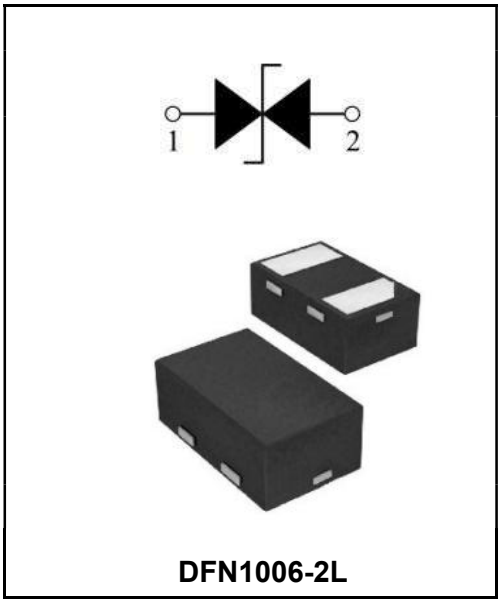
TVS/ESD Protection Diode



DFN1006-2L

Description

ESD0801PB is a low-capacitance Transient Voltage Suppressor (TVS) designed to provide electrostatic discharge (ESD) protection for data, control or power line. With maximum capacitance of 15pF, ESD0801PB is designed to protect parasitic-sensitive systems against over-voltage and over-current transient events. It complies with IEC 61000-4-2 (ESD), Level 4 (±15kV air, ±8kV contact discharge), IEC 61000-4-4 (electrical fast transient - EFT) (40A, 5/50 ns), very fast charged device model (CDM) ESD and cable discharge event (CDE), etc.

ESD0801PB uses ultra-small DFN1006 package. Each ESD0801PB device can protect one data line. It offers system designers flexibility to protect single data line where space is a premium concern.

Features

- Transient protection for high-speed data lines
  IEC 61000-4-2 (ESD) ±15kV (Air)
  ±8kV (Contact)
  IEC 61000-4-4 (EFT) 40A (5/50 ns)
  Cable Discharge Event (CDE)
- Package optimized for high-speed lines
- Ultra-small package (1.0mm×0.6mm×0.4mm)
- Protects one data, control or power line
- Low capacitance
- Low leakage current
- Low clamping voltage
- Each I/O pin can withstand over 1000 ESD strikes for ±8kV contact discharge

Application

- Portable Electronics
- Desktops, Servers and Notebooks
- Cellular Phones
- MP3 Ports
- Digital Ports
- Subscriber Identity Module (SIM) card

Absolute maximum ratings

Symbol	Parameter	Value	Units
P_{PP}	Peak Pulse Power (8/20μs)	60	W
V_{ESD}	ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	±25 ±20	kV
T_j	Operating Temperature	-55/+125	°C
T_{STG}	Storage Temperature	-55/+150	°C

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

Symbol	Parameter	Test Condition	Min	Typ	Max	Units
$\mathbf{V_{RWM}}$	Reverse Stand-Off Voltage				5.0	V
$\mathbf{V_{BR}}$	Reverse Breakdown voltage	I_T=1mA	5.6			V
$\mathbf{I_R}$	Reverse leakage current.	V_{RWM}=5V			1	μA
$\mathbf{I_{PP}}$	Peak Pulse Current	t_P=8/20us			4	A
$\mathbf{V_C}$	Clamping Voltage	I_{PP}=1A, t_P=8/20us I_{PP}=4A, t_P=8/20us			9.5 15	V
$\mathbf{C_J}$	Junction Capacitance	V_R=0V,f=1MHz			15	pF

Typical Characteristics

Figure 1: Peak Pulse Power Vs Pulse Time

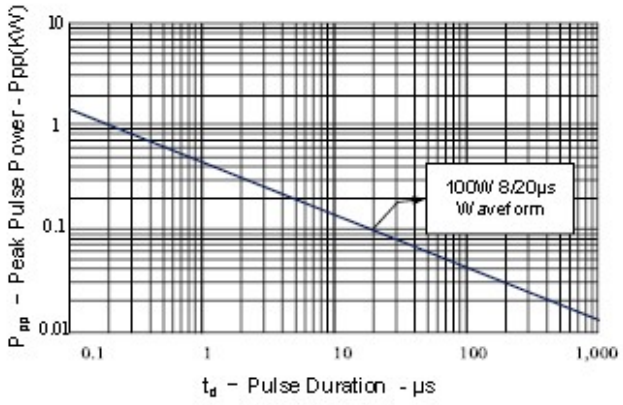


Figure 2: Power Derating Curve

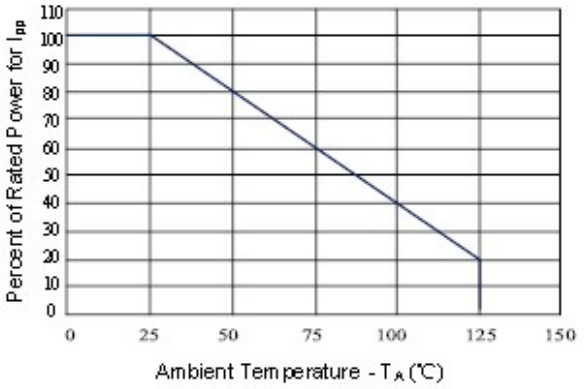


Figure 3: Clamping Voltage vs. Peak Pulse Current

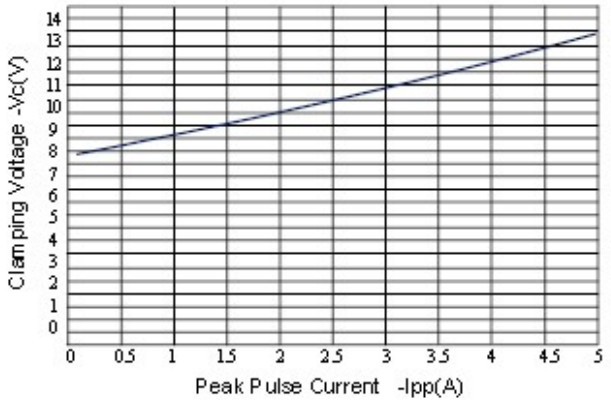


Figure 4: Normalized Junction Capacitance vs. Reverse Voltage

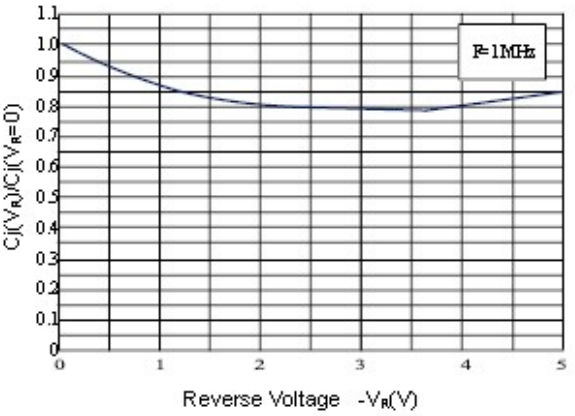


Figure 5: Pulse Waveform

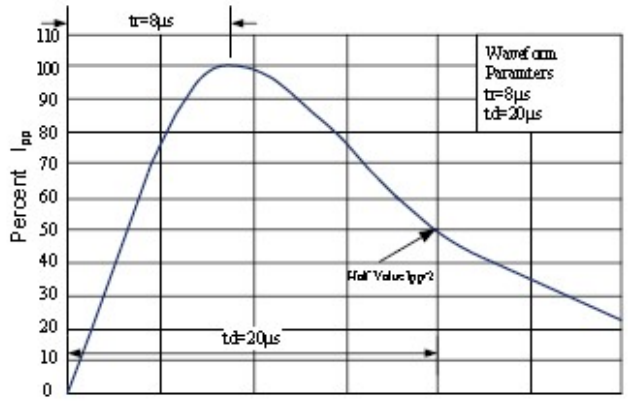
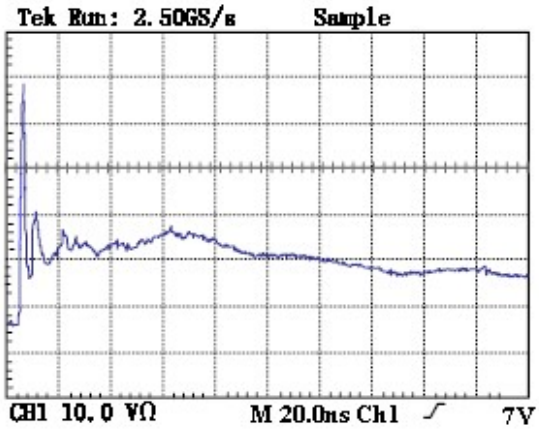


Figure 6: ESD Clamping(8kV Contact per IEC 61000-4-2)

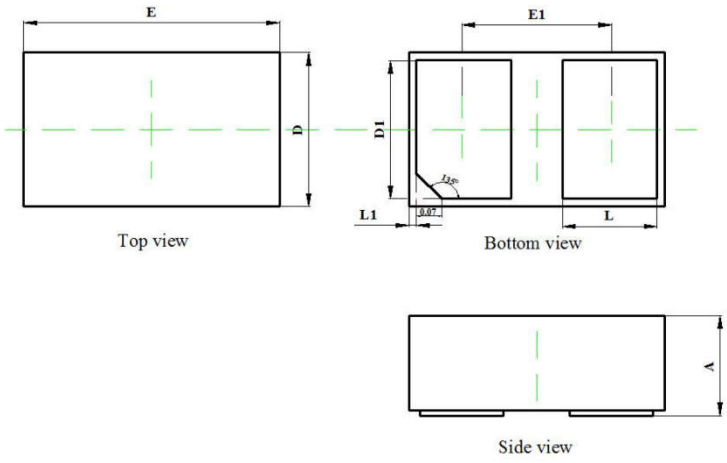


Ordering information

Package	Packing Description	Packing Quantity
DFN1006-2L	Tape/Reel,7”reel	10000PCS/Reel 400000PCS/Carton

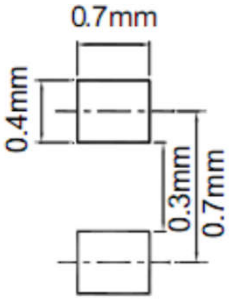
Package Dimensions

DFN1006-2L



Dim.	Millimeter(mm)		Inches	
	Min.	Max.	Min.	Max.
A	0.350	0.450	0.014	0.018
D	0.550	0.650	0.022	0.026
E	0.950	1.050	0.037	0.041
D1	0.420	0.520	0.017	0.020
E1	0.550	0.650	0.022	0.026
L	0.270	0.370	0.011	0.015
L1	-	0.100	-	0.004

The recommended mounting pad size



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