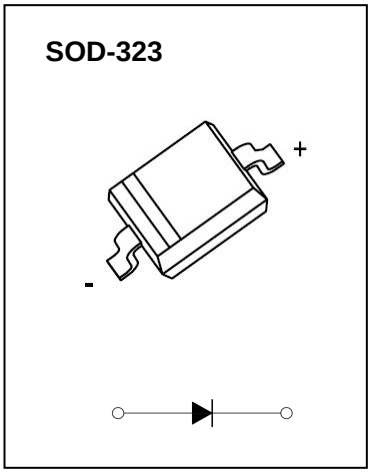
High Voltage Switching Diode

SOD-323



1. FEATURES

- We declare that the material of product compliance with RoHS requirements and Halogen Free.
- AEC-Q101 qualified (Automotive grade with suffix "Q")
- Exsemi technology

2. DEVICE MARKING AND RESISTOR VALUES

Device	Marking	Shipping
BAS316	A6	3000/Tape&Reel

3. MAXIMUM RATINGS(Ta = 25ºC)

Parameter	Symbol	Limits	Unit
Continuous Reverse Voltage	VR	100	V
Peak Forward Current	IF	250	mA
Peak Forward Surge Current	IFSM	500	mA

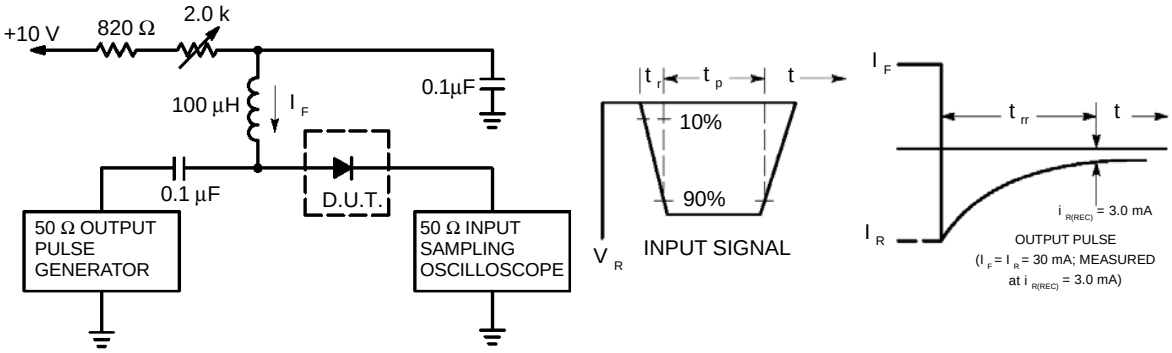
4. THERMAL CHARACTERISTICS

Parameter	Symbol	Limits	Unit
Total Device Dissipation FR– 5 Board, (Note 1) TA = 25°C	PD	250	mW
Thermal Resistance, Junction to Ambient	RθJA	300	℃/W
Total Device Dissipation Alumina Substrate, (Note 2) TA = 25°C	PD	300	mW
Derate above 25°C		2.4	mW/℃
Thermal Resistance, Junction to Ambient	RθJA	417	℃/W
Junction and Storage Temperature	TJ , Tstg	-55~+150	℃

1. FR–5 = 1.0 x 0.75 x 0.062 in.
2. Alumina = 0.4 x 0.3 x 0.024 in. 99.5% alumina.

5. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

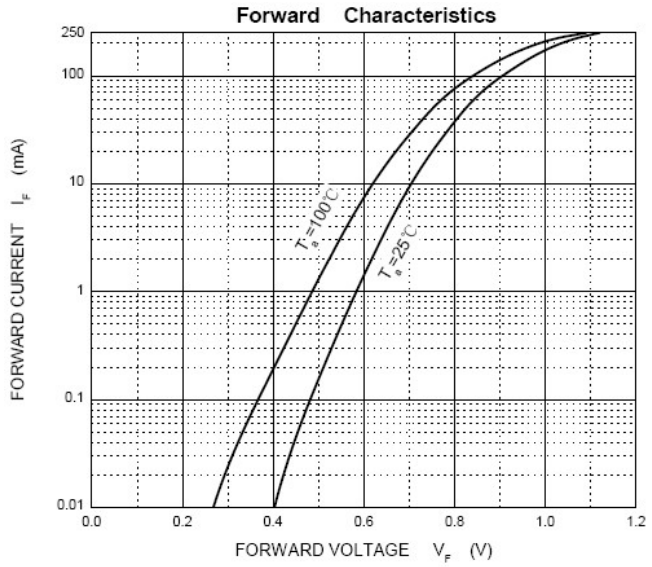
Characteristic	Symbol	Min	Max	Unit
Reverse Voltage Leakage Current	I_R			µAdc
(V_R = 75Vdc)		—	1.0	
(V_R = 75 Vdc, T_J = 150°C)		—	50	
(V_R = 25 Vdc, T_J = 150°C)		—	30	
Reverse Breakdown Voltage (I_{BR} = 100 µAdc)	$V_{(BR)}$	75	—	Vdc
Forward Voltage	V_F			mV
(I_F = 1.0 mAdc)		—	715	
(I_F = 10 mAdc)		—	855	
(I_F = 50 mAdc)		—	1000	
(I_F = 150 mAdc)		—	1250	
Diode Capacitance (V_R = 0, f = 1.0 MHz)	C_D	—	2.0	pF
Forward Recovery Voltage (I_F = 10 mAdc, t_r = 20ns)	V_{FR}	--	1.75	Vdc
Reverse Recovery Time (I_F = I_R = 10 mAdc, R_L = 50 Ω)	t_{rr}	—	6.0	ns
Stored Charge (I_F = 10 mAdc to V_R= 5.0Vdc, R_L = 500 Ω)	Q_S	—	45	pC

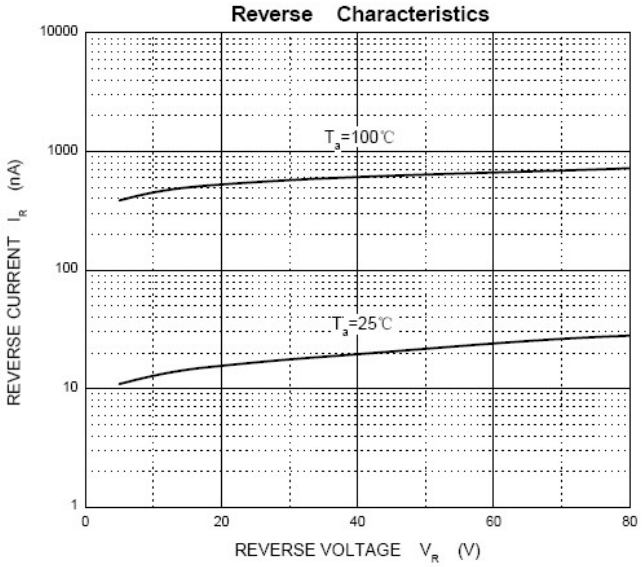


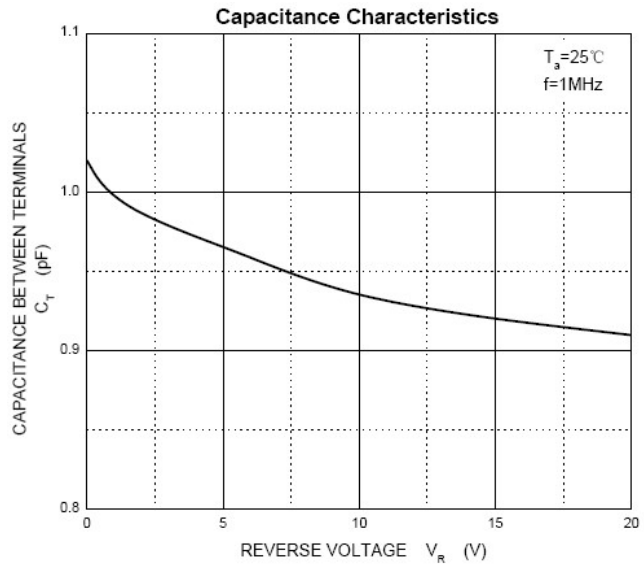
Notes: 1. A 2.0 kΩ variable resistor adjusted for a Forward Current (I_F) of 30 mA.
2. Input pulse is adjusted so $I_{R(peak)}$ is equal to 30 mA.
3. $t_p >> t_{rr}$

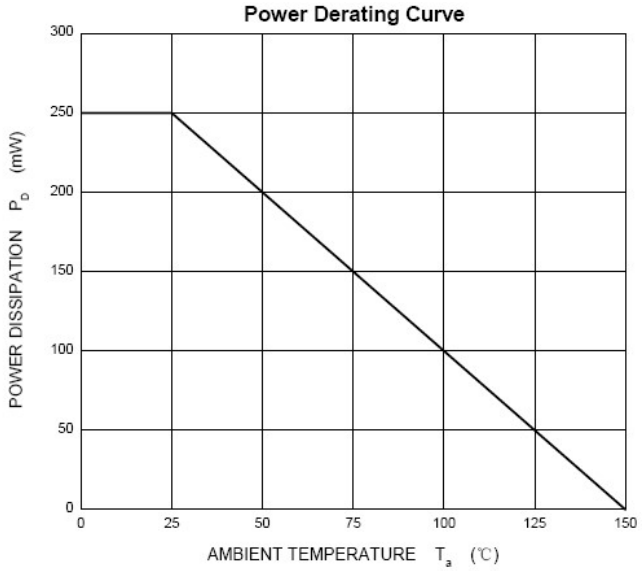
Figure 1. Recovery Time Equivalent Test Circuit

6.ELECTRICAL CHARACTERISTICS CURVES

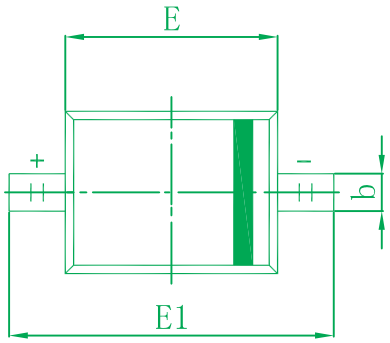


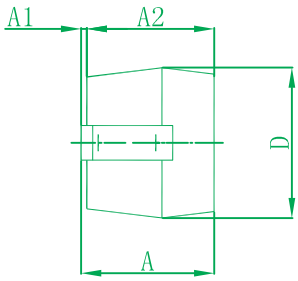


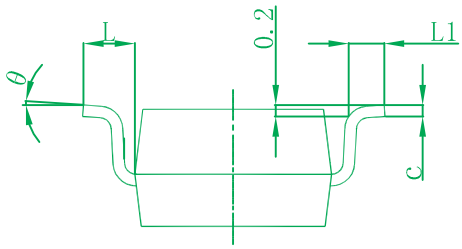




7.OUTLINE AND DIMENSIONS

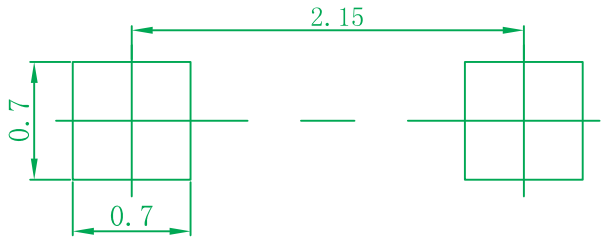






Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.150	0.035	0.045
b	0.250	0.400	0.010	0.015
c	0.080	0.150	0.003	0.006
D	1.150	1.400	0.045	0.055
E	1.600	1.800	0.063	0.071
E1	2.400	2.800	0.094	0.110
L	0.475 REF		0.019REF	
L1	0.250	0.400	0.010	0.016
θ	0°	8°	0°	8°

8.SOLDERING FOOTPRINT



Note:
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.05mm.
3.The pad layout is for reference purposes only.