

## Transient Voltage Suppressors for ESD Protection

### SE05N6B01GH

#### Features

- ◆ Operating Voltage: 5.0 V
- ◆ Low Leakage: nA Level
- ◆ Low Capacitance
- ◆ Low Clamping Voltage
- ◆ RoHS compliant

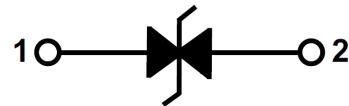
#### DFN1006-2L



#### Applications

- ◆ Cellular Handsets & Accessories
- ◆ Digital Visual Interface (DVI)
- ◆ RF Circuits
- ◆ Display Port
- ◆ USB Ports
- ◆ MDDI Ports
- ◆ PCI Express

#### Pin Configuration



#### Mechanical Characteristics

- ◆ DFN1006-2L (1.0x0.6x0.5mm) Package
- ◆ Quantity Per Reel : 10,000pcs
- ◆ Reel Size : 7 inch
- ◆ Lead Finish : Lead Free

#### Absolute Maximum Rating

| Symbol    | Parameter                                                      | Value       | Unit |
|-----------|----------------------------------------------------------------|-------------|------|
| $T_L$     | Lead Soldering Temperature                                     | 260 (10sec) | °C   |
| $T_J$     | Operating Temperature Range                                    | -40 to +125 | °C   |
| $T_{STG}$ | Storage Temperature Range                                      | -55 to +150 | °C   |
| $V_{ESD}$ | ESD per IEC 61000-4-2 (Air)<br>ESD per IEC 61000-4-2 (Contact) | ±30<br>±30  | KV   |

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Electrical Characteristics (@T<sub>A</sub>=25°C, unless otherwise specified)

| Symbol                  | Symbol    | Conditions                     | Min. | Typ. | Max. | Unit    |
|-------------------------|-----------|--------------------------------|------|------|------|---------|
| Reverse Working Voltage | $V_{RWM}$ | --                             | --   | --   | 5    | V       |
| Breakdown Voltage       | $V_{BR}$  | $I_T = 1mA$                    | 7    | --   | 9    | V       |
| Leakage Current         | $I_R$     | $V_{RWM} = 5V, T = 25^\circ C$ | --   | --   | 0.1  | $\mu A$ |
| Clamping Voltage        | $V_C$     | $I_{PP} = 1A, t_p = 8/20\mu s$ | --   | 11   | --   | V       |
|                         |           | $I_{PP} = 4A, t_p = 8/20\mu s$ | --   | 19   | --   | V       |
| Junction Capacitance    | $C_J$     | $V_R = 0V, f = 1MHz$           | --   | 0.35 | --   | pF      |

## Characteristic Curves

Fig. 1. 8/20 $\mu s$  Pulse Waveform

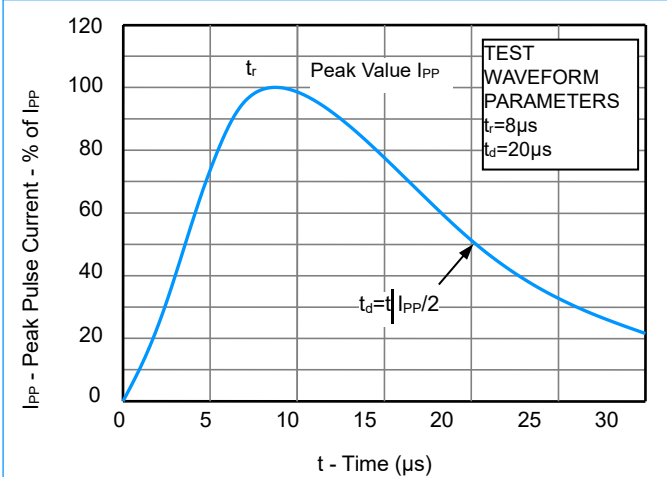


Fig. 2. ESD Pulse Waveform (according to IEC 61000-4-2)

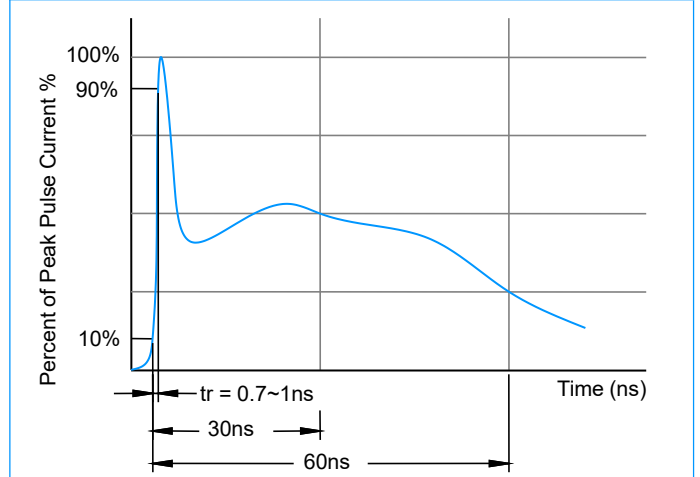


Fig. 3. Clamped +8kV ESD Voltage Waveform

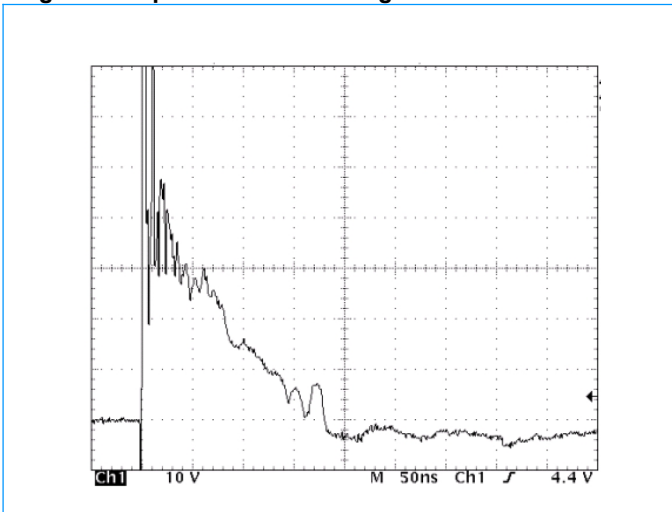
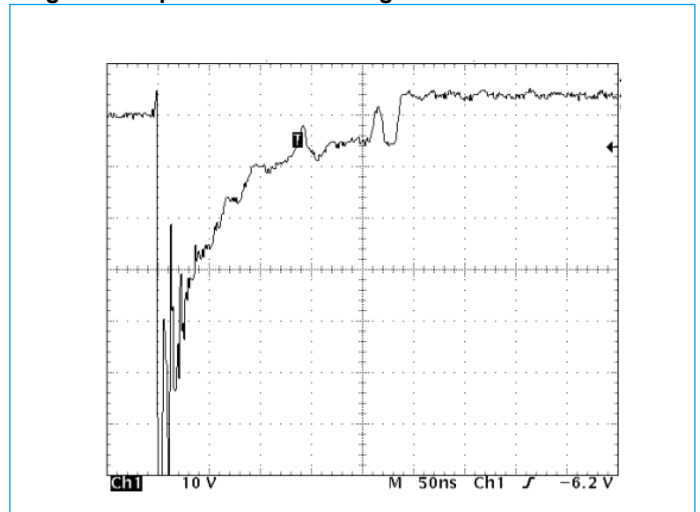


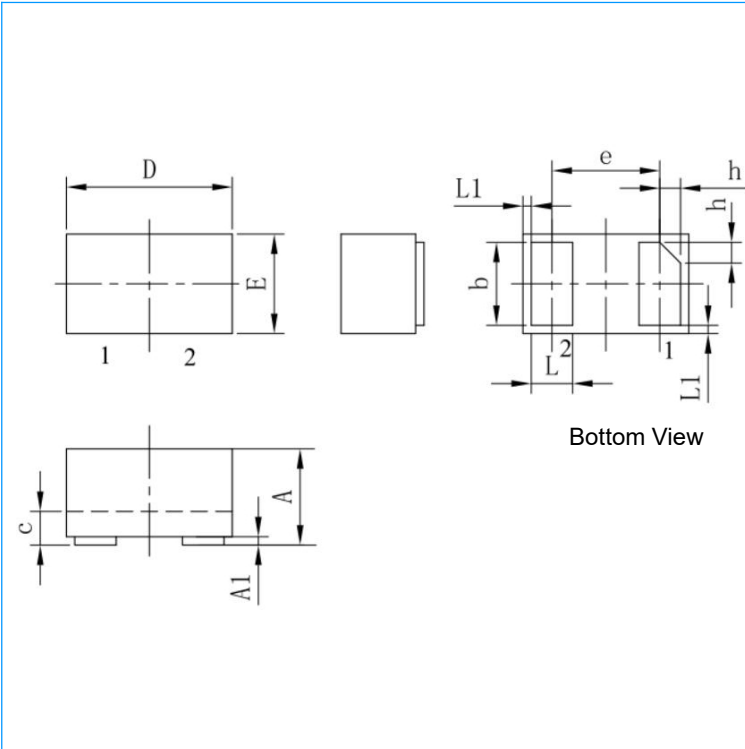
Fig. 4. Clamped -8kV ESD Voltage Waveform



## Transient Voltage Suppressors for ESD Protection

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### DFN1006-2L Package Outline & Dimensions



| Symbol    | Millimeters |      |      | Inches    |       |       |
|-----------|-------------|------|------|-----------|-------|-------|
|           | Min         | Typ  | Max  | Min       | Typ   | Max   |
| <b>A</b>  | 0.45        | 0.50 | 0.55 | 0.018     | 0.020 | 0.022 |
| <b>A1</b> | 0.00        | 0.02 | 0.05 | 0.000     | 0.001 | 0.002 |
| <b>b</b>  | 0.45        | 0.50 | 0.55 | 0.018     | 0.020 | 0.022 |
| <b>c</b>  | 0.12        | 0.15 | 0.18 | 0.005     | 0.006 | 0.007 |
| <b>D</b>  | 0.95        | 1.00 | 1.05 | 0.037     | 0.039 | 0.041 |
| <b>e</b>  | 0.65 BSC    |      |      | 0.026 BSC |       |       |
| <b>E</b>  | 0.55        | 0.60 | 0.65 | 0.022     | 0.024 | 0.026 |
| <b>L</b>  | 0.20        | 0.25 | 0.30 | 0.008     | 0.010 | 0.012 |
| <b>L1</b> | 0.05 REF    |      |      | 0.002 REF |       |       |
| <b>h</b>  | 0.07        | 0.12 | 0.17 | 0.003     | 0.005 | 0.007 |

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