# DCE0310A10LCSB

1-Line Low Capacitance Bi-directional TVS Diode

## Features

- Ultra low capacitance: 0.6pF typical
- Ultra low leakage: nA level
- Operating voltage: 3.3V
- Low clamping voltage
- IEC 61000-4-2 (ESD): Air ±30kV, Contact ±30kV
- IEC 61000-4-5 (Lightning): 10A (8/20μs)
- RoHS Compliant

## Mechanical Data

- Package: DFN1006-2
- Lead Finish: Matte Tin
- Case Material: "Green" Molding Compound
- Terminal Connections: See Diagram Below

**DFN1006-2L**


## Applications

- Cellular Handsets and Accessories
- Display Ports
- MDDI Ports
- USB Ports
- Digital Visual Interface (DVI)
- PCI Express and Serial SATA Ports

## Ordering information

| Order code | Marking | Package | Packaging option | Base quantity | Packaging specification |
|---|---|---|---|---|---|
| DCE0310A10LCSB | AS | DFN1006-2 | Tape and reel | 10000pcs / reel | EIA STD RS-481 |

## Absolute Maximum Ratings

Ratings at 25 °C, ambient temperature unless otherwise specified

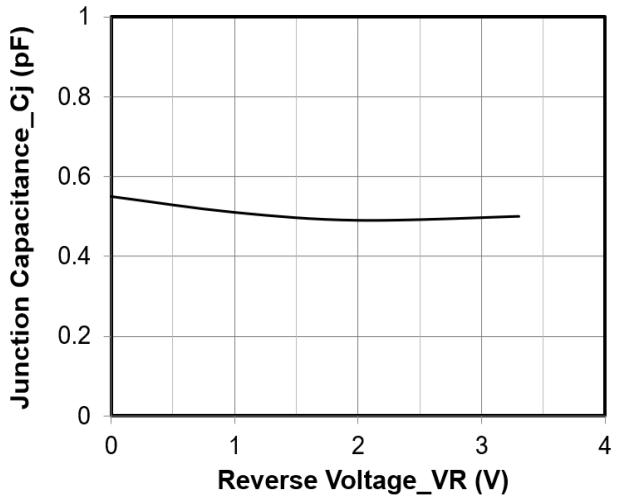
| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Peak Pulse Power ($T_P$=8/20μs) | $P_{PP}$ | 50 | W |
| ESD contact/air discharge (IEC-61000-4-2) | $V_{ESD}$ | ±30/±30 | kV |
| Peak Pulse Current ($T_P$ = 8/20μs) | $I_{PP}$ | 10 | A |
| Junction Temperature | $T_J$ | 125 | ℃ |
| Operation temperature | $T_{OP}$ | -40 to +85 | ℃ |
| Lead temperature | $T_L$ | 260 | ℃ |
| Storage temperature | $T_{STG}$ | -55 to +150 | ℃ |

## Electrical Characteristics

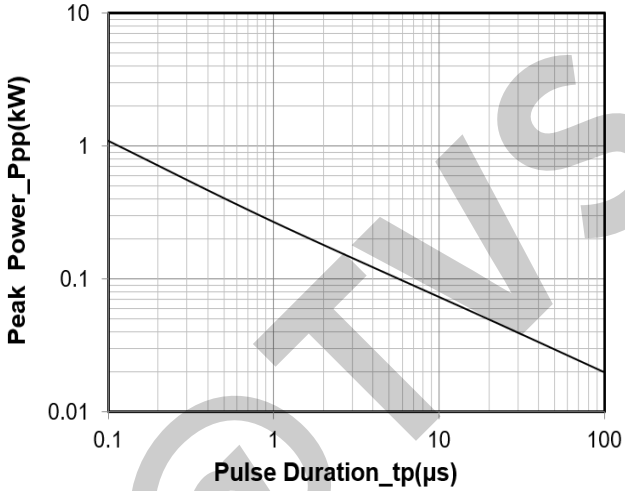
($T_A$ = 25 °C unless otherwise specified)

| Parameter | Symbol | Condition | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Reverse stand-off Voltage | $V_{RWM}$ | | - | - | 3.3 | V |
| Reverse Leakage Current | $I_R$ | VRWM = 3.3V | - | - | 0.2 | uA |
| Punch-Through Voltage | $V_{pt}$ | IT = 2 μ A | 3.5 | - | - | V |
| Snap-Back Voltage | $V_{SB}$ | IT = 50mA | 0.8 | - | - | V |
| Clamping Voltage(TLP) | $V_{CL}$ | IPP = 16A, tp = 100ns | - | 6 | - | V |
| Dynamic resistance | RDYN | | - | 0.25 | - | Ω |
| Clamping Voltage(ESD) | $V_{CE}$ | VESD = 8kV Contact | - | 6 | - | V |
| Clamping Voltage | $V_C$ | IPP = 1A,$t_p$=8/20μs | - | 1.5 | - | V |
| Clamping Voltage | $V_C$ | IPP = 10A,$t_p$=8/20μs | - | 4 | - | V |
| Junction Capacitance | $C_J$ | $V_R$=0V, f=1MHz | - | 0.6 | - | pF |

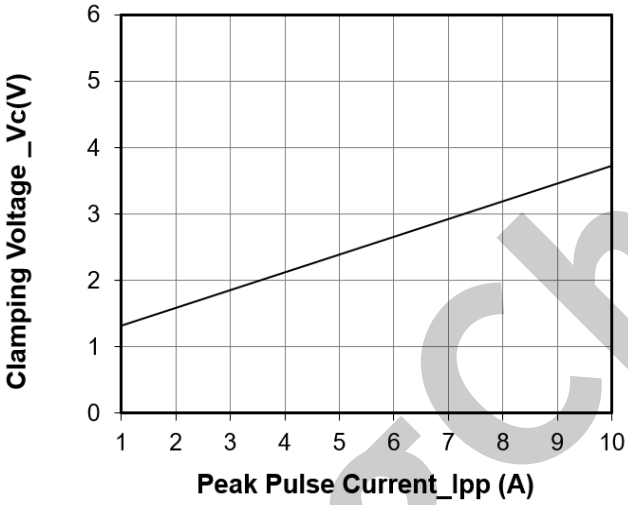
## Typical Performance Characteristics (TA=25°C unless otherwise Specified)



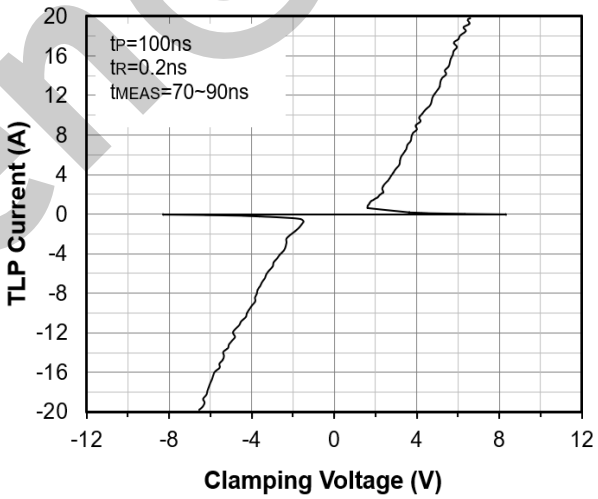

Junction Capacitance vs. Reverse Voltage



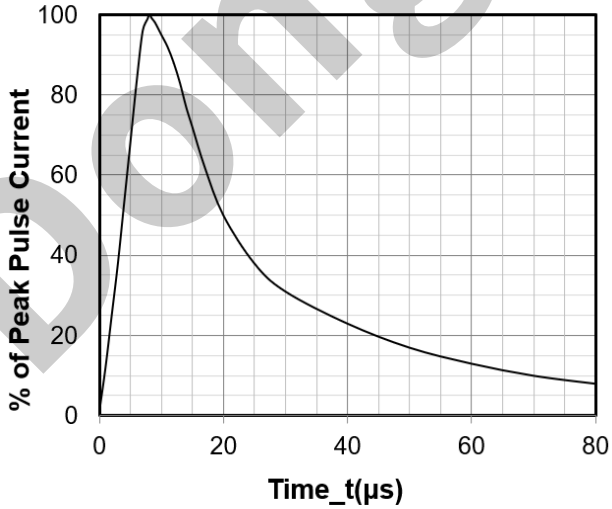

Peak Pulse Power vs. Pulse Time



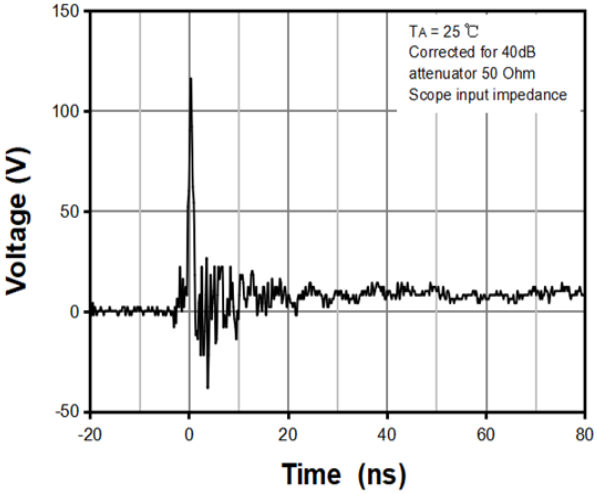

Clamping Voltage vs. Peak Pulse Current (tp = 8/20μs)




TLP Measurement



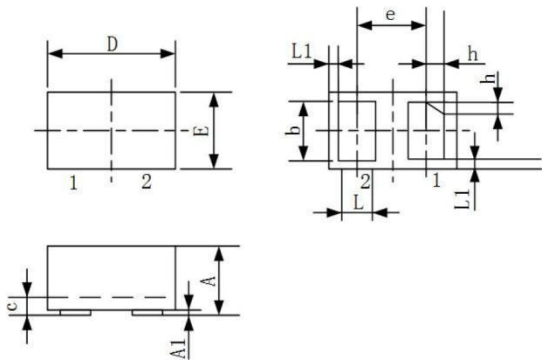

8 X 20μs Pulse Waveform




ESD Clamping Voltage

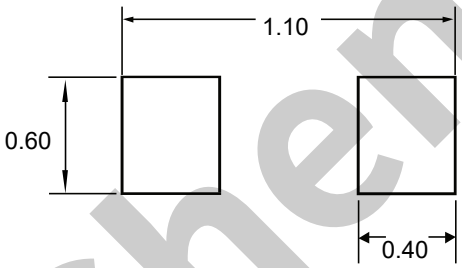
8 kV Contact per IEC61000−4−2

## Package Dimensions



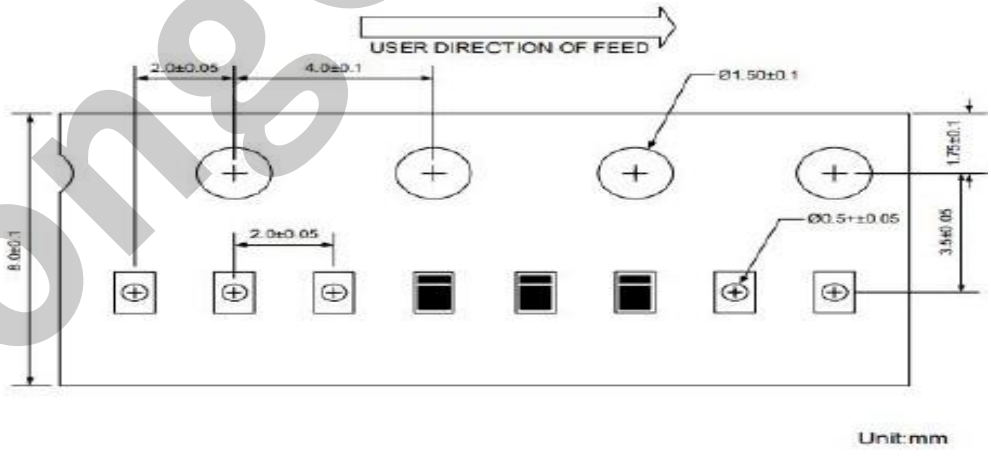

| Symbol | Dimensions in millimeters | | |
|---|---|---|---|
| | Min | Nom | Max |
| D | 0.95 | 1.00 | 1.05 |
| E | 0.55 | 0.60 | 0.65 |
| b | 0.45 | 0.50 | 0.55 |
| L | 0.20 | 0.25 | 0.30 |
| e | | 0.65 BSC | |
| A | 0.40 | 0.50 | 0.55 |
| A1 | 0 | 0.02 | 0.05 |
| c | 0.12 | 0.15 | 0.18 |
| h | 0.07 | 0.12 | 0.17 |
| L1 | | 0.05 REF | |

## Pad Dimensions




Unit:mm

## Tape and Reel Specification



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