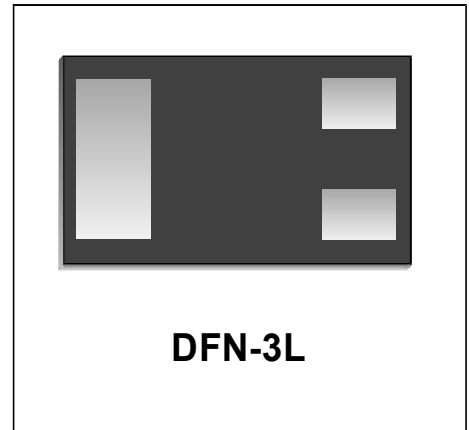


### Features

- 50 Watts Peak Power per Line ( $t_p = 8/20\mu s$ )
- Protects two I/O lines
- Low operating voltage: 5V
- Low Leakage Current
- Solid-state technology

### IEC COMPATIBILITY (EN61000-4)

- IEC 61000-4-2 (ESD)  $\pm 15kV$  (air),  $\pm 10kV$  (contact)
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 3A (8/20 $\mu s$ )



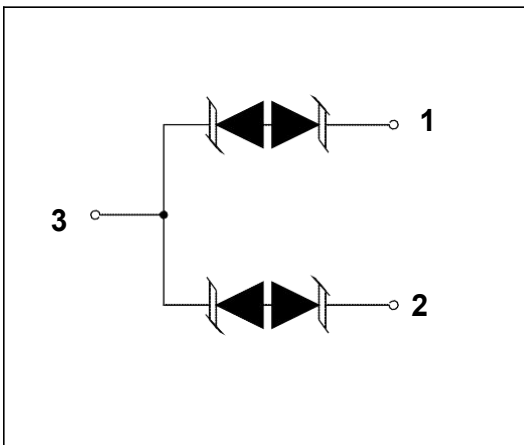
### Mechanical Characteristics

- JEDEC DFN-3L package
- Molding compound flammability rating: UL 94V-0
- Marking : Making Code
- Packaging : Tape and Reel per EIA 481
- RoHS Compliant

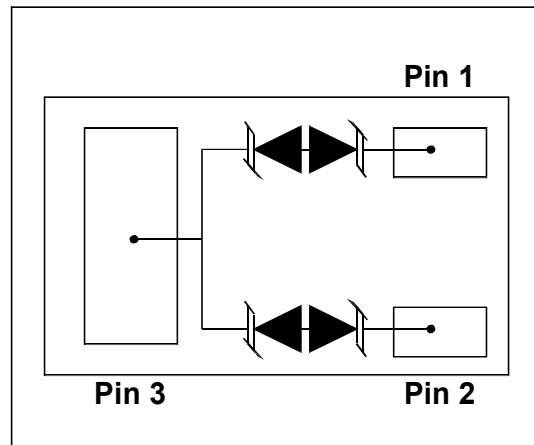
### Applications

- FireWire & USB
- Sensitive Analog Inputs
- Portable Electronics
- LAN/WAN equipment
- Video Line Protection
- Microcontroller Input Protection

### Circuit Diagram



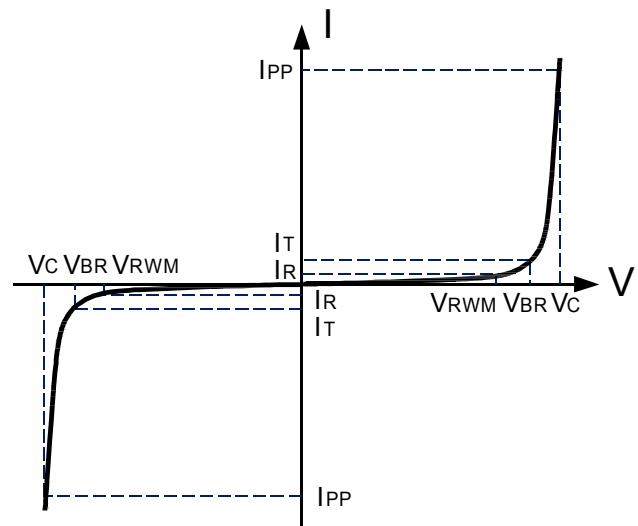
### Schematic & PIN Configuration



| <b>Absolute Maximum Rating</b>         |           |              |             |
|--|-----------|--------------|-------------|
| Rating                                 | Symbol    | Value        | Units       |
| Peak Pulse Power ( $t_p=8/20\mu s$ )   | $P_{PP}$  | 50           | Watts       |
| Peak Pulse Current ( $t_p=8/20\mu s$ ) | $I_{PP}$  | 3            | A           |
| Lead Soldering Temperature             | $T_L$     | 260(10sec)   | $^{\circ}C$ |
| Operating Temperature                  | $T_J$     | -55 to + 125 | $^{\circ}C$ |
| Storage Temperature                    | $T_{STG}$ | -55 to +150  | $^{\circ}C$ |

### Electrical Parameters (T=25 $^{\circ}C$ )

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



### Electrical Characteristics

| <b>BDFN3C052L</b>         |           |  |         |         |         |       |
|---------------------------|-----------|--|---------|---------|---------|-------|
| Parameter                 | Symbol    | Conditions                                       | Minimum | Typical | Maximum | Units |
| Reverse Stand-Off Voltage | $V_{RWM}$ |  |         |         | 5.0     | V     |
| Breakdown Voltage         | $V_{BR}$  | $I_T=1mA$  | 5.6     |         |         | V     |
| Reverse Leakage Current   | $I_R$     | $V_{RWM}=5V, T=25^{\circ}C$                      |         |         | 500     | nA    |
| Clamping Voltage          | $V_C$     | $I_{PP}=1A, t_p=8/20\mu s$                       |         |         | 9.5     | V     |
| Clamping Voltage          | $V_C$     | $I_{PP}=3A, t_p=8/20\mu s$                       |         | 13      | 15      | V     |
| Junction Capacitance      | $C_j$     | Between pin3 and pin1/<br>pin2, $V_R=0V, f=1MHz$ |         | 3       | 3.5     | pF    |
|                           |           | Between pin1 and pin2,<br>$V_R=0V, f=1MHz$       |         | 1.5     | 2.0     | pF    |

### Typical Characteristics

Fig.1 Peak Pulse Power Rating Curve

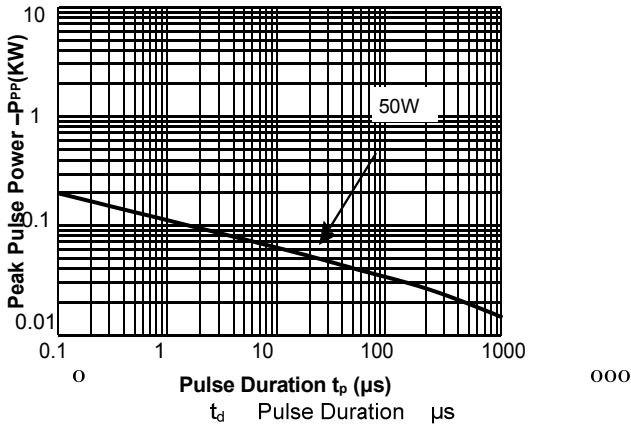


Figure 2: Power Derating Curve

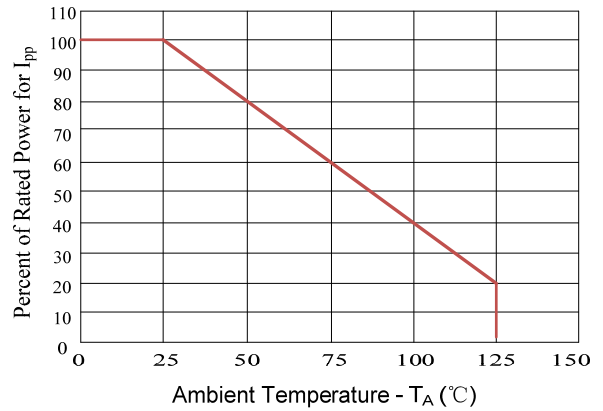


Figure3: Pulse Waveform

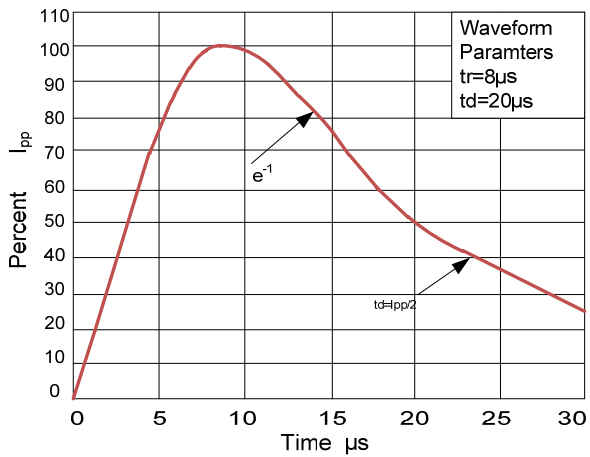
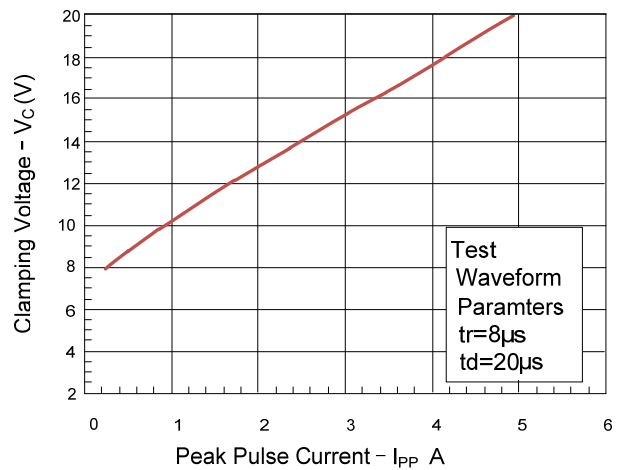


Figure 4: Clamping Voltage vs.Ipp



**Outline Drawing – DFN-3L**

**PACKAGE OUTLINE**

BOTTOM VIEW

**DFN-3L**

| SYMBOL | MILIMETER |      |      |
|--------|-----------|------|------|
|        | MIN       | NOM  | MAX  |
| A      | 0.41      | 0.45 | 0.50 |
| A1     | 0         | 0.02 | 0.05 |
| b      | 0.45      | 0.50 | 0.55 |
| b1     | 0.10      | 0.15 | 0.20 |
| C      | 0.12      | 0.15 | 0.18 |
| D      | 0.95      | 1.00 | 1.05 |
| e      | 0.65BSC   |      |      |
| E      | 0.55      | 0.60 | 0.65 |
| E1     | 0.15      | 0.20 | 0.25 |
| L      | 0.20      | 0.25 | 0.30 |
| L1     | 0.05REF   |      |      |

**Land Pattern**

**Marking Codes**

|             |            |              |    |
|-------------|------------|--------------|----|
| Part Number | BDFN3C052L | Marking Code | MF |
|-------------|------------|--------------|----|

**Package Information**

Qty: 10k/Reel

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