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 Ω; measured at I_R = 3 mA	t_{rr}	<	50	ns

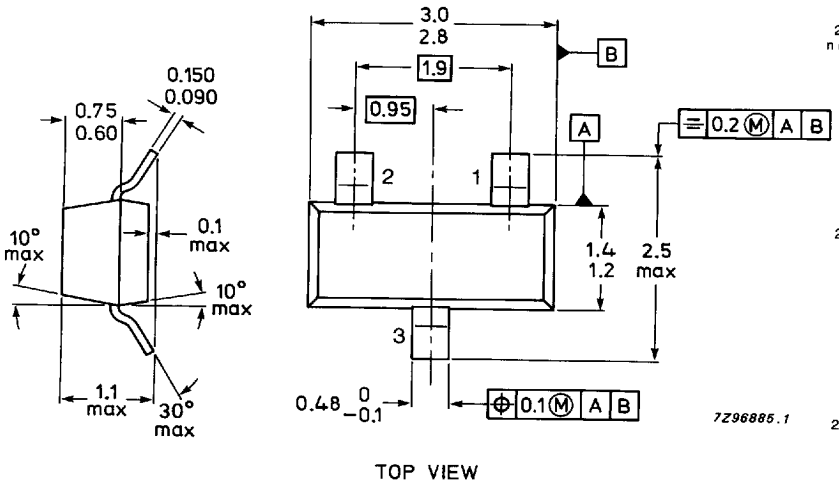
MECHANICAL DATA

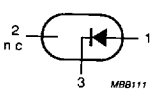
Fig. 1 SOT-23.

Dimensions in mm

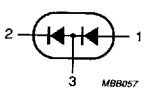
Marking code:

BAS29 = L20
BAS31 = L21
BAS35 = L22

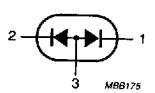




BAS29



BAS31



BAS35

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 $t = 1\ \mu s$; $T_j = 25\ ^oC$ prior to surge; per crystal $t = 1$ s; $T_j = 25\ ^oC$ prior to surge; per crystal	I_{FSM}	max.	3 A 0,75 A
Forward current (DC)	I_F	max.	250 mA
Repetitive peak reverse energy $t_p \geqslant 50\ \mu s$; $f \leqslant 20$ Hz; $T_j = 25\ ^oC$	E_{RRM}	max.	5,0 mJ
Storage temperature	T_{stg}		−65 to + 150 °C
Junction temperature	T_j	max.	150 °C

THERMAL RESISTANCE*

From junction to ambient**	$R_{th\ j\text{-}a}$	=	430 K/W

CHARACTERISTICS (per diode)

$T_j = 25\ ^oC$ 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; $T_j = 150\ ^oC$	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.