



Feature

- ◆ 230W Peak pulse power per line ($t_p = 8/20\mu s$)
- ◆ DFN1006-2L package
- ◆ Replacement for MLV(0402)
- ◆ Unidirectional configurations
- ◆ Response time is typically $< 1\text{ ns}$
- ◆ Protect one I/O or power line
- ◆ Low clamping Voltage
- ◆ RoHS compliant
- ◆ Transient protection for data lines to IEC 61000-4-2(ESD) $\pm 30\text{KV}(\text{air}), \pm 30\text{KV}(\text{contact}); \text{IEC } 61000-4-4 (\text{EFT}) 40\text{A} (5/50\text{ns})$

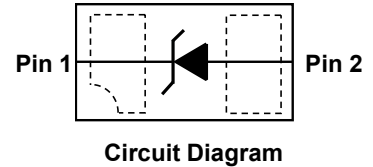
DFN1006-2L



Applications

- ◆ Cell phone handsets and accessories
- ◆ Personal digital assistants (PDA's)
- ◆ Notebooks, desktops, and servers
- ◆ Portable instrumentation
- ◆ Cordless phones
- ◆ Digital cameras
- ◆ Peripherals
- ◆ MP3 players

PIN CONFIGURATION



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: $7 \sim 17\ \mu\text{m}$
- ◆ Pin flatness: $\leq 3\text{mil}$

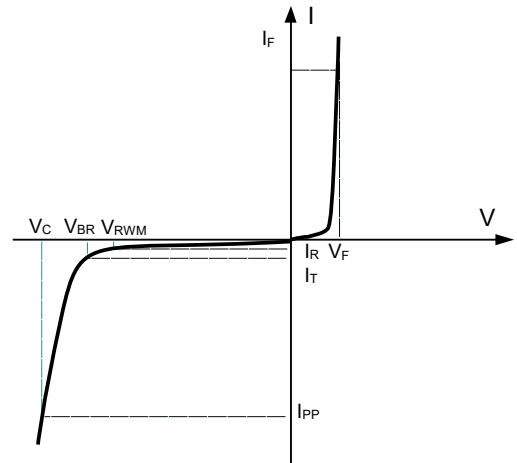
Absolute maximum rating@25°C

Rating	Symbol	Value	Units
Peak Pulse Power ($t_p = 8/20\mu s$)	P_{pp}	230	W
Lead Soldering Temperature	T_L	260 (10 sec)	$^\circ\text{C}$
Operating Temperature	T_J	-55 to 125	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55 to 150	$^\circ\text{C}$



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}				7	V
Breakdown Voltage	V_{BR}	$I_t = 1\text{mA}$	8.1	8.2	9.0	V
Reverse Leakage Current	I_R	$V_{RWM} = 7\text{V}$			1	μA
Clamping Voltage	V_C	$I_{PP} = 15\text{A}$ $t_P = 8/20\mu\text{s}$		16.5		V
Junction Capacitance	C_j	$V_R = 0\text{V}$ $f = 1\text{MHz}$		73		pF



Typical Characteristics

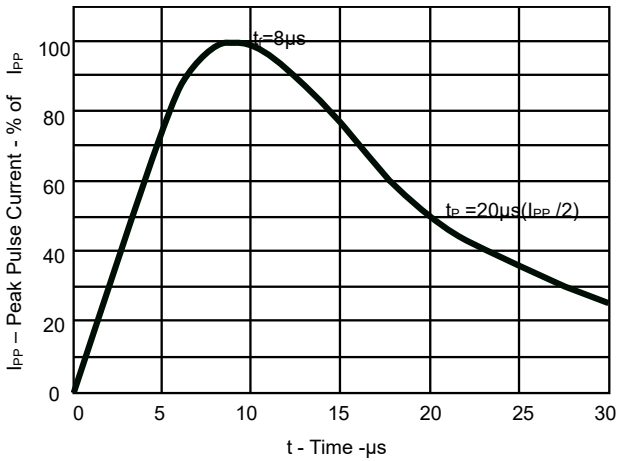


Fig 1. Pulse Waveform

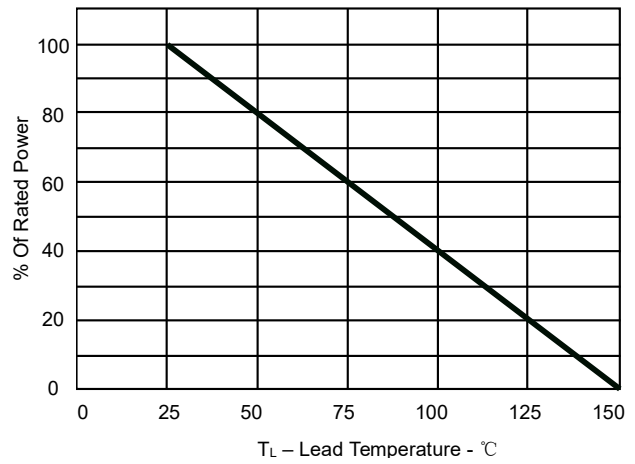


Fig 2. Power Derating Curve

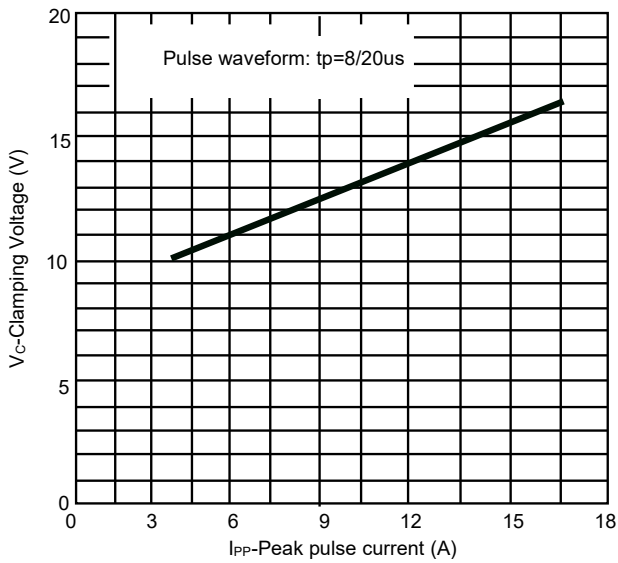


Fig 3. Clamping voltage vs. Peak pulse current

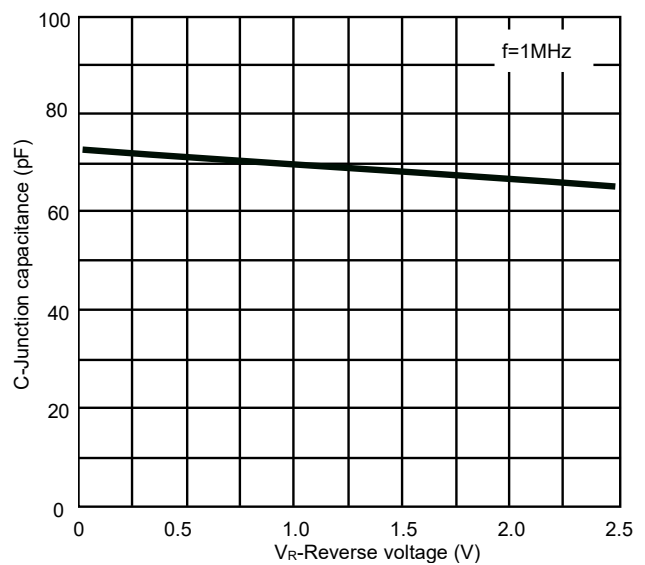
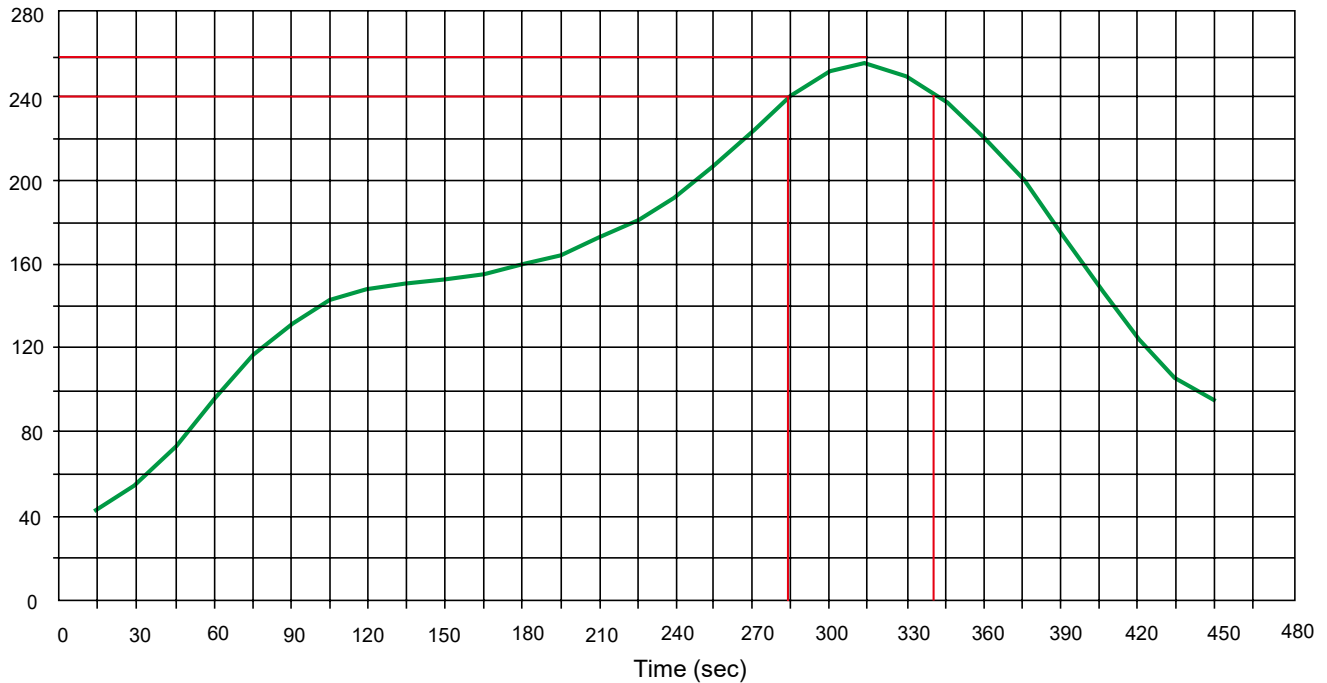


Fig 4. Capacitance vs. Reverse voltage



Solder Reflow Recommendation

Peak Temp=257°C, Ramp Rate=0.802deg. °C/sec



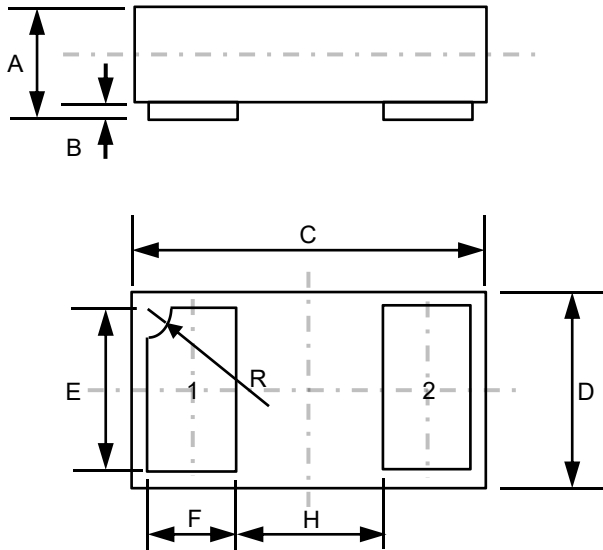
PCB Design

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:

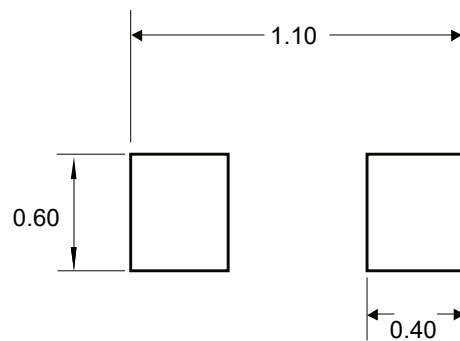
- ◆ Do not use stubs, but place the cathode of the TVS diode directly on the signal trace.
- ◆ Do not make false economies and save copper for the ground connection.
- ◆ Place via holes to ground as close as possible to the anode of the TVS diode.
- ◆ Use as many via holes as possible for the ground 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	0.68
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