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Kind regards,

Team Nexperia

DISCRETE SEMICONDUCTORS

DATA SHEET



BAV20; BAV21General purpose diodes

Product data sheet Supersedes data of 1996 Sep 17 1999 May 25



General purpose diodes

BAV20; BAV21

FEATURES

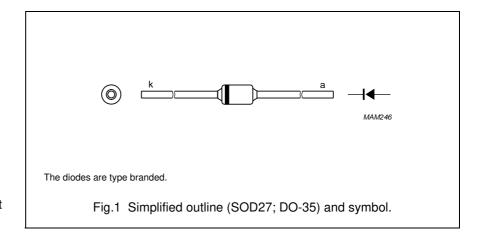
- Hermetically sealed leaded glass SOD27 (DO-35) package
- Switching speed: max. 50 ns
- · General application
- Continuous reverse voltage: max. 150 V, 200 V
- Repetitive peak reverse voltage: max. 200 V, 250 V
- Repetitive peak forward current: max. 625 mA.

APPLICATIONS

 General purposes in industrial equipment e.g. oscilloscopes, digital voltmeters and video output stages in colour television.

DESCRIPTION

The BAV20 and BAV21 are switching diodes fabricated in planar technology, and encapsulated in hermetically sealed leaded glass SOD27 (DO-35) packages.



General purpose diodes

BAV20; BAV21

LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V _{RRM}	repetitive peak reverse voltage				
	BAV20		_	200	V
	BAV21		_	250	V
V _R	continuous peak reverse voltage				
	BAV20		_	150	V
	BAV21		_	200	V
I _F	continuous forward current	see Fig.2; note 1	_	250	mA
I _{FRM}	repetitive peak forward current		_	625	mA
I _{FSM}	non-repetitive peak forward current	square wave; T _j = 25 °C prior to surge; see Fig.4			
		t = 1 μs	_	9	Α
		t = 100 μs	_	3	Α
		t = 1 s	_	1	Α
P _{tot}	total power dissipation	T _{amb} = 25 °C; note 1	_	400	mW
T _{stg}	storage temperature		-65	+175	°C
Tj	junction temperature		_	175	°C

Note

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

General purpose diodes

BAV20; BAV21

ELECTRICAL CHARACTERISTICS

 T_j = 25 °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V _F	forward voltage	see Fig.3			
		I _F = 100 mA	_	1.0	V
		I _F = 200 mA	_	1.25	V
I _R	reverse current	see Fig.5			
		$V_R = V_{Rmax}$	_	100	nA
		$V_R = V_{Rmax}$; $T_j = 150 ^{\circ}C$	_	100	μΑ
C_d	diode capacitance	$f = 1 \text{ MHz}$; $V_R = 0$; see Fig.6	_	5	pF
t _{rr}	reverse recovery time	when switched from I _F = 30 mA to	_	50	ns
		$I_R = 30 \text{ mA}$; $R_L = 100 \Omega$; measured			
		at I _R = 3 mA; 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	375	K/W

Note

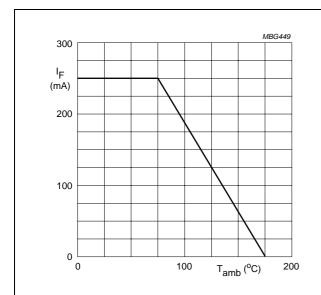
1. Device mounted on a printed circuit-board without metallization pad.

1999 May 25

General purpose diodes

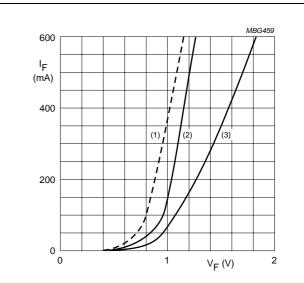
BAV20; BAV21

GRAPHICAL DATA



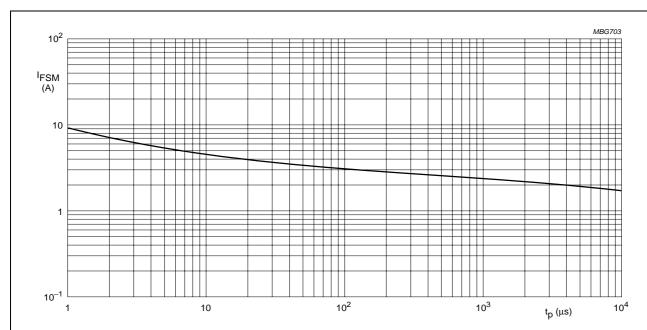
Device mounted on an FR4 printed-circuit board; lead length 10 mm.

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



- (1) $T_j = 150 \,^{\circ}\text{C}$; typical values.
- (2) $T_j = 25 \,^{\circ}\text{C}$; typical values.
- (3) $T_j = 25 \,^{\circ}\text{C}$; maximum values.

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



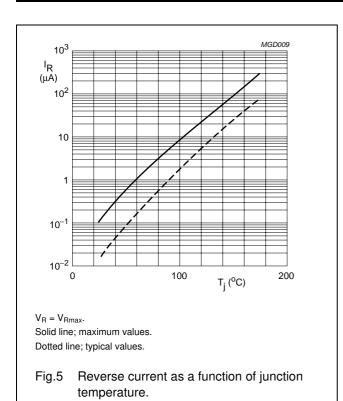
Based on square wave currents.

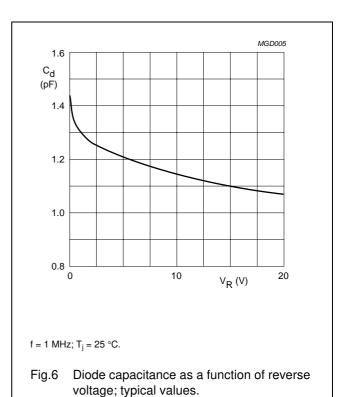
 $T_j = 25$ °C prior to surge.

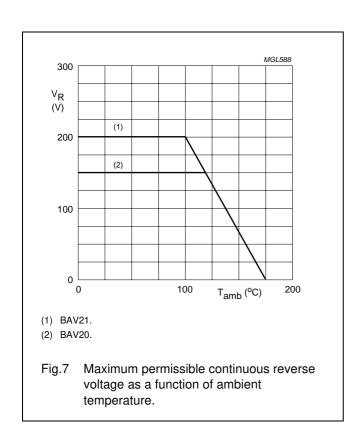
Fig.4 Maximum permissible non-repetitive peak forward current as a function of pulse duration.

General purpose diodes

BAV20; BAV21

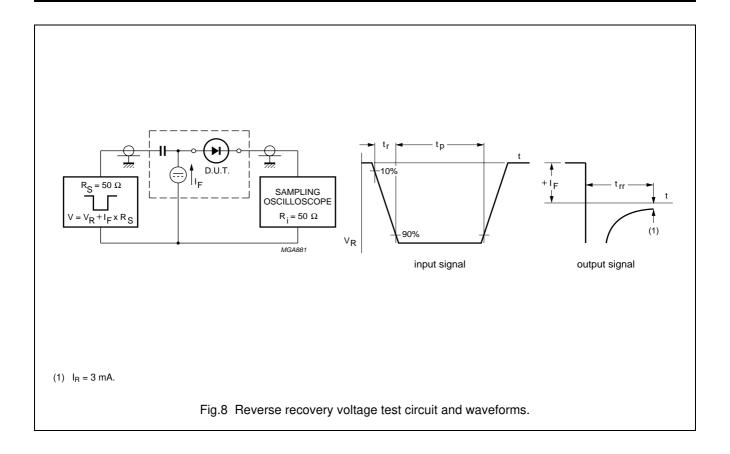






General purpose diodes

BAV20; BAV21



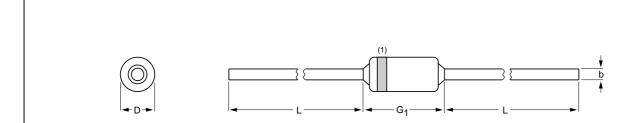
General purpose diodes

BAV20; BAV21

PACKAGE OUTLINE

Hermetically sealed glass package; axial leaded; 2 leads

SOD27



DIMENSIONS (mm are the original dimensions)

UNIT	b max.	D max.	G ₁ max.	L min.
mm	0.56	1.85	4.25	25.4

0 1 2 mm scale

Note

1. The marking band indicates the cathode.

OUTLINE REFERENCES				EUROPEAN	ISSUE DATE	
VERSION	IEC	JEDEC	EIAJ		PROJECTION	ISSUE DATE
SOD27	A24	DO-35	SC-40			97-06-09

General purpose diodes

BAV20; BAV21

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.

Notes

- 1. Please consult the most recently issued document before initiating or completing a design.
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NXP Semiconductors

Customer notification

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