



# BAS70-04

## General-purpose dual Schottky diode

1 January 2023

Product data sheet

### 1. General description

General-purpose dual Schottky diode in a small SOT23 (TO-236AB) Surface-Mounted Device (SMD) plastic package.

### 2. Features and benefits

- High switching speed
- Low leakage current
- High breakdown voltage
- Low capacitance

### 3. Applications

- Ultra high-speed switching
- Voltage clamping

### 4. Quick reference data

Table 1. Quick reference data

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
$I_F$	forward current		-	-	70	mA
$V_F$	forward voltage	$I_F = 1 \text{ mA}$ ; $t_p \leq 300 \text{ } \mu\text{s}$ ; $\delta \leq 0.02$ ; pulsed; $T_{\text{amb}} = 25 \text{ } ^\circ\text{C}$	-	-	410	mV
$V_R$	reverse voltage	$T_j = 25 \text{ } ^\circ\text{C}$	-	-	70	V

### 5. Pinning information

Table 2. Pinning information

Pin	Symbol	Description	Simplified outline	Graphic symbol
1	A1	anode (diode 1)	 SOT23	 006aaa437
2	K2	cathode (diode 2)		
3	K1; A2	cathode 1; anode 2		

6. Ordering information

Table 3. Ordering information

Type number	Package		
	Name	Description	Version
<a href="#">BAS70-04</a>	SOT23	plastic, surface-mounted package; 3 terminals; 1.9 mm pitch; 2.9 mm x 1.3 mm x 1 mm body	<a href="#">SOT23</a>

7. Marking

Table 4. Marking codes

Type number	Marking code[1]
BAS70-04	74%

[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
$V_R$	reverse voltage	$T_j = 25\text{ }^{\circ}\text{C}$		-	70	V
$I_F$	forward current			-	70	mA
$I_{FRM}$	repetitive peak forward current	$t_p \leq 1\text{ s}; \delta \leq 0.5$		-	70	mA
$I_{FSM}$	non-repetitive peak forward current	$t_p \leq 10\text{ ms}; T_{j(\text{init})} = 25\text{ }^{\circ}\text{C}$		-	100	mA
$T_j$	junction temperature			-	150	$^{\circ}\text{C}$
$T_{\text{amb}}$	ambient temperature			-65	150	$^{\circ}\text{C}$
$T_{\text{stg}}$	storage temperature			-65	150	$^{\circ}\text{C}$

9. Thermal characteristics

Table 6. Thermal characteristics

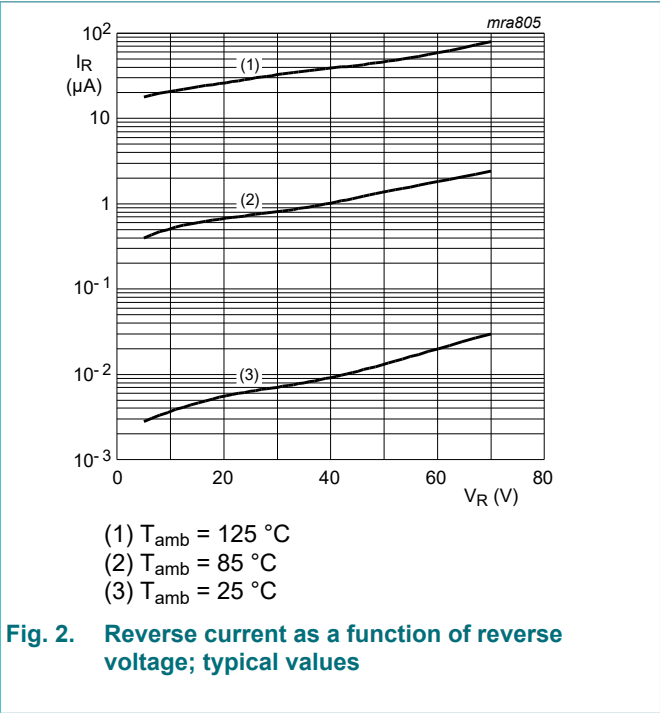
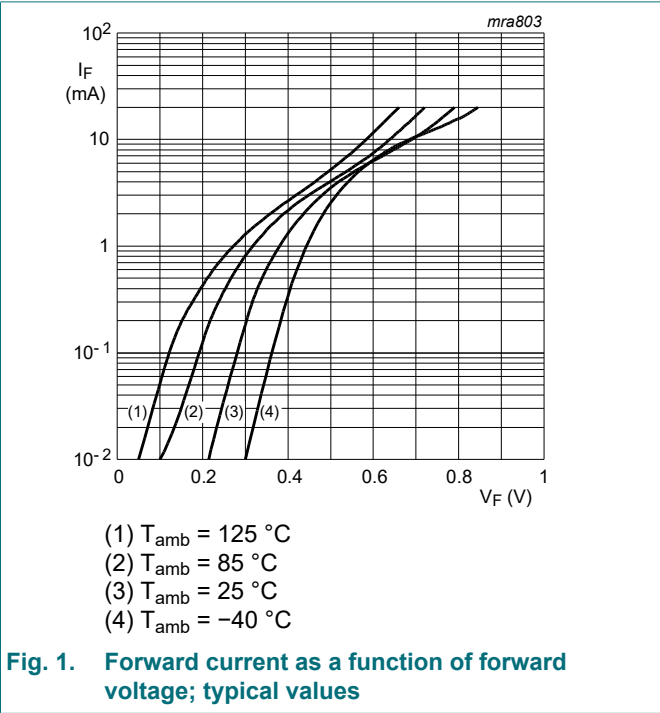
Symbol	Parameter	Conditions		Min	Typ	Max	Unit
$R_{\text{th}(j-a)}$	thermal resistance from junction to ambient	in free air	<a href="#">[1]</a>	-	-	500	K/W

[1] Device mounted on an FR4 Printed-Circuit Board (PCB), single-sided copper, tin-plated and standard footprint.

10. Characteristics

Table 7. Characteristics

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
$V_F$	forward voltage	$I_F = 1\text{ mA}$ ; $t_p \leq 300\text{ }\mu\text{s}$ ; $\delta \leq 0.02$ ; pulsed; $T_{\text{amb}} = 25\text{ }^\circ\text{C}$	-	-	410	mV
		$I_F = 10\text{ mA}$ ; $t_p \leq 300\text{ }\mu\text{s}$ ; $\delta \leq 0.02$ ; pulsed; $T_{\text{amb}} = 25\text{ }^\circ\text{C}$	-	-	750	mV
		$I_F = 15\text{ mA}$ ; $t_p \leq 300\text{ }\mu\text{s}$ ; $\delta \leq 0.02$ ; pulsed; $T_{\text{amb}} = 25\text{ }^\circ\text{C}$	-	-	1	V
$I_R$	reverse current	$V_R = 50\text{ V}$ ; $T_{\text{amb}} = 25\text{ }^\circ\text{C}$	-	-	100	nA
		$V_R = 70\text{ V}$ ; $T_{\text{amb}} = 25\text{ }^\circ\text{C}$	-	-	10	$\mu\text{A}$
$C_d$	diode capacitance	$V_R = 0\text{ V}$ ; $f = 1\text{ MHz}$ ; $T_{\text{amb}} = 25\text{ }^\circ\text{C}$	-	-	2	pF



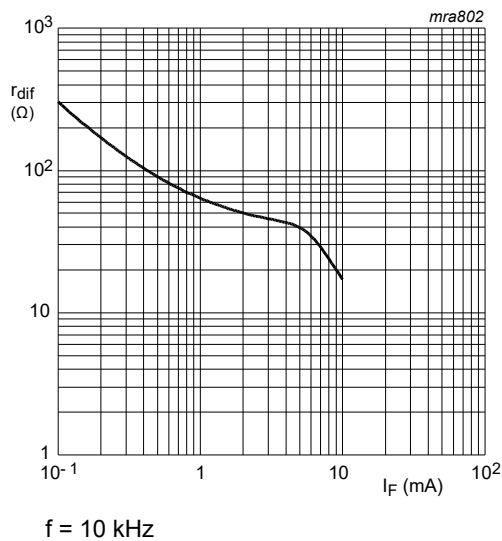


Fig. 3. Differential forward resistance as a function of forward current; typical values

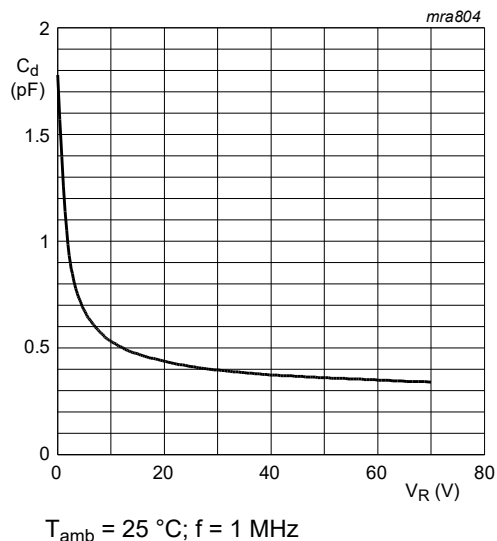


Fig. 4. Diode capacitance as a function of reverse voltage; typical values

11. Package outline

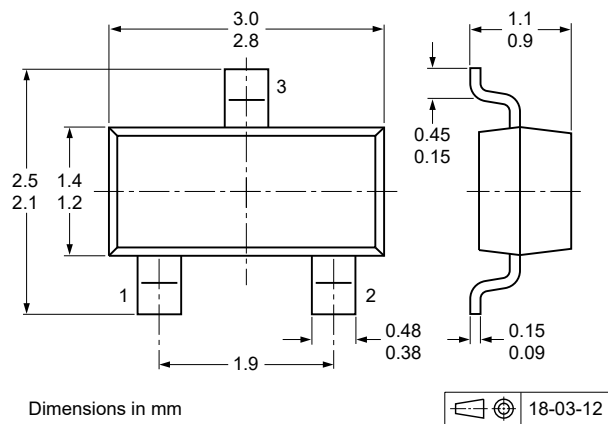


Fig. 5. Package outline SOT23

12. Soldering

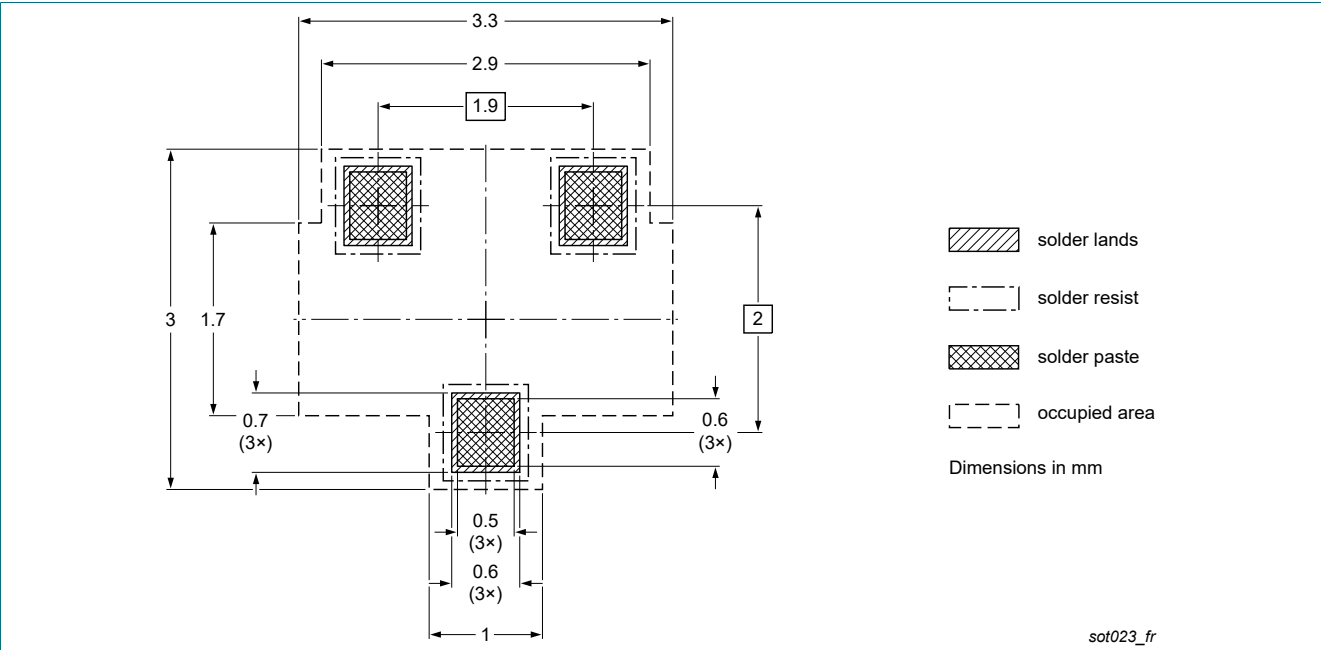


Fig. 6. Reflow soldering footprint for SOT23

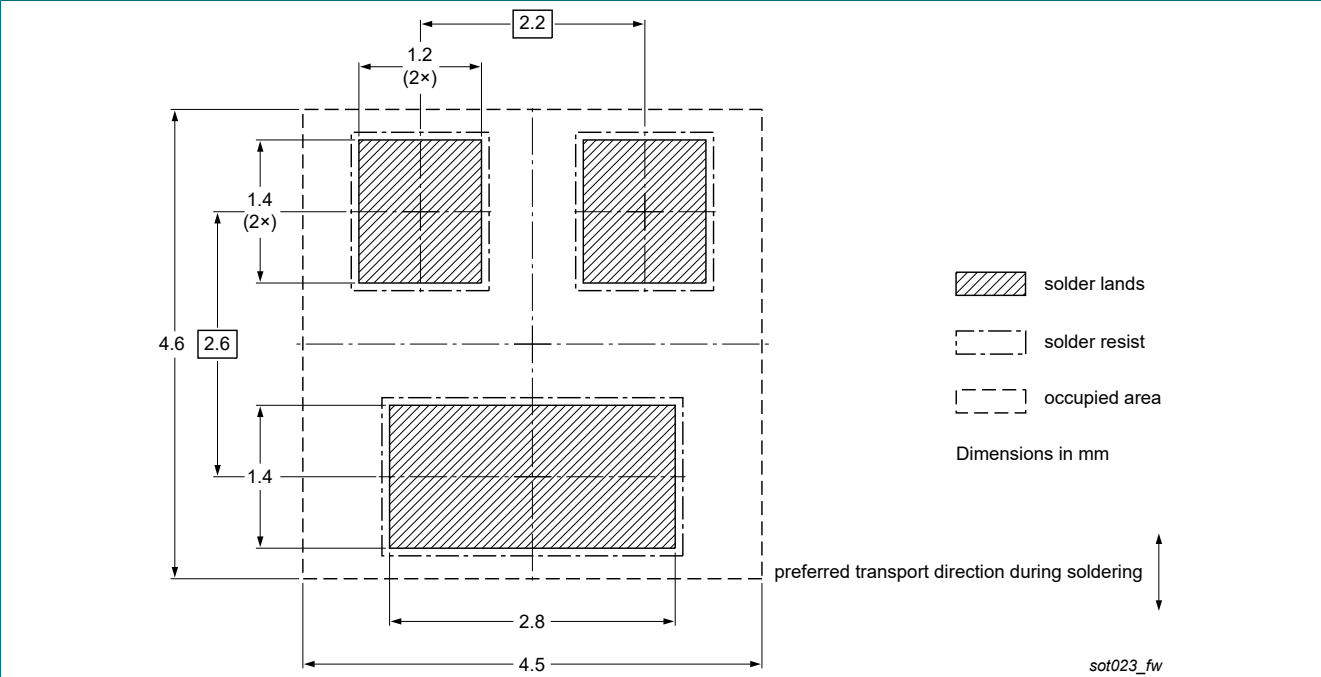


Fig. 7. Wave soldering footprint for SOT23

## 13. Revision history

Table 8. Revision history

Data sheet ID	Release date	Data sheet status	Change notice	Supersedes
BAS70-04 v.11	20230101	Product data sheet	-	BAS70_1PS7XSB70_SER_10
Modifications:	<ul style="list-style-type: none"> <li>Family data sheet reduced to single type data sheets.</li> <li>Product changed to non-automotive qualification. Please refer to <a href="https://www.nexperia.com">nexperia.com</a> for automotive (-Q) product alternative(s).</li> </ul>			
BAS70_1PS7XSB70_SER_10	20210407	Product data sheet	-	BAS70_1PS7XSB70_SER_9
BAS70_1PS7XSB70_SER_9	20060504	Product data sheet	-	BAS70_1PS7XSB70_SER_8
BAS70_1PS7XSB70_SER_8	20060504	Product data sheet	-	BAS70_1PS7XSB70_SER_7
BAS70_1PS7XSB70_SER_7	20050718	Product data sheet	-	1PS76SB70_2 1PS79SB70_1 BAS70H_1 BAS70L_1 BAS70-07V_1 BAS70VVBAS70W_3 BAS70-07S_4 BAS70_SERIES_6
1PS76SB70_2	20040126	Product specification	-	1PS76SB70_SER_1
1PS76SB70_1	19980716	Product specification	-	-
BAS70H_1	20050425	Product specification	-	-
BAS70L_1	20030520	Product specification	-	-
BAS70-07V_1	20020117	Product specification	-	-
BAS70VV_1	20040910	Product specification	-	-
BAS70W_3	19990326	Product specification	-	BAS70W_2
BAS70-07S_4	20030411	Product specification	-	BAS70_07S_3
BAS70_SERIES_6	20011011	Product specification	-	BAS70_5

## 14. 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.

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- [2] The term 'short data sheet' is explained in section "Definitions".
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