# PESD5V0X1BL,315
ESD PROTECTION DIODE

## Discription

Low capacitance bidirectional ElectroStatic Discharge (ESD) protection diode in a DFN1006(SOD-882) leadless ultra small Surface-Mounted Device (SMD) plastic package designed to protect one signal line from the damage caused by ESD and other transients.




DFN1006-2L




Circuit Diagram

## Features

- ★ Bidirectional ESD protection of one line
- ★ Low operating voltage:5.0V
- ★ Low clamping voltage VC = 10 V@100A
- ★ Response time is typically<1ns
- ★ Ultra Low Leakage:nA Level
- ★ IEC 61000-4-2: level 4 (ESD)
- ★ IEC 61000-4-5 (surge): IPPMQ100 A

## Applications

- ★ Portable electronics
- ★ Computersandperipherals
- ★ Audio and video equipment
- ★ Cellular handsets and accessories
- ★ Communication systems
- ★ Power supplies

## Ordering Information

| Product ID | Pack | Qty(PCS) |
|---|---|---|
| PESD5V0X1BL,315 | DFN1006-2L | 10000 |

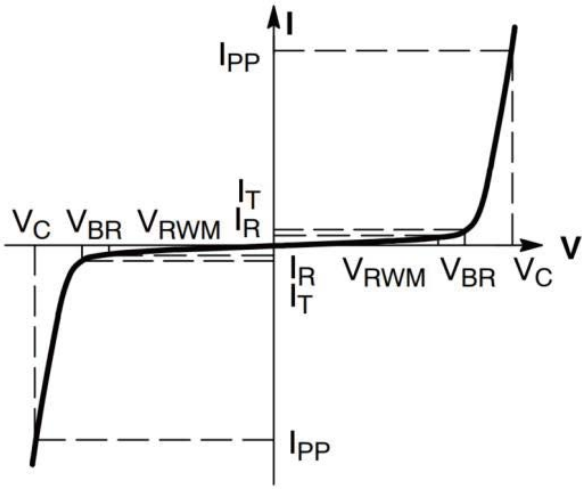
## Absolute Ratings(Tamb = 25°C)

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Peak Pulse Power (tp = 8/20μs) | $P_{PPM}$ | 45 | W |
| Peak Pulse Current(tp = 8/20μs) | $I_{PPM}$ | 3 | A |
| Maximum lead temperature for soldering during 10s | $T_L$ | 260 | °C |
| Storage Temperature Range | $T_{stg}$ | -55 to +150 | °C |
| Operating Temperature Range | $T_{OP}$ | -40 to +125 | °C |
| Maximum junction temperature | $T_j$ | 150 | °C |
| ESD voltage IEC 61000-4-2 (air discharge) | $V_{ESD}$ | 10 | kV |
| ESD voltage IEC 61000-4-2 (contact discharge) | $V_{ESD}$ | 15 | kV |

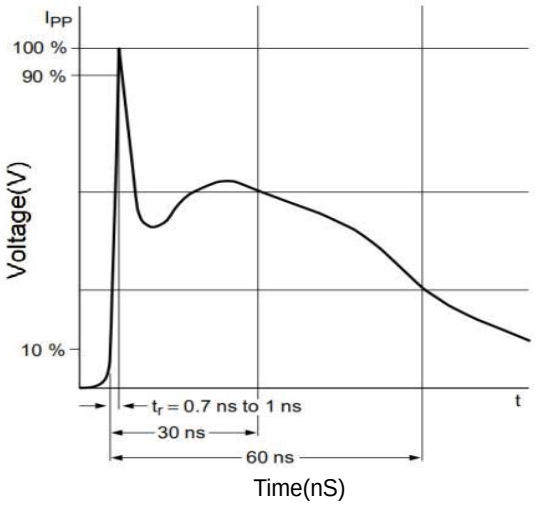
## Electrical Characteristics

| Parameter | Symbol | Min | Typ | Max | Unit | Condition |
|---|---|---|---|---|---|---|
| Reverse Working Voltage | $V_{RWM}$ | -- | -- | 5.0 | V | |
| Breakdown Voltage | $V_{BR}$ | 6.5 | -- | 9.0 | V | $I_T$=1mA |
| Leakage Current ILeak | $I_R$ | -- | -- | 1.0 | uA | $V_{RWM}$=5.0V |
| Clamping Voltage | $V_C$ | -- | -- | 15.0 | V | $I_{PP}$=1A,Tp=8/20μs |
| Junction Capacitance | $C_J$ | -- | -- | 0.6 | pF | $V_R$=0V, f=1MHz |

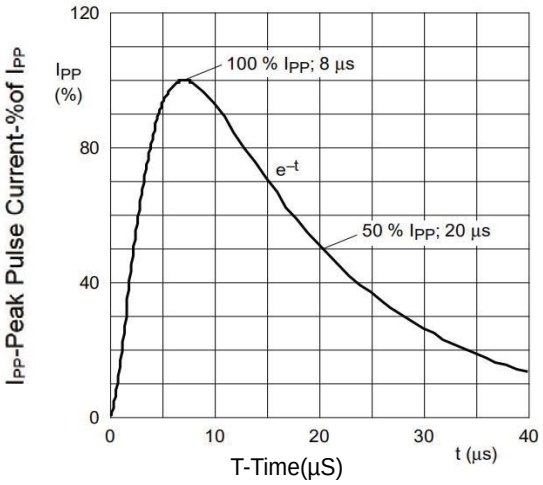
| Symbol | Parameter |
|---|---|
| $I_{PPM}$ | Maximum Reverse Peak Pulse Current |
| $V_C$ | Clamping Voltage @ $I_{PP}$ |
| $V_{RWM}$ | Working Peak Reverse Voltage |
| $I_R$ | Reverse Leakage Current @ $V_{RWM}$ |
| $I_T$ | Test Current |
| $V_{BR}$ | Breakdown Voltage @ $I_T$ |



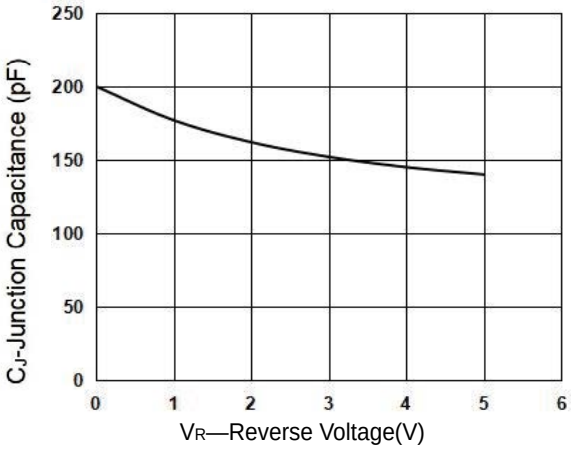
## Typical Characteristics



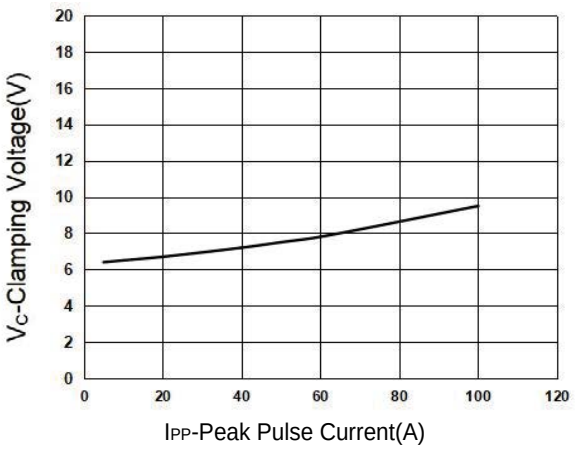

IEC61000−4−2 Pulse Waveform



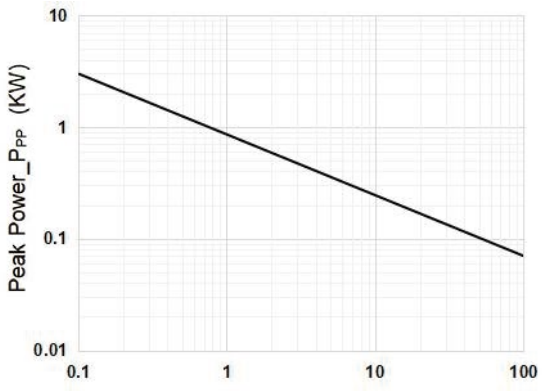

IEC61000−4−5 8X20µs Pulse Waveform



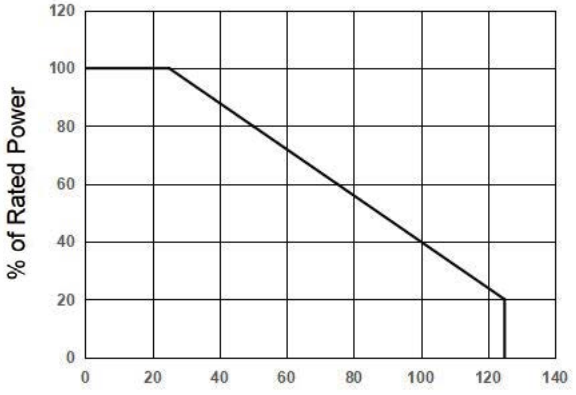

Junction Capacitance vs. Reverse Voltage




Clamping Voltage vs. Peak Pulse Current

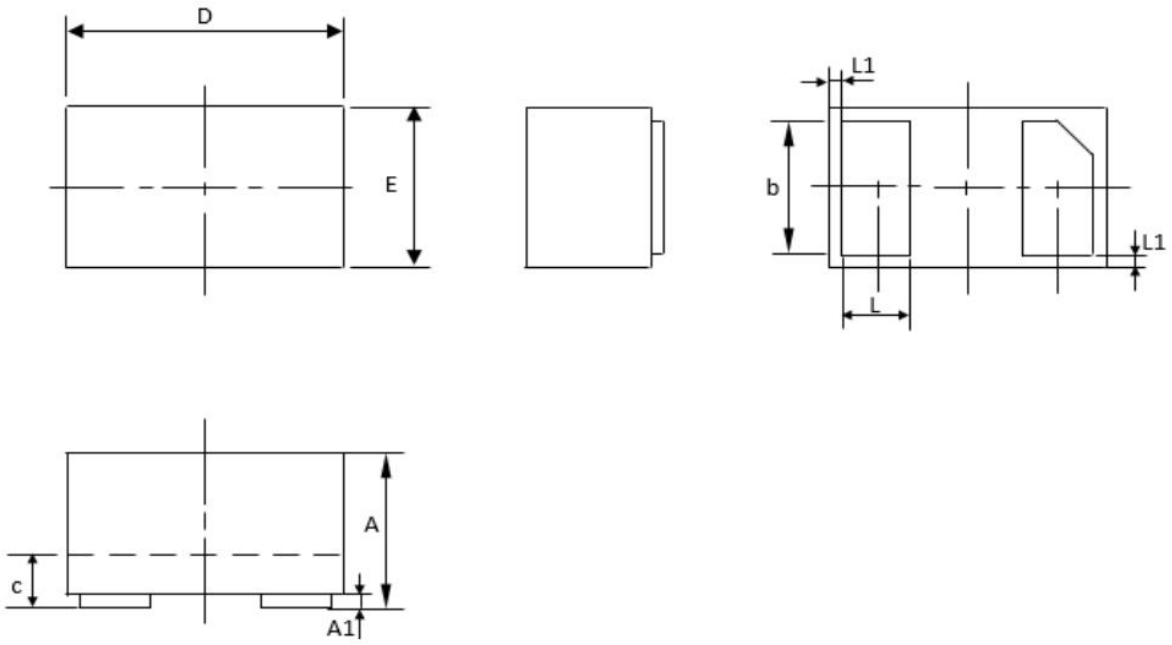



Peak Pulse Power vs. Pulse Time




Power Derating Curve

## Outline And Dimensions




| DFN1006-2L | | | |
|---|---|---|---|
| Dim | Min | Typ. | Max |
| A | 0.46 | 0.48 | 0.50 |
| A1 | 0 | 0.02 | 0.05 |
| b | 0.45 | 0.5 | 0.55 |
| c | 0.1 | 0.12 | 0.14 |
| D | 0.95 | 1.00 | 1.05 |
| E | 0.55 | 0.60 | 0.65 |
| L | 0.20 | 0.25 | 0.30 |
| L1 | 0.035 | 0.05 | 0.065 |
| h | 0.07 | 0.12 | 0.17 |
| All Dimensions in mm | | | |

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