

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 ($t_p = 5/50\text{ns}$)
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

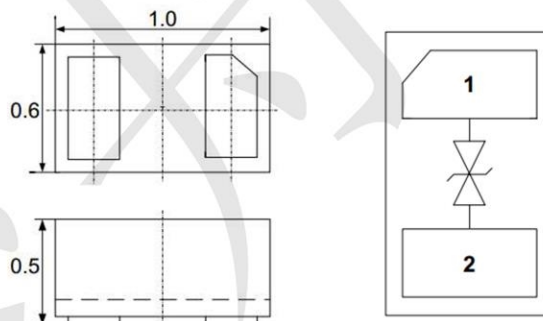
Applications

- ◆ 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"

Dimensions and Pin Configuration



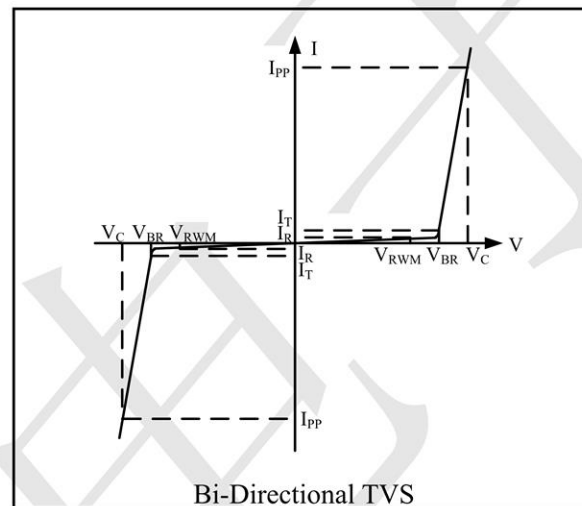
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Absolute Maximum Ratings ($T_A=25^\circ\text{C}$ unless otherwise specified)

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 ($T_A=25^\circ\text{C}$ 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	V_{RWM}			3.3	V	
Breakdown Voltage	V_{BR}	5			V	$I_{\text{T}} = 1\text{mA}$
Reverse Leakage Current	I_{R}			0.2	μA	$V_{\text{RWM}} = 3.3\text{V}$
Clamping Voltage	V_{C}			10	V	$I_{\text{PP}} = 1\text{A}$ (8 x 20 μs pulse)
Clamping Voltage	V_{C}			25	V	$I_{\text{PP}} = 4\text{A}$ (8 x 20 μs pulse)
Junction Capacitance	C_{J}		0.35	0.5	pF	$V_{\text{R}} = 0\text{V}$, $f = 1\text{MHz}$

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

Fig1. 8/20 μs Pulse Waveform

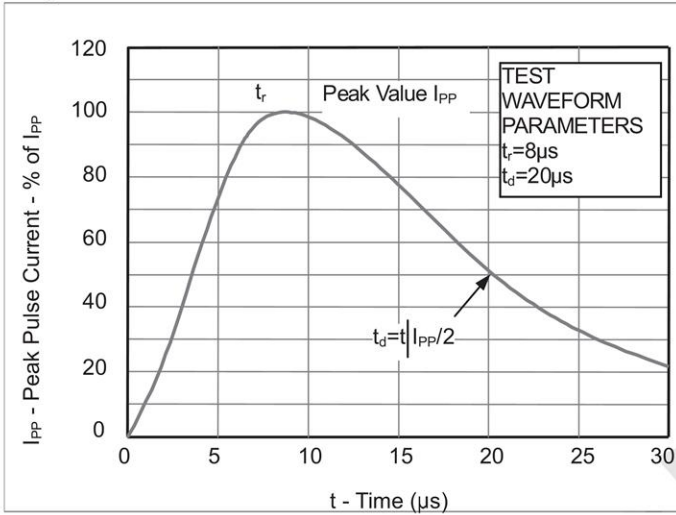


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

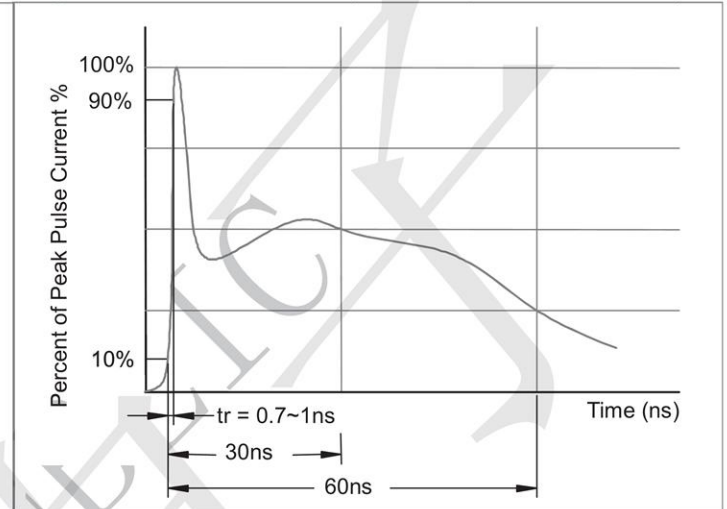
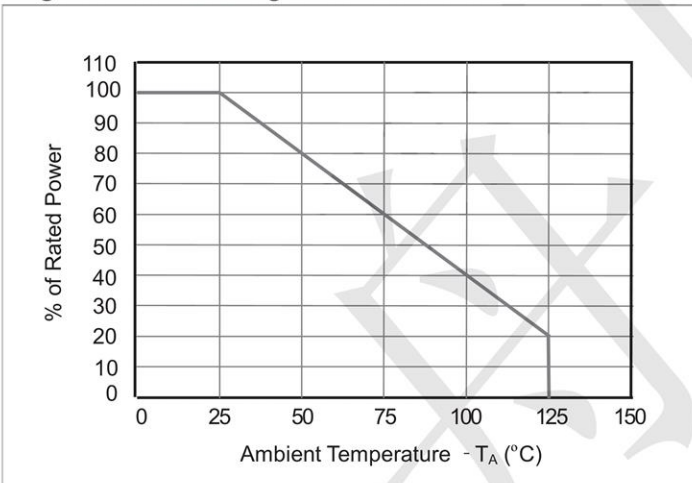
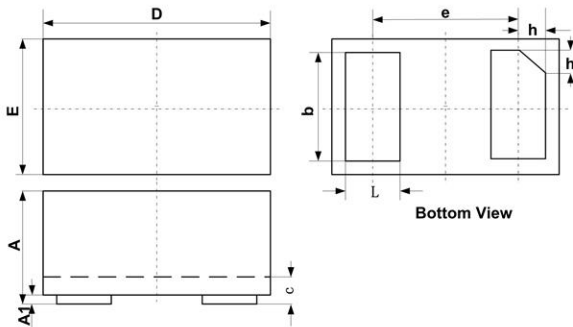


Fig3. Power Derating Curve

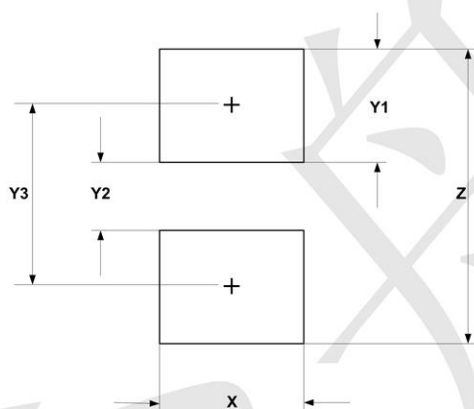


Outline Drawing - DFN1006-2



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