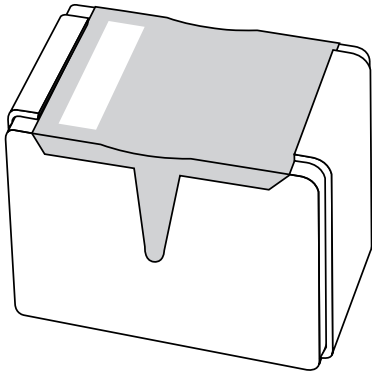


# DATA SHEET



## **BAT254** Schottky barrier diode

Product data sheet  
Supersedes data of 1999 Apr 22

2002 May 28

# Schottky barrier diode

# BAT254

### FEATURES

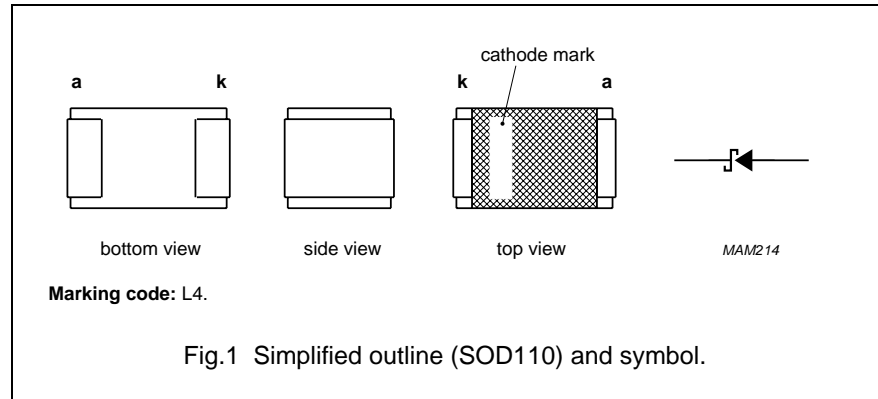
- Low forward voltage
- Guard ring protected
- Very small ceramic SMD package.

### APPLICATIONS

- Ultra high-speed switching
- Voltage clamping
- Protection circuits
- Blocking diodes.

### DESCRIPTION

Planar Schottky barrier diode encapsulated in a SOD110 very small ceramic SMD package.



### LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 60134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$V_R$	continuous reverse voltage		–	30	V
$I_F$	continuous forward current		–	200	mA
$I_{FRM}$	repetitive peak forward current	$t_p \leq 1 \text{ s}; \delta \leq 0.5$	–	300	mA
$I_{FSM}$	non-repetitive peak forward current	$t_p < 10 \text{ ms}$	–	600	mA
$T_{stg}$	storage temperature		–65	+150	°C
$T_j$	junction temperature		–	125	°C
$T_{amb}$	operating ambient temperature		–65	+125	°C

## Schottky barrier diode

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**ELECTRICAL CHARACTERISTICS** $T_{amb} = 25\text{ }^{\circ}\text{C}$  unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MAX.	UNIT
$V_F$	forward voltage	see Fig.2 $I_F = 0.1\text{ mA}$ $I_F = 1\text{ mA}$ $I_F = 10\text{ mA}$ $I_F = 30\text{ mA}$ $I_F = 100\text{ mA}$	240 320 400 500 800	mV mV mV mV mV
$I_R$	reverse current	$V_R = 25\text{ V}$ ; note 1; see Fig.3	2	$\mu\text{A}$
$t_{rr}$	reverse recovery time	when switched from $I_F = 10\text{ mA}$ to $I_R = 10\text{ mA}$ ; $R_L = 100\ \Omega$ ; measured at $I_R = 1\text{ mA}$ ; see Fig.5	5	ns
$C_d$	diode capacitance	$f = 1\text{ MHz}$ ; $V_R = 1\text{ V}$ ; see Fig.4	10	pF

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

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-a}$	thermal resistance from junction to ambient	note 1	315	K/W

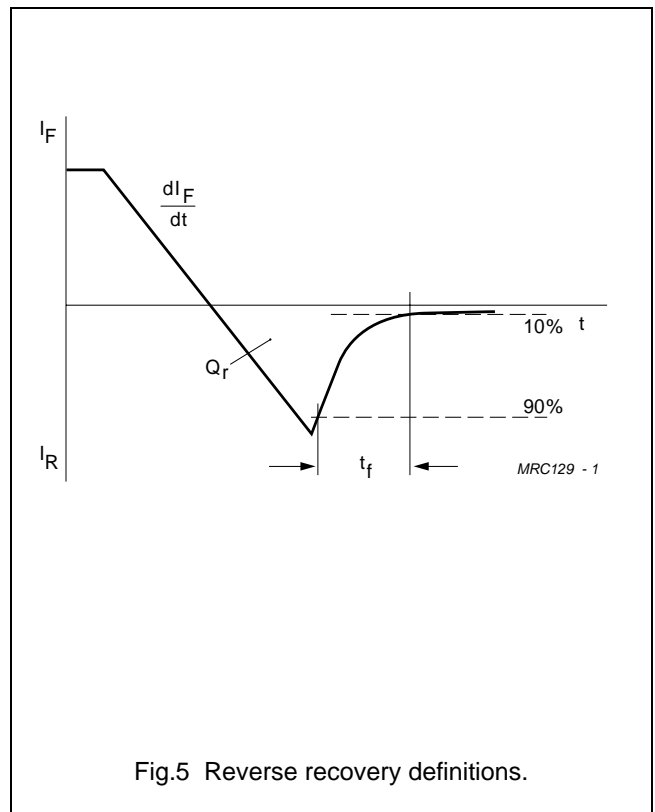
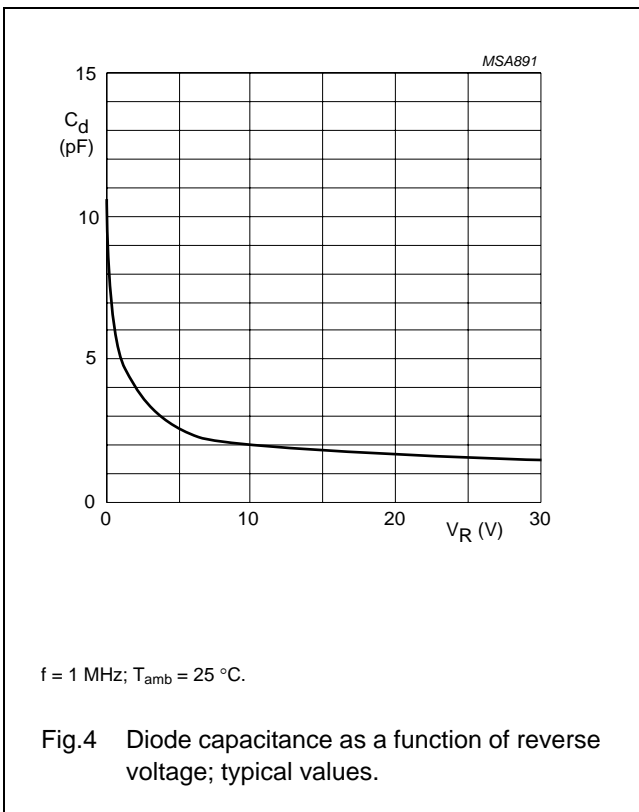
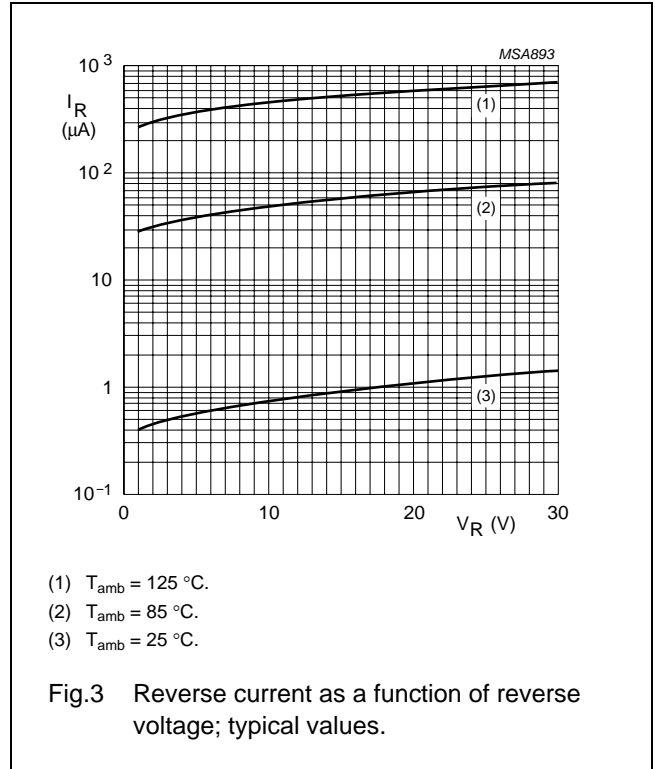
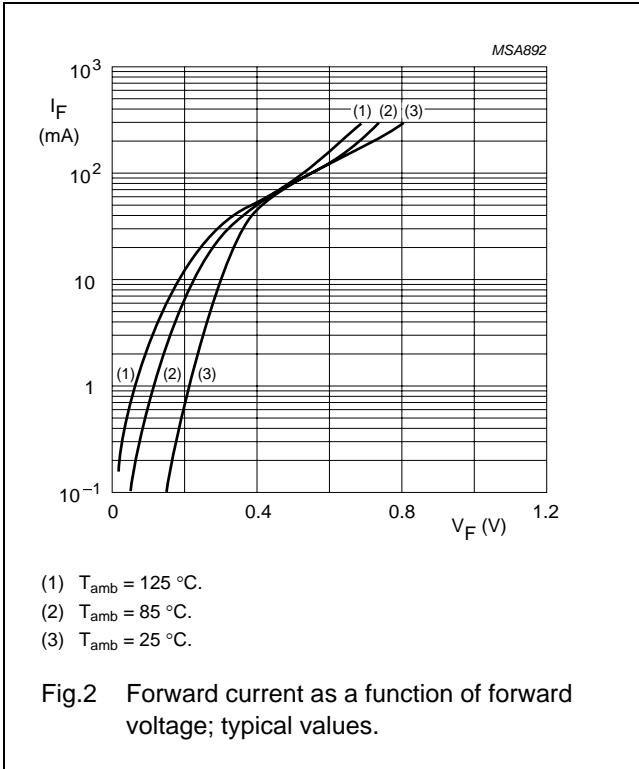
**Note**

1. Refer to SOD110 standard mounting conditions.

Schottky barrier diode

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GRAPHICAL DATA



# Schottky barrier diode

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## PACKAGE OUTLINE

Very small ceramic rectangular surface mounted package

SOD110

The technical drawing shows three views of the SOD110 package. The top view shows a rectangular package with a width dimension  $D$  and a height dimension  $A$ . The side view shows a thickness dimension  $E$  and a lead length dimension  $y$ . The front view shows a central cathode region with a cross-hatched pattern, flanked by two leads labeled 1 and 2. A 'cathode identifier' is indicated on the left lead. A scale bar below the front view shows 0, 0.5, and 1 mm.

**DIMENSIONS (mm are the original dimensions)**

UNIT	A max.	D	E	y
mm	1.6	2.10 1.90	1.40 1.10	0.1

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOD110						97-04-14

# Schottky barrier diode

BAT254

## DATA SHEET STATUS

DOCUMENT STATUS <sup>(1)</sup>	PRODUCT STATUS <sup>(2)</sup>	DEFINITION
Objective data sheet	Development	This document contains data from the objective specification for product development.
Preliminary data sheet	Qualification	This document contains data from the preliminary specification.
Product data sheet	Production	This document contains the product specification.

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Printed in The Netherlands

613514/03/pp7

Date of release: 2002 May 28

Document order number: 9397 750 09733

