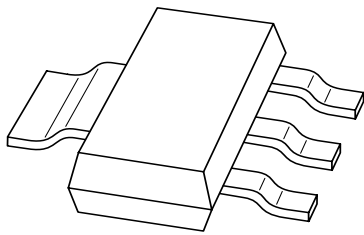


# DATA SHEET



## **BAT140 series** Schottky barrier double diodes

Product specification  
Supersedes data of 1997 Oct 03

2003 Aug 04

# Schottky barrier double diodes

# BAT140 series

### FEATURES

- Low switching losses
- Capability of absorbing very high surge current
- Fast recovery time
- Guard ring protected
- Plastic SMD package.

### APPLICATIONS

- Low power switched-mode power supplies
- Rectification
- Polarity protection.

### DESCRIPTION

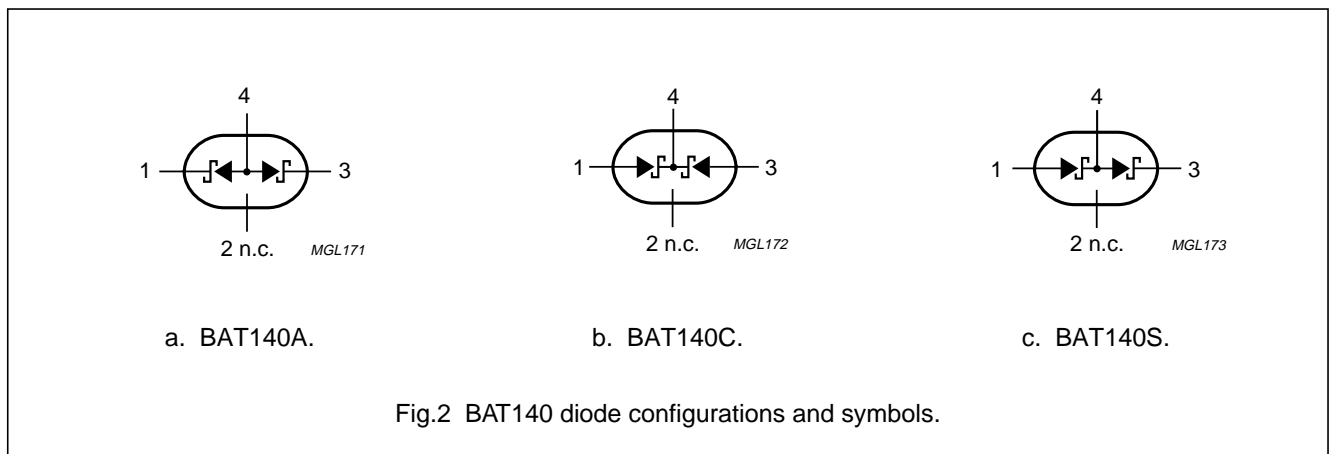
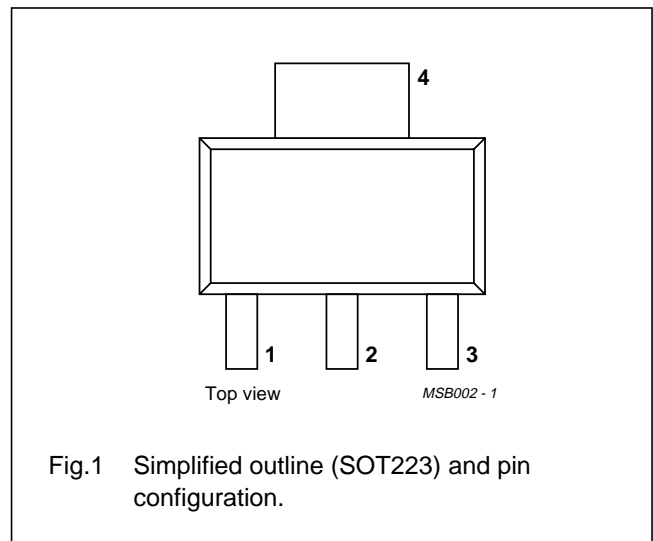
Planar Schottky barrier double diodes encapsulated in a SOT223 plastic SMD package.

### MARKING

TYPE NUMBER	MARKING CODE
BAT140A	AT140A
BAT140C	AT140C
BAT140S	AT140S

### PINNING

PIN	BAT140		
	A	C	S
1	k1	a1	a1
2	n.c.	n.c.	n.c.
3	k2	a2	k2
4	a1, a2	k1, k2	k1, a2



## Schottky barrier double diodes

## BAT140 series

**LIMITING VALUES**

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
<b>Per diode</b>					
$V_R$	continuous reverse voltage		–	40	V
$I_F$	continuous forward current		–	1	A
$I_{F(AV)}$	average forward current	$T_{amb} = 65\text{ °C}$ ; $R_{th\ j-a} = 80\text{ K/W}$ ; note 1; $V_{R(equiv)} = 0.2\text{ V}$ ; note 2	–	1	A
$I_{FSM}$	non-repetitive peak forward current	$t = 8.3\ \mu\text{s}$ half sinewave; JEDEC method	–	10	A
$I_{RSM}$	non-repetitive peak reverse current	$t_p = 100\ \mu\text{s}$	–	0.5	A
$T_{stg}$	storage temperature		–65	+150	°C
$T_j$	junction temperature		–	125	°C

**Notes**

1. Refer to SOT223 standard mounting conditions.
2. For Schottky barrier diodes thermal runaway has to be considered, as in some applications, the reverse power losses PR are a significant part of the total power losses. Nomograms for determination of the reverse power losses PR and  $I_{F(AV)}$  rating will be available on request.

**ELECTRICAL CHARACTERISTICS**

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

SYMBOL	PARAMETER	CONDITIONS	TYP.	MAX.	UNIT
<b>Per diode</b>					
$V_F$	forward voltage	see Fig.3 $I_F = 100\text{ mA}$ ; note 1 $I_F = 1\text{ A}$ ; note 1	280 460	330 500	mV mV
$I_R$	reverse current	$V_R = 10\text{ V}$ ; note 1; see Fig.4	15	40	$\mu\text{A}$
		$V_R = 40\text{ V}$ ; note 1; see Fig.4	60	300	$\mu\text{A}$
$C_d$	diode capacitance	$V_R = 4\text{ V}$ ; $f = 1\text{ MHz}$ ; see Fig.5	65	80	pF

**Note**

1. Pulsed test:  $t_p = 300\text{ ms}$ ;  $d = 0.02$ .

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-a}$	thermal resistance from junction to ambient	note 1	100	K/W

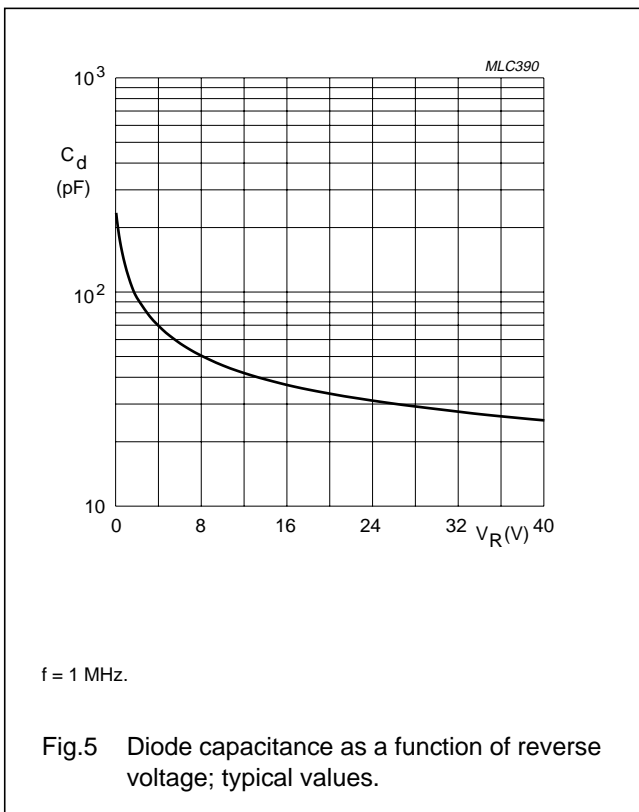
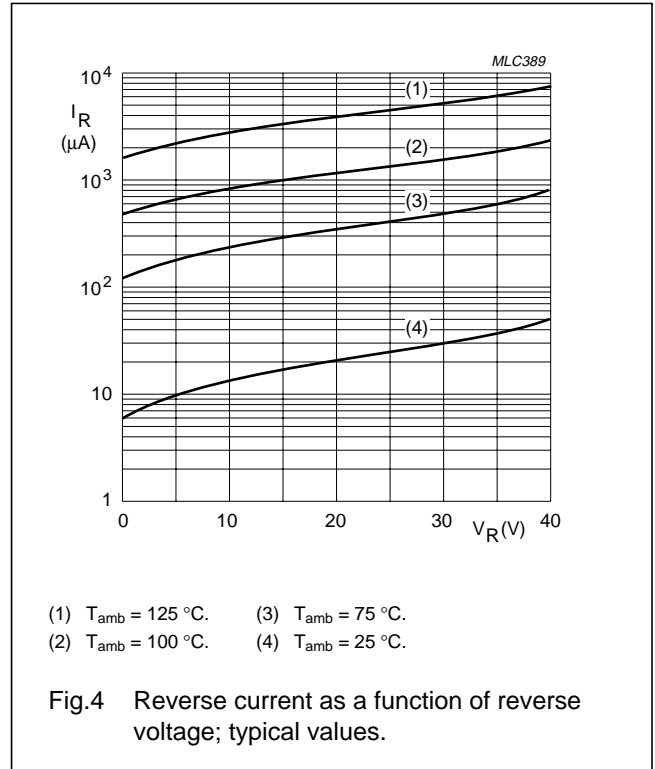
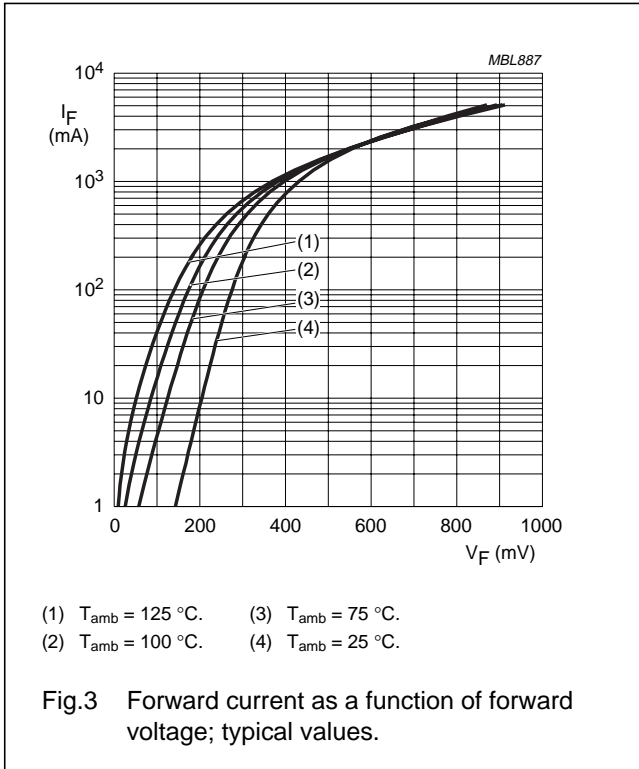
**Note**

1. Refer to SOT223 standard mounting conditions.

Schottky barrier double diodes

BAT140 series

GRAPHICAL DATA



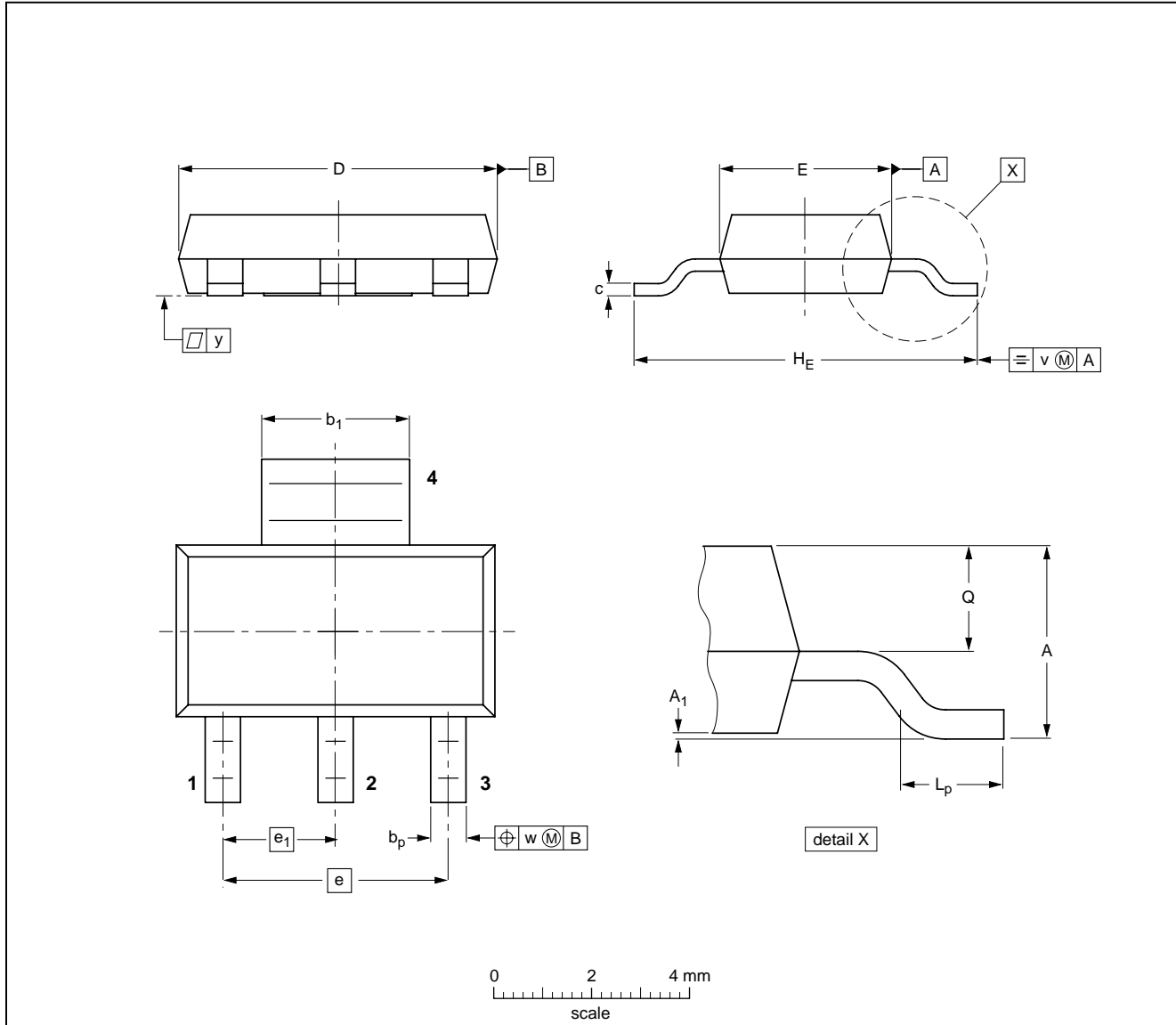
Schottky barrier double diodes

BAT140 series

PACKAGE OUTLINE

Plastic surface mounted package; collector pad for good heat transfer; 4 leads

SOT223



DIMENSIONS (mm are the original dimensions)

UNIT	A	A <sub>1</sub>	b <sub>p</sub>	b <sub>1</sub>	c	D	E	e	e <sub>1</sub>	H <sub>E</sub>	L <sub>p</sub>	Q	v	w	y
mm	1.8 1.5	0.10 0.01	0.80 0.60	3.1 2.9	0.32 0.22	6.7 6.3	3.7 3.3	4.6	2.3	7.3 6.7	1.1 0.7	0.95 0.85	0.2	0.1	0.1

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOT223			SC-73			97-02-28 99-09-13

## Schottky barrier double diodes

## BAT140 series

## DATA SHEET STATUS

LEVEL	DATA SHEET STATUS <sup>(1)</sup>	PRODUCT STATUS <sup>(2)(3)</sup>	DEFINITION
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