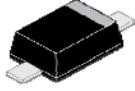


## 150mW Fast Switching Diode

**BAS516**



**SOD-523**

**SOD-523**  
**Plastic Package**  
**RoHS compliant**

### FEATURES:

1. 4.0nS; Fast Switching Device ( $T_{RR} < 4.0$  nS)
2. 150mW; Power Dissipation of 150mW
3. High Stability and High Reliability
4. Low reverse leakage

### MARKING: 61

### ABSOLUTE MAXIMUM RATINGS (Ta = 25 °C Unless otherwise specified)

PARAMETER	SYMBOL	VALUE	UNIT
Reverse Voltage	$V_R$	75	V
Working Inverse Voltage	$W_{IV}$	75	V
Peak Reverse Voltage	$V_{RM}$	100	V
Power Dissipation	$P_d$	150	mW
Operating junction temperature	$T_j$	150	°C
Storage temperature range	$T_s$	-55 to +150	°C
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	833	°C/W
Average Rectified Current	$I_O$	250	mA
Peak Forward Surge Current @tp=1us; $T_A=25^\circ\text{C}$	$I_{FSM}$	2.0	A

### ELECTRICAL CHARACTERISTICS at (Ta = 25 °C Unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITION	VALUE			UNIT
			MIN	TYP	MAX	
Reverse breakdown voltage	BV	$I_R=100\mu\text{A}$	75	--	--	V
Reverse Leakage Current	$I_R$	$V_R=25\text{V}$	--	--	30	nA
		$V_R=75$	--	--	1	$\mu\text{A}$
Forward Voltage	$V_F$	$I_F=1.0\text{mA}$	--	--	0.715	V
		$I_F=10\text{mA}$	--	--	0.855	V
		$I_F=50\text{mA}$	--	--	1.00	V
		$I_F=150\text{mA}$	--	--	1.25	V
Reverse Recovery Time	$T_{RR}$	$I_F=I_R=10\text{mA}$ $R_L=100\Omega$ $I_{RR}=0.1 \times I_R$	--	--	4	nS
Capacitance	$C_T$	$V_R=0\text{V}, f=1\text{MHZ}$	--	--	1	pF

### TYPICAL CHARACTERISTICS CURVES

Fig 1: Forward Characteristics

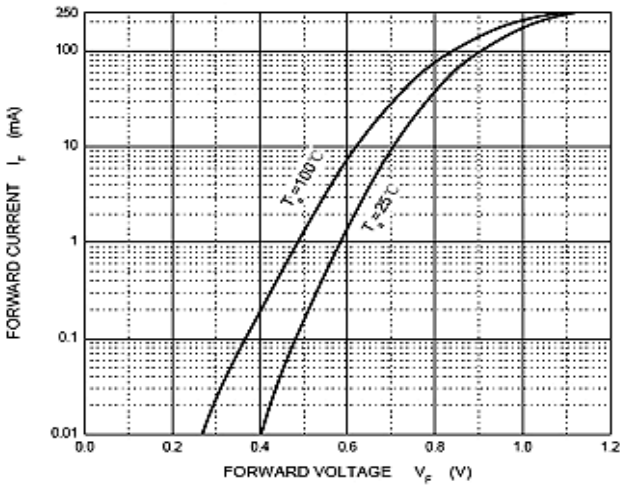


Fig 3: Reverse Characteristics

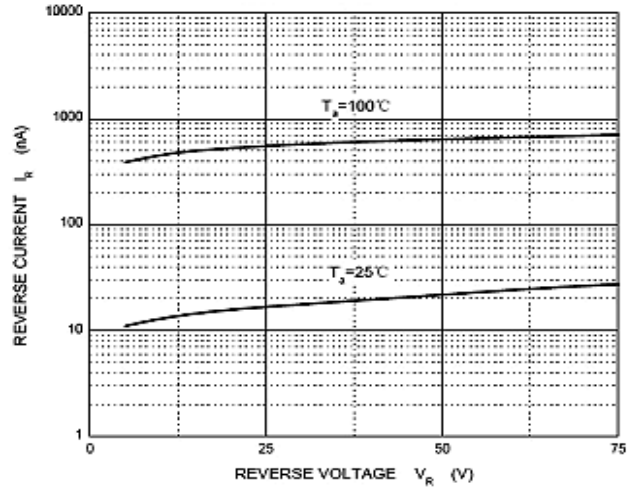


Fig 2: Capacitance Characteristics

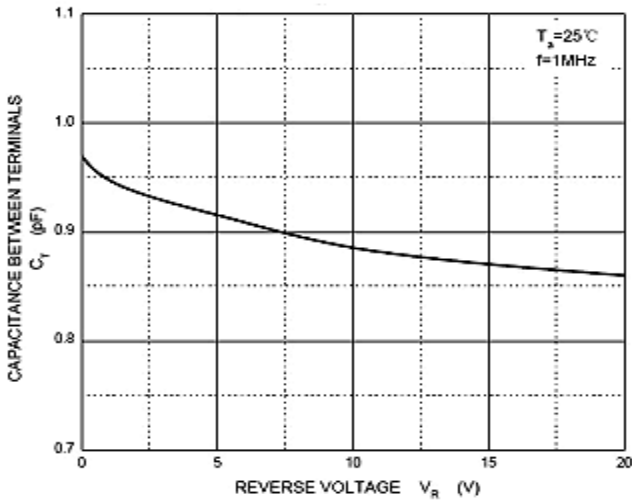
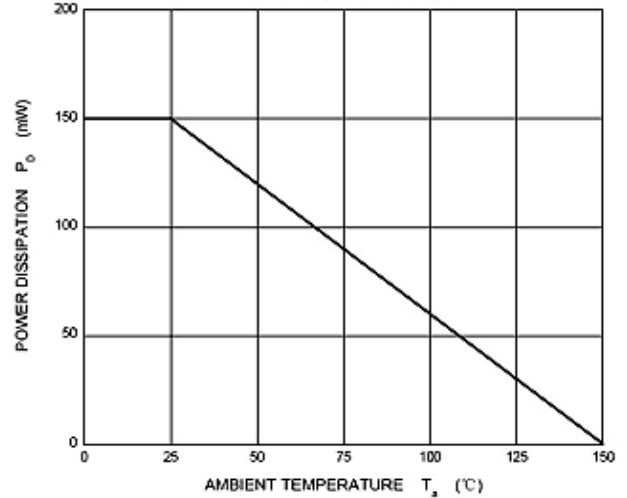
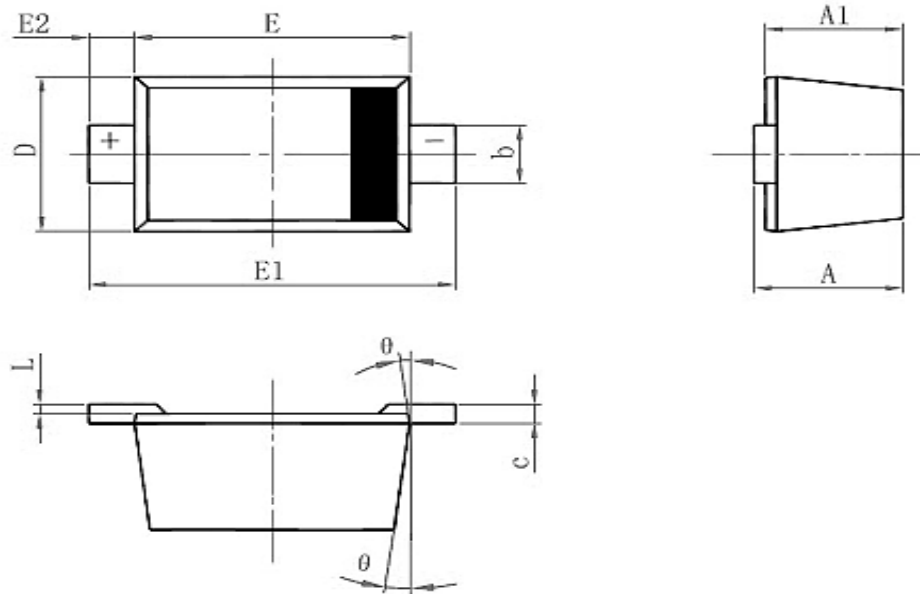


Fig 4: Power Derating Curve



## PACKAGE DETAILS

### SOD-523 PLASTIC PACKAGE



## PACKAGE OUTLINE

Symbol	Dimensions in Millimeters		Dimensions in Inches	
	Min	Max	Min	Max
A	0.510	0.770	0.020	0.031
A1	0.500	0.700	0.020	0.028
b	0.250	0.350	0.010	0.014
c	0.080	0.150	0.003	0.006
D	0.750	0.850	0.030	0.033
E	0.100	1.300	0.043	0.051
E1	0.1500	1.700	0.059	0.067
E2	0.200 REF		0.008 REF	
L	0.010	0.070	0.001	0.003
$\theta$	7° REF		7° REF	

### Mechanical Data

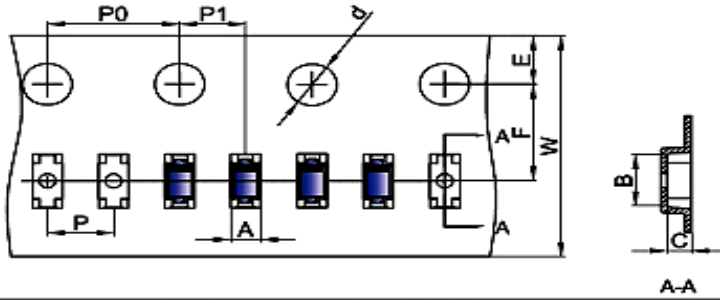
**Package:** SOD-523 Small Outline Plastic Package

**Polarity:** Color band denotes cathode end

**Mounting Position:** Any

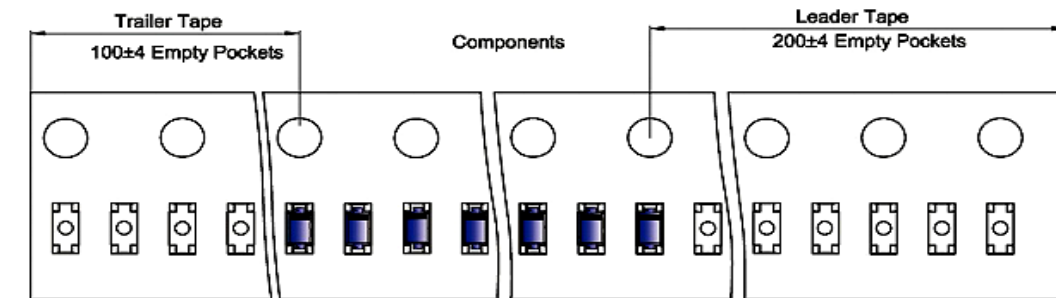
## Tape & Reel

### SOD-523 Embossed Carrier Tape

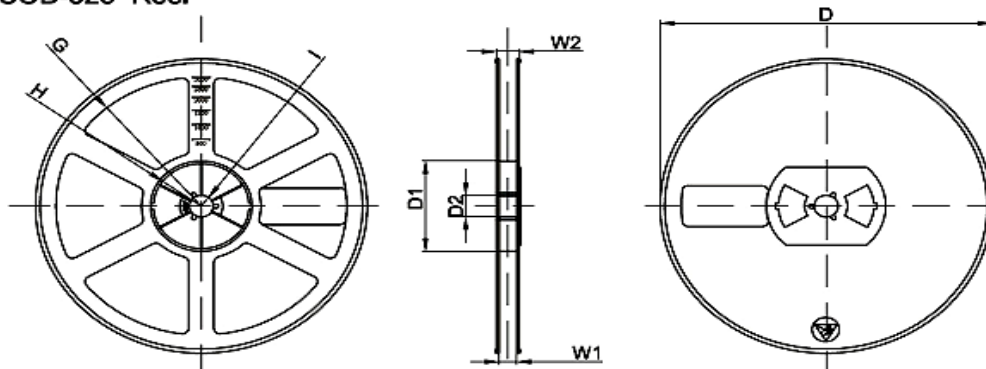


Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOD-523	0.9	1.94	0.73	Ø1.50	1.75	3.50	4.00	2.00	2.00	8.00
(Tolerance)	+/-0.05	+/-0.05	+/-0.05	+/-0.1	+/-0.1	+/-0.1	+/-0.1	+/-0.1	+/-0.1	+0.3/-0.1

## Tape Leader and Trailer



SOD-523 Reel



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
7" Dia	Ø178.00	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30
Tolerance	+/-2	+/-1	+/-1	+/-1	+/-1	+/-1	+/-1	+/-1

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
8000 pcs	7 inch	120,000 pcs	210×208×203	480,000 pcs	440×440×230	7.23



## Recommended Product Storage Environment for Discrete Semiconductor Devices

This storage environment assumes that the Diodes and transistors are packed properly inside the original packing supplied by CDIL.

- Temperature 5 °C to 30 °C
- Humidity between 40 to 70 %RH
- Air should be clean.
- Avoid harmful gas or dust.
- Avoid outdoor exposure or storage in areas subject to rain or water spraying .
- Avoid storage in areas subject to corrosive gas or dust. Product shall not be stored in areas exposed to direct sunlight.
- Avoid rapid change of temperature.
- Avoid condensation.
- Mechanical stress such as vibration and impact shall be avoided.
- The product shall not be placed directly on the floor.
- The product shall be stored on a plane area. They should not be turned upside down. They should not be placed against the wall.

### **Shelf Life of CDIL Products**

The shelf life of products is the period from product manufacture to shipment to customers. The product can be unconditionally shipped within this period. The period is defined as 2 years.

If products are stored longer than the shelf life of 2 years the products shall be subjected to quality check as per CDIL quality procedure.

The products are further warranted for another one year after the date of shipment subject to the above conditions in CDIL original packing.

### **Floor Life of CDIL Products and MSL Level**

When the products are opened from the original packing, the floor life will start.

For this, the following JEDEC table may be referred:

JEDEC MSL Level		
Level	Time	Condition
1	Unlimited	≤30 °C / 85% RH
2	1 Year	≤30 °C / 60% RH
2a	4 Weeks	≤30 °C / 60% RH
3	168 Hours	≤30 °C / 60% RH
4	72 Hours	≤30 °C / 60% RH
5	48 Hours	≤30 °C / 60% RH
5a	24 Hours	≤30 °C / 60% RH
6	Time on Label(TOL)	≤30 °C / 60% RH



Continental Device India Pvt. Limited

An IATF 16949, ISO9001 and ISO 14001 Certified Company



## Customer Notes

### Component Disposal Instructions

1. CDIL Semiconductor Devices are RoHS compliant, customers are requested to please dispose as per prevailing Environmental Legislation of their Country.
2. In Europe, please dispose as per EU Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE).

## Disclaimer

The product information and the selection guides facilitate selection of the CDIL's Semiconductor Device(s) best suited for application in your product(s) as per your requirement. It is recommended that you completely review our Data Sheet(s) so as to confirm that the Device(s) meet functionality parameters for your application. The information furnished in the Data Sheet and on the CDIL Web Site/CD are believed to be accurate and reliable. CDIL however, does not assume responsibility for inaccuracies or incomplete information. Furthermore, CDIL does not assume liability whatsoever, arising out of the application or use of any CDIL product; neither does it convey any license under its patent rights nor rights of others. These products are not designed for use in life saving/support appliances or systems. CDIL customers selling these products (either as individual Semiconductor Devices or incorporated in their end products), in any life saving/support appliances or systems or applications do so at their own risk and CDIL will not be responsible for any damages resulting from such sale(s).

CDIL strives for continuous improvement and reserves the right to change the specifications of its products without prior notice.



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