DISCRETE SEMICONDUCTORS

DATA SHEET



BAW62 High-speed diode

Product data sheet Supersedes data of April 1996



High-speed diode

BAW62

FEATURES

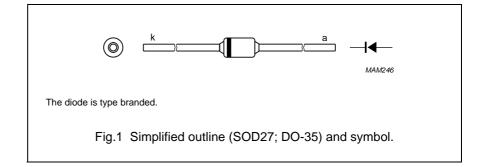
- Hermetically sealed leaded glass SOD27 (DO-35) package
- High switching speed: max. 4 ns
- Continuous reverse voltage: max. 75 V
- Repetitive peak reverse voltage: max. 75 V
- Repetitive peak forward current: max. 450 mA.

APPLICATIONS

- · High-speed switching
- Fast logic applications.

DESCRIPTION

The BAW62 is a high-speed switching diode fabricated in planar technology, and encapsulated in the hermetically sealed leaded glass SOD27 (DO-35) package.



LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V _{RRM}	repetitive peak reverse voltage		_	75	V
V_R	continuous reverse voltage		ı	75	V
I _F	continuous forward current	see Fig.2; note 1		250	mA
I _{FRM}	repetitive peak forward current		=	450	mA
I _{FSM}	non-repetitive peak forward current	square wave; T _j = 25 °C prior to surge; see Fig.4			
		t = 1 μs	_	4	Α
		t = 1 ms	_	1	Α
		t = 1 s	_	0.5	Α
P _{tot}	total power dissipation	T _{amb} = 25 °C; note 1	_	350	mW
T _{stg}	storage temperature		-65	+200	°C
Tj	junction temperature		_	200	°C

Note

1. Device mounted on an FR4 printed circuit-board; lead length 10 mm.

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ELECTRICAL CHARACTERISTICS

 $T_j = 25$ °C; unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V _F	forward voltage	see Fig.3			
		I _F = 5 mA	620	750	mV
		I _F = 100 mA	_	1000	mV
		I _F = 100 mA; T _j = 100 °C	_	930	mV
I _R	reverse current	see Fig.5			
		V _R = 20 V	_	25	nA
		V _R = 50 V	_	200	nA
		V _R = 75 V	_	5	μΑ
		V _R = 20 V; T _j = 150 °C	_	50	μΑ
		V _R = 75 V; T _j = 150 °C	_	100	μΑ
C _d	diode capacitance	f = 1 MHz; V _R = 0; see Fig.6	_	2	pF
t _{rr}	reverse recovery time	when switched from I _F = 10 mA to	_	4	ns
		$I_R = 10 \text{ mA}$; $R_L = 100 \Omega$; measured			
		at I _R = 1 mA; see Fig.7			
V_{fr}	forward recovery voltage	when switched from $I_F = 50$ mA;	_	2.5	V
		$t_r = 20 \text{ ns}$; see Fig.8			

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
R _{th j-tp}	thermal resistance from junction to tie-point	lead length 10 mm	240	K/W
R _{th j-a}	thermal resistance from junction to ambient	lead length 10 mm; note 1	500	K/W

Note

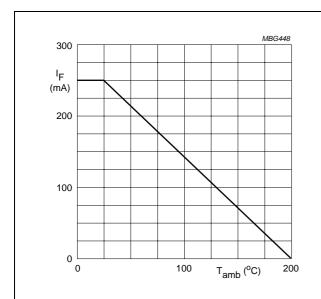
1. Device mounted on a printed circuit-board without metallization pad.

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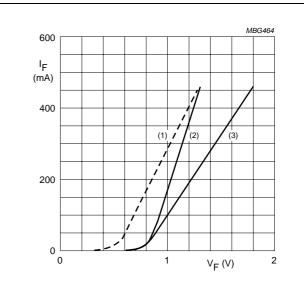
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GRAPHICAL DATA



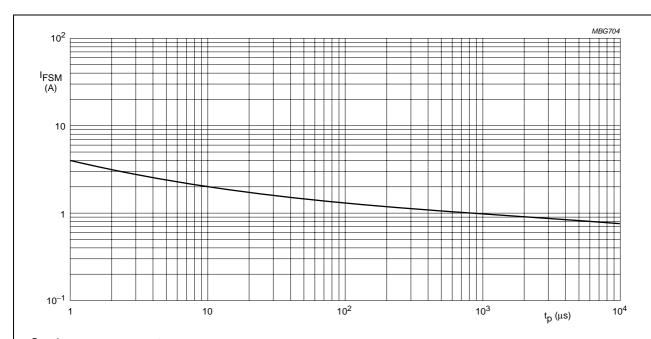
Device mounted on an FR4 printed-circuit board; lead length 10 mm.

Fig.2 Maximum permissible continuous forward current as a function of ambient temperature.



- (1) T_j = 175 °C; typical values.
- (2) $T_j = 25$ °C; typical values.
- (3) $T_j = 25$ °C; maximum values.

Fig.3 Forward current as a function of forward voltage.



Based on square wave currents.

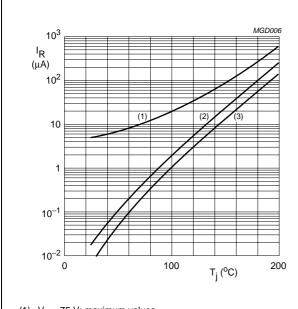
 $T_j = 25$ °C prior to surge.

Fig.4 Maximum permissible non-repetitive peak forward current as a function of pulse duration.

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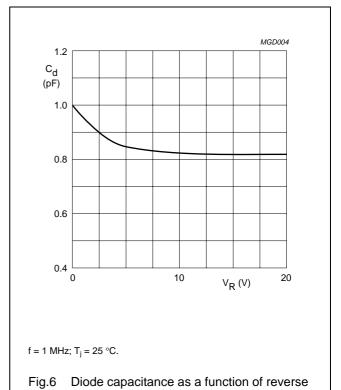
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- (1) $V_R = 75 V$; maximum values.
- (2) $V_R = 75 V$; typical values.
- (3) $V_R = 20 V$; typical values.

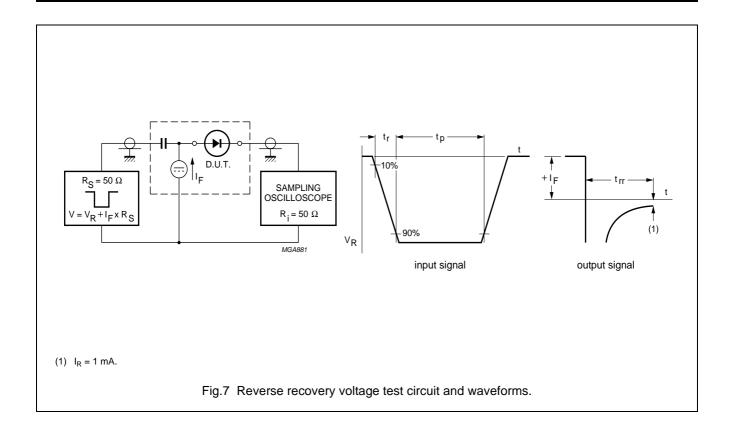
Fig.5 Reverse current as a function of junction temperature.

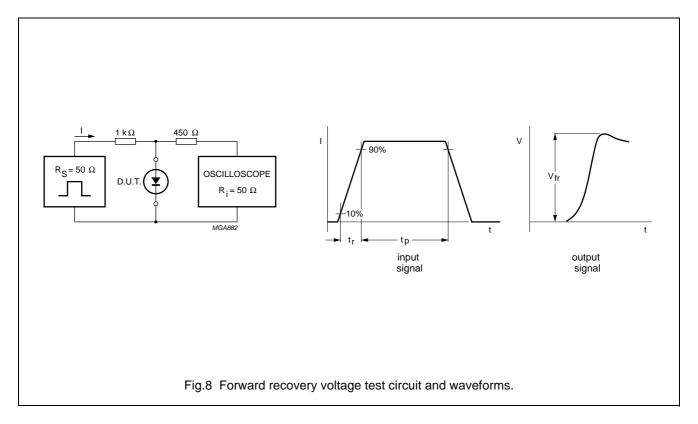


voltage; typical values.

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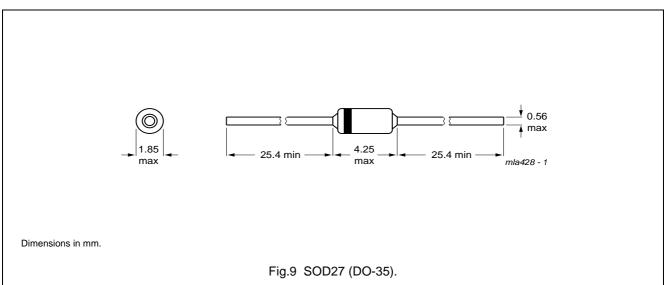


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PACKAGE OUTLINE



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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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