

SILICON PLANAR EPITAXIAL HIGH-SPEED DIODES

The BAS29, BAS31 and the BAS35 are silicon planar epitaxial diodes encapsulated in a SOT-23 envelope. The BAS29 consists of a single diode. The BAS31 has two diodes in series and the BAS35 has two diodes with a common anode. All diodes are designed for switching inductive loads in semi-electronic telephone exchanges.

QUICK REFERENCE DATA (per diode)

Continuous reverse voltage	V_R	max.	90 V
Repetitive peak forward current	I_{FRM}	max.	600 mA
Forward current	I_F	max.	250 mA
Junction temperature	T_j	max.	150 °C
Forward voltage at $I_F = 50$ mA	V_F	<	0,84 V
Reverse recovery time when switched from $I_F = 30$ mA to $I_R = 30$ mA; $R_L = 100 \Omega$; measured at $I_R = 3$ mA	t_{rr}	<	50 ns

MECHANICAL DATA

Fig. 1 SOT-23.

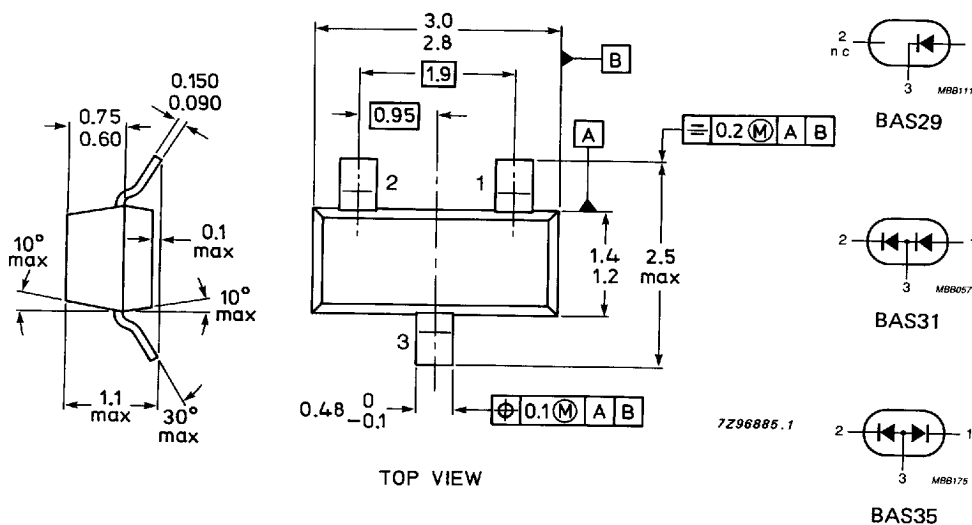
Dimensions in mm

Marking code:

BAS29 = L20

BAS31 = L21

BAS35 = L22



RATINGS (per diode)

Limiting values in accordance with the Absolute Maximum System (IEC 134)

Continuous reverse voltage	V_R	max.	90 V
Repetitive peak forward current	I_{FRM}	max.	600 mA
Repetitive peak reverse current	I_{RRM}	max.	600 mA
Average rectified forward current (averaged over any 20 ms period)	$I_F(AV)$	max.	250 mA
Non-repetitive peak forward current			
$t = 1 \mu s$; $T_j = 25^\circ C$ prior to surge; per crystal	I_{FSM}	max.	3 A
$t = 1 s$; $T_j = 25^\circ C$ prior to surge; per crystal			0,75 A
Forward current (DC)	I_F	max.	250 mA
Repetitive peak reverse energy $t_p \geq 50 \mu s$; $f \leq 20$ Hz; $T_j = 25^\circ C$	E_{RRM}	max.	5,0 mJ
Storage temperature	T_{stg}		-65 to + 150 $^\circ C$
Junction temperature	T_j	max.	150 $^\circ C$

THERMAL RESISTANCE*

From junction to ambient**	$R_{th j-a}$	=	430 K/W
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CHARACTERISTICS (per diode)

$T_j = 25^\circ C$ unless otherwise specified

Forward voltage			
$I_F = 10$ mA	V_F	<	0,75 V
$I_F = 50$ mA	V_F	<	0,84 V
$I_F = 100$ mA	V_F	<	0,90 V
$I_F = 200$ mA	V_F	<	1,00 V
$I_F = 400$ mA	V_F	<	1,25 V
Reverse current			
$V_R = 90$ V	I_R	<	100 nA
$V_R = 90$ V; $T_j = 150^\circ C$	I_R	<	100 μA
Reverse avalanche breakdown voltage			
$I_R = 1$ mA	$V_{(BR)R}$		120 to 175 V
Diode capacitance			
$V_R = 0$; $f = 1$ MHz	C_d	<	35 pF
Reverse recovery time when switched from			
$I_F = 30$ mA to $I_R = 30$ mA; $R_L = 100 \Omega$;			
measured at $I_R = 3$ mA	t_{rr}	<	50 ns

* See Thermal Characteristics.

** When mounted on a ceramic substrate of 8 mm x 10 mm x 0,7 mm.