

# Low Capacitance TVS Protection

## SE03N6S01GZ

### Features

- ◆ Protects one data, control or power line
- ◆ Low capacitance: 12pF (Typical)
- ◆ Low clamping voltage

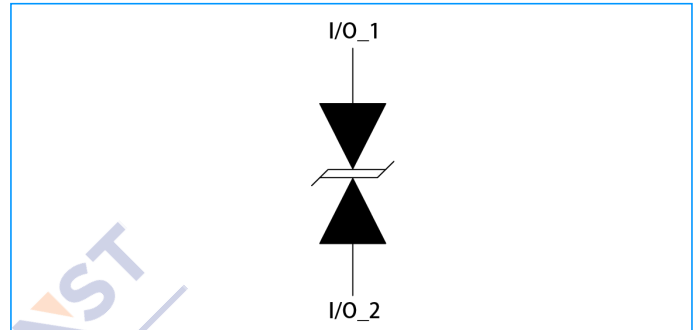
### Applications

- ◆ Portable Electronics
- ◆ Desktops, Servers and Notebooks
- ◆ Cellular Phones
- ◆ MP3 Ports
- ◆ Digital Camera Ports
- ◆ Subscriber Identity Module (SIM) card

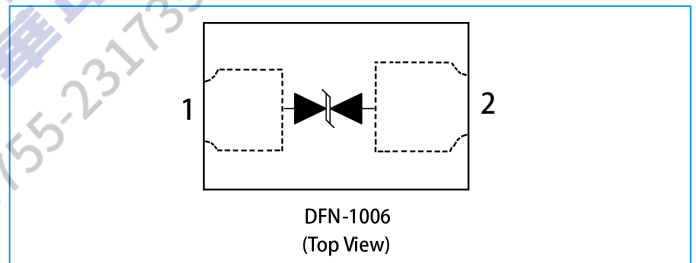
### Mechanical Characteristics

- ◆ DFN1006-2L package
- ◆ Flammability Rating: UL 94V-0
- ◆ Packaging: Tape and Reel
- ◆ Quantity per Reel: 10,000pcs
- ◆ Reel Size: 7inch

### FeatCircuit Diagram



### Pin Configuration

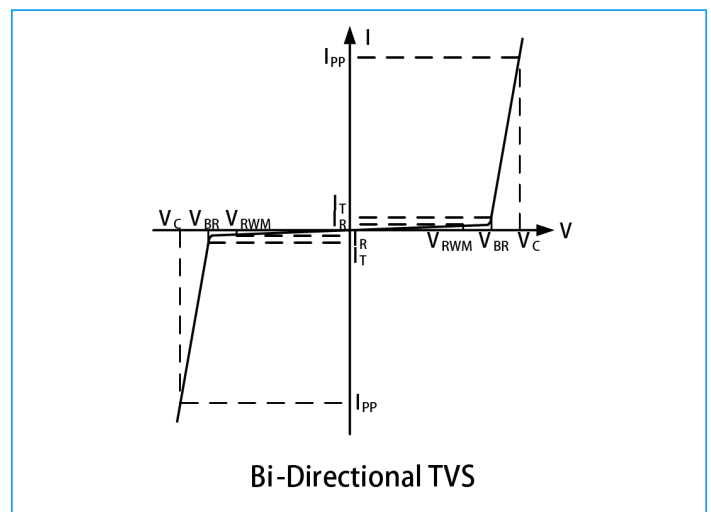


### Absolute Maximum Rating

| Symbol    | Parameter                       | Value    | Units       |
|-----------|---------------------------------|----------|-------------|
| $V_{ESD}$ | ESD per IEC 61000-4-2 (Air)     | $\pm 30$ | kV          |
|           | ESD per IEC 61000-4-2 (Contact) | $\pm 30$ |             |
| $T_{OPT}$ | Operating Temperature           | -55/+125 | $^{\circ}C$ |
| $T_{STG}$ | Storage Temperature             | -55/+150 | $^{\circ}C$ |

### I-V Curve Characteristics

| Symbol    | Parameter                           |
|-----------|-------------------------------------|
| $V_{RWM}$ | Nominal Reverse Working Voltage     |
| $I_R$     | Reverse Leakage Current @ $V_{RWM}$ |
| $V_{BR}$  | Reverse Breakdown Voltage @ $I_T$   |
| $I_T$     | Test Current for Reverse Breakdown  |
| $V_C$     | Clamping Voltage @ $I_{PP}$         |
| $I_{PP}$  | Maximum Peak Pulse Current          |
| $C_{ESD}$ | Parasitic Capacitance               |
| $V_R$     | Reverse Voltage                     |
| f         | Small Signal Frequency              |



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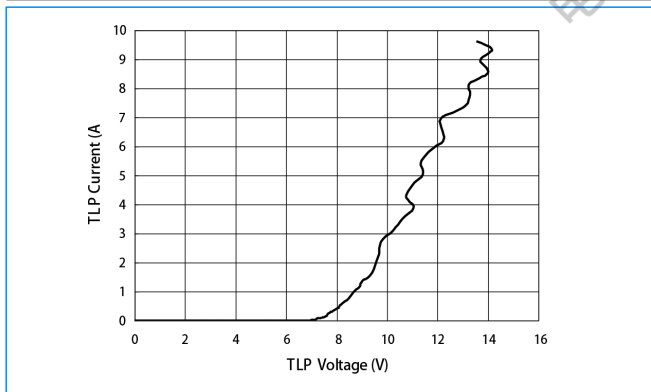
## SE03N6S01GZ

### Electrical Characteristics (T = 25°C)

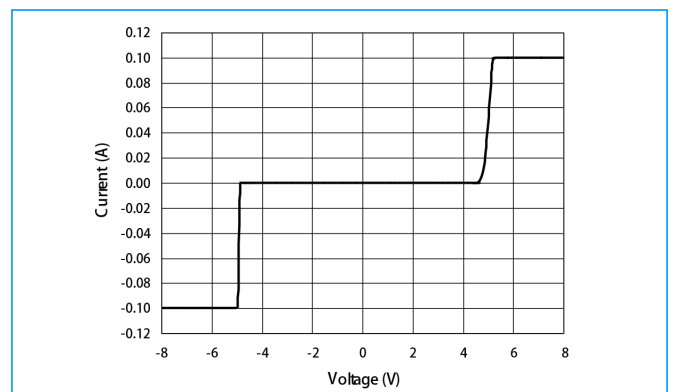
| Symbol    | Test Condition  | Minimum | Typical | Maximum | Units   |
|-----------|---|---------|---------|---------|---------|
| $V_{RWM}$ | —   | —       | —       | 3.3     | V       |
| $I_R$     | $V_{RWM} = 3.3V, T = 25^\circ C$<br>Between I/O_1 and I/O_2 | —       | —       | 0.5     | $\mu A$ |
| $V_{BR}$  | $I_T = 1mA$<br>Between I/O_1 and I/O_2                      | 3.5     | 4.1     | 5.0     | V       |
| $V_C$     | $I_{PP} = 1A, t_p = 8/20\mu s$<br>Between I/O_1 and I/O_2   | —       | 6.0     | —       | V       |
| $V_C$     | $I_{PP} = 8A, t_p = 8/20\mu s$<br>Between I/O_1 and I/O_2   | —       | 10      | —       | V       |
| $C_{ESD}$ | $V_R = 0V, f = 1MHz$<br>Between I/O_1 and I/O_2             | —       | 12      | —       | pF      |

### Characteristics Curve

TLP Measurement of I/O\_1 to I/O\_2

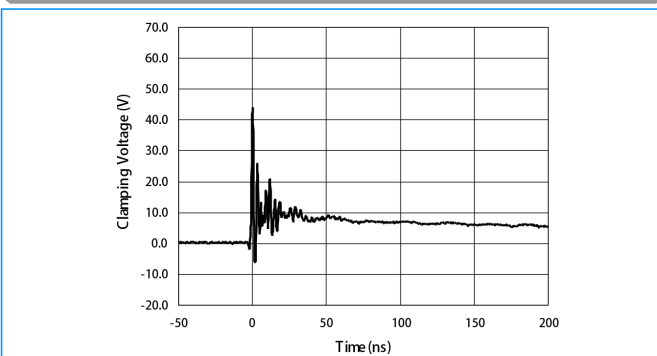


Voltage Sweeping of I/O\_1 to I/O\_2



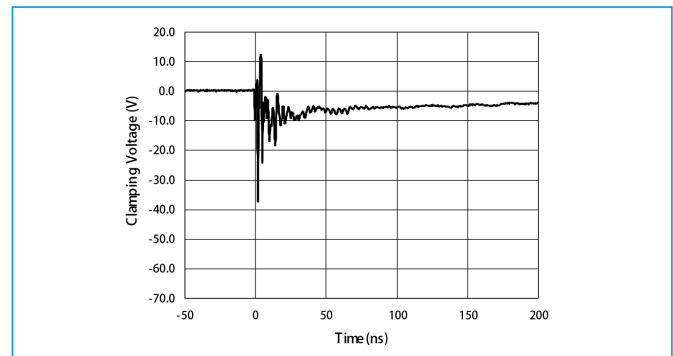
ESD Clamping of I/O\_1 to I/O\_2

(+8kV Contact per IEC 61000-4-2)



ESD Clamping of I/O\_1 to I/O\_2

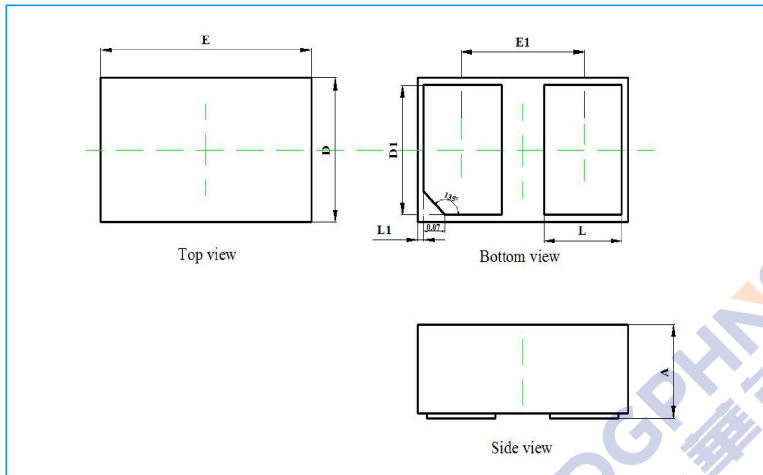
(-8kV Contact per IEC 61000-4-2)



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### DFN1006-2L Dimensions



| Symbol    | Millimeter |       | Inches |       |
|-----------|------------|-------|--------|-------|
|           | Min        | Max   | Min    | Max   |
| <b>A</b>  | 0.450      | 0.550 | 0.018  | 0.021 |
| <b>D</b>  | 0.550      | 0.650 | 0.022  | 0.026 |
| <b>E</b>  | 0.950      | 1.050 | 0.037  | 0.041 |
| <b>D1</b> | 0.420      | 0.520 | 0.017  | 0.020 |
| <b>E1</b> | 0.550      | 0.650 | 0.022  | 0.026 |
| <b>L</b>  | 0.270      | 0.370 | 0.011  | 0.015 |
| <b>L1</b> | 0.000      | 0.100 | 0.000  | 0.004 |