



DWC0325NS-Q ESD Protection Diode

Feature

- Bi-directional ESD protection of one line
- 40Watts 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)

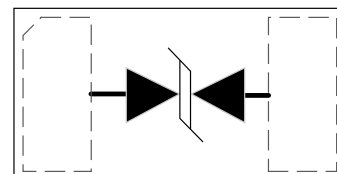
Application

- USB3.0 and USB3.1
- Ultra-high-speed data lines
- Very sensitive interface lines
- Notebooks, Desktops, and Servers
- Portable Instrumentation

Mechanical Data

- Package: DFN0603-2L
- Molding compound flammability rating: UL 94V-0
- RoHS/WEEE Compliant

Schematic & PIN Configuration



Ordering Information

Part Number	Package	Marking	Packing	Reel Size
DWC0325NS-Q	DFN0603-2L	C9	10000 Tape & Reel	7 inches



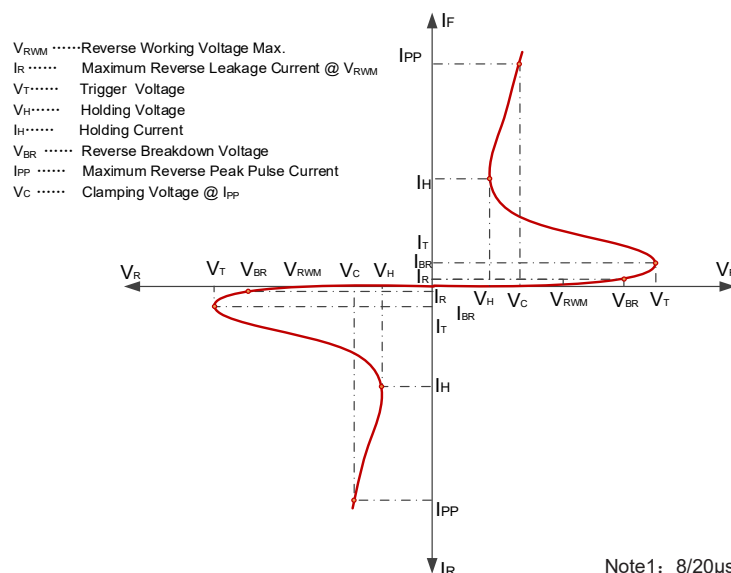
Absolute Maximum Rating ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Units
Peak Pulse Power ($t_p = 8/20\mu\text{s}$)	P_{PP}	40	Watts
Peak Pulse Current ($t_p = 8/20\mu\text{s}$) (note1)	I_{pp}	6	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V_{ESD}	± 20 ± 15	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 noted)

Parameter	Symbol	Conditions	Min	Typical	Max	Units
Reverse Stand-Off Voltage	V_{RWM}				3.3	V
Holding Voltage	V_H		2.0		3.3	V
Reverse Leakage Current	I_R	$V_{RWM}=3.3\text{V}, T=25^\circ\text{C}$		5	200	nA
Clamping Voltage	V_C	$I_{PP}=16\text{A}, t_p=100\text{ns}$		6.0	6.8	V
Clamping Voltage	V_{CL}	$I_{PP}=6\text{A}, t_p=8/20\mu\text{s}$			5.8	V
dynamic resistance	R_{dyn}	$T_{amb}=25^\circ\text{C}, I_R=10\text{A}$		0.3	0.4	Ω
Junction Capacitance	C_j	$V_R = 0\text{V}, f = 1\text{MHz}$		0.22	0.32	pF

Electrical Parameters

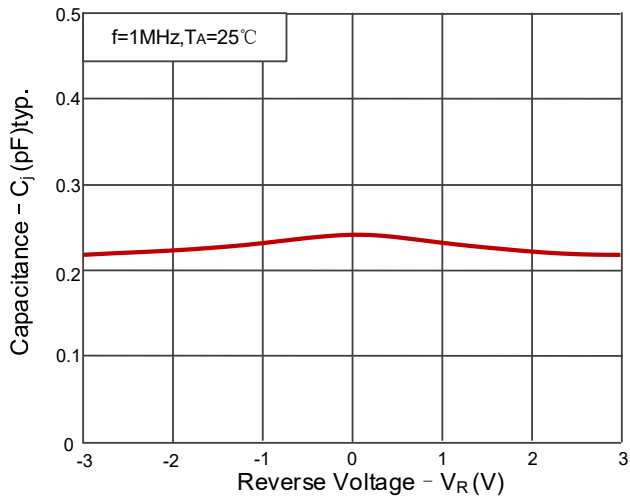


Note1: 8/20 μs pulse waveform.

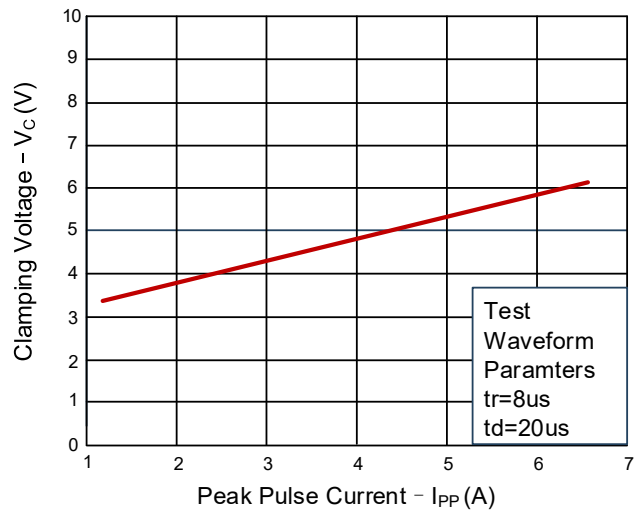


Typical Characteristic

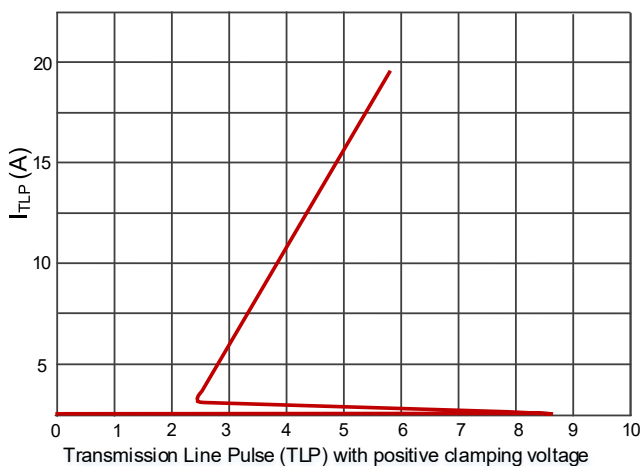
Capacitance vs. Reverse Voltage



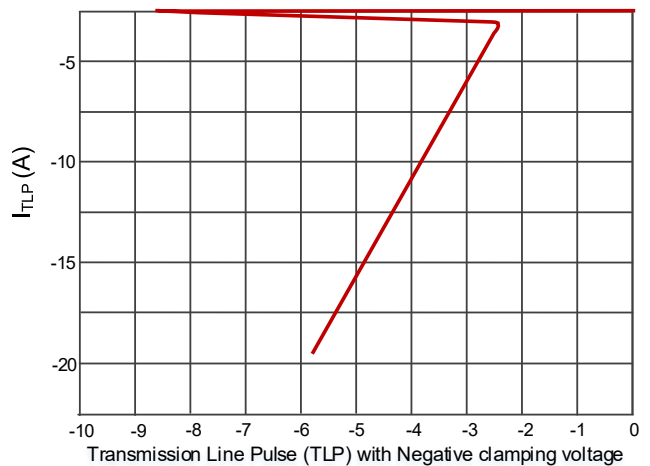
Reverse Clamping Voltage vs. Peak Pulse Current



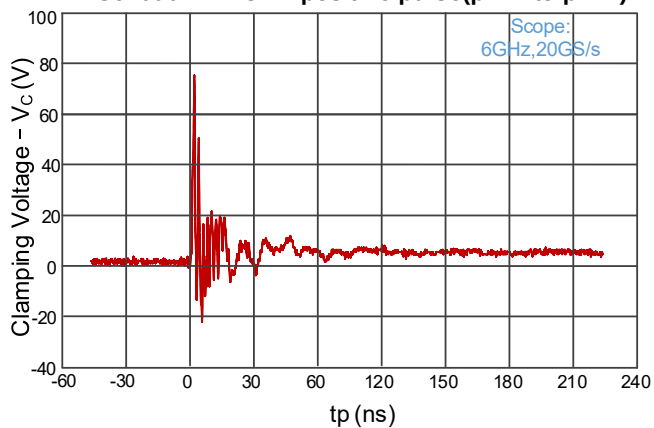
Positive Clamping voltage (TLP)



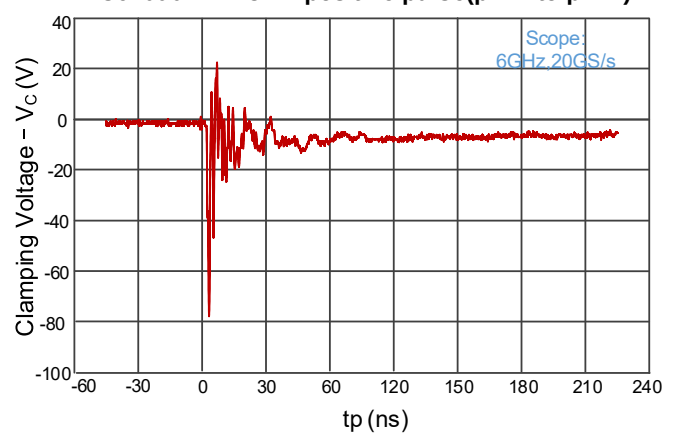
Positive Clamping voltage (TLP)



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

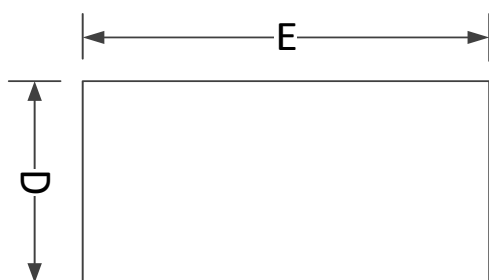


IEC61000-4-2 : 8 kV positive pulse(pin 2 to pin 1)

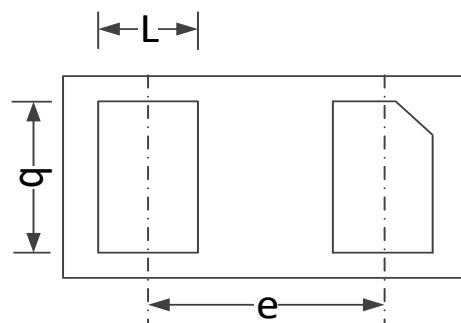




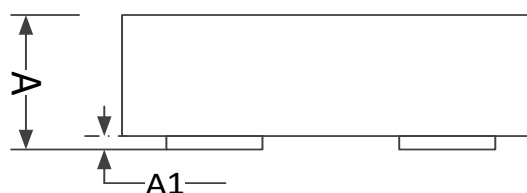
DFN0603-2L Outline Drawing



TOP VIEW



BOTTOM VIEW



SIDE VIEW

Common Dimension (mm)			
PKG	DFN0603		
REF.	MIN.	NOM.	MAX.
A	0.28	0.30	0.34
A1	0.00	0.02	0.05
b	0.21	0.23	0.265
L	0.14		0.24
e	0.35BSC		
D	0.25	0.30	0.35
E	0.55	0.60	0.65