## Description

The DC3301D9 is a 3.3V uni-directional TVS diode, uti-lizing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensi-tive data and power line. The DC3301D9 complies with the IEC 61000-4-2 (ESD) with ±30 kV air and ±30 kV con-tact discharge. It is assembled into an ultra-small 1.0x0.6x0.45mm lead-free SOD-923 package. The small size and high ESD surge protection make DC3301D9 an ide-al choice to protect cell phone, digital cameras, audio players and many other portable applications.

## Features

- Protects one data or power line
- Ultra low leakage：nA level
- Operating voltage：3.3V
- Low clamping voltage
- Complies with following standards:
  - – IEC 61000-4-2 (ESD) immunity test
    Air discharge: ±30kV
    Contact discharge: ±30kV
  - – IEC61000-4-5 (Lightning) 15A (8/20μs)
- RoHS Compliant

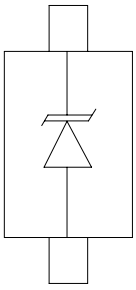
## Mechanical Characteristics

- Package: SOD-923
- Case Material: “Green” Molding Compound.
- Moisture Sensitivity: Level 3 per J-STD-020
- Terminal Connections: See Diagram Below
- Marking Information: See Below

## Applications

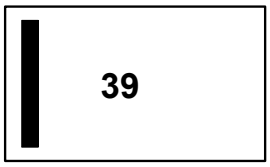
- Cellular Handsets and Accessories
- Personal Digital Assistants
- Notebooks and Handhelds
- Portable Instrumentation
- Digital Cameras
- Peripherals
- Audio Players
- Keypads, Side Keys, LCD Displays

## Dimensions and Pin Configuration



Circuit and Pin Schematic

## Marking Information




39 = Device Marking Code

Bar denotes cathode

## Ordering Information

| Part Number | Marking | Packaging | Reel Size |
|---|---|---|---|
| DC3301D9 | 39 | 8000/Tape & Reel | 7 inch |

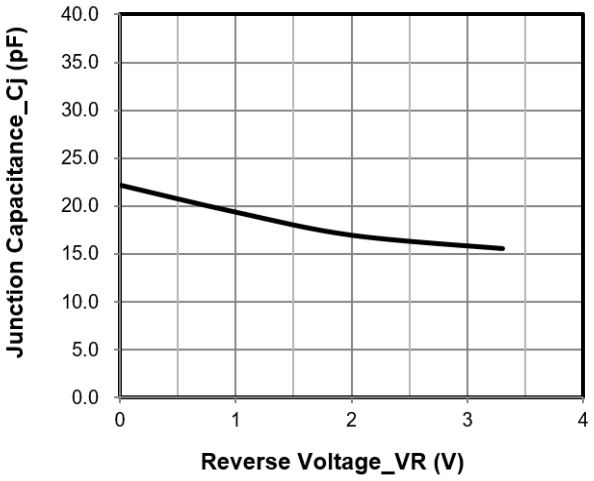
## Absolute Maximum Ratings ($T_A$=25°C unless otherwise specified)

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Peak Pulse Power (8/20μs) | Ppk | 150 | W |
| Peak Pulse Current (8/20μs) | Ipp | 15 | A |
| ESD per IEC 61000−4−2 (Air)<br>ESD per IEC 61000−4−2 (Contact) | $V_{ESD}$ | ±30<br>±30 | kV |
| Operating Temperature Range | $T_J$ | −55 to +125 | °C |
| Storage Temperature Range | Tstg | −55 to +150 | °C |

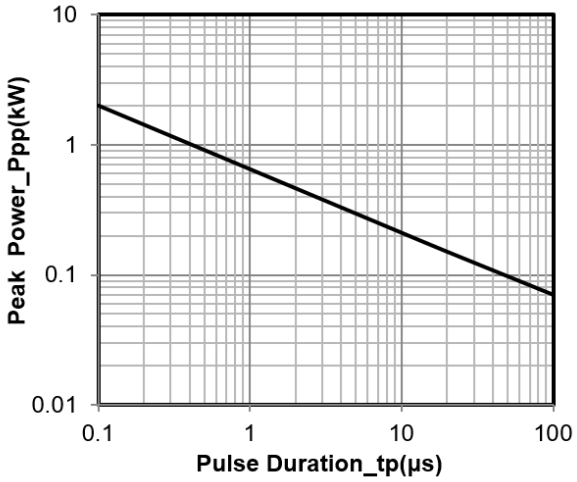
## Electrical Characteristics ($T_A$=25°C unless otherwise specified)

| Parameter | Symbol | Min | Typ | Max | Unit | Test Condition |
|---|---|---|---|---|---|---|
| Reverse Working Voltage | $V_{RWM}$ | | | 3.3 | V | |
| Breakdown Voltage | $V_{BR}$ | 3.5 | | | V | $I_T$ = 1mA |
| Reverse Leakage Current | $I_R$ | | | 0.2 | μA | $V_{RWM}$ = 3.3V |
| Clamping Voltage | $V_C$ | | | 7 | V | $I_{PP}$ = 1A (8 x 20μs pulse) |
| Clamping Voltage | $V_C$ | | | 10 | V | $I_{PP}$ = 15A (8 x 20μs pulse) |
| Junction Capacitance | $C_J$ | | 20 | | pF | VR = 0V, f = 1MHz |

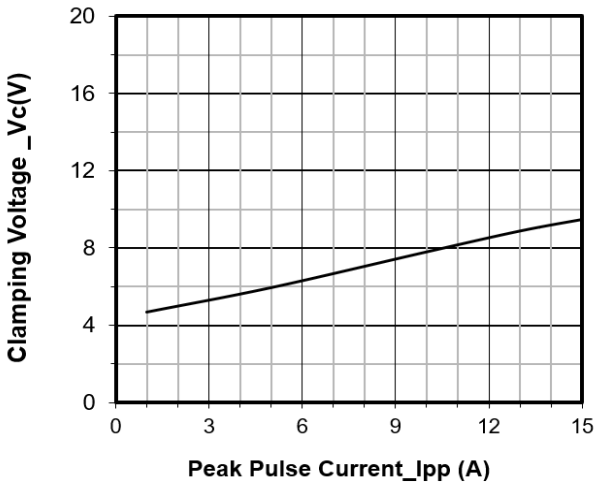
## Typical Performance Characteristics ($T_A$=25℃ unless otherwise Specified)



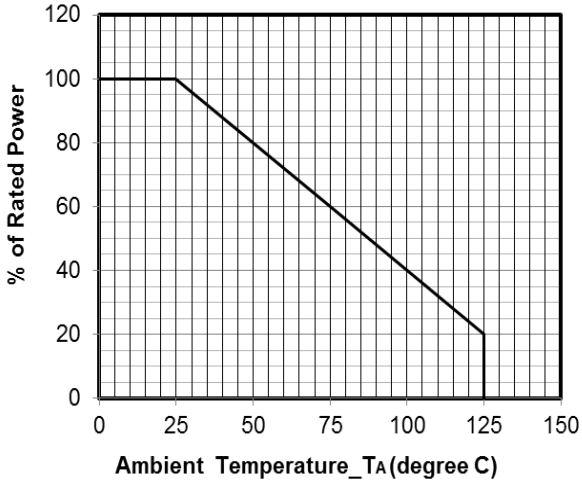

**Junction Capacitance vs. Reverse Voltage**



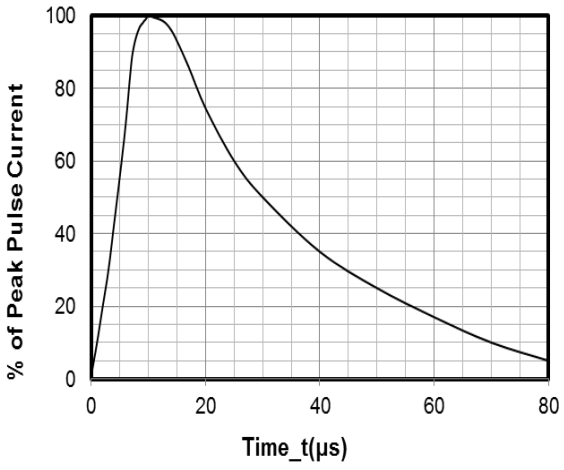

**Peak Pulse Power vs. Pulse Time**



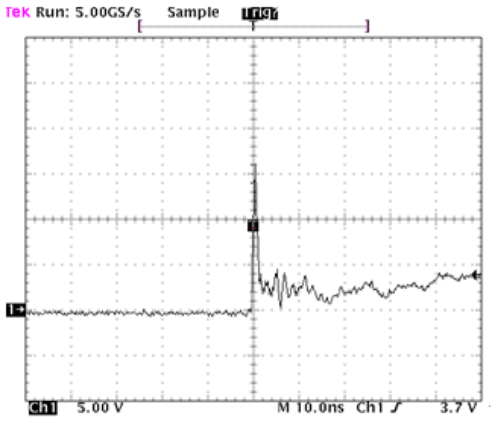

**Clamping Voltage vs. Peak Pulse Current**




**Power Derating Curve**




**8 X 20μs Pulse Waveform**

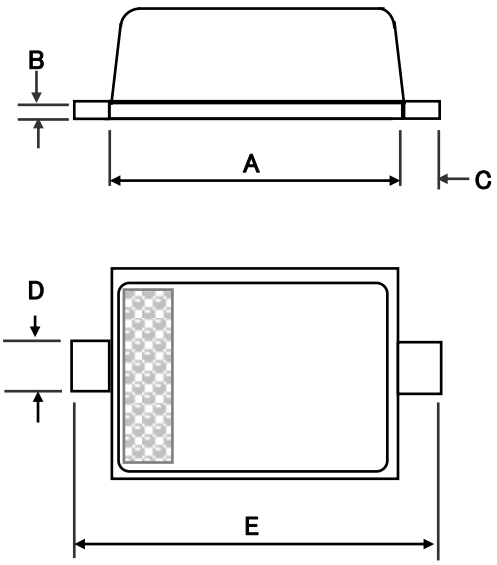



**Note：Data is taken with a 10x attenuator**

**ESD Clamping Voltage**

**8 kV Contact per IEC61000−4−2**

## SOD-923 Package Outline Drawing



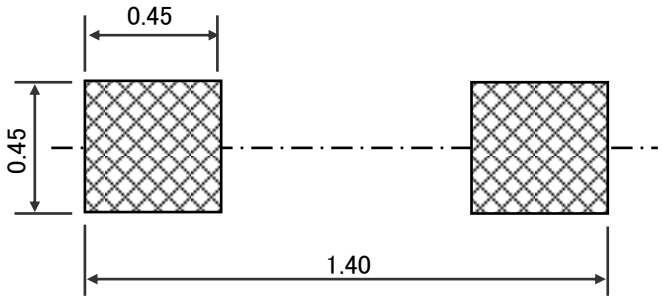

SOD923 * Package Outline

Dimensions

| Unit | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| Max. | 0.90 | 0.20 | 0.15 | 0.30 | 1.10 | 0.45 | 0.65 |
| Min. | 0.70 | 0.05 | 0.05 | 0.15 | 0.90 | 0.39 | 0.55 |

Unit: mm

## Suggested Land Pattern




## Contact Information

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