

Features

- ◆ Transient protection for data lines to **IEC 61000-4-2 (ESD) $\pm 25\text{kV}$ (air), $\pm 25\text{kV}$ (contact)**
IEC 61000-4-4 (EFT) 40A (tp = 5/50ns)
Cable Discharge Event (CDE)
- ◆ Ultra-small package (1.0 x 0.6 x 0.5mm)
- ◆ Protects one data or I/O line
- ◆ Low capacitance: **0.3pF**
- ◆ Low clamping voltage
- ◆ Low operating voltage: 3.3V
- ◆ Solid-state silicon-avalanche technology

Mechanical Characteristics

- ◆ Package: DFN1006-2
- ◆ Lead Finish: Matte Tin
- ◆ UL Flammability Classification Rating 94V-0
- ◆ Pb-Free, Halogen Free, RoHS/WEEE Compliant



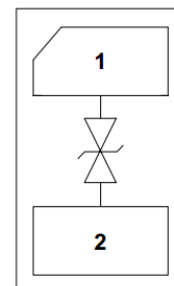
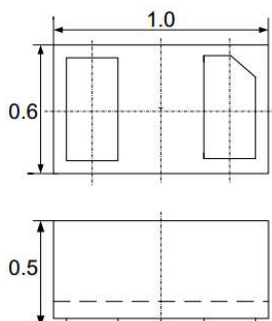
Applications

- ◆ Cellular Handsets & Accessories
- ◆ Digital Visual Interface (DVI)
- ◆ Display Port
- ◆ MDDI Ports
- ◆ USB Ports
- ◆ PCI Express
- ◆ Serial ATA

Ordering Information

Part Number	Qty per Reel	Reel Size
TPD1E1B04DPYR-TP	10000	7"

Circuit Diagram and Pin Configuration

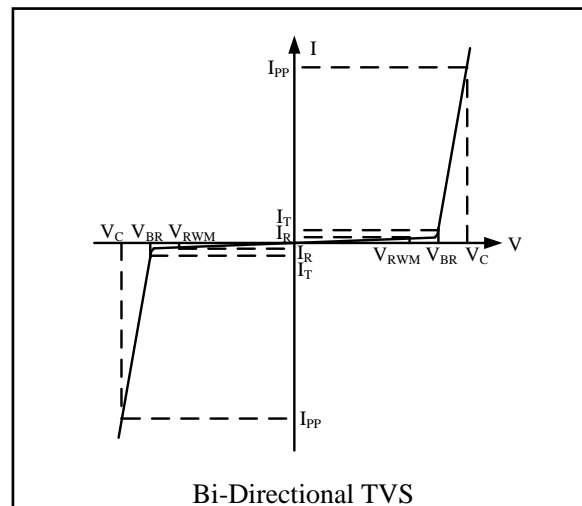


Absolute Maximum Ratings (T_A=25°C unless otherwise specified)

Parameter	Symbol	Limits	unit
IEC61000-4-2(ESD) Contact Air	V _{ESD}	±25 ±25	KV
Peak Pulse Power (8/20us)	P _{pk}	100	W
Peak Pulse Current (8/20us)	I _{pp}	4	A

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

Symbol	Parameter
V _{RWM}	Nominal Reverse Working Voltage
I _R	Reverse Leakage Current @ V _{RWM}
V _{BR}	Reverse Breakdown Voltage @ I _T
I _T	Test Current for Reverse Breakdown
V _C	Clamping Voltage @ I _{pp}
I _{pp}	Maximum Peak Pulse Current
C _{ESD}	Parasitic Capacitance
V _R	Reverse Voltage
f	Small Signal Frequency



Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	VRWM			3.3	V	
Breakdown Voltage	VBR	5			V	I _T = 1mA
Reverse Leakage Current	I _R			0.2	uA	VRWM = 3.3V
Clamping Voltage	V _C			10	V	I _{pp} = 1A (8 x 20μs pulse)
Clamping Voltage	V _C			25	V	I _{pp} = 4A (8 x 20μs pulse)
Junction Capacitance	C _J		0.35	0.5	pF	V _R = 0V, f = 1MHz

PROTECTION PRODUCTS
Typical characteristics

Fig1. 8/20 μ s Pulse Waveform

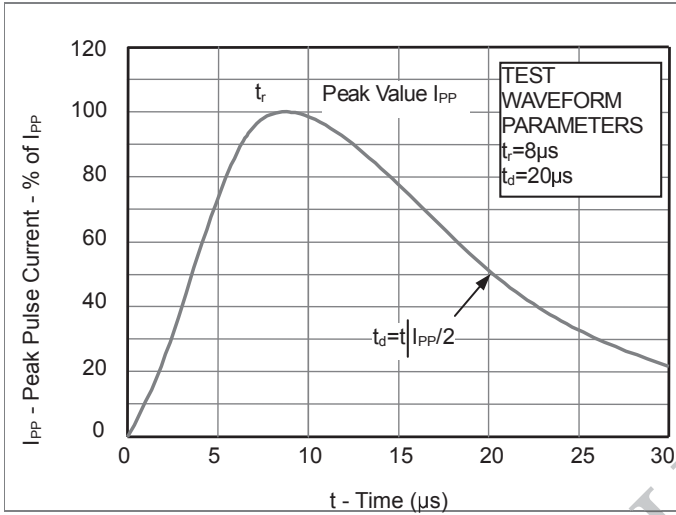


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

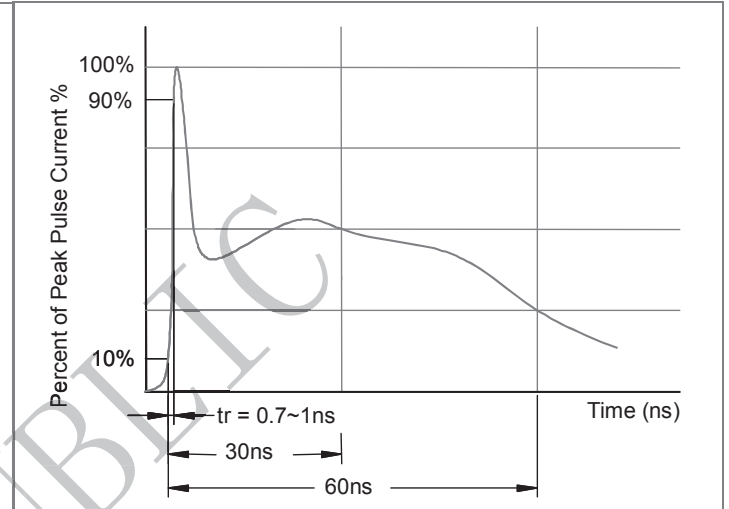
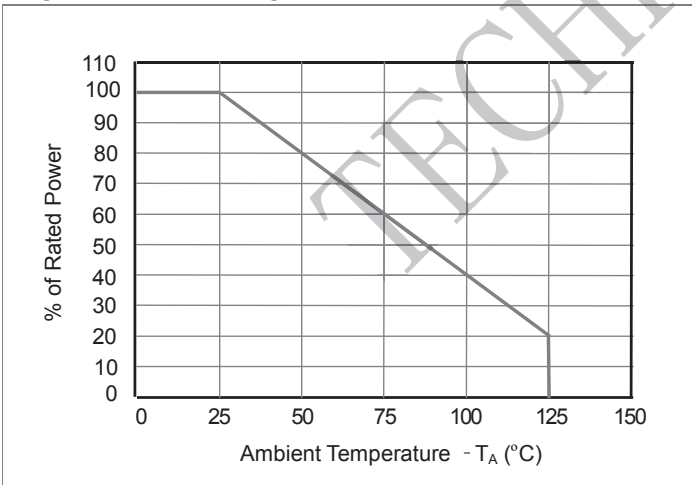
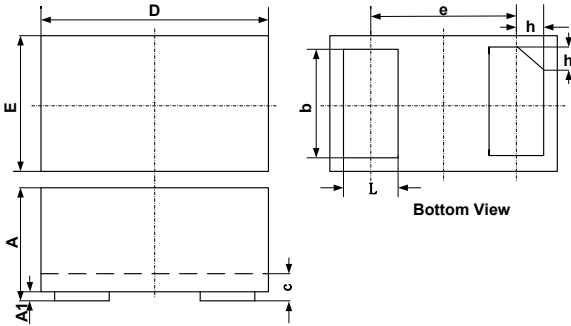


Fig3. Power Derating Curve

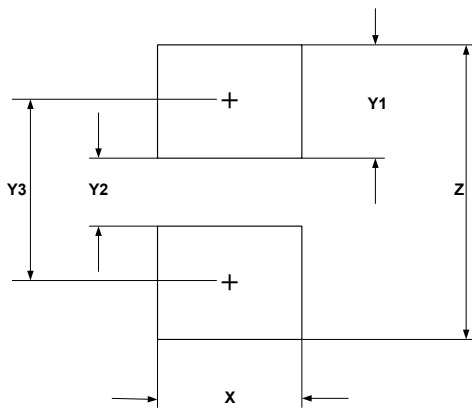


Outline Drawing - DFN1006-2



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

Land Pattern - DFN1006-2



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