

Features

- 150 Watts Peak Pulse Power per Line ($t_p=8/20 \mu s$)
- Protects One Bidirectional I/O Lines
- Low Clamping Voltage
- RoHS Compliant
- IEC61000-4-2 (ESD) $\pm 30kV$ (air), $\pm 30kV$ (contact)
- IEC61000-4-4 (EFT) 40A (5/50ns)
- IEC61000-4-5 (LIGHTING) 18A (8/20 μs)

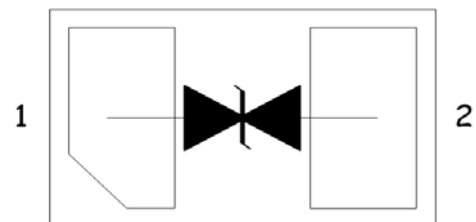
Dimensions DFN1006



Applications

- Cellular Handsets & Accessories
- Keypads, Side Keys, Audio Ports
- Portable Instrumentation'
- Notebooks, Desktops, and Servers
- Digital Lines
- Tablet PC

Pin Configuration



Mechanical Characteristics

- DFN1006 Package
- Molding Compound Flammability Rating : UL 94V-O
- Weight 0.5 Milligrams (Approximate)
- Reel Size : 7 inch
- Lead Finish : Lead Free

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

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	P _{pp}	150	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 +150	°C
Storage Temperature Range	T _{STJ}	-55 to +150	°C

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

Part Number	Device Marking	V _{RWM} (V)	V _{BR} (V)	I _T (mA)	V _C @1A	V _C		I _R μA (Max)	C (Pf) (Typ.)
						(Max)	(@A)		
ESD1811CDN	TD	1.8	2.3	1	3.6	8.5	18	0.1	25

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

Figure 1. 8 x 20 μs Waveform

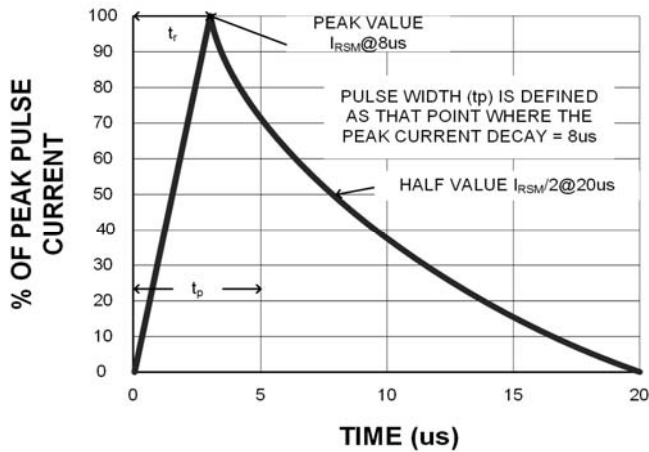


Figure 2. Power Derating Curve

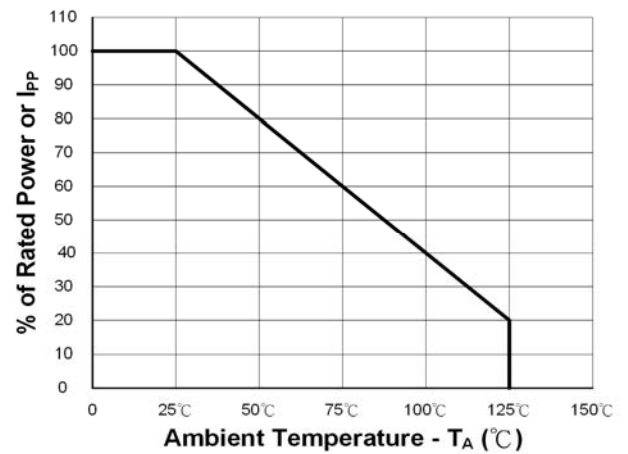
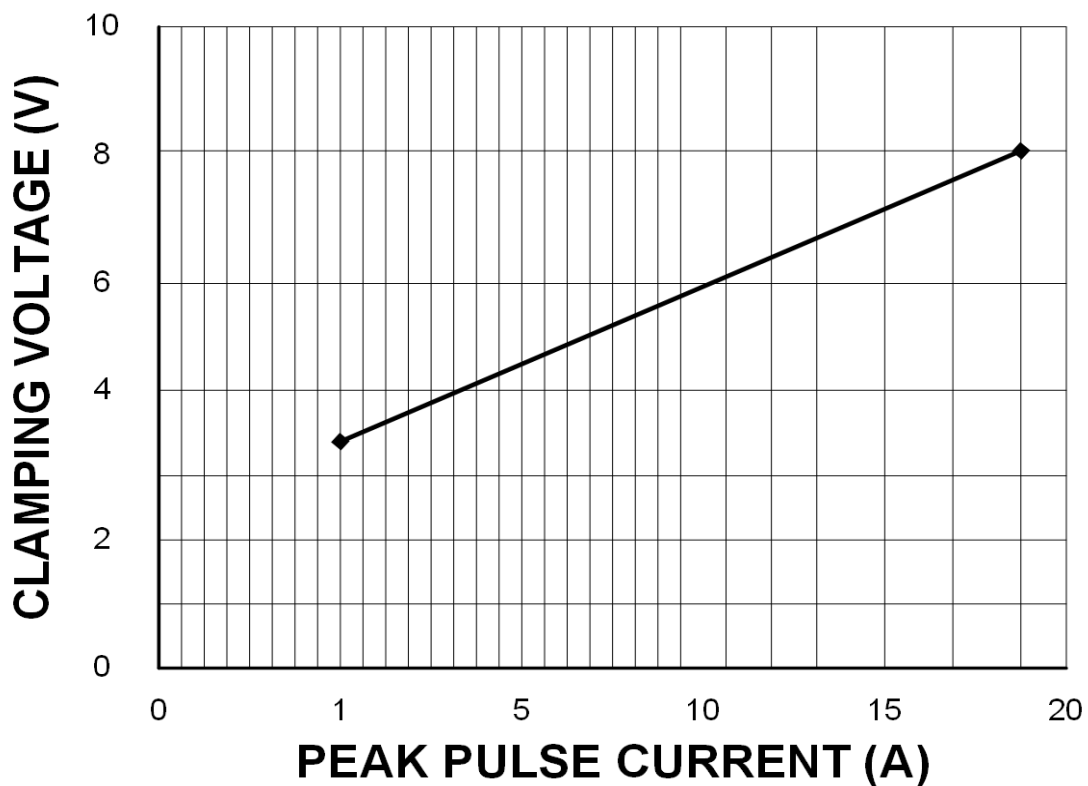


Figure 3. Clamping Voltage vs. Peak Pulse Current ($t_p=8/20 \mu\text{s}$)



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

Figure 4. Typic Breakdown Voltage vs. Temperature

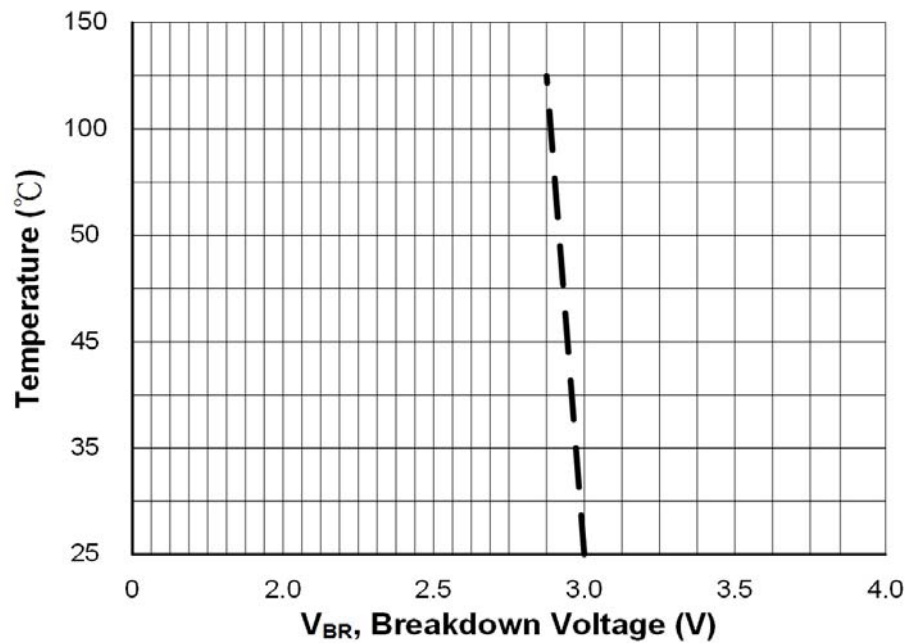
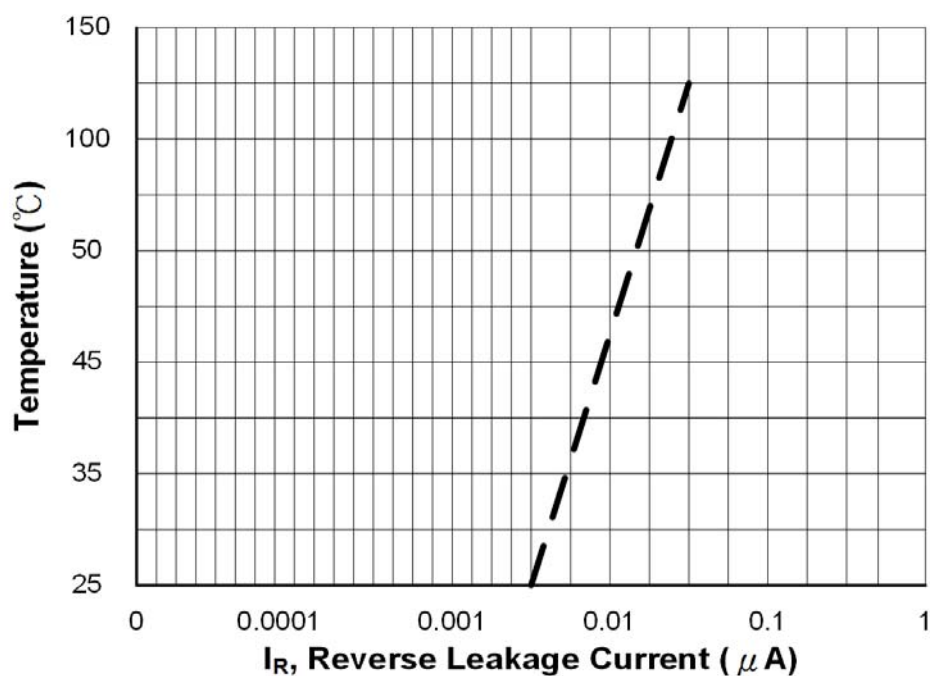
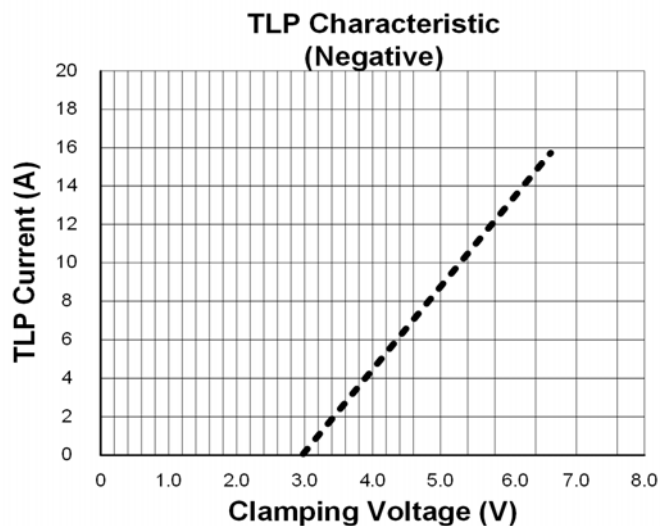
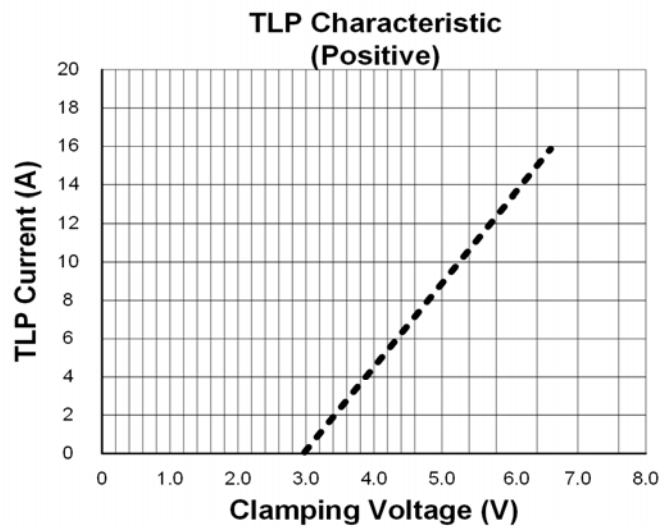


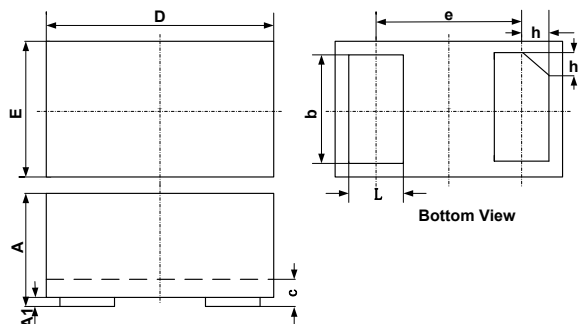
Figure 5. Typic Reverse Leakage vs. Temperature



Transmission Line Pulse (TLP) is a measurement technique used in the Electrostatic Discharge (ESD) arena to characterize performance attributes of devices under ESD stresses. TLP is able to obtain current versus voltage (I–V) curves in which each data point is obtained with a 100 ns long pulse, with currents up to 40 A. TLP was first used in the ESD field to study human body model (HBM) in integrated circuits, but it is an equally valid tool in the field of system level ESD. The applicability of TLP to system level ESD is illustrated in Figure 1, which compares an 8 kV IEC 61000–4–2 current waveform with TLP current pulses of 8 and 16 A. The current levels and time duration for the pulses are similar and the initial rise time for the TLP pulse is comparable to the rise time of the IEC 61000–4–2’s initial current spike. This application note will give a basic introduction to TLP measurements and explain the datasheet parameters extracted from TLP for SDI Technology’s protection products.

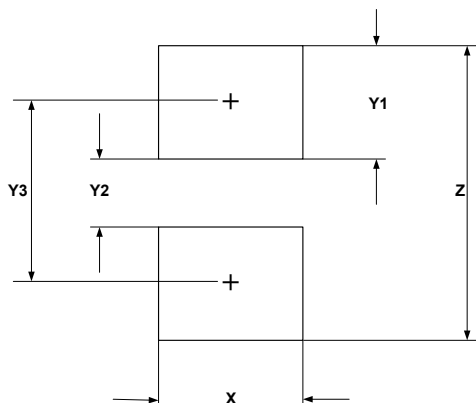


DFN1006 PACKAGE OUTLINE & DIMENSIONS



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
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