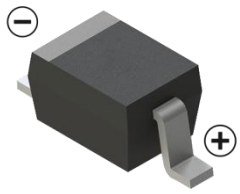
BAS416

SWITCHING DIODE

FEATURES

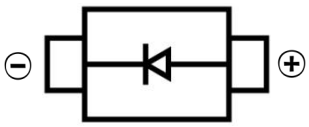
- Switching time: typ. 0.8 ms
- Low leakage current: typ. 3 pA
- Continuous reverse voltage: max. 75 V
- Surface Mount device
- For Low-leakage current medium-speed Switching Applications



SOD-323

MECHANICAL DATA

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



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

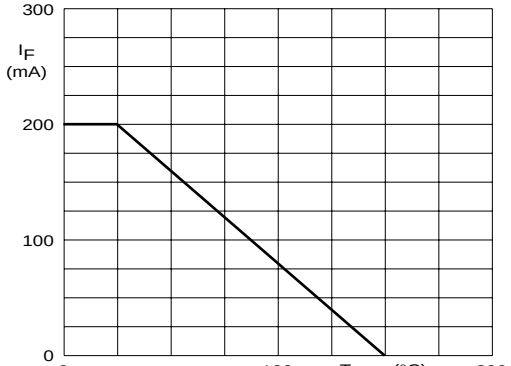
Parameter		Symbol	Value	Unit
Non-Repetitive Peak Reverse Voltage		V_{RRM}	85	V
DC Blocking Reverse Voltage		V_R	75	V
Forward Current		I_F	200	mA
Repetitive peak forward current		I_{FRM}	500	mA
Non-Repetitive Peak Forward Surge Current (square wave; T_J=25°C)	t= 1μs	I_{FSM}	4	A
	t=1ms		1	
	t=1s		0.5	
Power Dissipation		P_D	250	mW
Thermal Resistance From Junction To Ambient		$R_{\theta JA}$	450	°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		0.9	V	I_F=1mA
			1		I_F=10mA
			1.1		I_F=50mA
			1.25		I_F=150mA
Reverse voltage leakage current	I_R	0.003	5	nA	V_R=75V
		3	80		V_R=75V,T_J=150°C
Diode capacitance	C_D		2	pF	V_R=0V,f=1MHz
Reverse recovery time	T_{rr}	0.8	3	μS	I_F=I_R=10mA I_{rr}=0.1×I_R R_L=100Ω

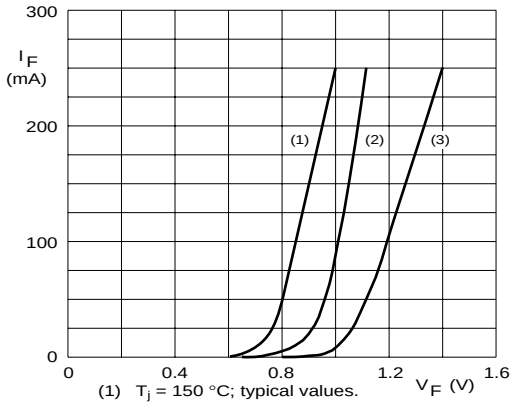
SWITCHING DIODE

Typical Characteristics



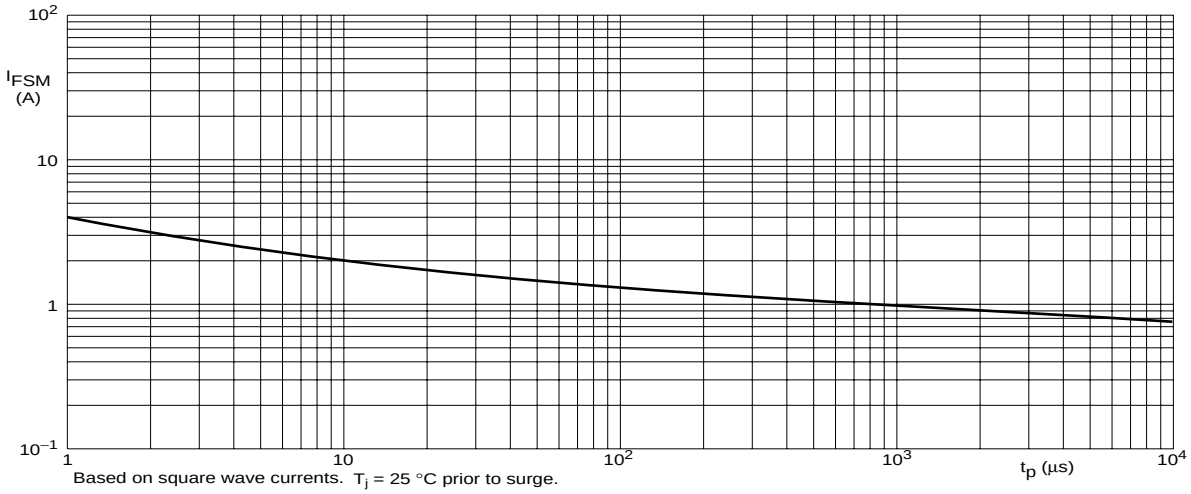
Device mounted on an FR4 printed-circuit board.

Fig.2 Maximum permissible continuous forward current as a function of ambient temperature.



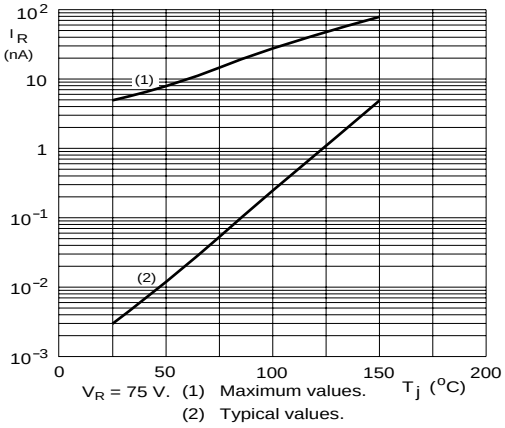
(1) T_j = 150 °C; typical values.
(2) T_j = 25 °C; typical values.
(3) T_j = 25 °C; maximum values.

Fig.3 Forward current as a function of forward voltage.



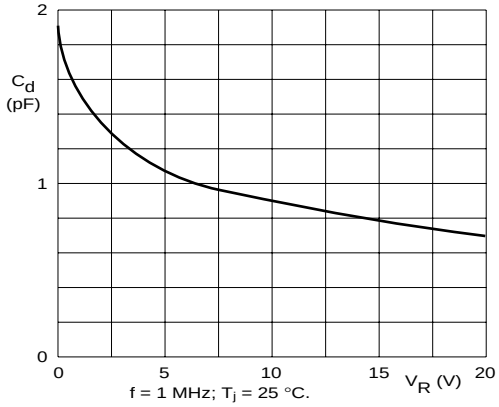
Based on square wave currents. T_j = 25 °C prior to surge.

Fig.4 Maximum permissible non-repetitive peak forward current as a function of pulse duration.



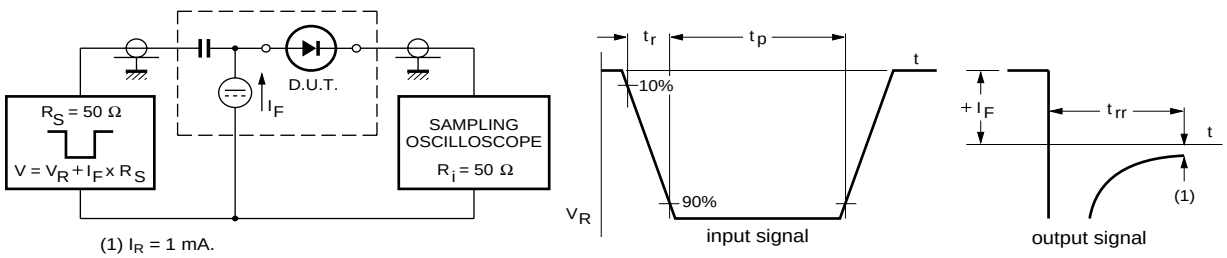
V_R = 75 V. (1) Maximum values.
(2) Typical values.

Fig.5 Reverse current as a function of junction temperature.



f = 1 MHz; T_j = 25 °C.

Fig.6 Diode capacitance as a function of reverse voltage; typical values.

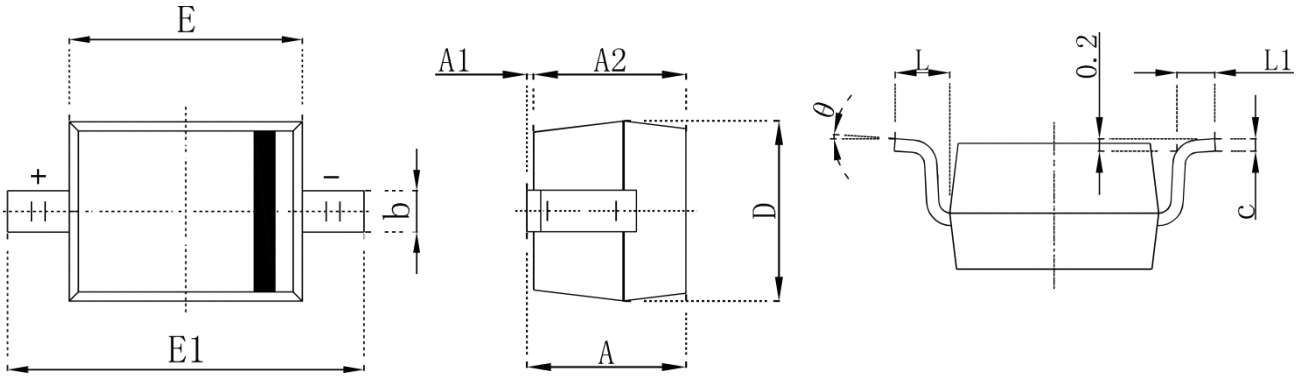


(1) I_R = 1 mA.

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.

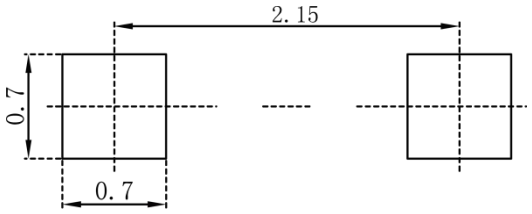
Fig.7 Reverse recovery voltage test circuit and waveforms.

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:

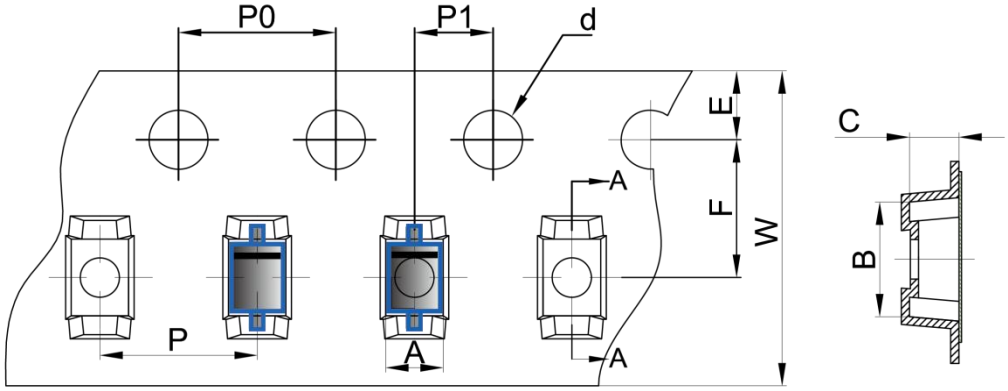
1.Controlling dimension: in millimeters

2.General tolerance: ±0.05mm

3.The pad layout is for reference purposes only

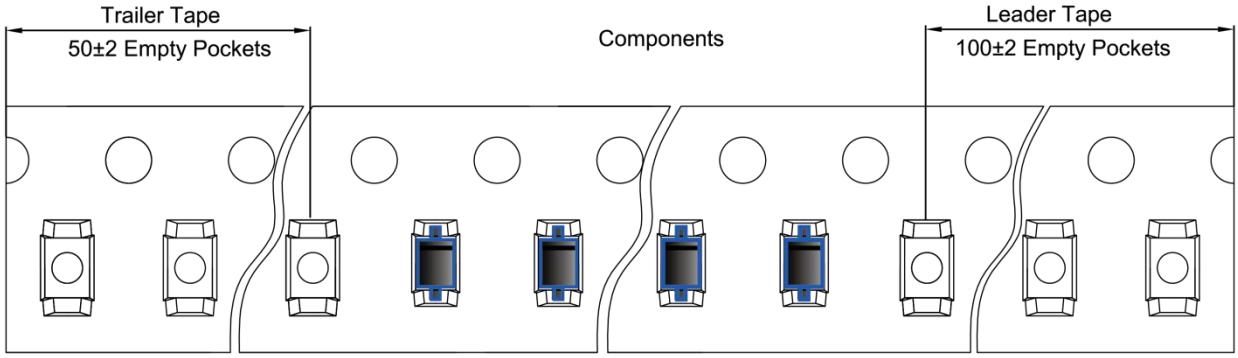
SOD-323 Tape and Reel

SOD-323 Embossed Carrier Tape

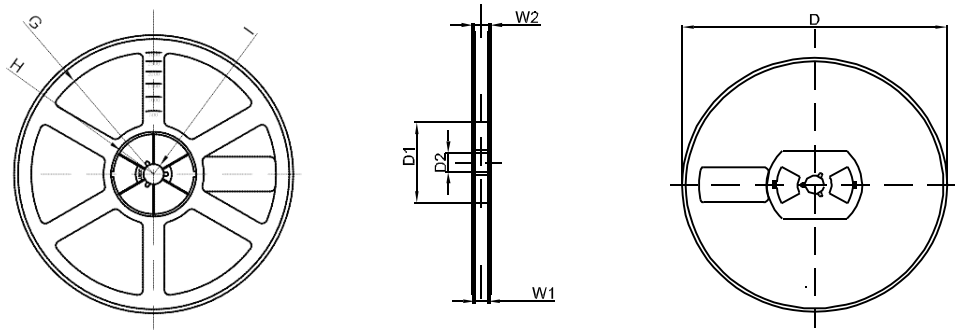


	DIMENSIONS ARE IN MILLIMETER									
TYPE	A	B	C	d	E	F	P0	P	P1	W
SOD-323	1.48	3.3	1.25	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00
TOLERANCE	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1

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