



Continental Device India Pvt. Limited

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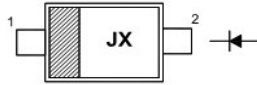
## Silicon Epitaxial Planar Diode High Voltage Switching Diode

# 1N3004W

**SOD-123**  
**Surface Mount Package**  
**RoHS compliant**



SOD-123



Top View

PIN DESCRIPTION

- 1. Cathode
- 2. Anode

Marking Code :JX

### FEATURES:

- 1.Fast switching speed
- 2 High Conductance
- 3.High Reverse Breakdown Voltage

**APPLICATIONS:** High Voltage Switching

### ABSOLUTE MAXIMUM RATINGS (T<sub>a</sub>=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Repetitive Peak Reverse Voltage	V <sub>RRM</sub>	350	V
Working Peak Reverse Voltage	V <sub>RWM</sub>	300	V
Reverse Voltage	V <sub>R</sub>	300	V
Continues Forward Current	I <sub>F</sub>	225	mA
Peak Repetitive Forward Current	I <sub>FRM</sub>	625	mA
Non-Repetitive Peak Forward Surge Current	at t = 1 μs	4	A
	at t = 1 s	1	
Power Dissipation	P <sub>d</sub>	350	mW
Operating and Storage Temperature Range	T <sub>j</sub> , T <sub>stg</sub>	- 65 to + 150	°C

1N3004W  
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**ELECTRICAL CHARACTERISTICS** ( $T_A=25^\circ\text{C}$  unless otherwise Specified)

PARAMETER	Symbol	TEST CONDITIONS	VALUE			UNIT
			MIN	TYP.	MAX	
Forward Voltage	$V_F$	at $I_F = 20\text{ mA}$	--	--	0.87	V
		at $I_F = 100\text{ mA}$	--	--	1	
		at $I_F = 200\text{ mA}$	--	--	1.25	
Reverse Current	$I_R$	at $V_R = 240\text{ V}$	--	--	100	nA
		at $V_R = 240\text{ V}$ , $T_J=150^\circ\text{C}$	--	--	100	uA
Reverse Breakdown Voltage	$V_{(BR)R}$	at $I_R = 100\text{ }\mu\text{A}$	350	--		V
Total Capacitance	$C_T$	at $V_R = 0$ , $f = 1\text{ MHz}$	--	--	5	pF
Reverse Recovery Time	$t_{rr}$	at $I_F = I_R = 30\text{ mA}$ , $i_{rr} = 0.1\text{ I}$ , $R_L = 100\Omega$	--	--	50	nS

1N3004W  
Rev0\_23042020EGL

## Typical Characteristic Curves

Fig 1. Power Derating curve, total Package

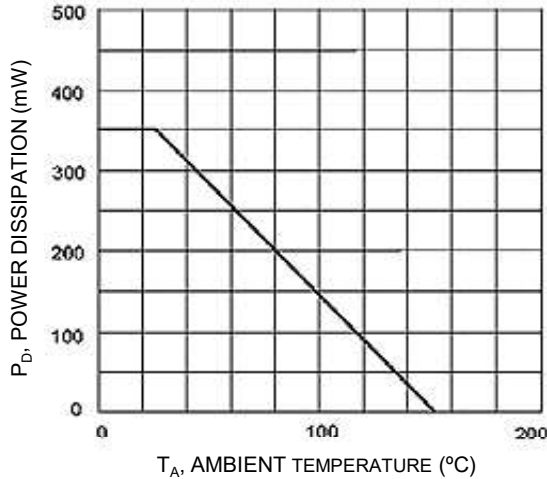


Fig 2. Typical Forward Characteristics, per element

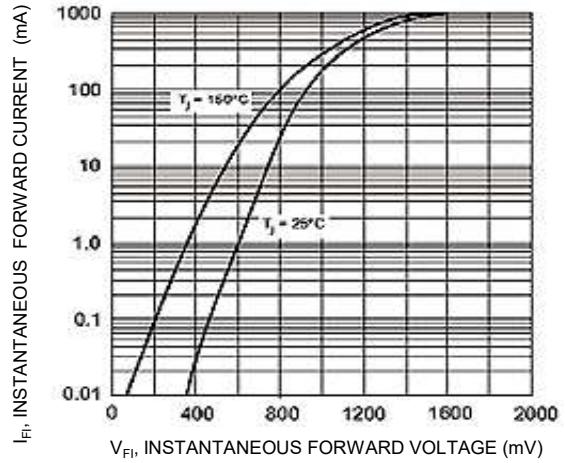


Fig 3. Typical Reverse Characteristics, per element

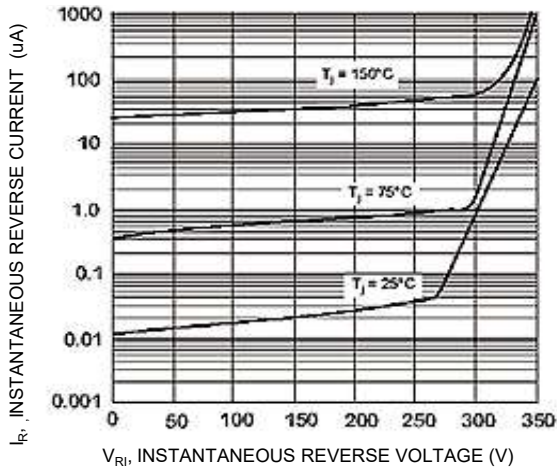
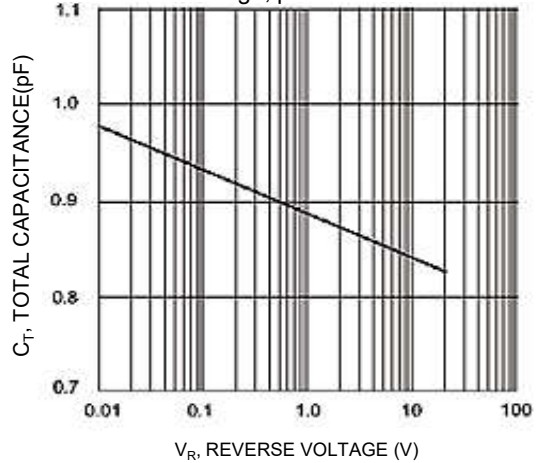


Fig 4. Typical Total Capacitance vs. Reverse Voltage, per element





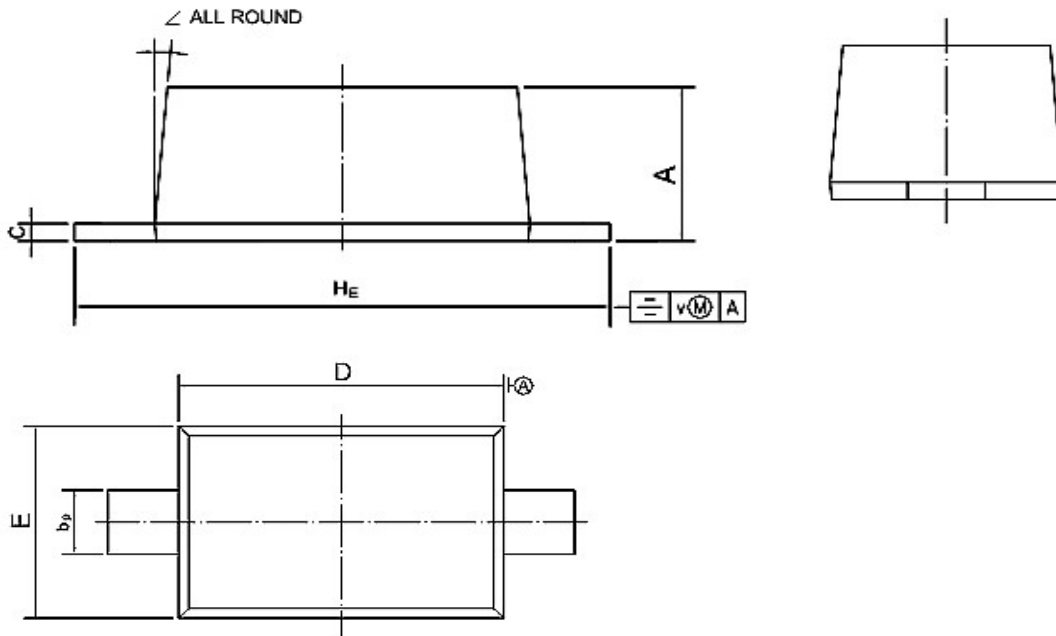
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## PACKAGE DETAILS

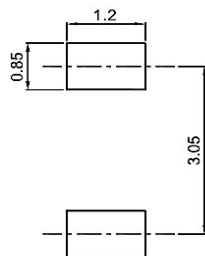
### SOD-123 Surface Mount Package



UNIT	A	$b_p$	c	D	E	$H_E$	v	$\angle$
mm	1.15 1.05	0.6 0.5	0.135 0.100	2.7 2.6	1.65 1.55	3.85 3.55	0.2	$5^\circ$

All dimensions are in mm

### Recommended Soldering Footprint



1N3004W  
Rev0\_23042020EGL



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### **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

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## 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 commended 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).



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CIN No. U32109DL1964PTC004291

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