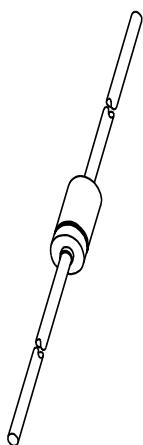


# DATA SHEET



## **BAT85** Schottky barrier diode

Product specification  
Supersedes data of February 1992

1996 Mar 20

**Schottky barrier diode****BAT85****FEATURES**

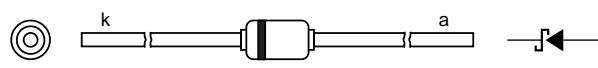
- Low forward voltage
- Guard ring protected
- Hermetically-sealed leaded glass package.

**APPLICATIONS**

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

**DESCRIPTION**

Planar Schottky barrier diode with an integrated protection ring against static discharges, encapsulated in a hermetically-sealed subminiature SOD68 (DO-34) package. The diode is suitable for mounting on a 2 E (5.08 mm) pitch.



MAM193

Fig.1 Simplified outline (SOD68; DO-34), pin configuration and symbol.

**LIMITING VALUES**

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$V_R$	continuous reverse voltage		–	30	V
$I_F$	continuous forward current		–	200	mA
$I_{F(AV)}$	average forward current	PCB mounting, lead length = 4 mm; $V_{RWM} = 25$ V; $a = 1.57$ ; $\delta = 0.5$ ; $T_{amb} = 50$ °C; see Fig.2	–	200	mA
$I_{FRM}$	repetitive peak forward current	$t_p \leq 1$ s; $\delta 0.5$	–	300	mA
$I_{FSM}$	non-repetitive peak forward current	$t_p \leq 10$ ms	–	5	A
$T_{stg}$	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

 $T_{amb} = 25^\circ C$  unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MAX.	UNIT
$V_F$	forward voltage	see Fig.3 $I_F = 0.1 \text{ mA}$ $I_F = 1 \text{ mA}$ $I_F = 10 \text{ mA}$ $I_F = 30 \text{ mA}$ $I_F = 100 \text{ mA}$	240 320 400 500 800	mV
$I_R$	reverse current	$V_R = 25 \text{ V}$ ; see Fig.4	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.6	4	ns
$C_d$	diode capacitance	$f = 1 \text{ MHz}$ ; $V_R = 1 \text{ V}$ ; see Fig.5	10	pF

## THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-a}$	thermal resistance from junction to ambient	note 1	320	K/W

## Note

1. Refer to SOD68 standard mounting conditions.

## Schottky barrier diode

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## GRAPHICAL DATA

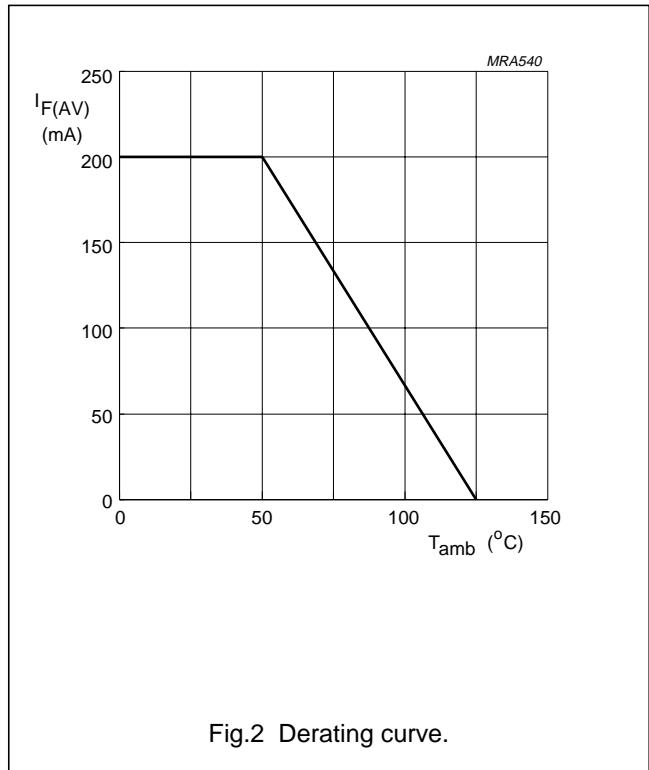


Fig.2 Derating curve.

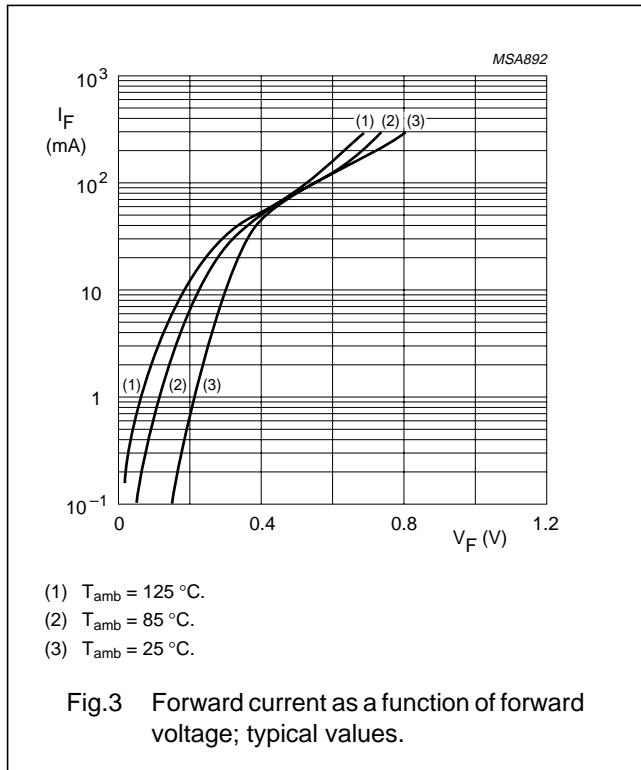
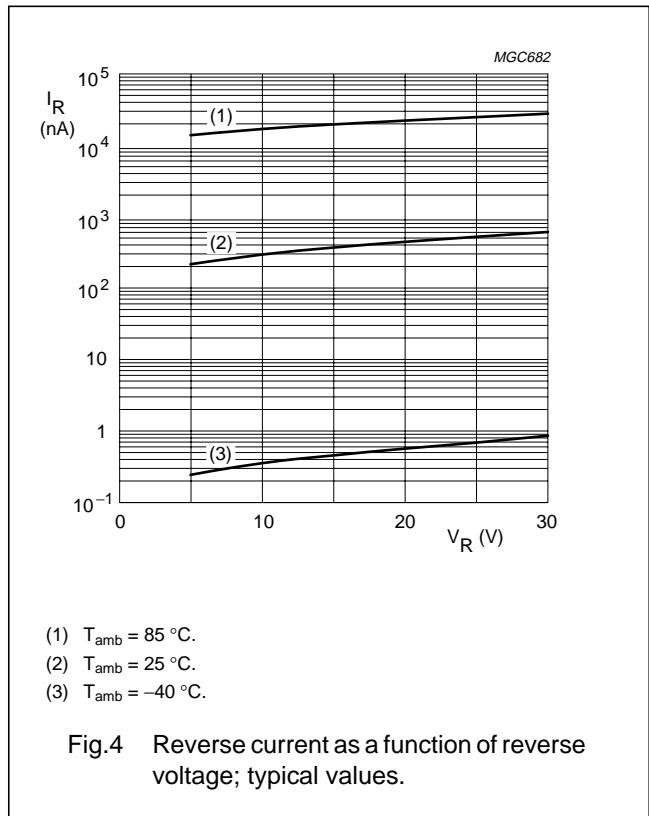


Fig.3 Forward current as a function of forward voltage; typical values.



- (1)  $T_{amb} = 85$   $^{\circ}$ C.
- (2)  $T_{amb} = 25$   $^{\circ}$ C.
- (3)  $T_{amb} = -40$   $^{\circ}$ C.

Fig.4 Reverse current as a function of reverse voltage; typical values.

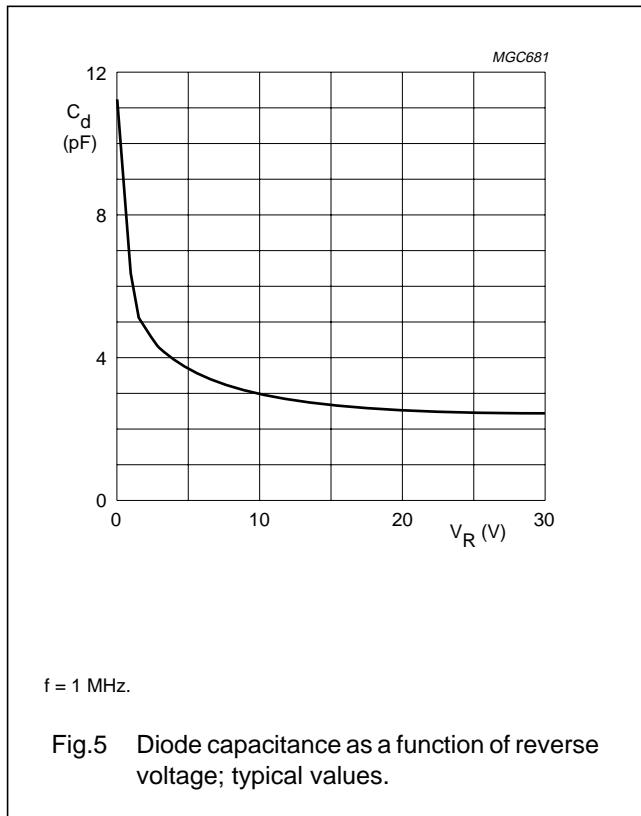
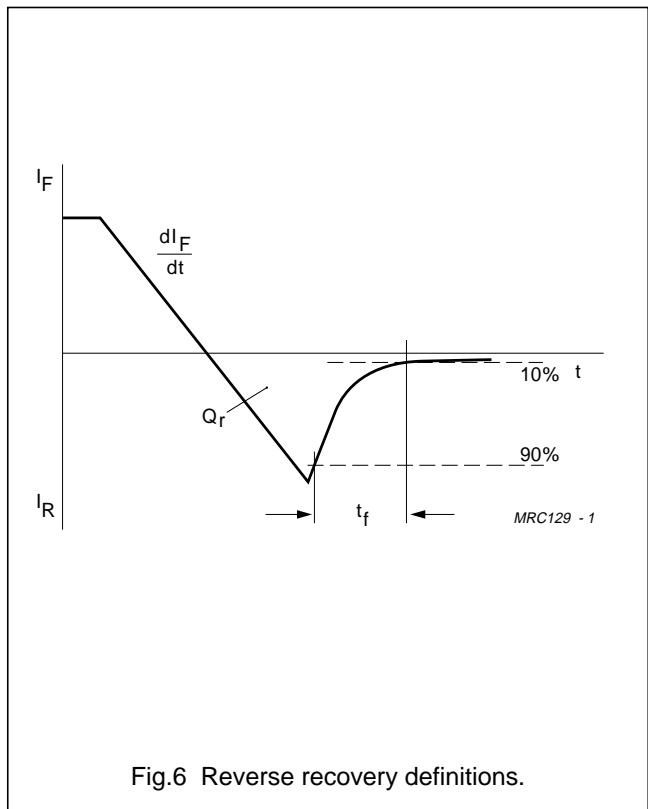
 $f = 1$  MHz.

Fig.5 Diode capacitance as a function of reverse voltage; typical values.

## Schottky barrier diode

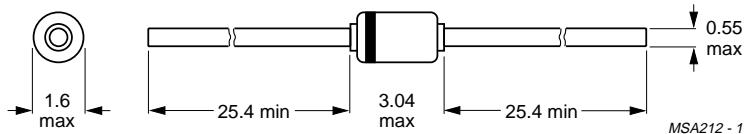
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## Schottky barrier diode

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## PACKAGE OUTLINE



Dimensions in mm.

Cathode indicated by a coloured band.

The diodes are type branded.

Fig.7 SOD68; (DO-34).

## 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

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