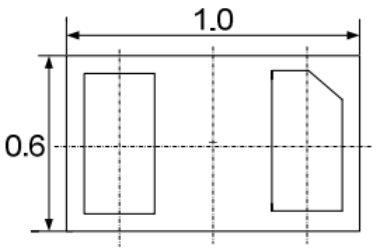
1-Line Ultra Low Capacitance Bi-directional TVS Diode

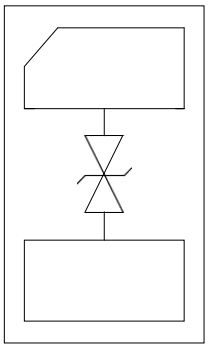
Features:

- Ultra small package: 1.0x0.6x0.5mm
- Protects one data or power line
- Ultra low leakage: nA level
- Operating voltage: 4.5V
- Low clamping voltage
- 2-pin leadless package
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test
    Air discharge: ±30kV
    Contact discharge: ±30kV
  - IEC61000-4-5 (Lightning) 45A (8/20μs)
- RoHS Compliant

DFN1006



Pin Configuration



Applications:

- Cellular Handsets and Accessories
- Personal Digital Assistants
- Notebooks and Handhelds
- Portable Instrumentation
- Digital Cameras
- Peripherals
- Keypads, Side Keys, LCD Displays

Mechanical Characteristics

- Package: DFN1006
- Lead Finish: NiPdAu
- Case Material: “Green” Molding Compound.
- Moisture Sensitivity: Level 3 per J-STD-020
- Quantity Per Reel: 10,000pcs
- Reel Size: 7 inch
- Device Marking: 24M

Absolute Maximum Ratings(Tamb=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppp	500	W
ESD per IEC 61000−4−2 (Air)	V_{ESD}	±30	Kv
ESD per IEC 61000−4−2 (Contact)		±30	
Operating Temperature Range	T_J	-55 to +125	℃
Storage Temperature Range	T_{STJ}	-55 to +150	℃

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

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
VRWM	Reverse Working Peak Voltage				4.5	V
VBR	Reverse Breakdown Voltage	IT = 1mA	4.8			V
IR	Reverse Leakage Current	VRWM = 4.5V			0.1	μA
VC	Clamping Voltage	IPP = 1 A (8/20μs)			6	V
VC	Clamping Voltage	IPP = 45 A (8/20μs)			11	V
CJ	Capacitance	VR = 0V, f = 1MHz			100	pF

Typical Performance Characteristics (T_A=25°C unless otherwise Specified)

Figure 1: Peak Pulse Power Vs Pulse Time

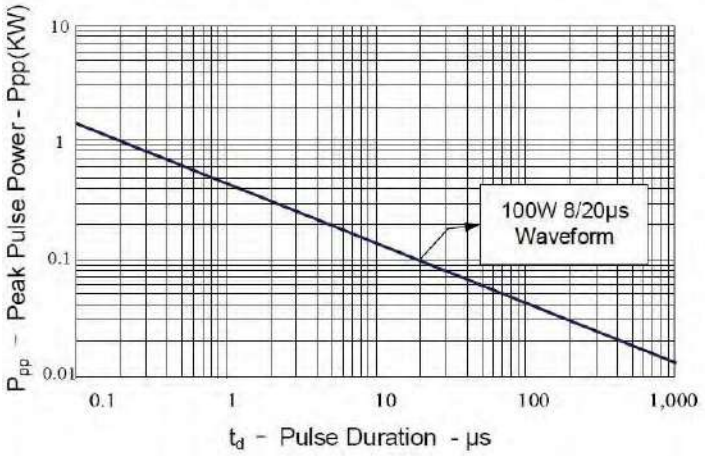


Figure 2: Power Derating Curve

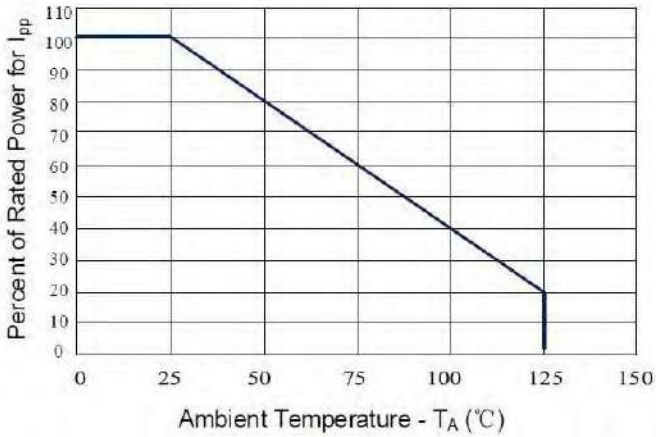


Figure 3: Clamping Voltage vs. Peak Pulse Current

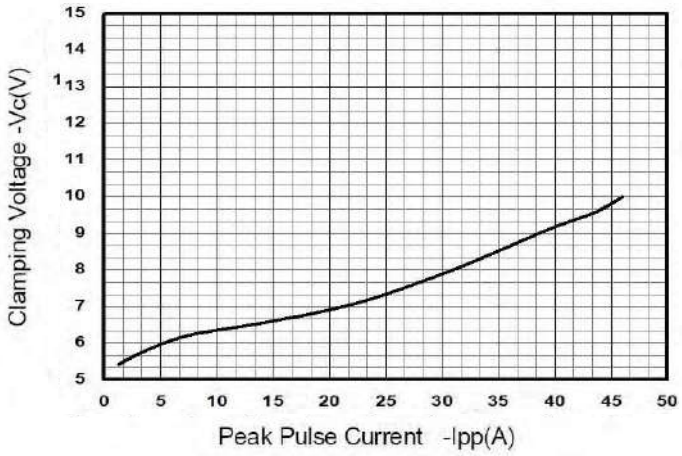


Figure 4: Normalized Junction Capacitance vs. Reverse Voltage

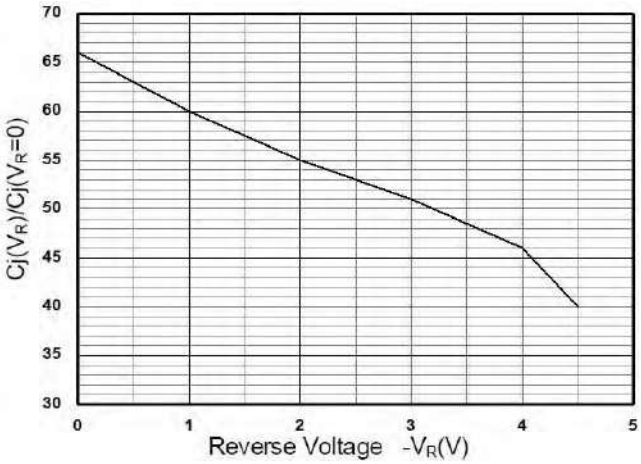


Figure 5: Pulse Waveform

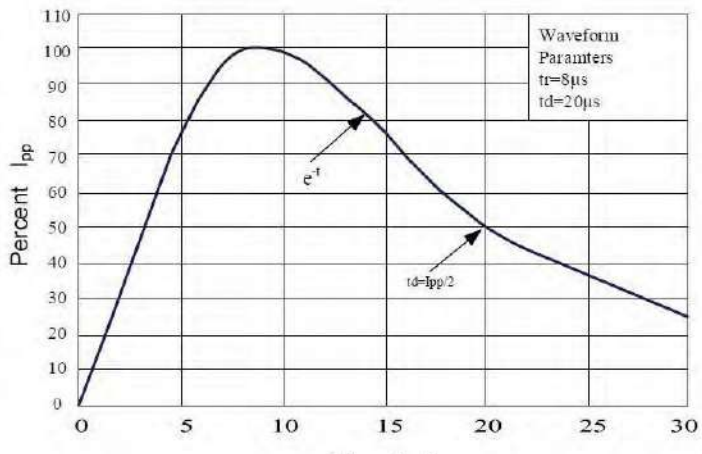
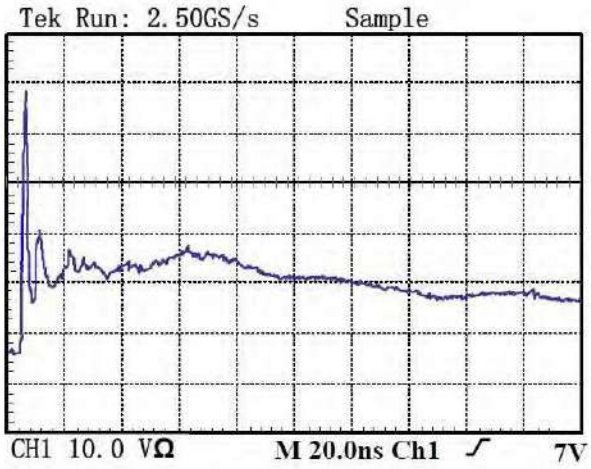
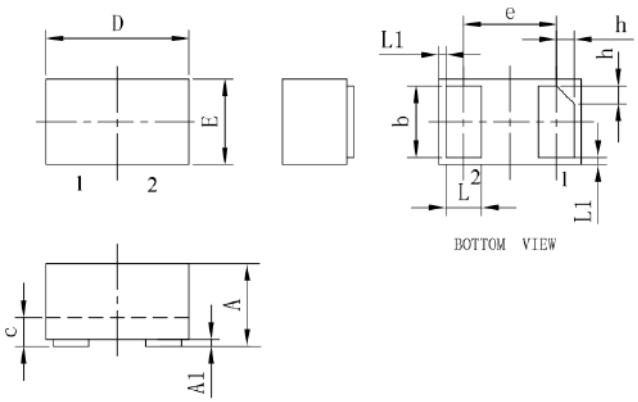


Figure 6: ESD Clamping(8kV Contact per IEC 61000-4-2)

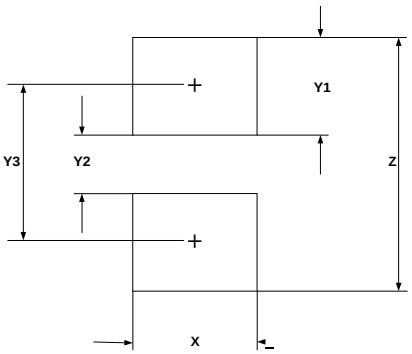


DFN1006 Package Outline Drawing



SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.45	0.50	0.55	0.018	0.020	0.022
A1	0.00	0.02	0.05	0.000	0.001	0.002
b	0.45	0.50	0.55	0.018	0.020	0.022
c	0.12	0.15	0.18	0.005	0.006	0.007
D	0.95	1.00	1.05	0.037	0.039	0.041
e	0.65 BSC			0.026 BSC		
E	0.55	0.60	0.65	0.022	0.024	0.026
L	0.20	0.25	0.30	0.008	0.010	0.012
L1	0.05REF			0.002REF		
h	0.07	0.12	0.17	0.003	0.005	0.007

Suggested Land Pattern



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
X	0.60	0.024
Y1	0.50	0.020
Y2	0.30	0.012
Y3	0.80	0.032
Z	1.30	0.052