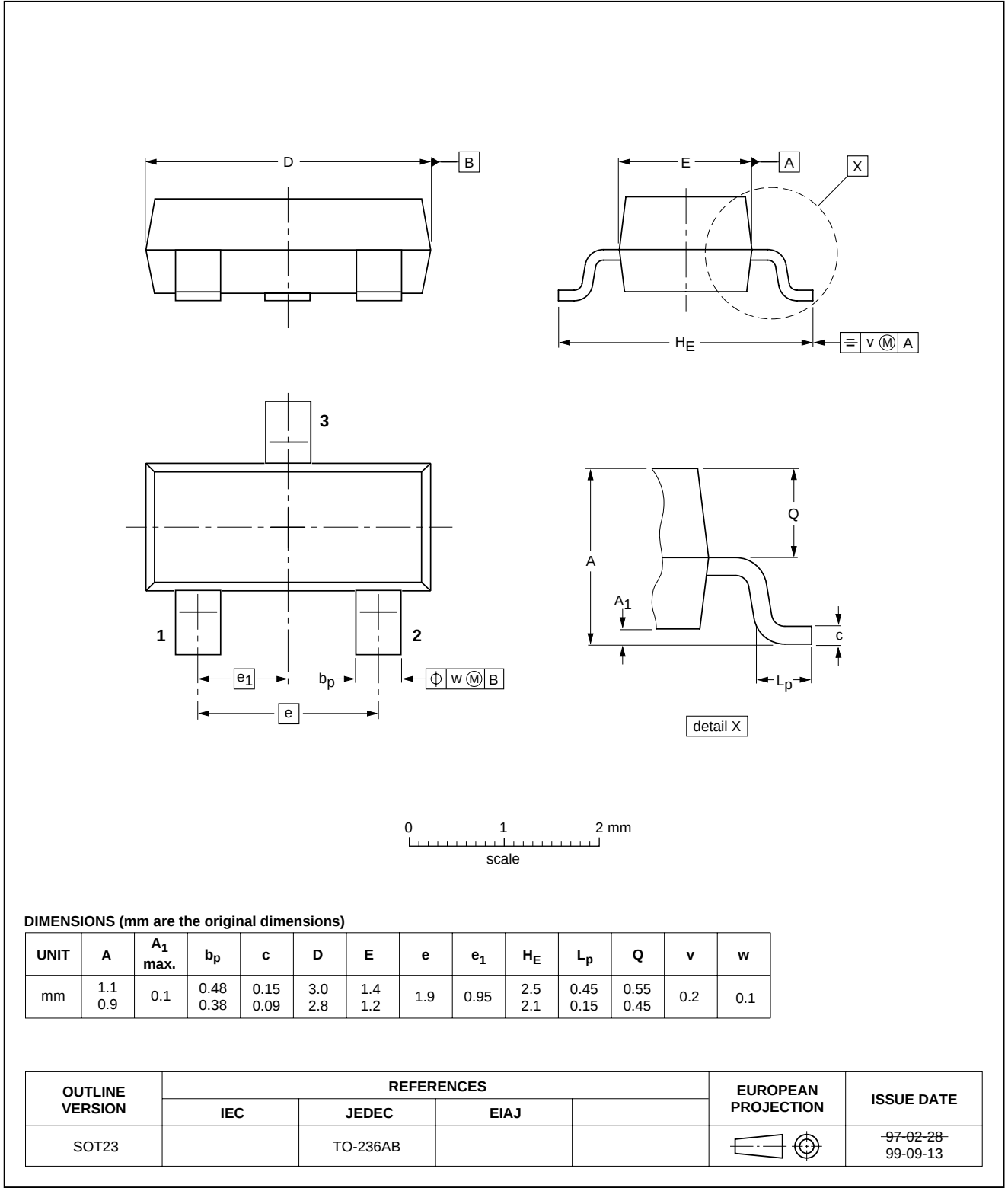
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PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT23



Low-leakage double diode

BAW156

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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2. The product status of device(s) described in this document may have changed since this document was published and may differ in case of multiple devices. The latest product status information is available on the Internet at URL <http://www.nxp.com>.

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Customer notification

This data sheet was changed to reflect the new company name NXP Semiconductors, including new legal definitions and disclaimers. No changes were made to the technical content, except for package outline drawings which were updated to the latest version.

Contact information

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