

### DESCRIPTION

ESD2401OC is a low-capacitance Transient Voltage Suppressor (TVS) designed to provide electrostatic discharge (ESD) protection for data, control or power lines. With maximum capacitance of 15pF only, ESD2401OC is designed to protect parasitic-sensitive systems against over-voltage and over-current transient events. It complies with IEC 61000-4-2 (ESD), Level 4 ( $\pm 8\text{kV}$  contact,  $\pm 15\text{kV}$  air discharge), very fast charged device model (CDM) ESD and cable discharge event (CDE), etc.

ESD2401OC uses ultra-small DFN1006 package. Each ESD2401OC device can protect one data line. It offers system designers flexibility to protect single data line where space is a premium concern.

### ORDERING INFORMATION

- ✧ Device: ESD2401OC
- ✧ Package: DFN1006
- ✧ Marking: DH
- ✧ Material: Halogen free
- ✧ Packing: Tape & Reel
- ✧ Quantity per reel: 10,000pcs

### FEATURES

- ✧ IEC61000-4-2 (ESD)  $\pm 8\text{kV}$  (Contact)  
 $\pm 15\text{kV}$  (Air)
- ✧ IEC61000-4-4 (EFT) 40A (5/50ns)
- ✧ IEC61000-4-5 (Lighting) 3A (8/20 $\mu\text{s}$ )
- ✧ 100 Watts Peak Pulse Power (tp=8/20 $\mu\text{s}$ )
- ✧ Working voltages : 24V
- ✧ Low clamping voltage
- ✧ Low leakage current

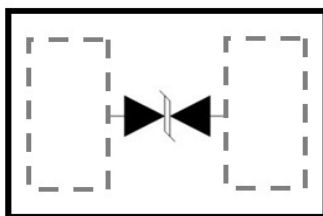
### MACHANICAL DATA

- ✧ DFN1006 package
- ✧ Flammability Rating: UL 94V-0
- ✧ Packaging: Tape and Reel
- ✧ Reel size: 7 inch

### APPLICATIONS

- ✧ Serial and Parallel Ports
- ✧ Notebooks, Desktops, Servers
- ✧ Projection TV
- ✧ Cellular handsets and accessories
- ✧ Portable instrumentation
- ✧ Peripherals

### PIN CONFIGURATION



### PACKAGE OUTLINE



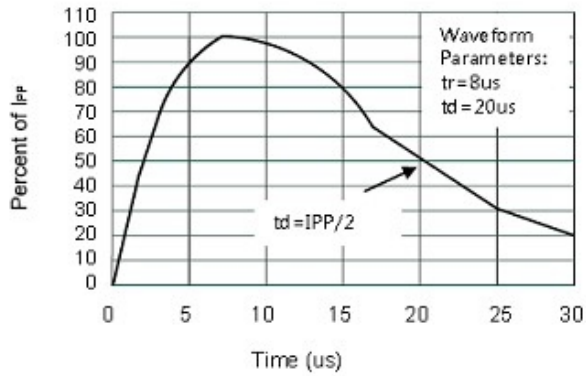
## ABSOLUTE MAXIMUM RATING

| Symbol    | Parameter  | Value               | Units        |
|-----------|--|---------------------|--------------|
| $V_{ESD}$ | ESD per IEC 61000-4-2 (Contact)<br>ESD per IEC 61000-4-2 (Air) | $\pm 8$<br>$\pm 15$ | kV           |
| $P_{PP}$  | Peak Pulse Power (8/20 $\mu$ s)                                | 150                 | W            |
| $T_{OPT}$ | Operating Temperature  | -55 ~ +125          | $^{\circ}$ C |
| $T_{STG}$ | Storage Temperature  | -55 ~ +150          | $^{\circ}$ C |
| $T_L$     | Lead Soldering Temperature                                     | 260 (10 sec.)       | $^{\circ}$ C |

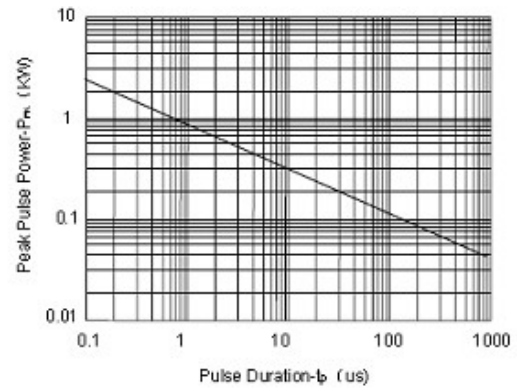
## ELECTRICAL CHARACTERISTICS (Tamb=25 $^{\circ}$ C)

| Symbol    | Parameter                 | Test Condition                                 | Min | Typ | Max | Units   |
|-----------|---------------------------|--|-----|-----|-----|---------|
| $V_{RWM}$ | Reverse Working Voltage   |  |     |     | 24  | V       |
| $V_{BR}$  | Reverse Breakdown Voltage | $I_T = 1\text{mA}$                             | 26  |     | 32  | V       |
| $I_R$     | Reverse Leakage Current   | $V_{RWM} = 24\text{V}$                         |     |     | 1   | $\mu$ A |
| $V_{C1}$  | Clamping Voltage 1        | $I_{PP} = 1\text{A}$ , $t_p = 8/20\mu\text{s}$ |     |     | 40  | V       |
| $V_{C2}$  | Clamping Voltage 2        | $I_{PP} = 3\text{A}$ , $t_p = 8/20\mu\text{s}$ |     |     | 50  | V       |
| $C_J$     | Junction Capacitance      | $V_R = 0\text{V}$ , $f = 1\text{MHz}$          |     | 8   | 15  | pF      |

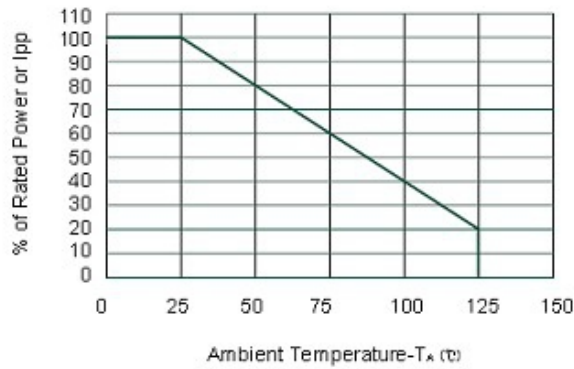
### ELECTRICAL CHARACTERISTICS CURVE



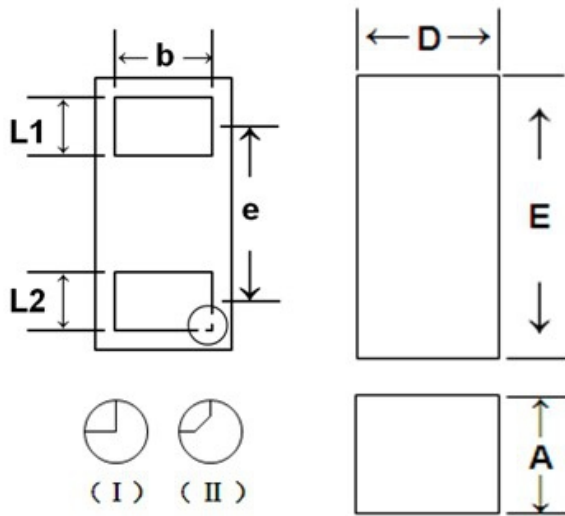
Pulse Waveform



Non-Repetitive Peak Pulse Power vs. Pulse Time



## DFN1006 PACKAGE OUTLINE DIMENSIONS



NOTE: ALL DIMENSIONS IN MM

|    | MIN  | NOM     | MAX  |
|----|------|---------|------|
| D  | 0.55 | 0.60    | 0.65 |
| E  | 0.95 | 1.00    | 1.05 |
| L1 | 0.20 | 0.25    | 0.30 |
| L2 | 0.20 | 0.25    | 0.30 |
| A  | 0.45 | 0.50    | 0.55 |
| b  | 0.45 | 0.50    | 0.55 |
| e  |      | 0.64BSC |      |

