Ultra Low Capacitance Bi-directional ESD Diode

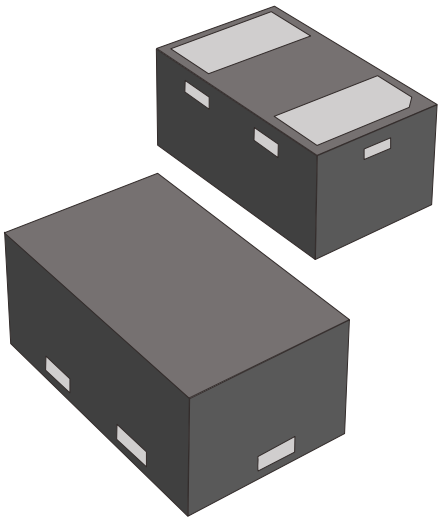
Features

- 240Watts peak pulse power (tp = 8/20μs)
- Uni-directional configurations
- Solid-state silicon-avalanche technology
- Capacitance: 0.7pF typical
- Low clamping voltage
- Low leakage current
- Complies with following standards:
  - – IEC 61000-4-2 (ESD) immunity test
    - Air discharge: ±30KV
    - Contact discharge: ±30KV
  - – IEC61000-4-4 (EFT) 40A (5/50ns)
  - – IEC61000-4-5 (Lightning) 14A (8/20us)

DFN1006

SOD-882

1mm×0.6mm×0.475mm



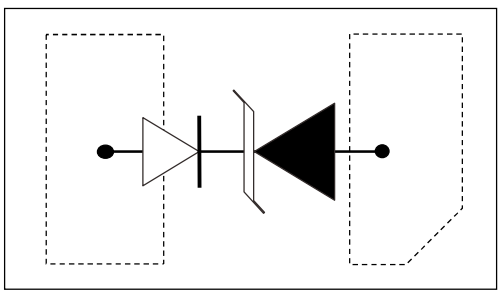
Applications

- USB 2.0 and USB 3.0
- HDMI 1.3 and HDMI 1.4
- SATA and eSATA
- DVI
- IEEE 1396
- PCI Express
- AEC-Q101 qualified (Automotive grade with suffix " Q".)

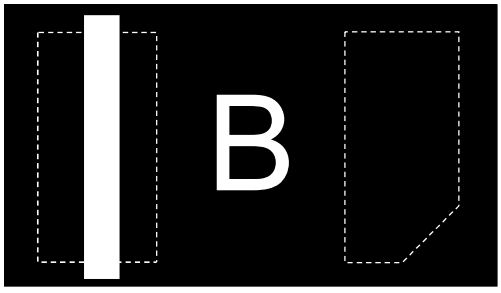
Mechanical Data

- Package: DFN1006
- UL Flammability Classification Rating 94V-0
- Packaging: Tape and Reel
- RoHS/WEEE Compliant

Schematic & PIN Configuration



Marking



Absolute Maximum Ratings

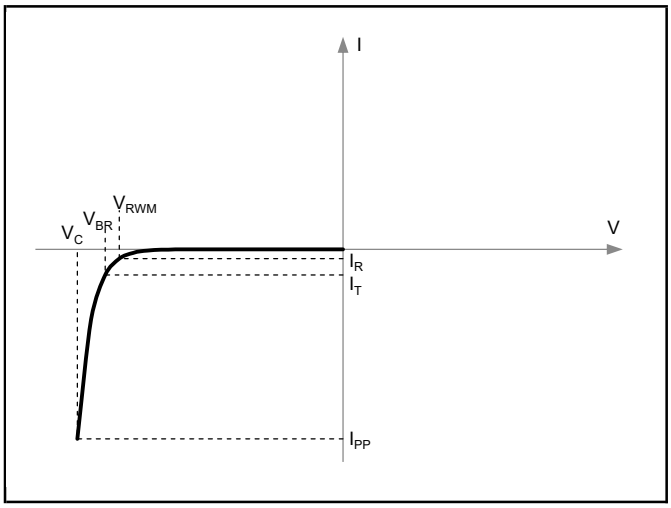
Parameter	Symbol	Value	Units
Reverse Working Voltage	V_{RWM}	5	V
Peak Pulse Power (tp=8/20μs)	P_{PP}	240	W
Peak Pulse Current (tp=8/20μs)	I_{PP}	14	A
ESD per IEC 61000−4−2 (Air)	$V_{ESD-Air}$	30	KV
ESD per IEC 61000−4−2 (Contact)	$V_{ESD-Contact}$	30	KV
Lead Soldering Temperature (10s)	T_L	260	℃
Operating Temperature Range	T_J	-55 to 125	℃
Storage Temperature Range	T_{STG}	-55 to 150	℃

Electrical Characteristics

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Breakdown Voltage	V_{BR}	I_T = 1mA	6	7		V
Reverse Leakage Current	I_R	V_{RWM} = 5V		0.001	0.1	uA
Clamping Voltage	V_C	I_{PP} = 1A, tp=8/20μs		8		V
		I_{PP} = 14A, tp=8/20μs			17	V
Junction Capacitance	C_J	V_{DC} = 0V, f=1MHz		0.7	0.85	pF

Electrical Parameters

Symbol	Definition
I_{PP}	Peak Pulse Current
V_C	Clamping Voltage
V_{RWM}	Reverse Working Voltage
I_R	Reverse Leakage Current
V_{BR}	Breakdown Voltage
I_T	Test Current



Typical Characteristics

Fig.1 - Peak Pulse Power Rating

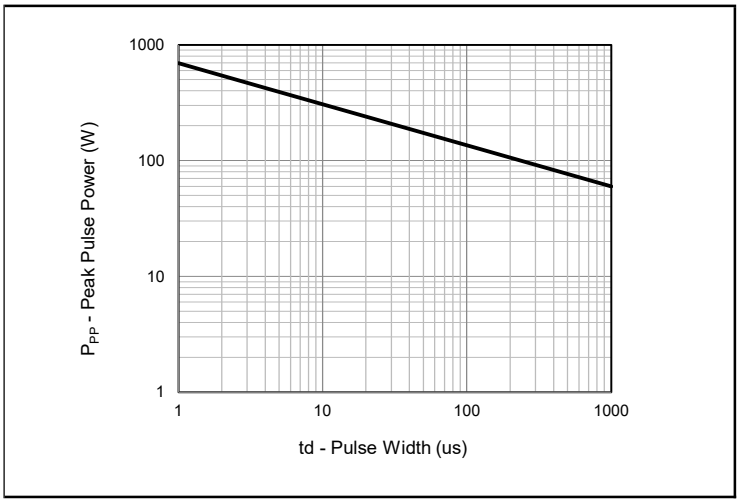


Fig.2 - Pulse Derating Curve

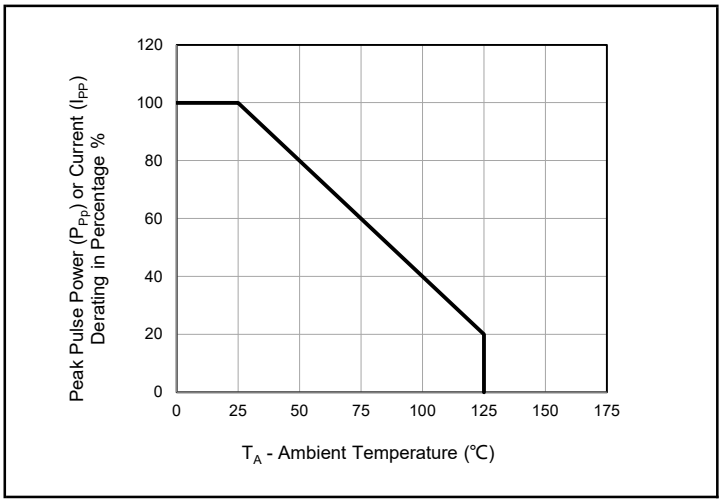


Fig.3 - 8/20us Pulse Waveform

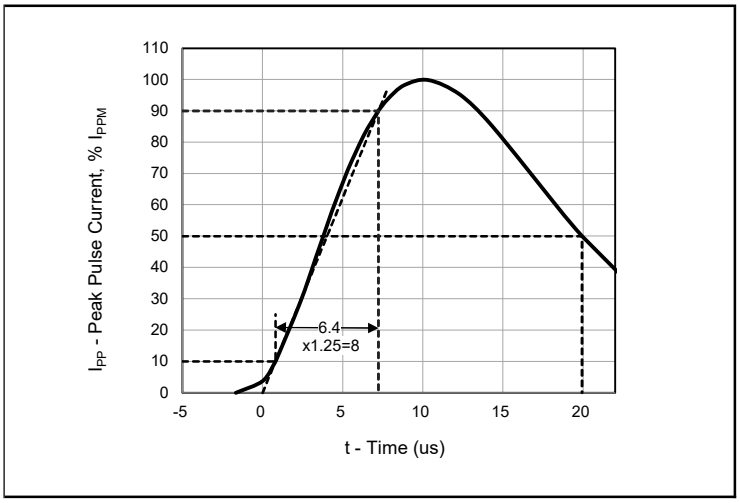


Fig.4 - Typical Clamping Voltage

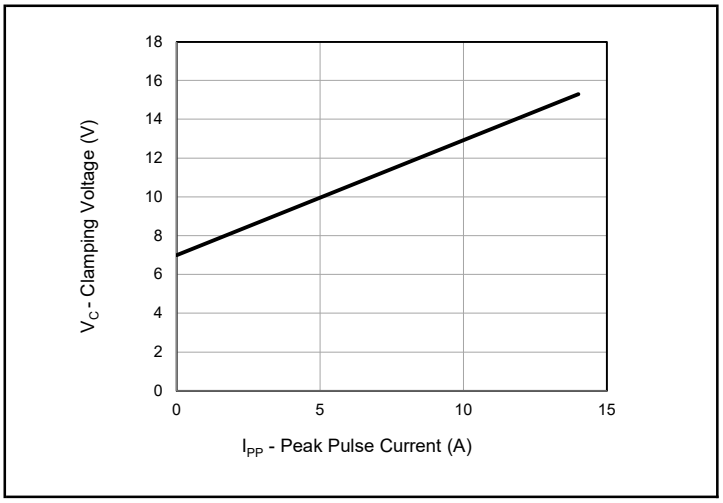


Fig.5 - ESD Pulse Waveform (IEC61000-4-2)

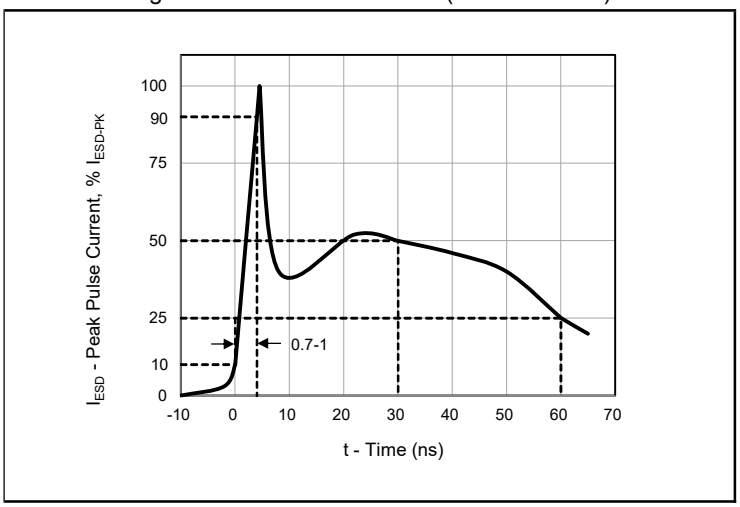
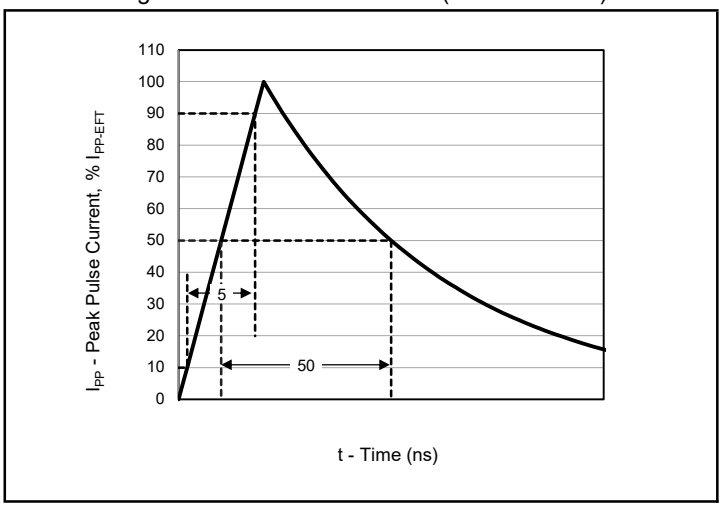
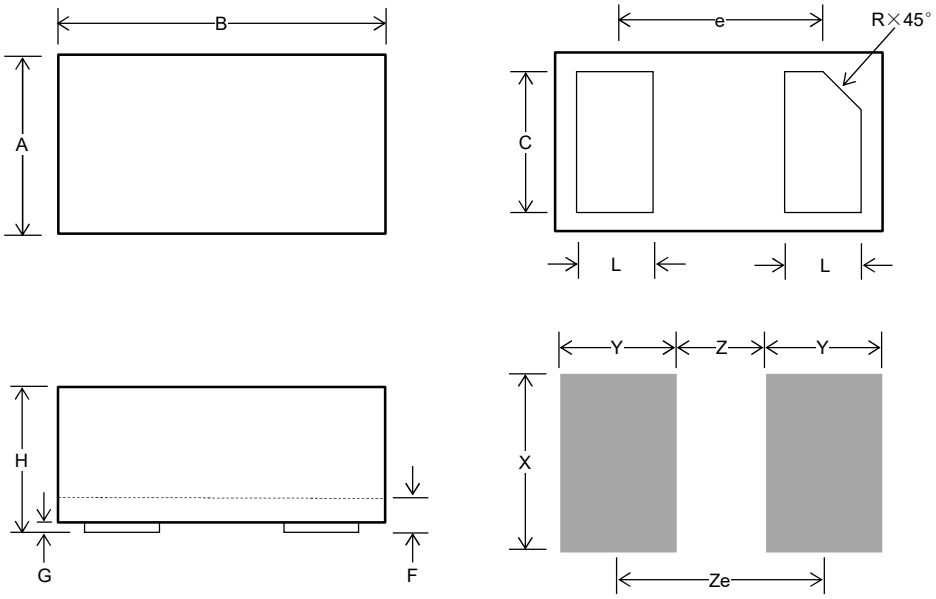


Fig.6 - 5/50ns EFT Waveform (IEC61000-4-4)



Outline Drawing



DFN1006			
SYMBOL	Millimeters		
	MIN	NOM	MAX
A	0.55	0.6	0.68
B	0.95	1	1.08
C	0.45	0.5	0.55
F	0.12		0.18
G	-	0	0.05
H	0.45	0.475	0.5
L	0.2	0.25	0.3
e		0.65	
X		0.6	
Y		0.5	
Z		0.3	
Ze		0.8	

Ordering Information

Order Code	Package	Base Quantity	Delivery Mode
EPDFN60501	DFN1006	10000 PCS/Reel	Tape and Reel