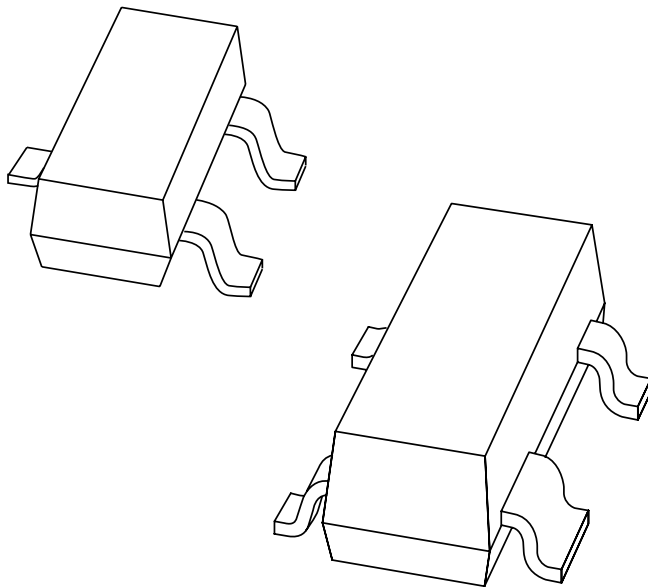


# DATA SHEET



## **BAS40 series** Schottky barrier (double) diodes

Product specification  
Supersedes data of 1999 Apr 28

2001 Oct 10

# Schottky barrier (double) diodes

# BAS40 series

### FEATURES

- Low forward voltage
- Guard ring protected
- Small plastic SMD packages
- Low diode capacitance.

### APPLICATIONS

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

### DESCRIPTION

Planar Schottky barrier diodes with an integrated guard ring for stress protection, encapsulated in small plastic SMD packages. Single diodes and double diodes with different pinning are available. BAS40, BAS40-04, BAS40-05 and BAS40-06 in a SOT23 and the BAS40-07 in a SOT143B package.

### MARKING

TYPE NUMBER	MARKING CODE <sup>(1)</sup>
BAS40	43*
BAS40-04	44*
BAS40-05	45*
BAS40-06	46*
BAS40-07	47p

### Note

- \* = p: Made in Hong Kong.  
 \* = t: Made in Malaysia.  
 \* = W: Made in China.

### PINNING SOT143B (see Fig.2)

PIN	DESCRIPTION
<b>BAS40-07</b>	
1	k <sub>1</sub>
2	k <sub>2</sub>
3	a <sub>2</sub>
4	a <sub>1</sub>

### PINNING SOT23 (see Fig.1a)

PIN	DESCRIPTION			
	BAS40 (see Fig.1b)	BAS40-04 (see Fig.1c)	BAS40-05 (see Fig.1d)	BAS40-06 (see Fig.1e)
1	a <sub>1</sub>	a <sub>1</sub>	a <sub>1</sub>	k <sub>1</sub>
2	n.c.	k <sub>2</sub>	a <sub>2</sub>	k <sub>2</sub>
3	k <sub>1</sub>	k <sub>1</sub> , a <sub>2</sub>	k <sub>1</sub> , k <sub>2</sub>	a <sub>1</sub> , a <sub>2</sub>

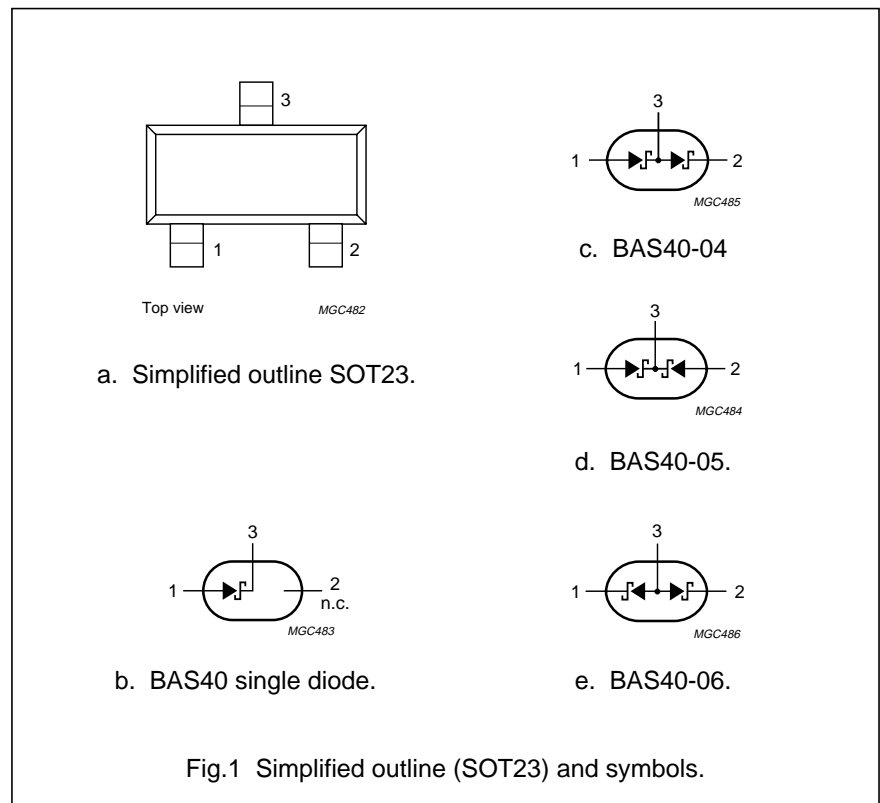


Fig.1 Simplified outline (SOT23) and symbols.

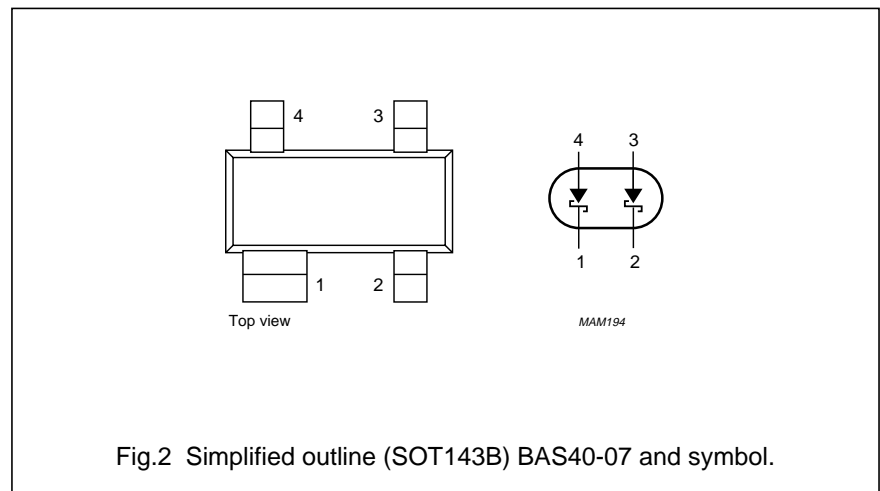


Fig.2 Simplified outline (SOT143B) BAS40-07 and symbol.

## Schottky barrier (double) diodes

## BAS40 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		–	120	mA
$I_{FRM}$	repetitive peak forward current	$t_p \leq 1 \text{ s}; \delta \leq 0.5$	–	120	mA
$I_{FSM}$	non-repetitive peak forward current	$t_p < 10 \text{ ms}$	–	200	mA
$T_{stg}$	storage temperature		–65	+150	°C
$T_j$	junction temperature		–	150	°C
$T_{amb}$	operating ambient temperature		–65	+150	°C

**ELECTRICAL CHARACTERISTICS** $T_{amb} = 25 \text{ °C}$  unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MAX.	UNIT
<b>Per diode</b>				
$V_F$	forward voltage	see Fig.3 $I_F = 1 \text{ mA}$ $I_F = 10 \text{ mA}$ $I_F = 40 \text{ mA}$	380 500 1	mV mV V
$I_R$	reverse current	$V_R = 30 \text{ V}$ ; note 1; see Fig.4	1	$\mu\text{A}$
		$V_R = 40 \text{ V}$ ; note 1; see Fig.4	10	$\mu\text{A}$
$C_d$	diode capacitance	$f = 1 \text{ MHz}$ ; $V_R = 0$ ; see Fig.6	5	pF

**Note**1. Pulse test:  $t_p = 300 \mu\text{s}$ ;  $\delta = 0.02$ .**THERMAL CHARACTERISTICS**

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

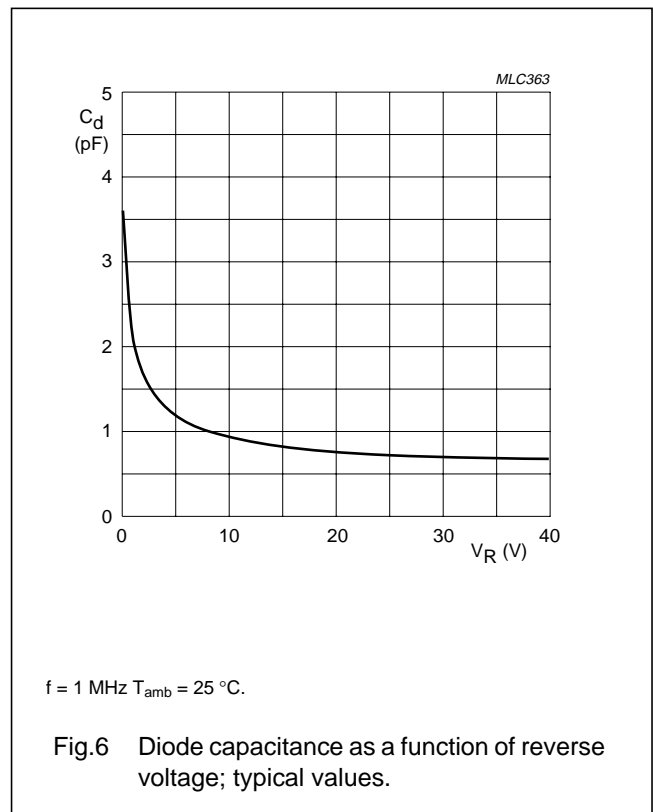
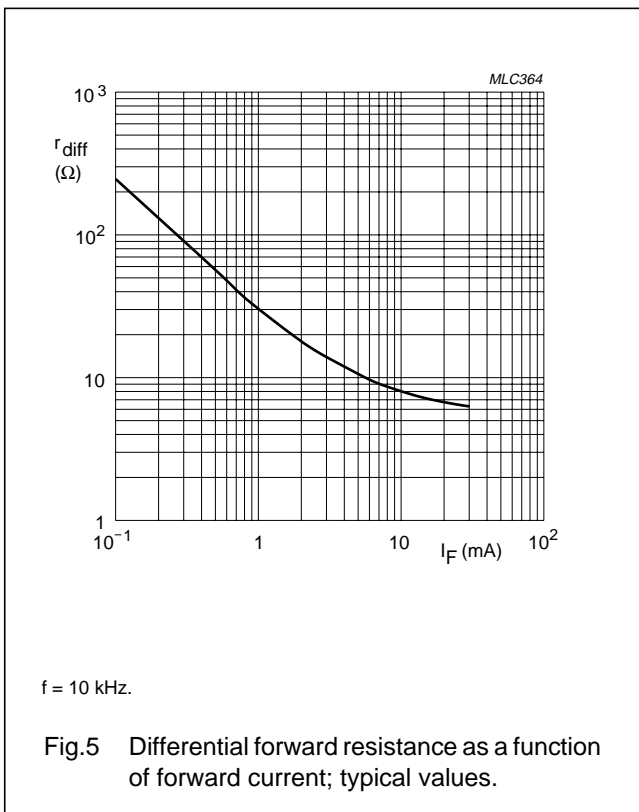
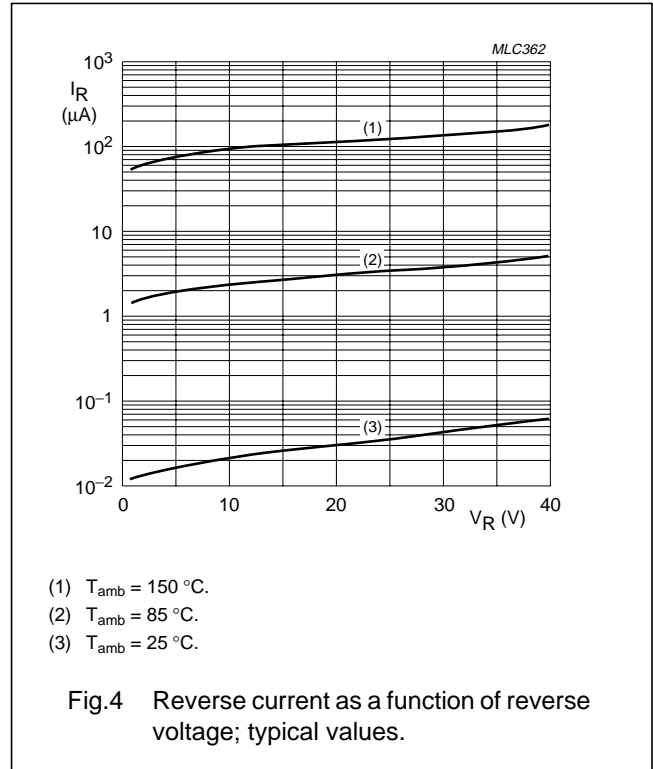
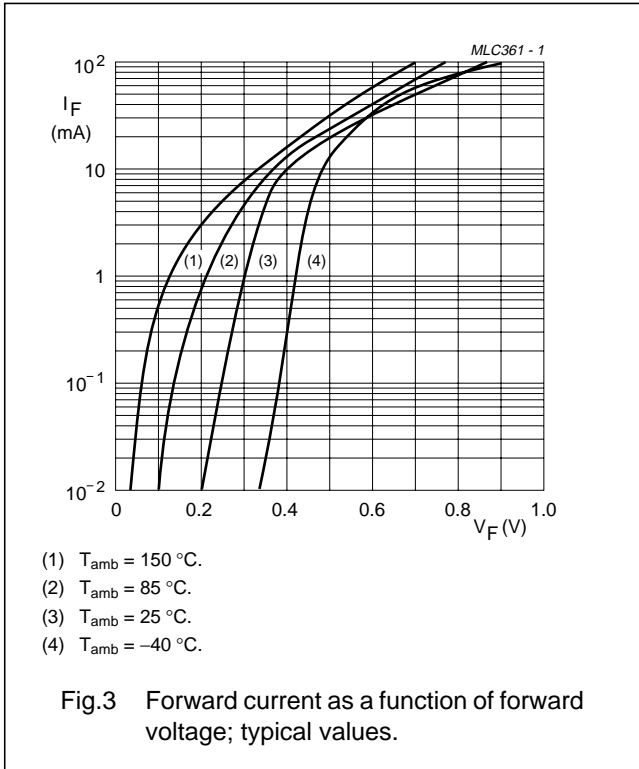
**Note**

1. Refer to SOT23 or SOT143B standard mounting conditions.

Schottky barrier (double) diodes

BAS40 series

GRAPHICAL DATA



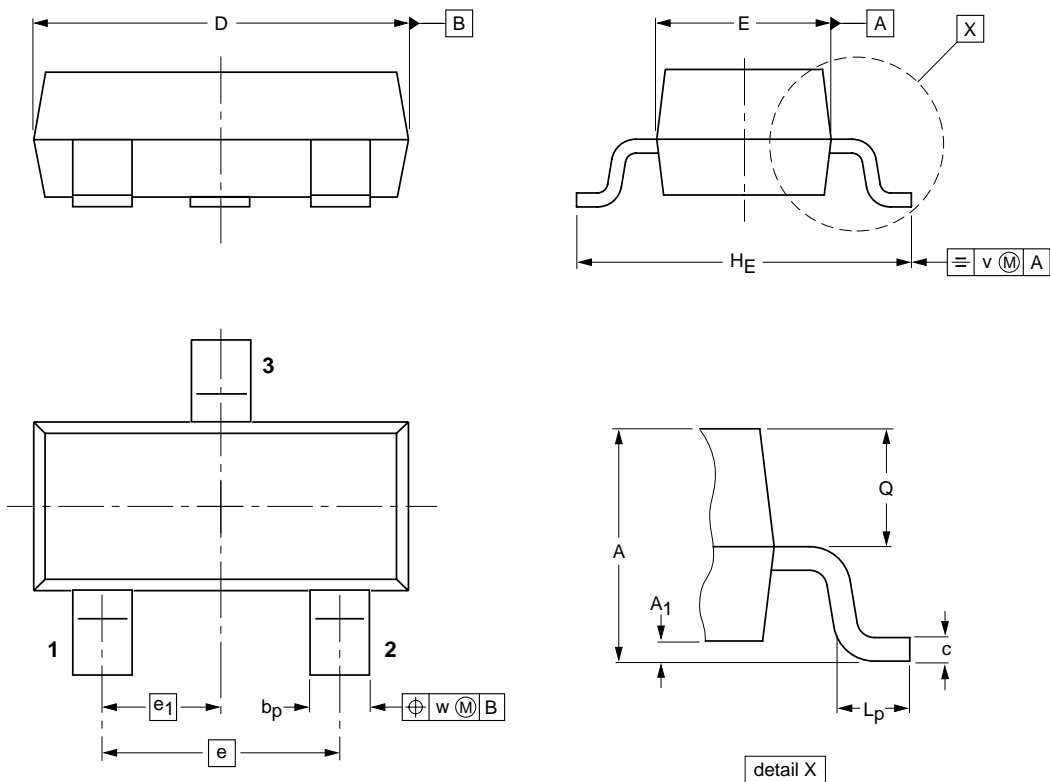
Schottky barrier (double) diodes

BAS40 series

PACKAGE OUTLINES

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

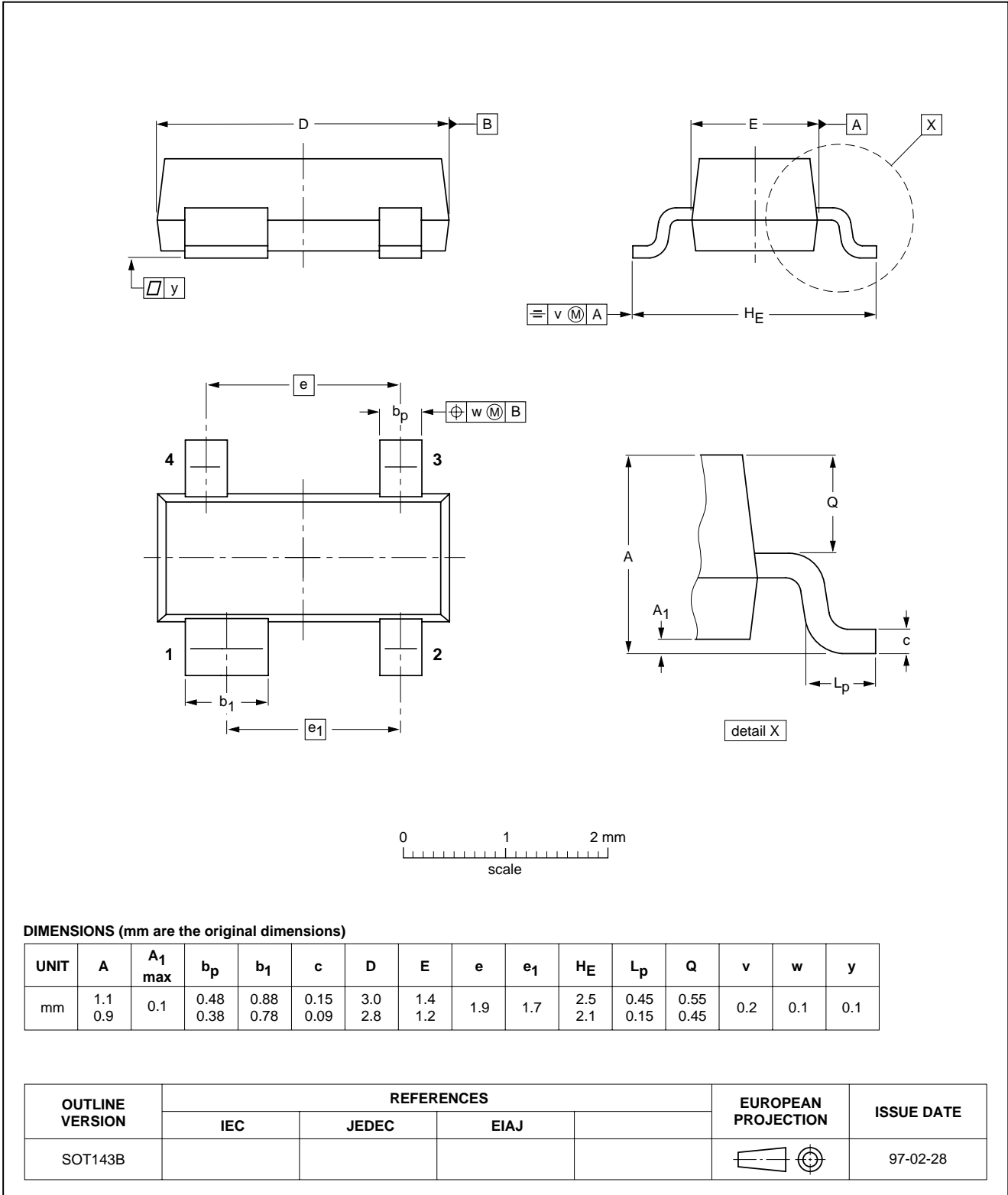
OUTLINE VERSION	REFERENCES			EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ		
SOT23		TO-236AB			97-02-28 99-09-13

Schottky barrier (double) diodes

BAS40 series

Plastic surface mounted package; 4 leads

SOT143B



## Schottky barrier (double) diodes

## BAS40 series

## DATA SHEET STATUS

DATA SHEET STATUS <sup>(1)</sup>	PRODUCT STATUS <sup>(2)</sup>	DEFINITIONS
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