

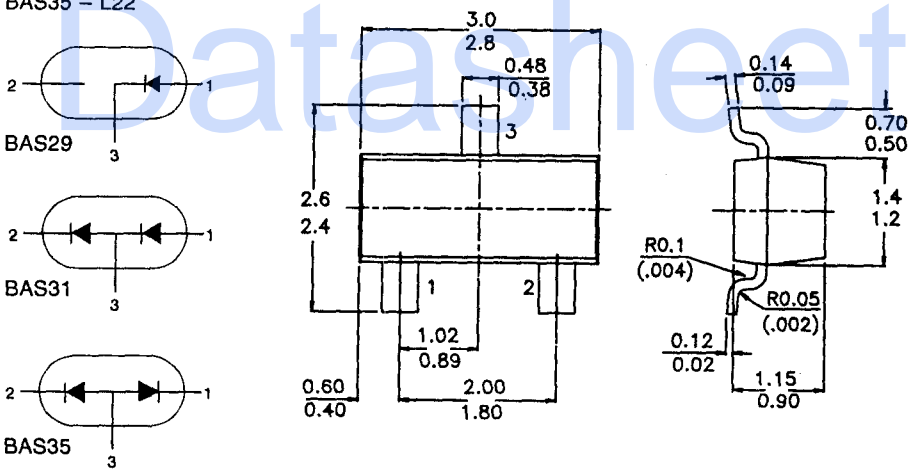
SILICON PLANAR EPITAXIAL HIGH-SPEED DIODE

BAS29 single diode, BAS31 dual diodes in series and BAS35 dual diodes, common anodes.

Marking

BAS29- L20
 BAS31 - L21
 BAS35 - L22

PACKAGE OUTLINE DETAILS
 ALL DIMENSIONS IN mm



ABSOLUTE MAXIMUM RATINGS (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}	<	75 ns

RATINGS (per diode) (at $T_A = 25^\circ\text{C}$ unless otherwise specified)

Limiting values

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 $t = 1 \mu s$; $T_j = 25 \text{ }^\circ\text{C}$ prior to surge; per crystal	I_{FSM}	max.	3 A
$t = 1 \text{ s}$; $T_j = 25 \text{ }^\circ\text{C}$ prior to surge; per crystal		max.	0.75 A
Forward current (D)	I_F	max.	250 mA
Repetitive peak reverse energy $t_p \geq 50 \mu s$; $f \leq 20 \text{ Hz}$; $T_j = 25 \text{ }^\circ\text{C}$	E_{RRM}	max.	5.0 mJ
Storage temperature	T_{stg}		-55 to +150 $^\circ\text{C}$
Junction temperature	T_j	max.	150 $^\circ\text{C}$

THERMAL RESISTANCE

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

$T_{amb} = 25 \text{ }^\circ\text{C}$ unless otherwise specified

Forward voltage

$I_F = 10 \text{ mA}$	V_F	<	0.75 V
$I_F = 50 \text{ mA}$	V_F	<	0.84 V
$I_F = 100 \text{ mA}$	V_F	<	0.90 V
$I_F = 200 \text{ mA}$	V_F	<	1.00 V
$I_F = 400 \text{ mA}$	V_F	<	1.25 V

Reverse currents

$V_R = 90 \text{ V}$	I_R	<	100 nA
$V_R = 90 \text{ V}$; $T_{amb} = 150 \text{ }^\circ\text{C}$	I_R	<	100 μA

Reverse avalanche breakdown voltage

$I_R = 1 \text{ mA}$	$V_{(BR)R}$		120 to 175 V
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Diode capacitance

$V_R = 0$; $f = 1 \text{ MHz}$	C_d	<	35 pF
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Reverse recovery time when switched from

$I_F = 30 \text{ mA}$ to $I_R = 30 \text{ mA}$; $R_L = 100 \Omega$; measured at $I_R = 3 \text{ mA}$	t_{rr}	<	75 ns
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* When mounted on a ceramic substrate of 8 mm x 10 mm x 0.7 mm.