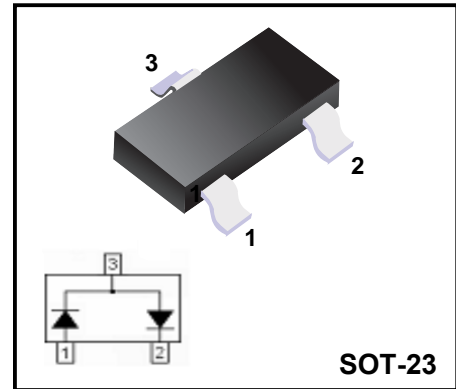


Plastic-Encapsulate Diode

High Voltage General Purpose Diode Applications

Features

- ◆ Repetitive peak reverse voltage: max.120V
- ◆ High Conductance: $I_F= 200\text{ mA}$
- ◆ Continuous reverse voltage: max.90V
- ◆ Fast Switching Speed: $t_{rr} < 50\text{ ns}$
- ◆ Small Plastic SOT-23 Package



SOT-23

Marking Code

Marking Code	
BAS31	L21

Absolute Maximum Ratings ($T_A=25^\circ\text{C}$)

Parameter	Symbol	Values	Units
Repetitive peak reverse voltage	V_{RRM}	120	V
Continuous reverse voltage	V_R	90	V
Forward current	I_F	200	mA
Repetitive peak forward current	I_{FRM}	600	mA
Power dissipation $T_S \leq 55^\circ\text{C}$	P_D	350	mW
Operating temperature range	T_j	-55~150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55~150	$^\circ\text{C}$
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	357	K/W

Electrical Characteristics ($T_A=25^\circ\text{C}$ Unless otherwise noted)

Parameter	Symbol	Test Conditions	Min.	Typ	Max.	Units
Breakdown Voltage, per Diode	V_R	$I_R= 1.0\text{mA}$	120			V
Forward voltage, per Diode	V_F	$I_F = 10\text{ mA}$			0.75	V
		$I_F = 50\text{ mA}$			0.84	
		$I_F = 100\text{ mA}$			0.90	
		$I_F = 200\text{ mA}$			1.0	
		$I_F = 400\text{ mA}$			1.25	
Reverse Leakage, per Diode	I_R	$V_R = 90\text{V}$			0.1	μA
		$V_R = 90\text{V}, T_A = 150^\circ\text{C}$			100	
Capacitance, per Diode	C_O	$V_R = 0\text{ V}, f = 1.0\text{ MHz}$			35	pF
Reverse-Recovery Time, per Diode	t_{rr}	$I_F= I_R=30\text{ mA}, V_R= 6\text{V}$ $I_{RR}= 3\text{mA}, R_L = 100\ \Omega$			50	ns

Typical Characteristics

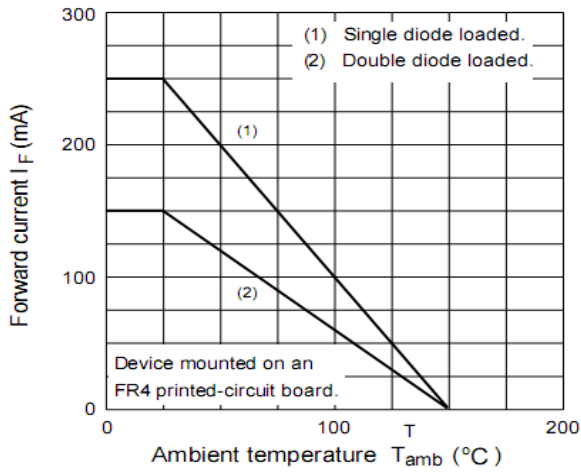


Figure 1. Forward current vs. junction temperature.

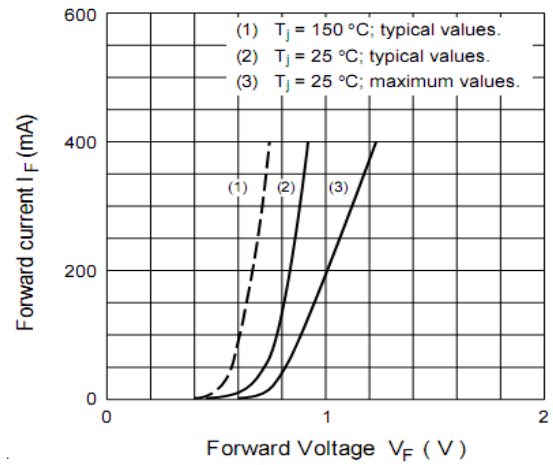


Figure 2. Forward current vs. forward voltage

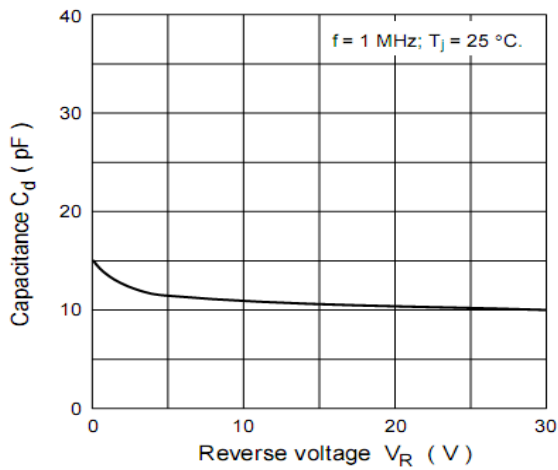


Figure 3. Total Capacitance vs. Reverse Voltage

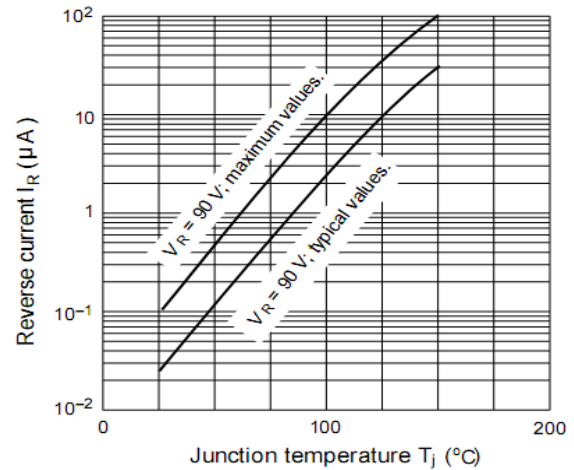


Figure 4. Reverse Current vs. Junction temperature.

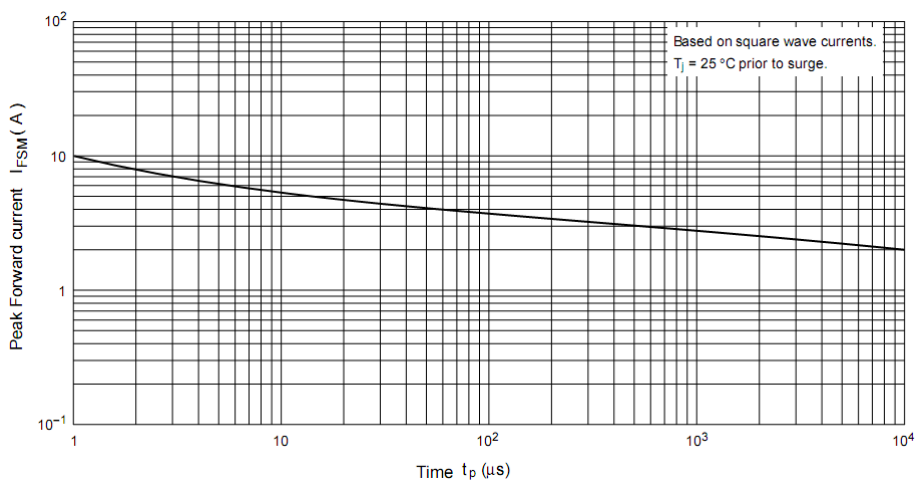


Figure 5. Maximum non-repetitive peak forward current

Ordering information

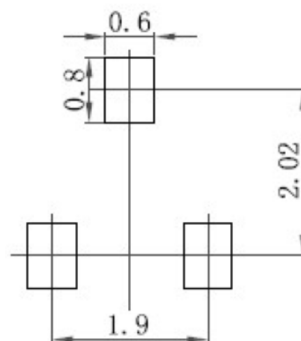
Package	Packing Description	Base Quantity	Packing Quantity
SOT-23	Tape/Reel,7"reel	3000pcs/Reel	24000PCS/Box 120000PCS/Carton

Package Dimensions

SOT-23

Dim.	Millimeter (mm)		mil	
	Min.	Max.	Min.	Max.
A	0.9	1.15	35	45
A1	0.1		3.9	
bp	0.38	0.48	15	19
C	0.09	0.15	3.54	5.9
D	2.8	3.0	110	118
E	1.2	1.4	47	55
E	1.9		75	
E1	0.95		37	
HE	2.1	2.55	83	100
Lp	0.15	0.45	5.9	18
Q	0.45	0.55	18	22
v	0.2		7.9	
W	0.1		4	

The recommended mounting pad size



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