

## DESCRIPTION

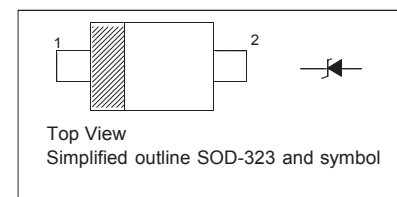
Unidirectional ElectroStatic Discharge (ESD) protection diode designed to protect one signal line from the damage caused by ESD and other transients.

## FEATURES

- Uni-directional ESD protection
- Low reverse stand-off voltage: 5V
- Low reverse clamping voltage
- Low leakage current
- Fast response time
- JESD22-A114-B ESD Rating of class 3B per human body model
- IEC 61000-4-2 Level 4 ESD protection

## PINNING

| PIN | DESCRIPTION |
|-----|-------------|
| 1   | Cathode     |
| 2   | Anode       |



## MAXIMUM RATINGS ( $T_a=25^{\circ}\text{C}$ unless otherwise noted )

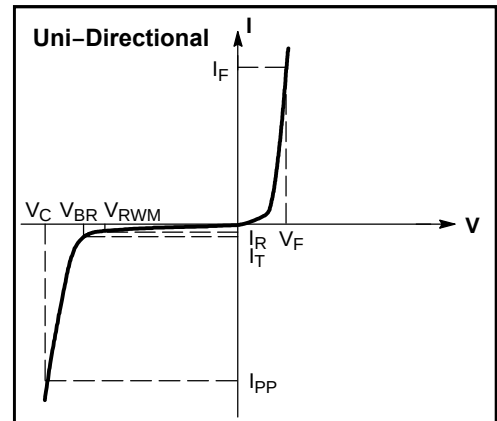
| Parameter                                              | Symbol                 | Limit      | Unit               |
|--------------------------------------------------------|------------------------|------------|--------------------|
| IEC 61000-4-2 ESD Voltage                              | $V_{\text{ESD}}^{(1)}$ | $\pm 25$   | kV                 |
| Air Model                                              |                        |            |                    |
| Contact Model                                          |                        | $\pm 25$   |                    |
| JESD22-A114-B ESD Voltage                              |                        | $\pm 16$   |                    |
| Per Human Body Model                                   |                        |            |                    |
| ESD Voltage                                            |                        | $\pm 0.4$  |                    |
| Machine Model                                          |                        |            |                    |
| Peak Pulse Power                                       | $P_{\text{PP}}^{(2)}$  | 210        | W                  |
| Peak Pulse Current                                     | $I_{\text{PP}}^{(2)}$  | 13         | A                  |
| Lead Solder Temperature – Maximum (10 Second Duration) | $T_L$                  | 260        | $^{\circ}\text{C}$ |
| Junction Temperature                                   | $T_j$                  | 150        | $^{\circ}\text{C}$ |
| Storage Temperature Range                              | $T_{\text{stg}}$       | -55 ~ +150 | $^{\circ}\text{C}$ |

(1).Device stressed with ten non-repetitive ESD pulses.

(2).Non-repetitive current pulse 8/20 $\mu\text{s}$  exponential decay waveform according to IEC61000-4-5.

**ELECTRICAL PARAMETER**

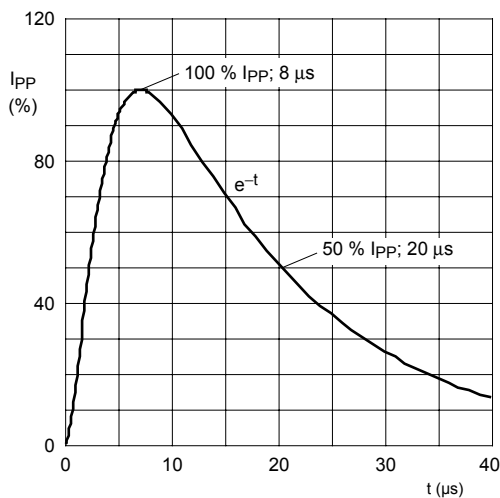
| Symbol    | Parameter                           |
|-----------|-------------------------------------|
| $V_C$     | Clamping Voltage @ $I_{PP}$         |
| $I_{PP}$  | Peak Pulse Current                  |
| $V_{BR}$  | Breakdown Voltage @ $I_T$           |
| $I_T$     | Test Current                        |
| $I_R$     | Reverse Leakage Current @ $V_{RWM}$ |
| $V_{RWM}$ | Reverse Standoff Voltage            |
| $V_F$     | Forward Voltage @ $I_F$             |
| $I_F$     | Forward Current                     |


**ELECTRICAL CHARACTERISTICS (  $T_a=25^\circ\text{C}$  unless otherwise noted )**

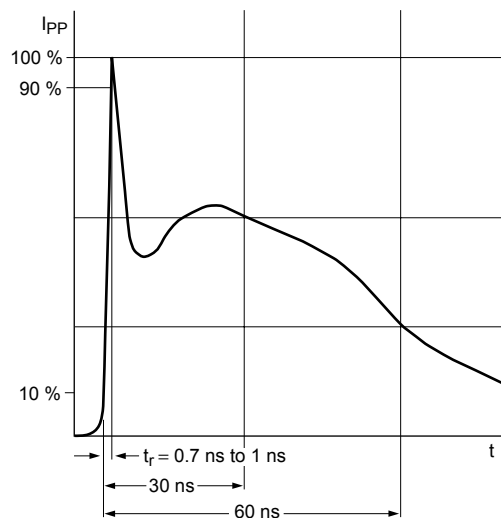
| Parameter                 | Symbol          | Test conditions                | Min | Typ | Max | Unit          |
|---------------------------|-----------------|--------------------------------|-----|-----|-----|---------------|
| Reverse stand off voltage | $V_{RWM}^{(1)}$ |                                |     |     | 5.0 | V             |
| Reverse leakage current   | $I_R$           | $V_{RWM}=5.0\text{V}$          |     |     | 1.0 | $\mu\text{A}$ |
| Breakdown voltage         | $V_{(BR)}$      | $I_T=1\text{mA}$               | 6.2 |     | 7.3 | V             |
| Clamping voltage          | $V_C^{(2)}$     | $I_{PP}=13\text{A}$            |     |     | 13  | V             |
| Junction capacitance      | $C_J$           | $V_R=0\text{V}, f=1\text{MHz}$ |     | 95  |     | pF            |

(1).Other voltages available upon request.

(2).Non-repetitive current pulse 8/20 $\mu\text{s}$  exponential decay waveform according to IEC61000-4-5

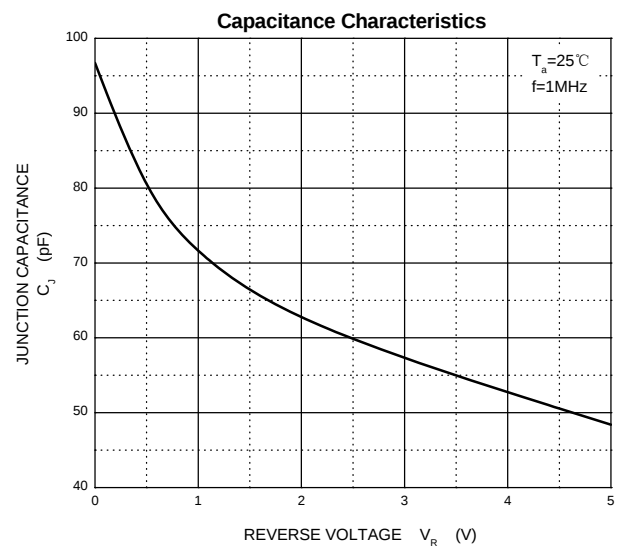
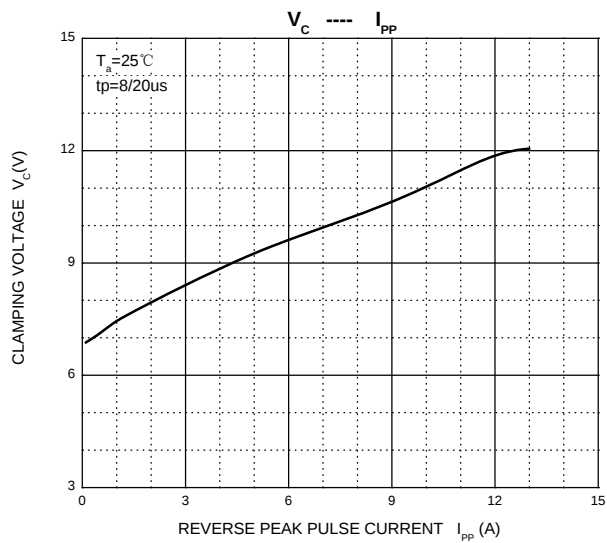
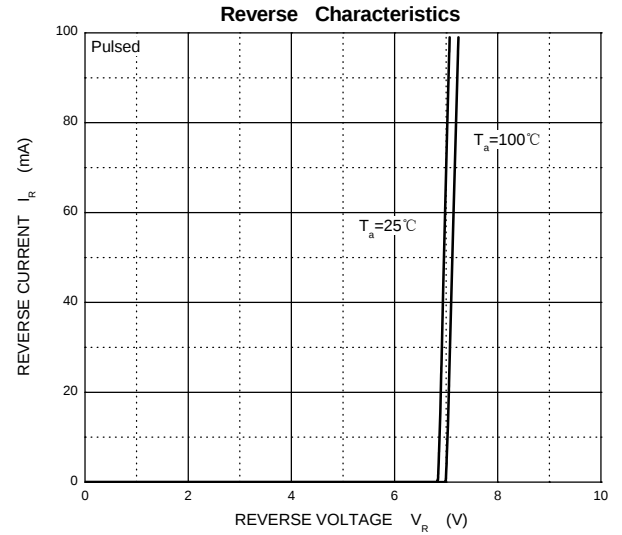
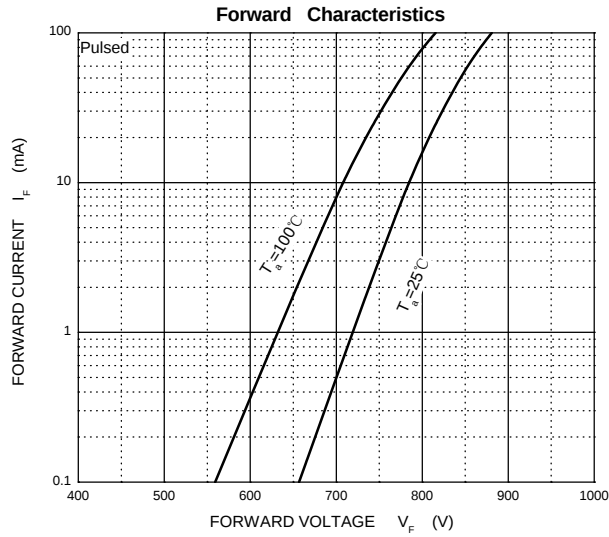


**8/20  $\mu\text{s}$  pulse waveform according to IEC 61000-4-5**



**ESD pulse waveform according to IEC 61000-4-2**

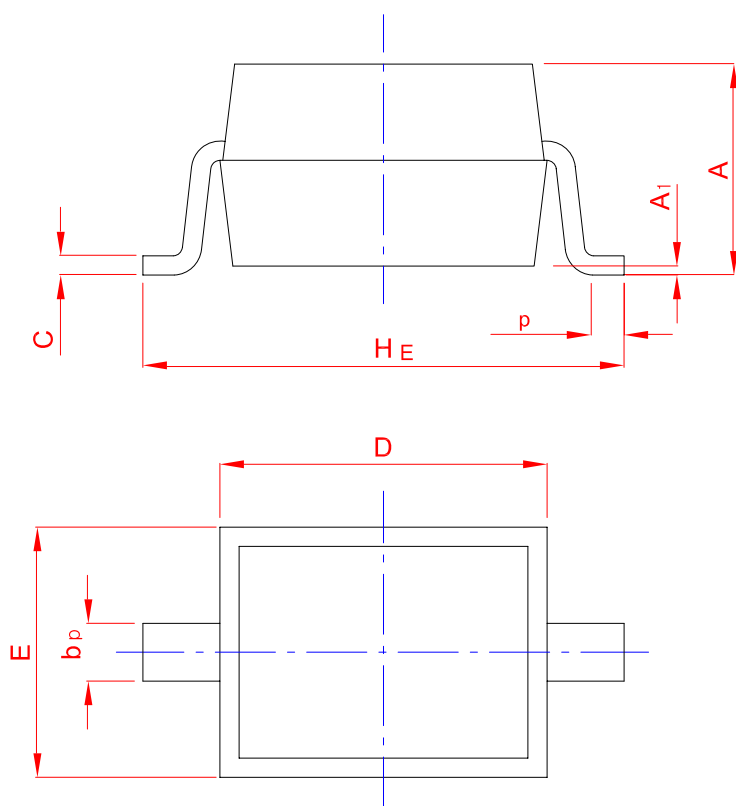
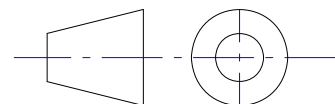
## TYPICAL CHARACTERISTICS



## PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

SOD-323



| UNIT | A    | b <sub>p</sub> | C    | D    | E    | H <sub>E</sub> | A1   | L <sub>p</sub> |
|------|------|----------------|------|------|------|----------------|------|----------------|
| mm   | 1.20 | 0.40           | 0.15 | 1.80 | 1.35 | 2.80           | 0.10 | 0.50           |
|      | 0.90 | 0.25           | 0.10 | 1.60 | 1.15 | 2.30           | 0.01 | 0.20           |