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Kind regards,

Team Nexperia

Product data sheet

1. General description

Planar Schottky barrier diode with an integrated guard ring for stress protection, encapsulated in a very small SOT323 (SC-70) Surface-Mounted Device (SMD) plastic package.

2. Features and benefits

- Low forward voltage
- Low capacitance
- AEC-Q101 qualified

3. Applications

- Ultra high-speed switching
- Line termination
- Voltage clamping
- Reverse polarity protection

4. Quick reference data

Table 1. Qui	able 1. Quick reference data						
Symbol	Parameter	Conditions		Min	Тур	Max	Unit
l _F	forward current			-	-	500	mA
V _R	reverse voltage			-	-	40	V
V _F	forward voltage	I _F = 500 mA; T _{amb} = 25 °C		-	-	550	mV

5. Pinning information

Table 2.	Pinning	information		
Pin	Symbol	Description	Simplified outline	Graphic symbol
1	А	anode	3	ĸ
2	n.c.	not connected		
3	к	cathode	1 ☐ ☐ 2 SC-70 (SOT323)	aaa-005805





6. Ordering information

able 3. Ordering information					
Type number	Package				
	Name	Description	Version		
1PS70SB20	SC-70	plastic surface-mounted package; 3 leads	SOT323		

7. Marking

Table 4. Marking codes	
Type number	Marking code
	[1]
1PS70SB20	7%2

[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	Мах	Unit
V _R	reverse voltage		-	40	V
l _F	forward current		-	500	mA
I _{FSM}	non-repetitive peak forward current	t_p = 8.3 ms; $T_{j(init)}$ = 25 °C; half sine wave	-	2	A
Tj	junction temperature		-	125	°C
T _{amb}	ambient temperature		-55	125	°C
T _{stg}	storage temperature		-65	150	°C

9. Thermal characteristics

Table 6. The	rmal characteristics						
Symbol	Parameter	Conditions		Min	Тур	Max	Unit
R _{th(j-a)}	thermal resistance from junction to ambient	in free air	[1]	-	-	500	K/W

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

Schottky barrier single diode

10. Characteristics

Table 7. Cl	able 7. Characteristics						
Symbol	Parameter	Conditions		Min	Тур	Max	Unit
V _F	forward voltage	I _F = 500 mA; T _{amb} = 25 °C		-	-	550	mV
I _R	reverse current	V _R = 35 V; T _{amb} = 25 °C		-	-	100	μA
		V_R = 35 V; pulsed; t_p = 300 µs; δ = 0.02 ; T _j = 100 °C		-	-	10	mA
C _d	diode capacitance	V_R = 0 V; f = 1 MHz; T_{amb} = 25 °C		60	-	90	pF



NXP Semiconductors

1PS70SB20

Schottky barrier single diode



11. Test information

11.1 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



Schottky barrier single diode

13. Soldering



14. Revision history

Table 8. Revision history					
Data sheet ID	Release date	Data sheet status	Change notice	Supersedes	
1PS70SB20 v.2	20121217	Product data sheet	-	1PS70SB20 v.1	

1PS70SB20

Schottky barrier single diode

Data sheet ID	Release date	Data sheet status	Change notice	Supersedes
Modifications:	 The format of this d of NXP Semiconduc Legal texts have be Sections 1 to 3 update Section 4 "Quick reference" Section 6 "Ordering Section 7 "Marking" Table 5 "Limiting value Figure 2 updated Section 11 "Test information of the section 13 "Soldering Section 14 "Legal in 	ocument has been redes ctors. en adapted to the new co ated ference data" added information" added lues": ambient temperatu prmation" added ed by minimized package ng" added iformation" updated	igned to comply with the ompany name where app re T _{amb} added outline drawing	new identity guidelines ropriate.
1PS70SB20 v.1	20010316	Product data sheet	-	-

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15. Legal information

15.1 Data sheet status

Document status [1][2]	Product status [<u>3]</u>	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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