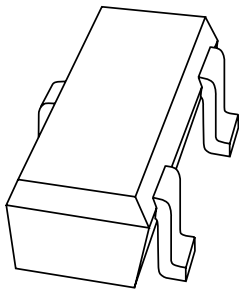


# DATA SHEET



## **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

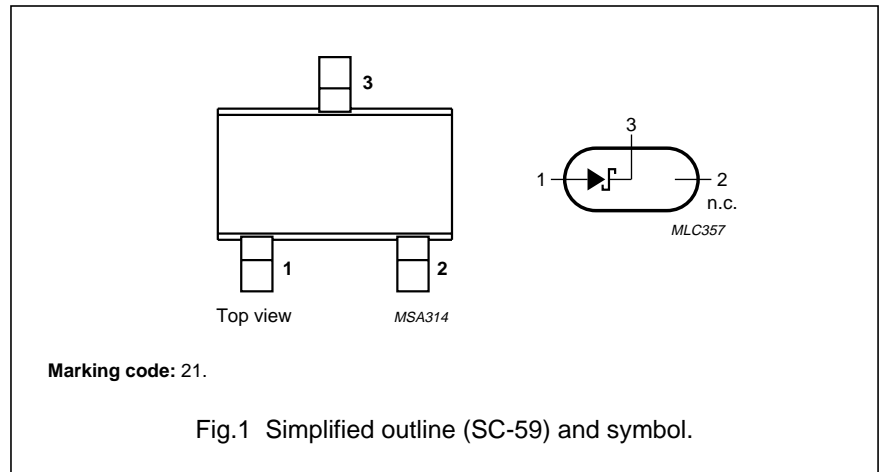
Planar Schottky barrier diode with an integrated guard ring for stress protection in an SC-59 small plastic SMD package.

### 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

1PS59SB21

**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	$\mu\text{A}$
		$V_R = 30\text{ V}$ ; $T_j = 100\text{ °C}$ ; 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

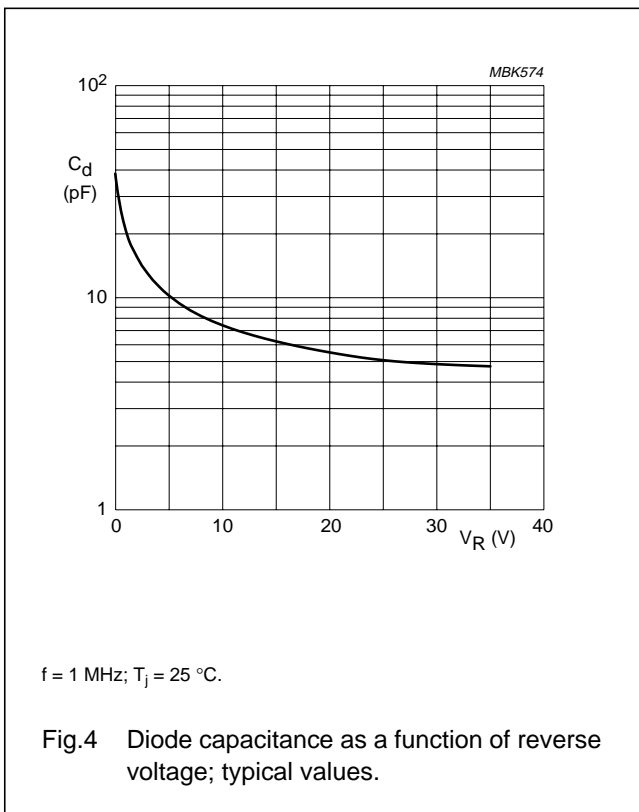
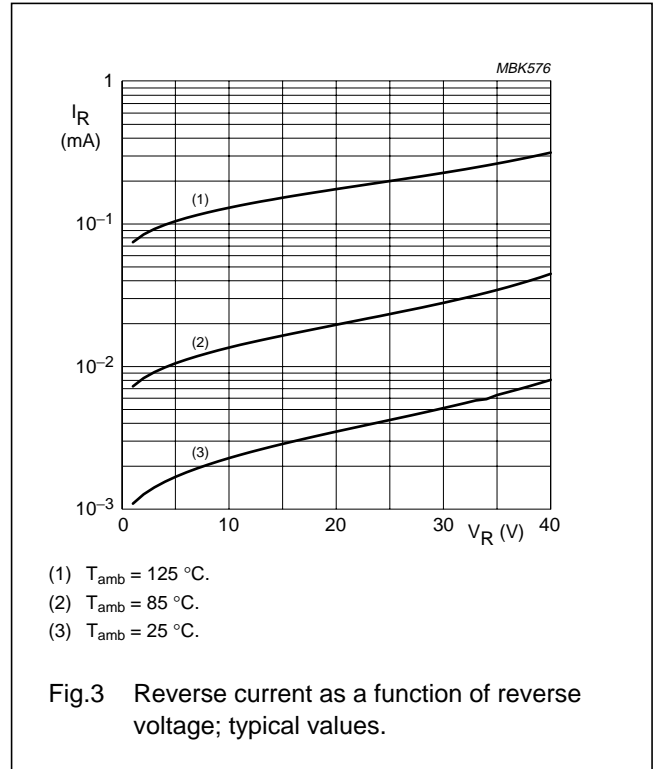
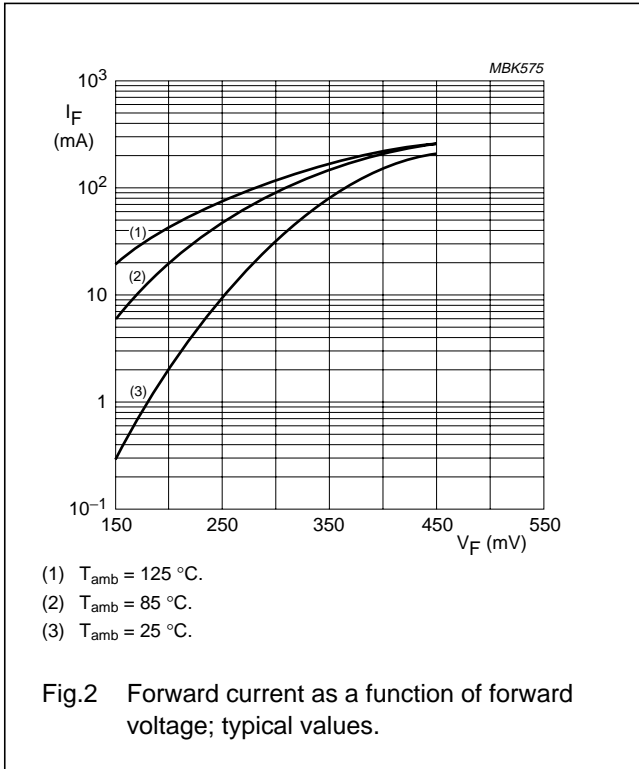
**Note**

1. Refer to SC-59 standard mounting conditions.

Schottky barrier diode

1PS59SB21

GRAPHICAL DATA



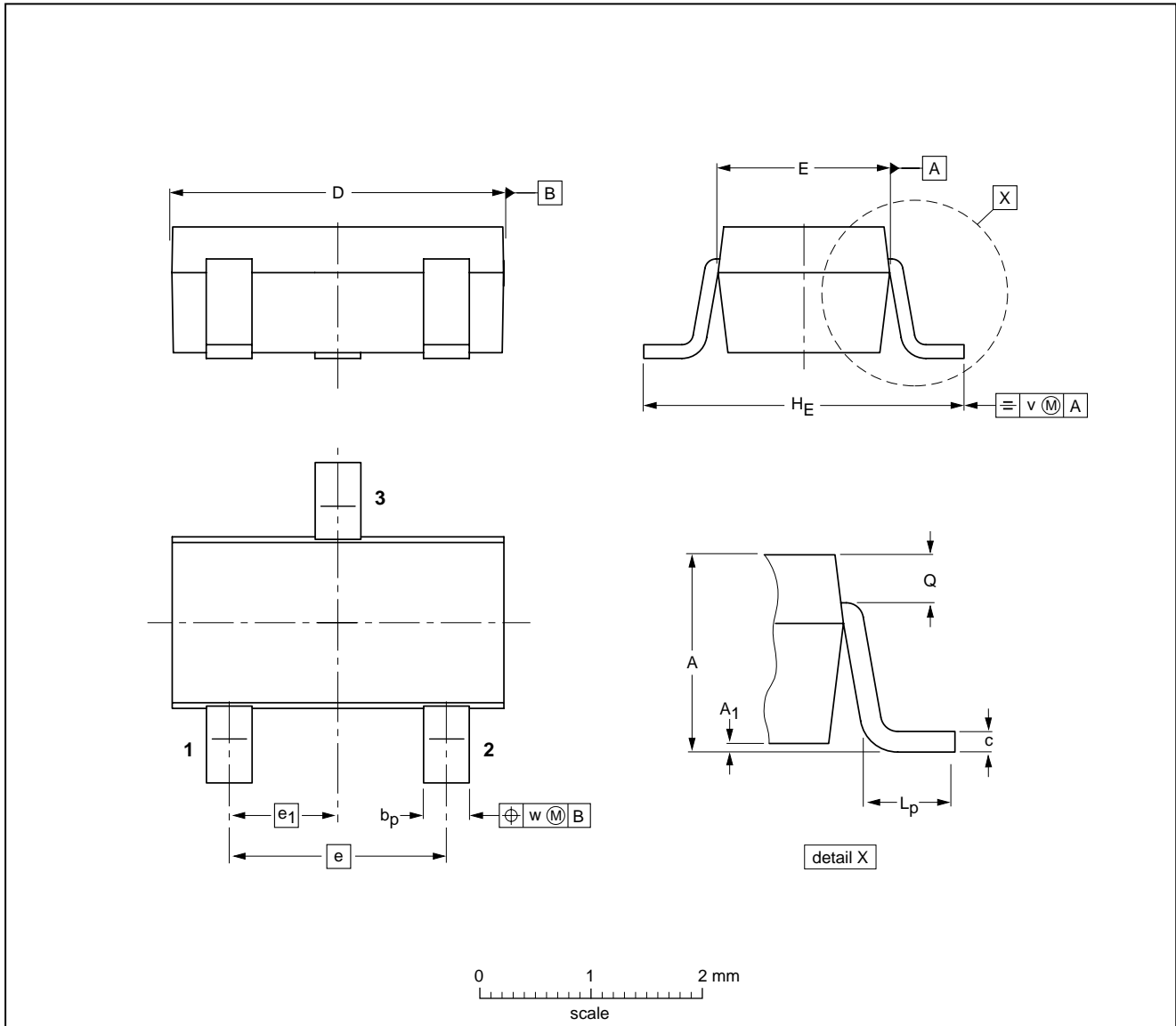
Schottky barrier diode

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PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT346



DIMENSIONS (mm are the original dimensions)

UNIT	A	A <sub>1</sub>	b <sub>p</sub>	c	D	E	e	e <sub>1</sub>	H <sub>E</sub>	L <sub>p</sub>	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

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**DEFINITIONS**

<b>Data sheet status</b>	
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.
<b>Limiting values</b>	
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.	
<b>Application information</b>	
Where application information is given, it is advisory and does not form part of the specification.	

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Schottky barrier diode

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