

Bidirectional TVS Diodes

Description

The ESD3Zxx Series is designed for applications requiring transient over voltage protection capability. They are intended for use in voltage and ESD sensitive equipment such as computers, printers, business machines, communication systems, medical equipment and other applications. These devices are ideal for situations where board space is at a premium.

Features

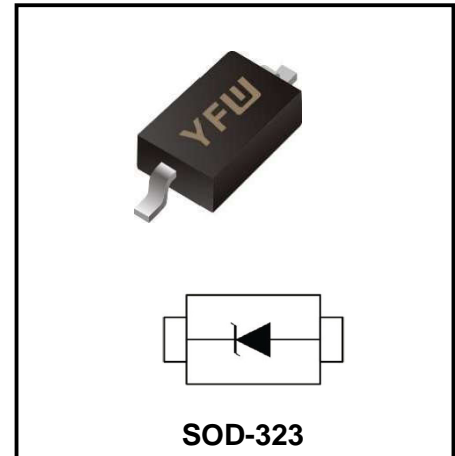
- ◆IEC61000-4-2(ESD) ±15kV(air), ±8kV(contact)
- ◆IEC61000-4-4(EFT) 40A(5/50ns)
- ◆350Watts Peak Pulse Power per (tp=8/20us)
- ◆Protects one I/O line(unidirectional)
- ◆Low clamping voltage
- ◆Working voltages: 3.3V to 36V
- ◆Low leakage current

Mechanical Data

- ◆SOD-323 Package
- ◆Flammability Rating: UL 94V-0
- ◆High temperature soldering guaranteed: 260°C/10s

Applications

- ◆Cell Phone Handsets and Accessories
- ◆Microprocessor based equipment
- ◆Personal Digital Assistants(PDA's)
- ◆Notebooks, Desktops, and Servers
- ◆Portable Instrumentation
- ◆Networking and Telecom
- ◆Serial and Parallel Ports
- ◆Peripherals



ABSOLUTE MAXIMUM RATING

| Parameters | Symbol | Value | Unit |
|-------------------------------|------------------|--------------|------|
| ESD per IEC61000-4-2(Air) | V _{ESD} | ±30 | kV |
| ESD per IEC61000-4-2(Contact) | | | |
| Peak Pulse Power (8/20us) | P _{PP} | 350 | W |
| Operating temperature | T _{OPT} | -55-+150 | °C |
| Storage temperature range | T _{STG} | -55-+150 | °C |
| Lead Soldering temperature | T _L | 260(10 sec.) | °C |

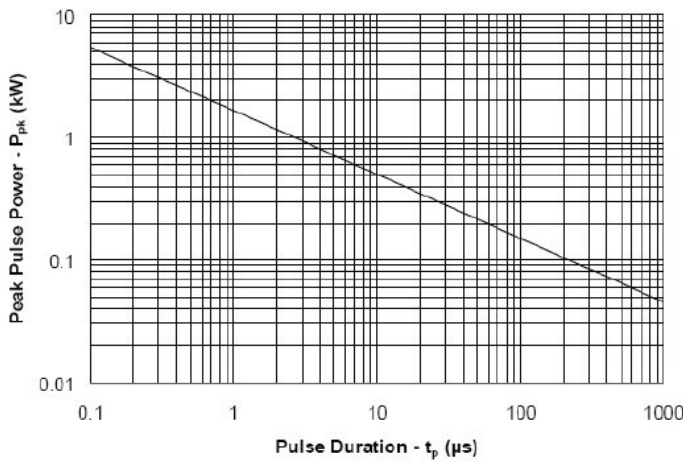
Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified

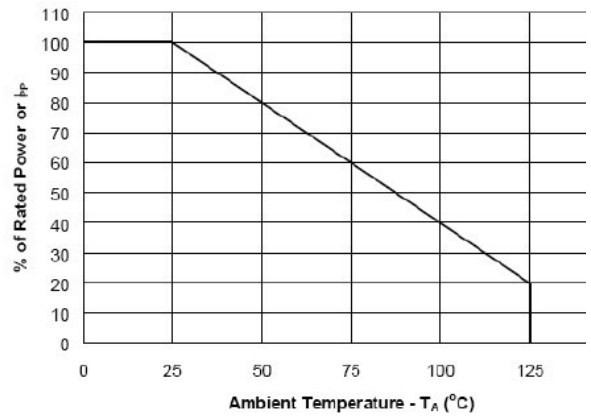
| PART NUMBER | DEVICE MARKING | VRWM (V) (max.) | VB (V) (min.) | IT (mA) | Vc@1A (V) (max.) | Vc (V) (max.) (@A) | | IR (uA) (max.) | CT (pF) (max.) |
|-------------|----------------|-----------------|---------------|---------|------------------|--------------------|----|----------------|----------------|
| | | | | | | | | | |
| ESD3Z03 | 03W | 3.3 | 4 | 1 | 6.5 | 14 | 20 | 40 | 450 |
| ESD3Z05 | 05W | 5 | 6 | 1 | 9.8 | 18 | 17 | 10 | 300 |
| ESD3Z12 | 12W | 12 | 13.3 | 1 | 19 | 32 | 11 | 1 | 130 |
| ESD3Z15 | 15W | 15 | 16.7 | 1 | 24 | 38 | 10 | 1 | 120 |
| ESD3Z18 | 18W | 18 | 20.0 | 1 | 29 | 45 | 9 | 1 | 100 |
| ESD3Z20 | 20W | 20 | 22.3 | 1 | 35 | 50 | 8 | 1 | 90 |
| ESD3Z24 | 24W | 24 | 26.7 | 1 | 43 | 52 | 7 | 1 | 80 |
| ESD3Z36 | 36W | 36 | 40.0 | 1 | 60 | 75 | 5 | 1 | 60 |

ELECTRICAL CHARACTERISTICS CURVE

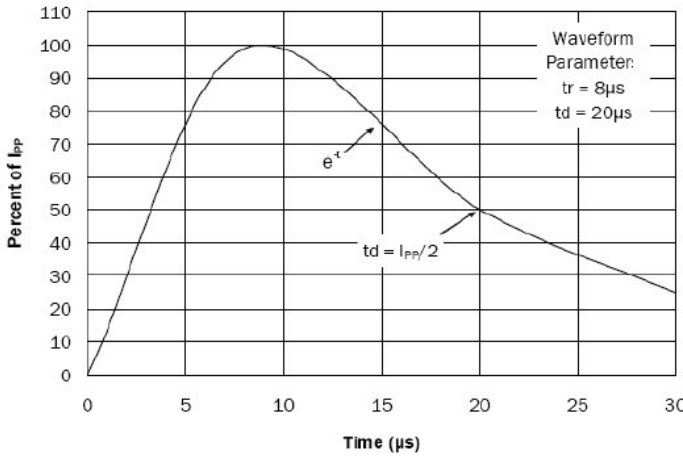
Non-Repetitive Peak Pulse Power vs. Pulse Time



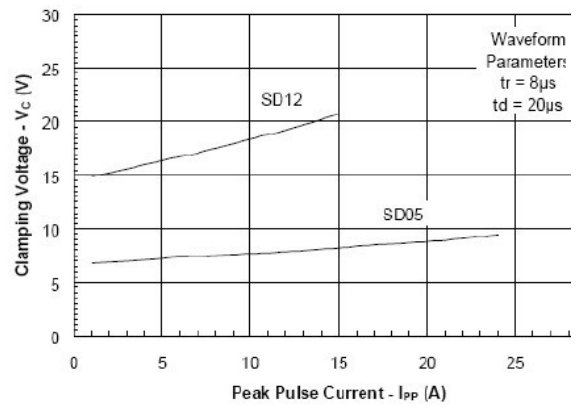
Power Derating Curve



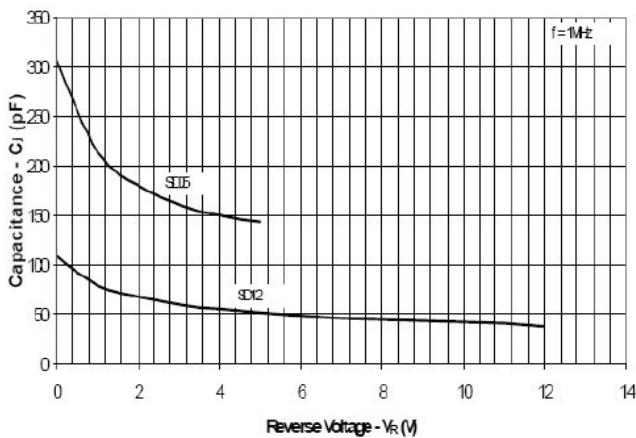
Pulse Waveform



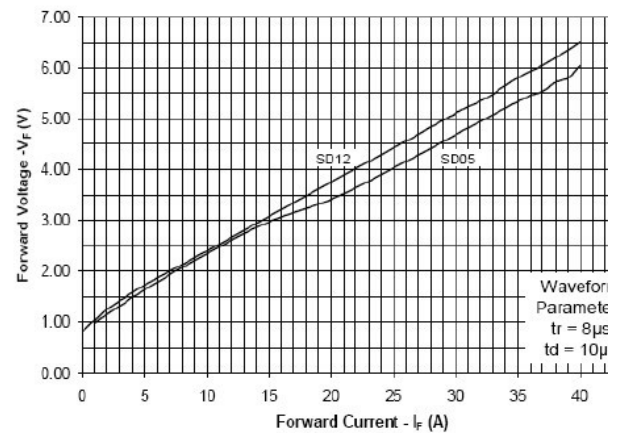
Clamping Voltage vs. Peak Pulse Current



Capacitance vs. Reverse Voltage

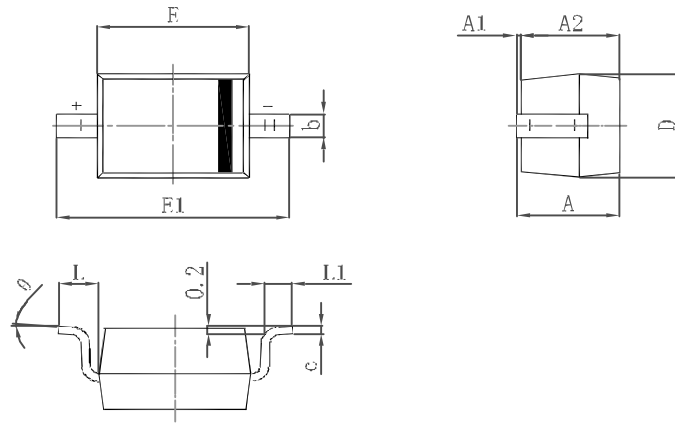


Forward Voltage vs. Forward Current



Package Outline

SOD-323



| Symbol | Min.(mm) | Max.(mm) |
|--------|----------|----------|
| A | | 1.000 |
| A1 | 0.000 | 0.100 |
| A2 | 0.800 | 0.900 |
| b | 0.250 | 0.350 |
| c | 0.080 | 0.150 |
| D | 1.200 | 1.400 |
| E | 1.600 | 1.800 |
| E1 | 2.500 | 2.700 |
| L | 0.475REF | |
| L1 | 0.250 | 0.400 |

Summary of Packing Options

| Package | Packing Description | Packing Quantity | Industry Standard |
|---------|---------------------|------------------|-------------------|
| SOD-323 | Tape/Reel,7"reel | 3 000 | EIA-481-1 |

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[CPDT-5V0USP-HF](#) [3.0SMCJ33CA-F](#) [3.0SMCJ36A-F](#) [HSPC16701B02TP](#) [JANTX1N6126A](#) [D3V3Q1B2DLP3-7](#) [D55V0M1B2WS-7](#)
[SCM1293A-04SO](#) [ESD200-B1-CSP0201 E6327](#) [SM12-7](#) [CEN955 W/DATA](#) [VESD12A1A-HD1-GS08](#) [CPDQC5V0-HF](#) [D1213A-01LP4-7B](#)
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