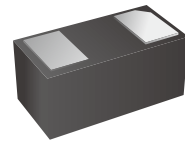
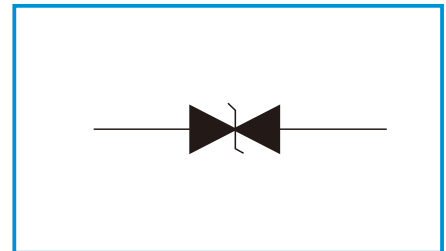


## Low Capacitance TVS/ESD Protection Diode

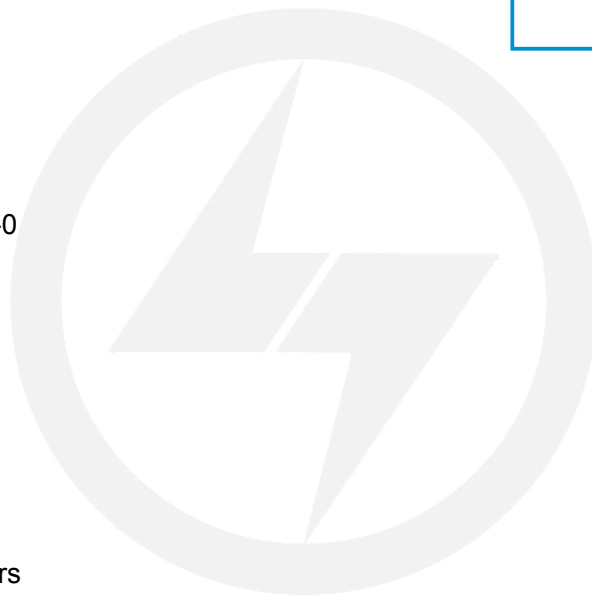
### Features

- Peak Power Dissipation 150 W (8/20μs)
- Stand-off voltage:12V
- Low capacitance 15pF(Maximum)
- Replacement for MLV(0402)
- Protects I/O Port
- Low Clamping Voltage
- Low Leakage
- Low Capacitance
- Response Time is <1ns
- Meets MSL 1 Requirements
- ROHS compliant


**Functional Diagram**


### Mechanical Data

- DFN1006 package
- Flammability Rating: UL 94V-0
- Packaging: Tape and Reel
- Reel size: 7 inch
- Marking: MOC



### Applications

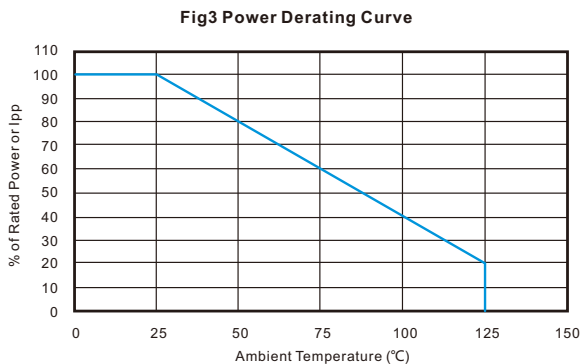
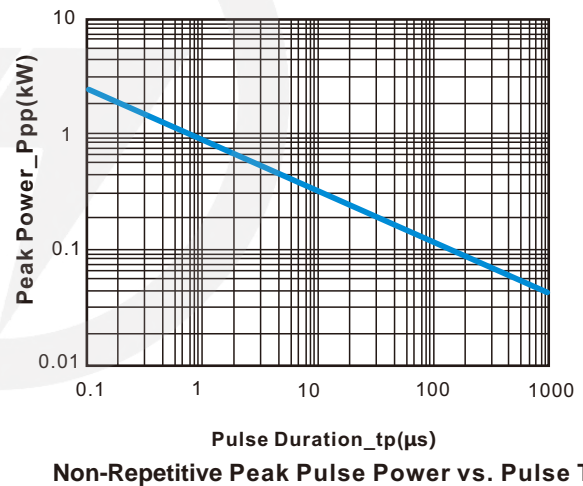
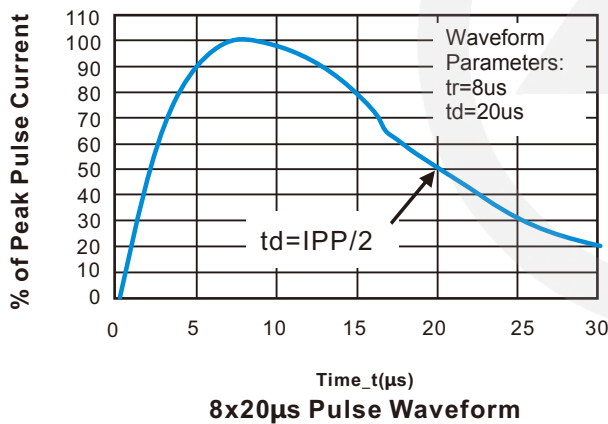
- Serial and Parallel Ports
- Notebooks, Desktops, Servers
- Projection TV
- Cellular handsets and accessories
- Portable instrumentation
- Peripherals
- MP3 Players

### Absolute Maximum Ratings (TA=25°C unless otherwise specified)

| Symbol           | Parameter  | Value       | Unit  |
|------------------|--|-------------|-------|
| V <sub>ESD</sub> | ESD per IEC 61000-4-2 (Air)                          | ±25         | kV    |
|                  | ESD per IEC 61000-4-2 (Contact)                      | ±20         |       |
| P <sub>PPP</sub> | Peak Pulse Power(tp=8/20us waveform)                 | 150         | watts |
| T <sub>L</sub>   | Lead Soldering Temperature                           | 260(10sec.) | °C    |
| T <sub>J</sub>   | Operating Temperature Range                          | -55~125     | °C    |
| T <sub>STG</sub> | Storage Temperature Range                            | -55~150     | °C    |
| T <sub>L</sub>   | Lead Solder Temperature-Maximum (10 Second Duration) | 260         | °C    |

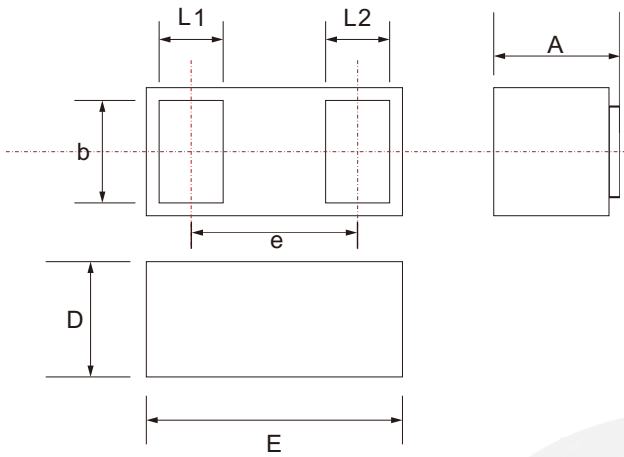
**Electrical Characteristics** (TA=25°C unless otherwise specified)

| Symbol           | Parameter                 | Test Condition                                | Min  | Typ | Max  | Units |
|------------------|---------------------------|---|------|-----|------|-------|
| V <sub>RWM</sub> | Reverse Working Voltage   |   |      |     | 12.0 | V     |
| V <sub>BR</sub>  | Reverse Breakdown Voltage | I <sub>T</sub> = 1mA                          | 13.3 |     |      | V     |
| I <sub>R</sub>   | Reverse Leakage Current   | V <sub>RWM</sub> = 12V                        |      |     | 0.2  | μA    |
| V <sub>C</sub>   | Clamping Voltage          | I <sub>PP</sub> = 1A, t <sub>p</sub> = 8/20μs |      |     | 19   | V     |
|                  |                           | I <sub>PP</sub> = 5A, t <sub>p</sub> = 8/20μs |      |     | 26   | V     |
| C <sub>J</sub>   | Junction Capacitance      | V <sub>R</sub> = 0V, f = 1MHz                 |      | 13  | 15   | pF    |

**Characteristic Curves**


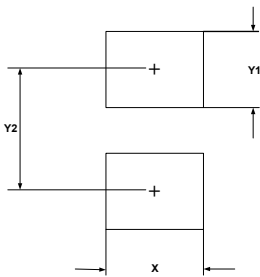
## DFN1006 Package Outline

Unit: mm



| SYMBOL | DIMENSIONS |       |
|--------|------------|-------|
|        | MIN.       | MAX.  |
| D      | 0.550      | 0.650 |
| E      | 0.950      | 1.050 |
| L1     | 0.200      | 0.300 |
| L2     | 0.200      | 0.300 |
| b      | 0.450      | 0.550 |
| e      | 0.640 TYP. |       |
| A      | 0.450      | 0.550 |

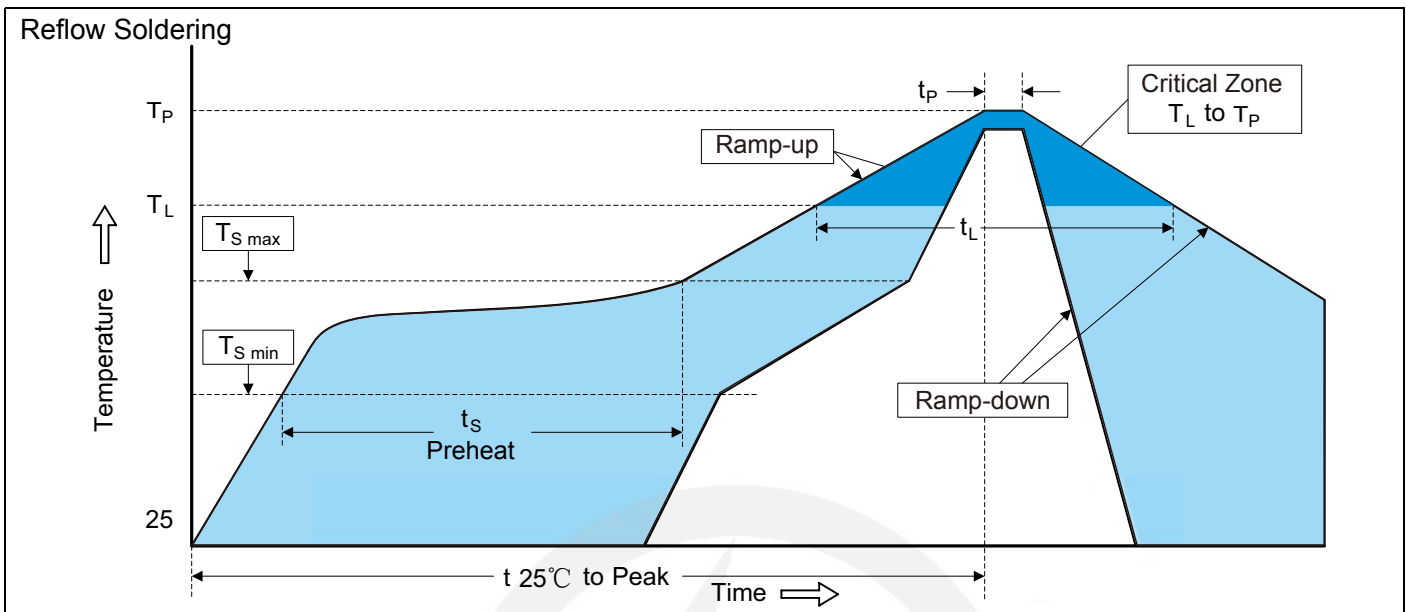
## DFN1006 Suggested Pad Layout



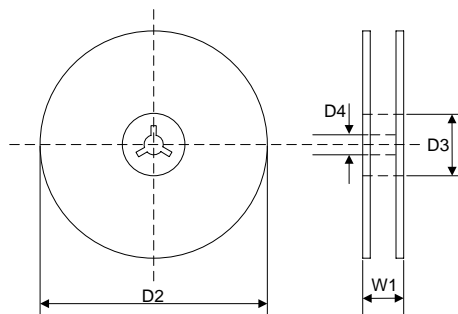
| SYM | DIMENSIONS  |
|-----|-------------|
|     | MILLIMETERS |
| X   | 0.50        |
| Y1  | 0.50        |
| Y2  | 0.90        |

Note:

1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05\text{mm}$
3. The pad layout is for reference purpose only.

**Recommended Soldering Conditions**

**Recommended Conditions**

| Profile Feature   | Pb-Free Assembly                 |
|---|----------------------------------|
| Average ramp-up rate ( $T_L$ to $T_P$ )   | 3°C/second max.                  |
| Preheat<br>-Temperature Min ( $T_{S\ min}$ )<br>-Temperature Max ( $T_{S\ max}$ )<br>-Time (min to max) ( $t_s$ ) | 150°C<br>200°C<br>60-180 seconds |
| $T_{S\ max}$ to $T_L$<br>-Ramp-up Rate  | 3°C/second max.                  |
| Time maintained above:<br>-Temperature ( $T_L$ )<br>-Time ( $t_L$ )   | 217°C<br>60-150 seconds          |
| Peak Temperature ( $T_P$ )  | 260°C                            |
| Time within 5°C of actual Peak Temperature ( $t_P$ )  | 20-40 seconds                    |
| Ramp-down Rate  | 6°C/second max.                  |
| Time 25°C to Peak Temperature   | 8 minutes max.                   |

**7" Reel**


|    |                      |
|----|----------------------|
| D2 | $\Phi 178.0 \pm 2.0$ |
|----|----------------------|

|    |                          |
|----|--------------------------|
| D3 | $\Phi 50.0 \text{ Min.}$ |
|----|--------------------------|

|    |                     |
|----|---------------------|
| D4 | $\Phi 13.0 \pm 0.5$ |
|----|---------------------|

|    |                |
|----|----------------|
| W1 | $16.0 \pm 2.0$ |
|----|----------------|

Quantity: 10000PCS