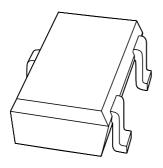
DISCRETE SEMICONDUCTORS

DATA SHEET



BAS70W seriesSchottky barrier (double) diodes

Product specification Supersedes data of 1996 Mar 19 1999 Mar 26





Schottky barrier (double) diodes

BAS70W series

BAS70-04W diode

BAS70-05W diode

configuration (symbol).

Fig.3

Fig.4

FEATURES

- · Low forward voltage
- · High breakdown voltage
- · Guard ring protected
- · Very small SMD package
- · Low capacitance.

APPLICATIONS

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

DESCRIPTION

Planar Schottky barrier diodes. Single diodes (BAS70W) and double diodes with different pinning (BAS70-04W; -05W; -06W) are available.

The diodes are encapsulated in a SOT323 very small plastic SMD package.

MARKING

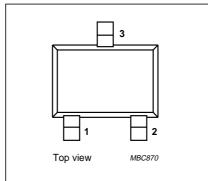
TYPE NUMBER	MARKING CODE ⁽¹⁾
BAS70W	73*
BAS70-04W	74*
BAS70-05W	75*
BAS70-06W	76*

Note

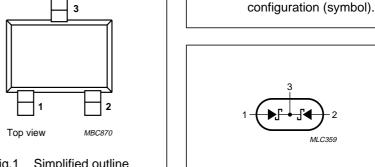
- 1. * = -: Made in Hong Kong.
 - * = t: Made in Malaysia.

PINNING

PIN	BAS70							
FIN	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				



Simplified outline (SOT323) and pin configuration.



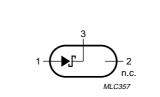


Fig.2 BAS70W single diode configuration (symbol).

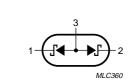


Fig.5 BAS70-06W diode configuration (symbol).

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Schottky barrier (double) diodes

BAS70W 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		_	70	V
I _F	continuous forward current		_	70	mA
I _{FRM}	repetitive peak forward current	$t_p \le 1 \text{ s}; \ \delta \le 0.5$	_	70	mA
I _{FSM}	non-repetitive peak forward current	t _p < 10 ms	_	100	mA
T _{stg}	storage temperature		-65	+150	°C
Tj	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	forward voltage	see Fig.6		
		I _F = 1 mA	410	mV
		I _F = 10 mA	750	mV
		I _F = 15 mA	1	V
I _R	reverse current	V _R = 50 V; note 1; see Fig.7	100	nA
		V _R = 70 V; note 1; see Fig.7	10	μΑ
τ	charge carrier life time (Krakauer method)	$I_F = 5 \text{ mA}$	100	ps
C _d	diode capacitance	f = 1 MHz; V _R = 0; see Fig.9	2	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	625	K/W

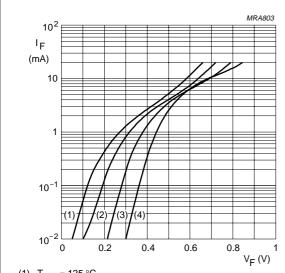
Note

1. Refer to SOT323 standard mounting conditions.

Schottky barrier (double) diodes

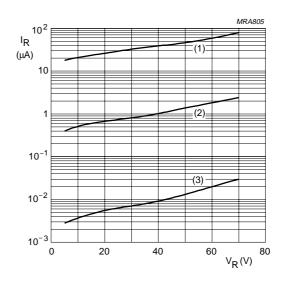
BAS70W series

GRAPHICAL DATA



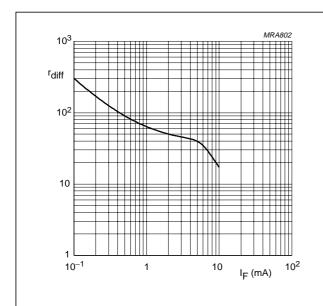
- (1) $T_{amb} = 125 \, ^{\circ}C$.
- (2) $T_{amb} = 85 \, ^{\circ}C$.
- (3) $T_{amb} = 25 \, ^{\circ}C$.
- (4) $T_{amb} = -40 \, ^{\circ}C$.

Forward current as a function of forward voltage; typical values.



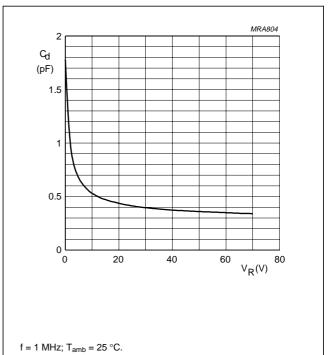
- (1) $T_{amb} = 125 \, ^{\circ}C$.
- (2) $T_{amb} = 85 \, ^{\circ}C$.
- (3) $T_{amb} = 25 \,^{\circ}C$.

Reverse current as a function of reverse voltage; typical values.



f = 10 kHz.

Fig.8 Differential forward resistance as a function of forward current; typical values.



4

Diode capacitance as a function of reverse voltage; typical values.

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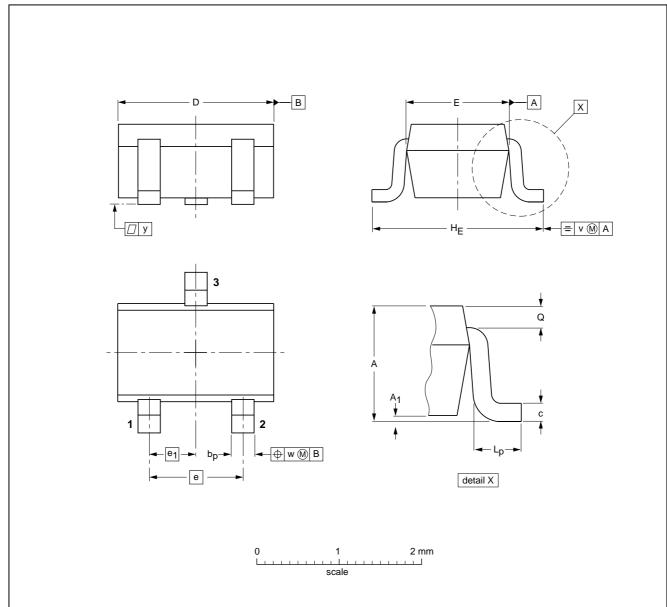
Schottky barrier (double) diodes

BAS70W series

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT323



DIMENS	1013 (11	iiii are t	ne ongn	iai uiiile	11510115)	
						_

UNIT	A	A ₁ max	bp	С	D	E	е	e ₁	HE	Lp	Q	٧	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		REFERENCES			EUROPEAN ISSUE DAT		
VERSION	IEC	JEDEC	EIAJ		PROJECTION	ISSUE DATE	
SOT323			SC-70			97-02-28	

Schottky barrier (double) diodes

BAS70W 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				

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

BAS70W series

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