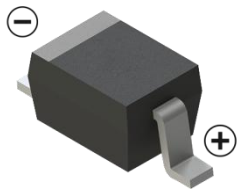
BAS316

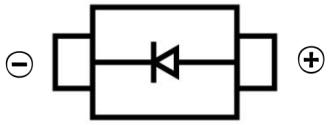
SWITCHING DIODE

FEATURES

- High Switching time:Max. 4 ns
- Continuous reverse voltage: max. 75V
- Repetitive peak reverse voltage: max. 100V
- Repetitive peak forward current: max. 500mA
- Surface Mount device
- For High-speed Switching Applications



SOD-323



MECHANICAL DATA

- Case: SOD-323
- Case Material: Molded Plastic. UL flammability
- Classification Rating: 94V-0
- Weight: 0.008 grams (approximate)

MARKING: A6

MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

Parameter		Symbol	Value	Unit
Repetitive Peak Reverse Voltage		V_{RRM}	100	V
Continuous Reverse Voltage		V_R	75	V
RMS Reverse Voltage		V_{RMS}	53	V
Forward Current		I_F	250	mA
Repetitive peak forward current		I_{FRM}	500	mA
Non-Repetitive Peak Forward Surge Current (square wave; T_J=25°C)	t= 1μs	I_{FSM}	5	A
	t=1ms		1	
	t=1s		0.5	
Power Dissipation		P_D	200	mW
Thermal Resistance From Junction To Ambient		$R_{\theta JA}$	625	°C/W
Junction Temperature		T_J	150	°C
Storage Temperature		T_{STG}	-55 ~+150	°C

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise specified)

Parameter	Symbol	Typ.	Max	Unit	Conditions
Forward voltage	V_F		0.715	V	I_F=1mA
			0.855		I_F=10mA
			1.0		I_F=50mA
			1.25		I_F=150mA
Reverse voltage leakage current	I_R		30	nA	V_R=25V
			1	μA	V_R=75V
			30		V_R=25V,T_J=150°C
			50		V_R=75V,T_J=150°C
Diode capacitance	C_D		2	pF	V_R=0V,f=1MHz
Reverse recovery time	T_{rr}		4	ns	I_F=I_R=10mA I_{rr}=0.1×I_R R_L=100Ω
Forward recovery voltage	V_{fr}		1.75	V	I_F=10mA,t_r=20ns

Typical Characteristics

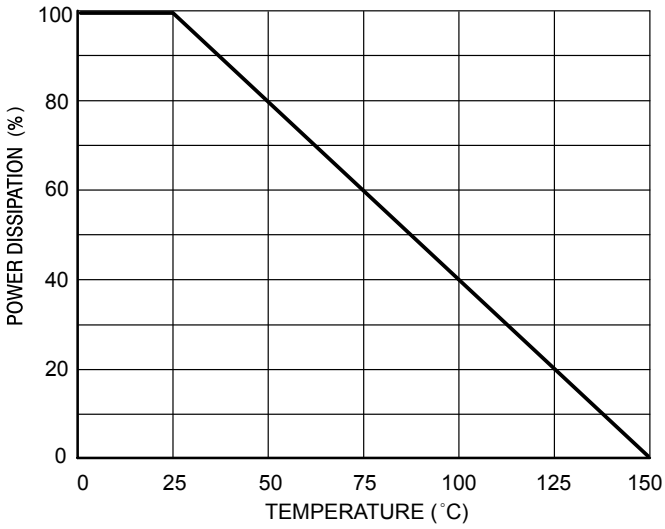


Fig.1 Steady State Power Derating

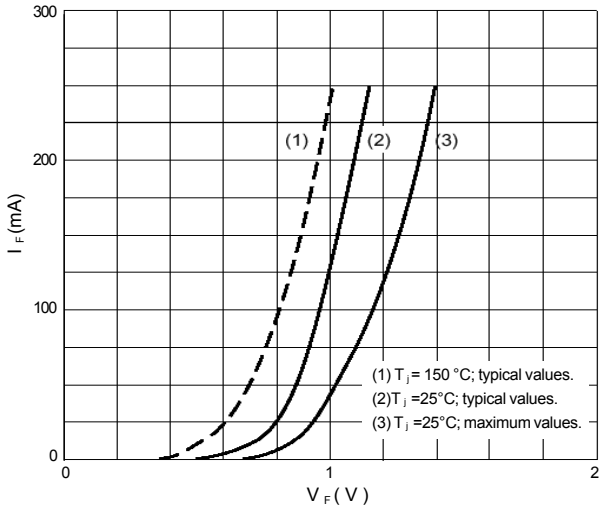


Fig.2 Forward current as a function of forward voltage.

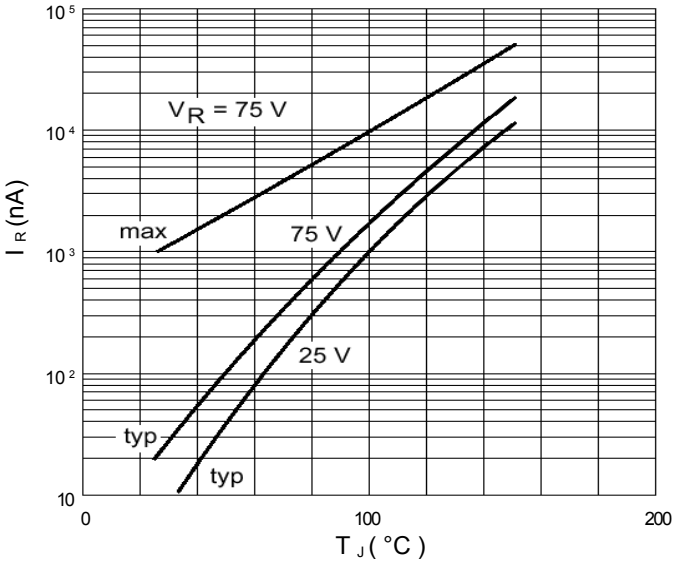


Fig.3 Reverse current as a function of junction temperature.

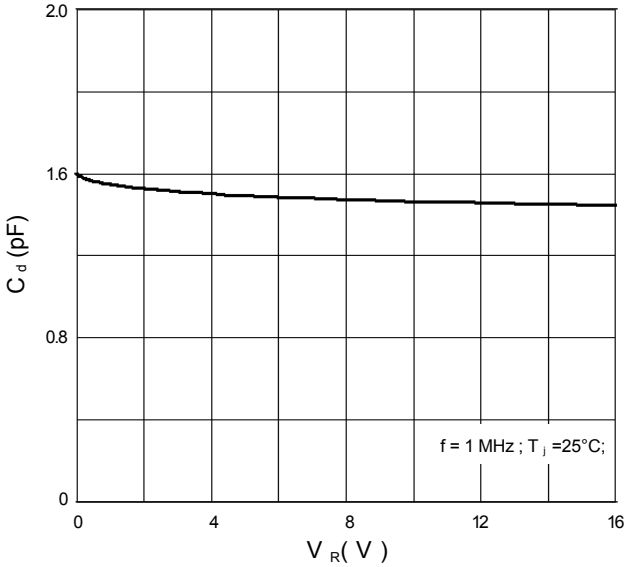


Fig.4 Diode capacitance as a function of reverse voltage; typical values.

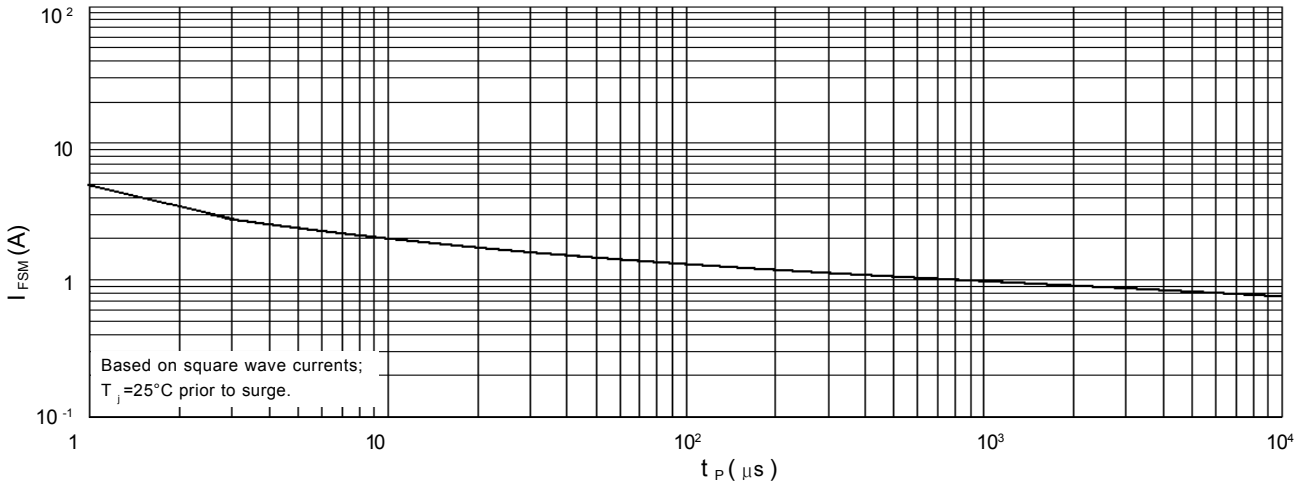
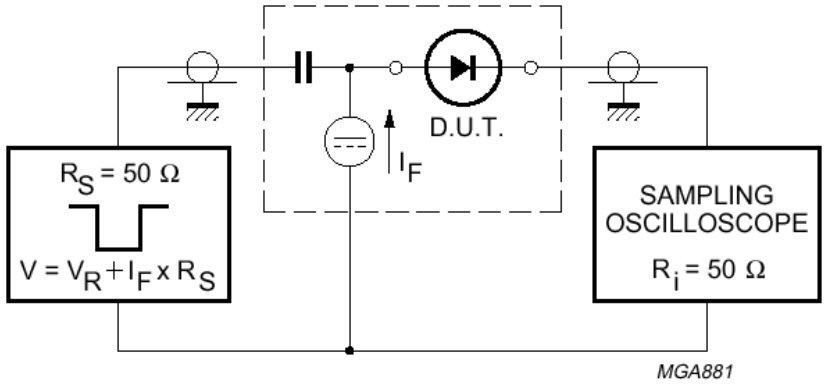
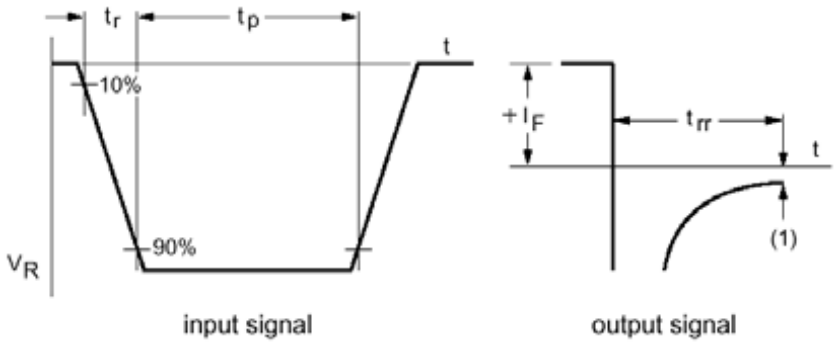


Fig.5 Maximum permissible non-repetitive peak forward current as a function of pulse duration.



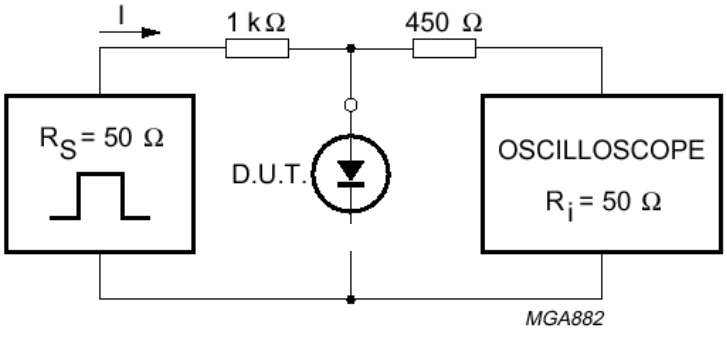


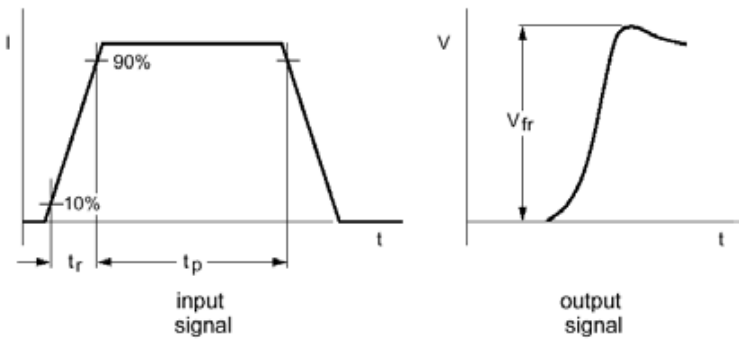
(1) I_R = 1 mA.

Input signal: reverse pulse rise time t_r = 0.6 ns; reverse voltage pulse duration t_p = 100 ns; duty factor δ = 0.05;

Oscilloscope: rise time t_r = 0.35 ns.

Fig.6 Reverse recovery voltage test circuit and waveforms.

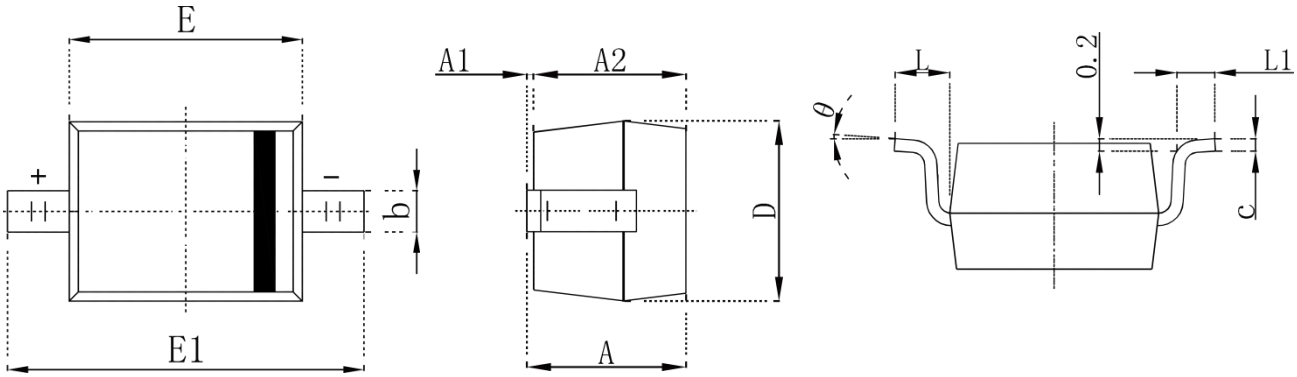




Input signal: forward pulse rise time t_r = 20 ns; forward current pulse duration $t_p \geq$ 100 ns; duty factor $\delta \leq$ 0.005.

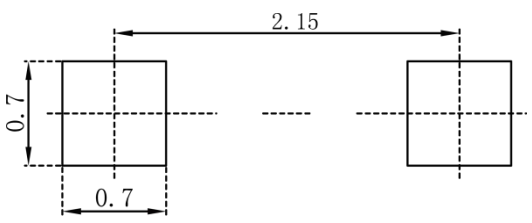
Fig.7 Forward recovery voltage test circuit and waveforms.

SOD-323 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A		1.000		0.039
A1	0.000	0.100	0.000	0.004
A2	0.800	0.900	0.031	0.035
b	0.250	0.350	0.010	0.014
c	0.080	0.150	0.003	0.006
D	1.200	1.400	0.047	0.055
E	1.600	1.800	0.063	0.071
E1	2.250	2.750	0.100	0.108
L	0.475 REF		0.019 REF	
L1	0.250	0.400	0.010	0.016
θ	0°	8°	0°	8°

SOD-323 Suggested Pad Layout



Note:

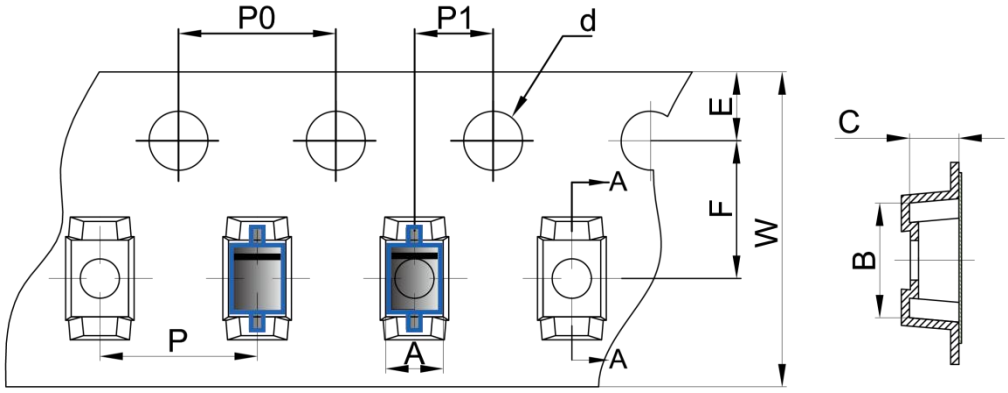
1.Controlling dimension: in millimeters

2.General tolerance: ±0.05mm

3.The pad layout is for reference purposes only

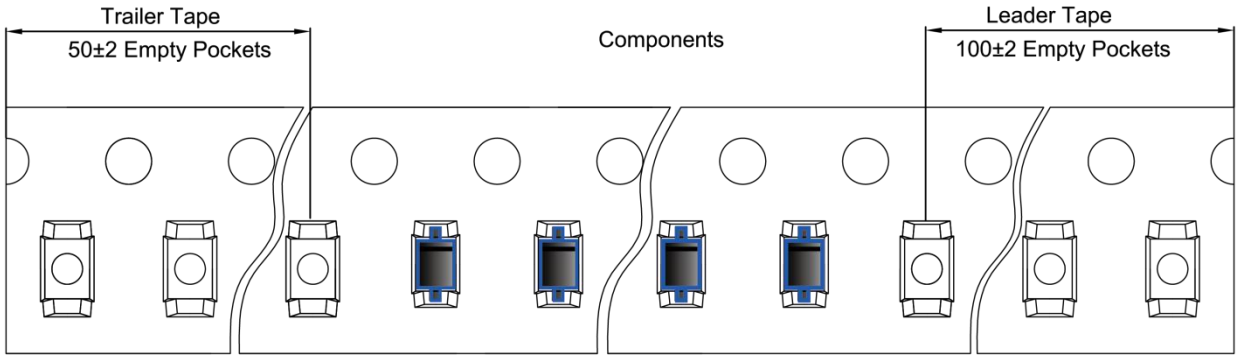
SOD-323 Tape and Reel

SOD-323 Embossed Carrier Tape

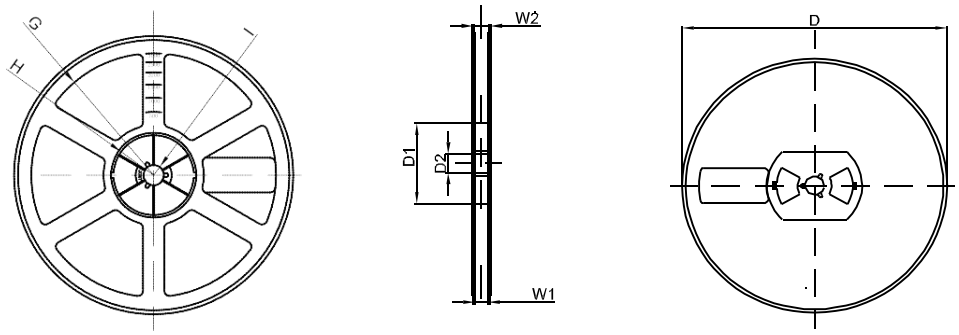


	DIMENSIONS ARE IN MILLIMETER									
TYPE	A	B	C	d	E	F	P0	P	P1	W
SOD-323	1.48	3.3	1.25	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00
TOLERANCE	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1

SOD-323 Tape Leader and Trailer



SOD-323 Reel



	DIMENSIONS ARE IN MILLIMETER							
REEL OPTION	D	D1	D2	G	H	I	W1	W2
7" DIA	Ø178	54.40	13.00	R78	R25.60	R6.50	9.50	12.30
TOLERANCE	±2	±1	±1	±1	±1	±1	±1	±1