

Schottky barrier diodes

BAS70 series

FEATURES

- Low leakage current
- Low turn-on and high breakdown voltage
- Ultra fast switching speed.

DESCRIPTION

The BAS70 series are silicon epitaxial Schottky barrier diodes with an integrated guard ring for stress protection. Single diodes (BAS70) and double diodes with different pinning (BAS70-04; -05; -06) are available. They are intended for high speed switching, circuit protection and voltage clamping applications.

The diodes are encapsulated in a SOT23 SMD plastic package.

PIN CONFIGURATION

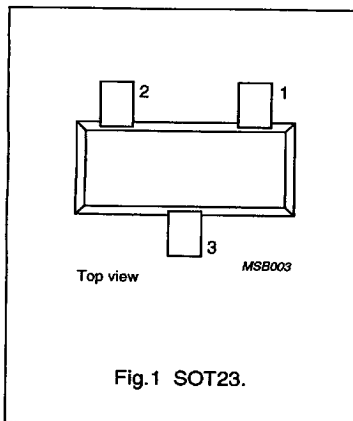
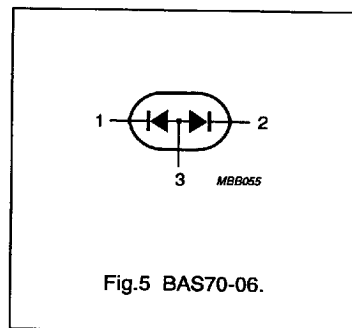
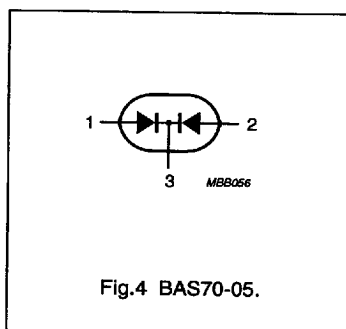
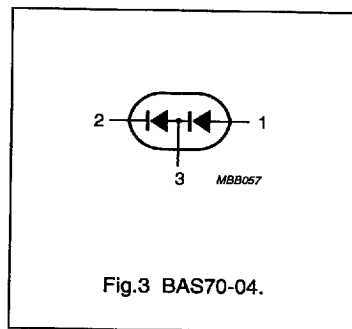
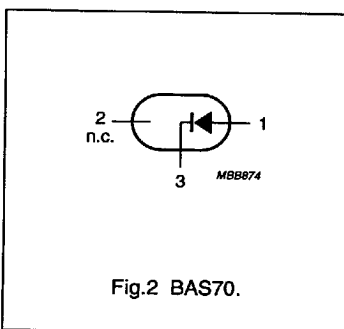


Fig.1 SOT23.

QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	MAX.	UNIT
V_R	continuous reverse voltage		70	V
I_F	continuous forward current		70	mA
V_F	forward voltage	$I_F = 1 \text{ mA}$	410	mV
I_R	reverse current	$V_R = 50 \text{ V}$	100	nA
T_j	junction temperature		150	°C
C_d	diode capacitance	$V_R = 0$	2	pF

SYMBOLS



PINNING/MARKING CODES

PIN	BAS70	BAS70-04	BAS70-05	BAS70-06
1	a	a1	a1	k1
2	n.c.	k2	a2	k2
3	k	k1/a2	k1/k2	a1/a2
Marking code	73p	74p	75p	76p

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LIMITING VALUES (per diode)

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_R	continuous reverse voltage		–	70	V
I_F	continuous forward current		–	70	mA
I_{FRM}	repetitive peak forward current	$t_p \leq 1$ s; $\delta \leq 0.5$	–	70	mA
I_{FSM}	non-repetitive peak forward current	$t_p < 10$ ms	–	100	mA
T_{stg}	storage temperature		–65	+150	°C
T_{amb}	operating ambient temperature		–65	+150	°C
T_j	junction temperature		–	150	°C

THERMAL RESISTANCE

SYMBOL	PARAMETER	THERMAL RESISTANCE
$R_{th\ j-a}$	from junction to ambient; note 1	500 K/W

Note

1. PCB mounting (SOT23 standard conditions).

CHARACTERISTICS

$T_j = 25$ °C unless otherwise specified.

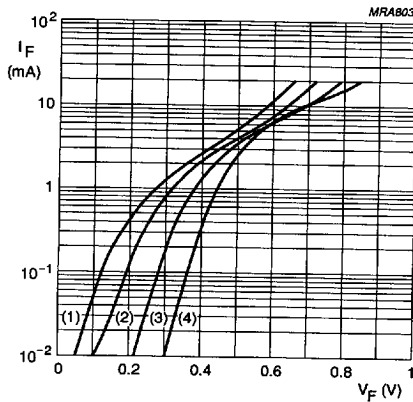
SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_F	forward voltage	$I_F = 1$ mA	–	410	mV
		$I_F = 10$ mA	–	750	mV
		$I_F = 15$ mA	–	1	V
$V_{(BR)R}$	reverse breakdown voltage	$I_R = 10$ μ A	70	–	V
I_R	reverse current	$V_R = 50$ V; note 1	–	100	nA
		$V_R = 70$ V; note 1	–	10	μ A
C_d	diode capacitance	$V_R = 0$ V; $f = 1$ MHz	–	2	pF
τ	charge carrier life-time; Krakauer method	$I_F = 5$ mA	–	100	ps

Note

1. Pulsed test: pulse width = 300 μ s ; $\delta = 0.02$.

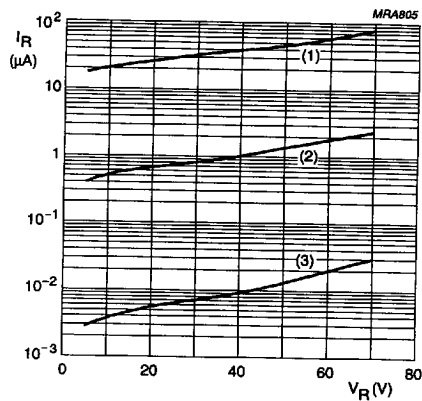
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- (1) $T_{amb} = 125^\circ\text{C}$.
- (2) $T_{amb} = 85^\circ\text{C}$.
- (3) $T_{amb} = 25^\circ\text{C}$.
- (4) $T_{amb} = -40^\circ\text{C}$.

Fig.6 Forward current as a function of forward voltage.



- (1) $T_{amb} = 150^\circ\text{C}$.
- (2) $T_{amb} = 85^\circ\text{C}$.
- (3) $T_{amb} = 25^\circ\text{C}$.

Fig.7 Reverse current as a function of reverse voltage.

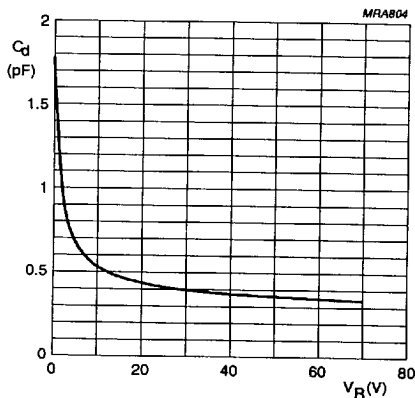
 $f = 1\text{ MHz}$.

Fig.8 Diode capacitance as a function of reverse voltage.

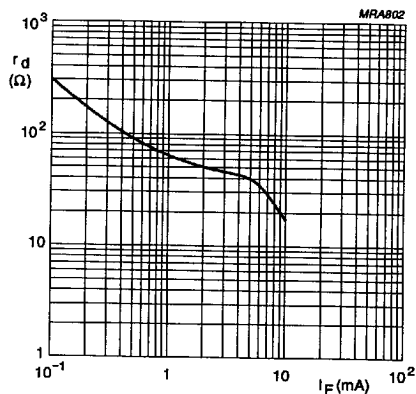
 $f = 10\text{ kHz}$.

Fig.9 Differential resistance as a function of forward current.