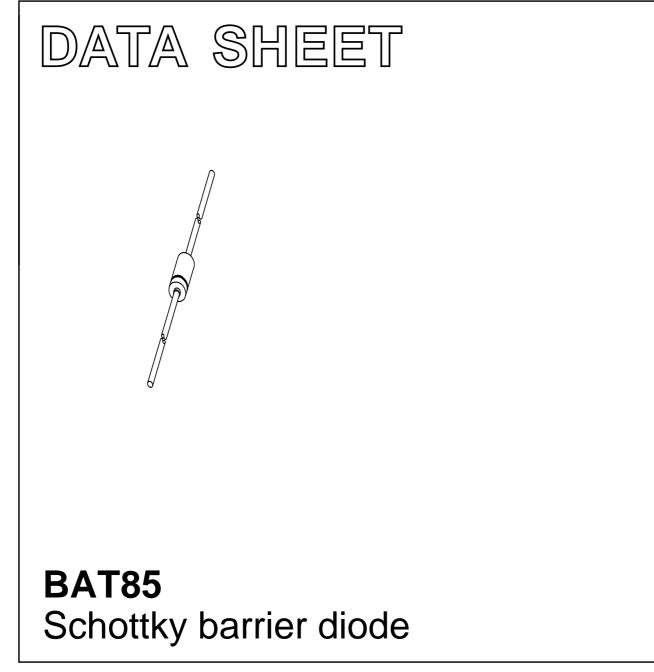
# DISCRETE SEMICONDUCTORS



Product specification Supersedes data of February 1992 1996 Mar 20



#### **Product specification**

### 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.

#### LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V <sub>R</sub>	continuous reverse voltage		_	30	V
I <sub>F</sub>	continuous forward current		_	200	mA
I <sub>F(AV)</sub>	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 <sub>FRM</sub>	repetitive peak forward current	$t_p \le 1 \text{ s}; \delta 0.5$	-	300	mA
I <sub>FSM</sub>	non-repetitive peak forward current	$t_p \le 10 \text{ ms}$	_	5	A
T <sub>stg</sub>	storage temperature		-65	+150	°C
Tj	junction temperature		_	125	°C
T <sub>amb</sub>	operating ambient temperature		-65	+125	°C

#### 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.

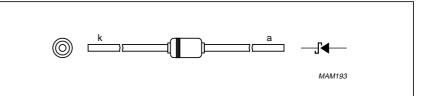


Fig.1 Simplified outline (SOD68; DO-34), pin configuration and symbol.

### BAT85

#### ELECTRICAL CHARACTERISTICS

 $T_{amb}$  = 25 °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MAX.	UNIT
V <sub>F</sub>	forward voltage	see Fig.3		
		I <sub>F</sub> = 0.1 mA	240	mV
		I <sub>F</sub> = 1 mA	320	mV
		I <sub>F</sub> = 10 mA	400	mV
		I <sub>F</sub> = 30 mA	500	mV
		I <sub>F</sub> = 100 mA	800	mV
I <sub>R</sub>	reverse current	V <sub>R</sub> = 25 V; see Fig.4	2	μA
t <sub>rr</sub>	reverse recovery time	when switched from $I_F = 10$ mA to $I_R = 10$ mA; $R_L = 100 \Omega$ ; measured at $I_R = 1$ mA; see Fig.6	4	ns
C <sub>d</sub>	diode capacitance	$f = 1 \text{ MHz}; V_R = 1 \text{ V}; \text{ see Fig.5}$	10	pF

#### THERMAL CHARACTERISTICS

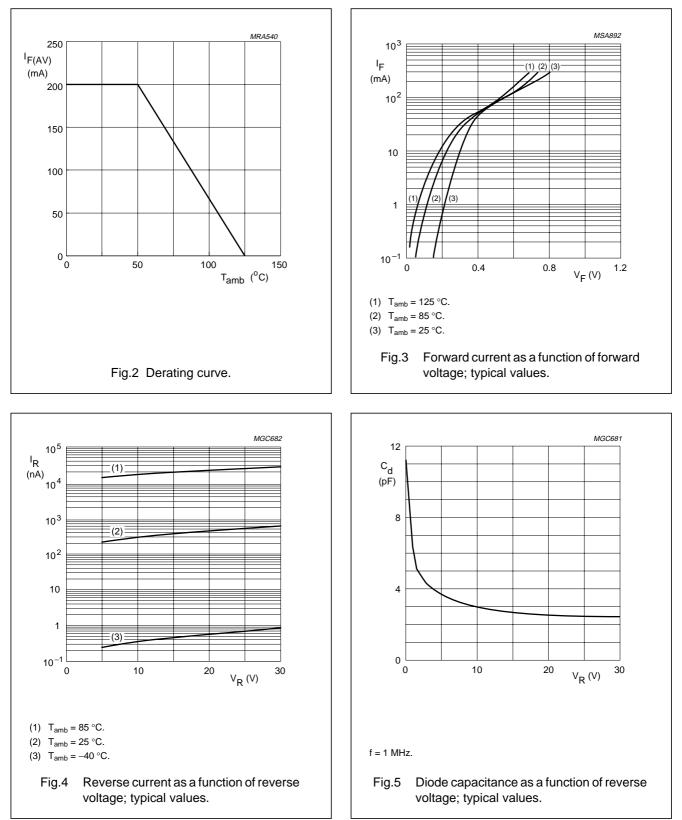
SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
R <sub>th j-a</sub>	thermal resistance from junction to ambient	note 1	320	K/W

Note

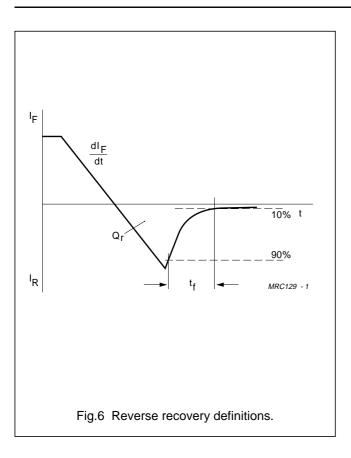
1. Refer to SOD68 standard mounting conditions.

### BAT85



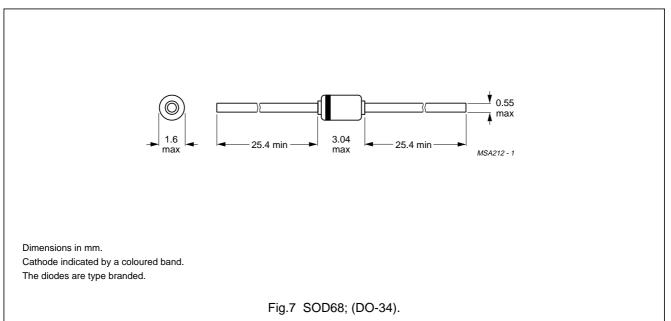


# BAT85



### BAT85

#### PACKAGE OUTLINE



#### 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	
more of the limiting values i of the device at these or at	accordance with the Absolute Maximum Rating System (IEC 134). Stress above one or may cause permanent damage to the device. These are stress ratings only and operation any other conditions above those given in the Characteristics sections of the specification limiting values for extended periods may affect device reliability.
Application information	
144 11 11 11 11 11	on 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.