

ULTRA LOW CAPACITANCE BIDIRECTIONAL TVS DIODE

Features:

- Ultra low leakage: nA level
- Operating voltage: 1V
- Low clamping voltage
- Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: $\pm 22\text{kV}$
 - Contact discharge: $\pm 20\text{kV}$
 - IEC61000-4-4 (EFT) 40A (5/50ns)
 - IEC61000-4-5 (Lightning) 6A (8/20 μs)
- RoHS Compliant

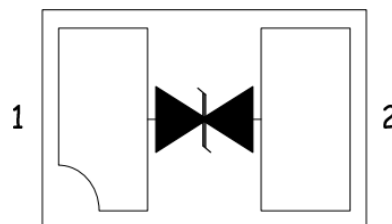
Dimensions DFN1006



Applications:

- USB Ports
- SIM Ports
- Smart Phones
- Wireless Systems
- Set-top box and digital TV
- Digital video interface (DVI)
- Ethernet 10/100/1000 Base T

Pin Configuration



Mechanical Characteristics

- Package: DFN1006
- Lead Finish: Lead Free
- UL Flammability Classification Rating 94V-0
- Quantity Per Reel: 10,000pcs
- Reel Size: 7 inch
- Device Marking: 1TE

Absolute Maximum Ratings (T_{amb}=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	P _{pp}	36	W
ESD per IEC 61000-4-2 (Air)	V _{ESD}	± 22	kV
ESD per IEC 61000-4-2 (Contact)		± 20	
Operating Temperature Range	T _J	-55 to +125	°C
Storage Temperature Range	T _{STJ}	-55 to +125	°C

Electrical Characteristics (TA=25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}		-1		1	V
Breakdown Voltage	V_{BR}	$I_T = 1\text{mA}$	4			V
Reverse Leakage Current	I_R	$V_{RWM} = 1\text{V}$			0.05	μA
Clamping Voltage	V_C	$I_{PP} = 6\text{A}$ (8 x 20 μs pulse)			6	V
Junction Capacitance	C_J	$V_R = 0\text{V}$, $f = 1\text{MHz}$		0.65	0.8	pF

Electrical Parameters (TA=25°C unless otherwise specified)

V_{RWM} Reverse Working Voltage Max.

I_R Maximum Reverse Leakage Current @ V_{RWM}

V_T Trigger Voltage

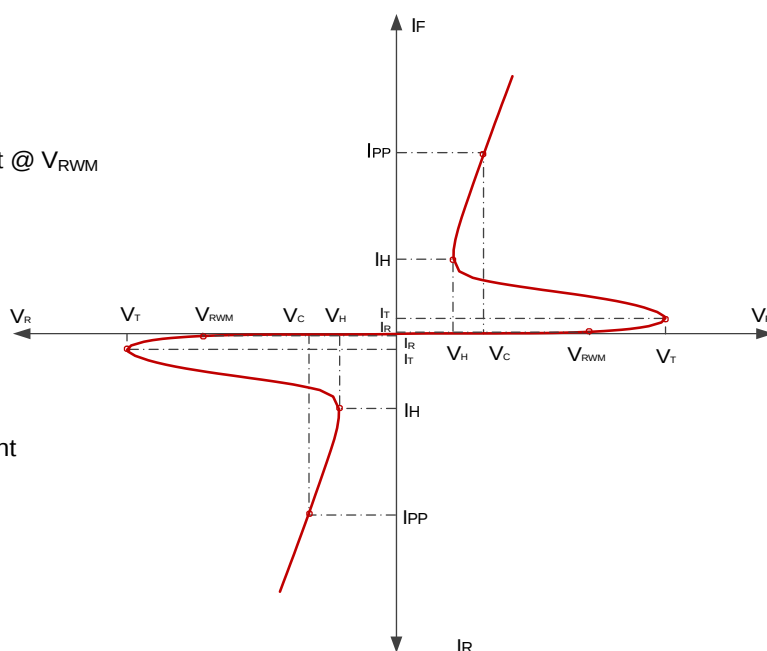
V_H Holding Voltage

I_H Holding Current

V_{BR} Reverse Breakdown Voltage

I_{PP} Maximum Reverse Peak Pulse Current

V_C Clamping Voltage @ I_{PP}



Note1: 8/20 μs pulse waveform.

Typical Performance Characteristics(TA=25°C unless otherwise specified)

Figure3: 8/20μs pulse waveform according to IEC61000-45

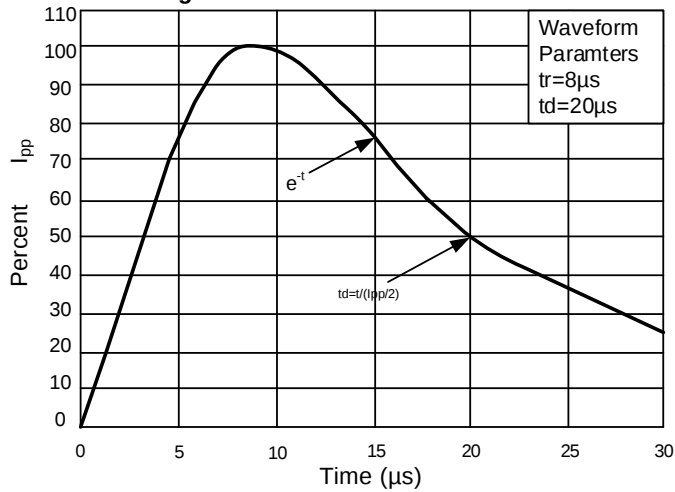


Figure2: ESD pulse waveform according to IEC 61000-4-2

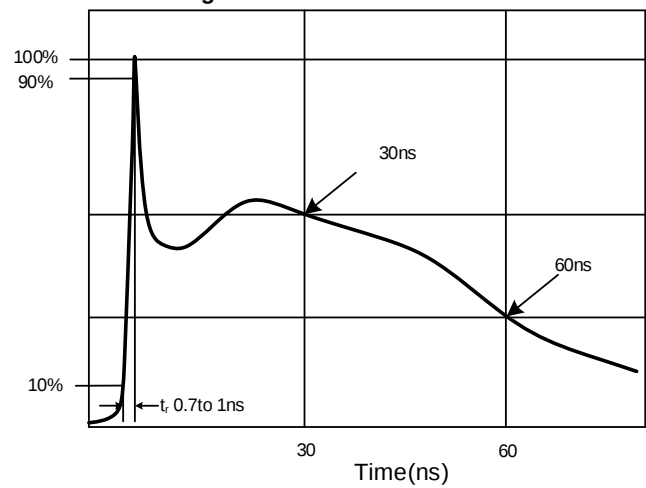


Figure3: Power Derating Curve

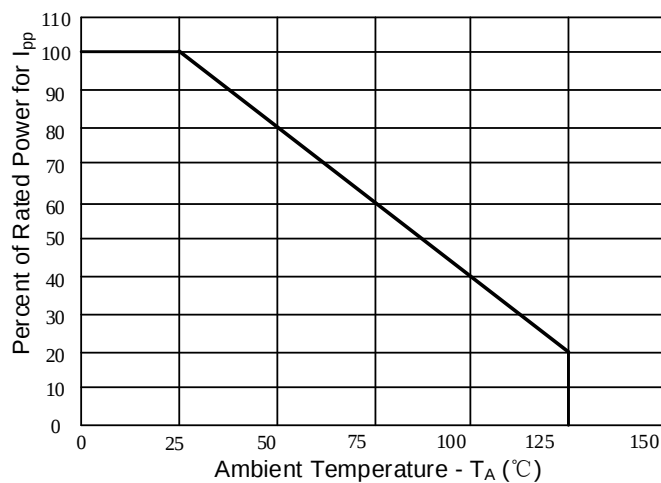
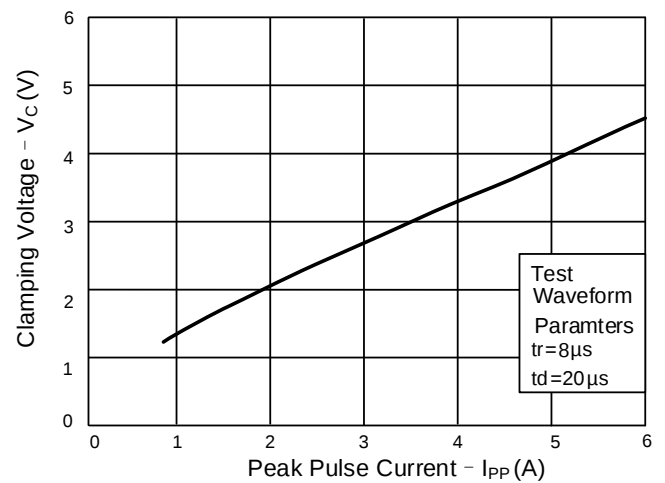
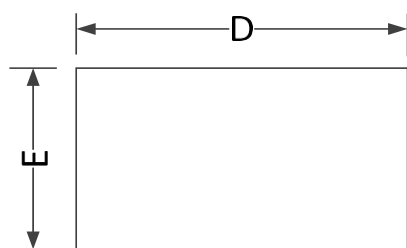


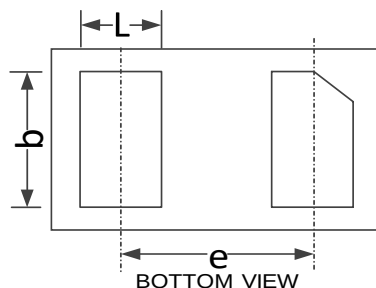
Figure 4: Clamping Voltage vs. Ipp



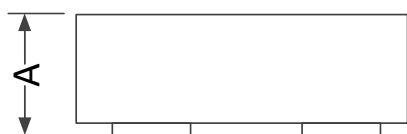
DFN1006Package Outline Drawing



TOP VIEW



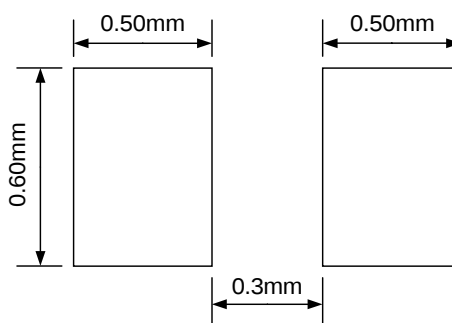
BOTTOM VIEW



SIDE VIEW

COMMON DIMENSION (MM)			
PKG	DFN1006		
REF.	MIN.	NOM.	MAX.
A	0.40		0.55
b	0.45	0.50	0.55
D	0.95	1.00	1.05
e	0.65BSC		
E	0.55	0.60	0.65
L	0.20	0.25	0.30

Suggested Land Pattern



* This Land Pattern is For Reference Purposes Only