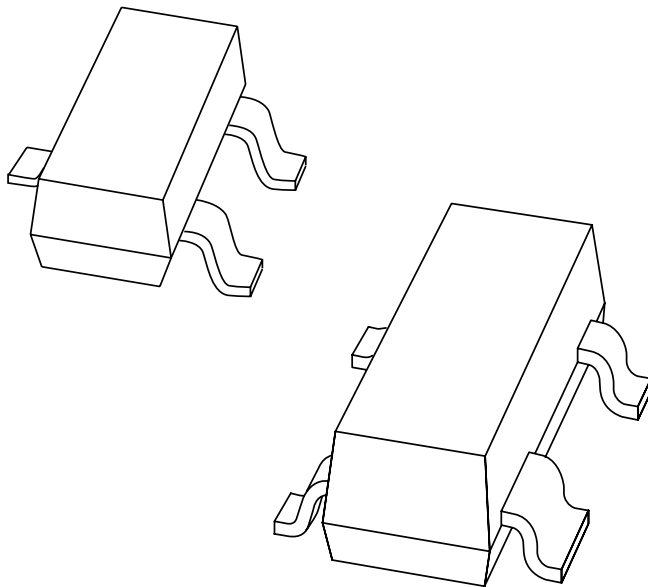


# DATA SHEET



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

Product specification  
Supersedes data of 1997 Oct 24

1999 Apr 28

# Schottky barrier (double) diodes

# BAS40 series

### FEATURES

- Low forward voltage
- Guard ring protected
- Small plastic SMD package
- 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. Single diodes and double diodes with different pinning are available. The diodes BAS40, BAS40-04, BAS40-05 and BAS40-06 are encapsulated in a SOT23 small plastic SMD package. The BAS40-07 is encapsulated in a SOT143B small plastic SMD package

### MARKING

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

### Note

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

### PINNING SOT143B (see Fig.2)

PIN	DESCRIPTION
<b>BAS40-07</b>	
1	$k_1$
2	$k_2$
3	$a_2$
4	$a_1$

### 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	$a_1$	$a_1$	$a_1$	$k_1$
2	n.c.	$k_2$	$a_2$	$k_2$
3	$k_1$	$k_1, a_2$	$k_1, k_2$	$a_1, a_2$

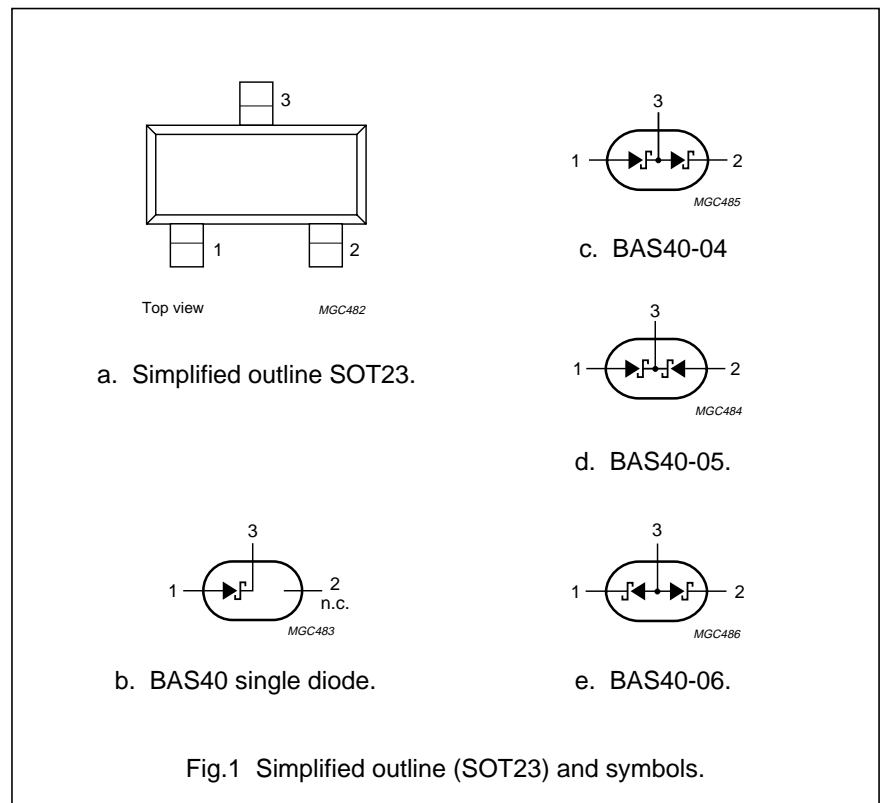


Fig.1 Simplified outline (SOT23) and symbols.

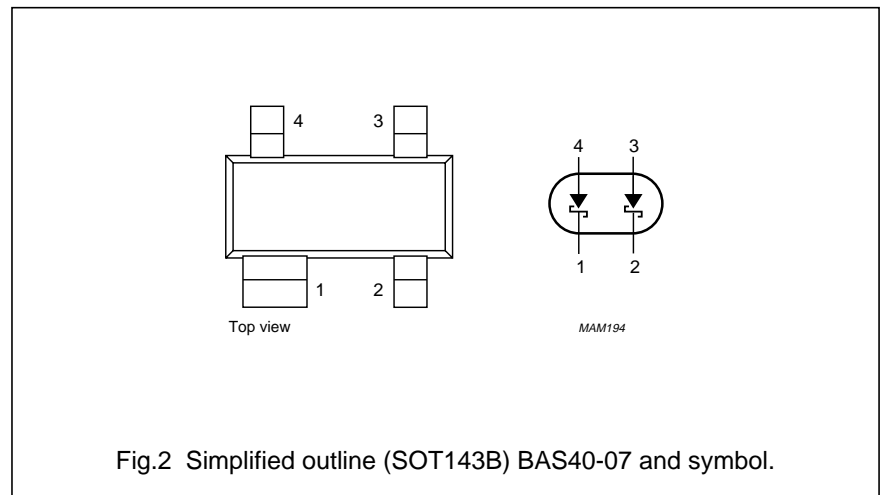


Fig.2 Simplified outline (SOT143B) BAS40-07 and symbol.

## Schottky barrier (double) diodes

## BAS40 series

**LIMITING VALUES**

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

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	$t_p \leq 1$ s; $\delta \leq 0.5$	–	120	mA
$I_{FSM}$	non-repetitive peak forward current	$t_p < 10$ 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**

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

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

**Note**

1. Pulse test:  $t_p = 300$   $\mu$ 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

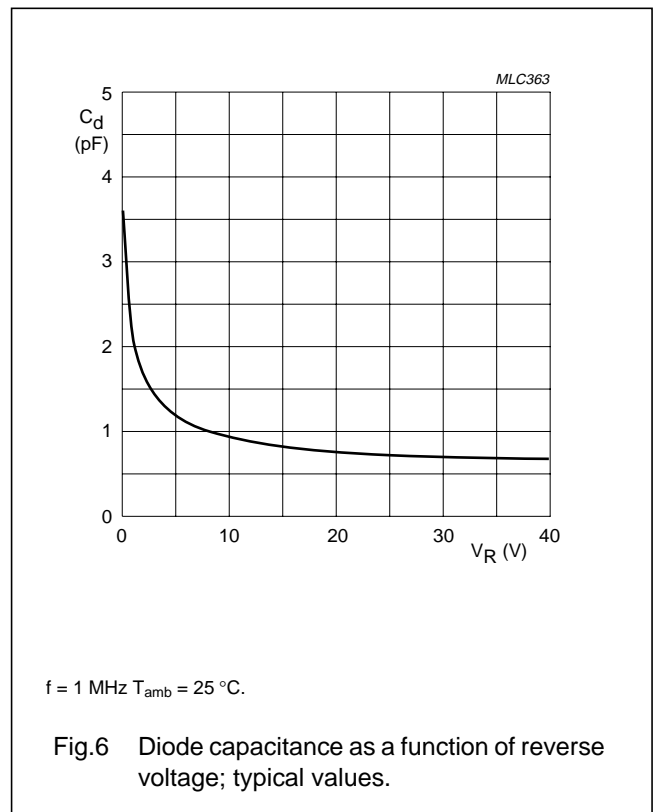
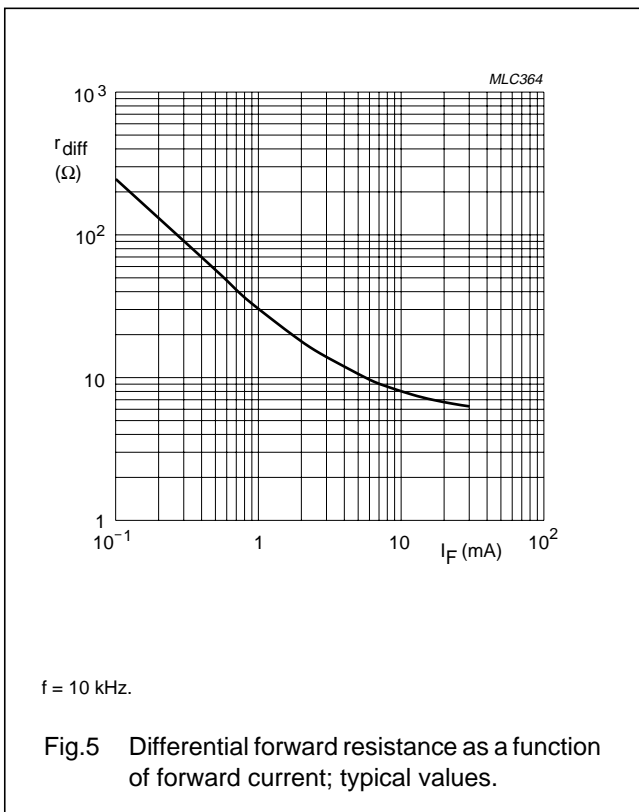
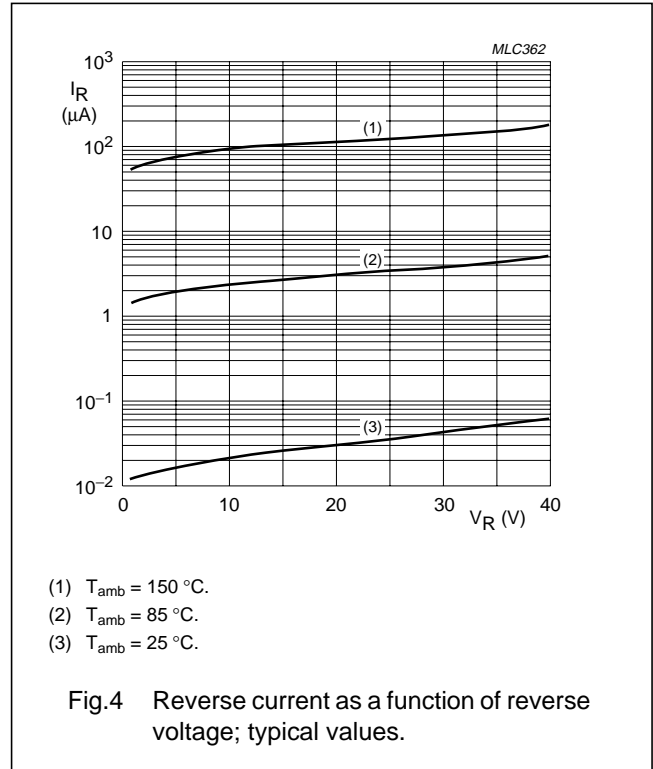
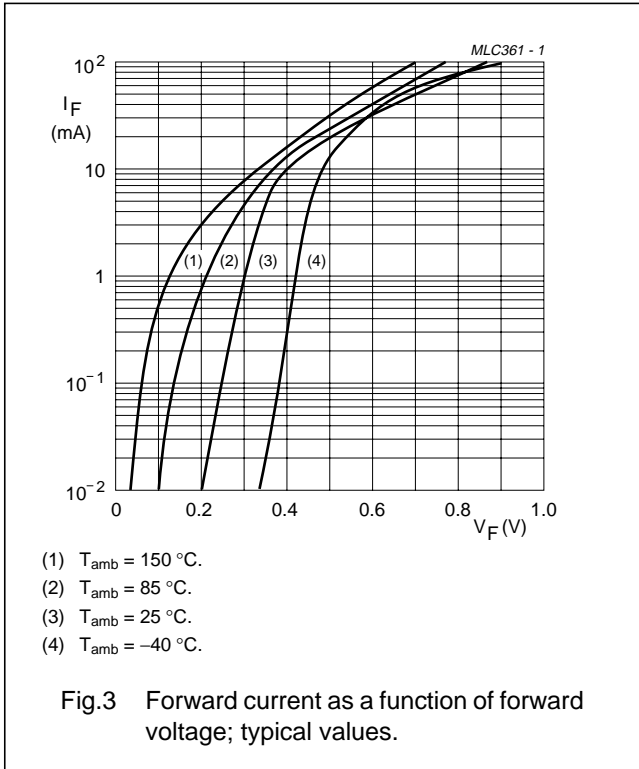
**Note**

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

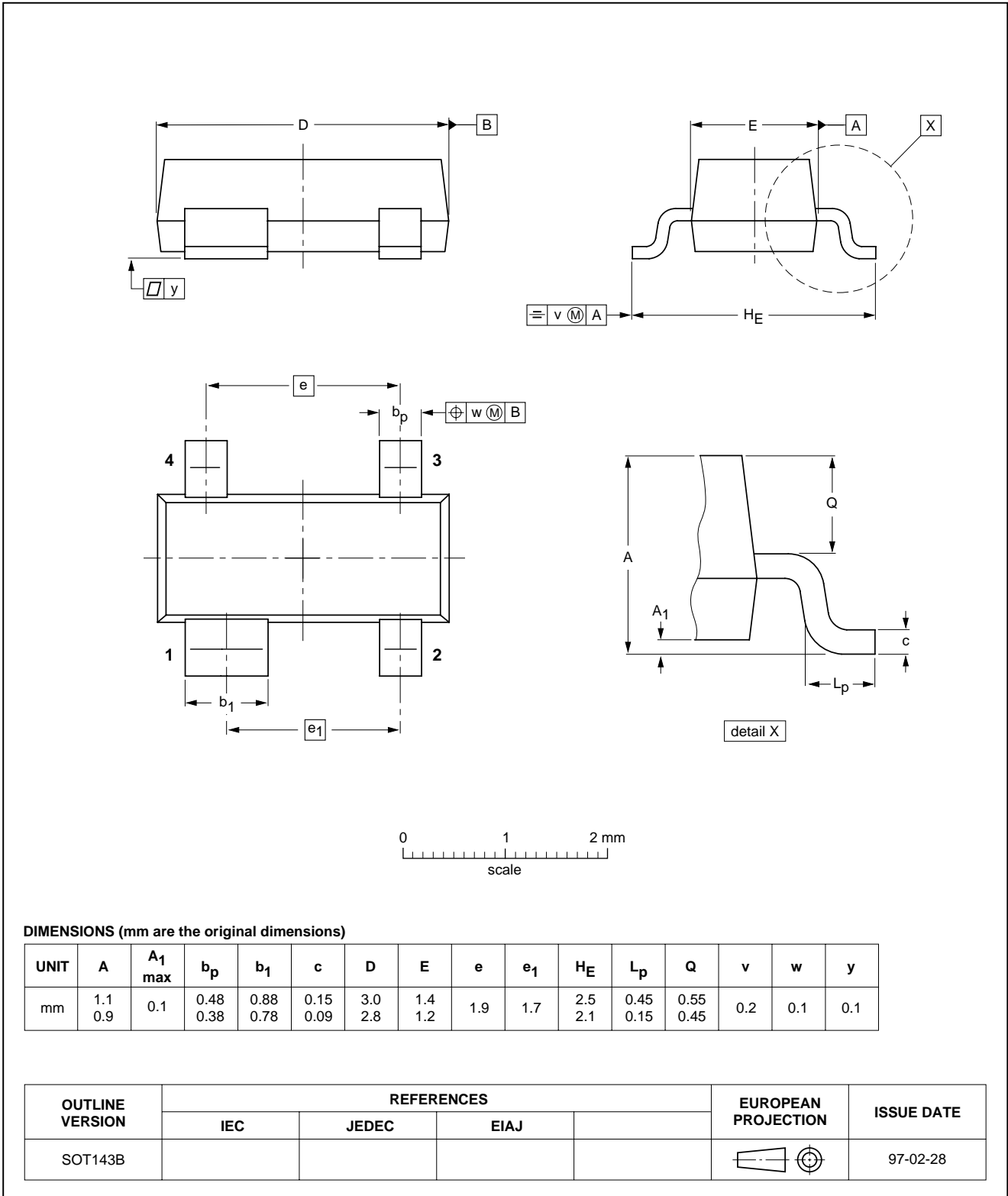


Schottky barrier (double) diodes

BAS40 series

Plastic surface mounted package; 4 leads

SOT143B



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

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**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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