



## Feature

- ◆ 300W peak pulse power per line ( $t_p = 8/20\mu s$ )
- ◆ DFN1006-2L package
- ◆ Replacement for MLV(0402)
- ◆ Bidirectional configurations
- ◆ Response time is typically  $< 1ns$
- ◆ Low clamping voltage
- ◆ RoHS compliant
- ◆ Transient protection for data lines to IEC61000-4-2(ESD)  $\pm 20KV$ (air),  $\pm 20KV$ (contact); IEC61000-4-4 (EFT) 40A (5/50ns)

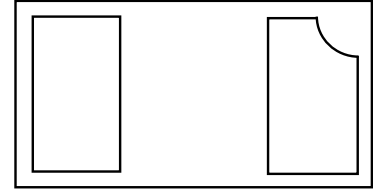
## Applications

- ◆ Cellular phones
- ◆ Portable devices
- ◆ Digital cameras
- ◆ Power supplies

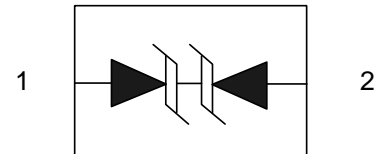
## Mechanical Characteristics

- ◆ Lead finish:100% matte Sn(Tin)
- ◆ Mounting position: Any
- ◆ Qualified max reflow temperature:260 °C
- ◆ Device meets MSL 1 requirements
- ◆ Pure tin plating: 7 ~ 17  $\mu m$
- ◆ Pin flatness: $\leq 3mil$

## DFN1006-2L



## PIN CONFIGURATION



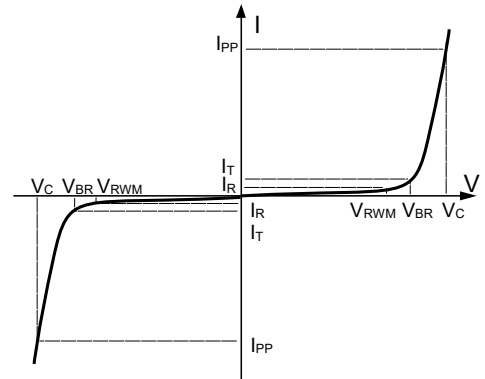
## Absolute maximum rating@25°C

Rating	Symbol	Value	Units
Peak Pulse Power ( $t_p=8/20\mu s$ )	$P_{pp}$	300	W
Operating Temperature	$T_J$	-55 to 150	°C
Storage Temperature	$T_{STG}$	-55 to 150	°C



## Electronics Parameter

Symbol	Parameter
$V_{RWM}$	Peak Reverse Working Voltage
$I_R$	Reverse Leakage Current @ $V_{RWM}$
$V_{BR}$	Breakdown Voltage @ $I_T$
$I_T$	Test Current
$I_{PP}$	Maximum Reverse Peak Pulse Current
$V_C$	Clamping Voltage @ $I_{PP}$
$P_{PP}$	Peak Pulse Power
$C_J$	Junction Capacitance
$I_F$	Forward Current
$V_F$	Forward Voltage @ $I_F$



## Electrical characteristics per line@25°C (unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Peak Reverse Working Voltage	$V_{RWM}$				24	V
Breakdown Voltage	$V_{BR}$	$I_t = 1\text{mA}$	25	27		V
Reverse Leakage Current	$I_R$	$V_{RWM} = 24\text{V}$ $T=25^\circ\text{C}$			1.0	$\mu\text{A}$
Clamping Voltage	$V_C$	$I_{PP}=1\text{A}$		34	40	V
Clamping Voltage	$V_C$	$I_{PP}=6.5\text{A}$		55	60	V
Junction Capacitance	$C_j$	$V_R=0\text{V}$ $f = 1\text{MHz}$		15	20	pF



## Typical Characteristics

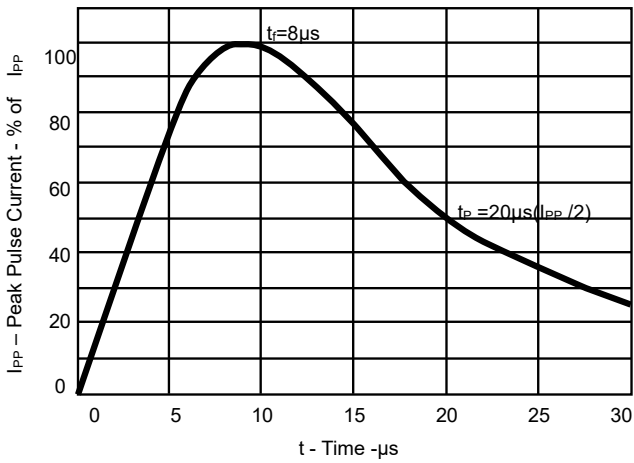


Fig 1. Pulse Waveform

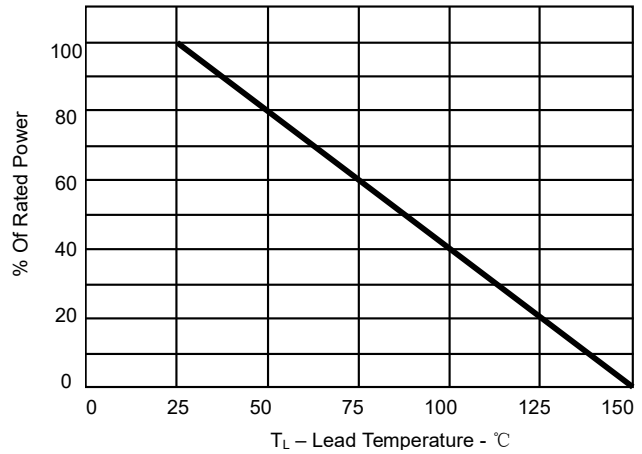


Fig 2. Power Derating Curve

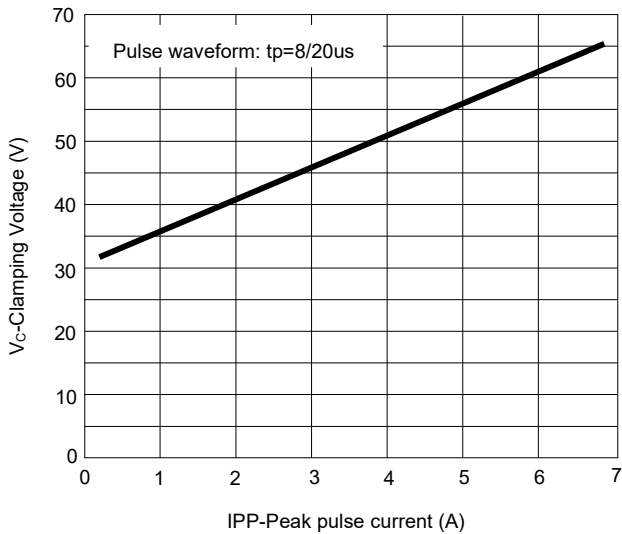


Fig 3. Clamping voltage vs. Peak pulse current

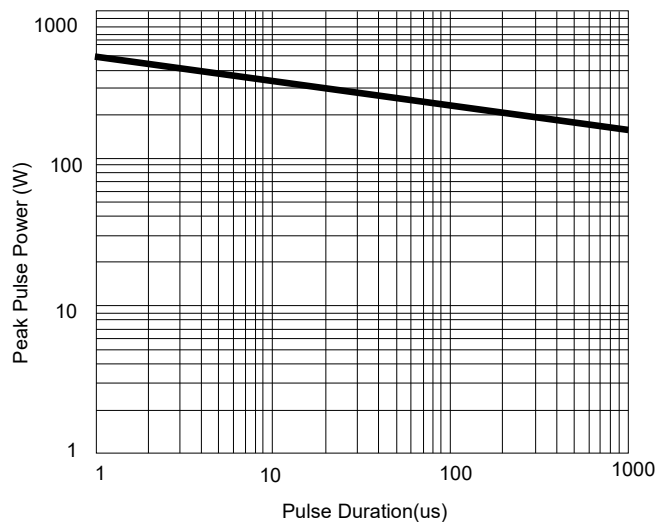
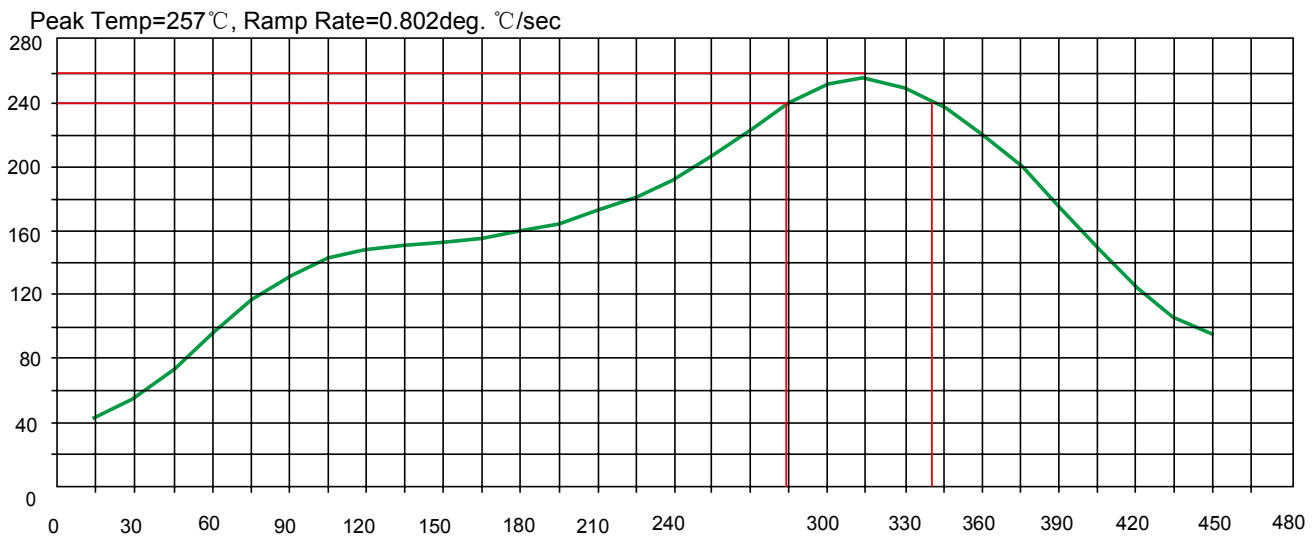


Fig 4. Non-Repetitive Peak Pulse Power vs. Pulse time



## Solder Reflow Recommendation



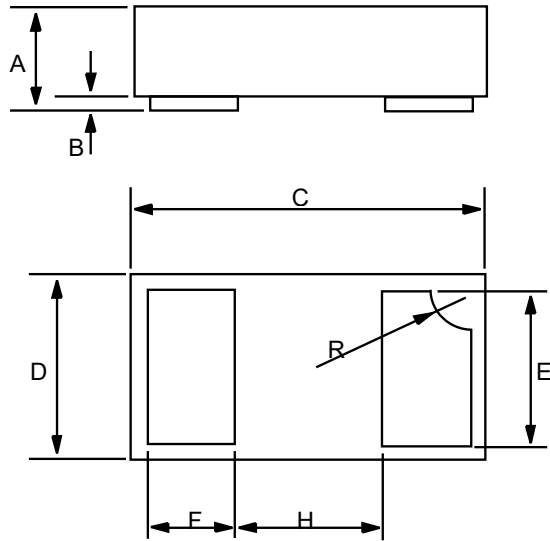
## PCB Design

For TVS diodes a low-ohmic and low-inductive path to chassis earth is absolutely mandatory in order to achieve good ESD protection. Novices in the area of ESD protection should take following suggestions to heart:

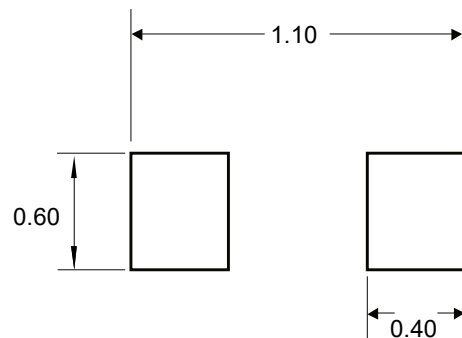
- ◆ Do not use stubs, but place the cathode of the TVS diode directly on the signal trace.
- ◆ Do not make false economies and save copper for the ground connection.
- ◆ Place via holes to ground as close as possible to the anode of the TVS diode.
- ◆ Use as many via holes as possible for the ground connection.
- ◆ Keep the length of via holes in mind! The longer the more inductance they will have.



## Product dimension (DFN1006-2L)



Dim	Inches		Millimeters	
	MIN	MAX	MIN	MAX
A	0.013	0.020	0.34	0.50
B	0.000	0.002	0.00	0.05
C	0.037	0.043	0.95	1.080
D	0.022	0.027	0.55	0.680
E	0.016	0.024	0.40	0.60
F	0.008	0.012	0.20	0.30
H	0.015Typ.		0.40Typ.	
R	0.001	0.005	0.05	0.15



Unit:mm

**Suggested PCB Layout**