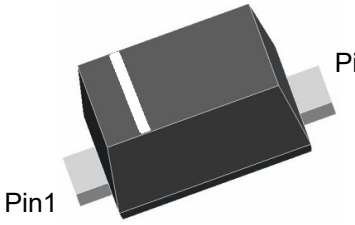
Prisemi®

PBAS521

Switching Diode

Feature

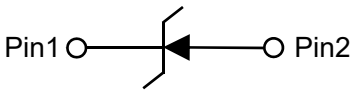
- High switching speed: t_{rr} ≤ 50 ns
- High reverse voltage: V_R ≤ 300 V
- Repetitive peak forward current: I_{FRM} ≤ 1 A
- Ultra small SMD plastic package
- High-speed & High-voltage switching



SOD-523(Top View)

Mechanical Data

- SOD-523 Small Outline Plastic Package
- Polarity: Color band denotes cathode end
- Mounting Position: Any



Circuit Diagram

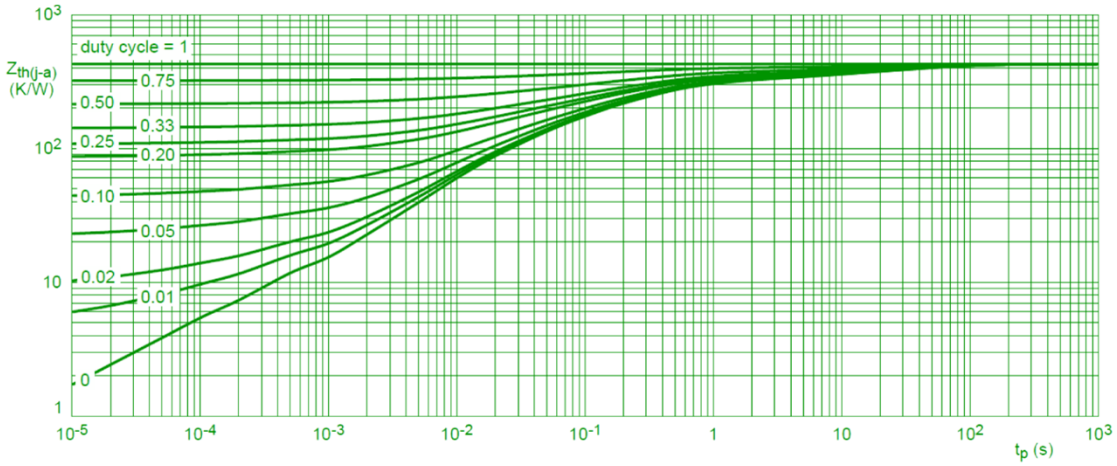
Absolute maximum rating@25℃

Parameter	Symbol	Value	Units
Reverse Voltage	V_R	300	V
Peak Repetitive Reverse Voltage	V_{RRM}	300	V
Power Dissipation	P_D	500	mA
Forward Current	I_F	250	mA
Repetitive Peak Forward Current @ tp=1ms，δ = 0.25	I_{FRM}	1.0	A
Peak Forward Surge Current @ tp=1μs	I_{FSM}	4.5	A
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	500	mW
Operating and Storage Temperature Range	T_J, T_{stg}	-65~+150	℃

Electrical characteristics per line@25℃

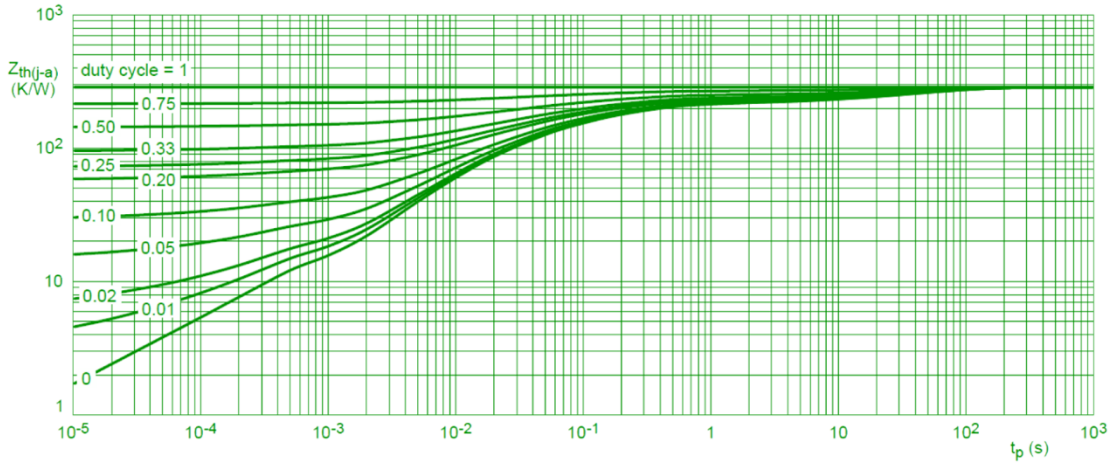
Parameter	Symbol	Conditions		Min.	Typ.	Max.	Units
Reverse Breakdown Voltage	V_{BR}	I_R=100μA		300	340	-	V
Forward Voltage	V_F	I_F=100mA , tp = 300μs , δ = 0.02		-	0.95	1.1	V
Reverse Leakage Current	I_R	V_R=200V	T_a=25℃	-	30	150	nA
			T_a=150℃	-	40	100	μA
Capacitance	C_T	V_R=0V, f=1MHz		-	0.4	5.0	pF
Reverse Recovery Time	t_{rr}	I_F= I_R=30mA, R_L=100Ω, $I_{R(meas)}$ = 3mA		-	16	50	ns

Typical Characteristics



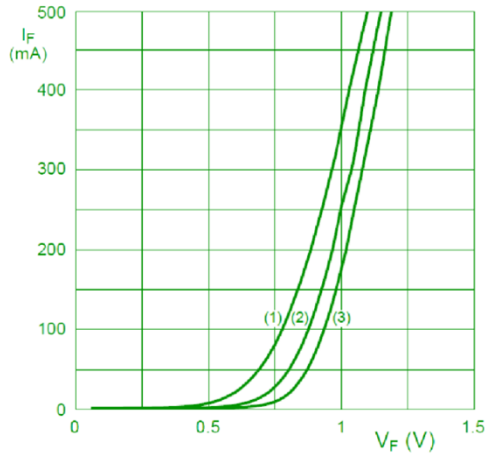
FR4 PCB, standard footprint

Fig. 1. Transient thermal impedance from junction to ambient as a function of pulse duration; typical values



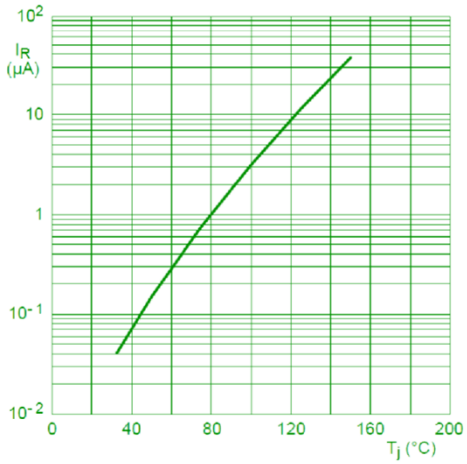
FR4 PCB, mounting pad for cathode 1 cm^2

Fig. 2. Transient thermal impedance from junction to ambient as a function of pulse duration; typical values



(1) T_{amb} = 150° C
(2) T_{amb} = 75° C
(3) T_{amb} = 25° C

Fig. 3. Forward current as a function of forward voltage; typical values



$V_R = V_{Rmax}$

Fig. 4. Reverse current as a function of junction temperature; typical values

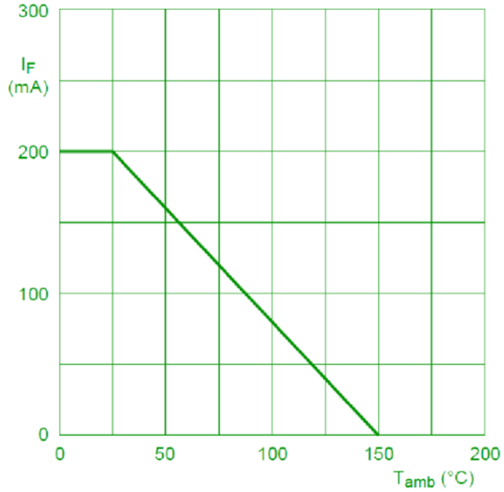
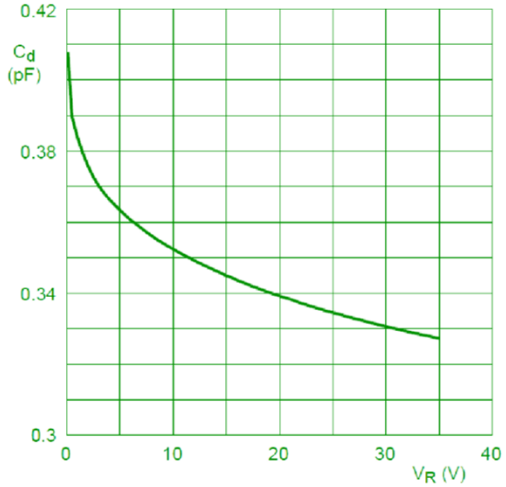
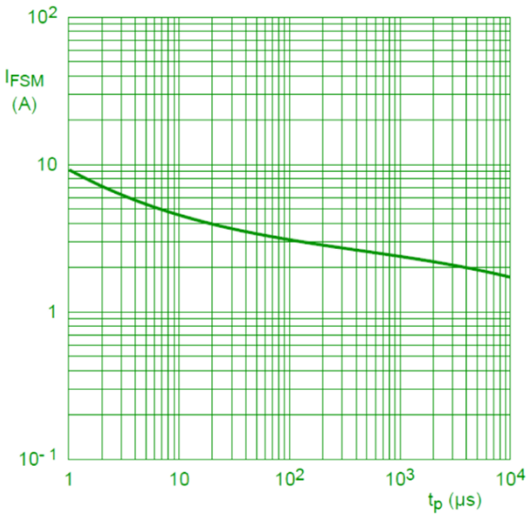


Fig. 5. Forward current as a function of ambient temperature; derating curve



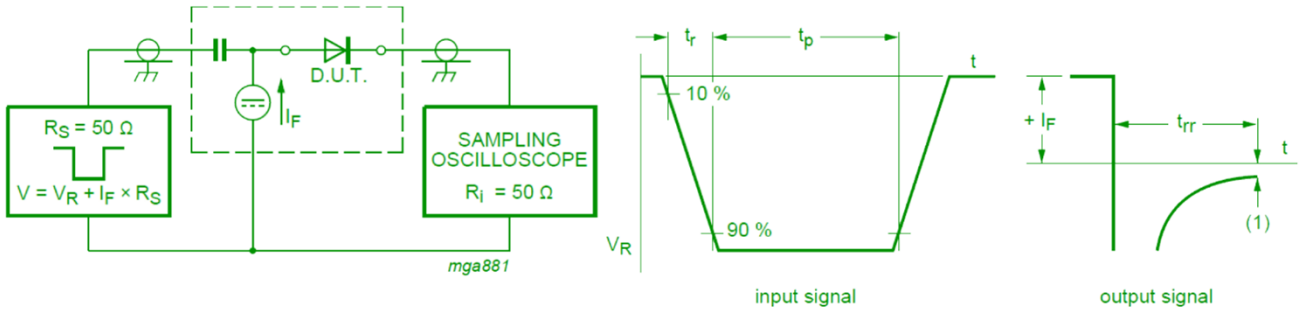
f = 1 MHz
T_{amb} = 25 °C

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



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

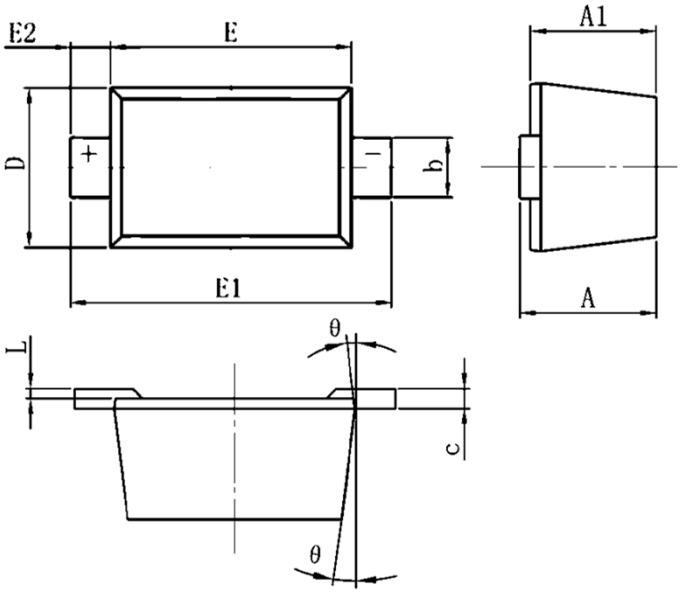
Fig. 7. Non-repetitive peak forward current as a function of pulse duration; maximum values



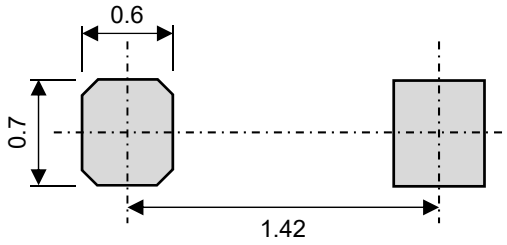
(1) I_R = 3 mA

Fig. 8. Reverse recovery time test circuit and waveforms

Product Dimension (SOD-523)



Dim	Millimeters		Inches	
	Min	Max	Min	Max
A	0.51	0.77	0.020	0.031
A1	0.50	0.70	0.020	0.028
b	0.25	0.38	0.010	0.015
C	0.08	0.15	0.003	0.006
D	0.75	0.85	0.030	0.033
E	1.10	1.30	0.043	0.051
E1	1.50	1.70	0.059	0.067
E2	0.20 REF		0.008 REF	
L	0.01	0.07	0.001	0.003
θ	7° REF		7° REF	



Suggested PCB Layout

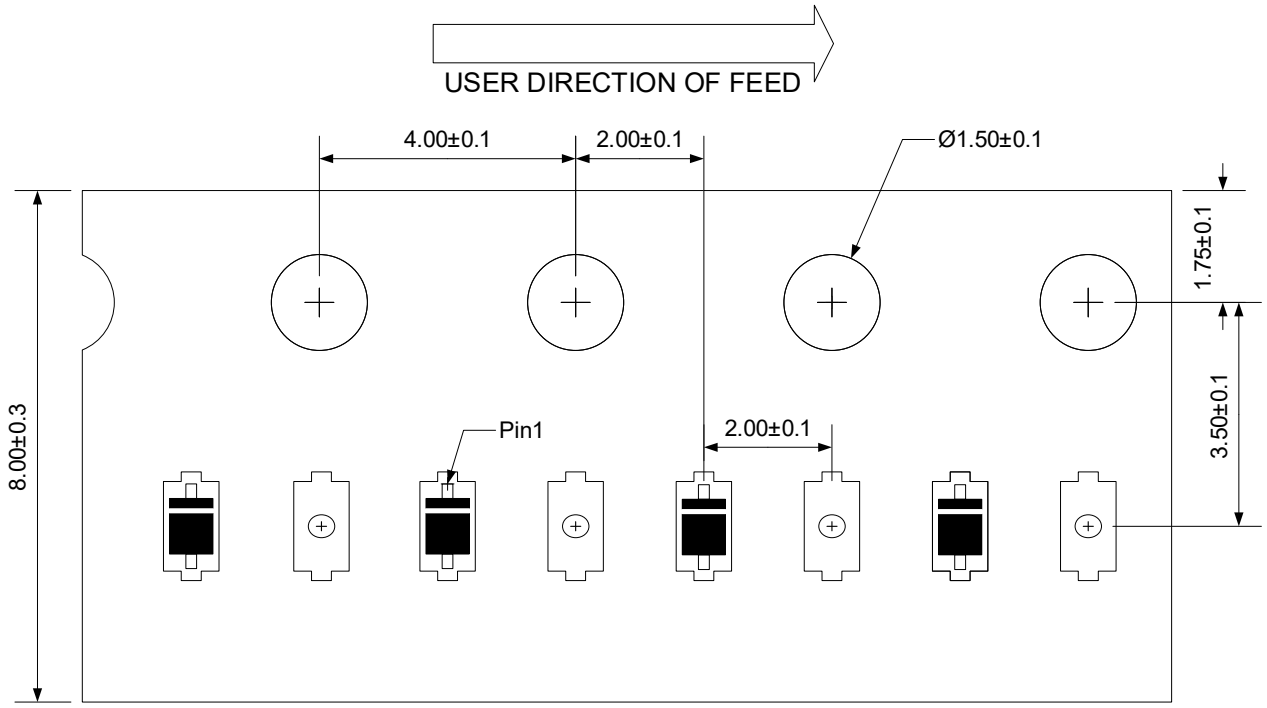
Unit: mm

Marking information

Ordering information

Package	Reel	Shipping
SOD-523	7"	3000 / Tape & Reel

Load with information



Unit:mm

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