

# SD24X

## 1. Protection Solution To Meet

- IEC61000-4-2 (ESD)  $\pm 30\text{kV}$  (air),  $\pm 30\text{kV}$  (contact)
- IEC61000-4-4 (EFT) 40A (5/50ns)
- IEC61000-4-5 (Lightning) 7A (8/20 $\mu\text{s}$ )

## 2. Features

- Protects one Uni-directional I/O line
- Low clamping voltage
- Working voltage: 24V
- Low leakage current
- RoHS compliant

## 3. Main Application

- Cell phone handsets and accessories
- Microprocessor based equipment
- Personal digital assistants (PDA' s)
- Notebooks, desktops, and servers
- Portable instrumentation

## 4. Mechanical Characteristics

- SOD-523 package
- Molding compound flammability rating: UL 94V-0
- Weight 0.5 milligrams (approximate)
- Lead finish: lead free

## 5. Absolute Maximum Ratings ( $T_A=25^\circ\text{C}$ unless otherwise noted)

| Parameter                       | Symbol                   | Value    | Unit             |
|---------------------------------|--------------------------|----------|------------------|
| ESD per IEC 61000-4-2 (Contact) | $V_{\text{ESD-Contact}}$ | $\pm 30$ | KV               |
| ESD per IEC 61000-4-2 (Air)     | $V_{\text{ESD-Air}}$     | $\pm 30$ | KV               |
| Peak Pulse Power(8/20us)        | $P_{\text{pp}}$          | 350      | W                |
| Operating Temperature           | $T_{\text{OPT}}$         | -55~+150 | $^\circ\text{C}$ |
| Storage Temperature Range       | $T_{\text{stg}}$         | -55~+150 | $^\circ\text{C}$ |

## 6. Pinning information

| Pin | Description | Simplified outline | Equivalent Circuit | Marking | Package |
|-----|-------------|--------------------|--------------------|---------|---------|
| 2   | Uni         |                    |                    | 8U      | SOD-523 |

## 7. Electrical Characteristics (Tamb=25°C)

| Parameter               | Symbols   | Condition                      | Min | Typ | Max | Unit    |
|-------------------------|-----------|--------------------------------|-----|-----|-----|---------|
| Reverse Working Voltage | $V_{RWM}$ |                                |     |     | 24  | V       |
| Breakdown Voltage       | $V_{BR}$  | $I_T = 1mA$                    | 26  |     |     | V       |
| Reverse Leakage Current | $I_R$     | $V_{RWM} = 24V$                |     |     | 0.5 | $\mu A$ |
| Clamping Voltage        | $V_C$     | $I_{pp} = 1A, t_p = 8/20\mu s$ |     |     | 36  | V       |
|                         |           | $I_{pp} = 7A, t_p = 8/20\mu s$ |     |     | 50  | V       |
| Junction Capacitance    | $C_J$     | $V_R = 0V, f = 1MHz$           |     | 45  | 70  | pF      |

## 8. Electrical Parameters

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

### 9. Typical Characteristics

Fig.1 8/20us Waveform Per IEC6100-4-5

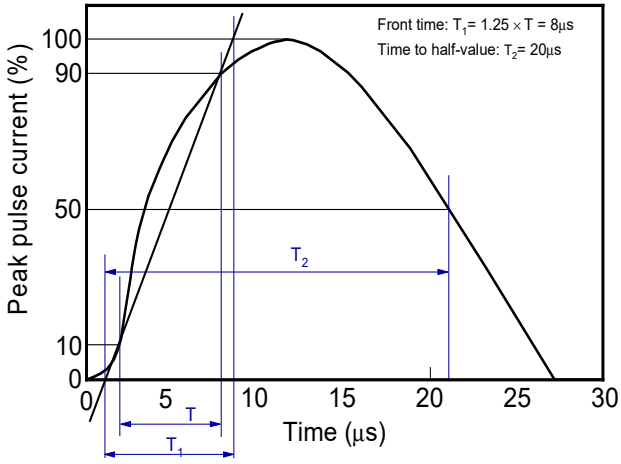


Fig.2 Contact Discharge Current Waveform per IEC61000-4-2

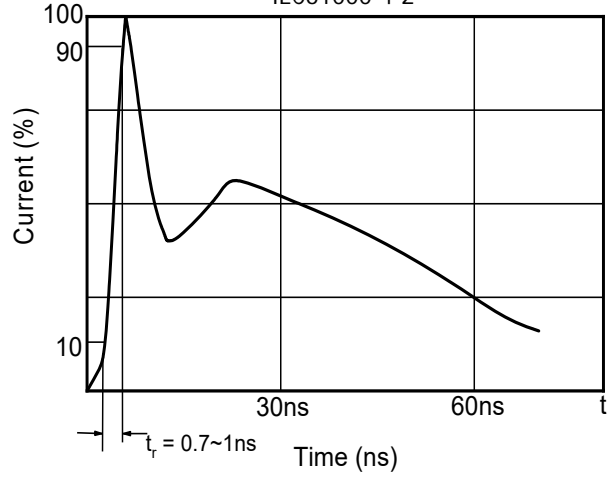
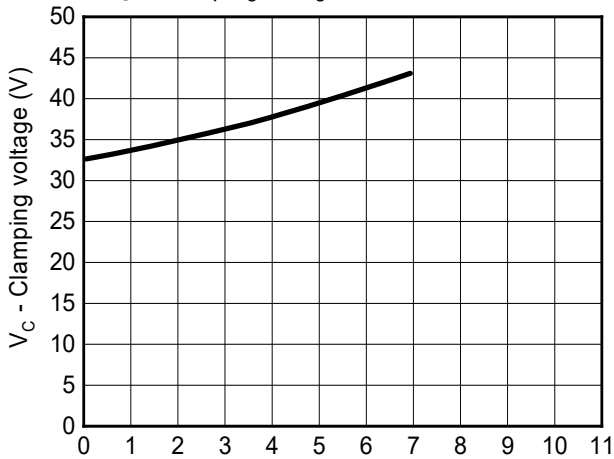
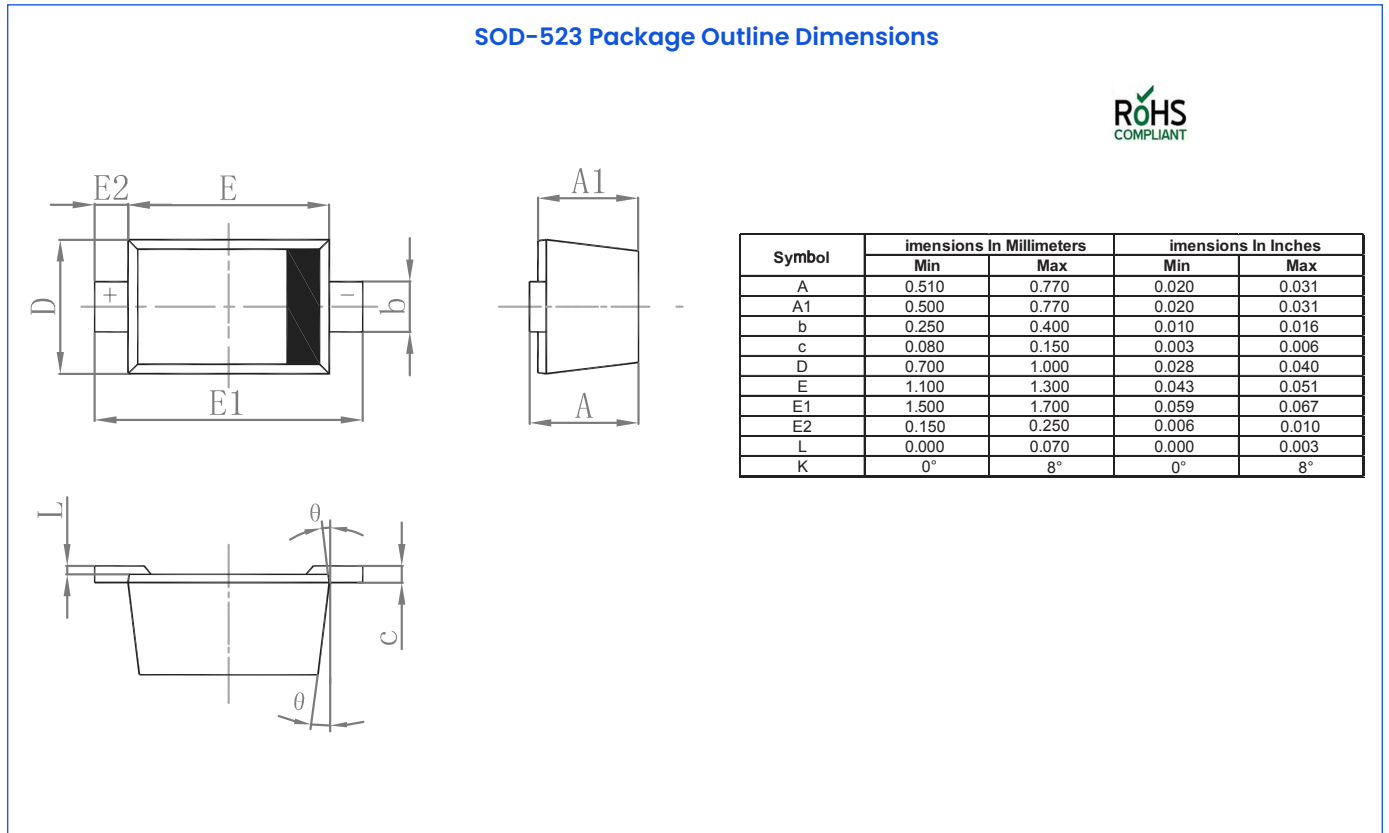


Fig.3 Clamping Voltage VS Peak Pulse Current

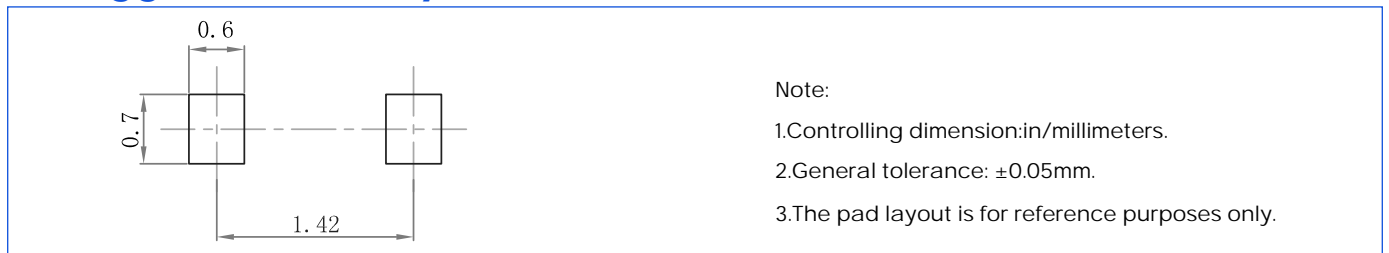


The curve above is for reference only.

## 10. Outline Drawing



## 11. Suggested Pad Layout



## 12. PACKAGE SPECIFICATIONS

| Package | Reel Size | Reel DIA. (mm) | Q'TY/Reel (pcs) | Box Size (mm) | QTY/Box (pcs) | Carton Size (mm) | Q'TY/Carton (pcs) |
|---------|-----------|----------------|-----------------|---------------|---------------|------------------|-------------------|
| SOD-523 | 7'        | 178            | 5000            | 190×190×190   | 75000         | 400×400×220      | 300,000           |

### 13.Important Notice and Disclaimer

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