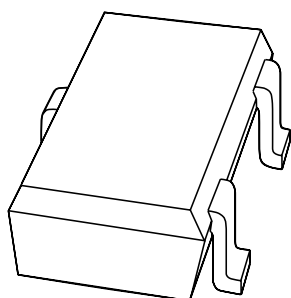


DATA SHEET



BAS40W series Schottky barrier (double) diodes

Product specification
Supersedes data of 1997 Oct 28

1999 Apr 26

Schottky barrier (double) diodes

BAS40W series

FEATURES

- Low forward voltage
- Guard ring protected
- Very small SMD package
- Low diode capacitance.

APPLICATIONS

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

DESCRIPTION

Planar Schottky barrier diodes encapsulated in a SOT323 very small plastic SMD package. Single diodes and double diodes with different pinning are available.

MARKING

TYPE NUMBER	MARKING CODE
BAS40W	63
BAS40-04W	64
BAS40-05W	65
BAS40-06W	66

PINNING

PIN	BAS40			
	W	-04W	-05W	-06W
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

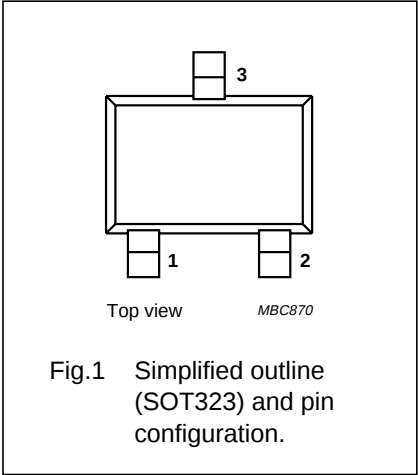


Fig.1 Simplified outline (SOT323) and pin configuration.

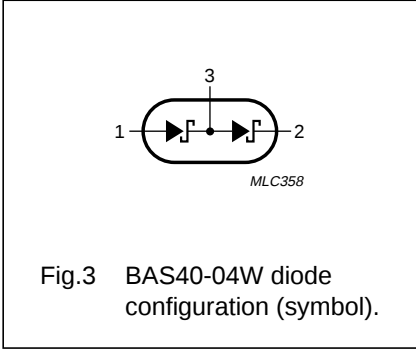


Fig.3 BAS40-04W diode configuration (symbol).

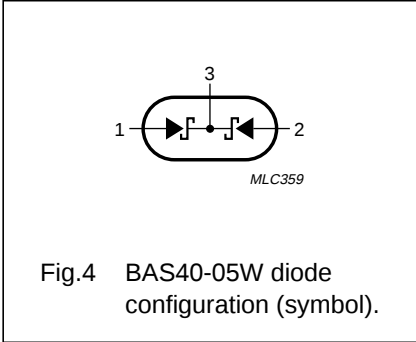


Fig.4 BAS40-05W diode configuration (symbol).

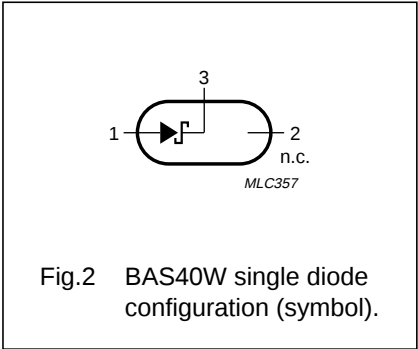


Fig.2 BAS40W single diode configuration (symbol).

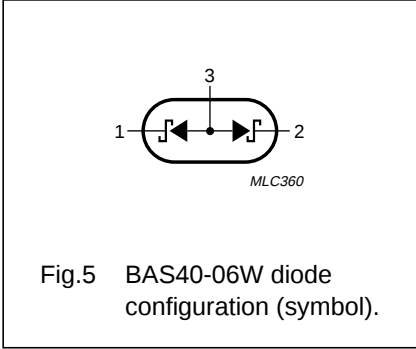


Fig.5 BAS40-06W diode configuration (symbol).

Schottky barrier (double) diodes

BAS40W series

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		–	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
Per diode				
V_F	continuous forward voltage	see Fig.6 $I_F = 1$ mA $I_F = 10$ mA $I_F = 40$ mA	380 500 1	mV mV V
I_R	continuous reverse current	$V_R = 30$ V; note 1; see Fig.7	1	μA
		$V_R = 40$ V; note 1; see Fig.7	10	μA
τ	charge carrier life time	$I_F = 5$ mA; Krakauer method	100	ps
C_d	diode capacitance	$V_R = 0$; $f = 1$ MHz; see Fig.9	5	pF

Note

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

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-a}$	thermal resistance from junction to ambient	note 1	625	K/W

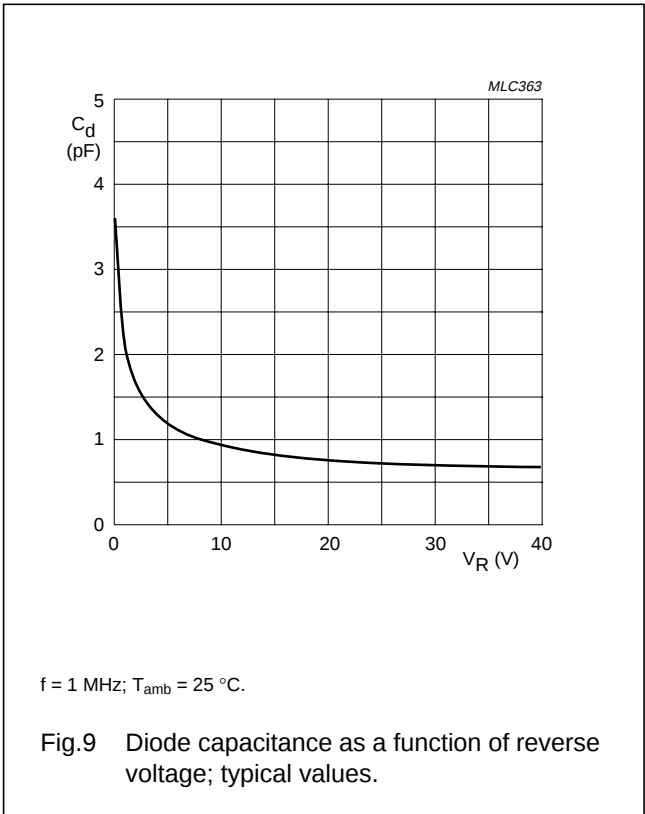
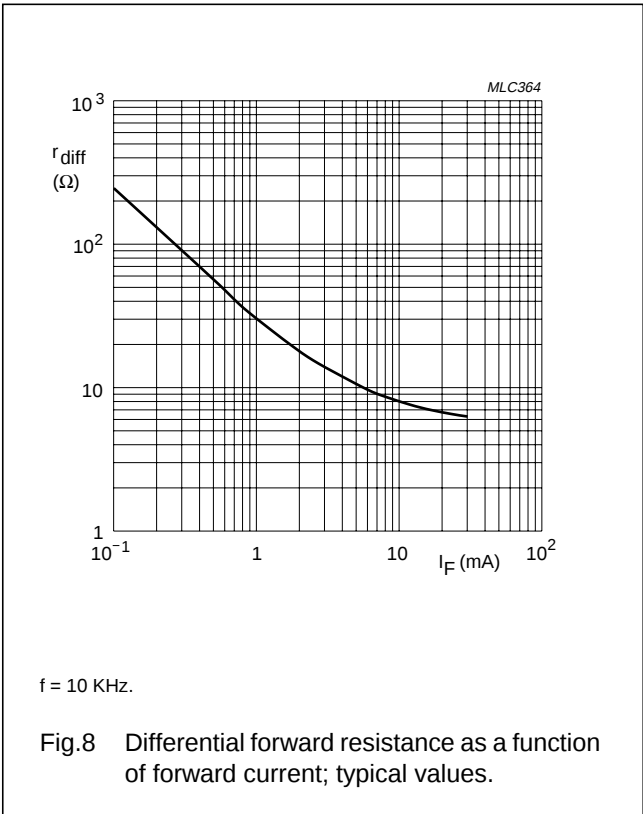
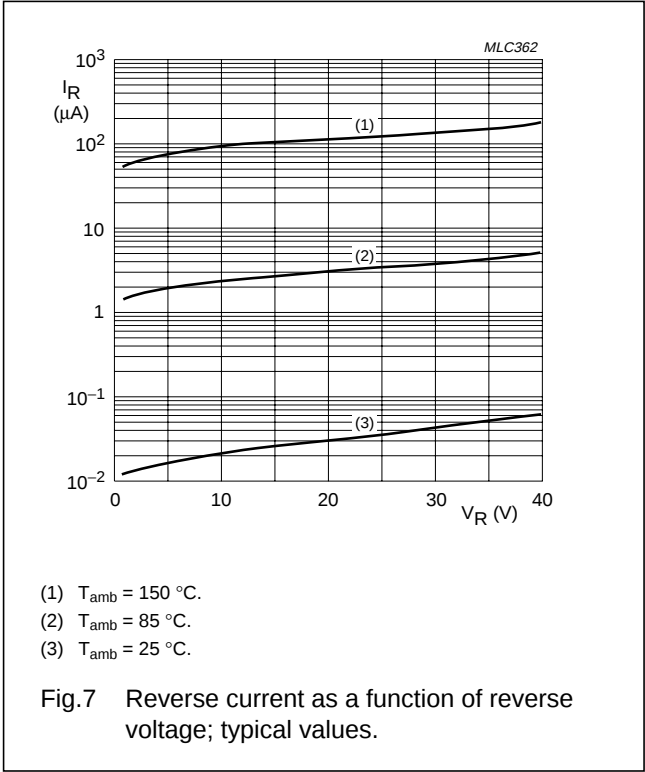
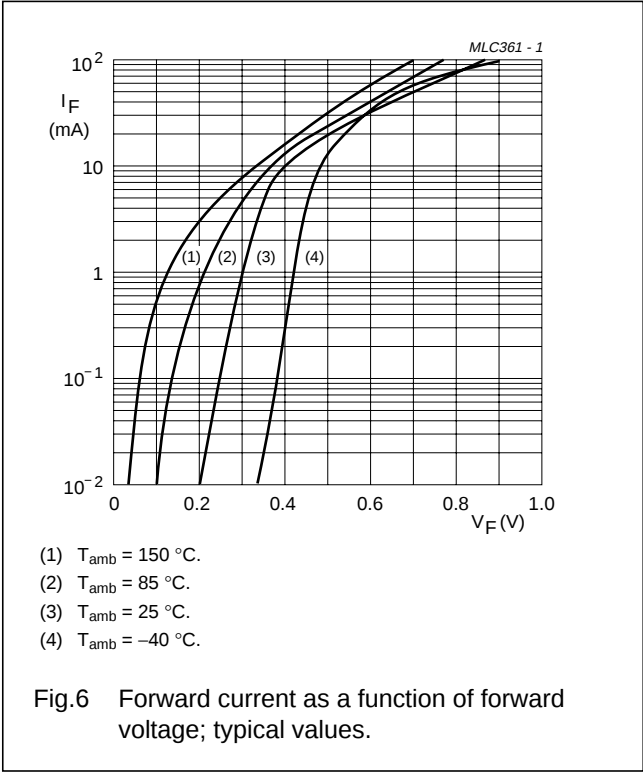
Note

1. Refer to SOT323 standard mounting conditions.

Schottky barrier (double) diodes

BAS40W series

GRAPHICAL DATA



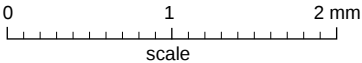
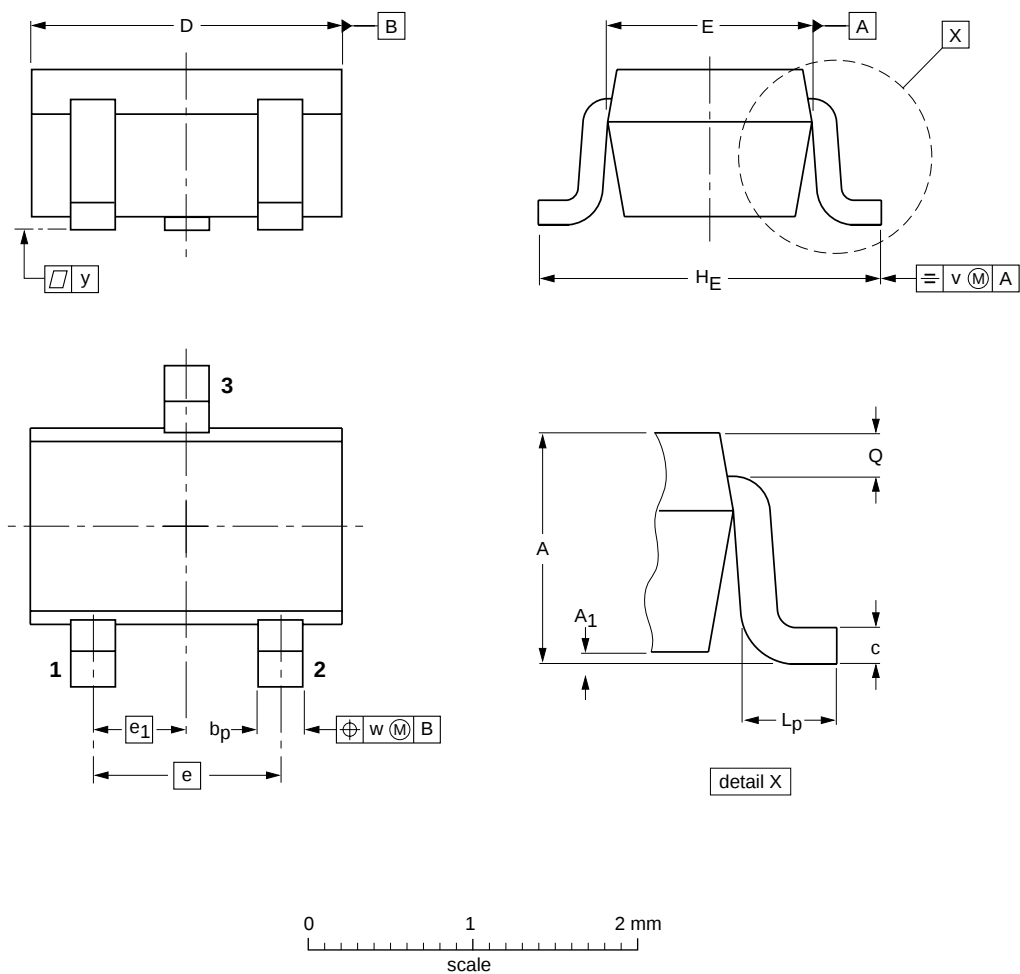
Schottky barrier (double) diodes

BAS40W series

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT323



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 0.8	0.1	0.4 0.3	0.25 0.10	2.2 1.8	1.35 1.15	1.3	0.65	2.2 2.0	0.45 0.15	0.23 0.13	0.2	0.2

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOT323			SC-70			97-02-28

Schottky barrier (double) diodes

BAS40W series

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.	

LIFE SUPPORT APPLICATIONS

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

BAS40W series

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Printed in The Netherlands

115002/00/03/pp8

Date of release: 1999 Apr 26

Document order number: 9397 750 05797

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