



# BAS70W

## General-purpose Schottky diode

19 January 2023

Product data sheet

### 1. General description

General-purpose Schottky diode in a small SOT323 (SC-70) 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	$I_F = 1 \text{ mA}$ ; $t_p \leq 300 \mu\text{s}$ ; $\delta \leq 0.02$ ; 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	A	anode	<p>SC-70 (SOT323)</p>	<p>006aaa436</p>
2	n.c.	not connected		
3	K	cathode		

## 6. Ordering information

Table 3. Ordering information

Type number	Package		
	Name	Description	Version
<a href="#">BAS70W</a>	SC-70	plastic, surface-mounted package; 3 leads; 1.3 mm pitch; 2 mm x 1.25 mm x 0.95 mm body	<a href="#">SOT323</a>

## 7. Marking

Table 4. Marking codes

Type number	Marking code[1]
BAS70W	73%

[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	$T_j = 25\text{ °C}$	-	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	$t_p \leq 10\text{ ms}$ ; $T_{j(\text{init})} = 25\text{ °C}$	-	100	mA
$T_j$	junction temperature		-	150	°C
$T_{\text{amb}}$	ambient temperature		-65	150	°C
$T_{\text{stg}}$	storage temperature		-65	150	°C

## 9. Thermal characteristics

Table 6. Thermal characteristics

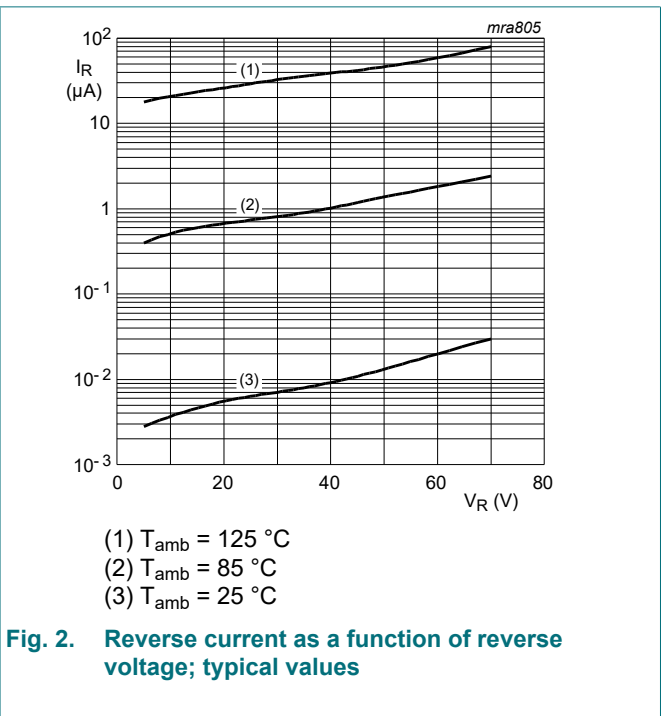
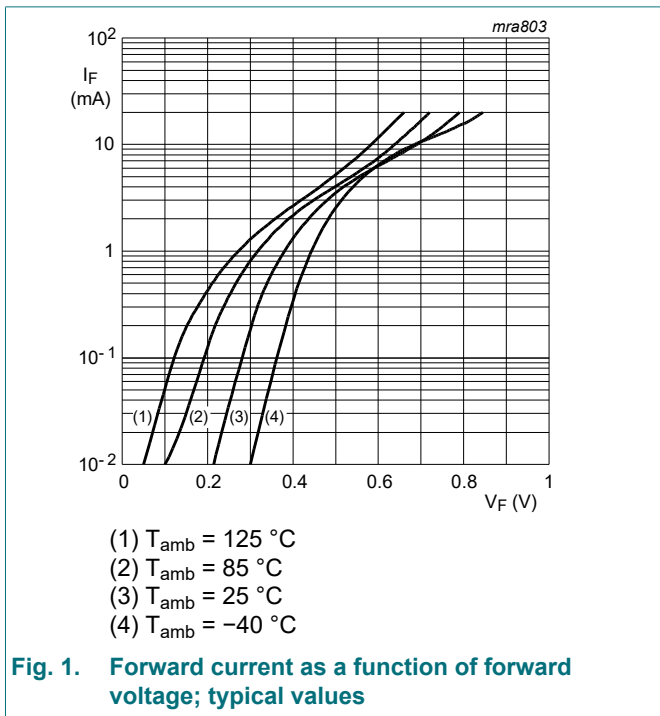
Symbol	Parameter	Conditions	Min	Typ	Max	Unit
$R_{\text{th}(j-a)}$	thermal resistance from junction to ambient	in free air	[1]	-	625	K/W

[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 <sub>F</sub>	forward voltage	I <sub>F</sub> = 1 mA; t <sub>p</sub> ≤ 300 μs; δ ≤ 0.02; pulsed; T <sub>amb</sub> = 25 °C	-	-	410	mV
		I <sub>F</sub> = 10 mA; t <sub>p</sub> ≤ 300 μs; δ ≤ 0.02; pulsed; T <sub>amb</sub> = 25 °C	-	-	750	mV
		I <sub>F</sub> = 15 mA; t <sub>p</sub> ≤ 300 μs; δ ≤ 0.02; pulsed; T <sub>amb</sub> = 25 °C	-	-	1	V
I <sub>R</sub>	reverse current	V <sub>R</sub> = 50 V; T <sub>amb</sub> = 25 °C	-	-	100	nA
		V <sub>R</sub> = 70 V; T <sub>amb</sub> = 25 °C	-	-	10	μA
C <sub>d</sub>	diode capacitance	V <sub>R</sub> = 0 V; f = 1 MHz; T <sub>amb</sub> = 25 °C	-	-	2	pF



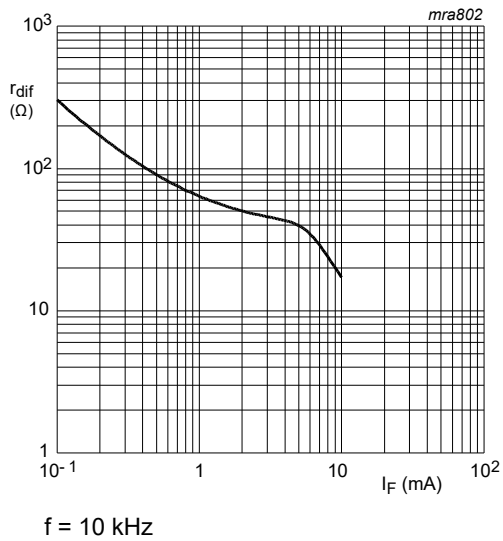


Fig. 3. Differential forward resistance as a function of forward current; typical values

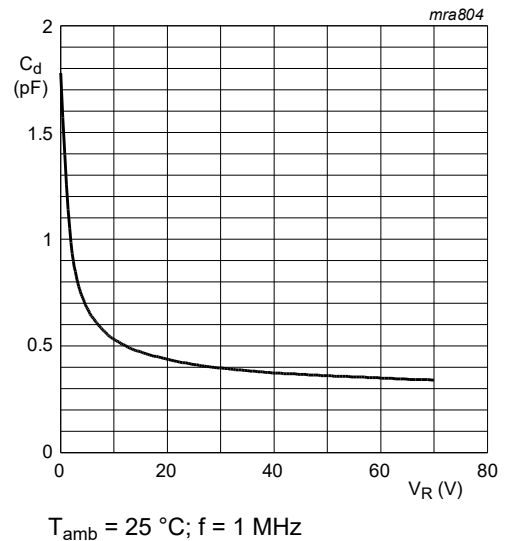


Fig. 4. Diode capacitance as a function of reverse voltage; typical values

## 11. Package outline

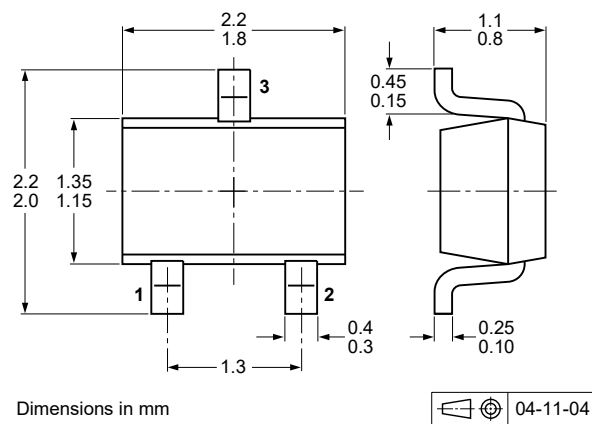


Fig. 5. Package outline SC-70 (SOT323)

## 12. Soldering

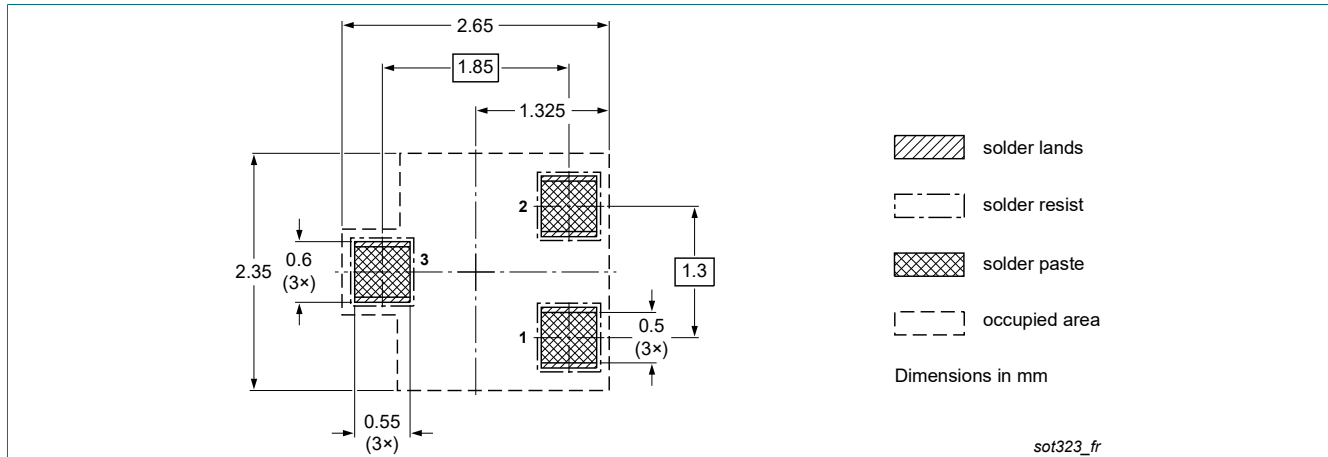


Fig. 6. Reflow soldering footprint for SC-70 (SOT323)

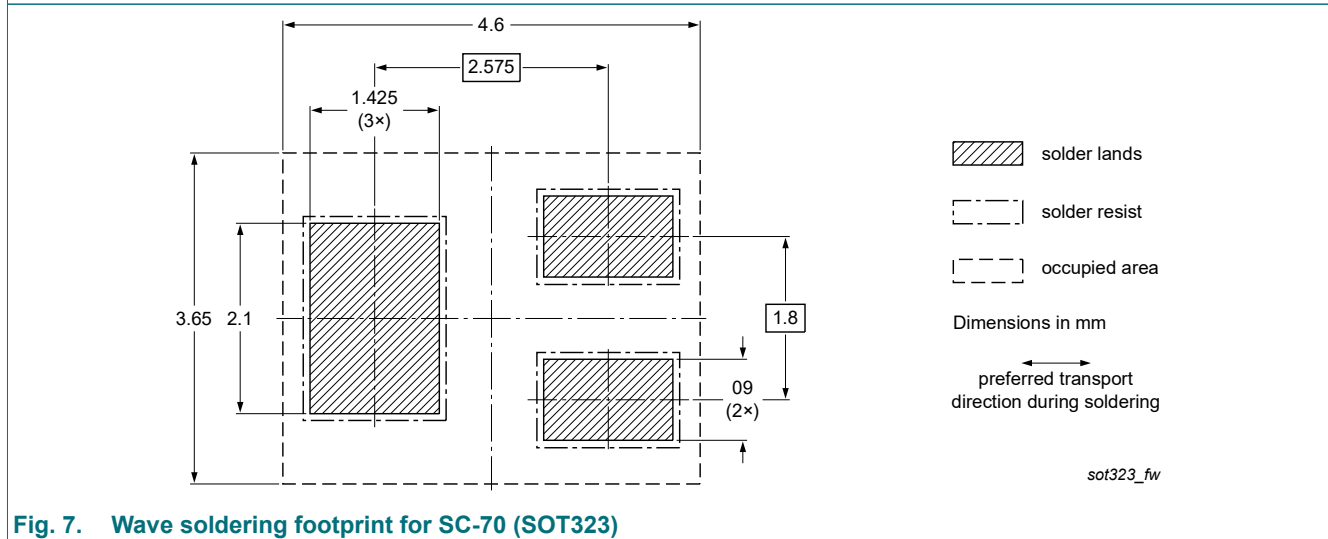


Fig. 7. Wave soldering footprint for SC-70 (SOT323)

## 13. Revision history

Table 8. Revision history

Data sheet ID	Release date	Data sheet status	Change notice	Supersedes
BAS70W v.12	20230119	Product data sheet	-	BAS70W v.11
Modifications:	<ul style="list-style-type: none"> <li>Characteristics, I<sub>R</sub>: Conditions corrected</li> </ul>			
BAS70W v.11	20230101	Product data sheet	-	BAS70_1PS7XSB70_SER_10
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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