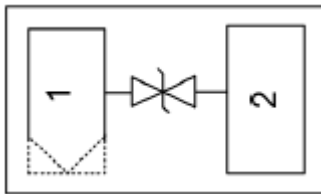
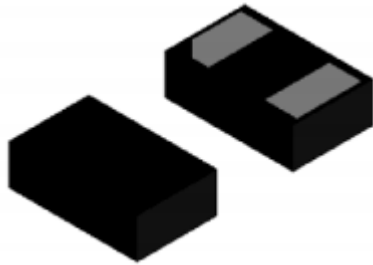


1-Line, Bi-directional, Transient Voltage Suppressor



DFN1610-2L

Features

- Stand-off voltage: 5V Max
- Transient protection for each line according to
IEC61000-4-2(ESD): $\pm 30\text{kV}$ (contact)
IEC61000-4-5(surge): 85A (8/20 μs)
- Low leakage current
- Ultra-low capacitance: $C_J = 200\text{ pF typ}$
- Low clamping voltage
- RoHS Compliant

Applications

Mobile Phones
Battery Protection
Power Line Protection
Vbat pin for Mobile Devices
Hand Held Portable Applications

Mechanical Data

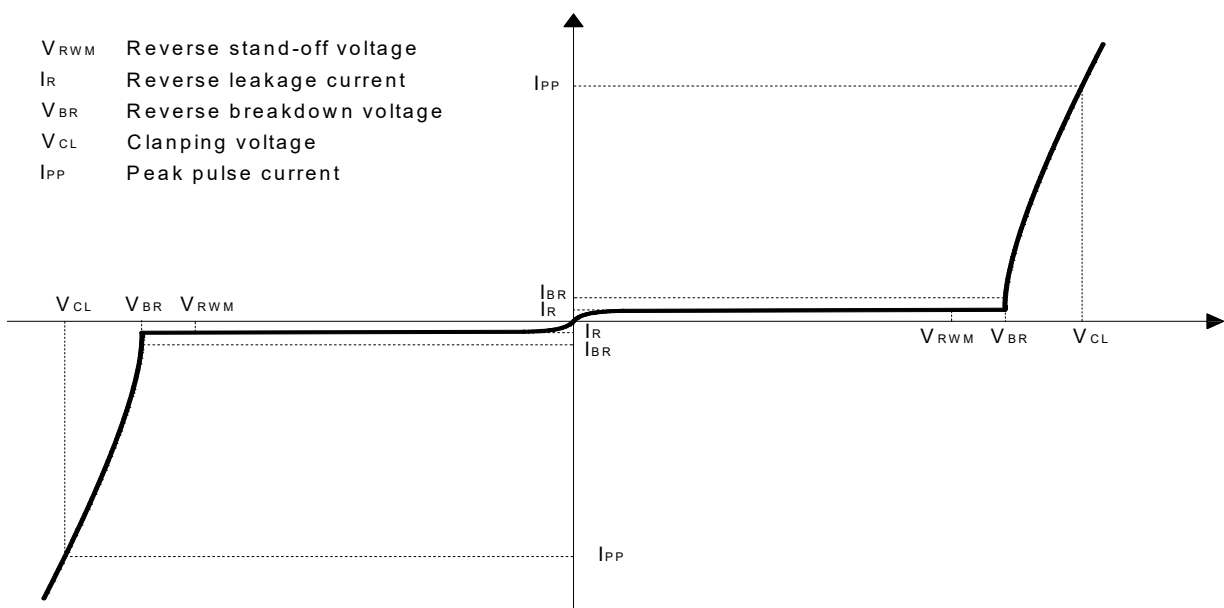
- Package: DFN1610-2L
- Case Material: "Green" Molding Compound
- Marking Information: See Below

05P

05P = Device Marking Code

■Definitions of electrical characteristics

- V_{RWM} Reverse stand-off voltage
 I_R Reverse leakage current
 V_{BR} Reverse breakdown voltage
 V_{CL} Clamping voltage
 I_{PP} Peak pulse current





ESD5V0P6B

■Maximum Ratings

PARAMETER	SYMBOL	LIMITS	UNIT
Peak pulse power ($t_p = 8/20\mu s$), any I/O pin to ground	P_{pk}	21105	W
Peak pulse current ($t_p = 8/20\mu s$), any I/O pin to ground	I_{pp}	85	A
ESD according to IEC61000-4-2 air discharge	V_{ESD}	± 30	KV
ESD according to IEC61000-4-2 contact discharge		± 30	
Junction temperature	T_J	-55~125	°C
Storage temperature	T_{STG}	-55~150	°C

■Electrical Characteristics ($T_a=25^\circ C$ Unless otherwise specified)

PARAMETER	Symbol	UNIT	Conditions	Min	Typ	Max
Reverse maximum working voltage	V_{RWM}	V				5
Reverse breakdown voltage	$V_{(BR)}$	V	$I_T = 1mA$	6		
Reverse leakage current	I_R	μA	$V_{RWM} = 5V$			0.5
Clamping voltage	V_{CL}	V	$I_{PP} = 20A, t_p = 8/20\mu s$			10
		V	$I_{PP} = 85A, t_p = 8/20\mu s$			13
Junction capacitance	CJ	pF	$VR = 0V, f = 1MHz$		200	

Notes:

- (1). TLP parameter: $Z_0 = 50\Omega$, $t_p = 100ns$, $t_r = 2ns$, averaging window from 60ns to 80ns. RDYN is calculated from 4A to 16A.
- (2). Contact discharge mode, according to IEC61000-4-2.
- (3). Non-repetitive current pulse, according to IEC61000-4-5

■Ordering Information (Example)

PREFERRED P/N	PACKING CODE	UNIT WEIGHT(mg)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
ESD5V0P6B	F1	Approximate 2.8	3000	30000	120000	7 reel

■ Characteristics (Typical)

Fig1. 8/20 μ s waveform per IEC61000-4-5

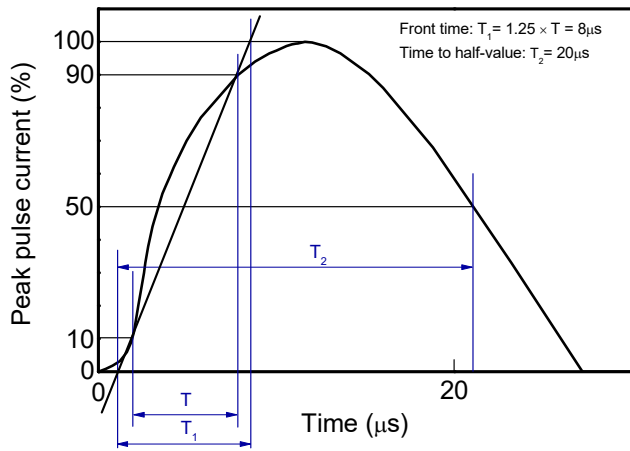


Fig2. Contact discharge current waveform per IEC61000-4-2

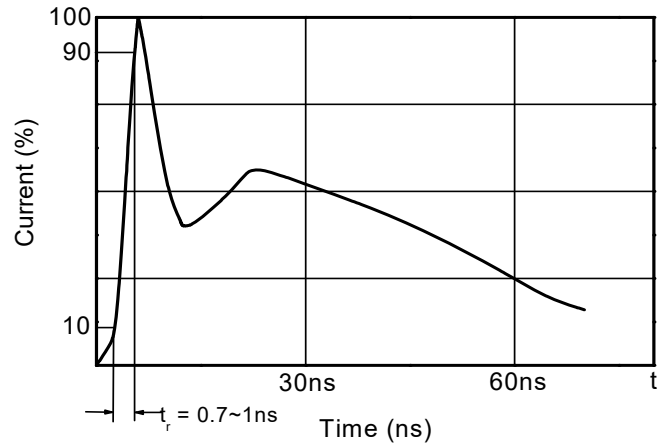


Fig3. Clamping voltage vs. Peak pulse current

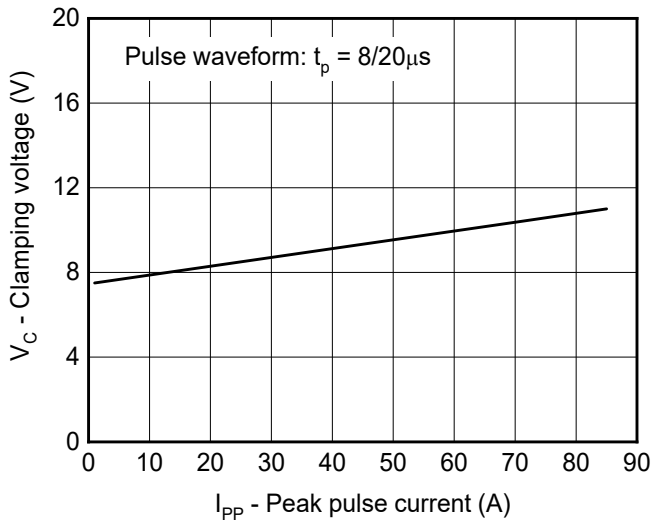


Fig4. Capacitance vs. Reverse voltage

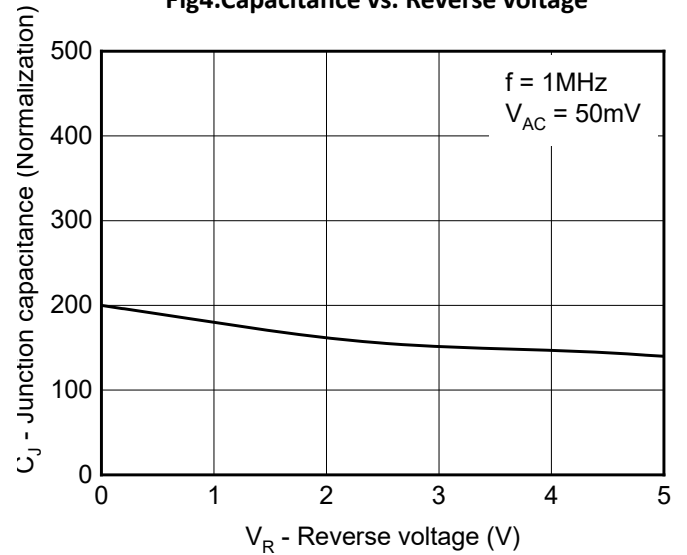


Fig5. Non-repetitive peak pulse power vs. Pulse time

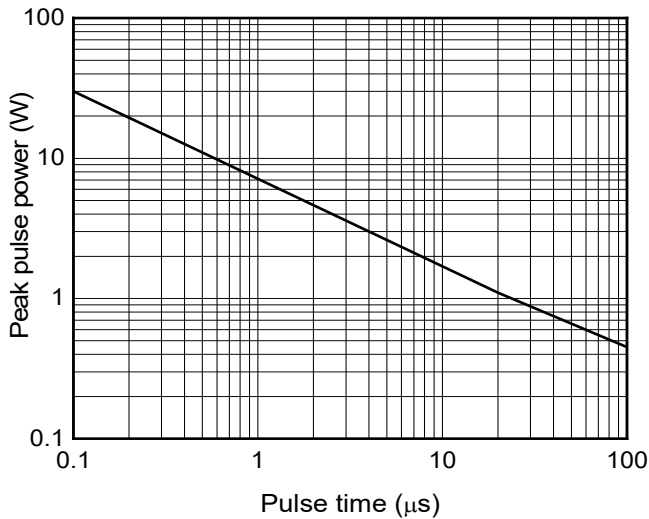


Fig6. Power derating vs. Ambient temperature

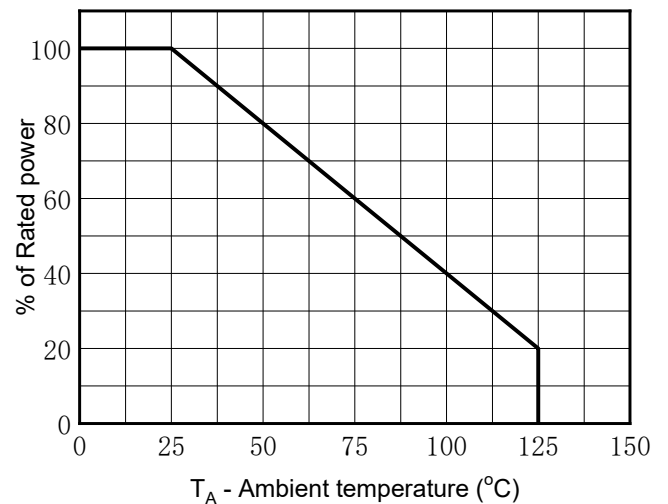
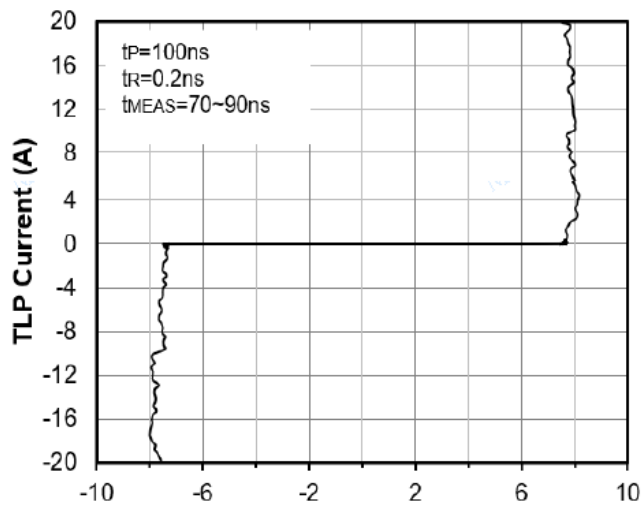




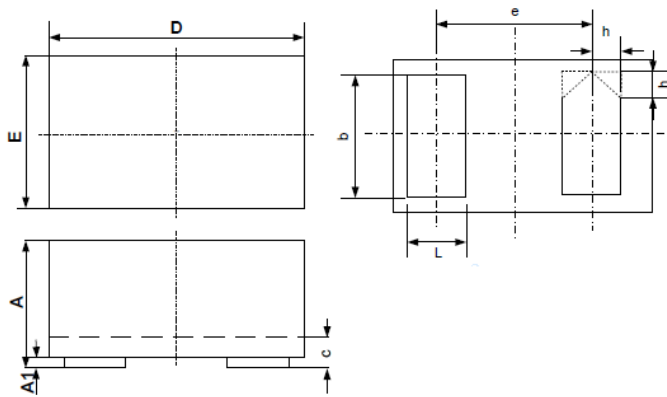
Fig7.TLP Measurement





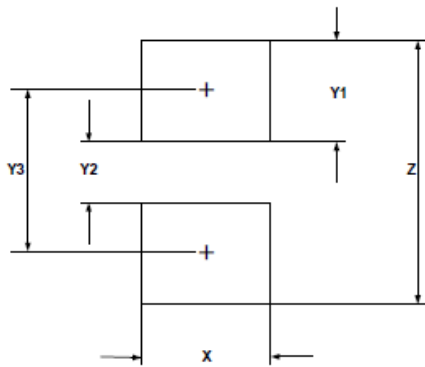
ESD5V0P6B

■ Outline Dimensions



SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.45	0.50	0.55	0.018	0.020	0.022
A1	0.00	0.02	0.05	0.000	0.001	0.002
b	0.75	0.80	0.85	0.030	0.032	0.034
c	0.10	0.15	0.20	0.004	0.006	0.008
D	1.55	1.60	1.65	0.062	0.064	0.066
e	1.10 BSC			0.044 BSC		
E	0.95	1.00	1.05	0.038	0.040	0.042
L	0.35	0.40	0.45	0.014	0.016	0.018
h	0.15	0.20	0.25	0.006	0.008	0.010

■ Soldering Footprint



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
X	1.00	0.040
Y1	0.62	0.025
Y2	0.60	0.024
Y3	1.22	0.049
Z	1.85	0.074

Notes:

This recommended land pattern is for reference purposes only. Please consult your manufacturing group to ensure your PCB design guidelines are met



Disclaimer

The information presented in this document is for reference only. Yangzhou Yangjie Electronic Technology Co., Ltd. reserves the right to make changes without notice for the specification of the products displayed herein to improve reliability, function or design or otherwise.

The product listed herein is designed to be used with ordinary electronic equipment or devices, and not designed to be used with equipment or devices which require high level of reliability and the malfunction of which would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), Yangjie or anyone on its behalf, assumes no responsibility or liability for any damages resulting from such improper use of sale.

This publication supersedes & replaces all information previously supplied. For additional information, please visit our website [http:// www.21yangjie.com](http://www.21yangjie.com) , or consult your nearest Yangjie's sales office for further assistance.