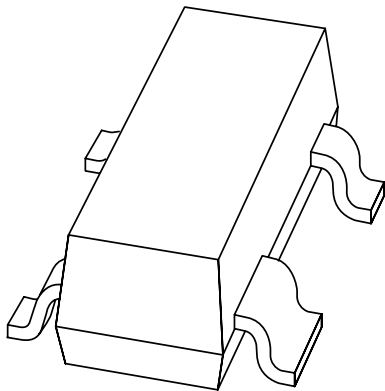


# DATA SHEET



## **BAW101** High voltage double diode

Product specification

2003 May 13

# High voltage double diode

# BAW101

### FEATURES

- Small plastic SMD package
- High switching speed: max. 50 ns
- High continuous reverse voltage: 300 V
- Electrically insulated diodes.

### APPLICATIONS

- High voltage switching
- Automotive
- Communication.

### DESCRIPTION

The BAW101 is a high-speed switching diode array with two separate dice, fabricated in planar technology and encapsulated in a small SOT143B plastic SMD package.

### MARKING

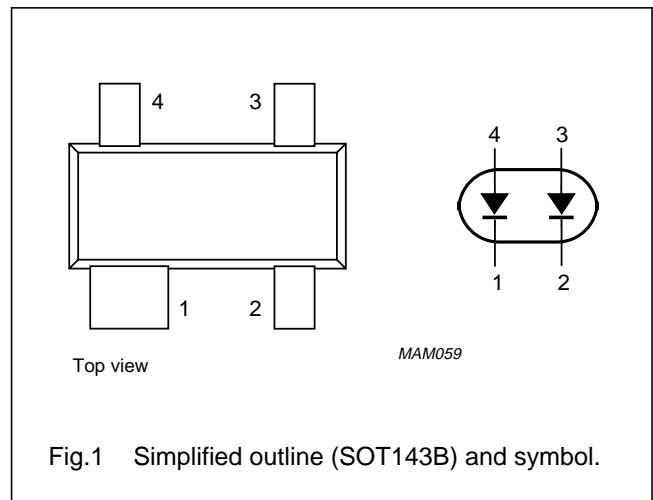
TYPE NUMBER	MARKING CODE <sup>(1)</sup>
BAW101	*AB

### Note

1. \* = p: Made in Hong Kong.  
 \* = t: Made in Malaysia.  
 \* = W: Made in China.

### PINNING

PIN	DESCRIPTION
1	cathode 1
2	cathode 2
3	anode 2
4	anode 1



## High voltage double diode

BAW101

**LIMITING VALUES**

In accordance with the Absolute Maximum Rating System (IEC 60134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
<b>Per diode</b>					
$V_R$	continuous reverse voltage		–	300	V
		series connection	–	600	V
$V_{RRM}$	repetitive peak reverse voltage		–	300	V
		series connection	–	600	V
$I_F$	continuous forward current	single diode loaded; note 1; see Fig.2	–	250	mA
		double diode loaded; note 1; see Fig.2	–	140	mA
$I_{FRM}$	repetitive peak forward current		–	625	mA
$I_{FSM}$	non-repetitive peak forward current	square wave; $T_j = 25\text{ °C}$ prior to surge; $t = 1\text{ }\mu\text{s}$	–	4.5	A
$P_{tot}$	total power dissipation	$T_{amb} = 25\text{ °C}$ ; note 1	–	350	mW
$T_{stg}$	storage temperature		–65	+150	°C
$T_j$	junction temperature		–	150	°C
$T_{amb}$	operating ambient temperature		–65	+150	°C

**Note**

1. Device mounted on an FR4 printed-circuit board, cathode-lead mounting pad = 1 cm<sup>2</sup>.

**ELECTRICAL CHARACTERISTICS** $T_j = 25\text{ °C}$  unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
<b>Per diode</b>					
$V_{BR(R)}$	reverse breakdown voltage	$I_R = 100\text{ }\mu\text{A}$	300	–	V
$V_F$	forward voltage	$I_F = 100\text{ mA}$ ; note 1	–	1.1	V
$I_R$	reverse current	$V_R = 250\text{ V}$	–	150	nA
		$V_R = 250\text{ V}$ ; $T_{amb} = 150\text{ °C}$	–	50	$\mu\text{A}$
$t_{rr}$	reverse recovery time	when switched from $I_F = 30\text{ mA}$ to $I_R = 30\text{ mA}$ ; $R_L = 100\text{ }\Omega$ ; measured at $I_R = 3\text{ mA}$	–	50	ns
$C_d$	diode capacitance	$V_R = 0\text{ V}$ ; $f = 1\text{ MHz}$	–	2	pF

**Note**

1. Pulse test: pulse width = 300  $\mu\text{s}$ ;  $\delta = 0.02$ .

# High voltage double diode

BAW101

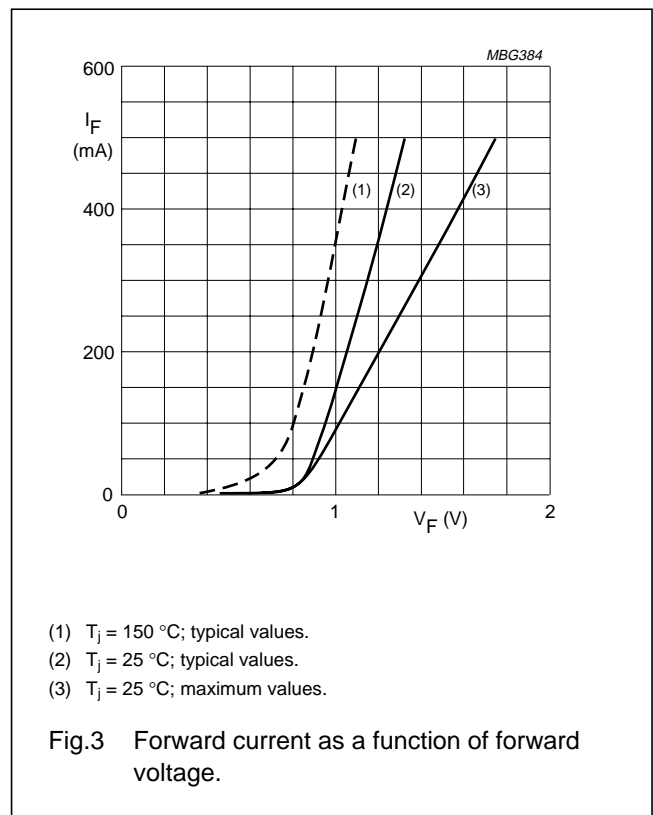
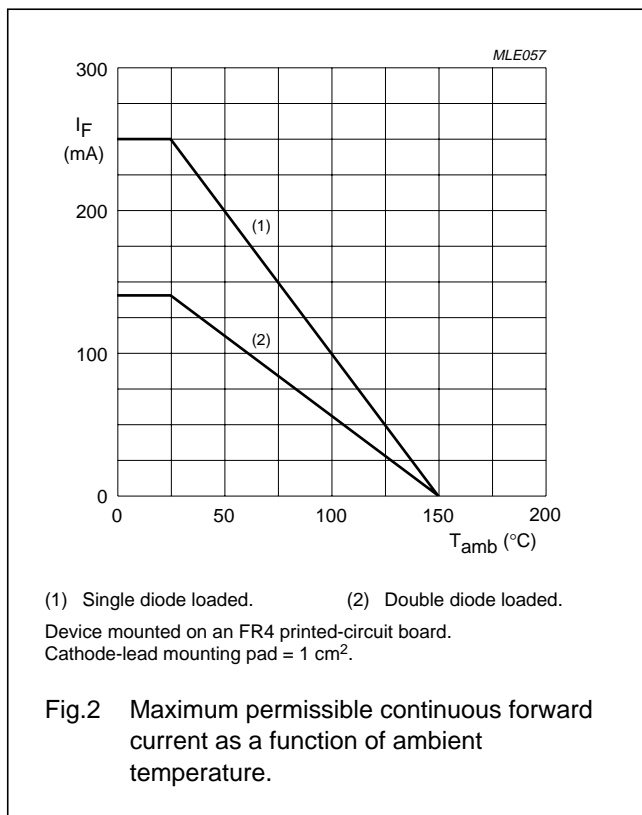
## THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-s}$	thermal resistance from junction to soldering point	note 1	255	K/W
$R_{th\ j-a}$	thermal resistance from junction to ambient	note 2	357	K/W

### Notes

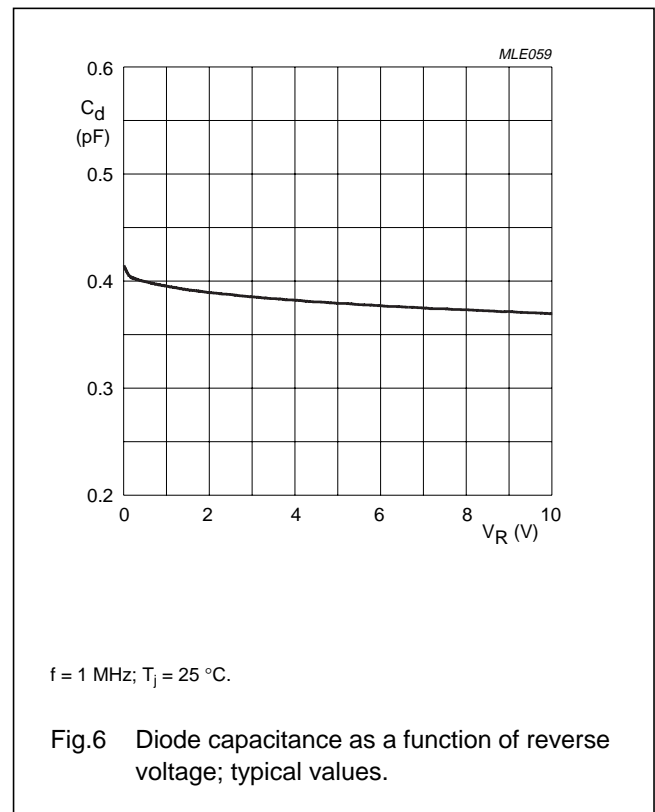
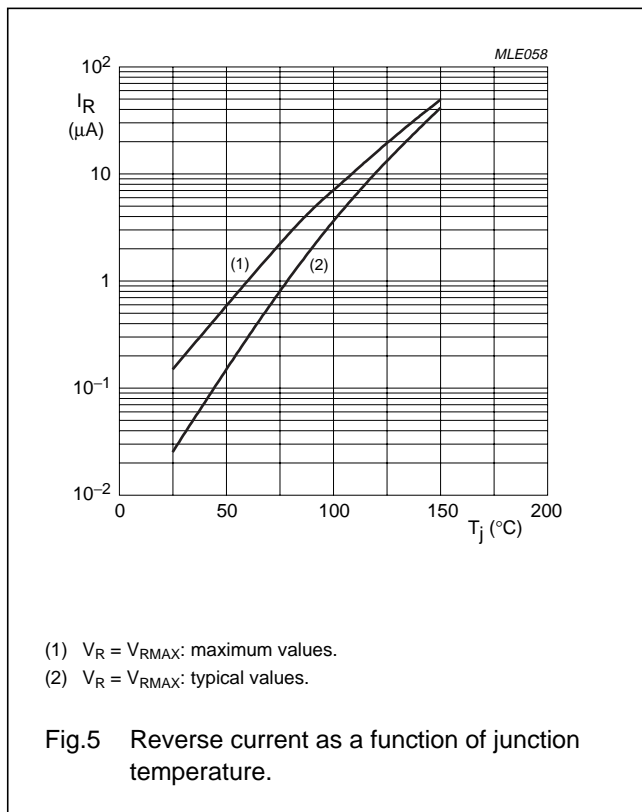
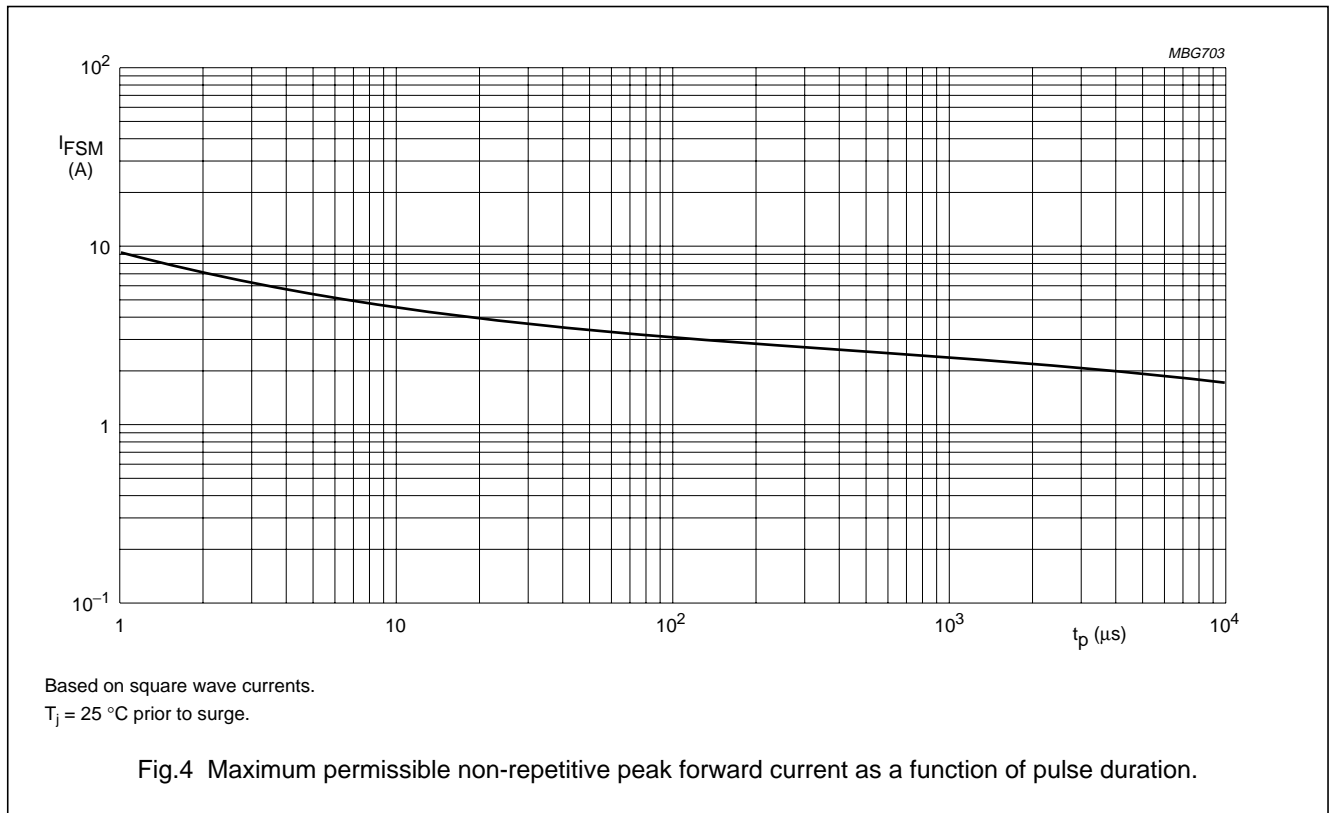
- One or more diodes loaded.
- Device mounted on an FR4 printed-circuit board, cathode-lead mounting pad = 1 cm<sup>2</sup>.

## GRAPHICAL DATA



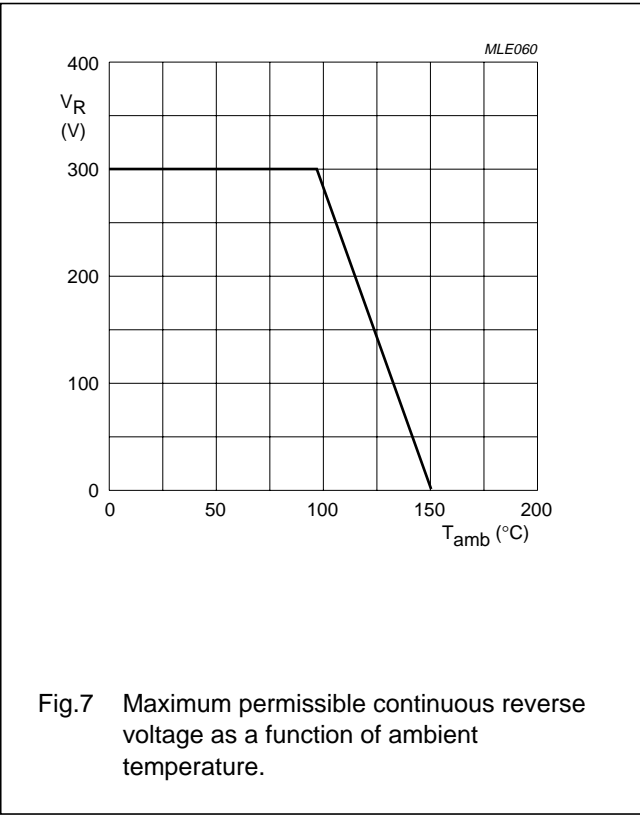
High voltage double diode

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High voltage double diode

BAW101



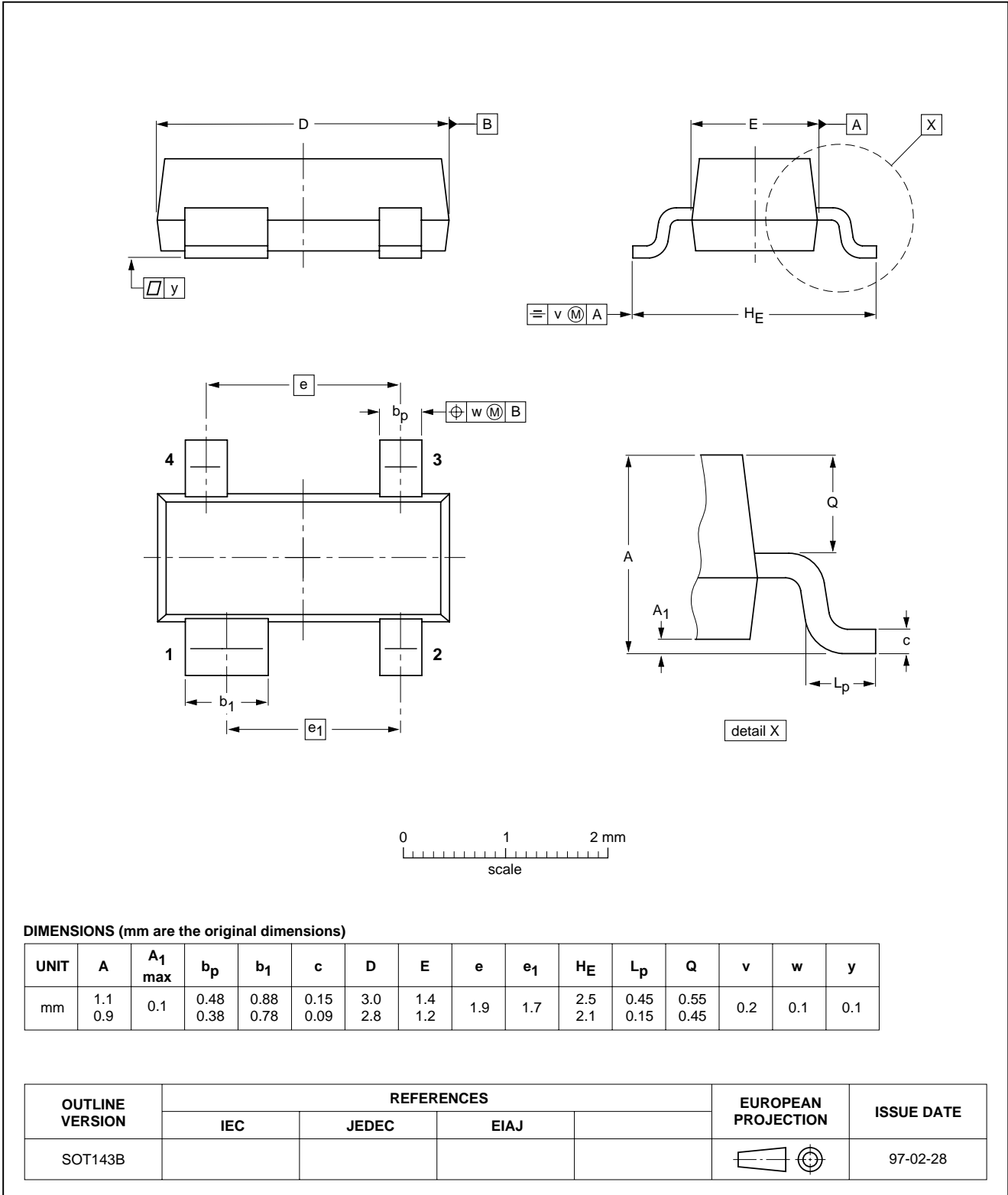
# High voltage double diode

BAW101

## PACKAGE OUTLINE

Plastic surface mounted package; 4 leads

SOT143B



## High voltage double diode

BAW101

## DATA SHEET STATUS

LEVEL	DATA SHEET STATUS <sup>(1)</sup>	PRODUCT STATUS <sup>(2)(3)</sup>	DEFINITION
I	Objective data	Development	This data sheet contains data from the objective specification for product development. Philips Semiconductors reserves the right to change the specification in any manner without notice.
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3. For data sheets describing multiple type numbers, the highest-level product status determines the data sheet status.

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**Limiting values definition** — Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 60134). 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.

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High voltage double diode

BAW101

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**NOTES**

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**NOTES**

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**NOTES**

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