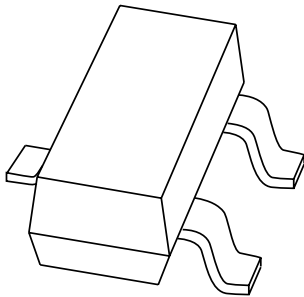


# DATA SHEET



## **BAT754 series** Schottky barrier (double) diodes

Product specification

1999 Aug 05

# Schottky barrier (double) diodes

# BAT754 series

### FEATURES

- Very low forward voltage
- Guard ring protected
- Small plastic SMD package
- Low diode capacitance.

### APPLICATIONS

- Ultra high-speed switching
- Voltage clamping
- Protection circuits
- Blocking diodes
- Low power consumption applications, e.g. hand-held applications.

### DESCRIPTION

Planar Schottky barrier diodes encapsulated in a SOT23 small plastic SMD package. Low forward voltage selection of the BAT54 series. Single diodes and double diodes with different pinning are available.

### MARKING

TYPE NUMBER	MARKING CODE
BAT754	2K
BAT754A	2L
BAT754C	2M
BAT754S	2N

### PINNING

PIN	BAT754			
		A	C	S
1	a	k <sub>1</sub>	a <sub>1</sub>	a <sub>1</sub>
2	n.c.	k <sub>2</sub>	a <sub>2</sub>	k <sub>2</sub>
3	k	a <sub>1</sub> , a <sub>2</sub>	k <sub>1</sub> , k <sub>2</sub>	k <sub>1</sub> , a <sub>2</sub>

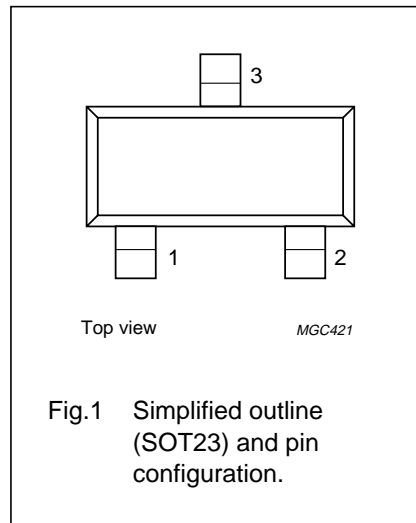


Fig.1 Simplified outline (SOT23) and pin configuration.

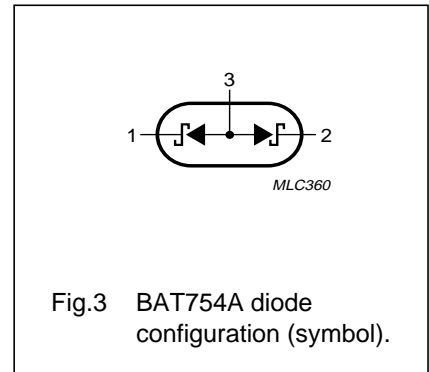


Fig.3 BAT754A diode configuration (symbol).

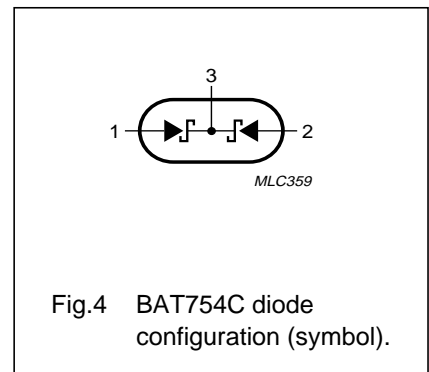


Fig.4 BAT754C diode configuration (symbol).

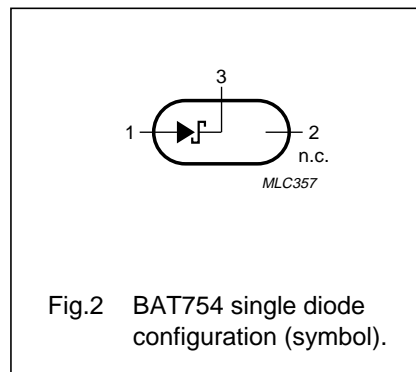


Fig.2 BAT754 single diode configuration (symbol).

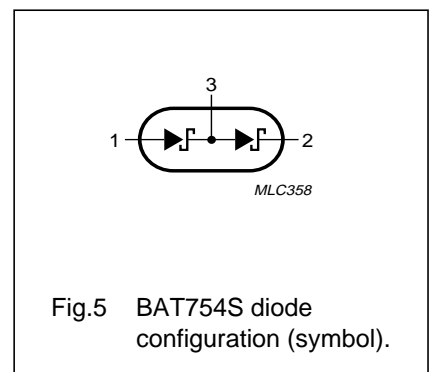


Fig.5 BAT754S diode configuration (symbol).

## Schottky barrier (double) diodes

## BAT754 series

**LIMITING VALUES**

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
<b>Per diode</b>					
$V_R$	continuous reverse voltage		–	30	V
$I_F$	continuous forward current		–	200	mA
$I_{FRM}$	repetitive peak forward current	$t_p \leq 1$ s; $\delta \leq 0.5$	–	300	mA
$I_{FSM}$	non-repetitive peak forward current	$t = 8.3$ ms half sinewave; JEDEC method	–	600	mA
$T_{stg}$	storage temperature		–65	+150	°C
$T_j$	junction temperature		–	125	°C
$T_{amb}$	operating ambient temperature		–65	+125	°C

**ELECTRICAL CHARACTERISTICS**

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

SYMBOL	PARAMETER	CONDITIONS	TYP.	MAX.	UNIT
<b>Per diode</b>					
$V_F$	forward voltage	see Fig.6 $I_F = 0.1$ mA $I_F = 1$ mA $I_F = 10$ mA $I_F = 30$ mA $I_F = 100$ mA	– – – – 600	200 260 340 420 –	mV mV mV mV mV
$I_R$	reverse current	$V_R = 25$ V; note 1; see Fig.7	–	2	$\mu$ A
$C_d$	diode capacitance	$f = 1$ MHz; $V_R = 1$ V; see Fig.8	–	10	pF

**Note**

1. Pulse test:  $t_p = 300$   $\mu$ s;  $\delta \leq 0.02$ .

**THERMAL CHARACTERISTICS**

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

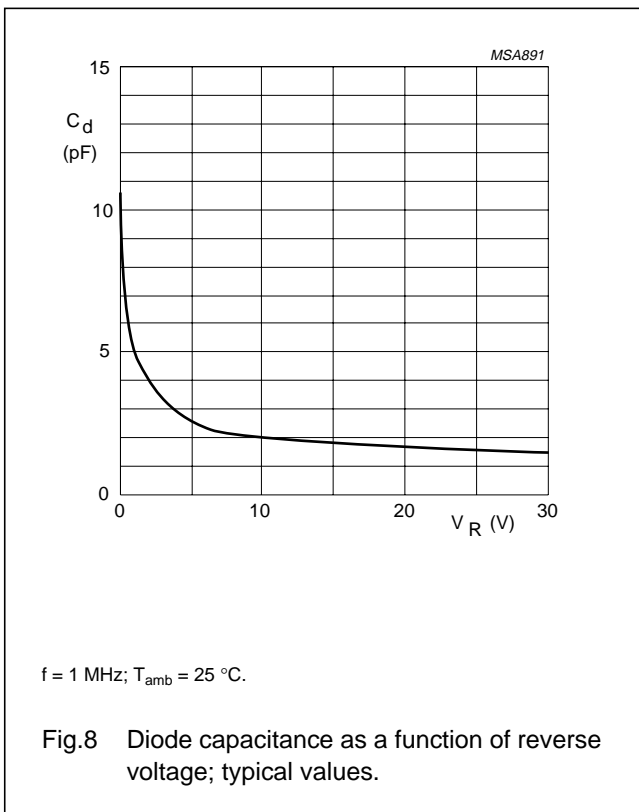
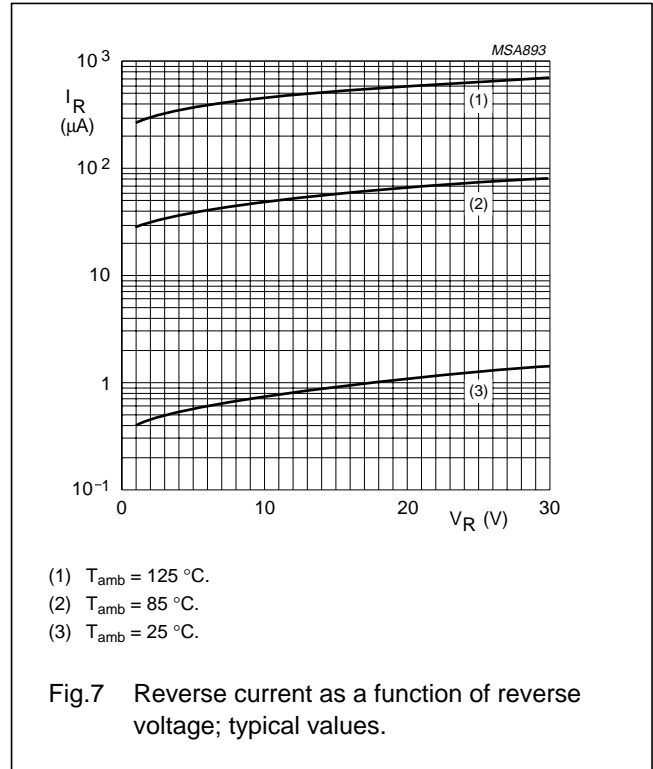
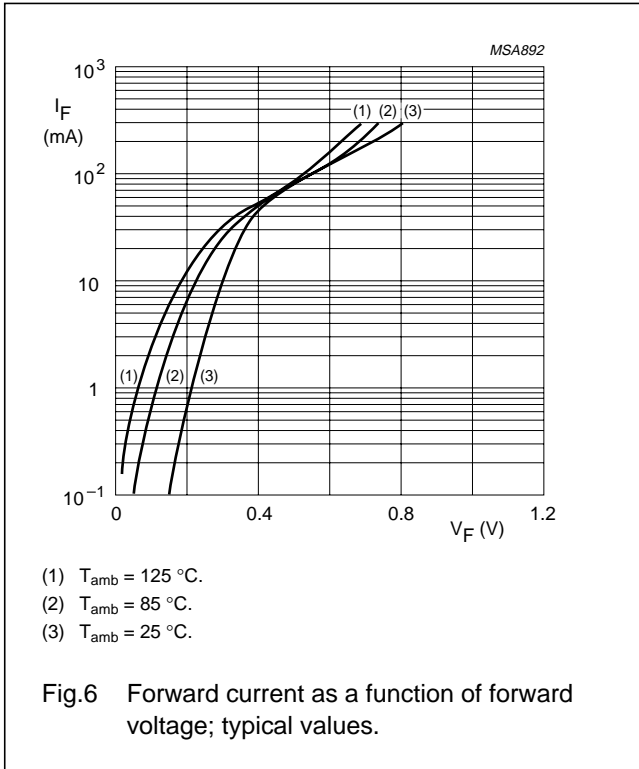
**Note**

1. Refer to SOT23 standard mounting conditions.

Schottky barrier (double) diodes

BAT754 series

GRAPHICAL DATA



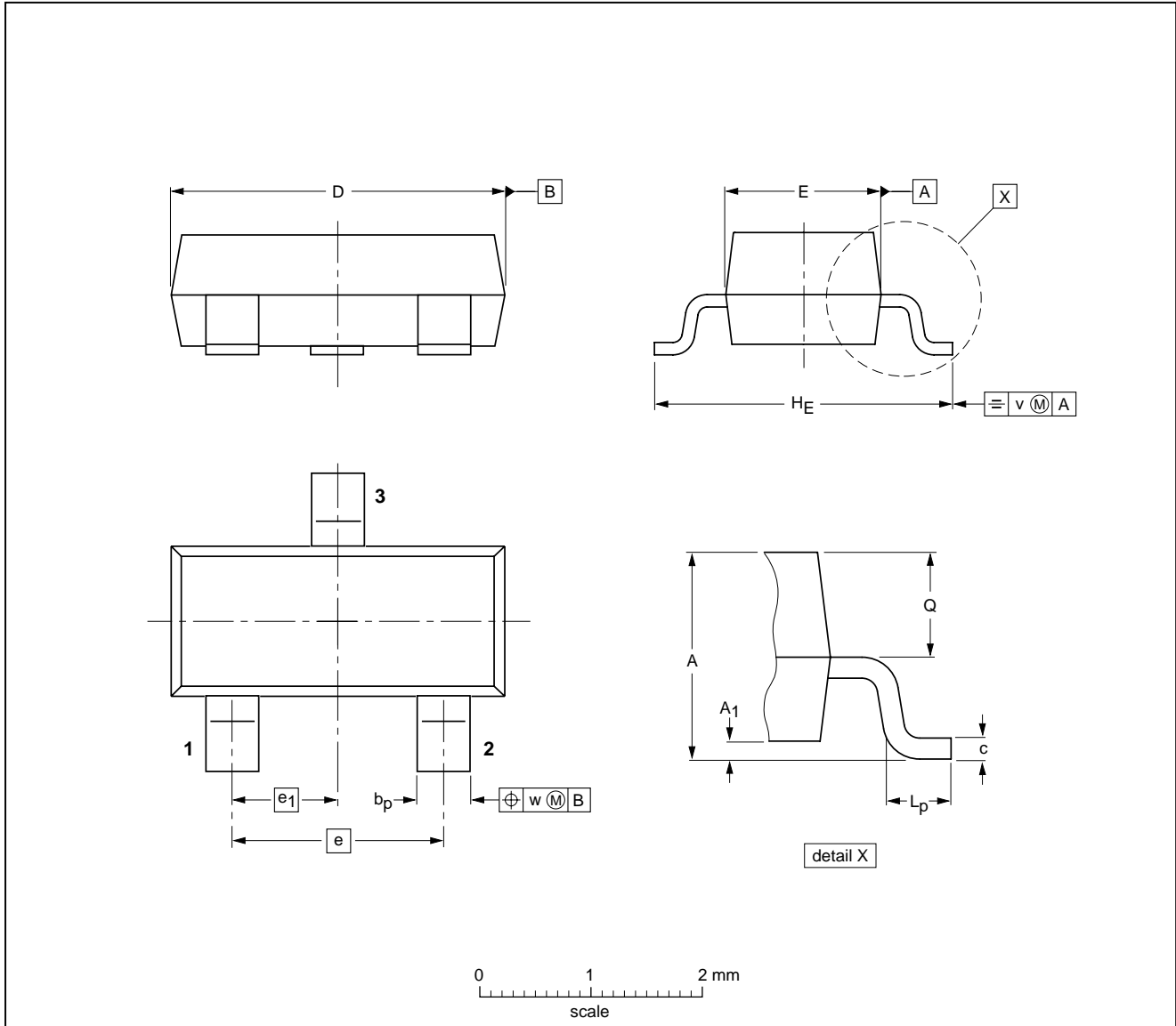
# Schottky barrier (double) diodes

# BAT754 series

## PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT23



DIMENSIONS (mm are the original dimensions)

UNIT	A	A <sub>1</sub> max.	b <sub>p</sub>	c	D	E	e	e <sub>1</sub>	H <sub>E</sub>	L <sub>p</sub>	Q	v	w
mm	1.1 0.9	0.1	0.48 0.38	0.15 0.09	3.0 2.8	1.4 1.2	1.9	0.95	2.5 2.1	0.45 0.15	0.55 0.45	0.2	0.1

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOT23						97-02-28

## Schottky barrier (double) diodes

## BAT754 series

**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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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 (double) diodes

BAT754 series

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