

Ultra Low Capacitance TVS Diode ESD Protection Device

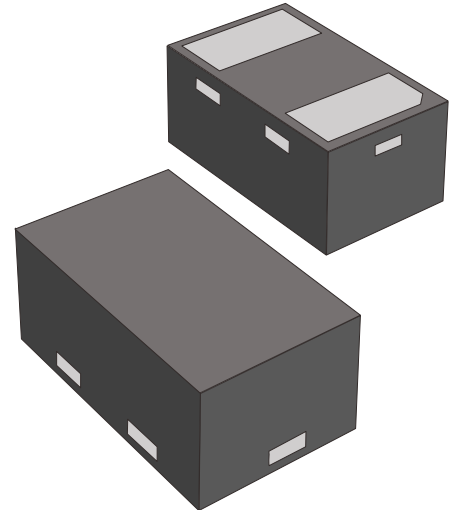
Features

- ◆ 80Watts peak pulse power ($t_p = 8/20\mu s$)
- ◆ Bi-directional configurations
- ◆ Solid-state silicon-avalanche technology
- ◆ Capacitance: 0.2pF typical
- ◆ Low clamping voltage
- ◆ Low leakage current
- ◆ Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: $\pm 25KV$
 - Contact discharge: $\pm 20KV$
 - IEC61000-4-4 (EFT) 40A (5/50ns)
 - IEC61000-4-5 (Lightning) 4A (8/20us)

DFN1006

SOD-882

1mm×0.6mm×0.475mm



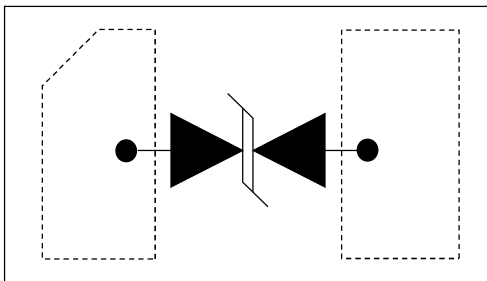
Applications

- ◆ USB 2.0 and USB 3.0
- ◆ HDMI 1.3 and HDMI 1.4
- ◆ SATA and eSATA
- ◆ DVI
- ◆ IEEE 1398
- ◆ PCI Express
- ◆ AEC-Q101 qualified (Automotive grade with suffix "Q".)

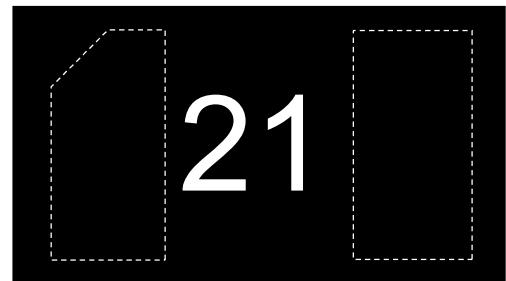
Mechanical Data

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

Schematic & PIN Configuration



Marking



Absolute Maximum Ratings

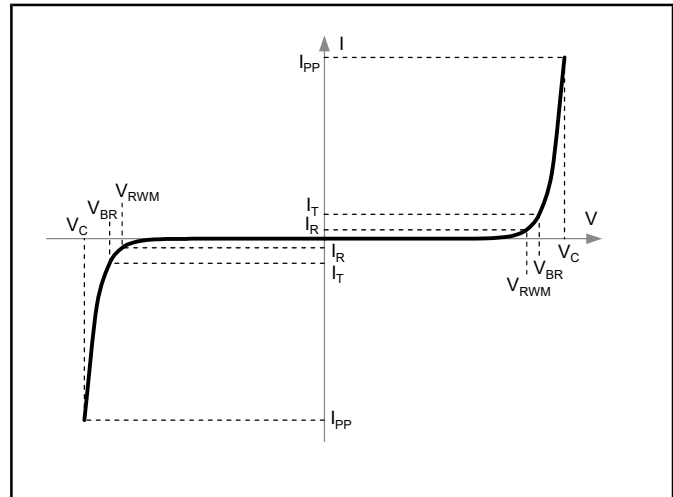
Parameter	Symbol	Value	Units
Reverse Working Voltage	V_{RWM}	5	V
Peak Pulse Power (tp=8/20μs)	P_{PP}	80	W
Peak Pulse Current (tp=8/20μs)	I_{PP}	4	A
ESD per IEC 61000-4-2 (Air)	$V_{ESD-Air}$	25	KV
ESD per IEC 61000-4-2 (Contact)	$V_{ESD-Contact}$	20	KV
Lead Soldering Temperature (10s)	T_L	260	°C
Operating Temperature Range	T_J	-55 to 125	°C
Storage Temperature Range	T_{STG}	-55 to 150	°C

Electrical Characteristics

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Breakdown Voltage	V_{BR}	$I_T = 1mA$	6.5	8		V
Reverse Leakage Current	I_R	$V_{RWM} = 5V$		0.001	0.1	uA
Clamping Voltage	V_C	$I_{PP} = 1A, tp=8/20\mu s$		10		V
		$I_{PP} = 4A, tp=8/20\mu s$		18	20	V
Junction Capacitance	C_J	$V_{DC} = 0V, f=1MHz$		0.2	0.4	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

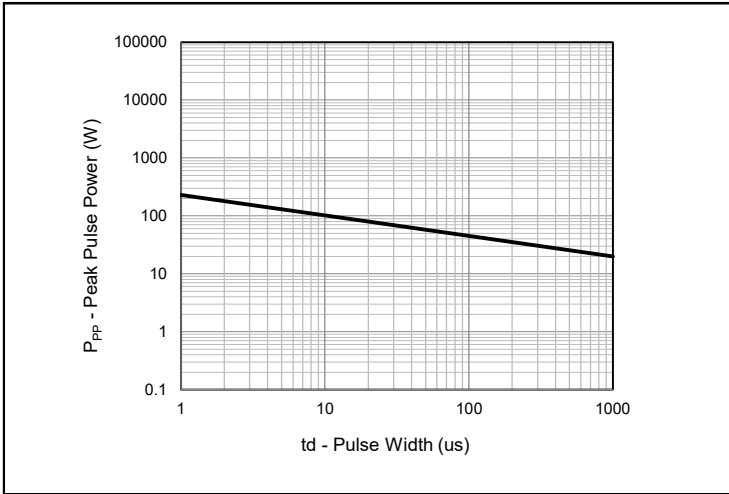


Fig.2 - Pulse Derating Curve

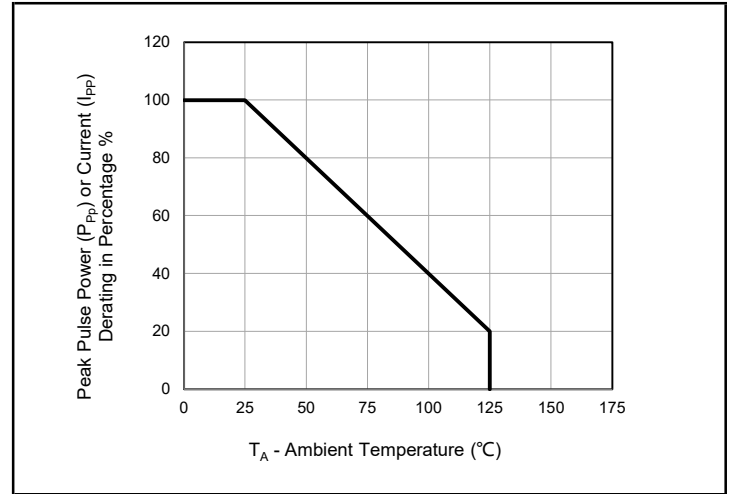


Fig.3 - 8/20us Pulse Waveform

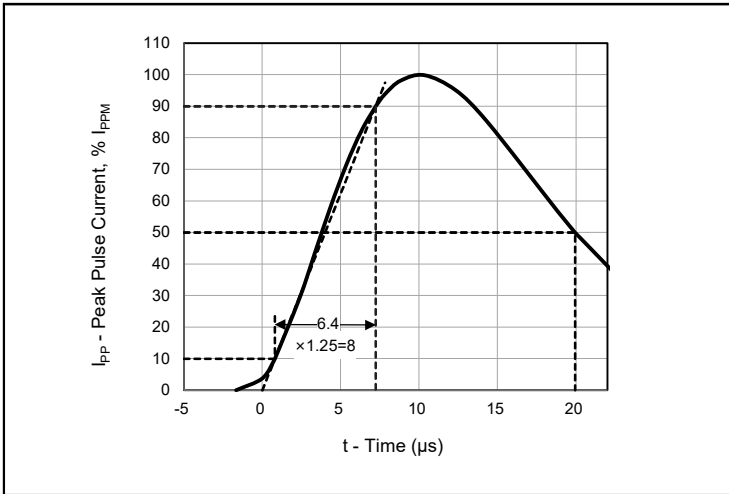


Fig.4 - Typical Clamping Voltage

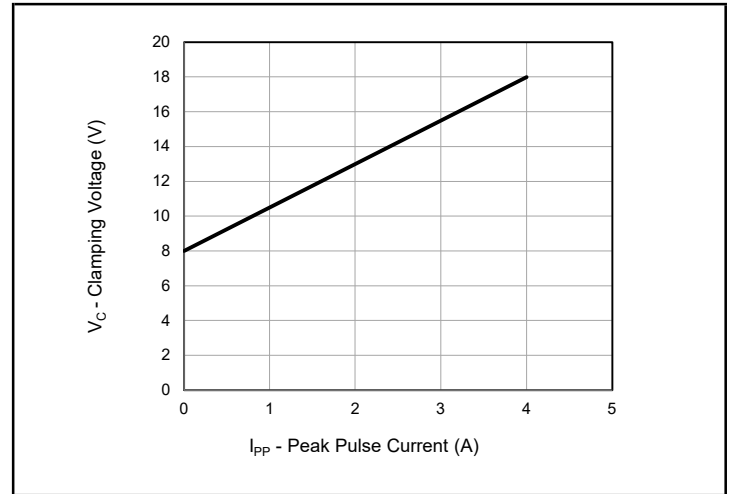


Fig.5 - ESD Pulse Waveform (IEC61000-4-2)

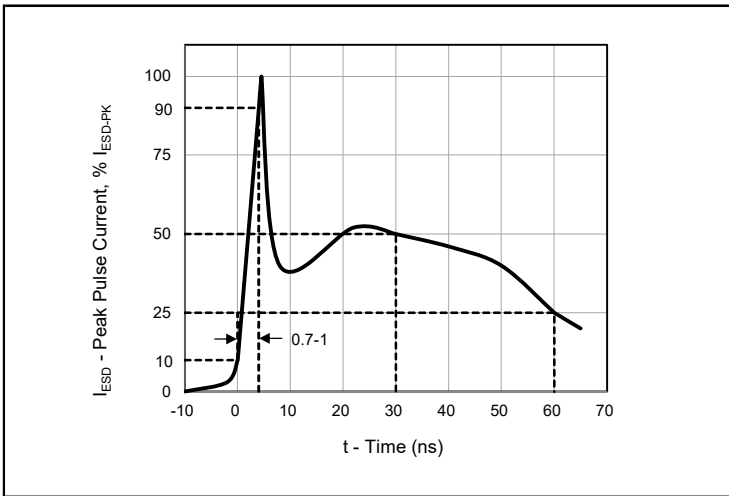
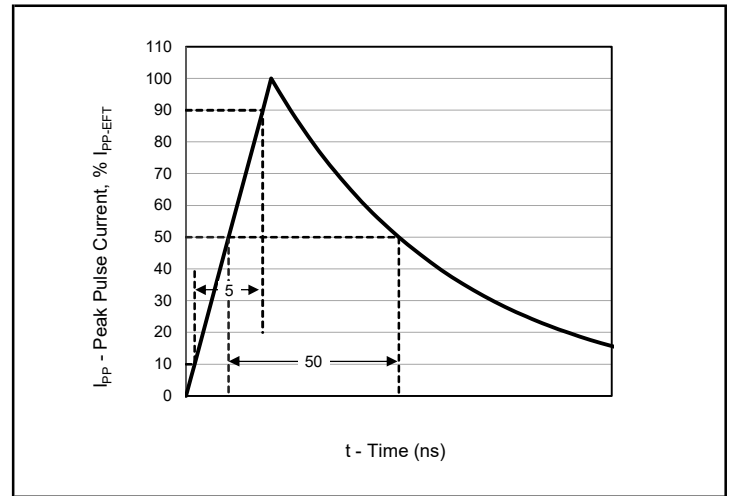
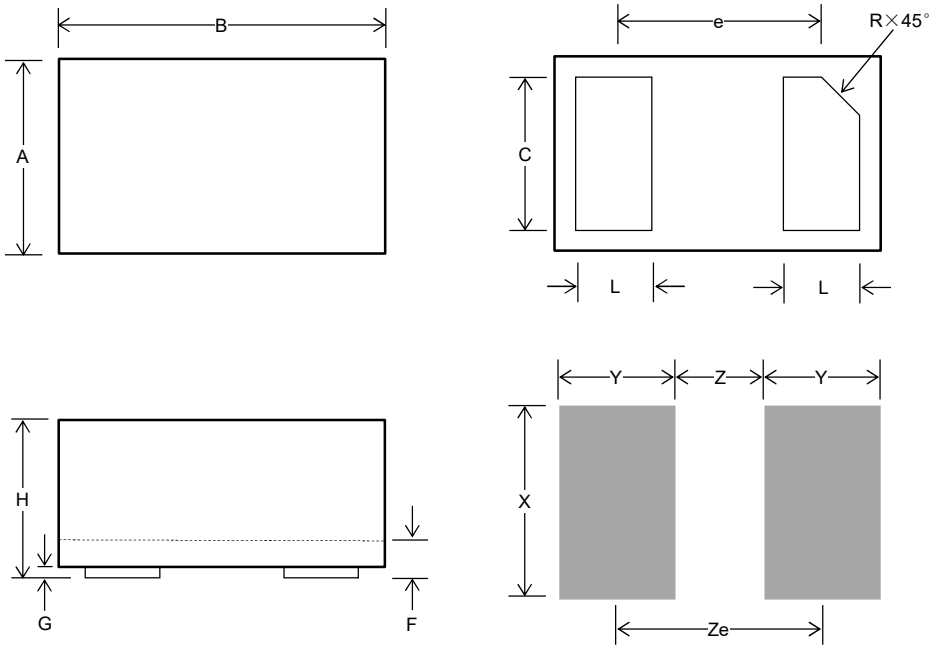


Fig.6 - 5/50ns EFT Waveform (IEC61000-4-4)



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
EPDFN60521	DFN1006	10000 PCS/Reel	Tape and Reel