



DWC2428B-Q ESD Protection Diode

Feature

- Bi-directional ESD protection of one line
- 42Watts peak pulse power ($t_p = 8/20\mu s$)
- Working voltage: 24V
- Junction Capacitance: 0.42pF(Typ)
- Low clamping voltage
- Low leakage current
- AEC-Q101 qualified
- IEC 61000-4-2 $\pm 12kV$ contact
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 6A (8/20 μs)

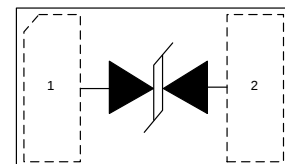
Application

- Near Field Communication(NFC) lines
- High-speed data lines protection
- Sensitive interface lines
- Communication systems
- Computers and peripherals

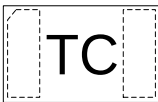
Mechanical Data

- 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
DWC2428B-Q	DFN1006-2L		10000 pcs	7 inches



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

Parameter	Symbol	Value	Units
Maximum Peak Pulse Current ($t_p=8/20\mu\text{s}$)	I_{pp}	6	A
ESD per IEC 61000-4-2 (Contact)	V_{ESD}	± 12	kV
Lead Soldering Temperature	T_L	260 (10sec.)	$^{\circ}\text{C}$
Junction Temperature	T_J	-55 to + 125	$^{\circ}\text{C}$
Storage Temperature	T_{stg}	-55 to + 150	$^{\circ}\text{C}$

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

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-Off Voltage	V_{RWM}				24	V
Reverse Leakage Current	I_R	$V_{RWM}=24\text{V}$			0.5	μA
Reverse Breakdown Voltage	V_{BR}	$I_T=1\text{mA}$	26.7			V
Holding Voltage	V_H	$I_H=150\text{mA}$	2		4	V
Clamping Voltage	V_C	$I_{PP}=6\text{A}, t_p=8/20\mu\text{s}$			7	V
Junction Capacitance	C_j	$V_R = 0\text{V}, f = 1\text{MHz}$		0.42	0.55	pF

Electrical Parameters

V_{RWM} Reverse Working Voltage Max.

I_R Maximum Reverse Leakage Current @ V_{RWM}

V_T Trigger Voltage

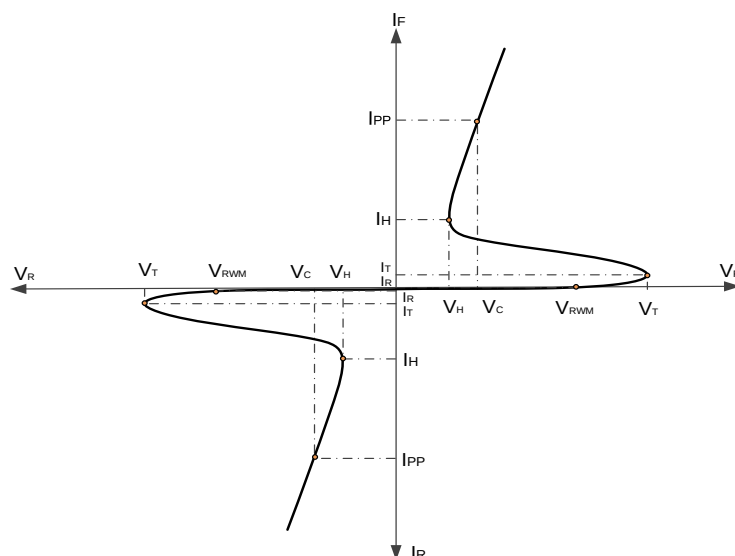
V_H Holding Voltage

I_H Holding Current

V_{BR} Reverse Breakdown Voltage

I_{PP} Maximum Reverse Peak Pulse Current

V_C Clamping Voltage @ I_{PP}





Typical Characteristics

Figure1: 8/20 μ s pulse waveform according to IEC61000-4-5

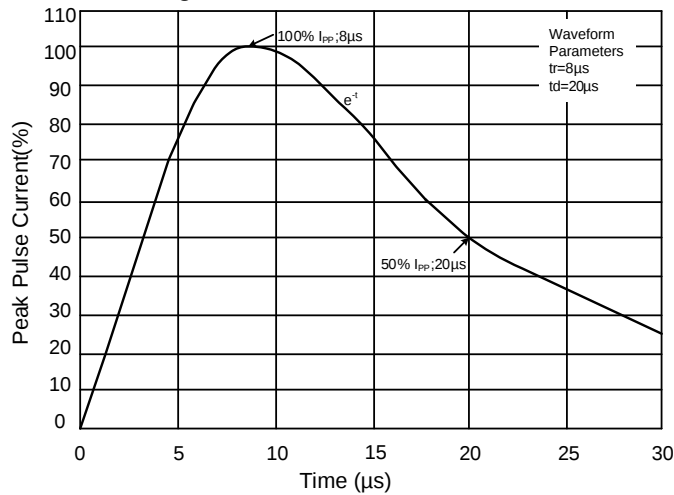


Figure2: ESD pulse waveform according to IEC 61000-4-2

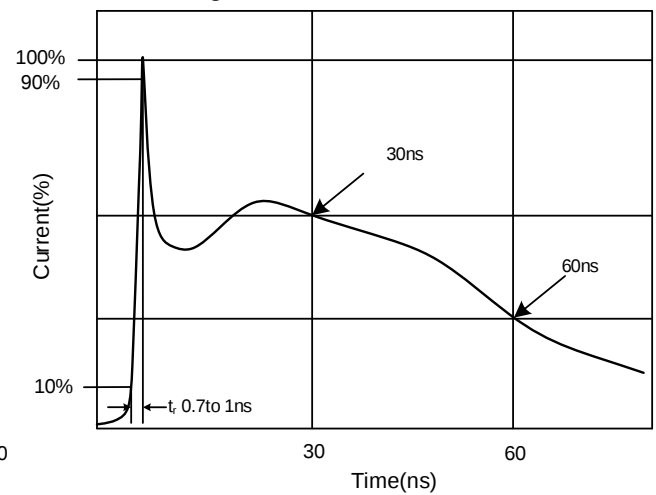


Figure3: Power Derating Curve

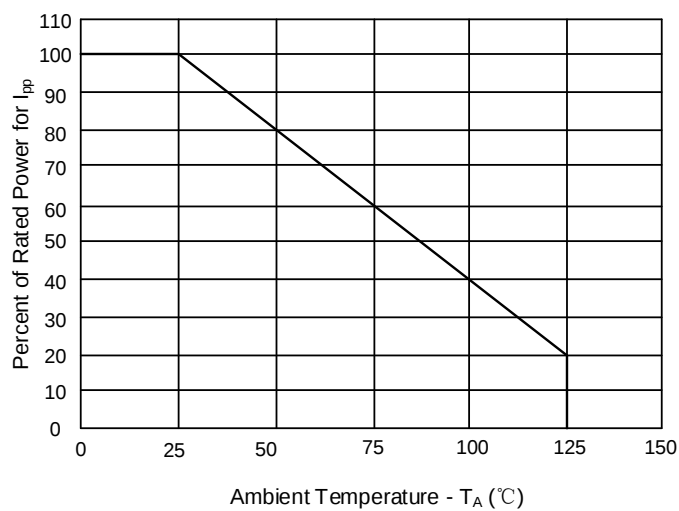
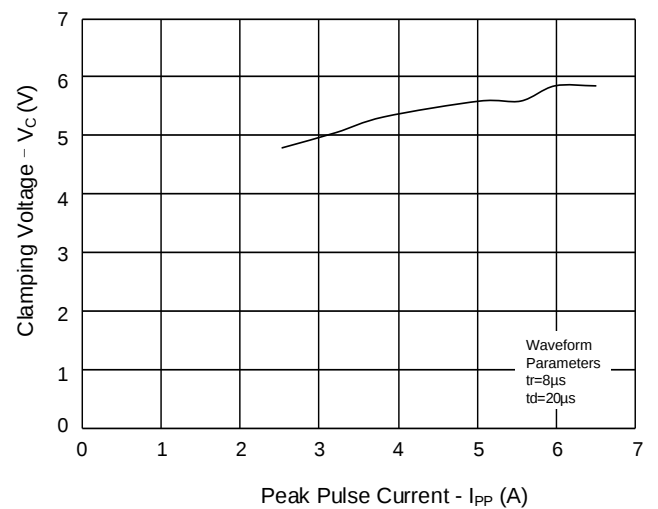


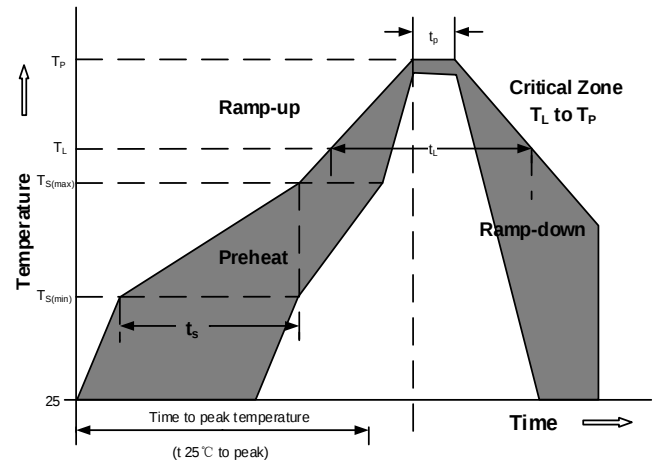
Figure 4: Clamping Voltage vs. I_{pp}



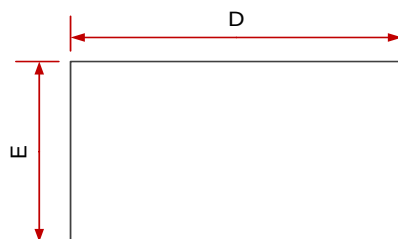


Soldering Parameters

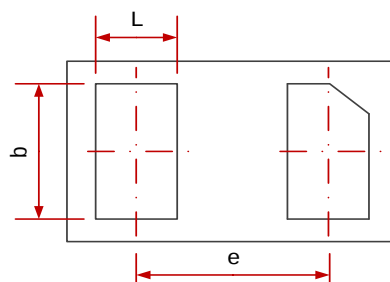
Reflow Condition		Pb-Free assembly
Pre Heat	Temperature Min ($T_{S(min)}$)	150°C
	Temperature Max ($T_{S(max)}$)	200°C
	Time (min to max) (t_s)	60-190 secs
Average ramp up rate (Liquids Temp) (T_L) to peak		5°C/second max
$T_{S(max)}$ to T_L —Ramp-up Rate		5°C/second max
Reflow	Temperature (T_L) (Liquids)	217°C
	Temperature (t_L)	60-150 seconds
Peak Temperature (T_P)		260+0/-5°C
Time within actual peak Temperature(t_p)		20-40 seconds
Ramp-down Rate		5°C/second max
Time 25°C to peak Temperature (T_P)		8 minutes max
Do not exceed		280°C



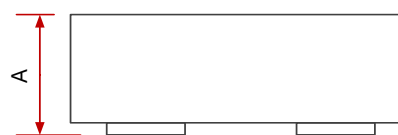
DFN1006-2L Outline Drawing



TOP VIEW

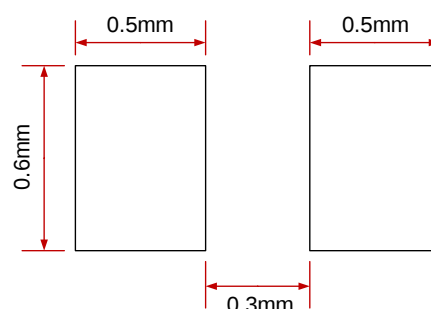


BOTTOM VIEW



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



* This land pattern is for reference purposes only