

## Features

- Ultra small package: 1.0x0.6x0.5mm
- Ultra low capacitance: 0.25pF typical
- Ultra low leakage: nA level
- Low operating voltage: 5V
- 2-pin leadless package
- RoHS compliant



## IEC COMPATIBILITY (EN61000-4)

- IEC 61000-4-2 (ESD)  $\pm 20\text{kV}$  (air),  $\pm 15\text{kV}$  (contact)
- IEC 61000-4-5 (Lightning ) 4.5A (8/20  $\mu\text{s}$ )

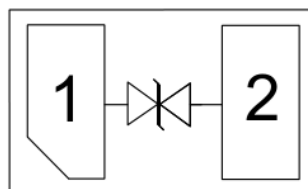
## Mechanical Characteristics

- Package: DFN1006-2
- Molding compound flammability rating: UL 94V-0
- Marking: Marking Code
- Packaging: Tape and Reel
- RoHS/WEEE Compliant
- MSD Level: 2

## Applications

- Smart phones
- Display Ports
- MDDI Ports
- USB Ports
- Digital Video Interface (DVI)
- Peripherals
- PCI Express and Serial SATA Ports

## Schematic and PIN Configuration

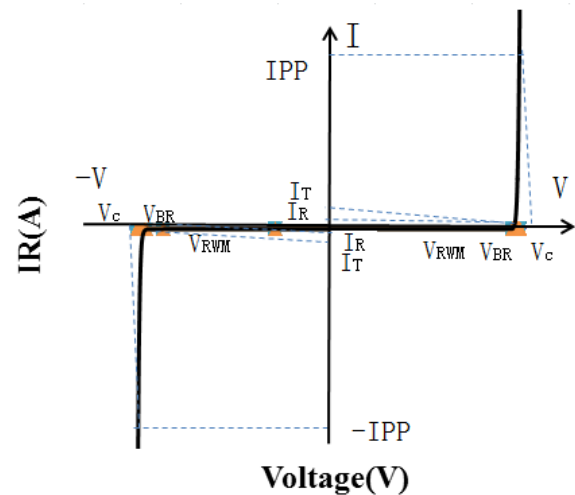


## Absolute Maximum Rating(TA=25°C unless otherwise specified)

| Rating                                   | Symbol    | Value        | Units |
|------------------------------------------|-----------|--------------|-------|
| Peak Pulse Power ( $t_p = 8/20\mu s$ )   | $P_{PP}$  | 110          | Watts |
| Peak Pulse Current ( $t_p = 8/20\mu s$ ) | $I_{pp}$  | 4.5          | A     |
| ESD per IEC 61000-4-2(Air)               | $V_{ESD}$ | +/-20        | kV    |
| ESD per IEC 61000-4-2(contact)           |           | +/-15        |       |
| Operating Temperature                    | $T_J$     | -55 to + 125 | °C    |
| Storage Temperature                      | $T_{STG}$ | -55 to +150  | °C    |

## Electrical Parameters (T=25°C)

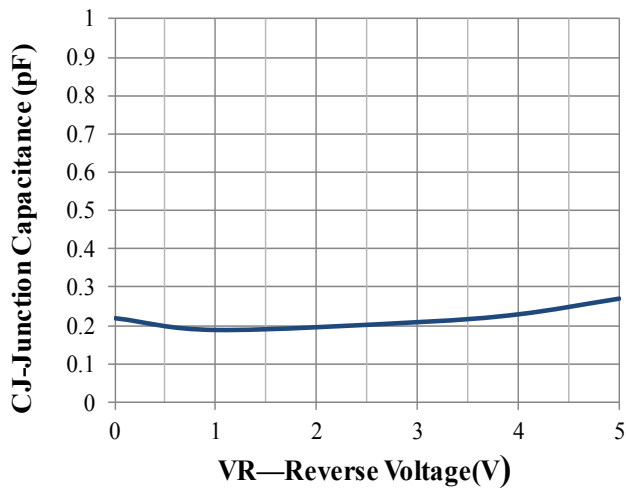
| Symbol   | Parameter                          |
|----------|------------------------------------|
| $I_T$    | Test Current                       |
| $I_{PP}$ | Maximum Reverse Peak Pulse Current |
| $V_C$    | Clamping Voltage @ $I_C$           |



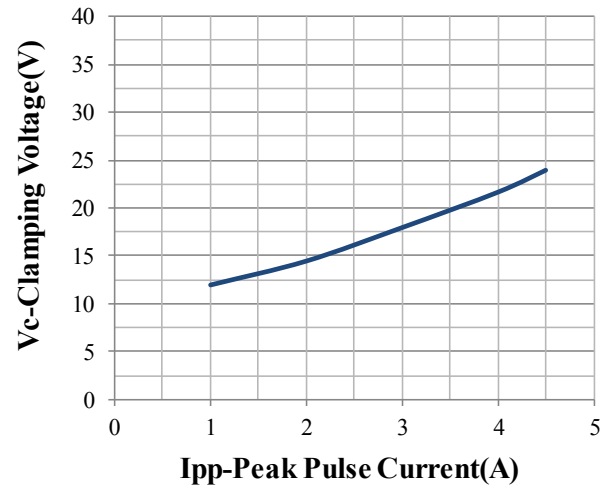
## Electrical Characteristics(TA=25°C unless otherwise specified)

| Parameter                 | Symbol    | Conditions                       | Min | Typical | Max  | Units   |
|---------------------------|-----------|----------------------------------|-----|---------|------|---------|
| Reverse Stand-Off Voltage | $V_{RWM}$ |                                  |     |         | 6    | V       |
| Reverse Breakdown Voltage | $V_{BR}$  | $I_T = 1mA$                      | 6.0 | 7.5     | 8.5  | V       |
| Reverse Leakage Current   | $I_R$     | $V_{RWM} = 5V, T = 25^\circ C$   |     |         | 0.5  | $\mu A$ |
| Peak Pulse Current        | $I_{PP}$  | $t_p = 8/20\mu s$                |     |         | 4.5  | A       |
| Clamping Voltage          | $V_C$     | $I_{PP} = 1A, t_p = 8/20\mu s$   |     | 12      |      | V       |
|                           |           | $I_{PP} = 4.5A, t_p = 8/20\mu s$ |     | 18      | 20   | V       |
| Junction Capacitance      | $C_j$     | $V_R = 0V, f = 1MHz$             |     | 0.22    | 0.26 | pF      |

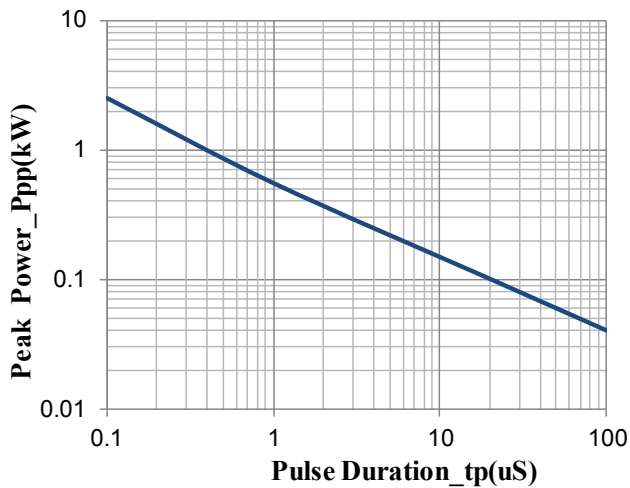
## Typical Characteristics(TA=25°C unless otherwise Specified)



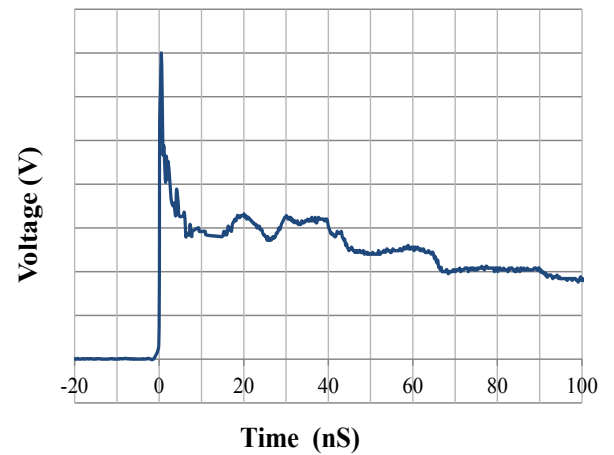
Junction Capacitance vs. Reverse Voltage



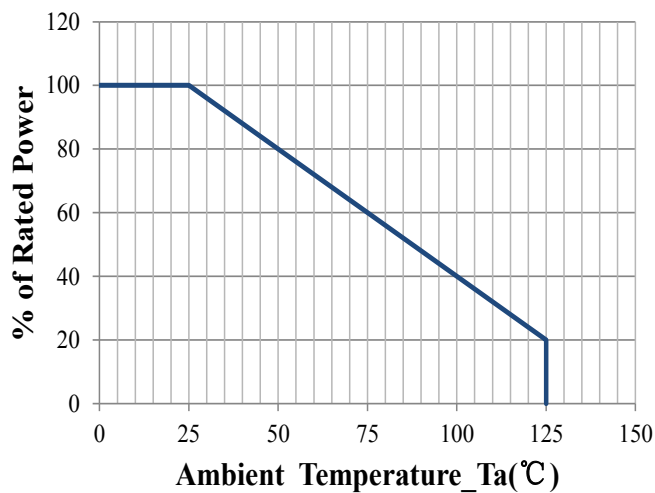
Clamping Voltage vs. Peak Pulse Current



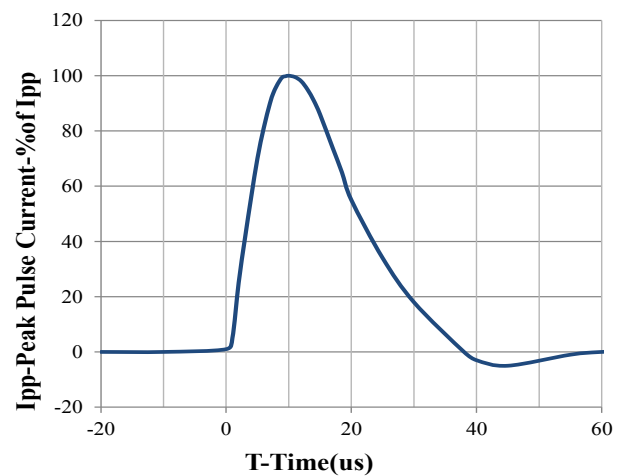
Peak Pulse Power vs. Pulse Time



IEC61000-4-2 Pulse Waveform

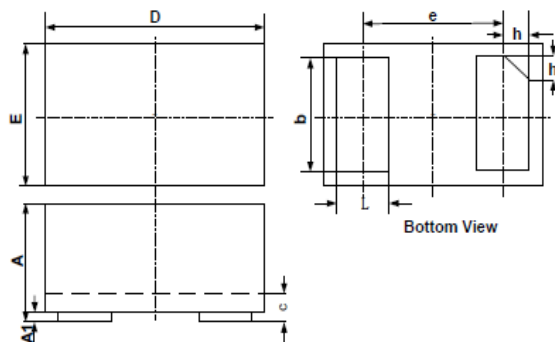


Power Derating Curve



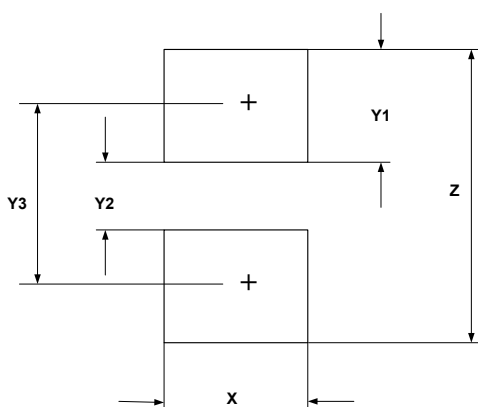
8 X 20us Pulse Waveform

## DFN1006-2 Package Outline Drawing



| SYM | DIMENSIONS  |      |      |           |       |       |
|-----|-------------|------|------|-----------|-------|-------|
|     | MILLIMETERS |      |      | INCHES    |       |       |
|     | MIN         | NOM  | MAX  | MIN       | NOM   | MAX   |
| A   | 0.45        | 0.50 | 0.55 | 0.018     | 0.020 | 0.022 |
| A1  | 0.00        | 0.02 | 0.05 | 0.000     | 0.001 | 0.002 |
| b   | 0.45        | 0.50 | 0.55 | 0.018     | 0.020 | 0.022 |
| c   | 0.12        | 0.15 | 0.18 | 0.005     | 0.006 | 0.007 |
| D   | 0.95        | 1.00 | 1.05 | 0.037     | 0.039 | 0.041 |
| e   | 0.65 BSC    |      |      | 0.026 BSC |       |       |
| E   | 0.55        | 0.60 | 0.65 | 0.022     | 0.024 | 0.026 |
| L   | 0.20        | 0.25 | 0.30 | 0.008     | 0.010 | 0.012 |
| h   | 0.07        | 0.12 | 0.17 | 0.003     | 0.005 | 0.007 |

## Suggested Land Pattern



| SYM | DIMENSIONS  |        |
|-----|-------------|--------|
|     | MILLIMETERS | INCHES |
| X   | 0.60        | 0.024  |
| Y1  | 0.50        | 0.020  |
| Y2  | 0.30        | 0.012  |
| Y3  | 0.80        | 0.032  |
| Z   | 1.30        | 0.052  |

## Order Information

| Order code  | Package   | Packaging         | Reel Size |
|-------------|-----------|-------------------|-----------|
| MDFN2C051UA | DFN1006-2 | 10000/Tape & Reel | 7 inch    |