



DWC0325B-Q ESD Protection Diode

Feature

- Bi-directional ESD protection of one line
- 39Watts peak pulse power ($t_p = 8/20\mu s$)
- Working voltage: 3.3V
- Junction Capacitance: 0.22pF(Typ)
- Low clamping voltage
- Low leakage current
- AEC-Q101 qualified
- IEC 61000-4-2 $\pm 15kV$ contact $\pm 20kV$ air
- IEC 61000-4-5 (Lightning) 6A (8/20 μs)
- IEC61000-4-4(EFT) 40A (5/50ns)

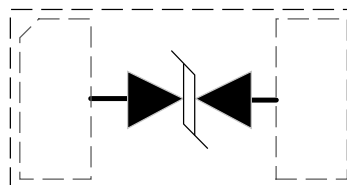
Application

- USB3.0 and USB3.1
- Ultra-high-speed data line
- Sensitive interfaces lines
- High Definition Multi-media Interface(HDMI)
- Antenna applications
- Digital visual interface(DVI)

Mechanical Data

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

Schematic & PIN Configuration



Ordering Information

Part Number	Package	Marking	Packing	Reel Size
DWC0325B-Q	DFN1006-2L	T3	10000 Tape & Reel	7 inches



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

Parameter	Symbol	Value	Units
Peak Pulse Current ($t_p=8/20\mu\text{s}$) (note1)	I_{pp}	6	A
ESD per IEC 61000-4-2 (Air)	V_{ESD}	20	kV
ESD per IEC 61000-4-2 (Contact)		15	
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	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-Off Voltage	V_{RWM}		-3.3		3.3	V
Reverse Leakage Current	I_R	$V_{RWM}=\pm 3.3\text{V}$			0.2	μA
Reverse Breakdown Voltage	V_{BR}	$I_T=1\text{mA}$	4.0	7.8		V
Holding Voltage	V_H	$I_H=50\text{mA}$	2.0		3.3	V
Clamping Voltage	V_C	$I_{PP}=6\text{A}, t_p=8/20\mu\text{s}$		5.5	6.5	V
ESD Clamping Voltage	V_C	$I_{TLP}=4\text{A}, t_p=0.2/100\text{ns}$		5.8		V
ESD Clamping Voltage	V_C	$I_{TLP}=16\text{A}, t_p=0.2/100\text{ns}$		9.4	11.8	V
ESD Dynamic Resistance	R_{DYN}	$TLP=0.2/100\text{ns}$		0.3	0.5	Ω
Junction Capacitance	C_J	$V_R = 0\text{V}, f = 1\text{MHz}$		0.22	0.32	pF

Electrical Parameters

V_{RWM} Reverse Working Voltage Max.

I_R Maximum Reverse Leakage Current @ V_{RWM}

V_T Trigger Voltage

V_H Holding Voltage

I_H Holding Current

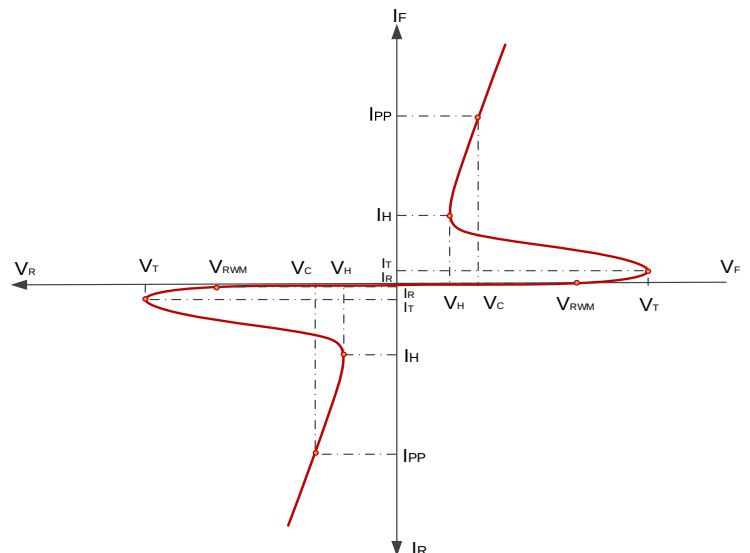
V_{BR} Reverse Breakdown Voltage

I_{PP} Maximum Reverse Peak Pulse Current

V_C Clamping Voltage @ I_{PP}

Note(1): TLP Setting: I_{TLP} and V_{TLP} sample window: $t_1=70\text{ns}$ to $t_2=90\text{ns}$.

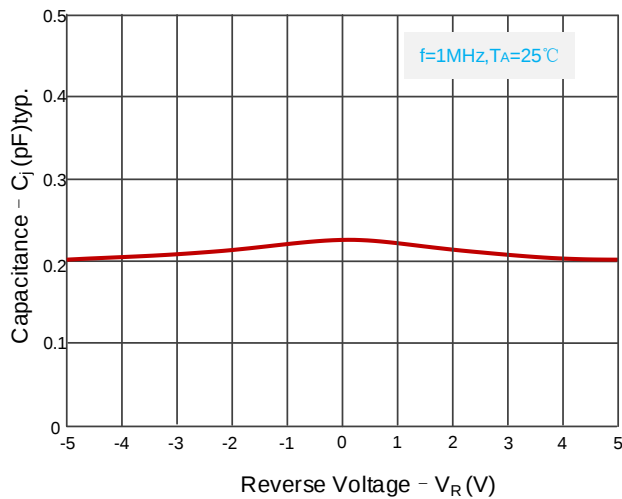
Note(2): Dynamic resistance calculated from $I_{PP}=4\text{A}$ to $I_{PP}=16\text{A}$



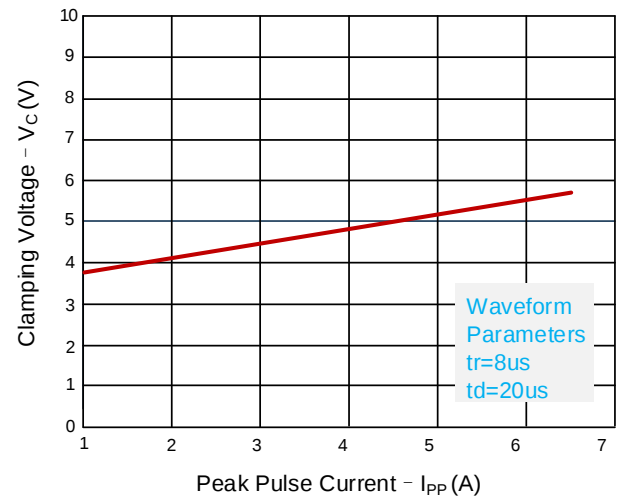


Typical Characteristics

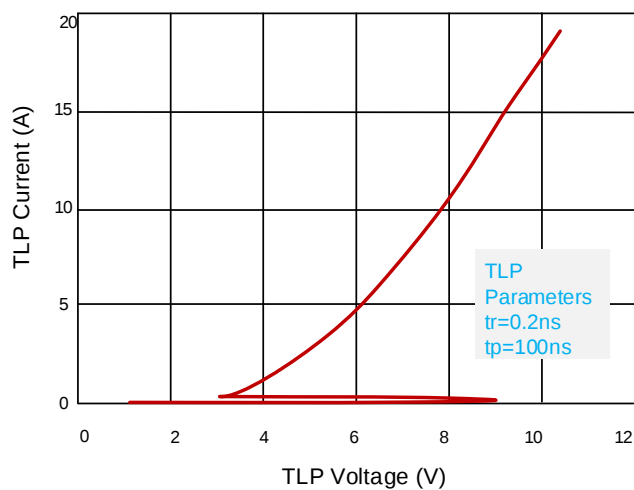
Capacitance vs. Reverse Voltage



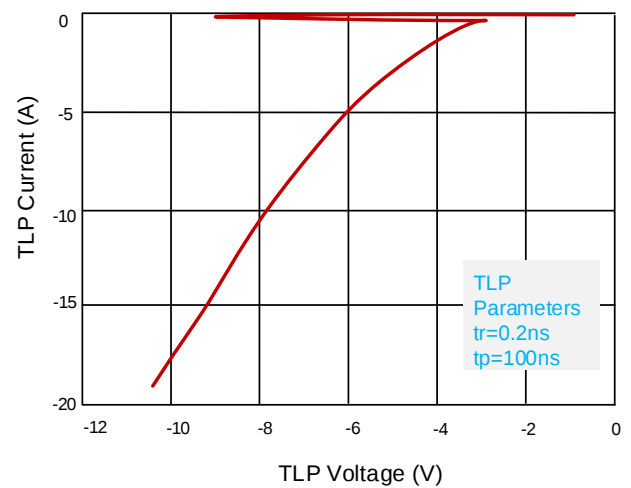
Reverse Clamping Voltage vs. Peak Pulse Current



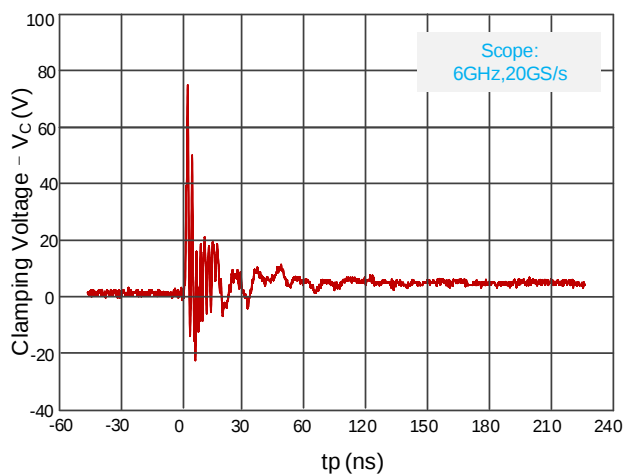
TLP Positive I-V Curve



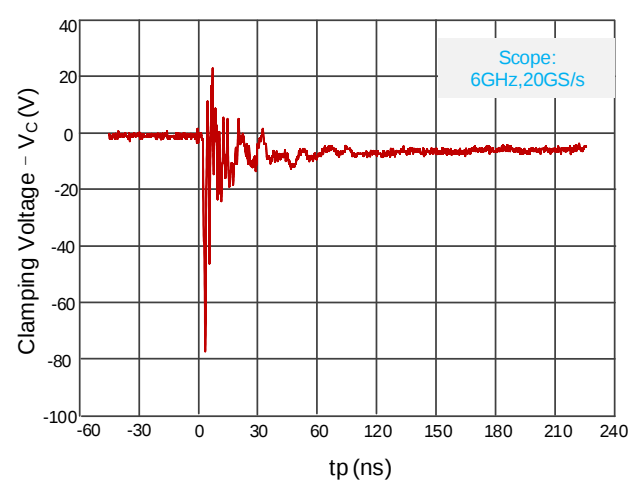
TLP Negative I-V Curve



IEC61000-4-2 : 8 kV positive pulse(pin 1 to pin 2)

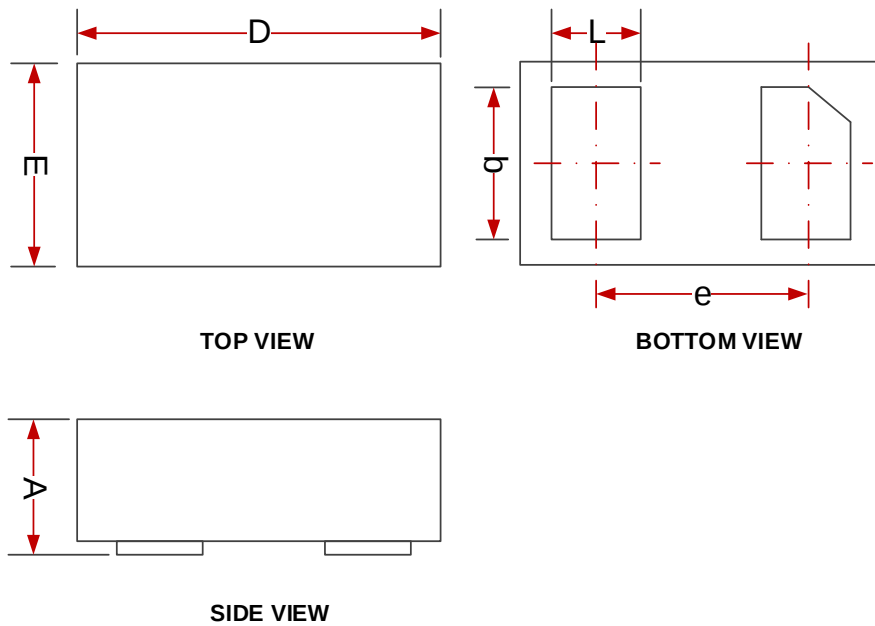


IEC61000-4-2 : 8 Kv negative pulse(pin 2 to pin 1)



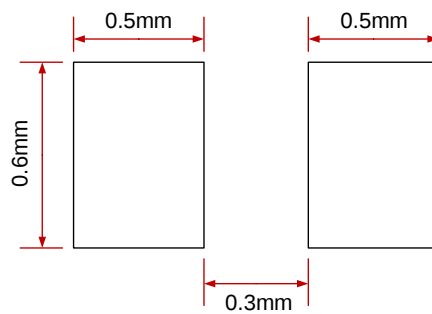


DFN1006-2L Outline Drawing



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

Suggested Land Pattern



* This land pattern is for reference purposes only