



Bi-directional 18V Low Capacitance ESD Protector

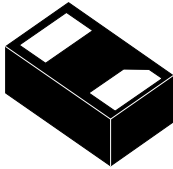
Features

- 30W 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) $\pm 15KV$ (air), $\pm 15KV$ (contact); IEC61000-4-4 (EFT) 40A (5/50ns)

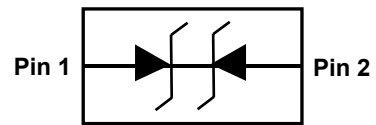
Applications

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

DFN1006-2L



Circuit Diagram



Circuit Diagram

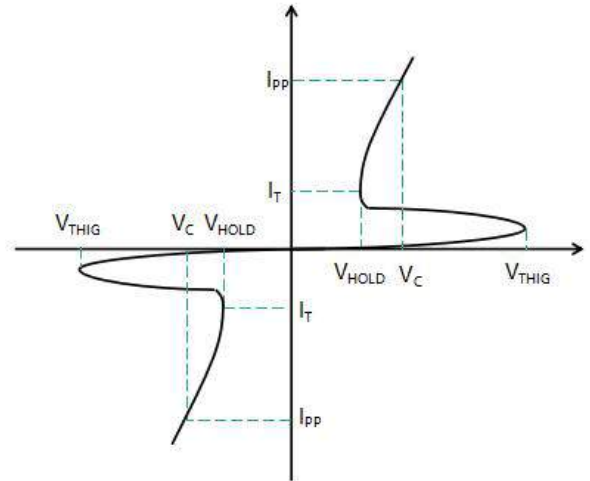
Absolute maximum rating@25°C

Rating	Symbol	Value	Units
Peak Pulse Power ($t_p=8/20\mu s$)	P_{pp}	30	W
Peak Pulse Current($t_p=8/20\mu s$)	I_{pp}	4	A
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}				18	V
Breakdown Voltage	V_{BR}	$I_t = 1\text{mA}$	19		23	V
Reverse holding voltage	V_{HOLD}	$I_{HOLD} = 60\text{mA}$	2.0	2.8	3.5	V
Reverse Leakage Current	I_R	$V_{RWM} = 18\text{V}$, $T = 25^\circ\text{C}$			1.0	μA
Clamping Voltage	V_C	TLP=16A or ESD=8KV		9		V
Clamping Voltage	V_C	$I_{PP} = 1\text{A}$			6	V
Clamping Voltage	V_C	$I_{PP} = 4\text{A}$			8	V
Junction Capacitance	C_j	$V_R = 0\text{V}$, $f = 1\text{MHz}$		0.4	0.5	pF



Typical Characteristics

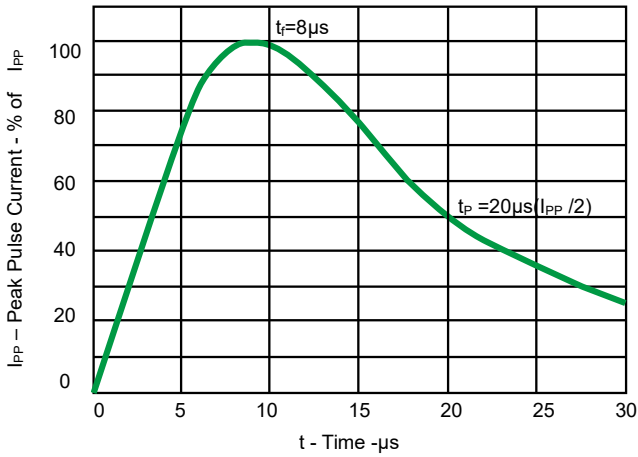


Fig 1. Pulse Waveform

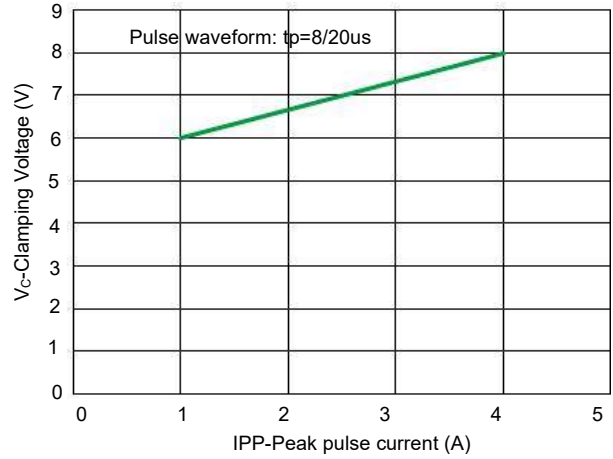


Fig 2. Clamping voltage vs. Peak pulse current

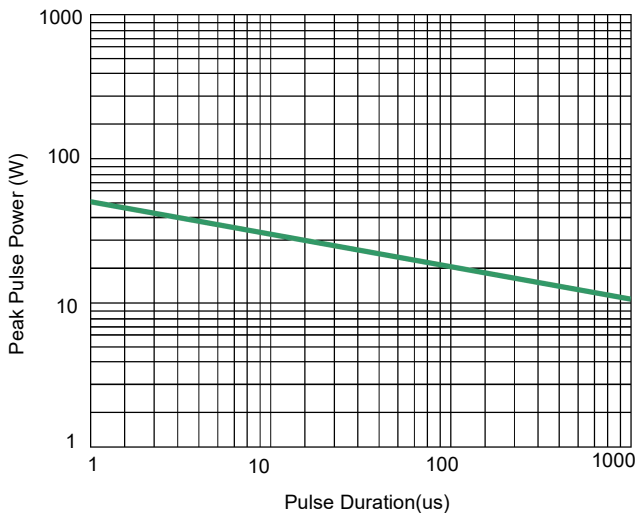


Fig 3. Non-Repetitive Peak Pulse Power vs. Pulse time

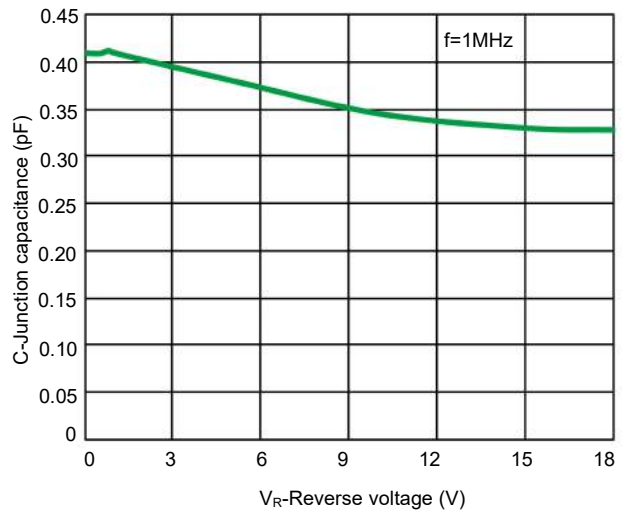


Fig 4. Capacitance vs. Reverse voltage



Typical Characteristics

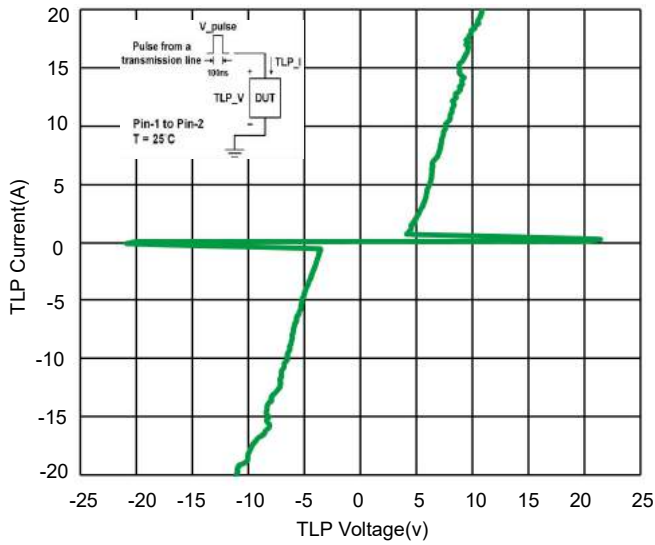


Fig 5. TLP Measurement

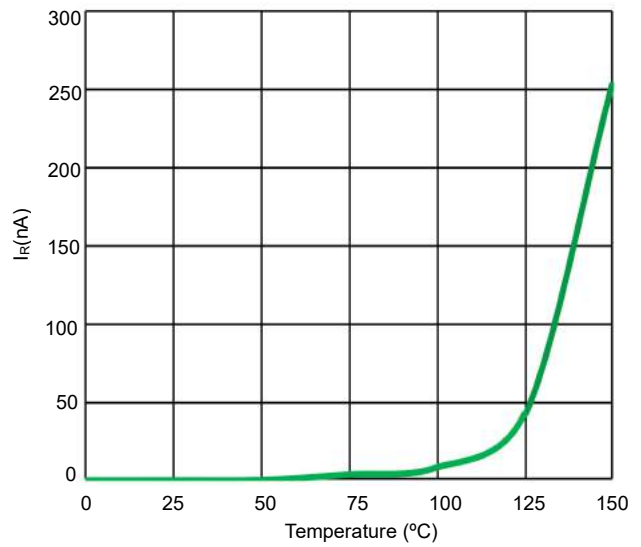


Fig 6. Typical Leakage Current vs. Temperature

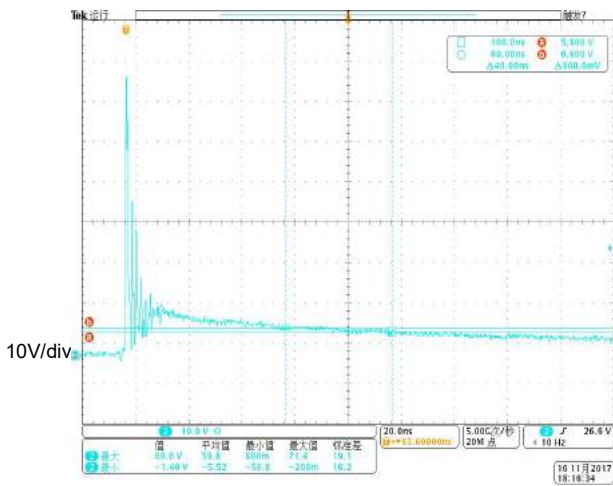


Fig 7. ESD clamping voltage (IEC61000-4-2 +8KV contact)

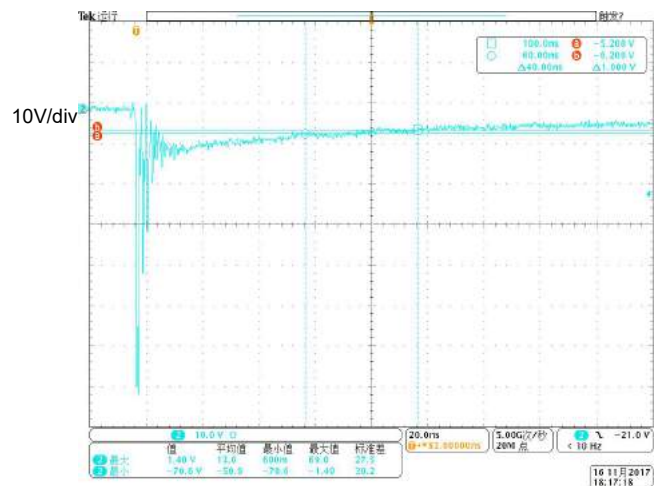
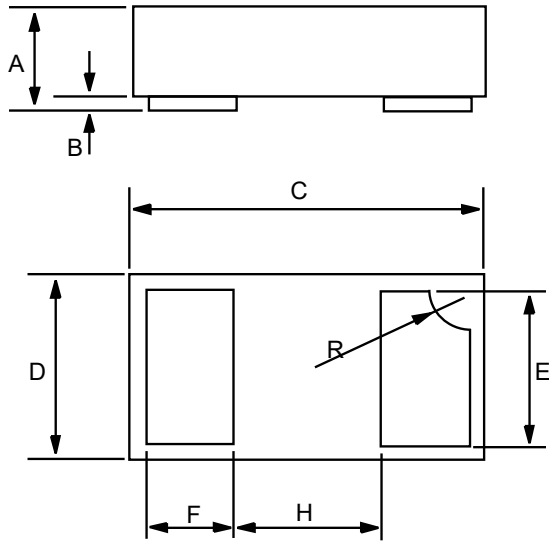


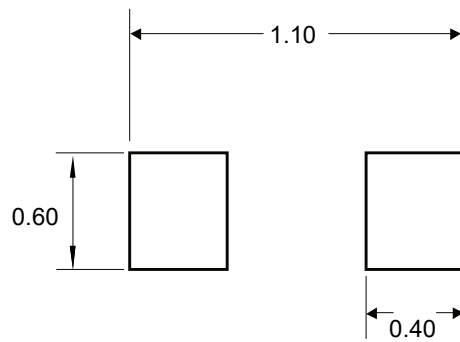
Fig 8. ESD clamping voltage (IEC61000-4-2-8KV contact)



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



Suggested PCB Layout

Unit:mm



NOTICE

The information presented in this document is for reference only. Semiteh reserves the right to make changes without notice for the specification of the products displayed herein.

The product listed herein is designed to be used with ordinary electronic equipment or devices, and not designed to be used with equipment or devices which require high level of reliability and the malfunction of which would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), Semiteh Semiconductor Co., Ltd., or anyone on its behalf, assumes no responsibility or liability for any damages resulting from such improper use of sale.

This publication supersedes & replaces all information previously supplied. For additional information, please visit our website <http://www.semiteh.com>, or consult your nearest Semiteh's sales office for further assistance.