Transys Electronics LIMITED

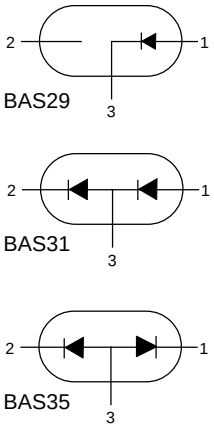
SOT-23 BAS29, BAS31, BAS35

SILICON PLANAR EPITAXIAL HIGH-SPEED DIODE

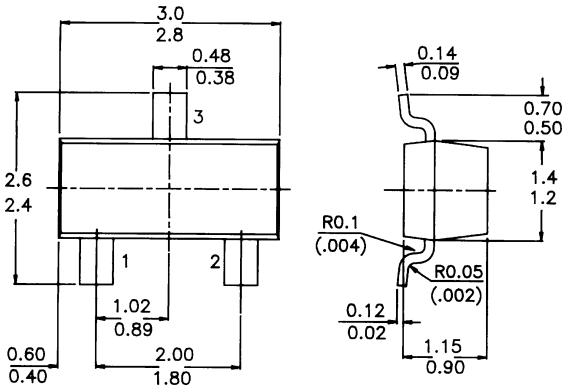
BAS29 single diode, BAS31 dual diodes in series and BAS35 dual diodes, common anodes.

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 Ω; measured at* I_R *= 3 mA*	t_{rr}	<	*75 ns*

RATINGS *(per diode) (at* T_A *= 25°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 µs; T_j = 25 °C prior to surge; per crystal	I_{FSM}	*max.*	*3 A*
t = 1 s; T_j = 25 °C prior to surge; per crystal		*max.*	*0.75 A*
Forward current (D)	I_F	*max.*	*250 mA*
Repetitive peak reverse energy			
$t_p \geq 50$ µs; $f \leq 20$ Hz; T_j = 25 °C	E_{RRM}	*max.*	*5.0 mJ*
Storage temperature	*Tstg*	*–55 to +150*	*°C*
Junction temperature	*Tj*	*max.*	*150 °C*

THERMAL RESISTANCE

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

CHARACTERISTICS *(per diode)*

T_{amb} = 25 °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 currents			
V_R = 90 V	I_R	<	*100 nA*
V_R = 90 V; T_{amb} = 150 °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 Ω;			
measured at I_R = 3 mA	t_{rr}	<	*75 ns*

** When mounted on a ceramic substrate of 8 mm × 10 mm × 0.7 mm.*