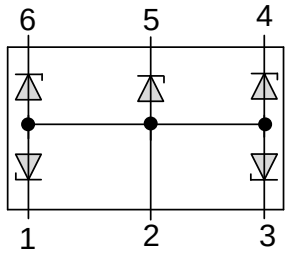
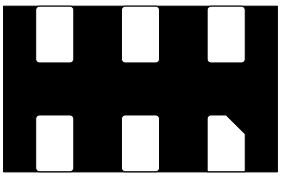
5-Line, Uni-directional, Ultra-low Capacitance Transient Voltage Suppressor





DFN1410-6L

Features

- Stand-off voltage: 5V Max
- Transient protection for each line according to
  IEC61000-4-2(ESD): ±15kV (contact)
  IEC61000-4-5(surge): 6A (8/20μs)
- Low leakage current
- Low clamping voltage
- RoHS Compliant

Applications

- Cellular Handsets and Accessories
- Computers and peripherals
- Audio and video equipment
- Communication systems
- Portable electronics
- Subscriber Identity Module (SIM) card protection

Mechanical Data

- Package: DFN1410-6L
- Case Material: “Green” Molding Compound
- Marking Information: See Below

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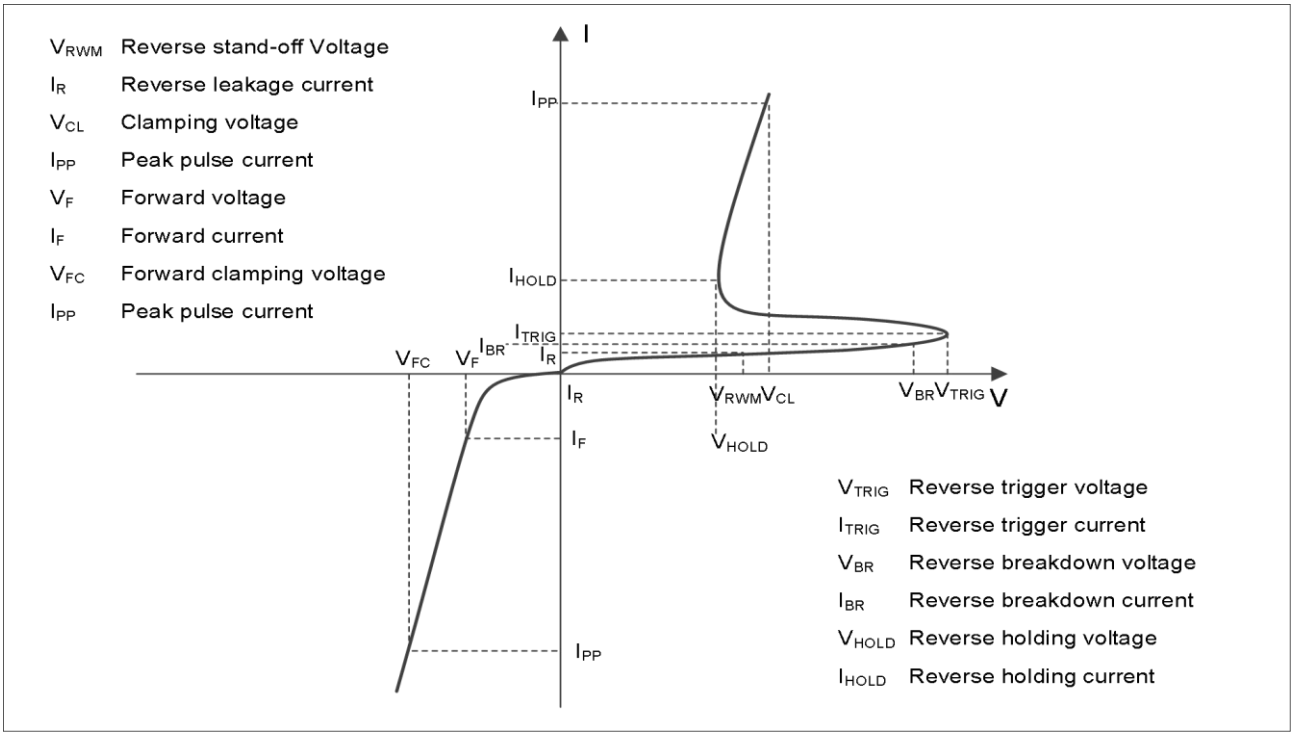
■Definitions of electrical characteristics



■Maximum Ratings

PARAMETER	SYMBOL	LIMITS	UNIT
Peak pulse power (t_p = 8/20μs)	P_{pk}	48	W
Peak pulse current (t_p = 8/20μs)	I_{PP}	6	A
ESD according to IEC61000-4-2 air discharge	V_{ESD}	±15	kV
ESD according to IEC61000-4-2 contact discharge		±15	
Junction temperature	T_J	-55~125	°C
Storage temperature	T_{STG}	-55~150	°C

■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			0.1
Reverse breakdown voltage	V_{BR}	V	I_T = 1mA	7		
Clamping voltage 1)	V_{CL}	V	I_{PP} = 16A, t_p = 100ns		6.5	
Clamping voltage 2)	V_{CL}	V	V_{ESD} = +8kV		6.5	
Clamping voltage 3)	V_{CL}	V	I_{PP} = 4A, t_p = 8/20μs		3.2	5
		V	I_{PP} = 6A, t_p = 8/20μs		4	8
Junction capacitance	C_J	pF	V_R = 0V, f = 1MHz any I/O pin to ground		3	5
Junction capacitance	C_J	pF	V_R = 0V, f = 1MHz between I/O pins		1.5	2.5

Notes:

1) TLP parameter: Z0 = 50Ω, tp = 100ns, tr = 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)

PREFERED P/N	PACKING CODE	UNIT WEIGHT(mg)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
ESDLC0505P7	F1	Approximate 2.2	3 000	30 000	120 000	7” reel

■ Characteristics (Typical)

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

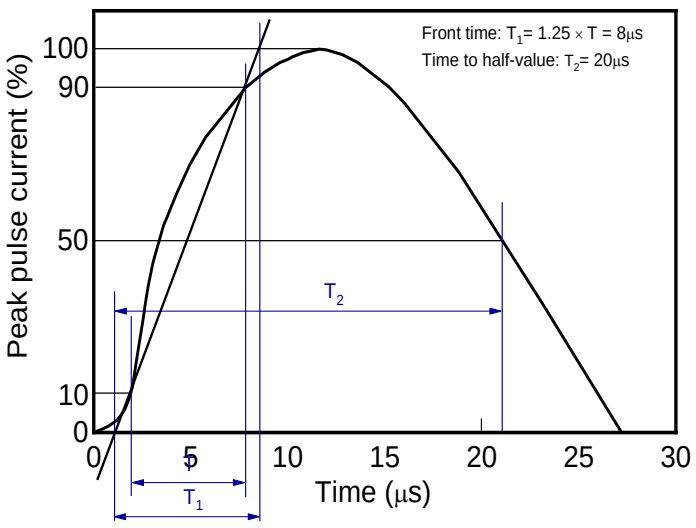


Fig.2 Contact discharge current waveform per IEC61000-4-2

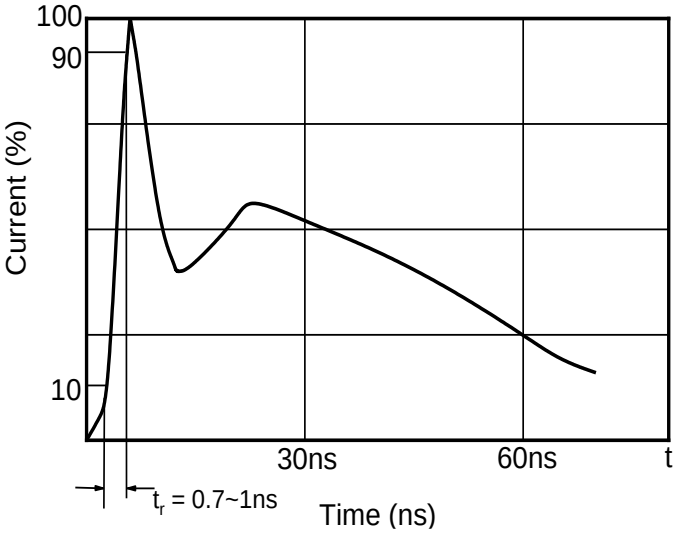


Fig.3 Clamping voltage vs. Peak pulse current

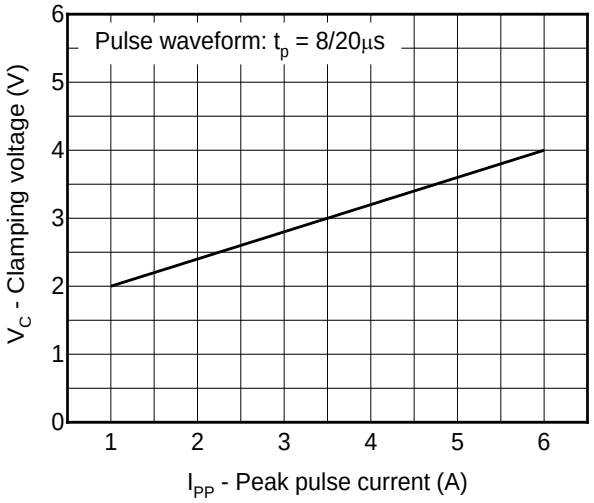


Fig.4 Capacitance vs. Reverse voltage

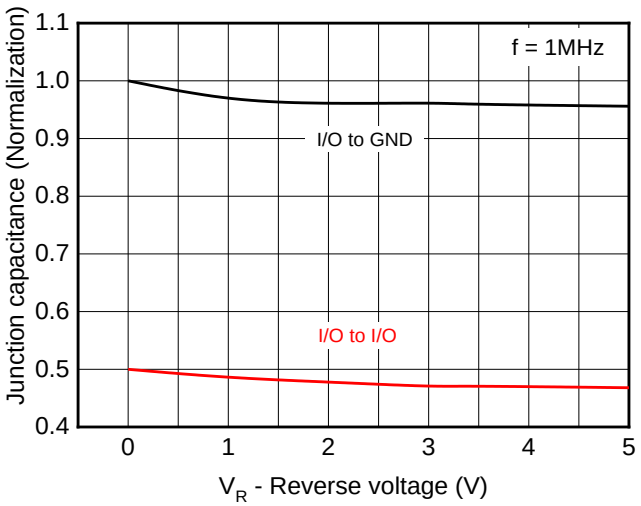


Fig.5 Non-repetitive peak pulse power vs. Pulse time

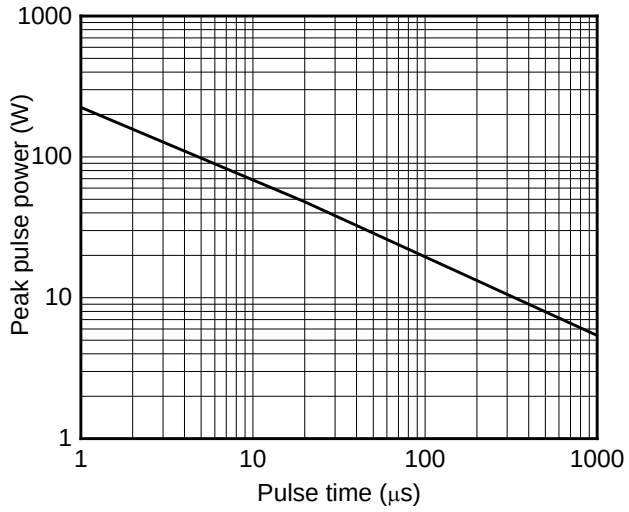


Fig.6 Power derating vs. Ambient temperature

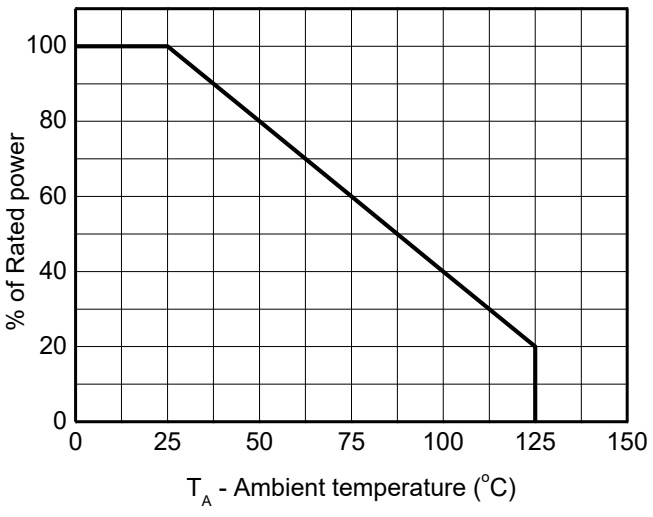


Fig.7 ESD clamping
(+8kV contact discharge per IEC61000-4-2)

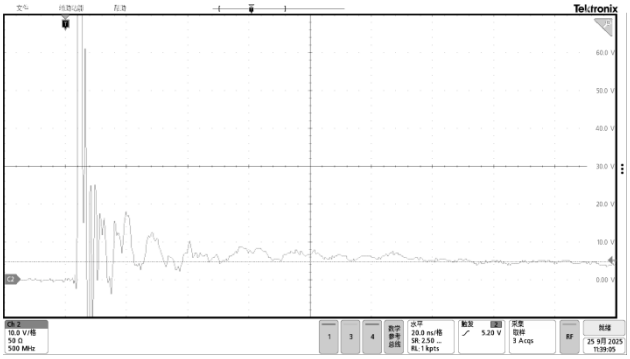


Fig.8 ESD clamping
(-8kV contact discharge per IEC61000-4-2)

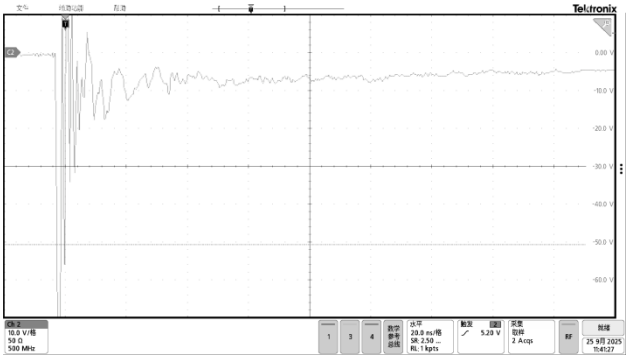
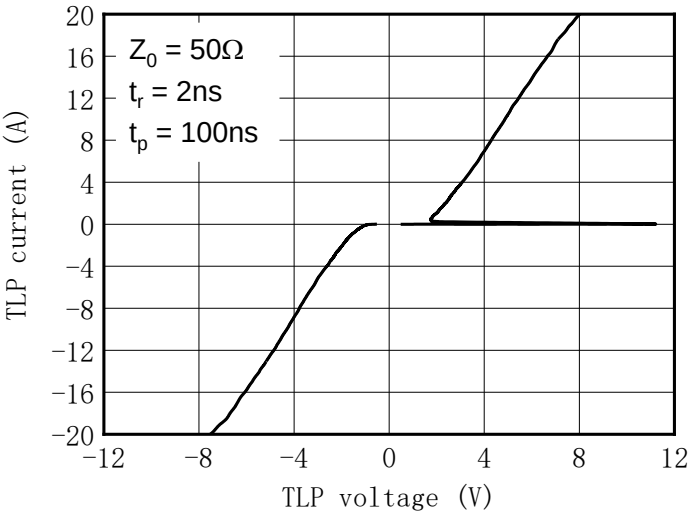
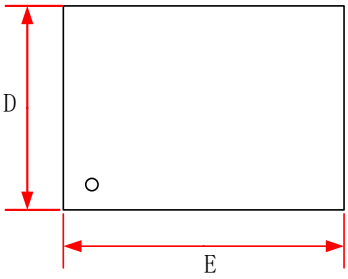
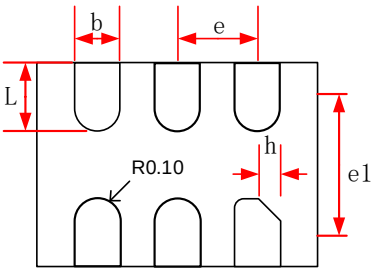


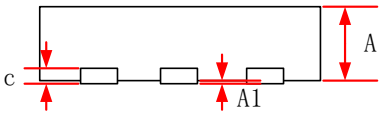
Fig.9 TLP Measurment



■ Outline Dimensions







Symbol	Dimensions in Millimeters		
	Min.	Typ.	Max.
A	0.50	0.55	0.60
A1	0.00	0.02	0.05
b	0.15	0.20	0.25
c	0.15 Ref.		
D	0.95	1.00	1.05
E	1.40	1.45	1.50
e	0.50 BSC		
e1	0.65 BSC		
L	0.25	0.35	0.45

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