

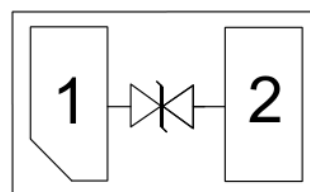
### Features

- Ultra small package: 1.0x0.6x0.5mm
- Protects one power line
- Ultra low leakage: nA level
- Low clamping voltage
- 2-pin leadless package
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test
    - Air discharge:  $\pm 30\text{kV}$
    - Contact discharge:  $\pm 30\text{kV}$
  - IEC61000-4-5 (Lightning) 100A (8/20 $\mu\text{s}$ )
- RoHS Compliant

### Dimensions DFN1006



### Pin Configuration



### Applications

- Mobile Phones
- Battery Protection
- Power Line Protection
- Vbat pin for Mobile Devices
- Hand Held Portable Applications

### Mechanical Characteristics

- Package: DFN1006
- Lead Finish: Lead Free
- UL Flammability Classification Rating 94V-0
- Quantity Per Reel: 10,000 pcs
- Reel Size: 7 inch
- Device Marking: V5

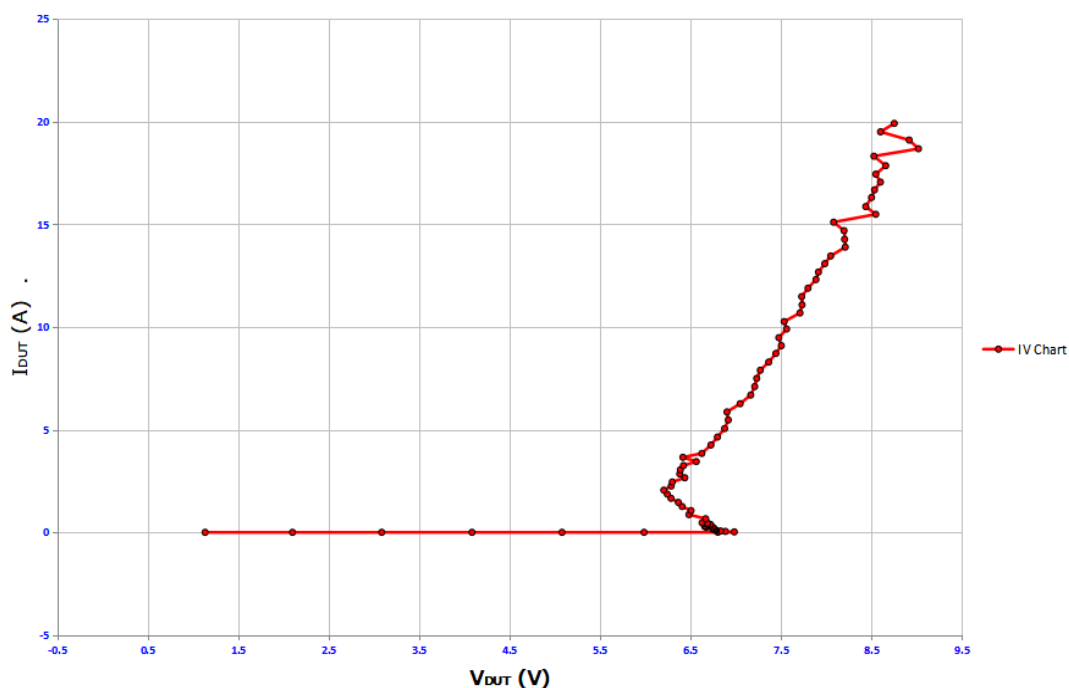
### Absolute Maximum Ratings (T<sub>amb</sub>=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 $\mu\text{s}$ )	Ppk	900	W
Peak Pulse Current (8/20 $\mu\text{s}$ )	IPP	100	A
ESD per IEC 61000-4-2 (Air)	VESD	$\pm 30$	kV
ESD per IEC 61000-4-2 (Contact)		$\pm 30$	
Operating Temperature Range	TJ	-55 to +125	°C
Storage Temperature Range	Tstg	-55 to +150	°C

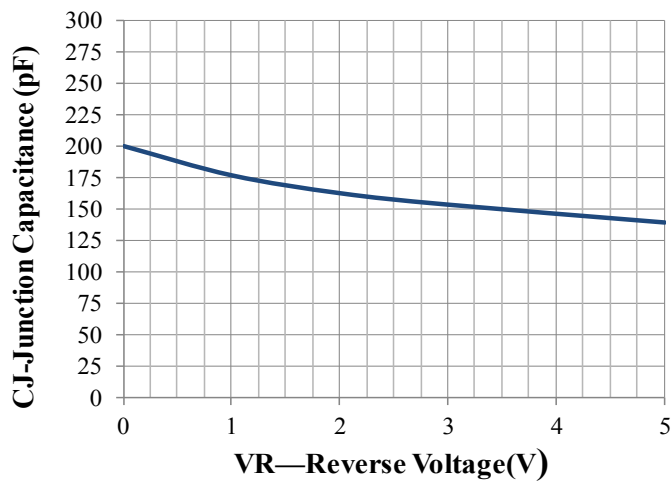
## Electrical Characteristics (TA=25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	$V_{RWM}$				5.0	V
Breakdown Voltage	$V_{BR}$	$I_T = 1\text{mA}$	5.5	6.3	7.5	V
Reverse Leakage Current	$I_R$	$V_{RWM} = 5.0\text{V}$			0.5	$\mu\text{A}$
Clamping Voltage	$V_C$	$I_{PP} = 50\text{A}$ (8 x 20 $\mu\text{s}$ pulse)		7.5	9.0	V
Clamping Voltage	$V_C$	$I_{PP} = 100\text{A}$ (8 x 20 $\mu\text{s}$ pulse)		9.0	10.5	V
Clamping Voltage	$V_C$	$I_{PP} = 4\text{A}$ (TLP)		6.7		V
Clamping Voltage	$V_C$	$I_{PP} = 16\text{A}$ (TLP)		8.5		V
Dynamic Resistance	$R_{DYN}$	TLP=0.2/100ns		0.015		$\Omega$
Junction Capacitance	$C_J$	$V_R = 0\text{V}$ , $f = 1\text{MHz}$		200	300	pF

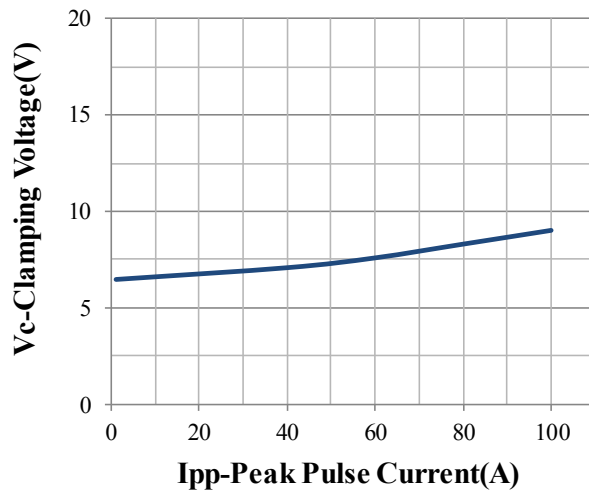
## TLP Waveform



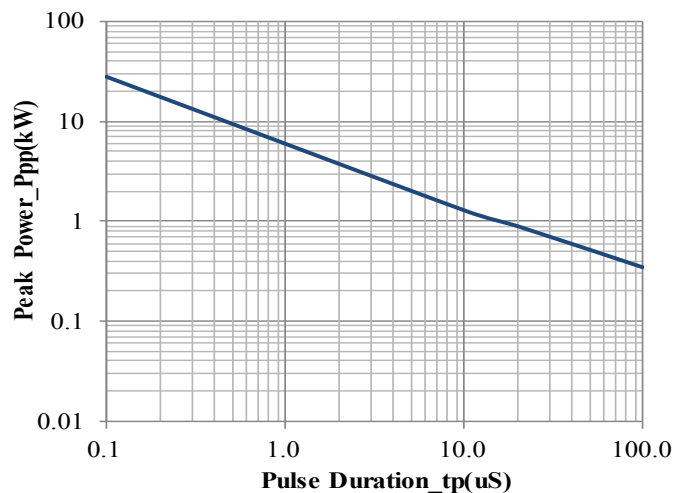
## Typical Performance Characteristics ( $T_A=25^{\circ}\text{C}$ unless otherwise Specified)



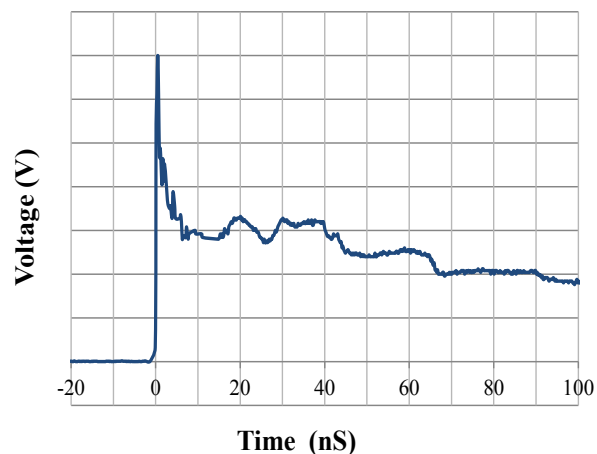
Junction Capacitance vs. Reverse Voltage



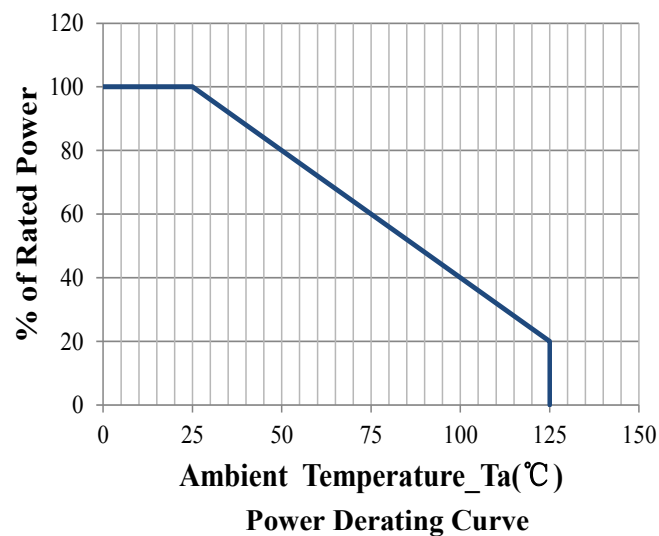
Clamping Voltage vs. Peak Pulse Current



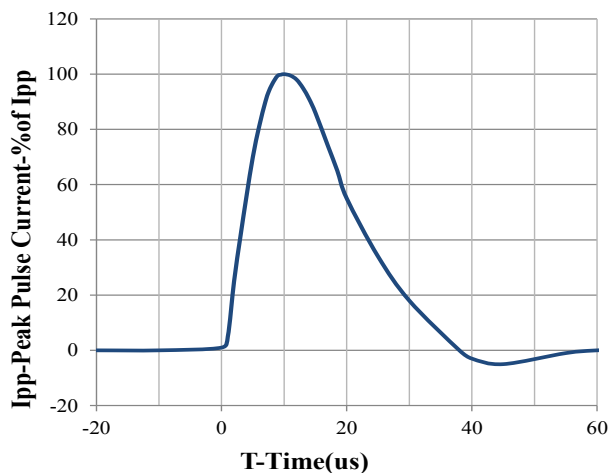
Peak Pulse Power vs. Pulse Time



IEC61000-4-2 Pulse Waveform

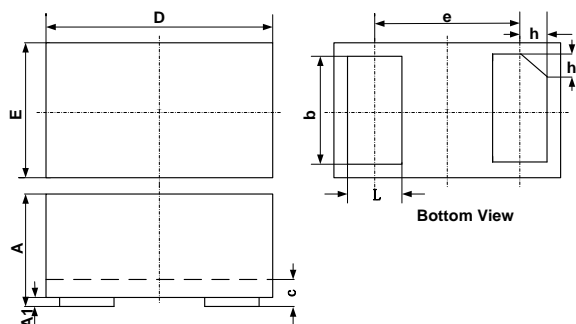


Power Derating Curve



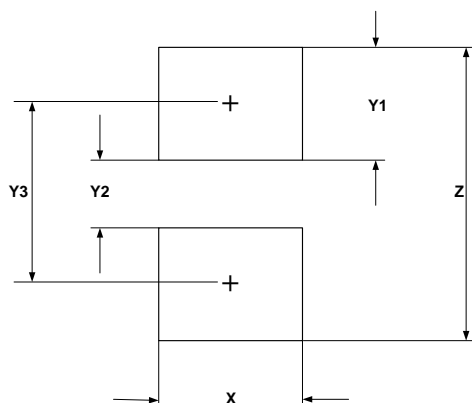
8 X 20us Pulse Waveform

## DFN1006 PACKAGE OUTLINE & DIMENSIONS



SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.40	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
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