

## ESD50V12L

### Low Capacitance TVS Diode Array

#### Features

- Transient protection for high speed data lines to
- IEC 61000-4-2 (ESD)  $\pm 15\text{kV}$  (air),  $\pm 8\text{kV}$  (contact)
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 0.5kV, 12A (8/20 $\mu\text{s}$ )
- Array of surge rated diodes with internal TVS Diode
- Protects two I/O lines
- Operating Voltage: 12 volts
- Low capacitance (5pF typical) for high-speed interfaces
- Low clamping voltage
- Solid-state silicon-avalanche technology
- RoHS compliant package

#### Mechanical Data

- JEDEC SOT-143 package
- UL 497B listed Molding compound flammability rating: UL 94V-0
- Packaging : Tape and Reel per EIA 481 RoHS/WEEE

#### Compliant

#### Application

- ADSL
- Industrial electronics
- RS-422 interfaces
- Portable electronics
- Microcomputer input protection
- LAN/WAN equipment
- ADSL

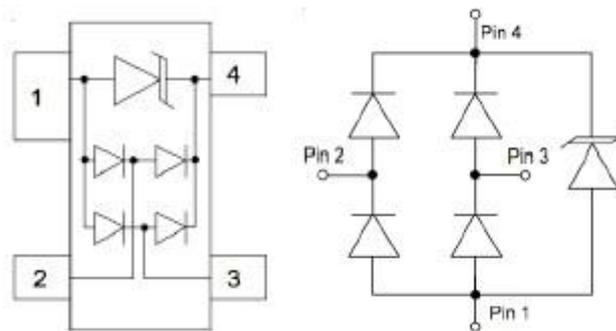
#### Packing & Order Information

3,000/Reel

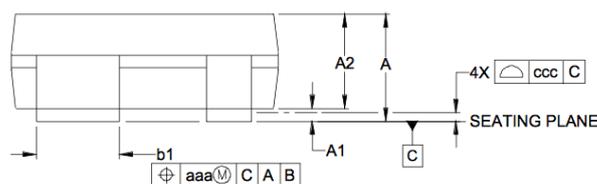
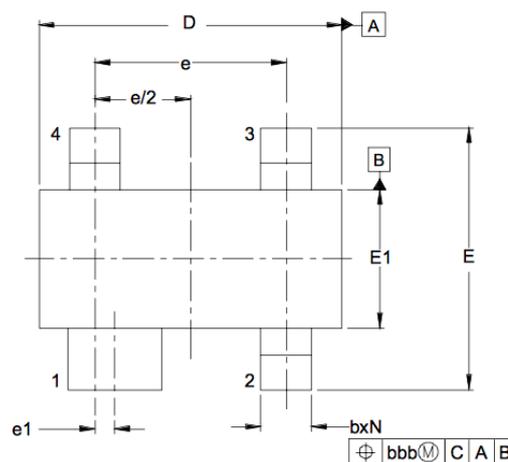


**RoHS  
COMPLIANT**

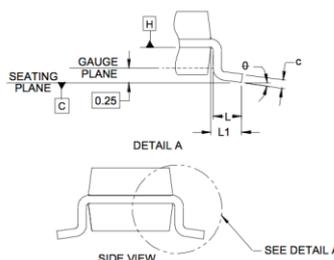
#### Schematic & PIN Configuration



SOT-143



| DIM    | DIMENSIONS |        |      |             |       |      |
|--------|------------|--------|------|-------------|-------|------|
|        | INCHES     |        |      | MILLIMETERS |       |      |
|        | MIN        | NOM    | MAX  | MIN         | NOM   | MAX  |
| A      | .031       | -      | .048 | 0.80        | -     | 1.22 |
| A1     | .000       | -      | .006 | 0.013       | -     | 0.15 |
| A2     | .029       | .035   | .042 | 0.75        | 0.90  | 1.07 |
| b      | .011       | -      | .020 | 0.30        | -     | 0.51 |
| b1     | .029       | -      | .037 | 0.76        | -     | 0.94 |
| c      | .003       | -      | .008 | 0.08        | -     | 0.20 |
| D      | .110       | .114   | .120 | 2.80        | 2.90  | 3.04 |
| E      | .082       | .093   | .104 | 2.10        | 2.37  | 2.64 |
| E1     | .047       | .051   | .055 | 1.20        | 1.30  | 1.40 |
| e      |            | .075   |      |             | 1.92  | BSC  |
| e1     |            | .008   |      |             | 0.20  | BSC  |
| L      | .015       | .020   | .024 | 0.40        | 0.50  | 0.60 |
| L1     |            | (.021) |      |             | (.54) |      |
| N      |            | 4      |      |             | 4     |      |
| $\phi$ | 0°         | -      | 8°   | 0°          | -     | 8°   |
| aaa    |            | .006   |      |             | 0.15  |      |
| bbb    |            | .008   |      |             | 0.20  |      |
| ccc    |            | .004   |      |             | 0.10  |      |



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#### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

##### Maximum Ratings (Tc=25°C unless otherwise noted)

| Symbol | Parameter                                 | Value | Unit |
|--------|---|-------|------|
| Ppk    | Peak Pulse Power (tp = 8/20µs)            | 500   | W    |
| IPP    | Peak Pulse Current (tp = 8/20µs)          | 16    | A    |
| VFP    | Peak Forward Voltage (IF = 1A, tp=8/20µs) | 1.5   | v    |

##### Maximum Ratings (Tc=25°C unless otherwise noted)

| Symbol | Parameter                  | Value       | Unit |
|--------|----------------------------|-------------|------|
| TJ     | Lead Soldering Temperature | 260 (10sec) | °C   |
| TL     | Operating Temperature      | -55 to +125 | °C   |
| TSTG   | Storage Temperature        | -55 to +150 | °C   |

##### Electrical Characteristics (Tc=25°C unless otherwise noted)

| Parameter                 | Conditions                               | Symbol | Value   |     | Unit |
|---------------------------|--|--------|---------|-----|------|
|                           |  |        | Typical | Max |      |
| Reverse Stand-Off Voltage |  | VRWM   | 13.5    | 12  | V    |
| Reverse Breakdown Voltage | It = 1Ma                                 | VBP    |         |     | V    |
| Reverse Leakage Current   | VRWM=12V, T=25°C                         | IR     |         | 1   | µA   |
| Clamping Voltage          | IPP = 5A, tp = 8/20µs                    | VC     |         | 24  | V    |
| Clamping Voltage          | IPP = 16A, tp = 8/20µs                   | VC     | 50      | 31  | V    |
| Junction Capacitance      | Between I/O pins and Ground VR=0V,f=1MHz | Cj     | 5       | 10  | pF   |
|                           | Between I/O pins VR =0V,f=1MHz           |        | 3       |     | pF   |

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