



BAV70S

High-speed switching double diode

14 July 2026

Product data sheet

1. General description

High-speed switching double diode, encapsulated in a very small SOT363-3 (SC-88) Surface-Mounted Device (SMD) plastic package.

2. Features and benefits

- High switching speed: $t_{rr} \leq 4$ ns
- Low capacitance: $C_d \leq 1.5$ pF
- Low leakage current
- Reverse voltage: $V_R \leq 100$ V
- Very small SMD plastic package

3. Applications

- High-speed switching
- General-purpose switching

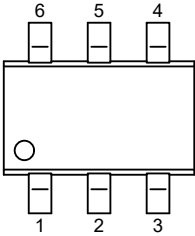
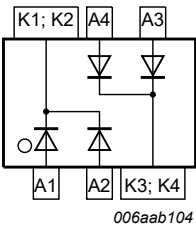
4. Quick reference data

Table 1. Quick reference data

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Per diode						
I_R	reverse current	$V_R = 80$ V; $T_{amb} = 25$ °C	-	-	0.5	µA
V_R	reverse voltage		-	-	100	V
t_{rr}	reverse recovery time	$I_F = 10$ mA; $I_R = 10$ mA; $I_{R(meas)} = 1$ mA; $R_L = 100$ Ω; $T_{amb} = 25$ °C	-	-	4	ns

5. Pinning information

Table 2. Pinning information

Pin	Symbol	Description	Simplified outline	Graphic symbol
1	A1	anode (diode 1)	 Transparent top view TSSOP6 (SOT363-3)	 006aab104
2	A2	anode (diode 2)		
3	K3; K4	common cathode (diode 3 and diode 4)		
4	A3	anode (diode 3)		
5	A4	anode (diode 4)		
6	K1; K2	common cathode (diode 1 and diode 2)		

6. Ordering information

Table 3. Ordering information

Type number	Package		
	Name	Description	Version
BAV70S	TSSOP6	Plastic surface-mounted package; 6 leads	SOT363-3

7. Marking

Table 4. Marking codes

Type number	Marking code[1]
BAV70S	A4%

[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
Per diode						
V _R	reverse voltage			-	100	V
V _{RRM}	repetitive peak reverse voltage			-	100	V
I _F	forward current	T _s = 60 °C		-	250	mA
I _{FRM}	repetitive peak forward current			-	450	mA
I _{FSM}	non-repetitive peak forward current	t _p = 1 µs; square wave	[1]	-	4	A
		t _p = 1 ms; square wave	[1]	-	1	A
		t _p = 1 s; square wave	[1]	-	0.5	A
P _{tot}	total power dissipation	T _s = 60 °C	[2]	-	350	mW
Per device						
I _F	forward current	T _s = 60 °C		-	100	mA
T _j	junction temperature			-	150	°C
T _{amb}	ambient temperature			-65	150	°C
T _{stg}	storage temperature			-65	150	°C

[1] t_j = 25 °C prior to surge
[2] Device mounted on an FR4 Printed-Circuit Board (PCB), single-sided copper, tin-plated and standard footprint.

9. Thermal characteristics

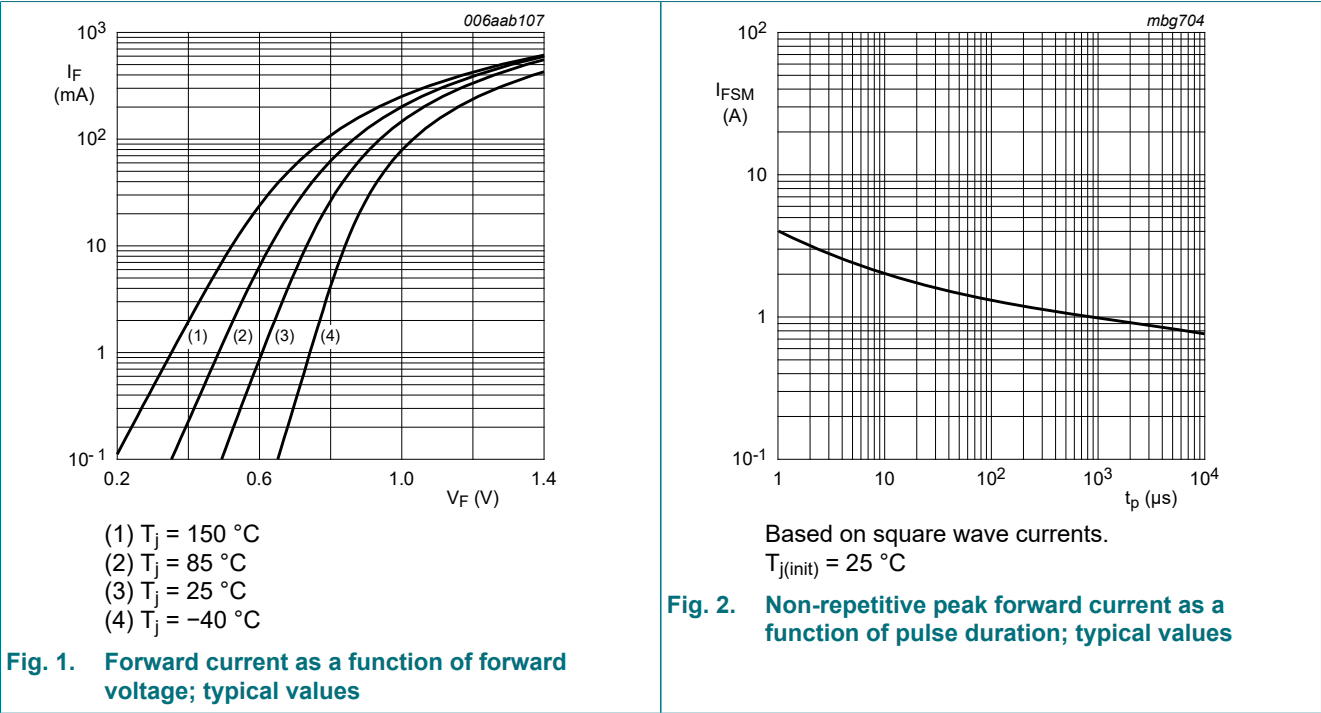
Table 6. Thermal characteristics

Symbol	Parameter	Conditions		Min	Typ	Max	Unit
R _{th(j-sp)}	thermal resistance from junction to solder point			-	-	255	K/W

10. Characteristics

Table 7. Characteristics

Symbol	Parameter	Conditions		Min	Typ	Max	Unit
Per diode							
V _F	forward voltage	I _F = 1 mA; pulsed; t _p ≤ 300 μs; δ ≤ 0.02; T _{amb} = 25 °C		-	-	715	mV
		I _F = 10 mA; pulsed; t _p ≤ 300 μs; δ ≤ 0.02; T _{amb} = 25 °C		-	-	855	mV
		I _F = 50 mA; pulsed; t _p ≤ 300 μs; δ ≤ 0.02; T _{amb} = 25 °C		-	-	1	V
		I _F = 150 mA; pulsed; t _p ≤ 300 μs; δ ≤ 0.02; T _{amb} = 25 °C		-	-	1.25	V
I _R	reverse current	V _R = 25 V; T _{amb} = 25 °C		-	-	30	nA
		V _R = 80 V; T _{amb} = 25 °C		-	-	0.5	μA
		V _R = 25 V; T _j = 150 °C		-	-	30	μA
		V _R = 80 V; T _j = 150 °C		-	-	100	μA
C _d	diode capacitance	V _R = 0 V; f = 1 MHz; T _{amb} = 25 °C		-	-	1.5	pF
t _{rr}	reverse recovery time	I _F = 10 mA; I _R = 10 mA; I _{R(meas)} = 1 mA; R _L = 100 Ω; T _{amb} = 25 °C		-	-	4	ns
V _{FRM}	peak forward recovery voltage	I _F = 10 mA; t _r = 20 ns; T _{amb} = 25 °C		-	-	1.75	V



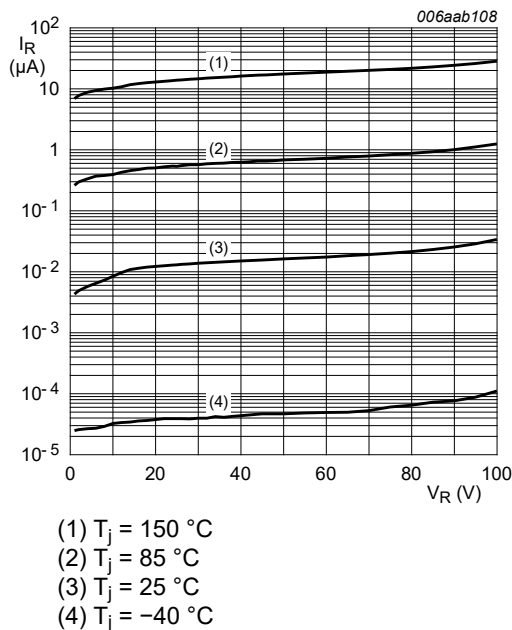


Fig. 3. Reverse current as a function of reverse voltage; typical values

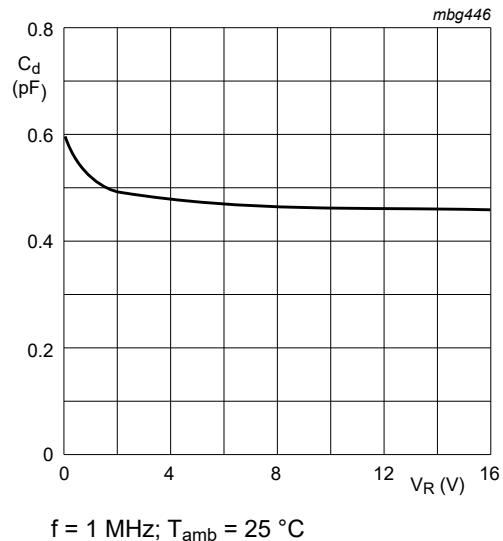


Fig. 4. Diode capacitance as a function of reverse voltage; typical values

11. Test information

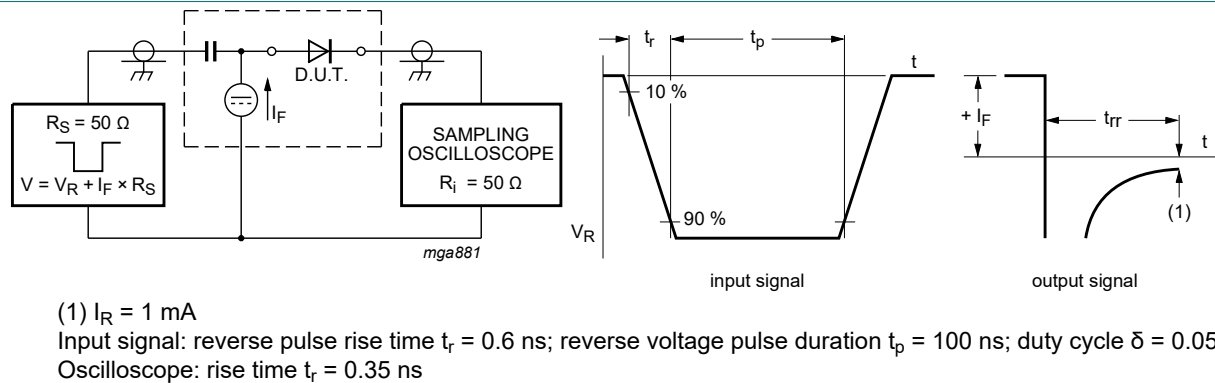


Fig. 5. Reverse recovery time test circuit and waveforms

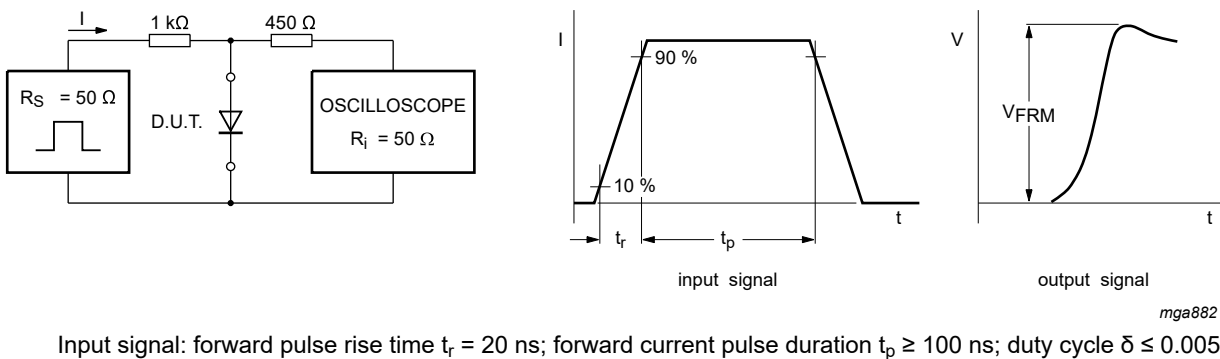


Fig. 6. Forward recovery voltage test circuit and waveforms

12. Package outline

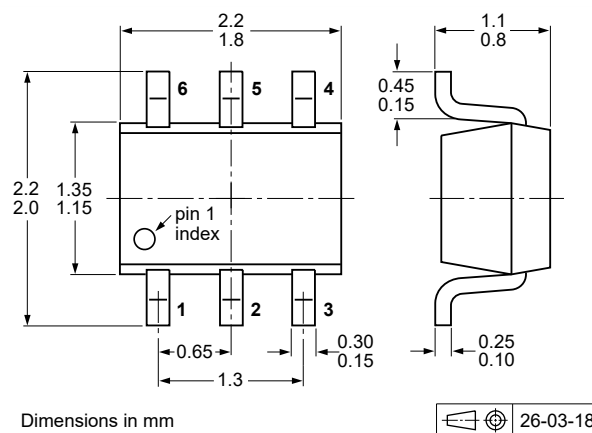


Fig. 7. Package outline TSSOP6 (SOT363-3)

13. Soldering

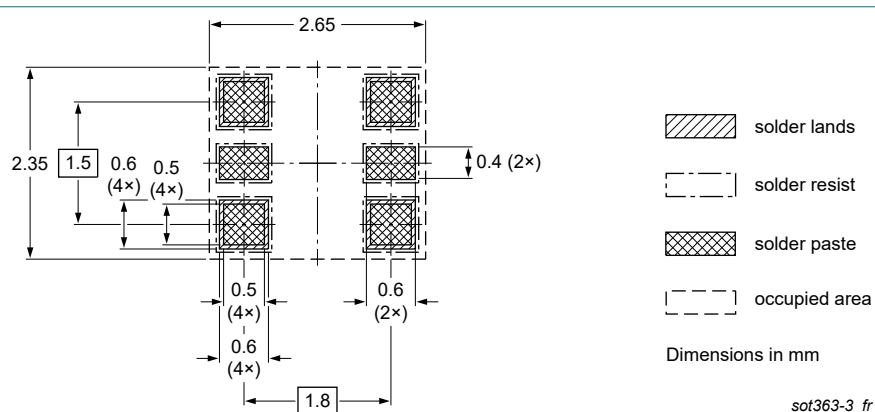


Fig. 8. Reflow soldering footprint for TSSOP6 (SOT363-3)

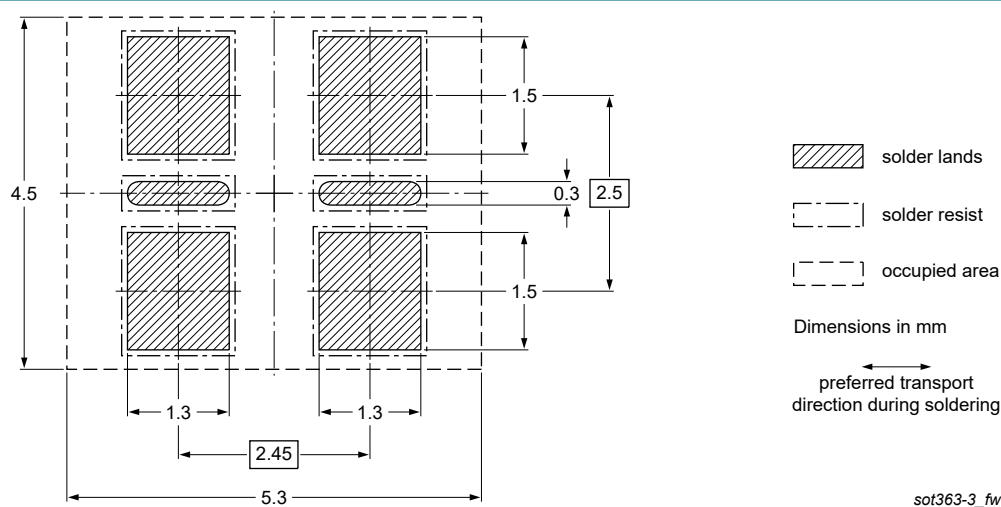


Fig. 9. Wave soldering footprint for TSSOP6 (SOT363-3)

14. Revision history

Table 8. Revision history

Data sheet ID	Release date	Data sheet status	Change notice	Supersedes
BAV70S v.10	20260714	Product data sheet	-	BAV70S v.9
Modification:	• Package changed from SOT363 to SOT363-3			
BAV70S v.9	20220701	Product data sheet	-	BAV70_SER v.8
BAV70_SER v.8	20150318	Product data sheet	-	BAV70_SER_7
BAV70_SER_7	20071127	Product data sheet	-	BAV70_6 BAV70S_2 BAV70T_3 BAV70W_6
BAV70_6	20020403	Product specification	-	BAV70_5
BAV70S_2	19971021	Product specification	-	BAV70S_1
BAV70T_3	20040204	Product specification	-	BAV70T_2
BAV70W_6	20020405	Product specification	-	BAV70W_5

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".
- [3] The product status of device(s) described in this document may have changed since this document was published and may differ in case of multiple devices. The latest product status information is available on the internet at <https://www.nexperia.com>.

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