

General purpose diodes

BAS19; BAS20; BAS21

FEATURES

- Small plastic SMD package
- Switching speed: max. 50 ns
- General application
- Continuous reverse voltage: max. 100 V; 150 V; 200 V
- Repetitive peak reverse voltage: max. 120 V; 200 V; 250 V
- Repetitive peak forward current: max. 625 mA.

APPLICATIONS

- General purpose switching in e.g. surface mounted circuits.

DESCRIPTION

The BAS19, BAS20 and BAS21 are general purpose diodes fabricated in planar technology, and encapsulated in a small SOT23 plastic SMD package.

MARKING

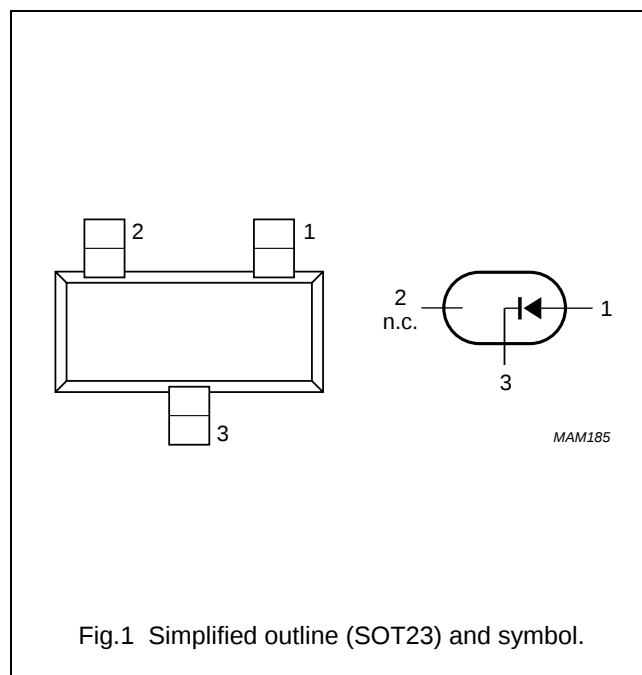
TYPE NUMBER	MARKING CODE ⁽¹⁾
BAS19	JP*
BAS20	JR*
BAS21	JS*

Note

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

PINNING

PIN	DESCRIPTION
1	anode
2	not connected
3	cathode



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LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_{RRM}	repetitive peak reverse voltage				
	BAS19		–	120	V
	BAS20		–	200	V
	BAS21		–	250	V
V_R	continuous reverse voltage				
	BAS19		–	100	V
	BAS20		–	150	V
	BAS21		–	200	V
I_F	continuous forward current	see Fig.2; note 1	–	200	mA
I_{FRM}	repetitive peak forward current		–	625	mA
I_{FSM}	non-repetitive peak forward current	square wave; $T_j = 25\text{ °C}$ prior to surge; see Fig.4			
		$t = 1\text{ }\mu\text{s}$	–	9	A
		$t = 100\text{ }\mu\text{s}$	–	3	A
		$t = 10\text{ ms}$	–	1.7	A
P_{tot}	total power dissipation	$T_{amb} = 25\text{ °C}$; note 1	–	250	mW
T_{stg}	storage temperature		–65	+150	°C
T_j	junction temperature		–	150	°C

Note

1. Device mounted on an FR4 printed-circuit board.

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ELECTRICAL CHARACTERISTICST_j = 25 °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MAX.	UNIT
V _F	forward voltage	see Fig.3 I _F = 100 mA I _F = 200 mA	1 1.25	V V
I _R	reverse current BAS19 BAS20 BAS21	see Fig.5 V _R = 100 V V _R = 100 V; T _j = 150 °C V _R = 150 V V _R = 150 V; T _j = 150 °C V _R = 200 V V _R = 200 V; T _j = 150 °C	100 100 100 100 100 100	nA μA nA μA nA μA
C _d	diode capacitance	f = 1 MHz; V _R = 0; see Fig.6	5	pF
t _{rr}	reverse recovery time	when switched from I _F = 30 mA to I _R = 30 mA; R _L = 100 Ω; measured at I _R = 3 mA; see Fig.8	50	ns

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
R _{th j-tp}	thermal resistance from junction to tie-point		330	K/W
R _{th j-a}	thermal resistance from junction to ambient	note 1	500	K/W

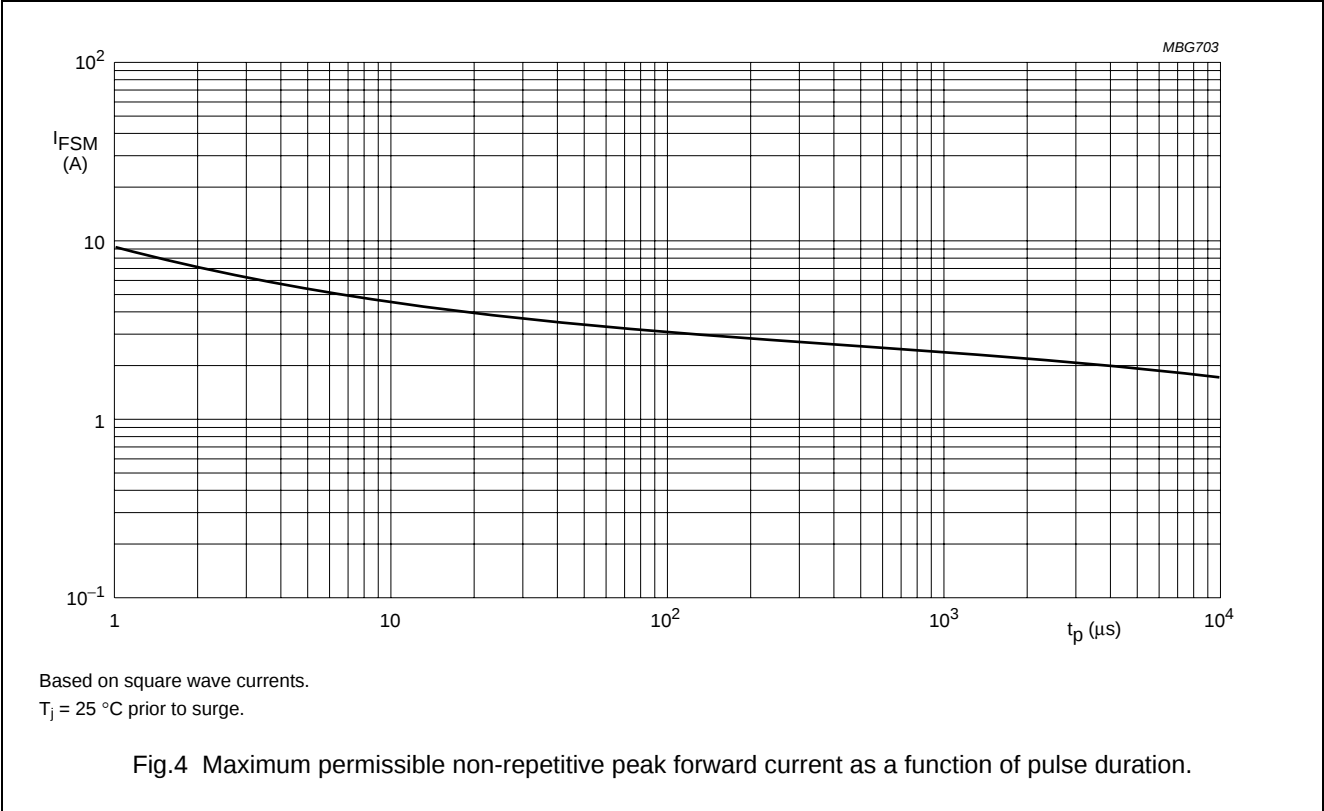
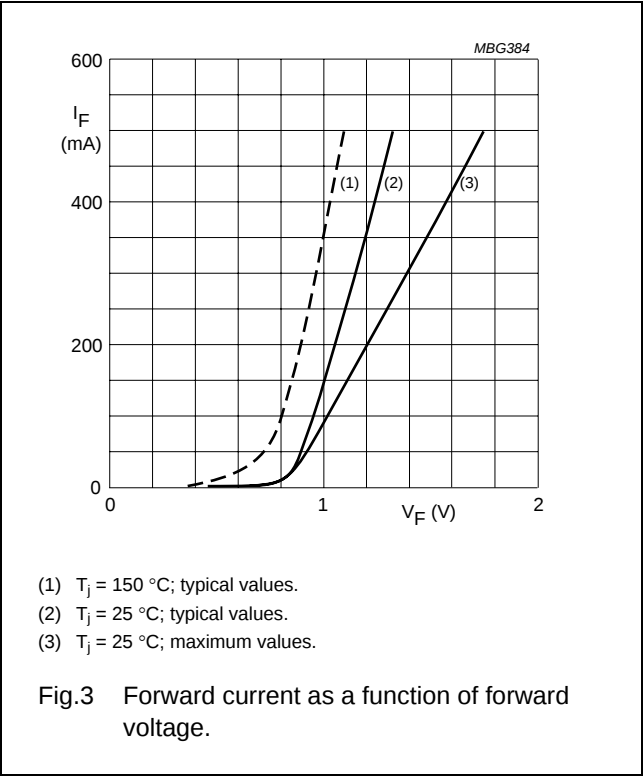
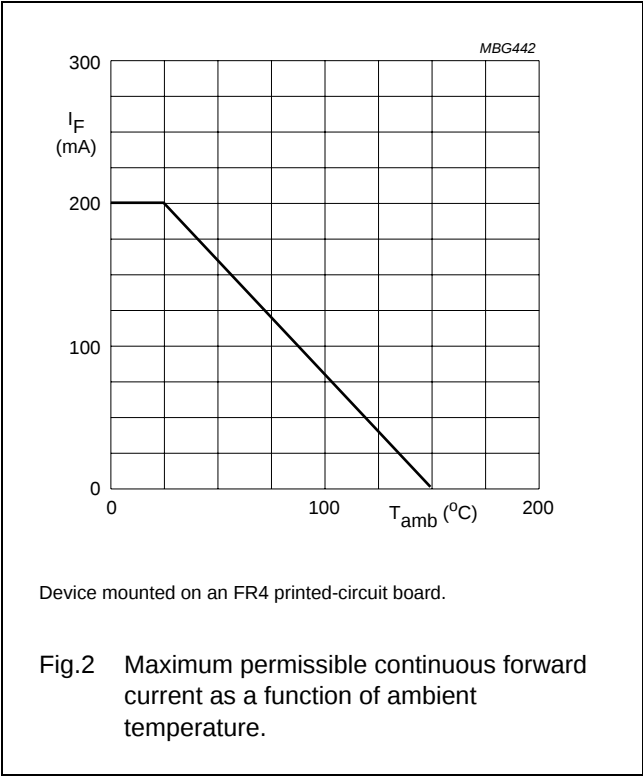
Note

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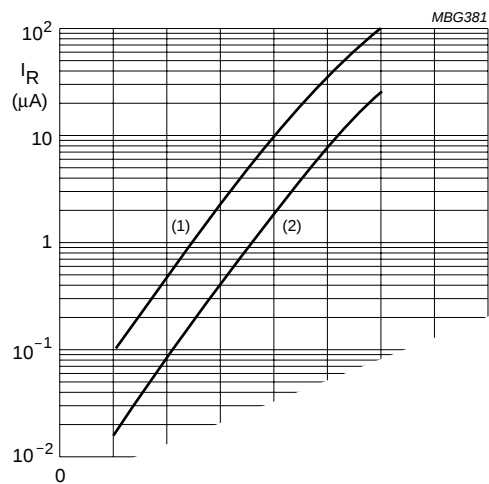
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GRAPHICAL DATA



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- (1) $V_R = V_{Rmax}$; maximum values.
(2) $V_R = V_{Rmax}$; typical values.

Fig.5 Reverse current as a function of junction temperature.

f =