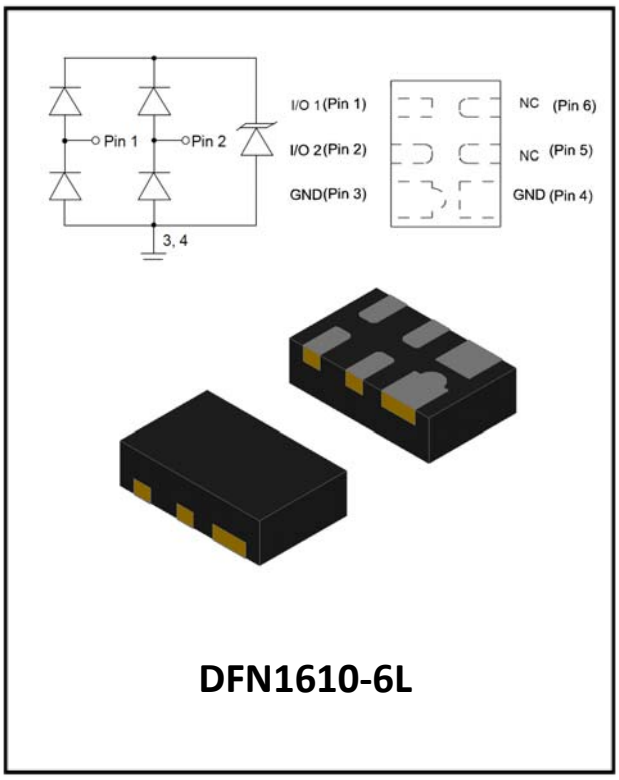
2-Line, Uni-directional, Ultra-low Capacitance Transient Voltage Suppressor



DFN1610-6L

Features

- Stand-off voltage: 5V Max
- Transient protection for each line according to
  IEC61000-4-2(ESD): ±20kV (contact)
  IEC61000-4-5(surge): 5A (8/20μs)
- Low leakage current
- Low clamping voltage
- RoHS Compliant

Applications

- Cellular Handsets and Accessories
- USB Ports
- Video Interface
- MDDI Ports

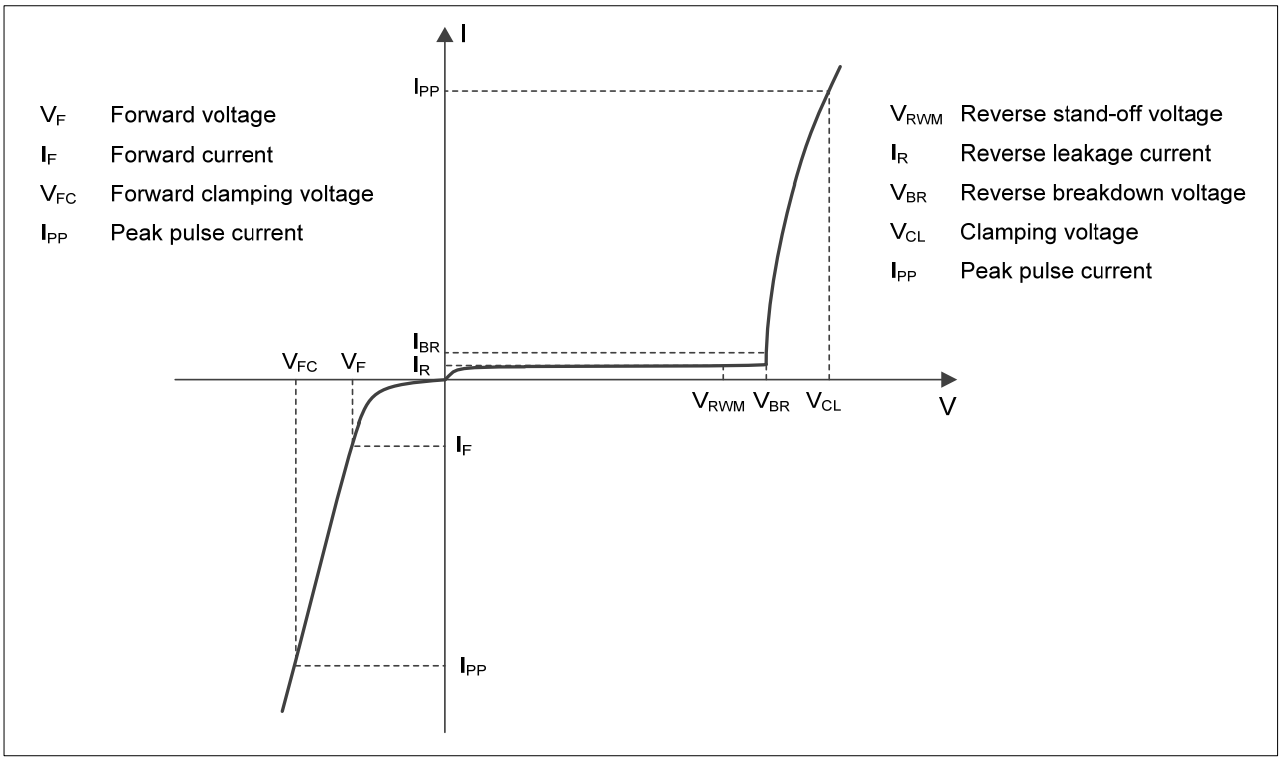
Mechanical Data

- Package: DFN1610-6L
- Case Material: “Green” Molding Compound
- Moisture Sensitivity: Level 3 per J-STD-020
- Marking Information: See Below



0502P = Marking Code
Dot denotes Pin1

■Definitions of electrical characteristics



■Maximum Ratings

PARAMETER	SYMBOL	LIMITS	UNIT
Peak pulse power (t_p = 8/20μs)	P_{pk}	60	W
Peak pulse current (t_p = 8/20μs)	I_{PP}	5	A
ESD according to IEC61000-4-2 air discharge	V_{ESD}	±25	kV
ESD according to IEC61000-4-2 contact discharge		±20	
Junction temperature	T_J	-55~125	ºC
Storage temperature	T_{STG}	-55~150	ºC

■Electrical Characteristics（T_a=25℃ Unless otherwise specified）

PARAMETER	Symbol	UNIT	Conditions	Min	Typ	Max
Reverse maximum working voltage	V_{RWM}	V				5
Reverse leakage current	I_R	μA	V_{RWM} = 5V			0.6
Reverse breakdown voltage	V_{BR}	V	I_T = 1mA	6		
Clamping voltage [1)]	V_{CL}	V	I_{PP} = 1A, t_p = 8/20μs any I/O pin to ground			9
		V	I_{PP} = 5A, t_p = 8/20μs any I/O pin to ground			12
Junction capacitance	C_J	pF	V_R = 0V, f = 1MHz any I/O pin to ground		0.5	0.8
Junction capacitance	C_J	pF	V_R = 0V, f = 1MHz between I/O pins		0.3	0.4

Notes:
(1). Non-repetitive current pulse, according to IEC61000-4-5.

■Ordering Information (Example)

PREFERED P/N	PACKING CODE	UNIT WEIGHT(mg)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
ESDSLC0502P6	F1	Approximate 2.5	3 000	30 000	120 000	7” reel

■ Characteristics (Typical)

Fig.1 8/20μs waveform per IEC61000-4-5

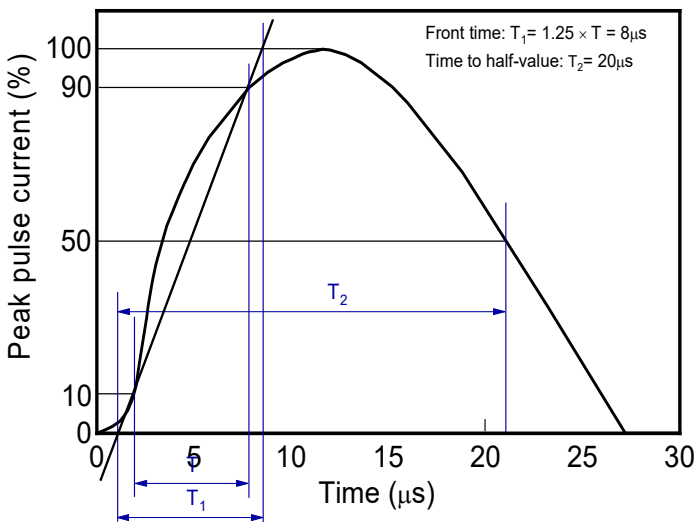


Fig.2 Contact discharge current waveform per IEC61000-4-2

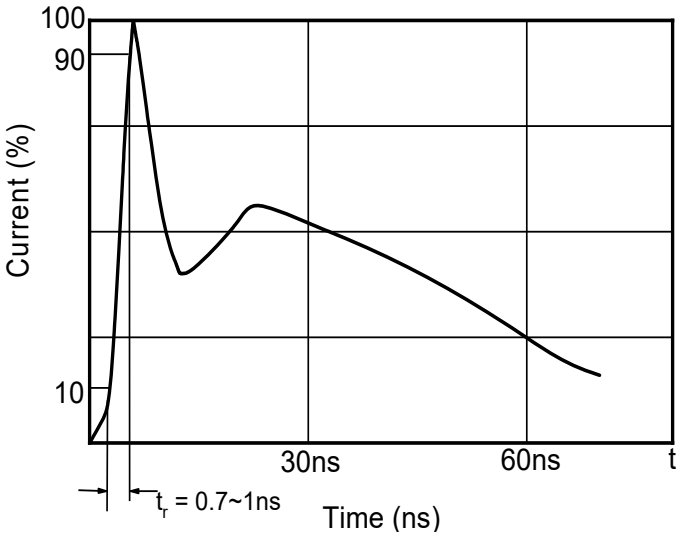


Fig.3 Clamping voltage vs. Peak pulse current

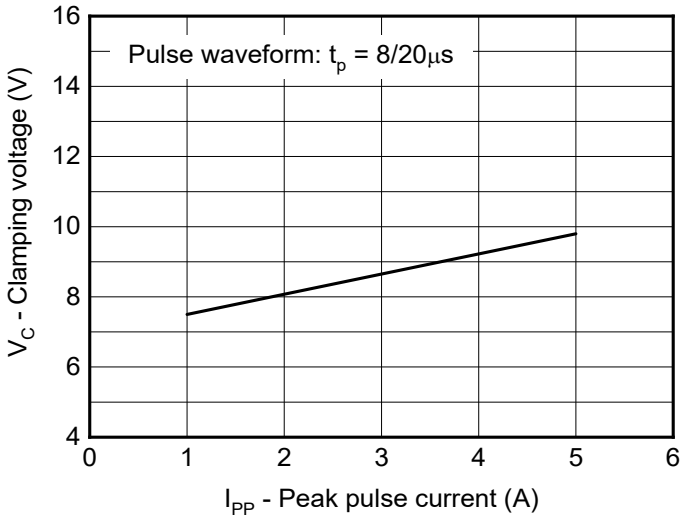


Fig.4 Capacitance vs. Reverse voltage

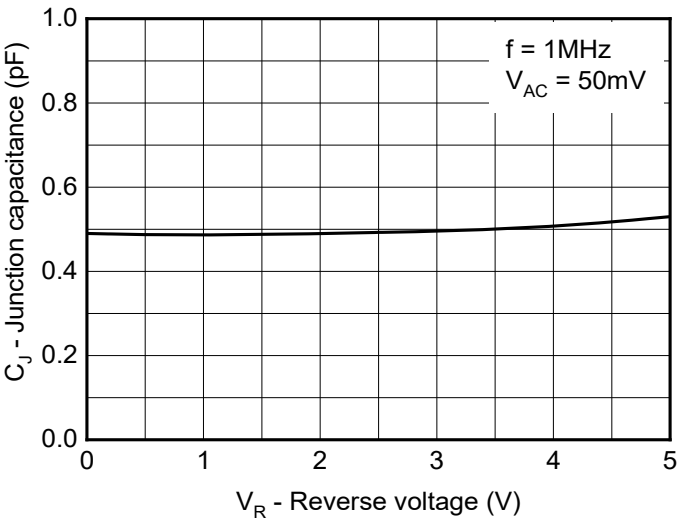


Fig.5 Non-repetitive peak pulse power vs. Pulse time

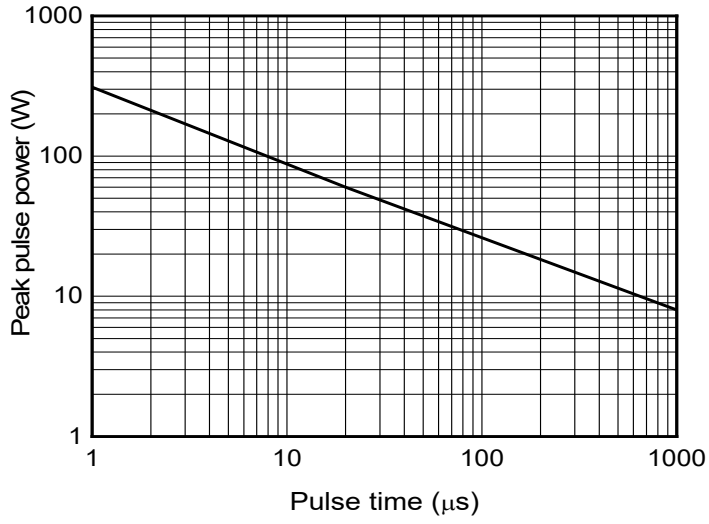


Fig.6 Power derating vs. Ambient temperature

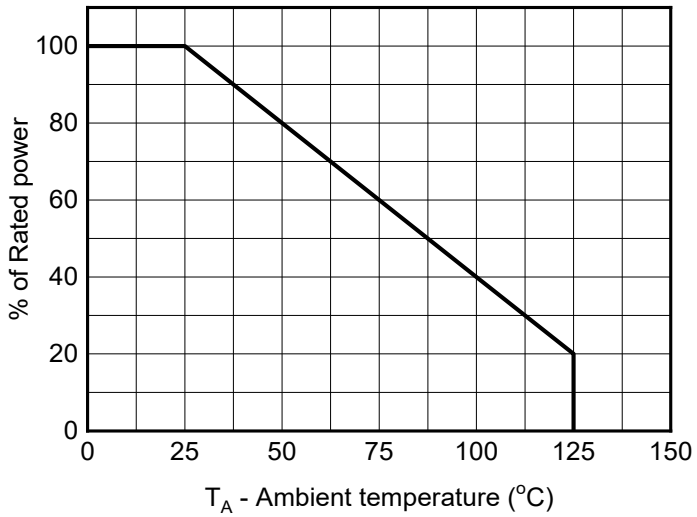


Fig.7 ESD clamping
(+8kV contact discharge per IEC61000-4-2)

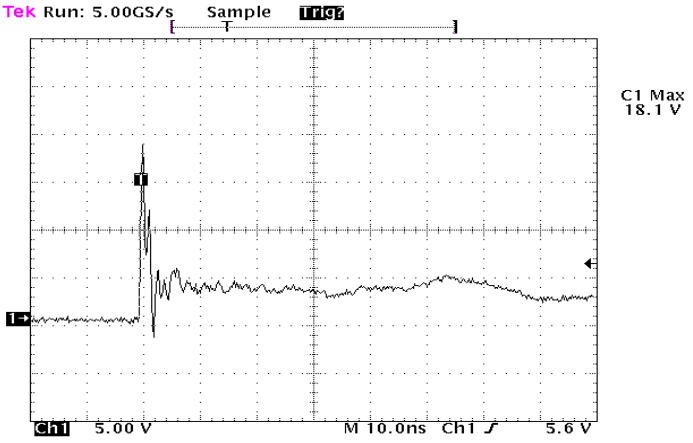
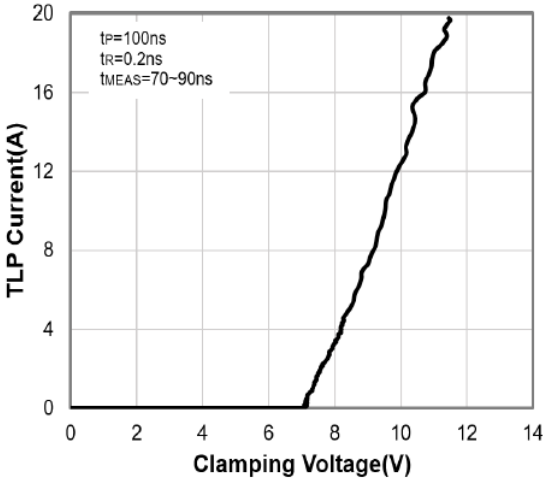
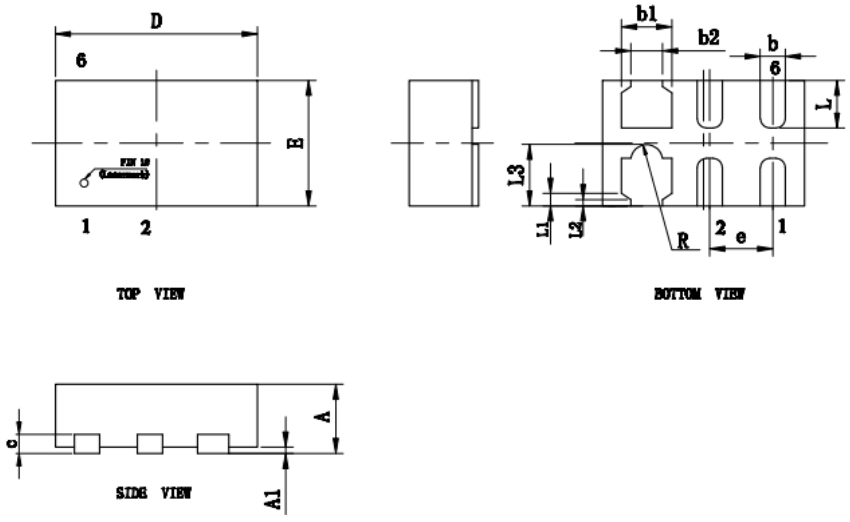


Fig.7 TLP Measurment

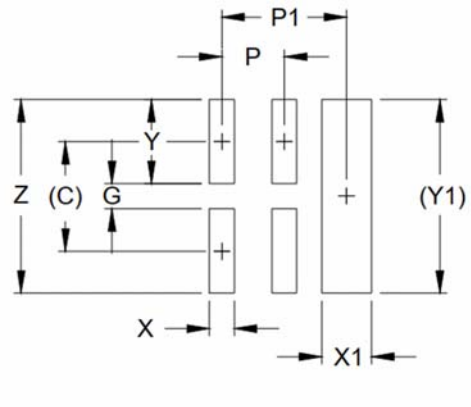


■ Outline Dimensions



SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	0.50	0.55	0.60
A1	-	0.02	0.05
b	0.15	0.20	0.25
b1	0.35	0.40	0.45
b2	0.20	0.25	0.30
c	0.10	0.15	0.20
D	1.55	1.60	1.65
E	095	1.00	1.05
e	0.50 BSC		
L	0.33	0.38	0.43
L1	0.100REF		
L2	0.05REF		
L3	0.49REF		
e	0.08	0.13	0.18

■ Recommended PCB Layout



DIMENSIONS		
DIM	INCHES	MILLIMETERS
C	(.034)	(0.87)
G	.007	0.19
P	.020	0.50
P1	.039	1.00
X	.008	0.20
X1	.016	0.40
Y	.027	0.68
Y1	(.061)	(1.55)
Z	.061	1.55

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

Notice

All products, product specifications and data are subject to change without notice to improve reliability, function or design or otherwise. Information contained herein is intended to provide a product description only. No license, express or implied, to any intellectual property rights is granted by this document. Except as provided in STARSEA's terms and conditions of sale for such products, STARSEA assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of STARSEA products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.