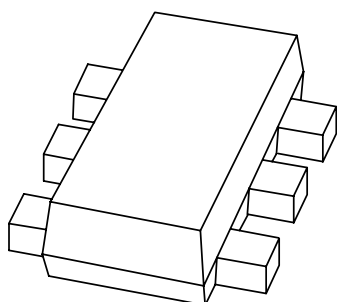


# DATA SHEET



## **BAS40-05V** Schottky barrier diodes

Product specification

2002 Nov 21

Schottky barrier diodes

BAS40-05V

FEATURES

- Low forward voltage
- Absorbs very high surge pulse
- Low capacitance
- Ultra small SMD plastic package
- Flat leads giving excellent coplanarity and improved thermal behaviour.

APPLICATIONS

- Ultra high-speed switching
- Voltage clamping
- Board space critical applications.

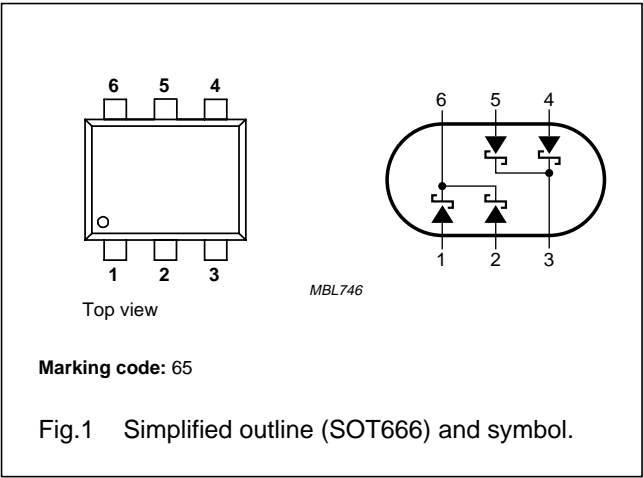
DESCRIPTION

The BAS40-05V consists of two dual Schottky barrier diodes with common cathodes and integrated guard ring for stress protection.

Two separate dice are encapsulated in a SOT666 ultra small SMD plastic package.

PINNING

PIN	DESCRIPTION
1	anode (a1)
2	anode (a2)
3	common cathode (k2)
4	anode (a3)
5	anode (a4)
6	common cathode (k1)



LIMITING VALUES

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

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	$t_p < 1\text{ s}; \delta < 0.5$	–	120	mA
$I_{FSM}$	non-repetitive peak forward current	$t = 8.3\text{ ms}$ half sinewave; JEDEC method	–	200	mA
$T_{stg}$	storage temperature		–65	+150	°C
$T_j$	junction temperature		–	150	°C
$T_{amb}$	operating ambient temperature		–65	+150	°C

## Schottky barrier diodes

## BAS40-05V

**ELECTRICAL CHARACTERISTICS**

$T_{\text{amb}} = 25\text{ }^{\circ}\text{C}$  unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MAX.	UNIT
<b>Per diode</b>				
$V_F$	continuous forward voltage	see Fig.2; note 1 $I_F = 1\text{ mA}$ $I_F = 10\text{ mA}$ $I_F = 40\text{ mA}$	380 500 1	mV mV V
$I_R$	reverse current	see Fig.3; note 1 $V_R = 30\text{ V}$ $V_R = 40\text{ V}$	1 10	$\mu\text{A}$ $\mu\text{A}$
$C_d$	diode capacitance	$V_R = 0\text{ V}$ ; $f = 1\text{ MHz}$ ; see Fig.5	5	pF

**Note**

1. Pulsed test:  $t_p = 300\text{ }\mu\text{s}$ ;  $\delta = 0.02$ .

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{\text{th j-a}}$	thermal resistance from junction to ambient	note 1	225	K/W

**Note**

1. Refer to SOT666 standard mounting conditions.

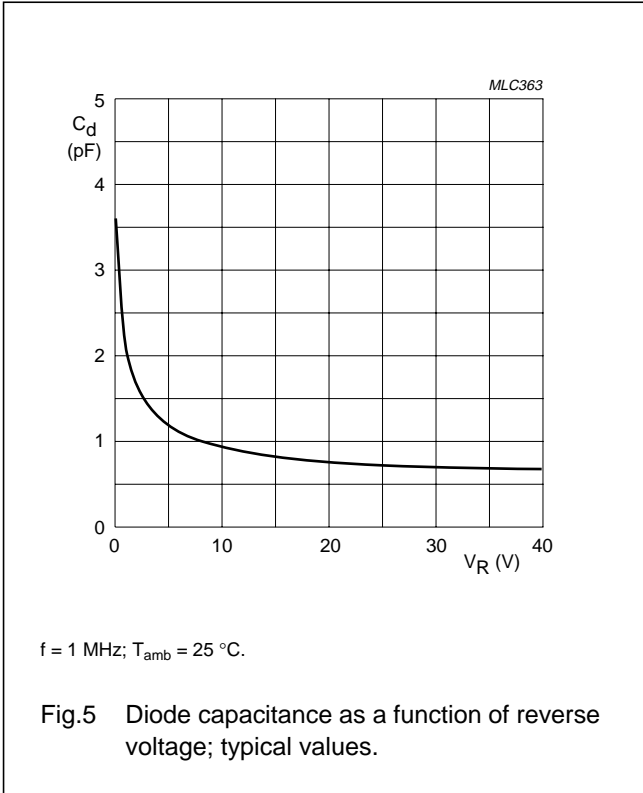
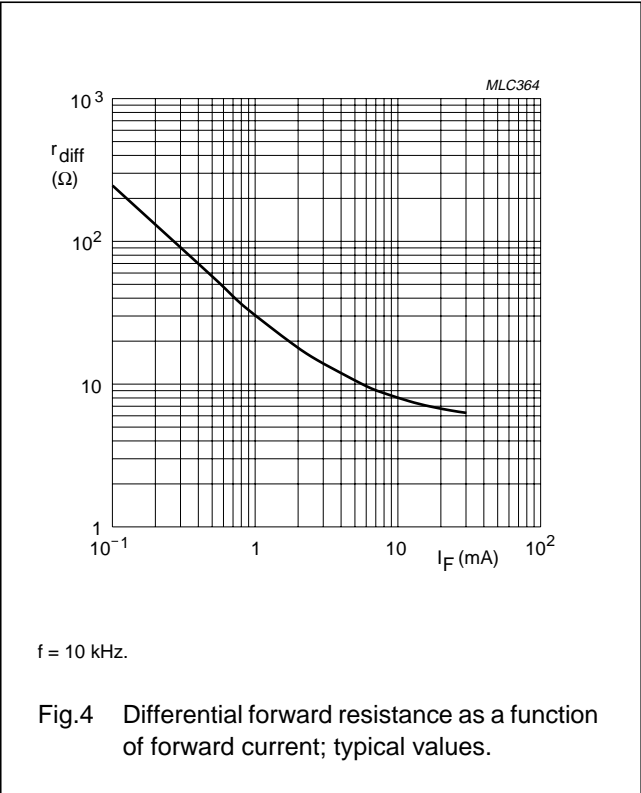
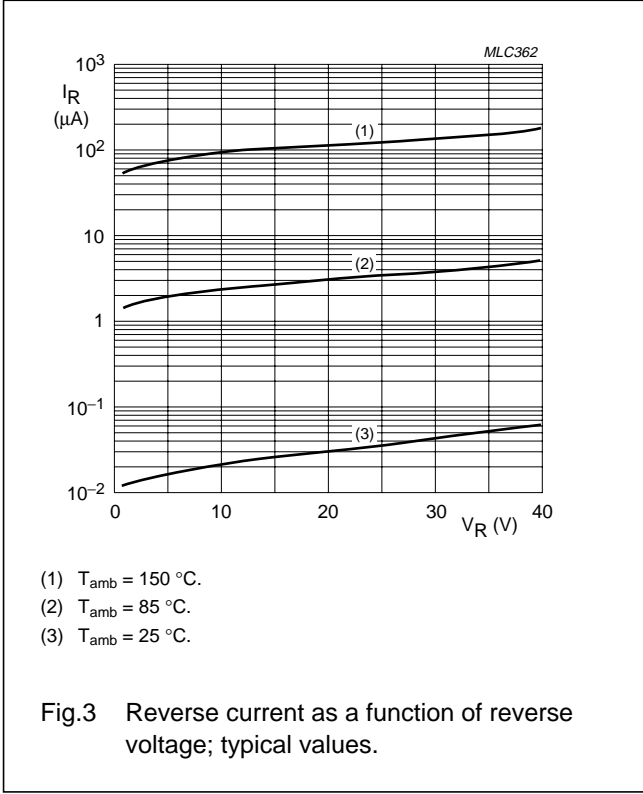
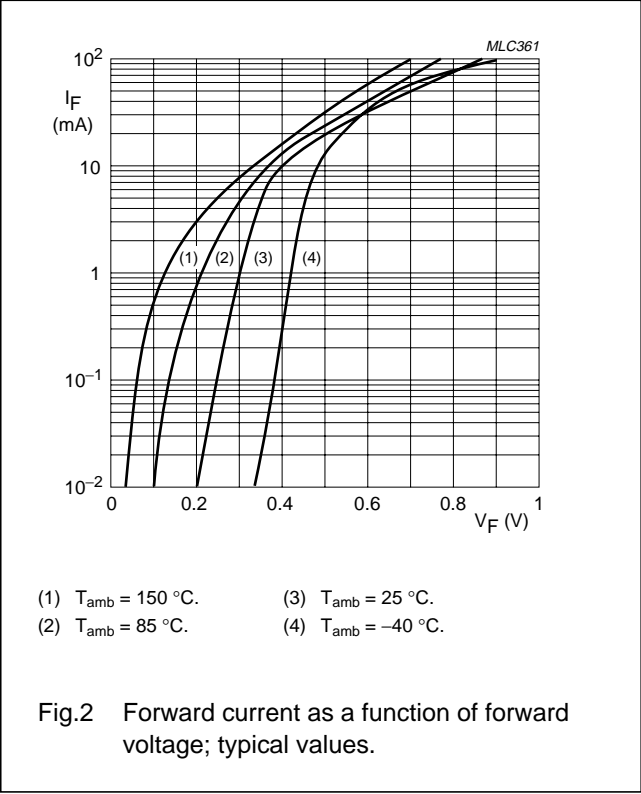
**Soldering**

The only recommended soldering is reflow soldering.

Schottky barrier diodes

BAS40-05V

GRAPHICAL DATA



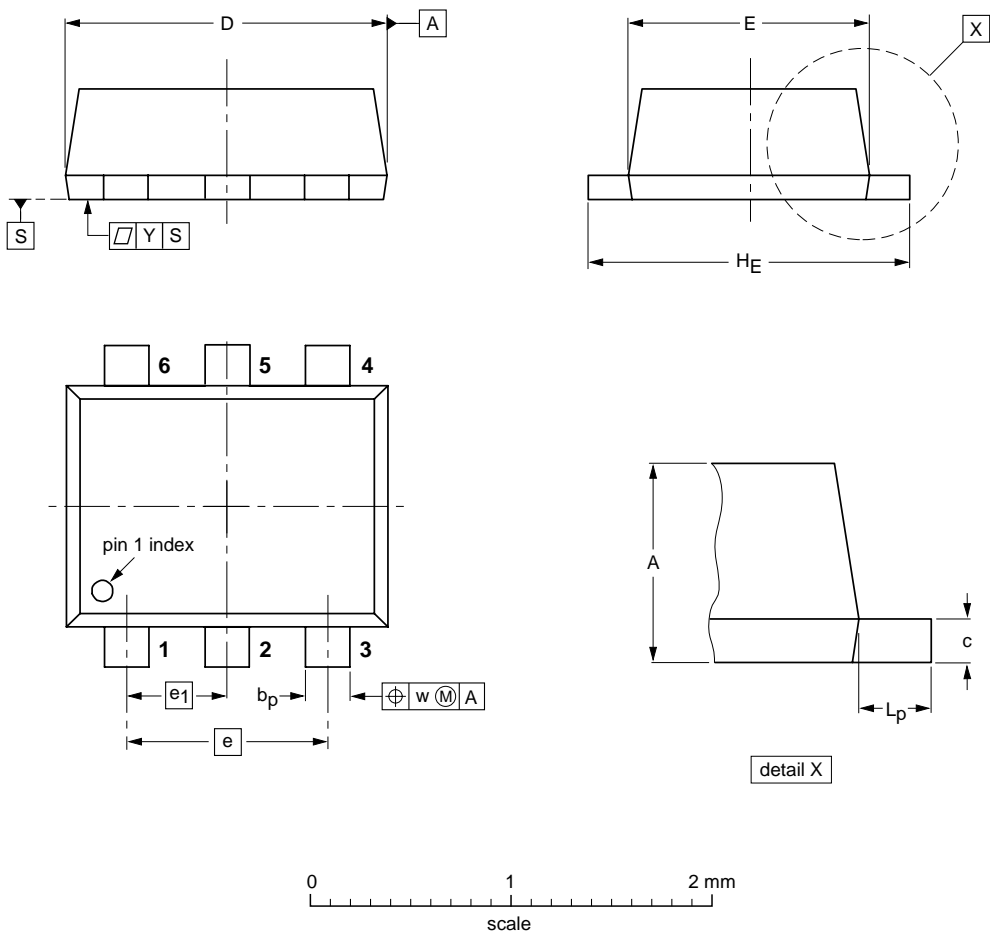
Schottky barrier diodes

BAS40-05V

PACKAGE OUTLINE


Plastic surface mounted package; 6 leads

SOT666



DIMENSIONS (mm are the original dimensions)

UNIT	A	b <sub>p</sub>	c	D	E	e	e <sub>1</sub>	H <sub>E</sub>	L <sub>p</sub>	w	y
mm	0.6 0.5	0.27 0.17	0.18 0.08	1.7 1.5	1.3 1.1	1.0	0.5	1.7 1.5	0.3 0.1	0.1	0.1

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOT666						-01-01-04- 01-08-27

## Schottky barrier diodes

BAS40-05V

## DATA SHEET STATUS

LEVEL	DATA SHEET STATUS <sup>(1)</sup>	PRODUCT STATUS <sup>(2)(3)</sup>	DEFINITION
I	Objective data	Development	This data sheet contains data from the objective specification for product development. Philips Semiconductors reserves the right to change the specification in any manner without notice.
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**Limiting values definition** — Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 60134). 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.

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Schottky barrier diodes

BAS40-05V

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**NOTES**

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