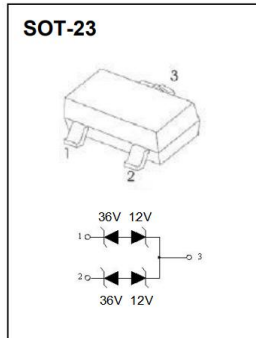
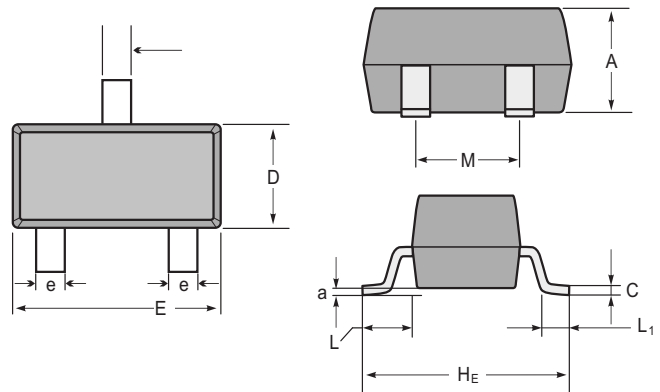


Features

- Bi-directional ESD protection of one line
- Reverse stand-off voltage: 12V/36V
- Low reverse clamping voltage
- Low leakage current
- Fast response time
- IEC 61000-4-2 (ESD) immunity test :
- Air discharge: ±30kV
- Contact discharge: ±30kV



Marking Diagram



SOT-23 mechanical data

| UNIT | A | C | D | E | He | e | M | L | L1 | a | |
|------|-----|-----|------|-----|-----|-----|-----|------|------------|------------|------|
| mm | max | 1.1 | 0.15 | 1.4 | 3.0 | 2.6 | 0.5 | 1.95 | 0.55 (ref) | 0.36 (ref) | 0.0 |
| | min | 0.9 | 0.08 | 1.2 | 2.8 | 2.2 | 0.3 | 1.7 | | | 0.15 |
| mil | max | 43 | 6 | 55 | 118 | 102 | 20 | 77 | 22 (ref) | 14 (ref) | 0.0 |
| | min | 35 | 3 | 47 | 110 | 87 | 12 | 67 | | | 6 |

Description

Designed to protect voltage sensitive electronic components from ESD and other transients. Excellent clamping capability, low leakage, low capacitance, and fast response time provide best in class protection on designs that are exposed to ESD.

The combination of small size, low capacitance, and high level of ESD protection makes them a flexible solution for applications such as HDMI, Display Port TM, and MDDI interfaces. It is designed to replace multiplayer varistors (MLV) in consumer equipments applications such as mobile phone, notebook, PAD, STB, LCD TV etc.

Applications

- Computers and peripherals
- High speed data lines
- Audio and video equipment
- Cellular handsets and accessories
- Subscriber identity module(SIM) card protection
- Portable electronics
- FireWire
- Other electronics equipments communi- cation systems

ES1236D2HA23

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

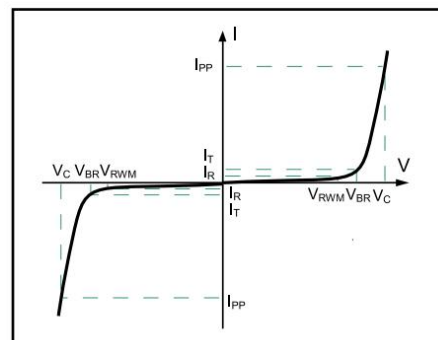
| Parameter | Symbol | Value | Unit |
|--|--------|-------------|------------------|
| Peak Pulse Power (PIN1/PIN2 to PIN3) | Ppk | 360 | W |
| Peak Pulse Power (PIN3 to PIN1/PIN2) | Ppk | 360 | W |
| Peak Pulse Current (PIN1/PIN2 to PIN3) | IPP | 4 | A |
| Peak Pulse Current (PIN3 to PIN1/PIN2) | IPP | 15 | A |
| ESD per IEC 61000-4-2 (Air) | VESD | ± 30 | kV |
| ESD per IEC 61000-4-2 (Contact) | | ± 30 | |
| Operating Temperature Range | TJ | -55 to +125 | $^\circ\text{C}$ |
| Storage Temperature Range | Tstg | -55 to +150 | $^\circ\text{C}$ |

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

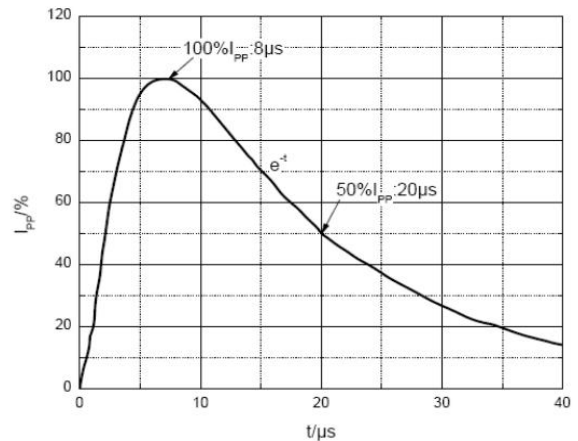
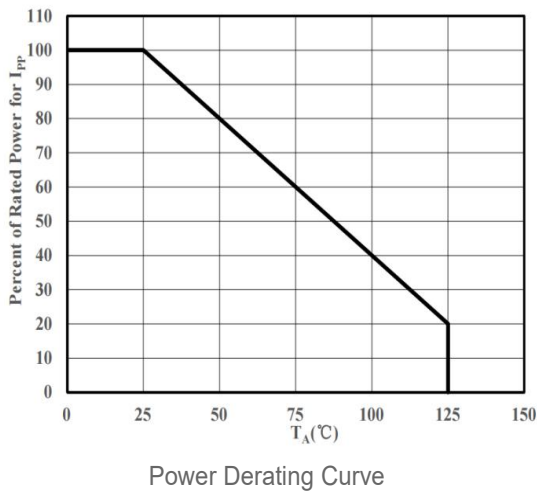
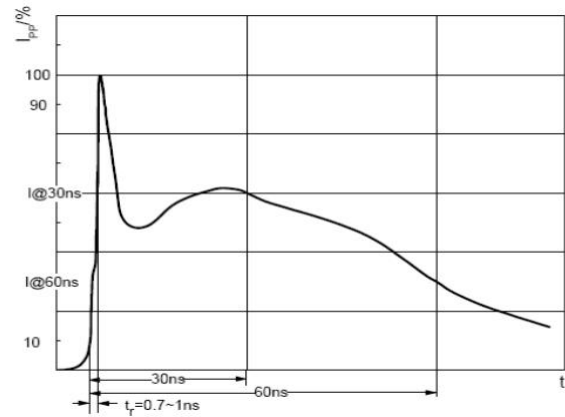
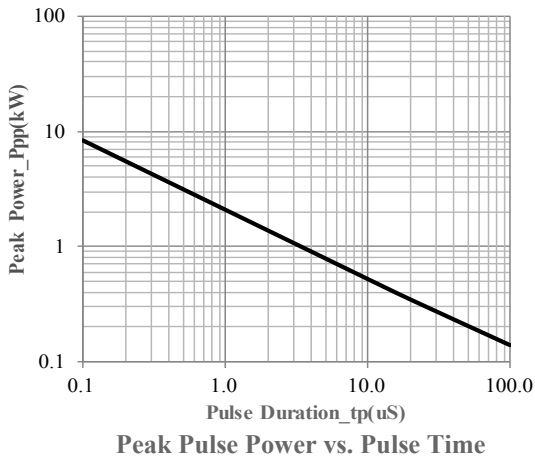
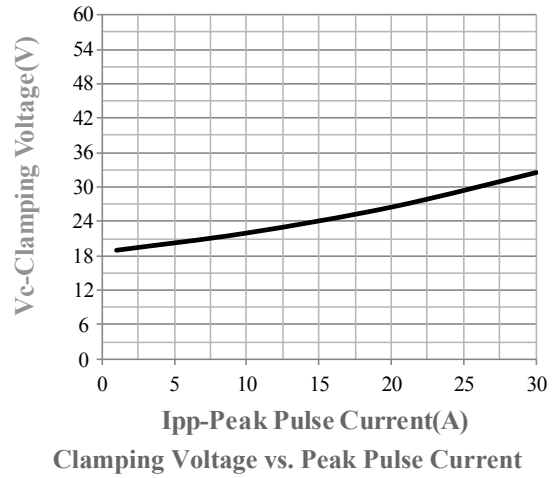
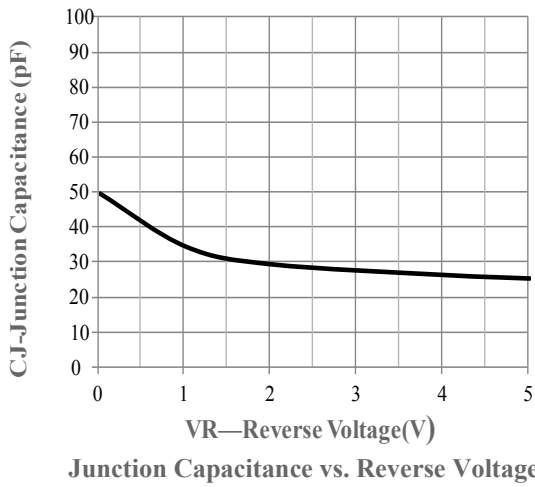
| Parameter | Symbol | Test Condition | Min | Typ | Max | Unit |
|-------------------------|-----------|--|------|-----|------|---------------|
| Reverse Working Voltage | V_{RWM} | PIN1/PIN2 to PIN3 | | | 36 | V |
| | | PIN3 to PIN1/PIN2 | | | 12 | V |
| Breakdown Voltage | VBR | $I_T=1\text{mA}, t_p=8/20\mu\text{s}, \text{PIN1/PIN2 to PIN3}$ | 39.5 | | 45 | V |
| | | $I_T=1\text{mA}, t_p=8/20\mu\text{s}, \text{PIN3 to PIN1/PIN2}$ | 14.2 | | 16.2 | V |
| Reverse Leakage Current | IR | $V_{RWM} = 36\text{V}, \text{PIN1/PIN2 to PIN3}$ | | | 0.2 | μA |
| | | $V_{RWM} = 12\text{V}, \text{PIN3 to PIN1/PIN2}$ | | | 0.2 | μA |
| Clamping Voltage | V_C | $I_{PP} = 4\text{A} (8 \times 20\mu\text{s pulse}), \text{PIN1/PIN2 to PIN3}$ | | | 60 | V |
| | | $I_{PP} = 15\text{A} (8 \times 20\mu\text{s pulse}), \text{PIN3 to PIN1/PIN2}$ | | | 24 | V |
| Junction Capacitance | Cj | $V_R = 0\text{V}, f = 1\text{MHz}$ | | | 50 | pF |

Electronics Parameter

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



Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise Specified)



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