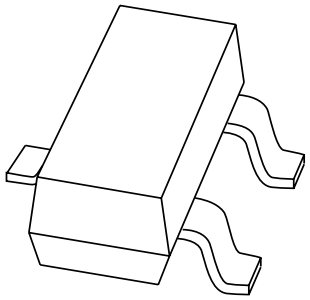
DATA SHEET



BAT754 series
Schottky barrier (double) diodes

Product specification

1999 Aug 05

Philips
Semiconductors

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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_1	a_1	a_1
2	n.c.	k_2	a_2	k_2
3	k	a_1, a_2	k_1, k_2	k_1, a_2

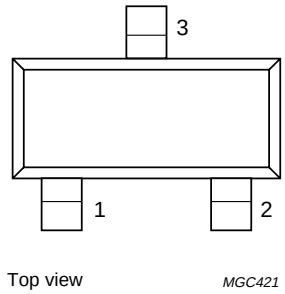


Fig.1 Simplified outline (SOT23) and pin configuration.

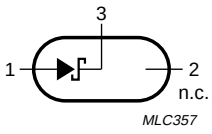


Fig.2 BAT754 single diode configuration (symbol).

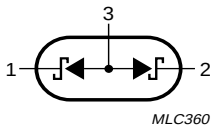


Fig.3 BAT754A diode configuration (symbol).

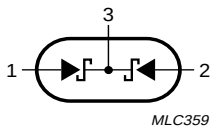


Fig.4 BAT754C diode configuration (symbol).

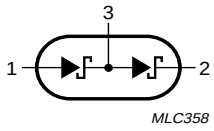


Fig.5 BAT754S diode configuration (symbol).

LIMITING VALUES

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

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

Note

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

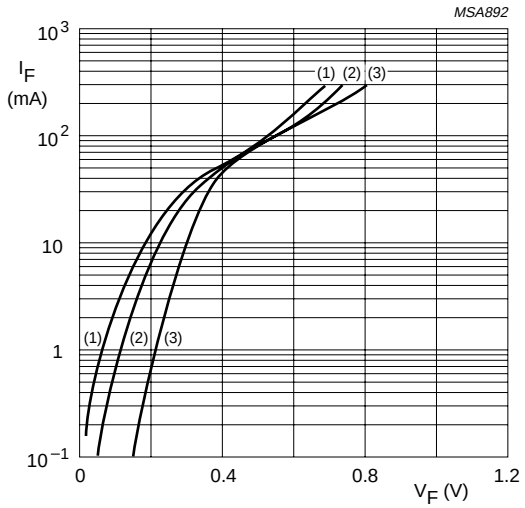
THERMAL CHARACTERISTICS

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

Note

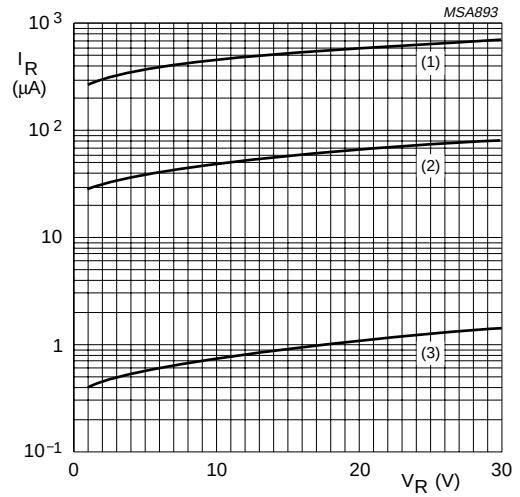
1. Refer to SOT23 standard mounting conditions.

GRAPHICAL DATA



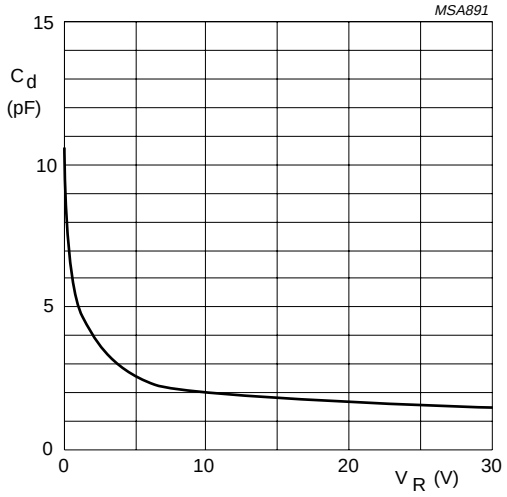
(1) T_{amb} = 125 °C.
(2) T_{amb} = 85 °C.
(3) T_{amb} = 25 °C.

Fig.6 Forward current as a function of forward voltage; typical values.



(1) T_{amb} = 125 °C.
(2) T_{amb} = 85 °C.
(3) T_{amb} = 25 °C.

Fig.7 Reverse current as a function of reverse voltage; typical values.

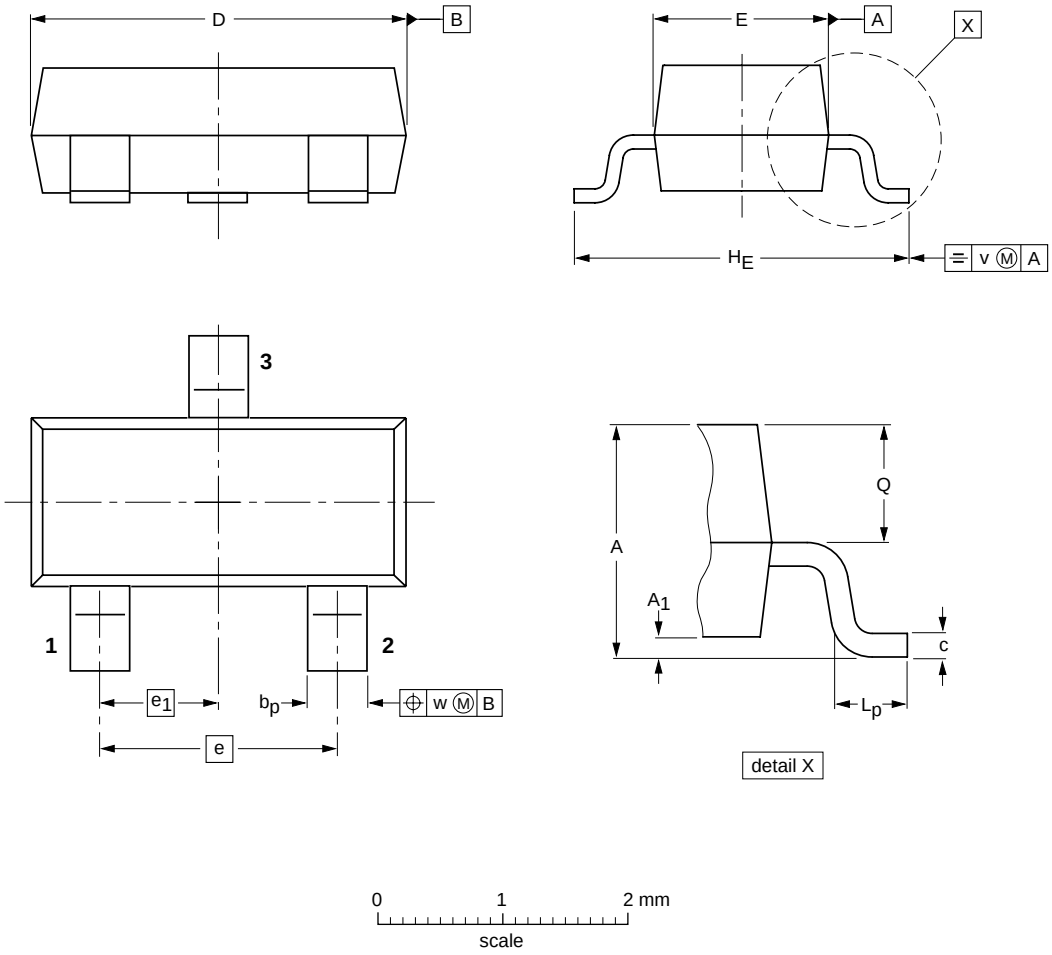


f = 1 MHz; T_{amb} = 25 °C.

Fig.8 Diode capacitance as a function of reverse voltage; typical values.

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads **SOT23**



DIMENSIONS (mm are the original dimensions)

UNIT	A	A_1 max.	b_p	c	D	E	e	e_1	H_E	L_p	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

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.	

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