



**THE DATASHEET OF
BAS28,235**





BAS28

High-speed double diode

16 April 2026

Product data sheet

1. General description

Two high-speed switching diodes fabricated in planar technology and encapsulated in a small SOT143B Surface-Mounted Device (SMD) plastic package. The diodes are not connected.

2. Features and benefits

- High switching speed: $t_{rr} \leq 4$ ns
- Reverse voltage: $V_R \leq 75$ V
- Repetitive peak reverse voltage: $V_{RRM} \leq 85$ V
- Repetitive peak forward current: $I_{FRM} \leq 500$ mA
- Small plastic SMD package
- AEC-Q101 qualified

3. Applications

- High-speed switching in e.g. surface mounted circuits

4. Quick reference data

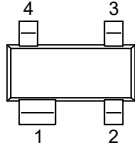
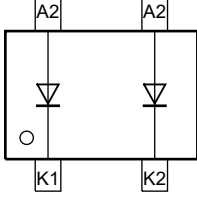
Table 1. Quick reference data

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
I_F	forward current	[1]	-	-	215	mA
I_R	reverse current	$V_R = 75$ V; $T_{amb} = 25$ °C	-	-	1	µA
V_R	reverse voltage		-	-	75	V
t_{rr}	reverse recovery time	$I_F = 10$ mA; $I_R = 10$ mA; $R_L = 100$ Ω; $I_{R(meas)} = 1$ mA; $T_{amb} = 25$ °C	-	-	4	ns

[1] Device mounted on an FR4 PCB, single-sided copper and standard footprint.

5. Pinning information

Table 2. Pinning information

Pin	Symbol	Description	Simplified outline	Graphic symbol
1	K1	cathode (diode 1)	 <p>SOT143B</p>	 <p>006aab100</p>
2	K2	cathode (diode 2)		
3	A2	anode (diode 2)		
4	A1	anode (diode 1)		

6. Ordering information

Table 3. Ordering information

Type number	Package		
	Name	Description	Version
BAS28	SOT143B	plastic, surface-mounted package; 4 leads; 1.9 mm pitch; 2.9 mm x 1.3 mm x 1 mm body	SOT143B

7. Marking

Table 4. Marking codes

Type number	Marking code[1]
BAS28	JT%

[1] % = placeholder for manufacturing site code

8. Limiting values

Table 5. Limiting values

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

Symbol	Parameter	Conditions		Min	Max	Unit
V_{RRM}	repetitive peak reverse voltage			-	85	V
V_R	reverse voltage			-	75	V
I_F	forward current		[1]	-	215	mA
I_{FSM}	non-repetitive peak forward current	$t_p = 1 \mu\text{s}$; square wave; $T_{j(\text{init})} = 25 \text{ }^\circ\text{C}$		-	4	A
		$t_p = 1 \text{ ms}$; square wave; $T_{j(\text{init})} = 25 \text{ }^\circ\text{C}$		-	1	A
		$t_p = 1 \text{ s}$; square wave; $T_{j(\text{init})} = 25 \text{ }^\circ\text{C}$		-	0.5	A
I_{FRM}	repetitive peak forward current			-	500	mA
P_{tot}	total power dissipation	one diode loaded; $T_{\text{amb}} \leq 25 \text{ }^\circ\text{C}$	[1]	-	250	mW
T_j	junction temperature			-	150	$^\circ\text{C}$
T_{stg}	storage temperature			-65	150	$^\circ\text{C}$

[1] Device mounted on an FR4 PCB, single-sided copper and standard footprint.

9. Thermal characteristics

Table 6. Thermal characteristics

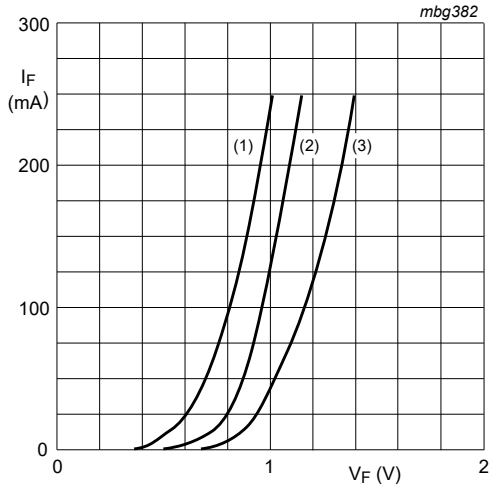
Symbol	Parameter	Conditions		Min	Typ	Max	Unit
$R_{\text{th}(j-a)}$	thermal resistance from junction to ambient	in free air	[1]	-	-	500	K/W
$R_{\text{th}(j-sp)}$	thermal resistance from junction to solder point			-	-	360	K/W

[1] Device mounted on an FR4 PCB, single-sided copper and standard footprint.

10. Characteristics

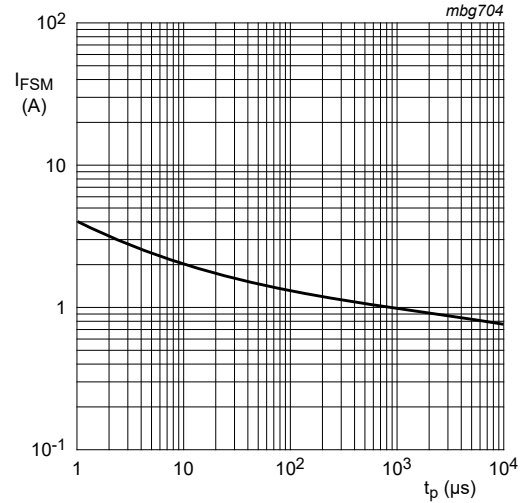
Table 7. Characteristics

Symbol	Parameter	Conditions		Min	Typ	Max	Unit
V_F	forward voltage	$I_F = 1 \text{ mA}$; $T_{\text{amb}} = 25 \text{ }^\circ\text{C}$		-	-	715	mV
		$I_F = 10 \text{ mA}$; $T_{\text{amb}} = 25 \text{ }^\circ\text{C}$		-	-	855	mV
		$I_F = 50 \text{ mA}$; $T_{\text{amb}} = 25 \text{ }^\circ\text{C}$		-	-	1	V
		$I_F = 150 \text{ mA}$; $T_{\text{amb}} = 25 \text{ }^\circ\text{C}$		-	-	1.25	V
I_R	reverse current	$V_R = 25 \text{ V}$; $T_{\text{amb}} = 25 \text{ }^\circ\text{C}$		-	-	30	nA
		$V_R = 75 \text{ V}$; $T_{\text{amb}} = 25 \text{ }^\circ\text{C}$		-	-	1	μA
		$V_R = 25 \text{ V}$; $T_j = 150 \text{ }^\circ\text{C}$		-	-	30	μA
		$V_R = 75 \text{ V}$; $T_j = 150 \text{ }^\circ\text{C}$		-	-	50	μA
C_d	diode capacitance	$V_R = 0 \text{ V}$; $f = 1 \text{ MHz}$; $T_{\text{amb}} = 25 \text{ }^\circ\text{C}$		-	-	1.5	pF
t_{rr}	reverse recovery time	$I_F = 10 \text{ mA}$; $I_R = 10 \text{ mA}$; $R_L = 100 \Omega$; $I_{R(\text{meas})} = 1 \text{ mA}$; $T_{\text{amb}} = 25 \text{ }^\circ\text{C}$		-	-	4	ns
V_{FRM}	peak forward recovery voltage	$I_F = 10 \text{ mA}$; $t_r = 20 \text{ ns}$; $T_{\text{amb}} = 25 \text{ }^\circ\text{C}$		-	-	1.75	V



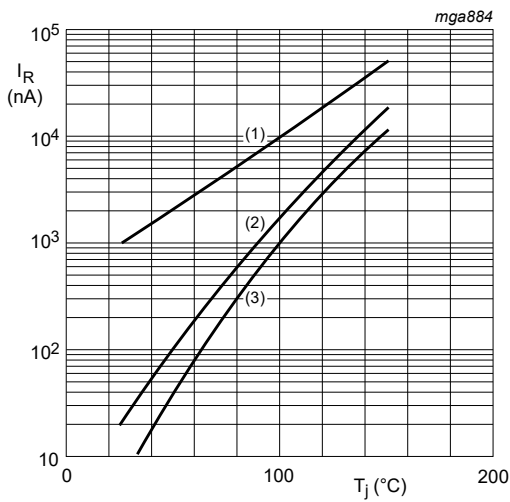
- (1) $T_j = 150\text{ }^\circ\text{C}$; typical values
- (2) $T_j = 25\text{ }^\circ\text{C}$; typical values
- (3) $T_j = 25\text{ }^\circ\text{C}$; maximum values

Fig. 1. Forward current as a function of forward voltage



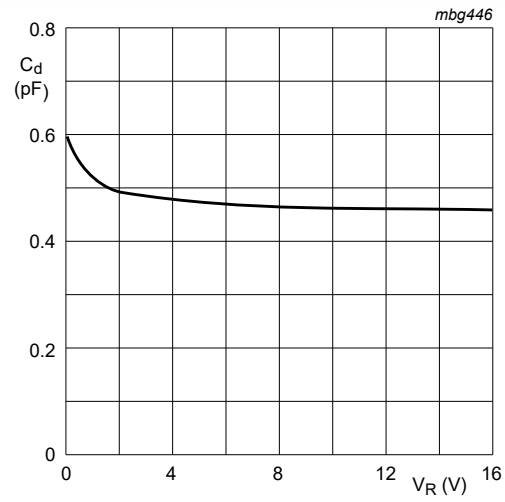
Based on square wave currents; $T_j = 25\text{ }^\circ\text{C}$ prior to surge.

Fig. 2. Maximum permissible non-repetitive peak forward current as a function of pulse duration.



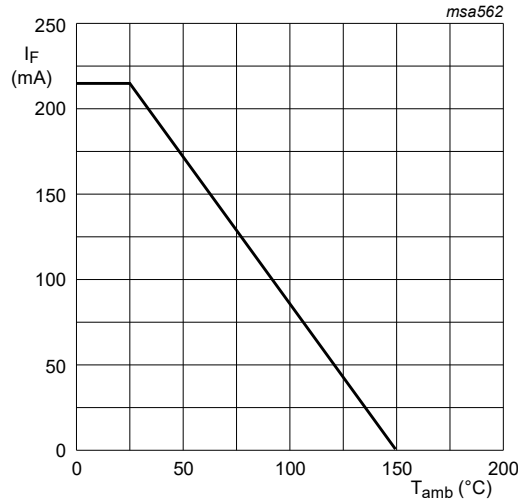
- (1) $V_R = 75\text{ V}$; maximum values
- (2) $V_R = 75\text{ V}$; typical values
- (3) $V_R = 25\text{ V}$; typical values

Fig. 3. Reverse current as a function of junction temperature



$f = 1\text{ MHz}$; $T_j = 25\text{ }^\circ\text{C}$

Fig. 4. Diode capacitance as a function of reverse voltage; typical values



FR4 PCB, standard footprint

Fig. 5. Forward current as a function of ambient temperature; derating curve

11. Test information

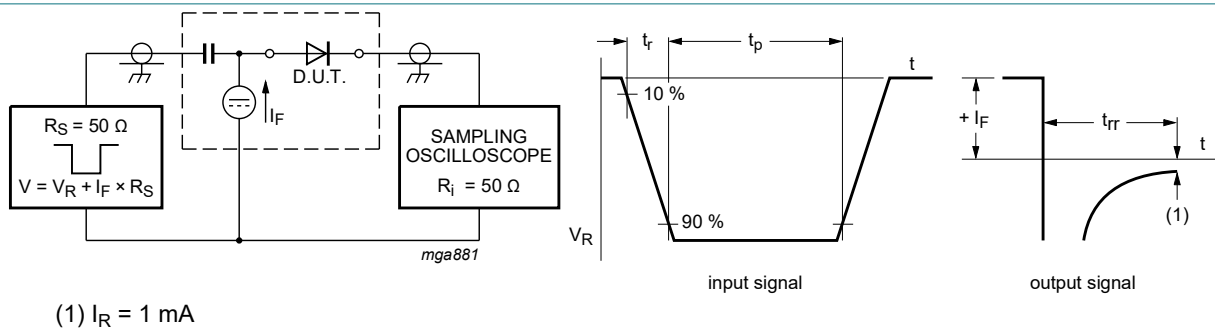


Fig. 6. Reverse recovery time test circuit and waveforms

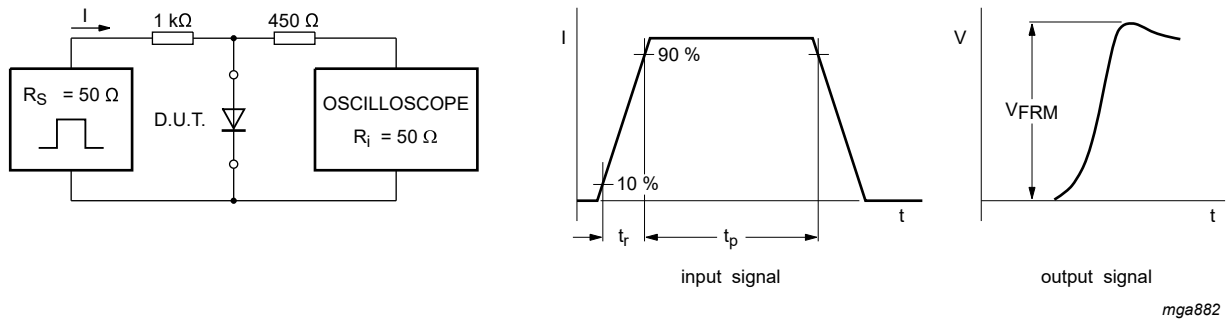


Fig. 7. Forward recovery voltage test circuit and waveforms

Quality information

This product has been qualified in accordance with the Automotive Electronics Council (AEC) standard Q101 - *Stress test qualification for discrete semiconductors*, and is suitable for use in automotive applications.

12. Package outline

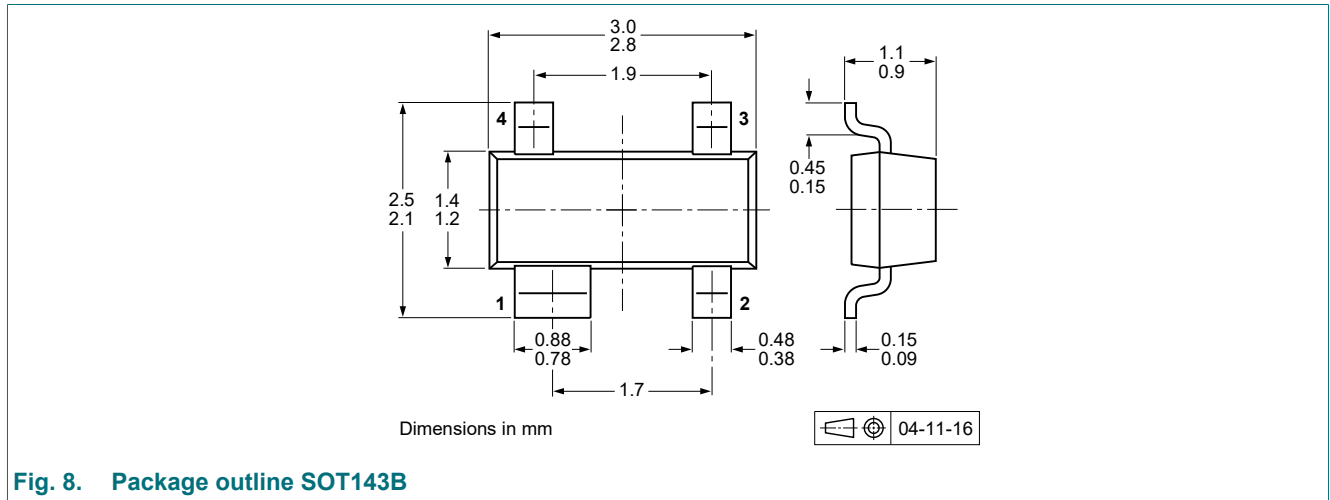


Fig. 8. Package outline SOT143B

13. Soldering

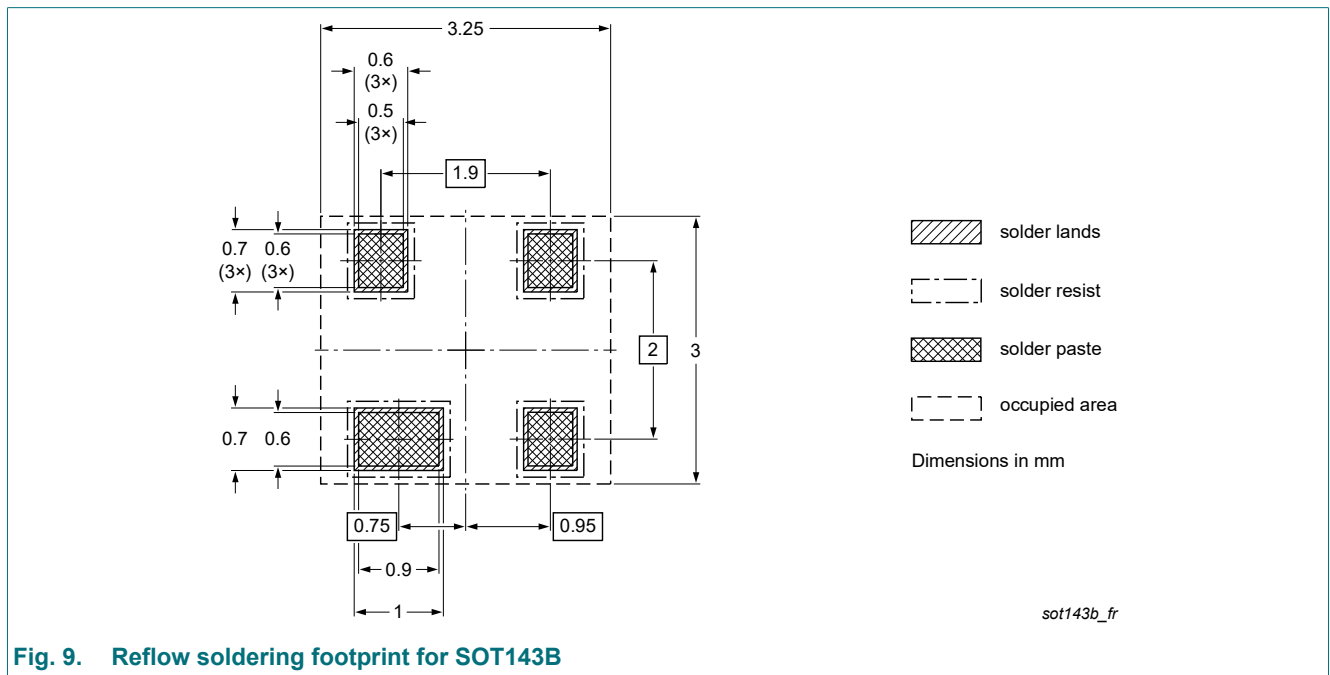


Fig. 9. Reflow soldering footprint for SOT143B

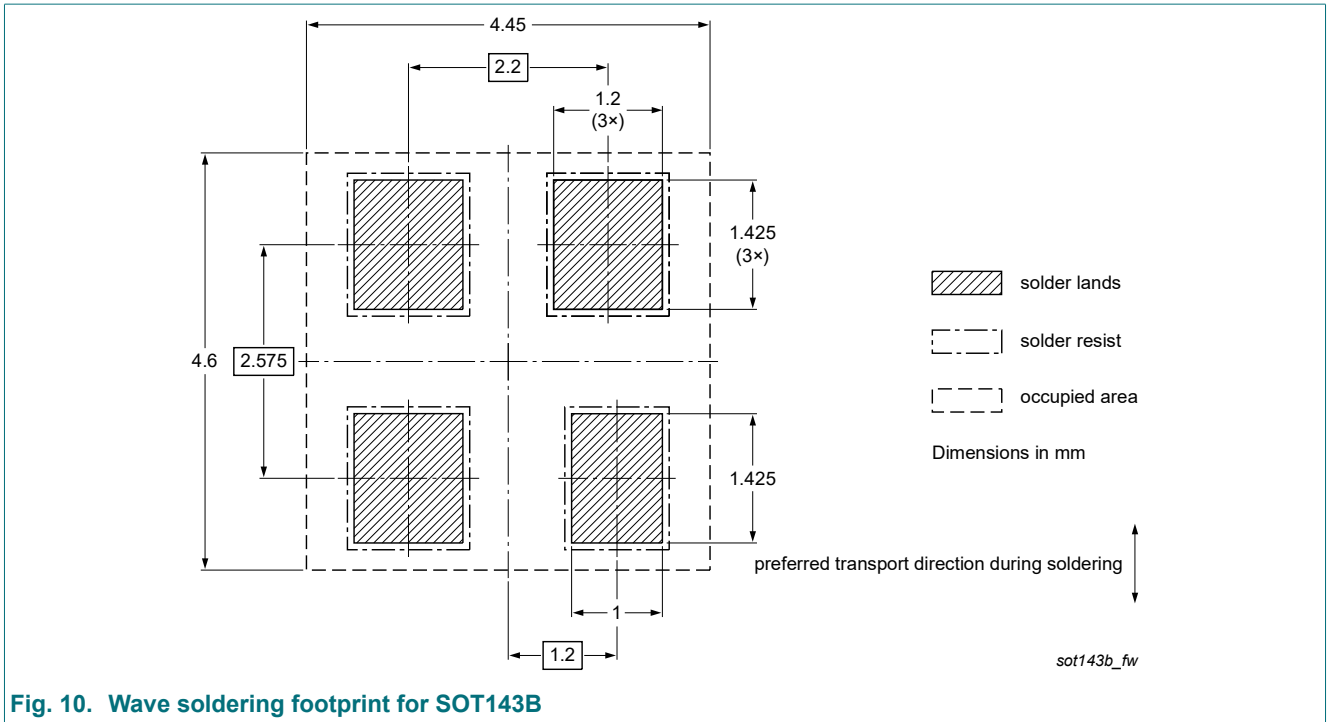


Fig. 10. Wave soldering footprint for SOT143B

14. Revision history

Table 8. Revision history

Data sheet ID	Release date	Data sheet status	Change notice	Supersedes
BAS28 v.4	20260416	Product data sheet	-	BAS28 v.3
Modifications:	<ul style="list-style-type: none">The format of this data sheet has been redesigned to comply with the identity guidelines of NexperiaSection "Packing information" removed			
BAS28 v.3	20100722	Product data sheet	-	BAS28_2
BAS28_2	19960910	Product specification	-	BAS28_1
BAS28_1	19960403	Product specification	-	-

15. Legal information

Data sheet status

Document status [1][2]	Product status [3]	Definition
Objective [short] data sheet	Development	This document contains data from the objective specification for product development.
Preliminary [short] data sheet	Qualification	This document contains data from the preliminary specification.
Product [short] data sheet	Production	This document contains the product specification.

- [1] Please consult the most recently issued document before initiating or completing a design.
- [2] The term 'short data sheet' is explained in section "Definitions".
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