

为您的产品保驾护航

PRODUCT DATASHEET

Electro-Static Discharge

JEN1006-4.5V-C ESD

Features

- Ultra small package: 1.0x0.6x0.5mm(DFN1006)
- Protects one data or power line
- Ultra low leakage: nA level
- Operating voltage: 4.5V
- Low clamping voltage
- 2-pin leadless package
- Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: $\pm 30\text{kV}$
 - Contact discharge: $\pm 30\text{kV}$
 - IEC61000-4-5 (Lightning) 40A (8/20 μs)
- RoHS Compliant

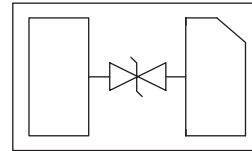
Pin Description



Applications

- Cellular Handsets and Accessories
- Personal Digital Assistants
- Notebooks and Handhelds
- Portable Instrumentation
- Digital Cameras
- Peripherals
- Keypads, Side Keys, LCD Displays

Schematic Diagram



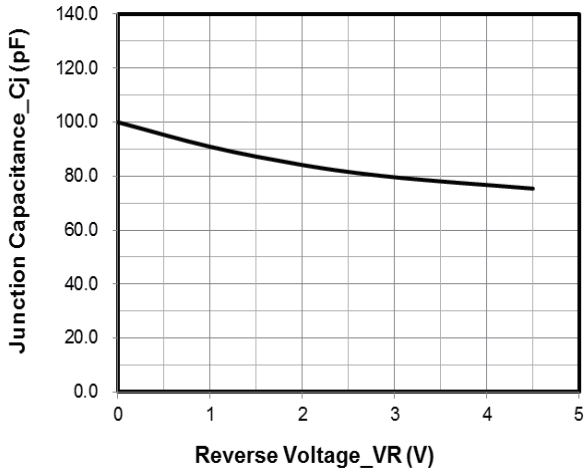
Limiting Values($T_A = 25^\circ\text{C}$, unless otherwise specified)

| Symbol | Parameter | Conditions | Min | Max | Unit |
|------------------|---------------------------------|---------------------------------|-----|----------|------------------|
| V _{ESD} | Electrostatic Discharge Voltage | IEC 61000-4-2;Contact Discharge | - | ± 30 | kV |
| | | IEC 61000-4-2;Air Discharge | - | ± 30 | kV |
| P _{PK} | Peak Pulse Power | $t_p=8/20\mu\text{s}$ | - | 400 | W |
| I _{PP} | Rated Peak Pulse Current | $t_p=8/20\mu\text{s}$ | - | 40 | A |
| T _J | Operating Temperature Range | - | -55 | 125 | $^\circ\text{C}$ |
| T _{stg} | Storage Temperature Range | - | -55 | 150 | $^\circ\text{C}$ |

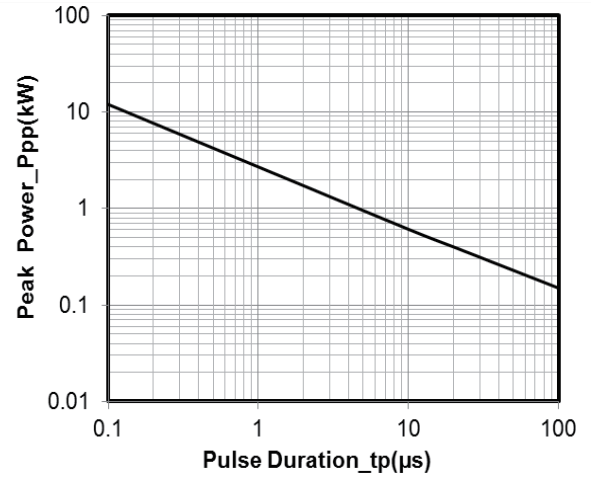
Electrical Characteristics($T_A = 25^\circ\text{C}$, unless otherwise specified)

| Symbol | Parameter | Conditions | Min | Typ. | Max | Unit |
|------------------|-------------------------|---|-----|------|-----|---------------|
| V _{RWM} | Reverse Working Voltage | $T_A=25^\circ\text{C}$ | - | - | 4.5 | V |
| V _{BR} | Breakdown Voltage | $I_T=1\text{ mA}; T_A=25^\circ\text{C}$ | 4.8 | - | - | V |
| I _R | Reverse Leakage Current | V _{RWM} =4.5V | - | - | 0.2 | μA |
| V _C | Clamping Voltage | I _{PP} =1A, $t_p=8/20\mu\text{s}$ | - | - | 6.5 | V |
| V _C | Clamping Voltage | I _{PP} =40A, $t_p=8/20\mu\text{s}$ | - | - | 10 | V |
| C _J | Junction Capacitance | V _R =0V, f=1 MHz | - | 100 | - | pF |

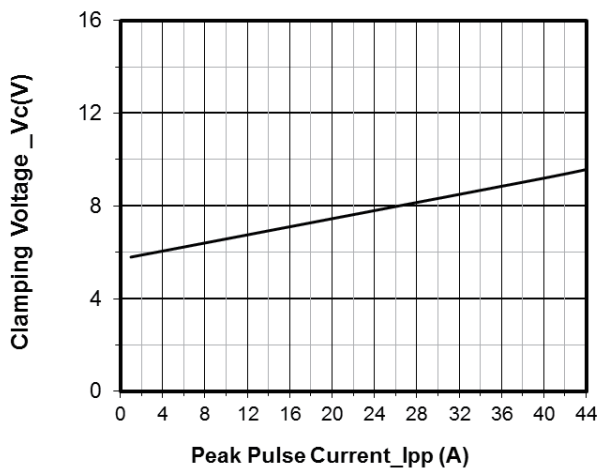
Typical Characteristics



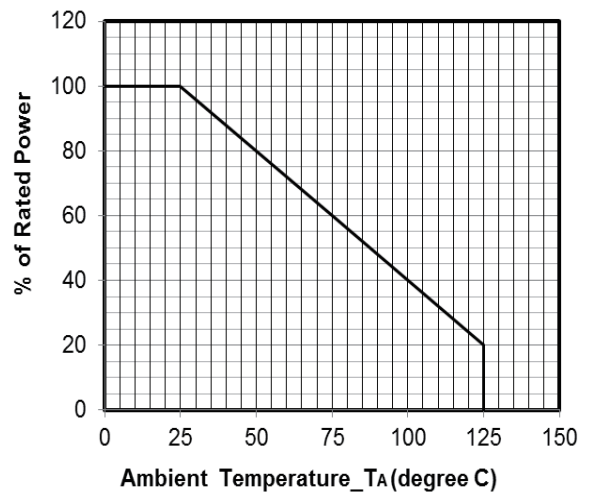
Junction Capacitance vs. Reverse Voltage



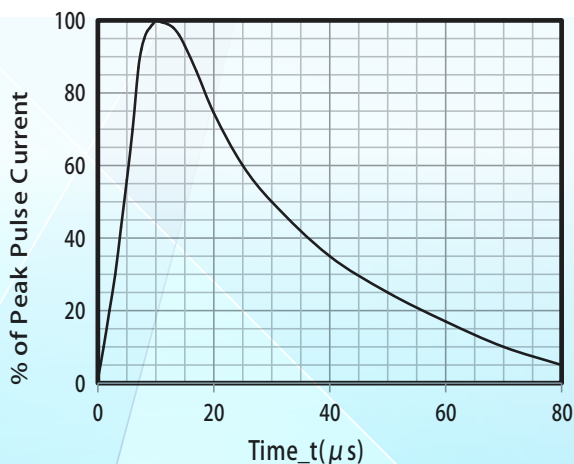
Peak Pulse Power vs. Pulse Time



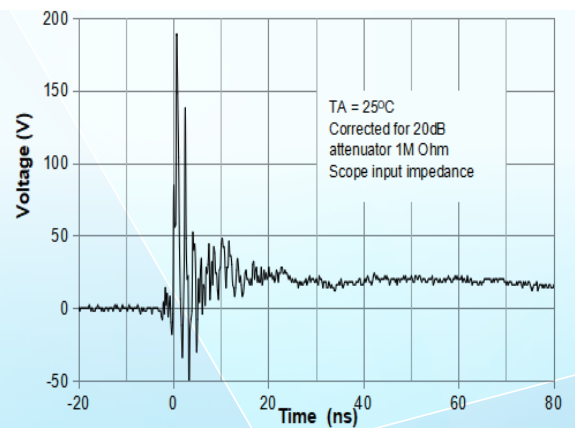
Clamping Voltage vs. Peak Pulse Current (tp = 8/20 μs)



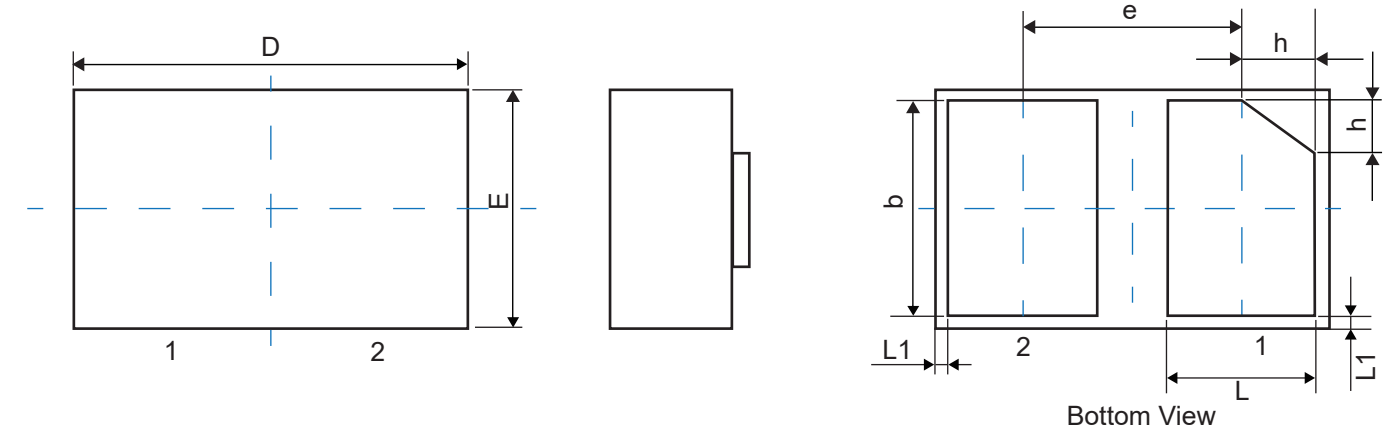
Power Derating Curve



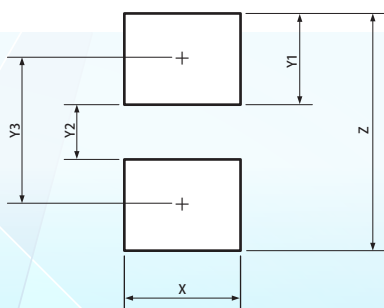
8 X 20 μs Pulse Waveform



ESD Clamping Voltage
8 kV Contact per IEC61000-4-2

Physical Dimensions(mm.)


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

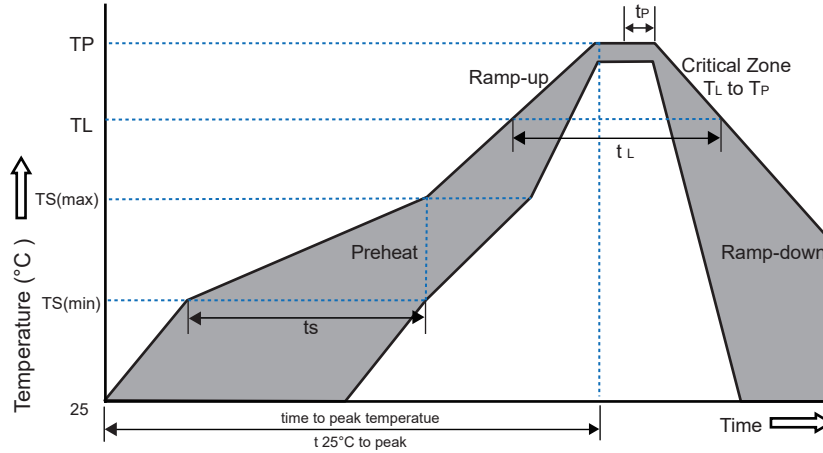
Suggested Land Pattern


| Symbol | Dimensions | |
|--------|-------------|--------|
| | Millimeters | Inches |
| X | 0.60 | 0.024 |
| Y1 | 0.50 | 0.020 |
| Y2 | 0.30 | 0.012 |
| Y3 | 0.80 | 0.032 |
| Z | 1.30 | 0.052 |

Packaging Quantity

| Part Number | Size(mm) | Delivery Form | Delivery Quantity |
|----------------|-------------|---------------|-------------------|
| JEN1006-4.5V-C | 1.0x0.6x0.5 | 7"T&R | 10,000 |

Soldering Parameters



| Reflow Condition | | Pb-Free Assembly |
|--|----------------------------------|------------------|
| Pre-heat | -Temperature Min($T_{s(min)}$) | +150°C |
| | -Temperature Max($T_{s(max)}$) | +200°C |
| | -Time(Min to Max)(t_s) | 60~180 secs. |
| Average ramp up rate (Liquid us Temp(T_L) to peak) | | 3°C/sec. Max |
| Ts(max) to T_L - Ramp-up Rate | | 3°C/sec. Max |
| Reflow | -Temperature(T_L)(Liquid us) | +217°C |
| | -Temperature (t_L) | 60~150 secs. |
| Peak Temp (T_P) | | +260(+0/-5)°C |
| Time within 5°C of actual Peak Temp (t_p) | | 30 secs. Max |
| Ramp-down Rate | | 6°C/sec. Max |
| xTime 25°C to Peak Temp (TP) | | 8 min. Max |
| Do not exceed | | +260°C |

Part Number System

JE N1006 - 4.5V - C

C=Bi-directional
 Blank=Uni-directional

Working Voltage: 4.5V

DFN1006

JDT ESD