DWC4840NS-Q ESD Protection Diode

Feature

- Bi-directional ESD protection of one line
- Working voltage: 48V
- Junction Capacitance: 0.35pF(Typ)
- Low clamping voltage
- Low leakage current
- AEC-Q101 qualified
- IEC 61000-4-2 12kV contact
- IEC61000-4-4(EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 6A (8/20μs)

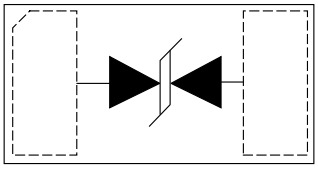
Application

- USB Type-C
- High speed data and control line protection
- Personal Digital Assistants(PDA's)
- Notebooks,Desktops and Computers
- Consumer electronics

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
DWC4840NS-Q	DFN0603-2L	DK	10000 Tape & Reel	7 inches

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

Parameter	Symbol	Value	Units
Maximum Peak Pulse Current (t_p =8/20μs)	I_{pp}	6	A
ESD per IEC 61000-4-2 (Contact)	V_{ESD}	±12	kV
Lead Soldering Temperature	T_L	260(10seconds)	℃
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	Test Conditions	Min.	Typ.	Max.	Units
Reverse Stand-Off Voltage	V_{RWM}		-48		48	V
Reverse Leakage Current	I_R	V_{RWM}=±48V			0.5	μA
Reverse Breakdown Voltage	V_{BR}	I_T=1mA	55			V
Clamping Voltage	V_C	I_{PP}=6A,t_p=8/20μs			7	V
Junction Capacitance	Cj	V_R = 0V, f = 1MHz		0.35	0.45	pF

Electrical Parameters (T_A = 25°C unless otherwise noted)

V_{RWM} ·····Reverse Working Voltage Max.

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

V_T····· Trigger Voltage

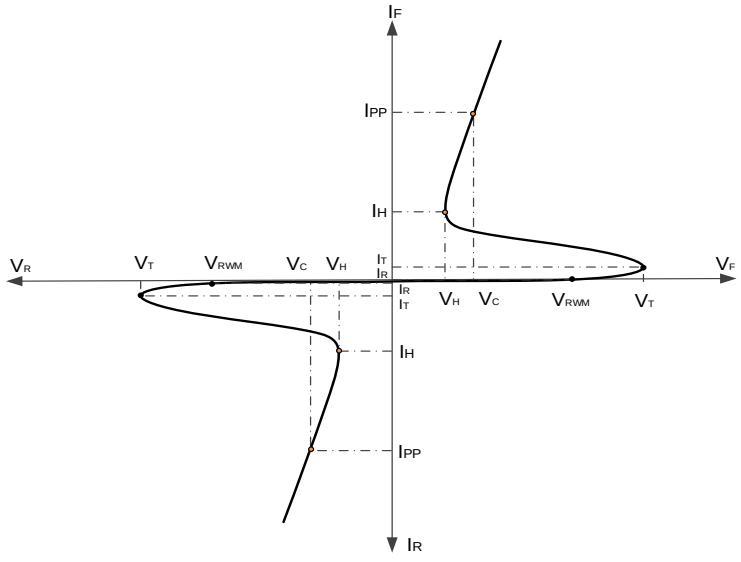
V_H····· Holding Voltage

I_H····· Holding Current

V_{BR} ····· Reverse Breakdown Voltage

I_{PP} ····· Maximum Reverse Peak Pulse Current

V_C ····· Clamping Voltage @ I_{PP}



Typical Characteristics

Figure1: ESD pulse wavefrom according to IEC 61000-4-2

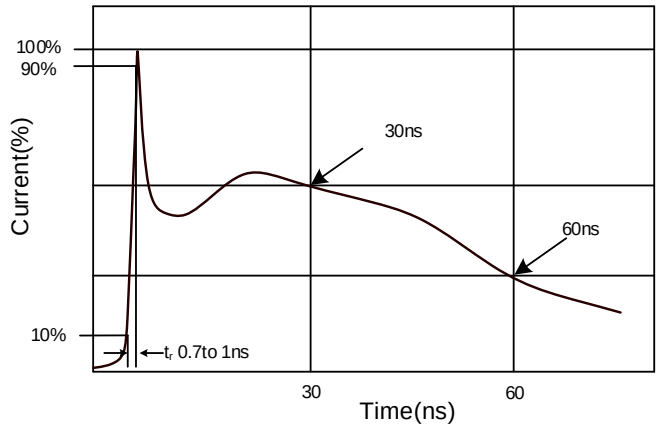


Figure 2: Power Derating Curve

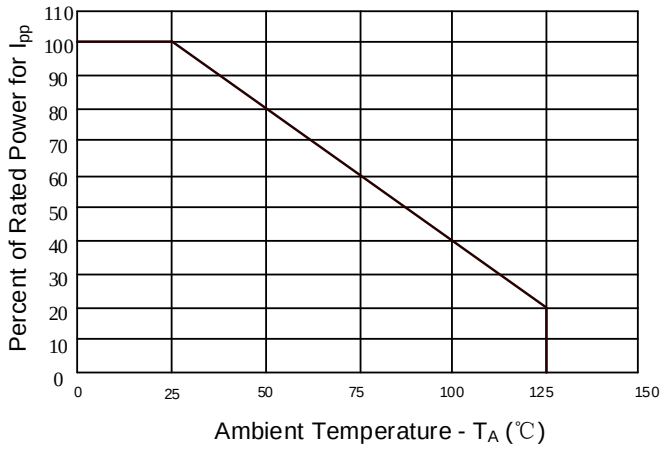


Figure3: 8/20 μs Pulse Waveform

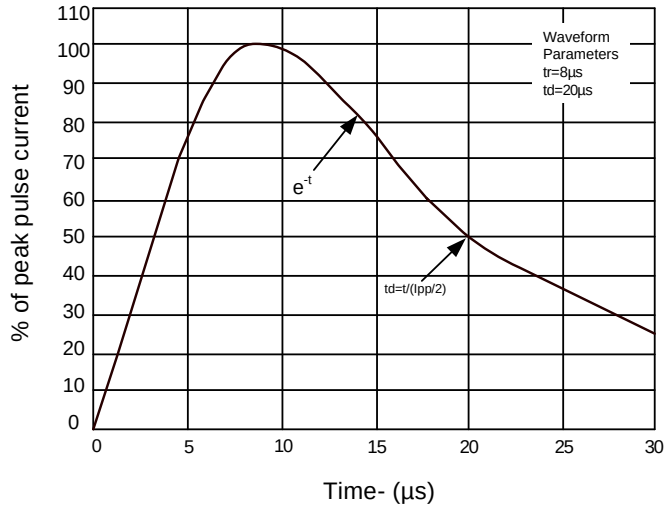
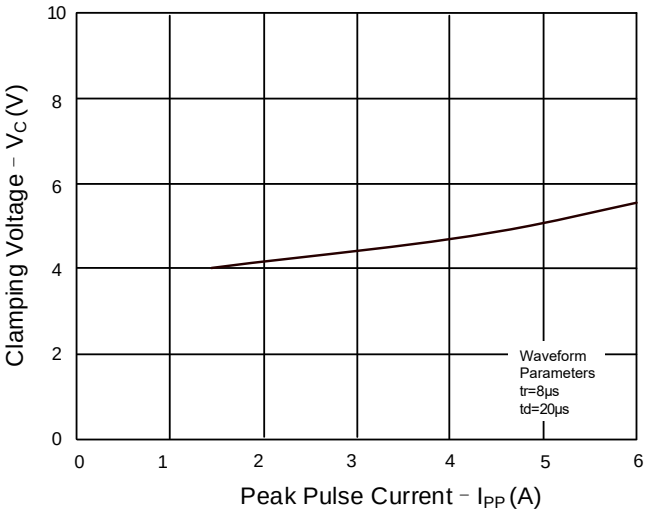
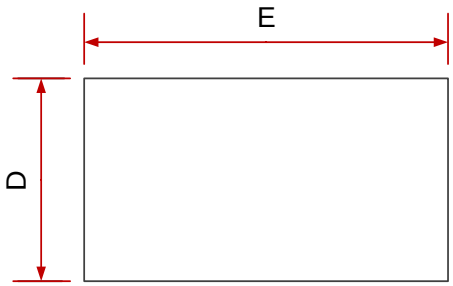


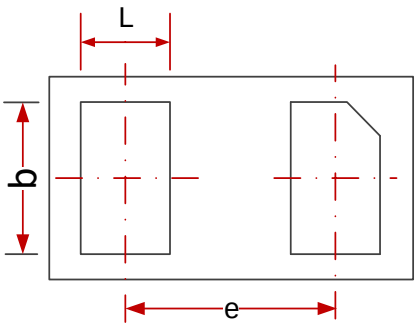
Figure 4: Clamping Voltage vs.Ipp



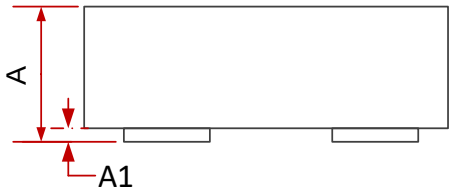
Outline Drawing-DFN0603



TOP VIEW



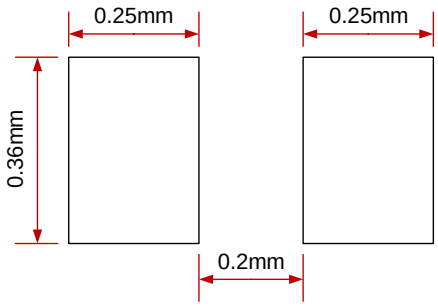
BOTTOM VIEW



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	0.40BSC		
D	0.25	0.30	0.35
E	0.55	0.60	0.65

Land Pattern *



* This land pattern is for reference purposes only