

1-Line Ultra Low Capacitance Bi-directional TVS Diode

Features

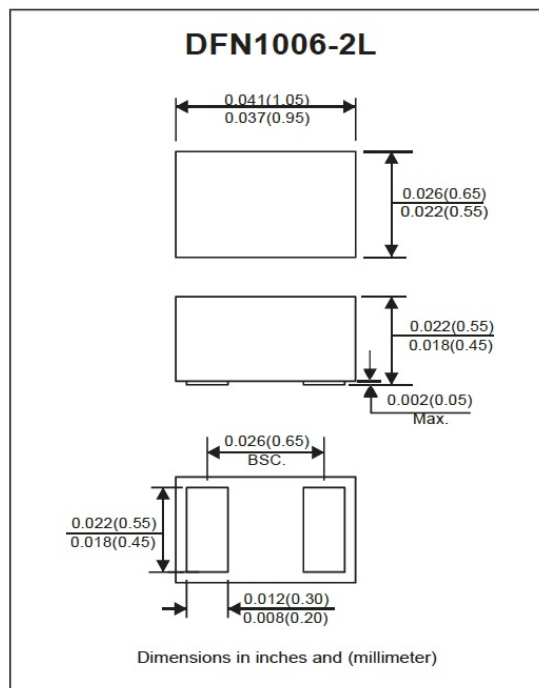
- IEC 61000-4-2 (ESD) $\pm 15\text{kV}$ (air), $\pm 8\text{kV}$ (contact)
- IEC 61000-4-5 (Lightning) 1.5A (8/20 μs)
- Ultra small package: 1.0x0.6x0.5mm
- Ultra low capacitance: 0.3pF typical
- Ultra low leakage: nA level
- Operating voltage: 24V.
- Low clamping voltage
- 2-pin leadless package

Applications

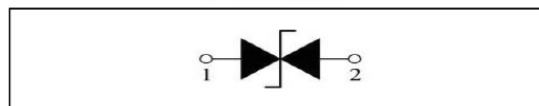
- Cellular Handsets and Accessories.
- Display Ports
- MDDI Ports
- Digital Visual Interface (DVI)
- PCI Express and Serial SATA Ports

Mechanical Characteristics

- Package: DFN1006-2L (1.0x0.6x0.5mm)
- Case Material: "Green" Molding Compound.
- Moisture Sensitivity: Level 3 per J-STD-020
- Material: RoHS compliant



Circuit Diagram



Absolute Maximum Ratings ($T_A = 25^\circ\text{C}$ Unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power ($t_p = 8/20\mu\text{s}$)	P_{PP}	80	W
Peak Pulse Current ($t_p = 8/20\mu\text{s}$)	I_{PP}	1.5	A
ESD per IEC 61000-4-2 (Air)	V_{ESD}	± 15	KV
ESD per IEC 61000-4-2 (Contact)		± 8	KV
Operating Temperature Range	T_J	-55 to + 125	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55 to + 150	$^\circ\text{C}$

Electrical Parameters (T _A = 25°C)	
Symbol	Parameter
I _{PP}	Reverse Peak Pulse Current
V _C	Clamping Voltage @ I _{PP}
V _{RWM}	Reverse Stand-Off Voltage
I _R	Reverse Leakage Current @ V _{RWM}
V _{BR}	Breakdown Voltage @ I _T
I _T	Test Current

Electrical Characteristics (T _A = 25°C Unless otherwise specified)						
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Reverse Standoff Voltage	V _{RWM}				24	V
Reverse breakdown Voltage	V _{BR}	I _T = 1mA	26.5			V
Reverse leakage current	I _R	V _{RWM} = 24V			0.5	μA
Clamping Voltage	V _C	I _{PP} = 1A, t _p = 8/20μs			40	V
Clamping Voltage	V _C	I _{PP} = 1.5A, t _p = 8/20μs			53	V
Junction capacitance	C _J	V _R = 0V, f = 1MHz		0.3		pF

Typical Performance Characteristics ($T_A = 25^\circ\text{C}$ Unless otherwise noted)

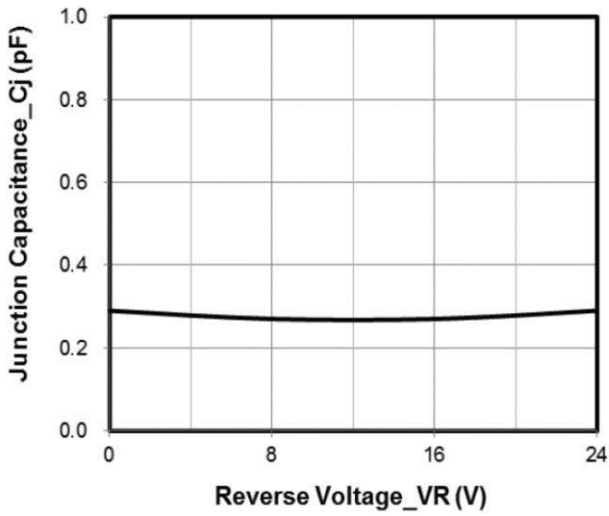


Fig 1. Junction Capacitance vs. Reverse Voltage

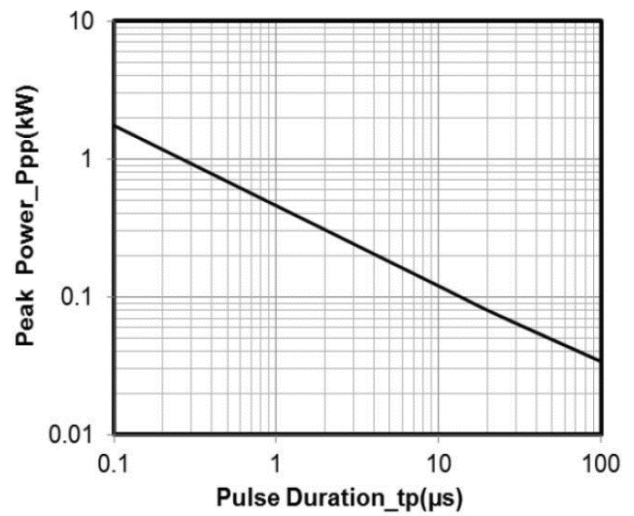


Fig 2. Peak Pulse Power vs. Pulse Time

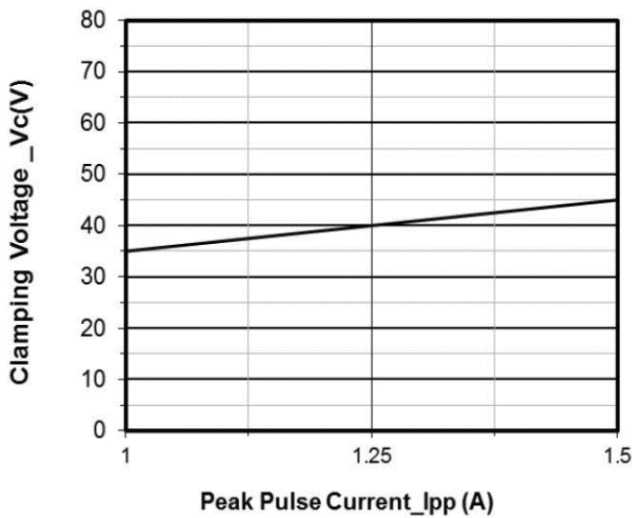


Fig 3. Clamping Voltage vs. Peak Pulse Current

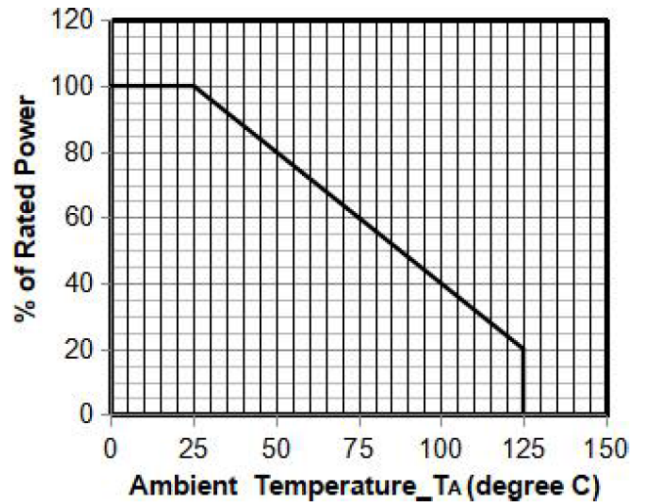


Fig 4. Power Derating Curve

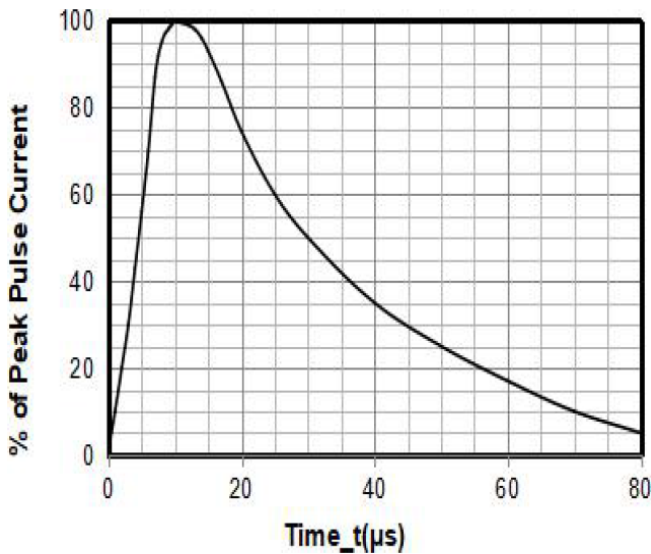
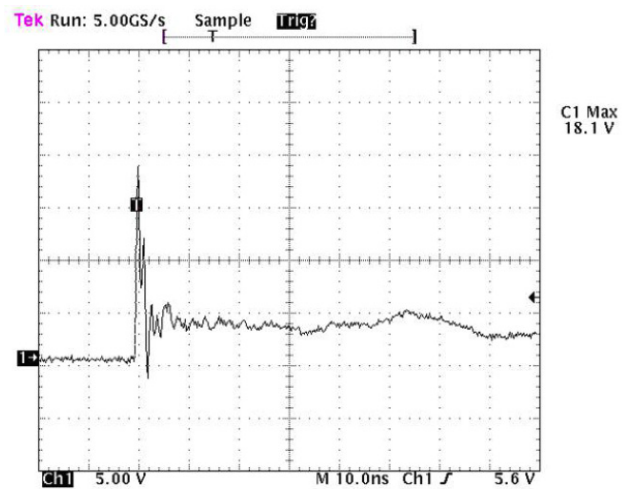


Fig 5. 8/20 μs Pulse Waveform

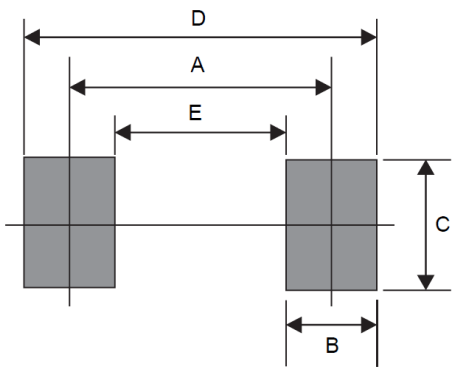


Note: Data is taken with a 10x attenuator

Fig 6. ESD Clamping Voltage
8 kV Contact per IEC61000-4-2

Suggested PAD Layout

Symbol	DFN1006-2L	
	(mm)	(inch)
A	0.70	0.028
B	0.40	0.016
C	0.60	0.024
D	1.10	0.043
E	0.30	0.012



The diagram illustrates the pad layout for the DFN1006-2L package. It shows two rectangular pads. Dimension A is the distance between the centers of the two pads. Dimension B is the width of each pad. Dimension C is the height of each pad. Dimension D is the total width of the two pads including the gap between them. Dimension E is the distance from the center of the left pad to the left edge of the right pad.

Marking Code

R24

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Ordering information

Part Number	Package	Base qty	Reel Size	Delivery mode
		(pcs)	(inch)	
SC24L1BDY	DFN1006-2L	10,000	7	Tape and reel