



DWC0525BH ESD Protection Diode

Feature

- Bi-directional ESD protection of one line
- Working voltage: 5V
- Junction Capacitance: 0.3pF(Typ)
- Low clamping voltage
- Low leakage current
- IEC 61000-4-2 $\pm 25\text{kV}$ contact $\pm 25\text{kV}$ air
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 9A (8/20 μs)

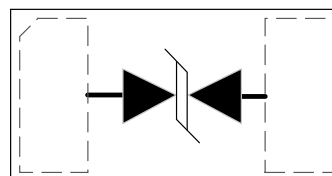
Application

- USB 3.0 and USB3.1
- Ultra-high-speed data lines
- Very sensitive interface lines
- Notebooks, Desktops, and Servers
- Portable Instrumentation

Mechanical Data

- Package: DFN1006-2L
- Molding compound flammability rating: UL 94V-0
- RoHS/WEEE compliant

Schematic & PIN Configuration



Ordering Information

Part Number	Package	Marking	QTY per Reel	Reel Size
DWC0525BH	DFN1006-2L		10000 pcs	7 inches

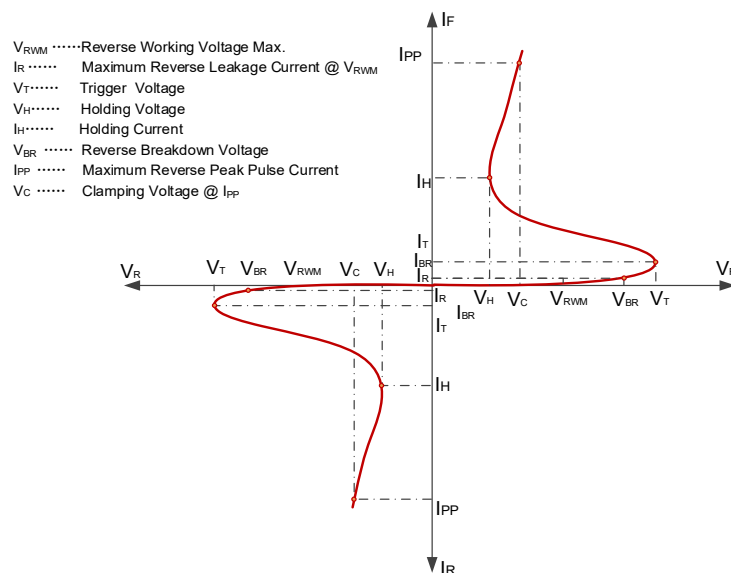
Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Current ($t_p=8/20\mu\text{s}$) (Note1)	I_{PP}	9	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V_{ESD}	± 25 ± 25	kV
Lead Soldering Temperature	T_L	260 (10seconds)	$^{\circ}\text{C}$
Junction Temperature	T_J	-55 to + 125	$^{\circ}\text{C}$
Storage Temperature	T_{stg}	-55 to + 125	$^{\circ}\text{C}$

Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typical	Max	Unit
Reverse Stand-Off Voltage	V_{RWM}				5.0	V
Reverse Breakdown Voltage	V_{BR}	$I_T=1\text{mA}$	6.0	7.0		
Holding Voltage	V_H		2.0		3.5	V
Reverse Leakage Current	I_R	$V_{RWM}=5.0\text{V}, T=25^{\circ}\text{C}$			0.5	μA
Clamping Voltage	V_C	$I_{PP}=9\text{A}, t_p=8/20\mu\text{s}$		7	8	V
ESD Clamping Voltage	V_{CL}	$I_{TLP}=4\text{A}, t_p=0.2/100\text{ns}$		3.7		V
ESD Clamping Voltage	V_{CL}	$I_{TLP}=16\text{A}, t_p=0.2/100\text{ns}$		8		V
ESD Dynamic Resistance	R_{DYN}	$T_{LP}=0.2/100\text{ns}$		0.35		Ω
Junction Capacitance	C_j	$V_R = 0\text{V}, f = 1\text{MHz}$		0.30	0.40	pF

Electrical Parameters



Note1: 8/20 μs pulse waveform.



Typical Characteristics

Fig1: Capacitance vs. Reverse Voltage

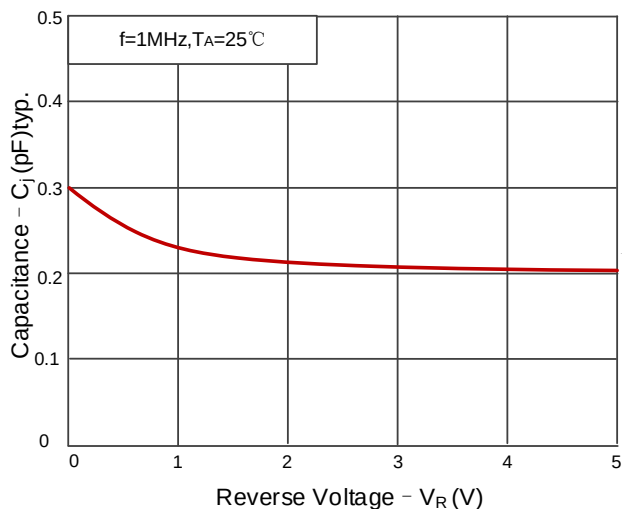


Fig2: Power Derating Curve

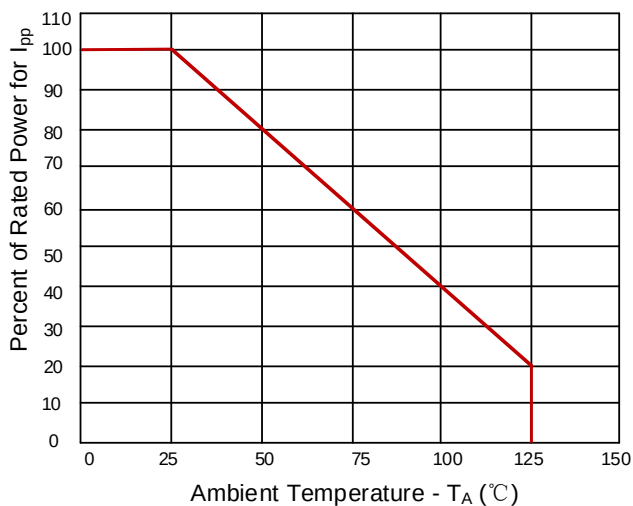


Fig3: TLP I-V Curve

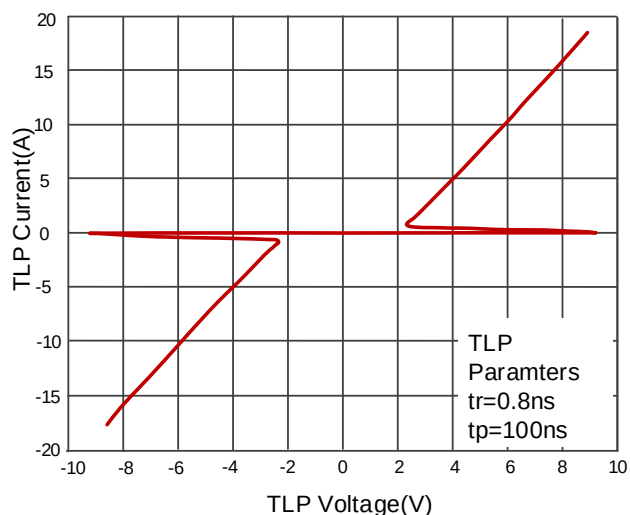


Fig4: Reverse Clamping Voltage vs. Peak Pulse Current

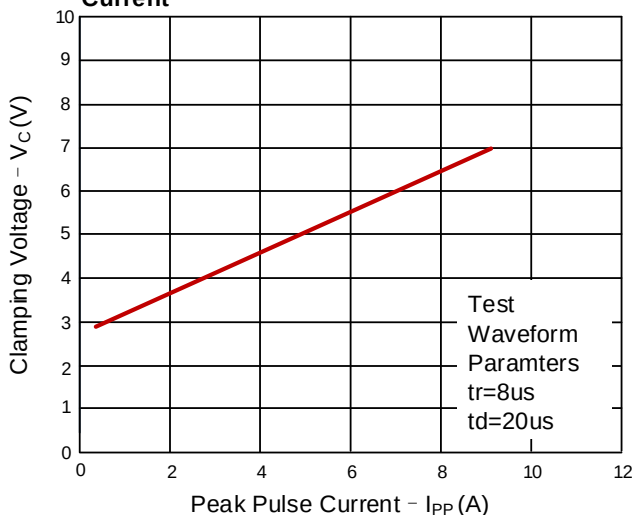


Figure5: IEC61000-4-2 +8 kV Contact ESD Clamping Voltage

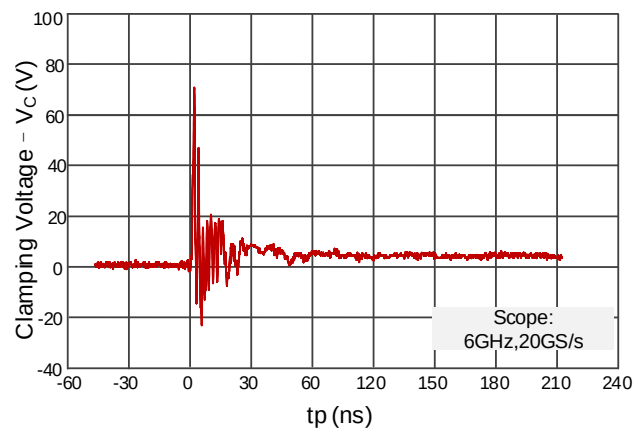
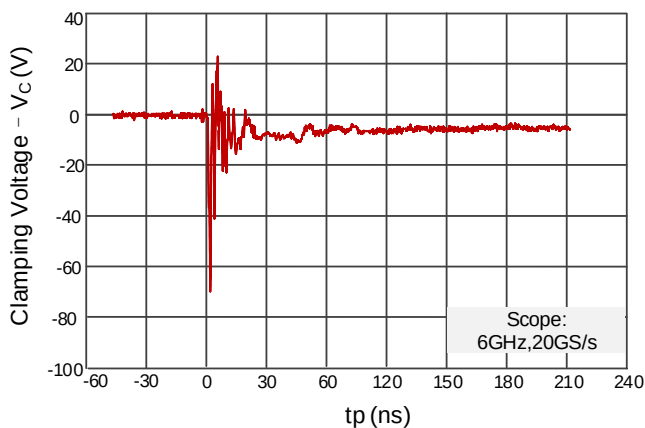
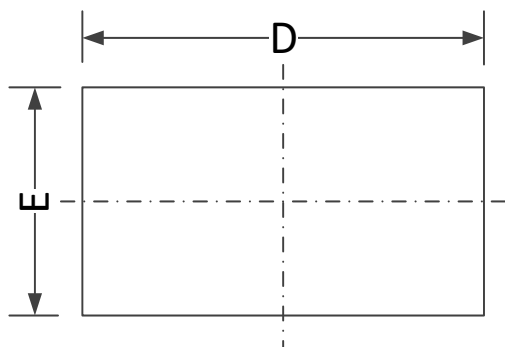


Figure6: IEC61000-4-2 -8 kV Contact ESD Clamping Voltage

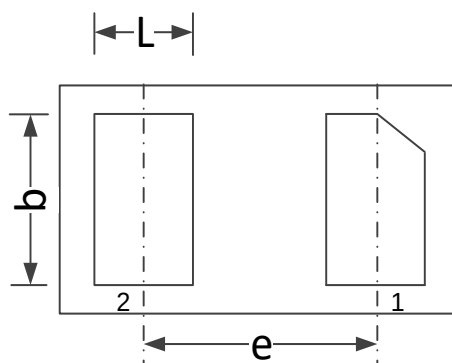




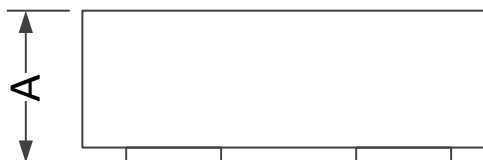
DFN1006-2L Outline Drawing



TOP VIEW



BOTTOM VIEW



SIDE VIEW

COMMON DIMENSION (MM)			
PKG	DFN1006		
REF.	MIN.	NOM.	MAX.
A	0.40		0.55
b	0.45	0.50	0.55
D	0.95	1.00	1.05
e	0.65BSC		
E	0.55	0.60	0.65
L	0.20	0.25	0.30