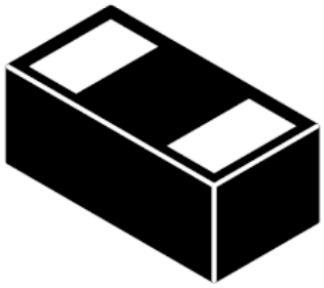
# LM-AZ6118-01F

## 1-Line Bi-directional TVS Diode

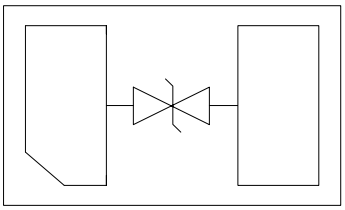
## Features

- Protects one data line
- Ultra low leakage: nA level
- Operating voltage: 1.8V
- Ultra low clamping voltage
- Complies with following standards:
  - – IEC 61000-4-2 (ESD) immunity test
    Air discharge: ±30kV
    Contact discharge: ±30kV
  - – IEC61000-4-5 (Lightning) 12A (8/20μs)
- RoHS Compliant

## Dimensions DFN1006



## Pin Configuration



## Applications

- Cell Phone Handsets andAccessories
- Microprocessor based equipment
- Personal DigitalAssistants(PDA's)
- Notebooks, Desktops, and Servers
- Portable Instrumentation
- Networking and Telecom
- Serial and Parallel Ports
- Peripherals

## Mechanical Characteristics

- Package: DFN1006
- Case Material: "Green" Molding Compound.
- Moisture Sensitivity: Level 3 per J-STD-020
- Quantity Per Reel:10,000pcs
- Reel Size:7 inch
- Device Marking: 181

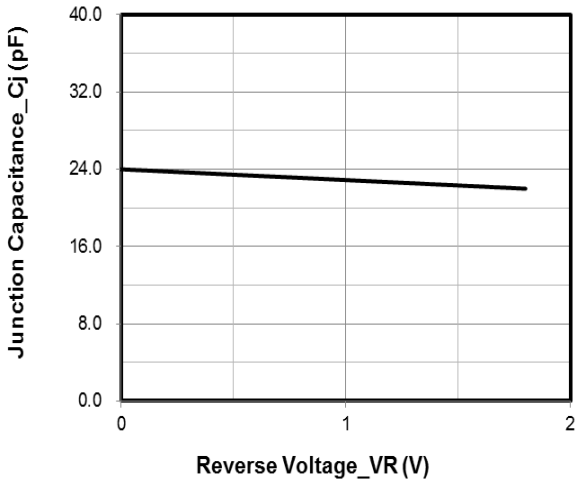
## Absolute Maximum Ratings(Tamb=25°C unless otherwise specified)

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Peak Pulse Power (8/20μs) | Ppp | 100 | W |
| ESD per IEC 61000−4−2 (Air) | $V_{ESD}$ | ±30 | kV |
| ESD per IEC 61000−4−2 (Contact) | | ±30 | |
| Operating Temperature Range | $T_J$ | -55 to +125 | ℃ |
| Storage Temperature Range | $T_{STJ}$ | -55 to +150 | ℃ |

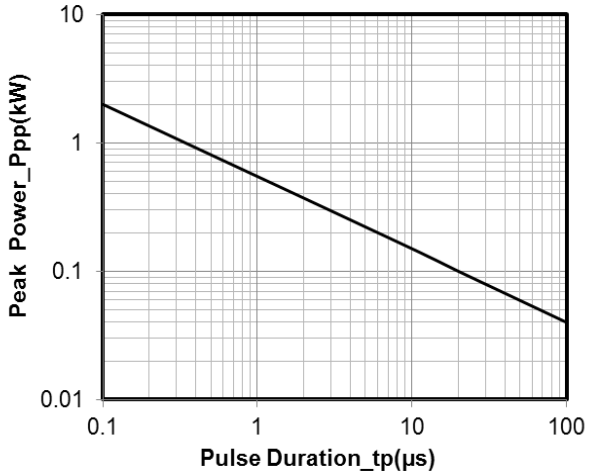
## Electrical Characteristics(TA=25°C unless otherwise specified)

| Parameter | Symbol | Test Condition | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Reverse Working Voltage | $V_{RWM}$ | | | | 1.8 | V |
| Breakdown Voltage | $V_{BR}$ | $I_T$ = 1mA | 2.5 | | | V |
| Reverse Leakage Current | $I_R$ | $V_{RWM}$ = 1.8V | | | 0.2 | μA |
| Clamping Voltage | $V_C$ | $I_{PP}$ = 1A (8 x 20 μs pulse) | | | 3.5 | V |
| Clamping Voltage | $V_C$ | $I_{PP}$ = 12A (8 x 20 μs pulse) | | | 8.5 | V |
| Junction Capacitance | $C_J$ | $V_R$ = 0V, f = 1MHz | | 30 | | pF |

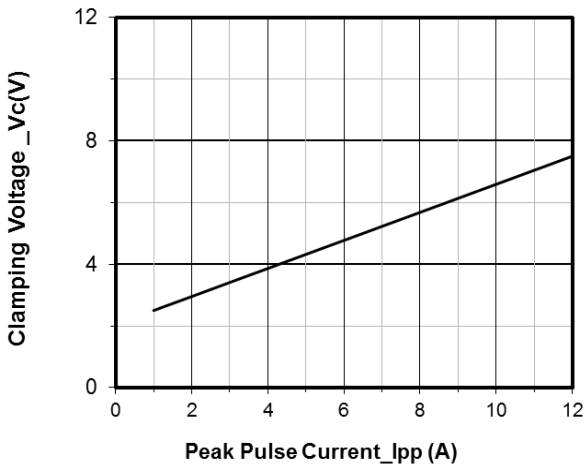
## Typical Performance Characteristics(TA=25°C unless otherwise specified)



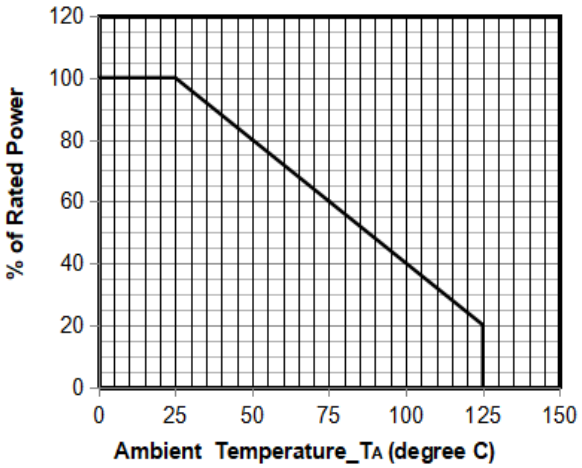

**Junction Capacitance vs. Reverse Voltage**



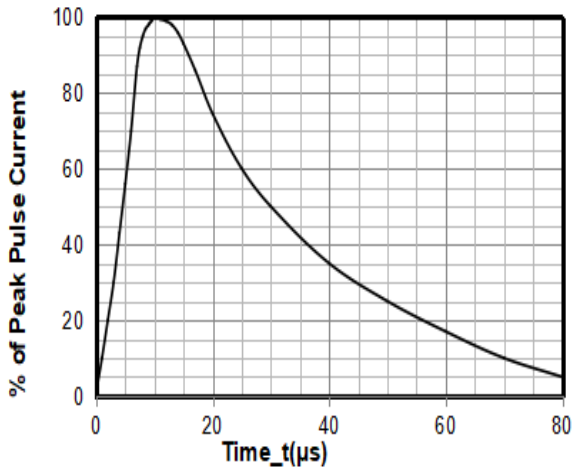

**Peak Pulse Power vs. Pulse Time**



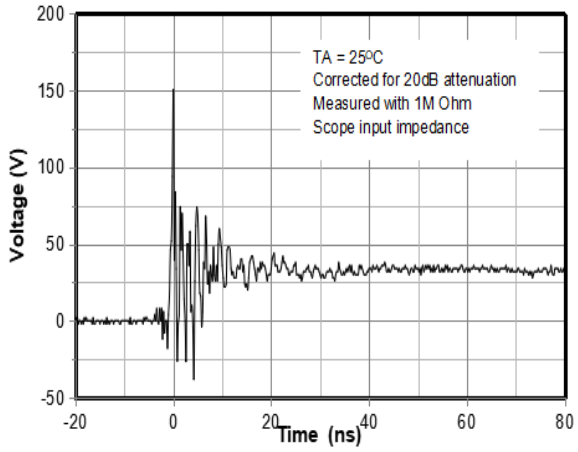

**Clamping Voltage vs. Peak Pulse Current**




**Power Derating Curve**



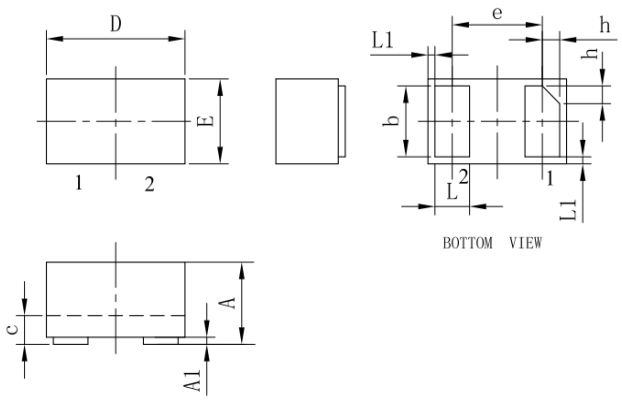

**8 X 20μs Pulse Waveform**




**ESD Clamping Voltage**

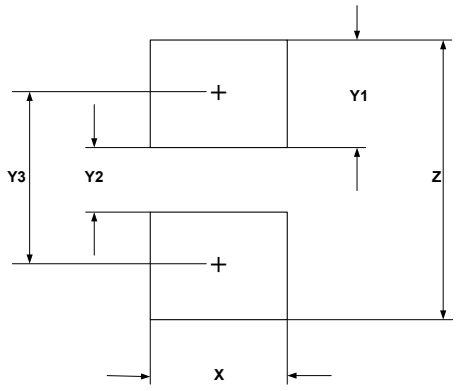
**8 kV Contact per IEC61000−4−2**

## DFN1006 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 |
| L1 | 0.05REF | | | 0.002REF | | |
| 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 |

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