

4-CHANNEL LOW CAPACITANCE ESD PROTECTION DIODES ARRAY

The LRC8804FDT1G is a 4-channel ultra low capacitance rail clam ESD protection diodes array . Each channel consists of a pair of diodes that steer positive or negative ESD current to either the positive or negative rail . A zener diode is integrated in to the array between the positive and negative supply rails. In the typical applications, the negative rail pin (assigned as GND) is connected with system ground . The Positive ESD current is steered to the ground through an ESD diode and Zener diode and the positive ESD voltage is clamped to the zener voltage.

The LRC8804FDT1G is idea to protect high speed data lines.

●APPLICATIONS

- 1) HDMI / DVI ports
- 2)Display Port interface
- 3)10M / 100M / 1G Ethernet
- 4)USB 3.1 interface
- 4)VGA interface
- 5)Set-top box
- 6)Flat panel Monitors / TVs
- 7)PC / Note book

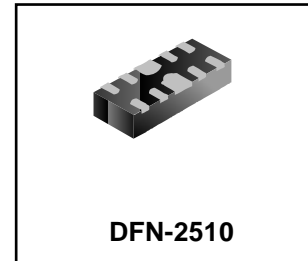
●FEATURES

- 1) 4 channels of ESD protection;
- 2)Provides ESD protection to IEC61000-4-2 level 4
 - ±15kV air discharge
 - ±15kV contact discharge;
- 3) Channel I/O to GND capacitance: 0.3pF(Max)
- 4) Channel I/O to I/O capacitance: 0.28pF(Max)
- 5) Low clamping voltage;
- 6) Low operating voltage;
- 7) Improved zener structure;
- 8) Optimized package for easy high speed data lines PCB layout;
- 9) RoHS compliant.

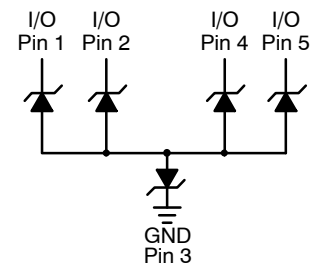
●DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
LRC8804FDT1G	24E	3000Tape&Reel

LRC8804FDT1G



PIN CONFIGURATION



LRC8804FDT1G**●ABSOLUTE MAXIMUM RATINGS**

Parameter	Symbol	Limits	Unit
Peak Pulse Power(8/20us)	PPP	75	W
Peak Pulse Current(8/20us)	IPP	5	A
ESD per IEC 61000-4-2(Air)	VESD1	±15	kV
ESD per IEC 61000-4-2(Contact)	VESD2	±15	kV
Operating Temperature Range	T _{opr}	-55 ~ +125	°C
Storage Temperature Range	T _{stg}	-55 ~ +150	°C

●ELECTRICAL CHARACTERISTICS (T_a= 25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Reverse Working Voltage	VRWM	–	–	5	V	Any I/O pin to GND
Reverse Breakdown Voltage	VBR	5.5	–	–	V	I _t =1mA; Any I/O pin to GND
Reverse Leakage Current	IR	–	–	0.3	μA	VRWM =5V, T=25°C; Any I/O pin to GND
Clamping Voltage	VC	–	–	10	V	IPP=1A, tP=8/20μs; Any I/O pin to GND
Junction Capacitance Between Channel	CJ1	–	0.2	0.28	pF	VR=0V, f=1MHz; Between I/O pins
Junction Capacitance Between I/O And GND	CJ2	–	0.25	0.3	pF	VR=0V, f=1MHz; Any I/O pin to GND

LRC8804FDT1G

IEC 61000-4-2 Spec.

Level	Test Voltage (kV)	First Peak Current (A)	Current at 30 ns (A)	Current at 60 ns (A)
1	2	7.5	4	2
2	4	15	8	4
3	6	22.5	12	6
4	8	30	16	8

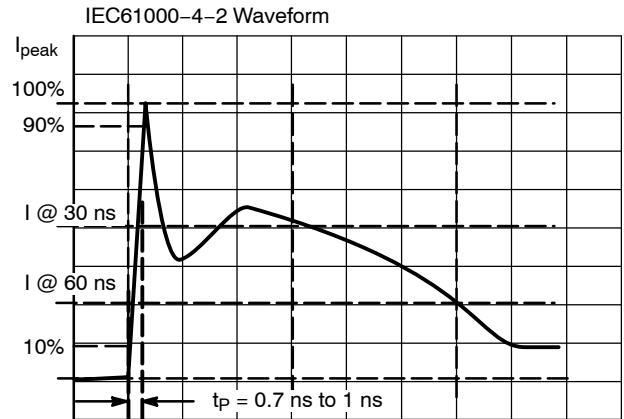


Figure 1. IEC61000-4-2 Spec

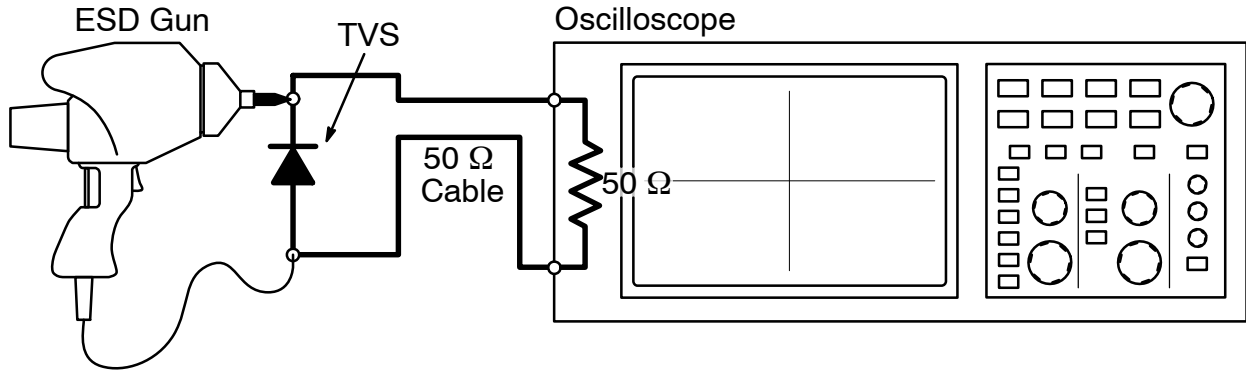


Figure 2. Diagram of ESD Clamping Voltage Test Setup

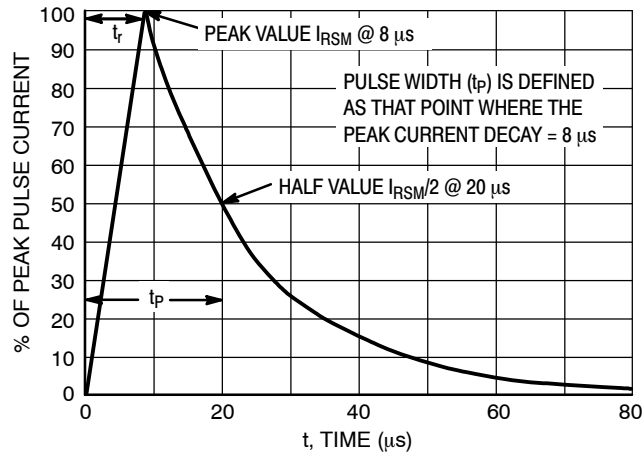
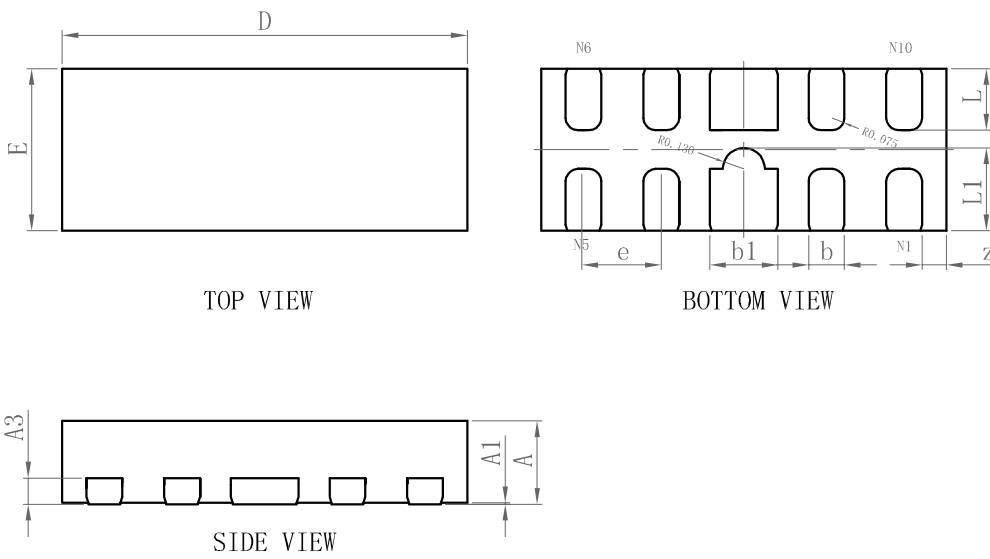


Figure 3. 8 X 20 μs Pulse Waveform

LRC8804FDT1G

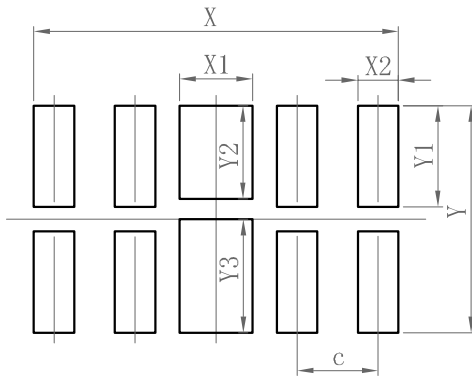
DFN-2510

Package Outline Dimension



DFN2510			
Dim	Min	Typ	Max
A	0.48	0.53	0.58
A1	0	0.02	0.05
A3	-	0.152	-
b	0.17	0.22	0.27
b1	0.37	0.42	0.47
D	2.45	2.50	2.55
e	0.45	0.50	0.55
E	0.95	1.00	1.05
L	0.33	0.38	0.43
L1	0.46	0.51	0.56
z	0.10	0.15	0.20
All Dimensions in mm			

Suggested Pad layout



DFN2510	mm
c	0.5
X	2.25
X1	0.45
X2	0.25
Y	1.4
Y1	0.625
Y2	0.575
Y3	0.7