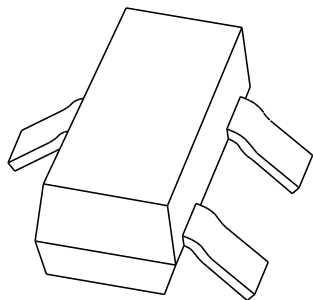


DATA SHEET



BAW156 Low-leakage double diode

Product specification
Supersedes data of June 1994
File under Discrete Semiconductors, SC01

1996 Mar 13

Low-leakage double diode

BAW156

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

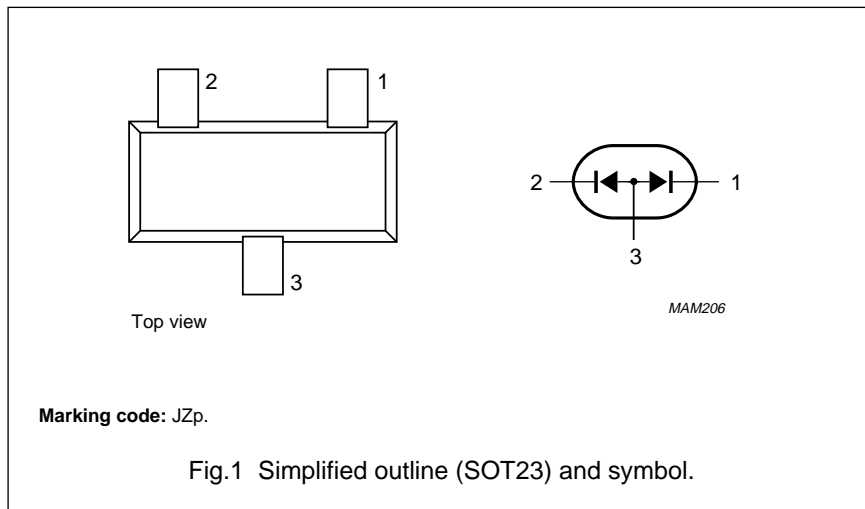
- Low-leakage current applications in surface mounted circuits.

DESCRIPTION

Epitaxial, medium-speed switching, double diode in a small plastic SOT23 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; see Fig.2; note 1	–	160	mA
		double diode loaded; see Fig.2; note 1	–	140	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			
		$t_p = 1\ \mu\text{s}$	–	4	A
		$t_p = 1\ \text{ms}$	–	1	A
		$t_p = 1\ \text{s}$	–	0.5	A
P_{tot}	total power dissipation	up to $T_{amb} = 25\text{ °C}$; 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.

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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 $I_R = 10\text{ mA}; R_L = 100\ \Omega$; 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

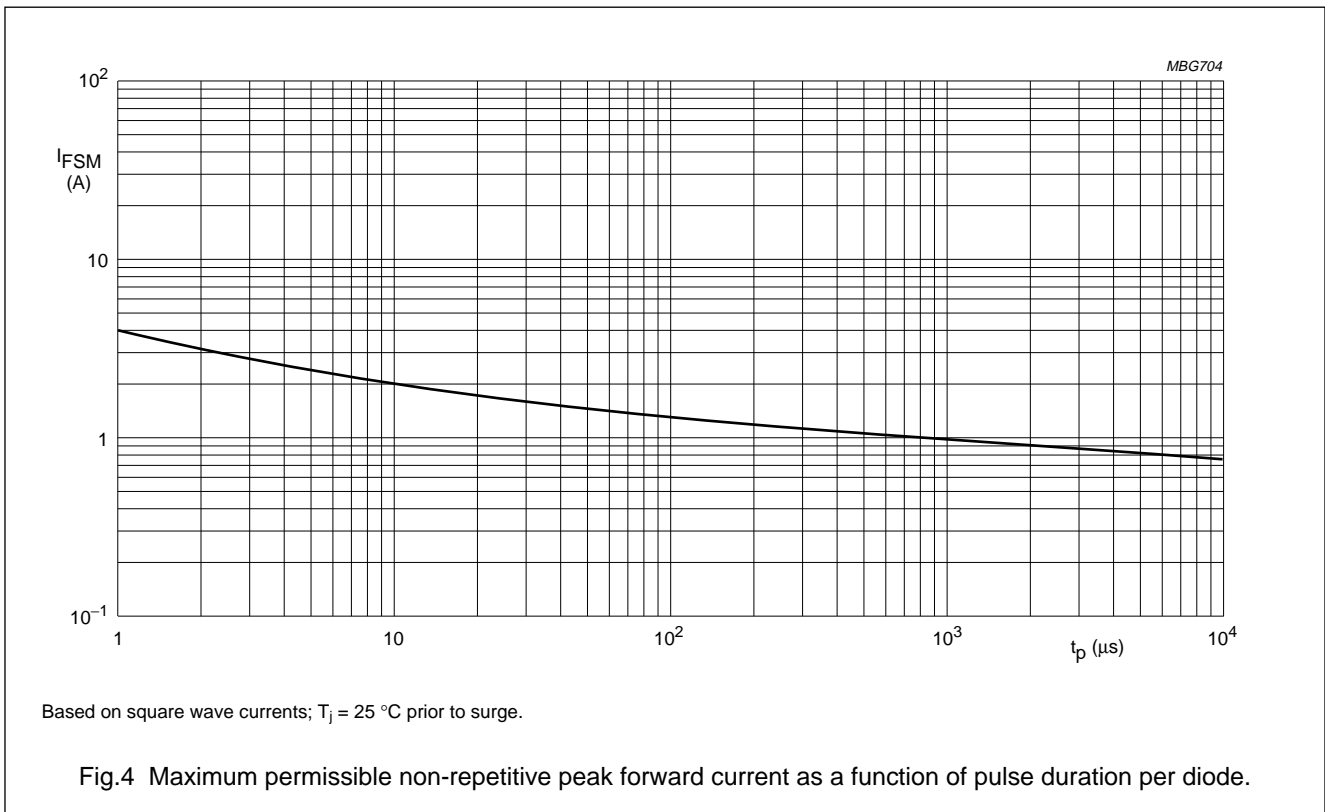
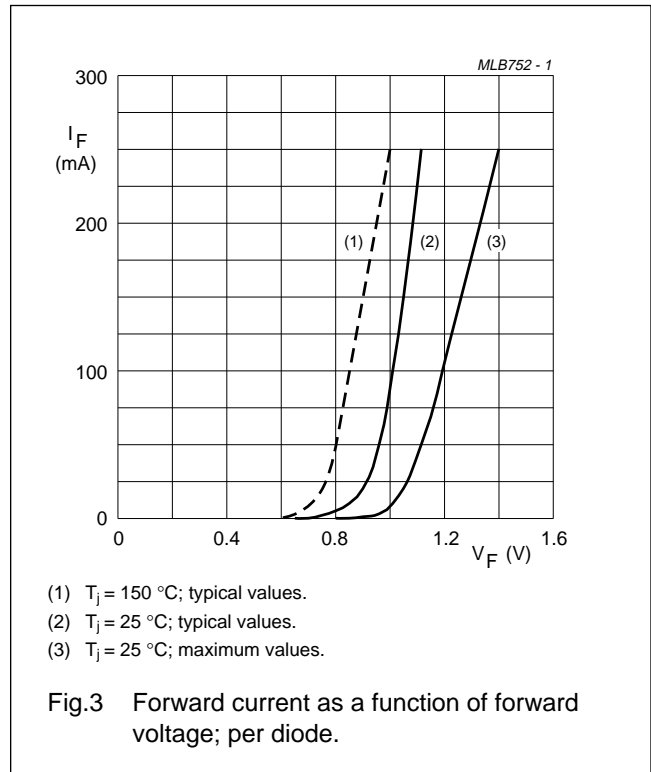
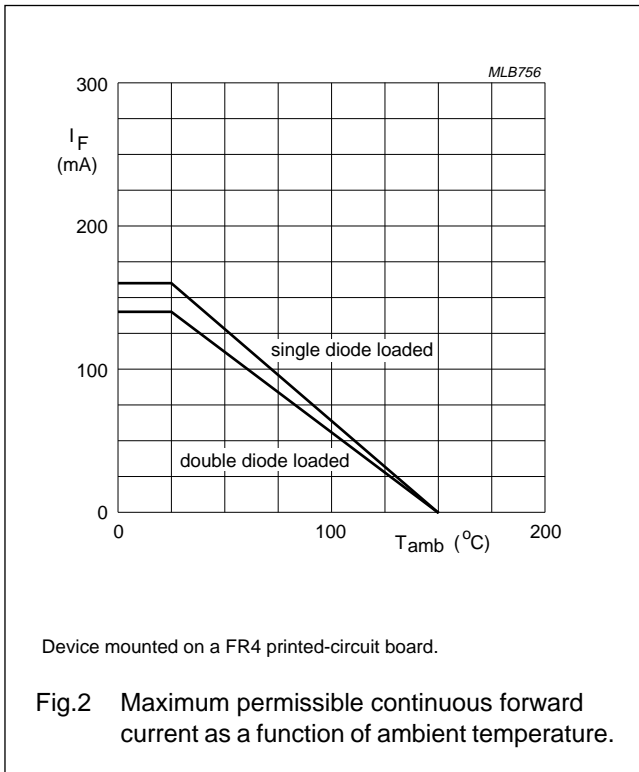
Note

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

Low-leakage double diode

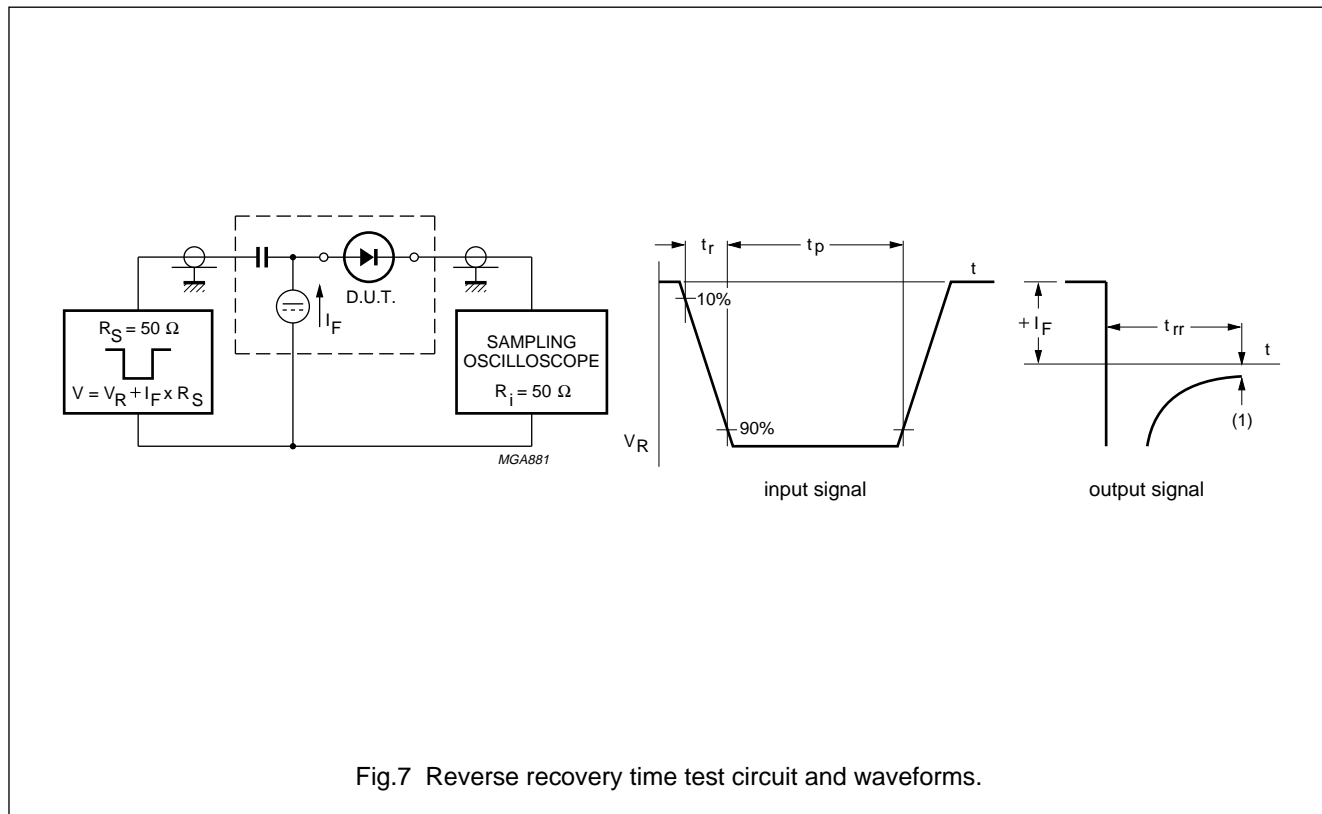
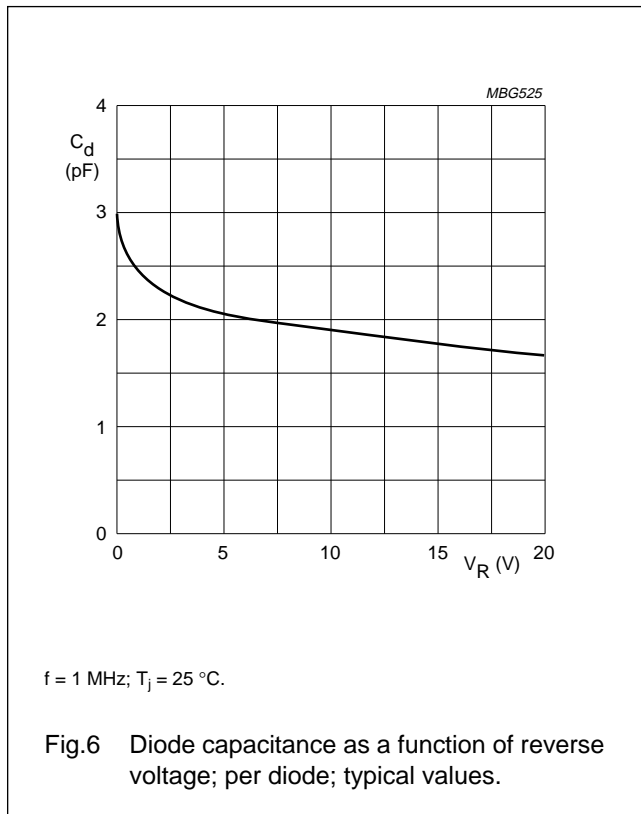
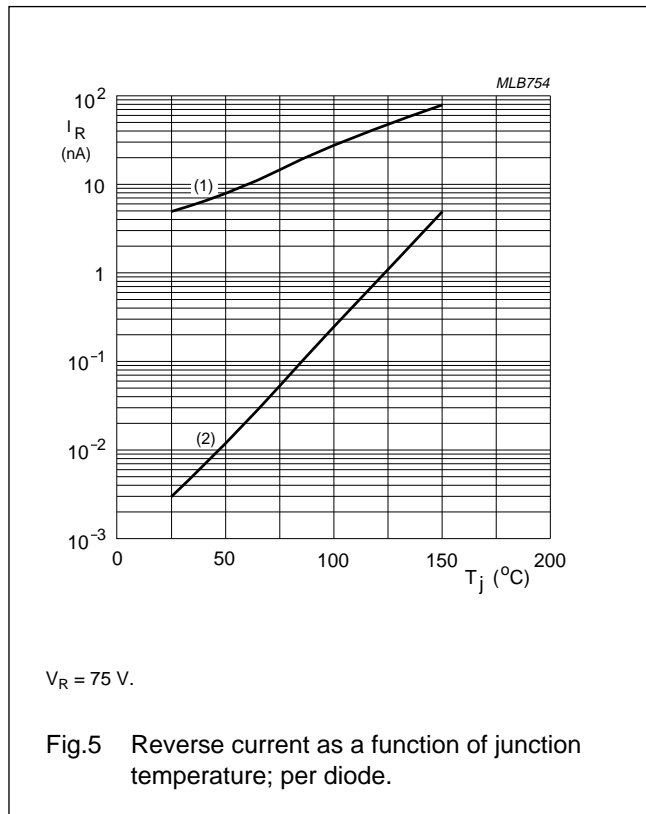
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GRAPHICAL DATA



Low-leakage double diode

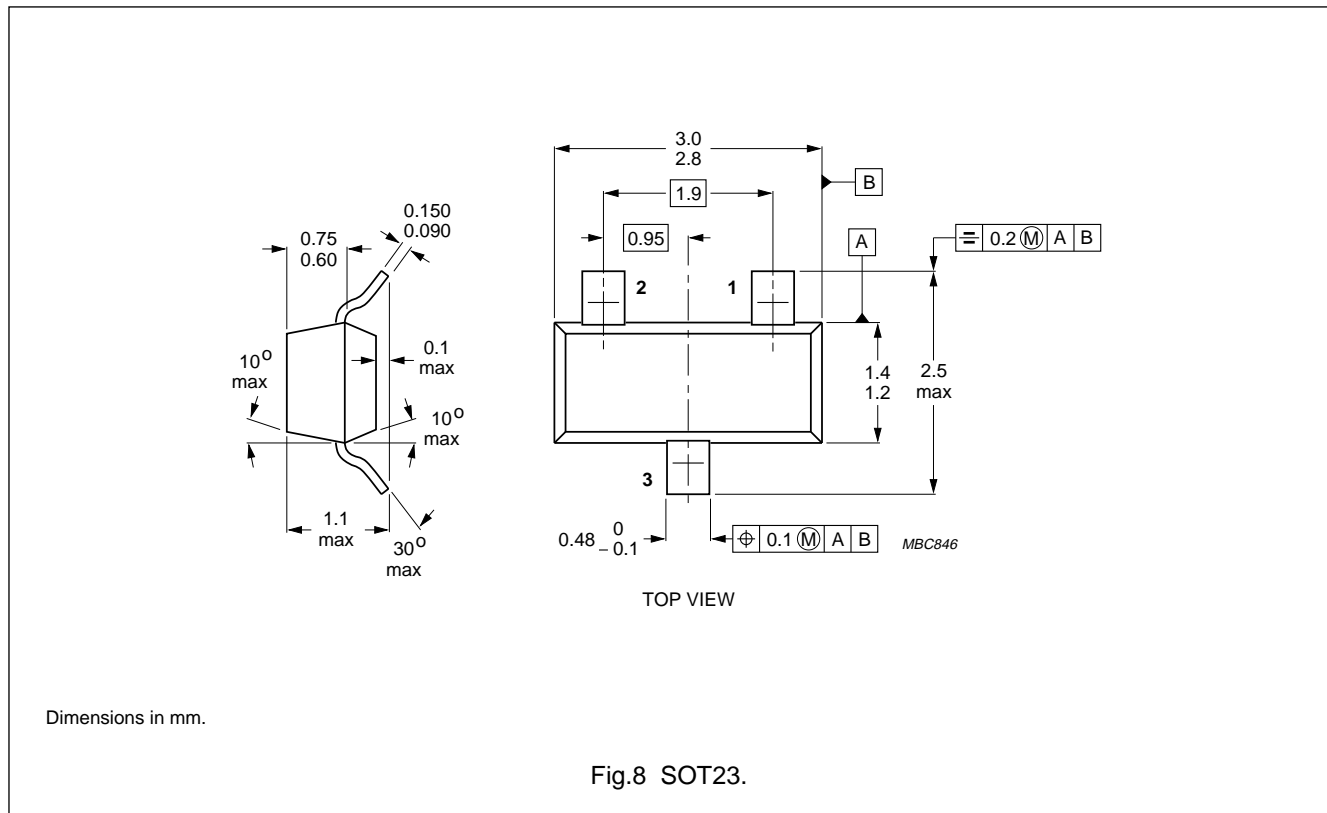
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Low-leakage double diode

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PACKAGE OUTLINE



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

These products are not designed for use in life support appliances, devices, or systems where malfunction of these products can reasonably be expected to result in personal injury. Philips customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Philips for any damages resulting from such improper use or sale.