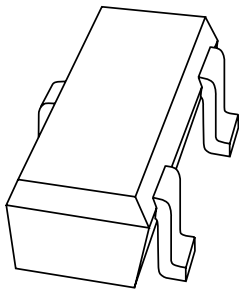


DATA SHEET



1PS59SB21 Schottky barrier diode

Product specification
Supersedes data of 1998 Jul 28

1999 May 05

Schottky barrier diode

1PS59SB21

FEATURES

- Ultra fast switching speed
- Low forward voltage
- Guard ring protected
- Small SMD package.

DESCRIPTION

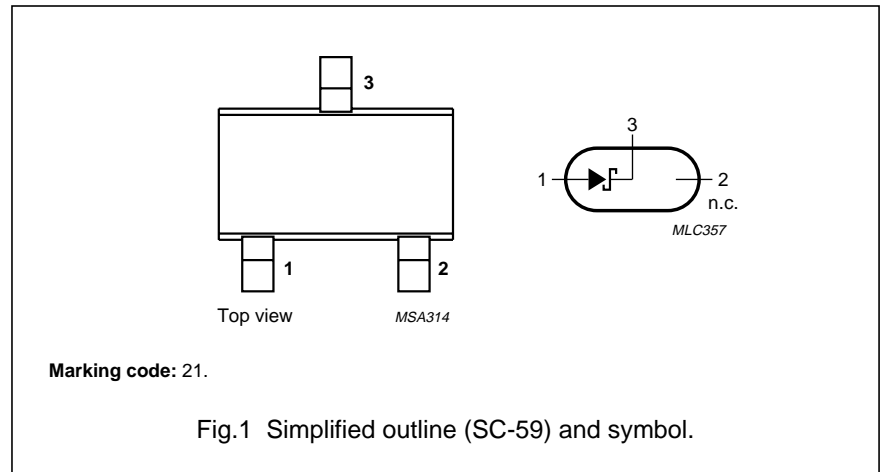
Planar Schottky barrier diode with an integrated guard ring for stress protection in an SC-59 small plastic SMD package.

PINNING

PIN	DESCRIPTION
1	anode
2	not connected
3	cathode

APPLICATIONS

- High-speed switching
- Voltage clamping
- Protection circuits.



LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 134).

SYMBOL	PARAMETER	MIN.	MAX.	UNIT
V_R	continuous reverse voltage	–	40	V
I_F	continuous forward current	–	200	mA
I_{FSM}	non-repetitive peak forward current	–	1	A
T_{stg}	storage temperature	–65	+150	°C
T_j	junction temperature	–	125	°C

Schottky barrier diode

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ELECTRICAL CHARACTERISTICS $T_j = 25\text{ °C}$ unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_F	forward voltage	see Fig.2			
		$I_F = 10\text{ mA}$	–	300	mV
		$I_F = 100\text{ mA}$	–	420	mV
		$I_F = 200\text{ mA}$	–	550	mV
I_R	reverse current	$V_R = 30\text{ V}$; note 1; see Fig.3	–	15	μA
		$V_R = 30\text{ V}$; $T_j = 100\text{ °C}$; note 1; see Fig.3	–	3	mA
C_d	diode capacitance	$f = 1\text{ MHz}$; $V_R = 0$; see Fig.4	40	50	pF

Note

1. Pulse test: $t_p = 300\text{ }\mu\text{s}$; $\delta = 0.02$.

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-a}$	thermal resistance from junction to ambient	note 1	500	K/W

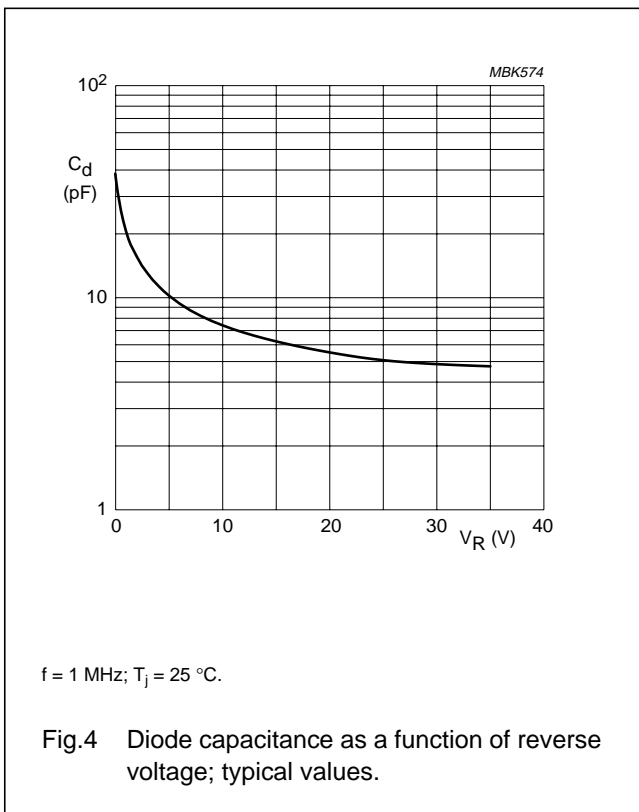
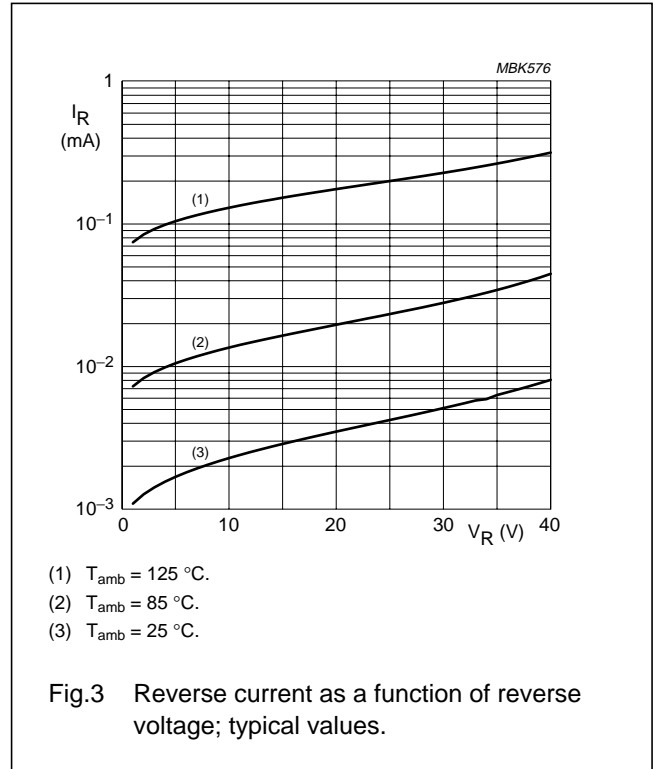
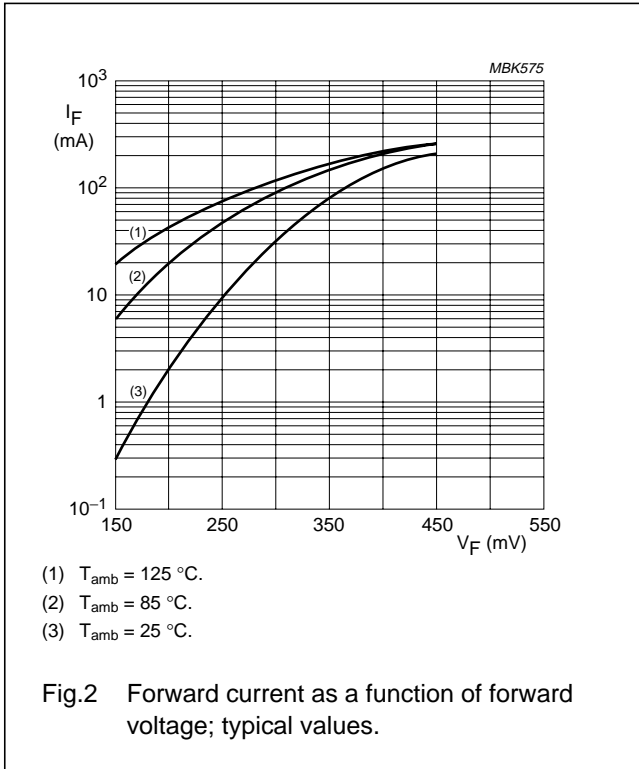
Note

1. Refer to SC-59 standard mounting conditions.

Schottky barrier diode

1PS59SB21

GRAPHICAL DATA



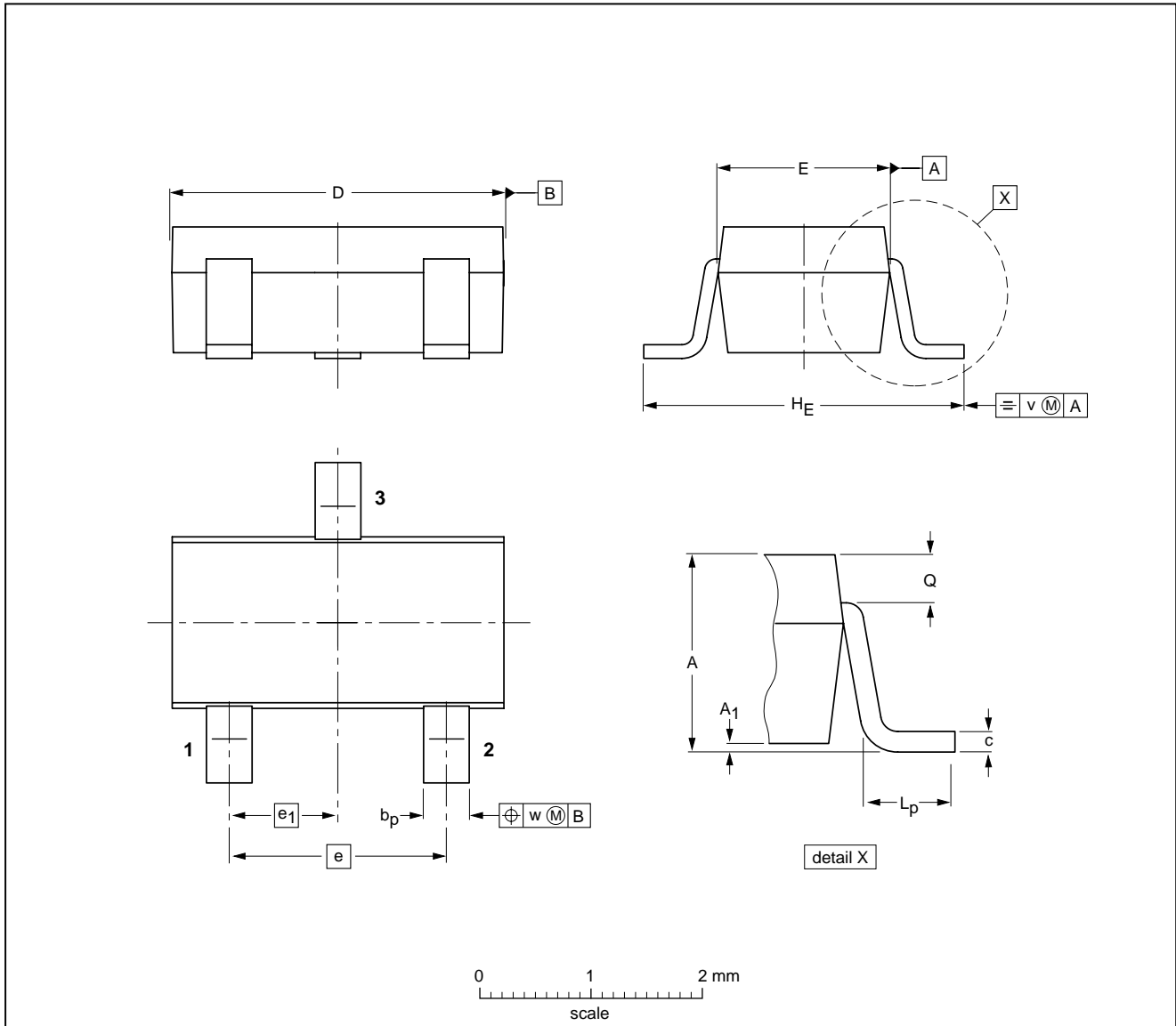
Schottky barrier diode

1PS59SB21

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT346



DIMENSIONS (mm are the original dimensions)

UNIT	A	A ₁	b _p	c	D	E	e	e ₁	H _E	L _p	Q	v	w
mm	1.3 1.0	0.1 0.013	0.50 0.35	0.26 0.10	3.1 2.7	1.7 1.3	1.9	0.95	3.0 2.5	0.6 0.2	0.33 0.23	0.2	0.2

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOT346		TO-236	SC-59			98-07-17

Schottky barrier diode**1PS59SB21**

DEFINITIONS

Data sheet status	
Objective specification	This data sheet contains target or goal specifications for product development.
Preliminary specification	This data sheet contains preliminary data; supplementary data may be published later.
Product specification	This data sheet contains final product specifications.
Limiting values	
Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 134). Stress above one or more of the limiting values may cause permanent damage to the device. These are stress ratings only and operation of the device at these or at any other conditions above those given in the Characteristics sections of the specification is not implied. Exposure to limiting values for extended periods may affect device reliability.	
Application information	
Where application information is given, it is advisory and does not form part of the specification.	

LIFE SUPPORT APPLICATIONS

These products are not designed for use in life support appliances, devices, or systems where malfunction of these products can reasonably be expected to result in personal injury. Philips customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Philips for any damages resulting from such improper use or sale.

Schottky barrier diode

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Printed in The Netherlands

115002/00/02/pp8

Date of release: 1999 May 05

Document order number: 9397 750 05903

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