

Features

- 400W peak pulse power (8/20µs)
- Protects one data or power line
- Ultra low leakage: nA level
- Operating voltage: 3.3V
- Ultra low clamping voltage
- Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
Air discharge: ±30kV
Contact discharge: ±30kV
 - IEC61000-4-4 (EFT) 40A (5/50ns)
 - IEC61000-4-5 (Lightning) 25A (8/20µs)
- RoHS Compliant

Mechanical Characteristics

- Package: SOD-323
- Lead Finish: Matte Tin
- Case Material: “Green” Molding Compound.
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 3 per J-STD-020
- Terminal Connections: See Diagram

Applications

- Cellular Handsets and Accessories
- Personal Digital Assistants
- Notebooks and Handhelds
- Portable Instrumentation
- Peripherals
- Pagers Peripherals
- Desktop and Servers

Part Number Code

| | | | | | | | | |
|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| E | S | D | 0 | 5 | 1 | 1 | L | 1 |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

| Product Type | |
|--------------|---------------------------------------|
| ESD | TSK Electrostatic suppressor ESD Type |

| Reverse Working Voltage (V) | |
|-----------------------------|------|
| 3V3 | 3.3V |
| 05 | 5V |
| 16 | 16V |

| Line | |
|------|--------|
| 1 | 1-Line |
| 2 | 2-Line |
| 3 | 3-Line |

| Capacitance Type | |
|------------------|--------|
| L | Low |
| X | Normal |

| directional | |
|-------------|-----|
| 0 | Bi |
| 1 | Uni |

| Size | |
|------|---------|
| 1 | 0201 |
| 2 | 0402 |
| 3 | DFN0603 |
| 4 | DFN1006 |

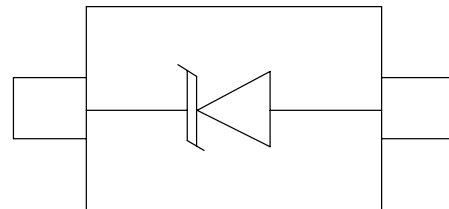
★ Code 4 to 9 is optional

Description

The ESD3V311LG2 is designed to replace multilayer varistors (MLVs) in portable applications such as cell phones, notebook computers and PDA's, using monolithic silicon technology to provide fast response time and ultra low ESD clamping voltage, making this device an ideal solution for protecting sensitive semiconductor components from damage. The ESD3V311LG2 complies with the IEC 61000-4-2 (ESD) standard with ±15kV air and ±8kV contact discharge. The ESD3V311LG2 is assembled into a lead-free SOD-323 package and will protect one unidirectional line. These devices will fit on the same PCB pad area as an 0805 MLV device.



Dimensions and Pin Configuration



SOD-323

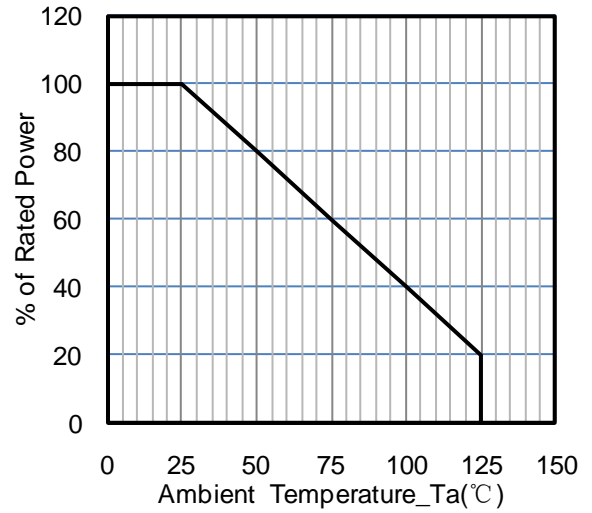
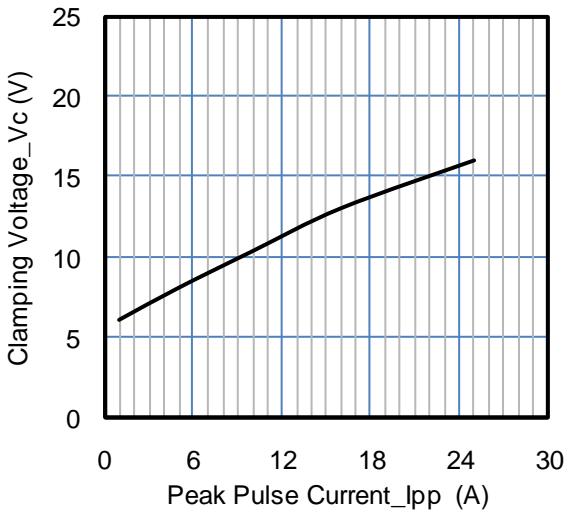
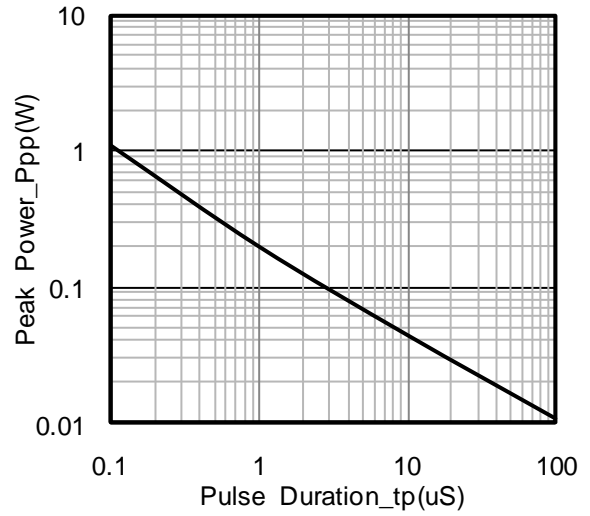
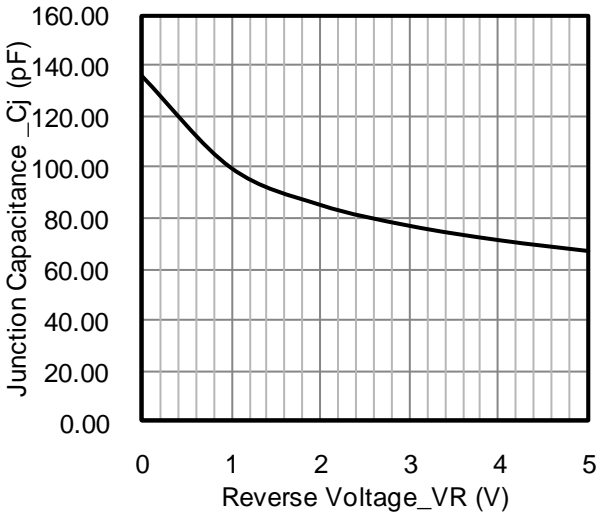
Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

| Parameter | Symbol | Value | Unit |
|--|------------------|----------------------|--------------------|
| Peak Pulse Power (8/20 μs) | Ppk | 400 | W |
| Peak Pulse Current (8/20 μs) | I _{PP} | 40 | A |
| ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact) | V _{ESD} | ± 30 ± 30 | kV |
| Operating Temperature Range | T _J | -55 to +125 | $^{\circ}\text{C}$ |
| Storage Temperature Range | T _{stg} | -55 to +150 | $^{\circ}\text{C}$ |

Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

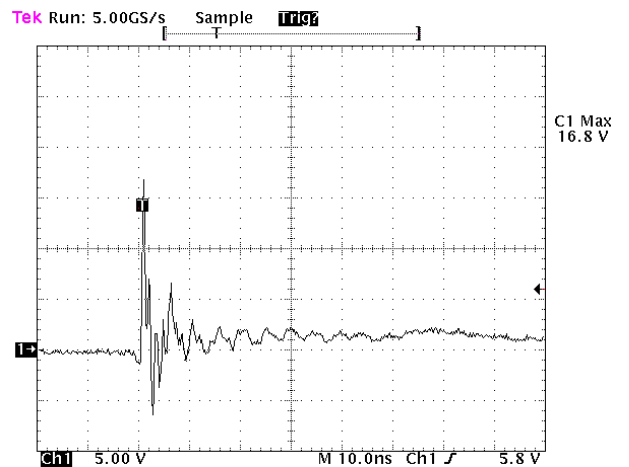
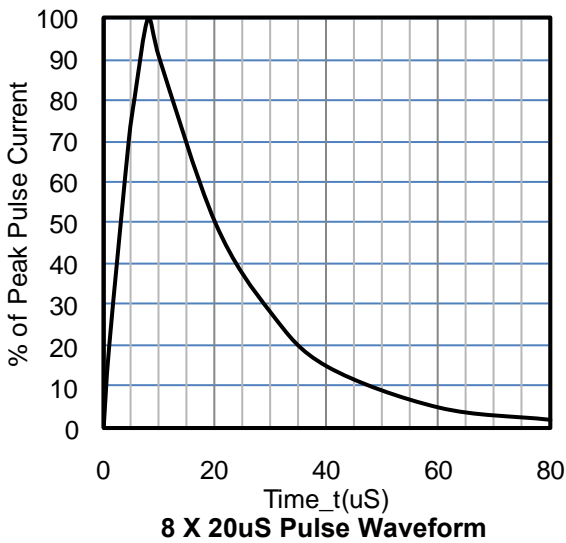
| Parameter | Symbol | Min | Typ | Max | Unit | Test Condition |
|-------------------------|------------------|-----|-----|-----|---------------|--|
| Reverse Working Voltage | V _{RWM} | | | 3.3 | V | |
| Breakdown Voltage | V _{BR} | 4.2 | | 6.0 | V | I _T = 2 μA |
| Reverse Leakage Current | I _R | | | 0.5 | μA | V _{RWM} = 3.3V |
| Clamping Voltage | V _C | | | 8 | V | I _{PP} = 5A (8 x 20 μs pulse) |
| Clamping Voltage | V _C | | | 16 | V | I _{PP} = 25A (8 x 20 μs pulse) |
| Junction Capacitance | C _J | | | 160 | pF | V _R = 0V, f = 1MHz |

Typical Performance Characteristics (TA=25°C unless otherwise Specified)



Clamping Voltage vs. Peak Pulse Current

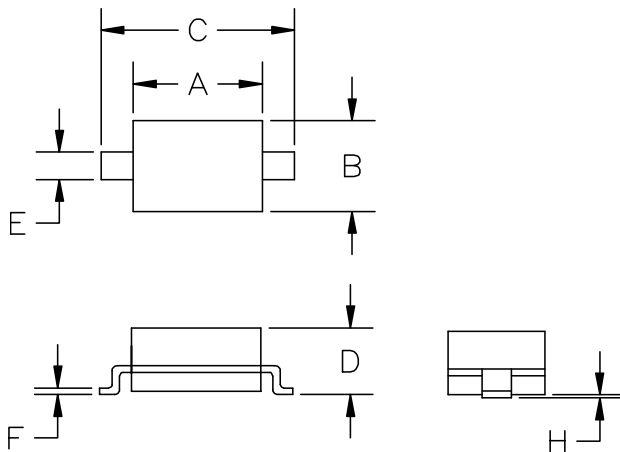
Power Derating Curve



ESD Clamping Voltage

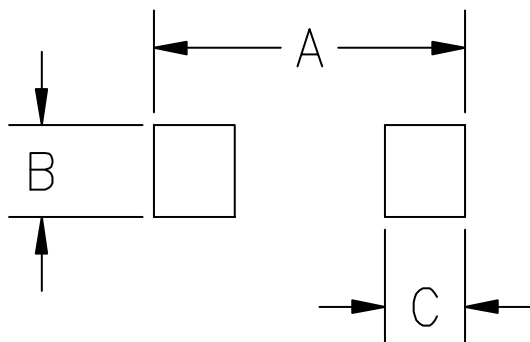
8 kV Contact per IEC61000-4-2

SOD-323 Package Outline Drawing



| SYM | DIMENSIONS | | | |
|-----|-------------|------|--------|-------|
| | MILLIMETERS | | INCHES | |
| | MIN | MAX | MIN | MAX |
| A | 1.50 | 1.80 | 0.060 | 0.071 |
| B | 1.20 | 1.40 | 0.045 | 0.054 |
| C | 2.30 | 2.70 | 0.090 | 0.107 |
| D | - | 1.10 | - | 0.043 |
| E | 0.30 | 0.40 | 0.012 | 0.016 |
| F | 0.10 | 0.25 | 0.004 | 0.010 |
| H | - | 0.10 | - | 0.004 |

Suggested Land Pattern



| SYM | DIMENSIONS | |
|-----|-------------|--------|
| | MILLIMETERS | INCHES |
| A | 3.15 | 0.120 |
| B | 0.80 | 0.031 |
| C | 0.80 | 0.031 |

Ordering Information

| Part Number | Packaging | Reel Size |
|-------------|------------------|-----------|
| ESD3V311LG2 | 3000/Tape & Reel | 7 inch |