# PESD5V0F1BL-N

ESD Protection Diode

## »Features

- 60Watts peak pulse power (tp = 8/20μs)
- Tiny DFN1006 package
- Bidirectional configurations
- Solid-state silicon-avalanche technology
- Low clamping voltage
- Low leakage current
- Low capacitance (Cj=0.4pF typ. IO to IO)
- Protection one data/power line
- IEC 61000-4-2 ±20kV contact ±20kV air
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 3.5A (8/20μs)



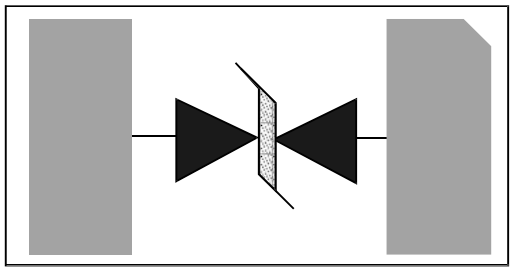
## »Applications

- Cell Phone Handsets and Accessories
- Microprocessor based equipment
- Personal Digital Assistants (PDA's)
- Notebooks, Desktops, and Servers
- Portable Instrumentation

## »Mechanical Data

- DFN1006 package
- Molding compound flammability rating: UL 94V-0
- Packaging: Tape and Reel
- RoHS/WEEE Compliant

## »Schematic & PIN Configuration



**DFN1006**

## »Absolute Maximum Rating

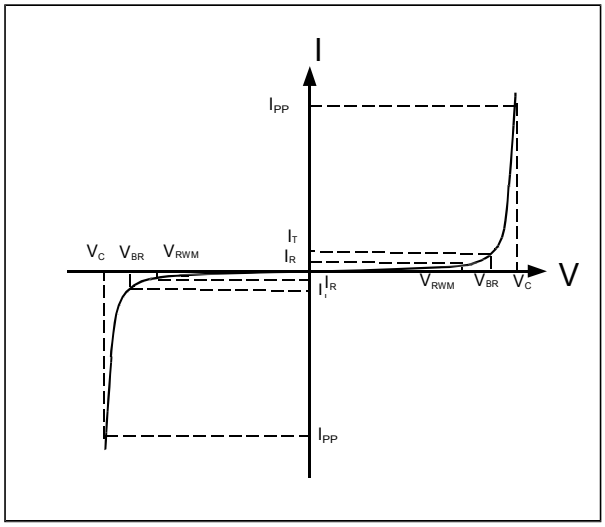
| Rating | Symbol | Value | Units |
|---|---|---|---|
| Peak Pulse Power ( $t_p$ =8/20μs ) | $P_{PP}$ | 60 | Watts |
| Peak Pulse Current ( $t_p$ =8/20μs )(note1) | $I_{pp}$ | 3.5 | A |
| ESD per IEC 61000-4-2 (Air)<br>ESD per IEC 61000-4-2 (Contact) | $V_{ESD}$ | 20<br>20 | kV |
| Lead Soldering Temperature | $T_L$ | 260(10seconds) | ℃ |
| Junction Temperature | $T_J$ | -55 to + 125 | ℃ |
| Storage Temperature | $T_{stg}$ | -55 to + 125 | ℃ |

## »Electrical Characteristics

| Parameter | Symbol | Conditions | Min | Typical | Max | Units |
|---|---|---|---|---|---|---|
| Reverse Stand-Off Voltage | $V_{RWM}$ | | | | 5.0 | V |
| Reverse Breakdown Voltage | $V_{BR}$ | $I_T$=1mA | 6.0 | 8.0 | | V |
| Reverse Leakage Current | $I_R$ | $V_{RWM}$=5V,T=25℃ | | 0.1 | 0.5 | μA |
| Peak Pulse Current | $I_{PP}$ | tp =8/20μs | | | 3.5 | A |
| Clamping Voltage | $V_C$ | $I_{PP}$=3.5A,$t_p$=8/20μs | | 16 | 20 | V |
| Junction Capacitance | $C_j$ | IO to IO<br>$V_R$ = 0V, f = 1MHz | | 0.4 | 0.5 | pF |

## »Electrical Parameters (TA = 25°C unless otherwise noted)

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




Note:. 8/20μs pulsewaveform.

## »Typical Characteristics

**Figure 1: Peak Pulse Power vs. Pulse Time**

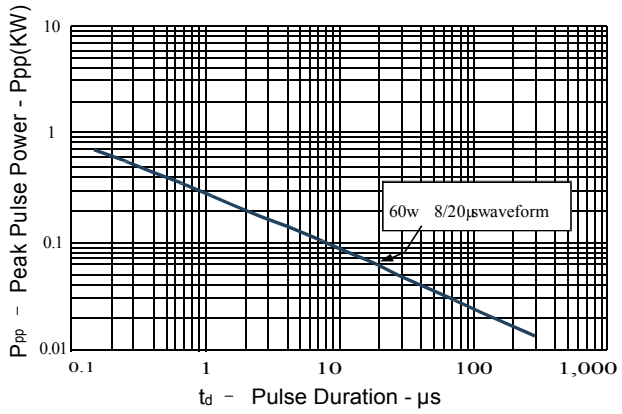



**Figure 2: Power Derating Curve**

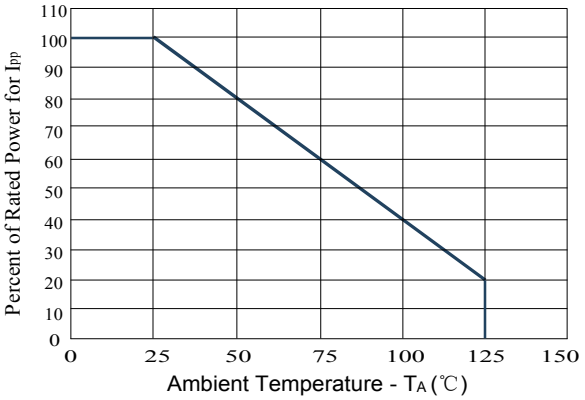



**Figure3: Pulse Waveform**

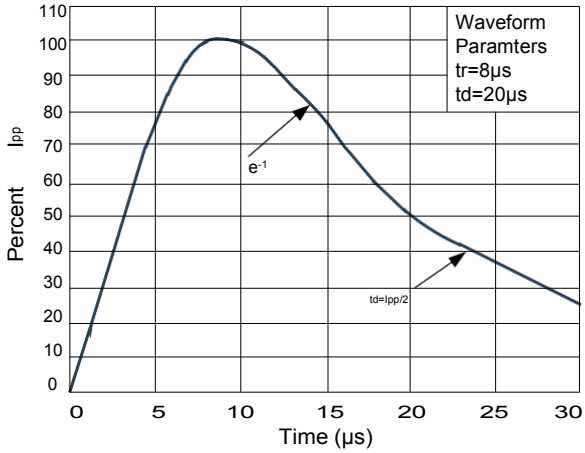



**Figure 4: Clamping Voltage vs.Ipp**

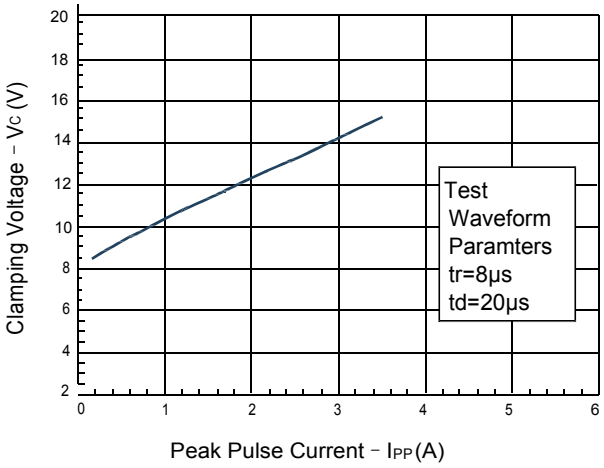



**Figure5: Positive Clamping voltage (TLP)**

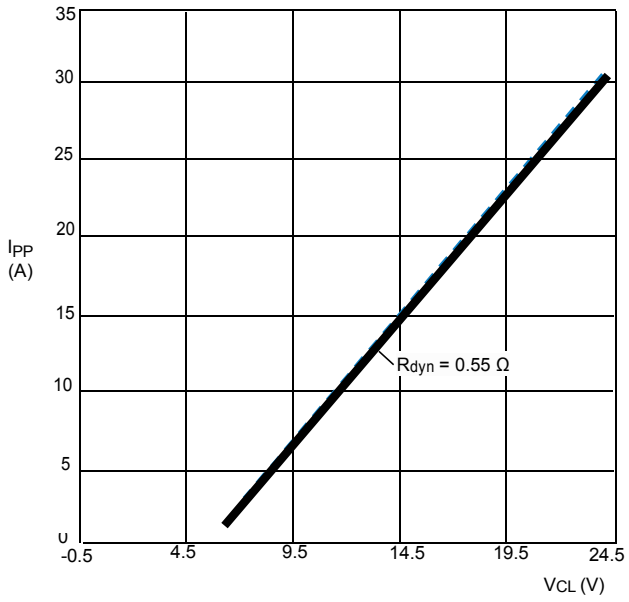
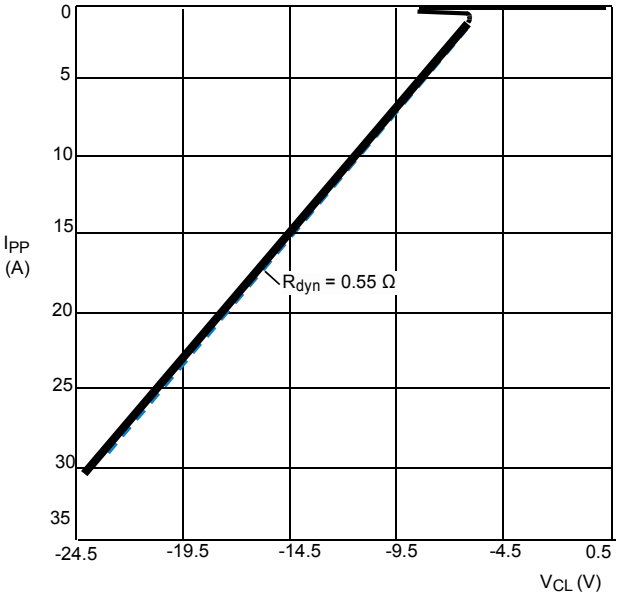
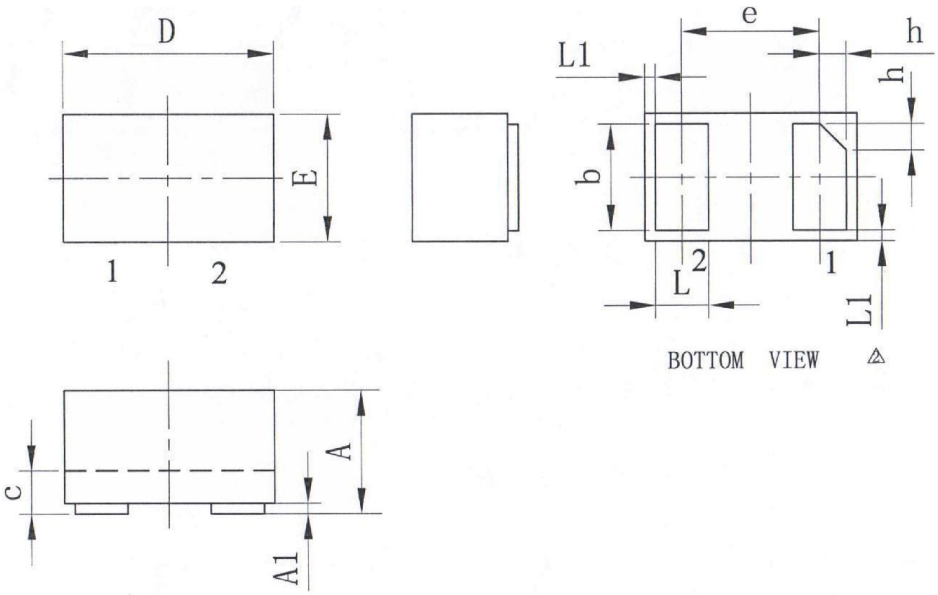



**Figure5: Negative Clamping voltage (TLP)**



## »Outline Drawing – DFN1006




| SYMBOL | MILLIMETER | | |
|---|---|---|---|
| | MIN | NOM | MAX |
| A | 0.45 | 0.50 | 0.55 |
| A1 | 0 | 0.02 | 0.05 |
| b | 0.45 | 0.50 | 0.55 |
| c | 0.12 | 0.15 | 0.18 |
| D | 0.95 | 1.00 | 1.05 |
| e | 0.65BSC | | |
| E | 0.55 | 0.60 | 0.65 |
| L | 0.20 | 0.25 | 0.30 |
| L1 | 0.05REF | | |
| h | 0.07 | 0.12 | 0.17 |
| 载体尺寸 (Mil) | 20*20 | | |

## »Marking




## »Ordering information

| Order code | Package | Base qty | Delivery mode |
|---|---|---|---|
| PESD5V0F1BL-N | DFN1006 | 10k | Tape and reel |

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## BORN:

SM24CANB-02HTG-N 1.5SMBJ18CA 1N4148WT 5.0SMDJ15CA BM3134E BML6401 GBLC03C-N BSD3C031LX MMBZ27VCLT1G-N MMBZ39VCLT1G-N PESD15VL1BA-N P4SMA6.8CA PSD24-N S8550 BAT46X BSD3A241V BSD9C051V ESDA14V2L SMFJ170A 1.0SMBJ6.5A GBJ1510 BDFN2C031V BSD3A031V BST23A052U BWF102N SMD2920-400/30N 1.5SMBJ40CA BDFN1C031V BC858B BN5A181V45