DWC1225NS ESD Protection Diode

Feature

- Bi-directional ESD protection of one line
- 48Watts peak pulse power (tp=8/20μs)
- Working voltage: 3.3V
- Junction Capacitance: 0.4pF(Typ)
- Low leakage current
- Low clamping voltage
- IEC 61000-4-2 ±12kV contact ±15kV air
- IEC 61000-4-5 (Lightning) 6A (8/20μs)
- IEC61000-4-4(EFT) 40A (5/50ns)

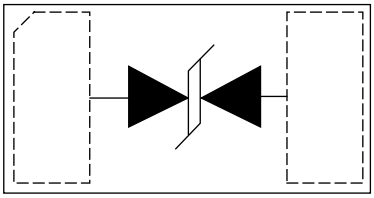
Application

- USB2.0/USB3.0
- HDMI1.3,HDMI1.4 and HDMI2.0
- SATA and eSATA interface
- Computers and peripherals
- Display and Cameras

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
DWC1225NS	DFN0603-2L	C2	10000 Tape & Reel	7 inches

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

Parameter	Symbol	Value	Unit
Maximum Peak Pulse Current (t_p =8/20μs)	I_{pp}	6	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V_{ESD}	±15 ±12	kV
Lead Soldering Temperature	T_L	260(10sec.)	℃
Junction Temperature	T_J	-55 to + 125	℃
Storage Temperature	T_{stg}	-55 to + 150	℃

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

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Reverse Stand-Off Voltage	V_{RWM}		-3.3		3.3	V
Reverse Leakage Current	I_R	V_{RWM}=±3.3V			0.5	μA
Reverse Breakdown Voltage	V_{BR}	I_T=1mA	8			V
Reverse Holding Voltage	V_H	I_T=I_H		2.7		V
ESD Clamping Voltage(1)	V_C	I_{TLP}=4A,tp=0.2/100ns		4.7		V
ESD Dynamic Resistance(2)	R_{DYN}	T_{LP}=0.2/100ns		0.34		Ω
Clamping Voltage	V_C	I_{PP}=6A,t_p=8/20μs			8	V
Junction Capacitance	Cj	V_R = 0V, f = 1MHz		0.4	0.55	pF

Electrical Parameters

V_{RWM} ……Reverse Working Voltage Max.

I_R …… Maximum Reverse Leakage Current @ V_{RWM}

V_T…… Trigger Voltage

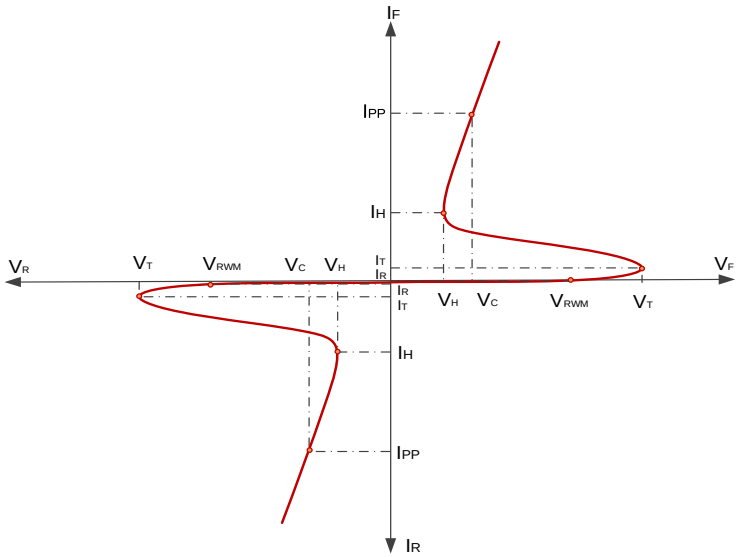
V_H…… Holding Voltage

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:t1=70ns to t2=90ns.

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

Typical Characteristics

Figure1: 8/20μs pulse wavefrom according to IEC61000-4-5

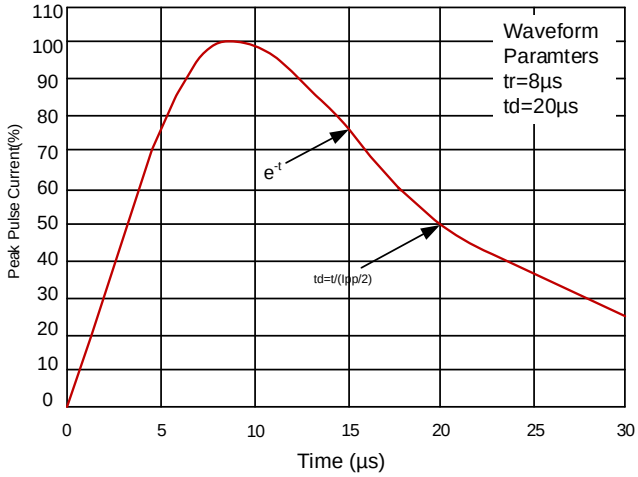


Figure2: ESD pulse wavefrom according to IEC 61000-4-2

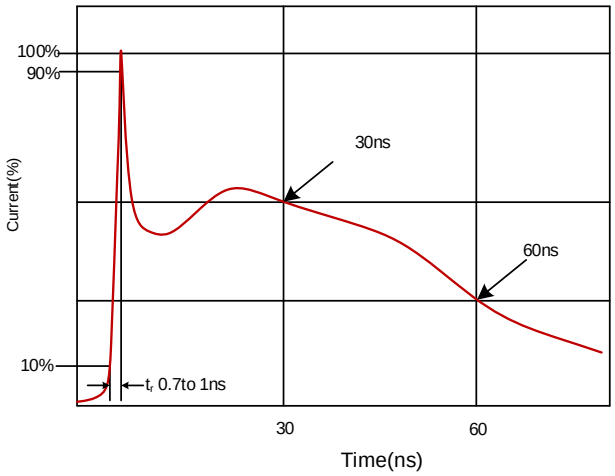


Figure3: Power Derating Curve

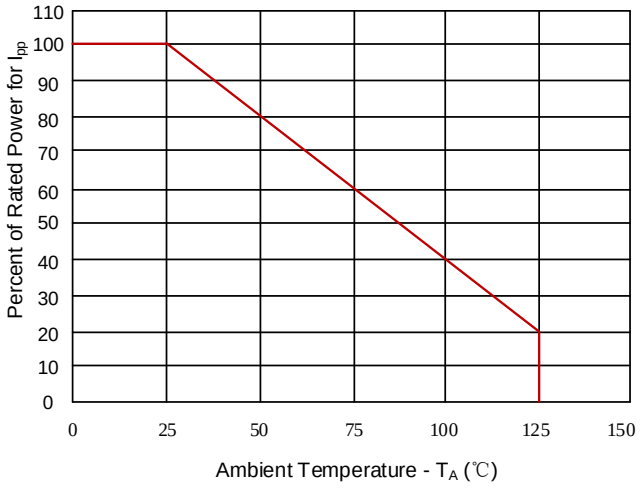


Figure 4: Clamping Voltage vs.Ipp

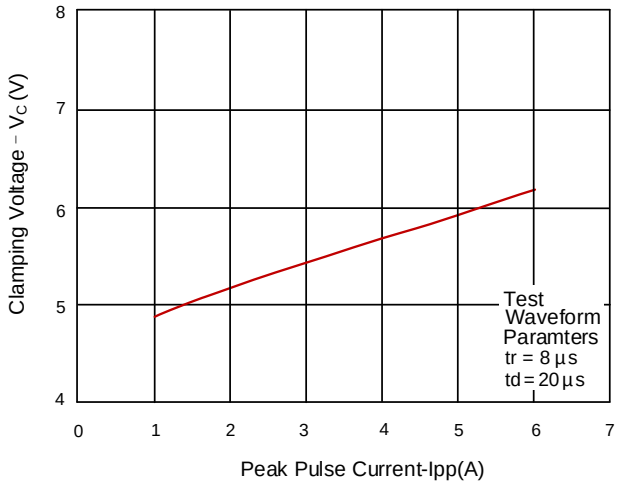


Figure5: TLP Positive I-V Curve

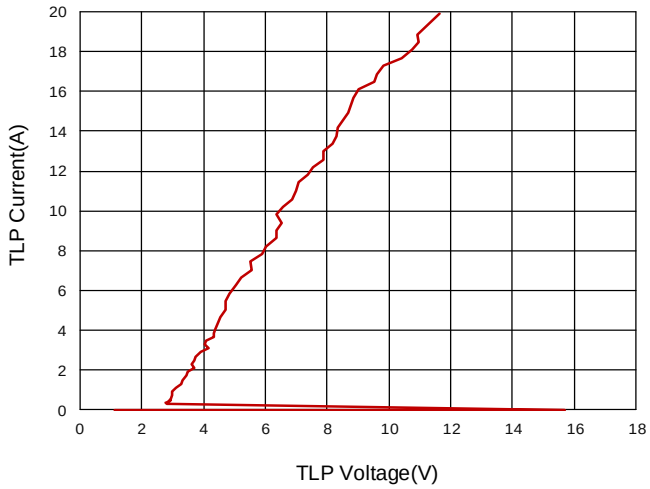
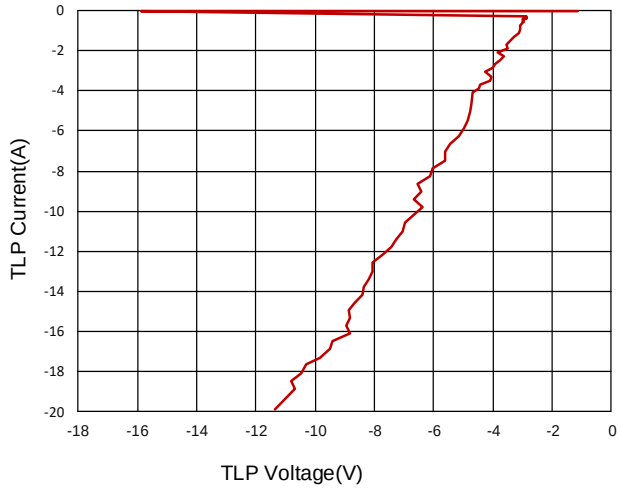
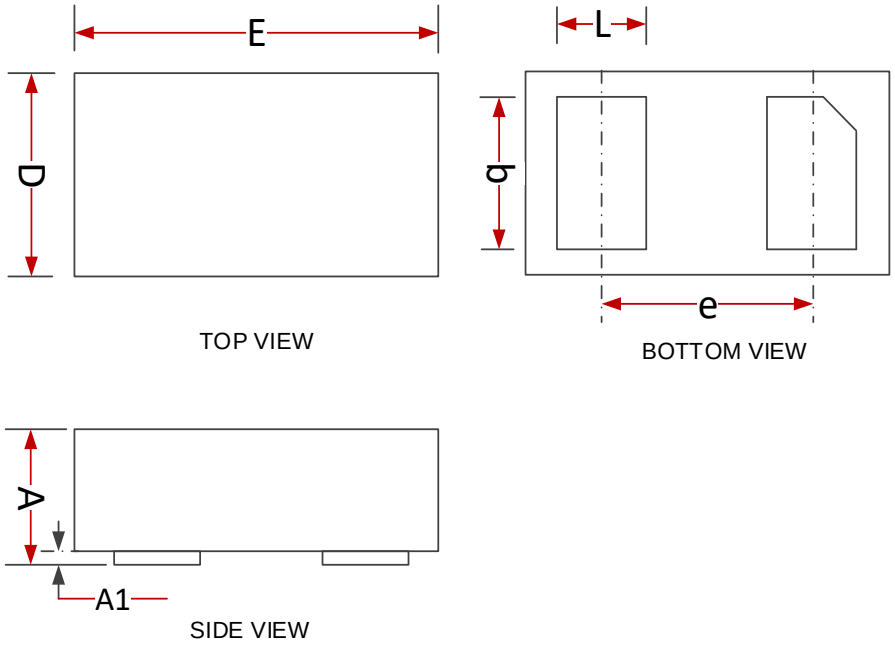


Figure6: TLP Neagtive I-V Curve

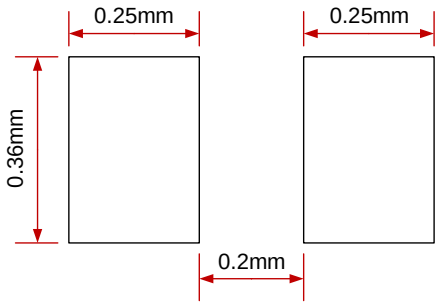


DFN0603-2L Outline Drawing



Common Dimension (mm)			
PKG	DFN0603-2L		
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	0.40BSC		
D	0.25	0.30	0.35
E	0.55	0.60	0.65

Land Pattern *



* This land pattern is for reference purposes only