

## 4-CHANNEL LOW CAPACITANCE ESD PROTECTION DIODES ARRAY

The LRC099-04DT1G 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 LRC099-04DT1G is idea to protect high speed data lines.

### ● APPLICATIONS

- 1) HDMI / DVI ports
- 2) Display Port interface
- 3) 10M / 100M / 1G Ethernet
- 4) USB 2.0 interface
- 4) VGA interface
- 5) Set-top box
- 6) Flat panel Monitors / TVs
- 7) PC / Note book

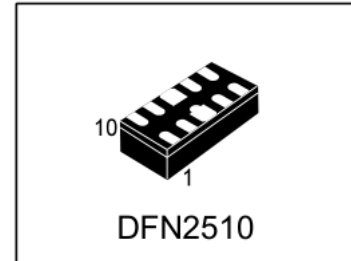
### ● FEATURES

- 1) 4 channels of ESD protection;
- 2) Provides ESD protection to IEC61000-4-2 level 4
  - ±15kV air discharge
  - ±8kV contact discharge;
- 3) Channel I/O to GND capacitance: 0.9pF(Max)
- 4) Channel I/O to I/O capacitance: 0.45pF(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.

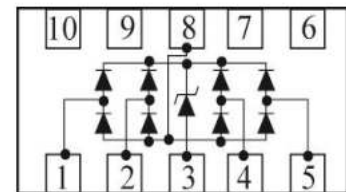
### ● DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
LRC099-04DT1G	24P	3000Tape&Reel

## LRC099-04DT1G



### PIN CONFIGURATION



**LRC099-04DT1G**

● **ABSOLUTE MAXIMUM RATINGS**

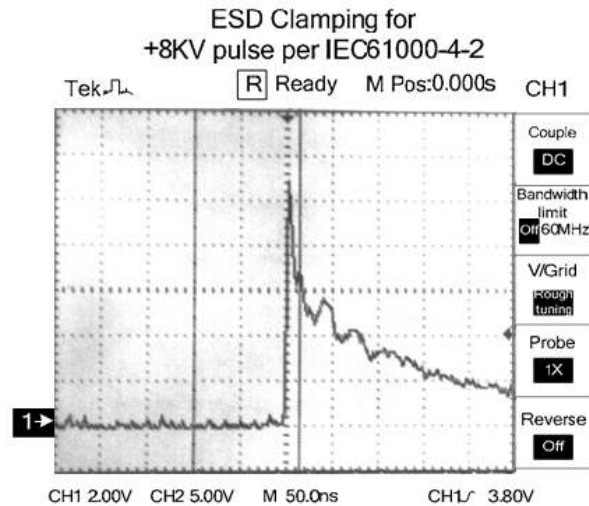
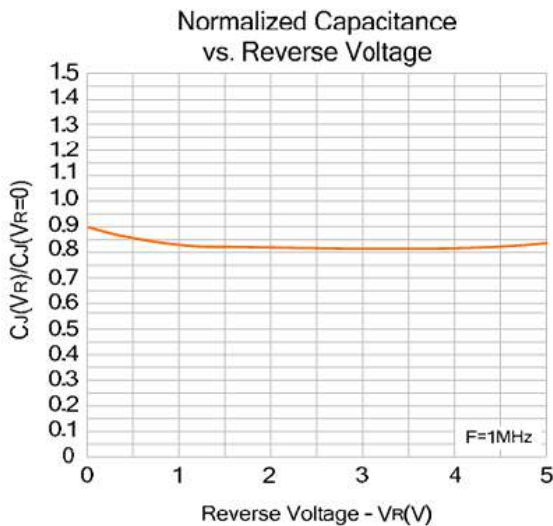
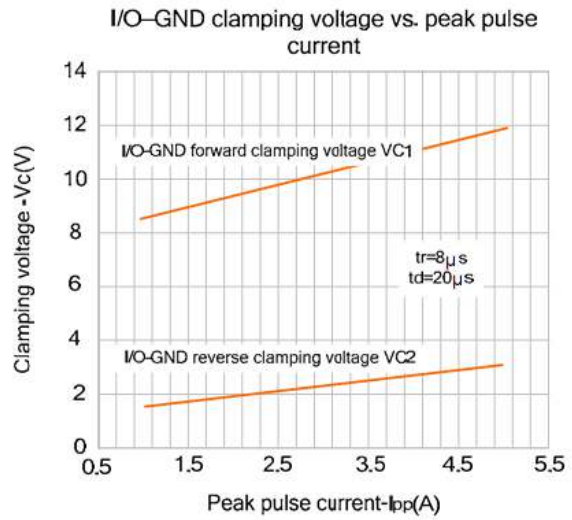
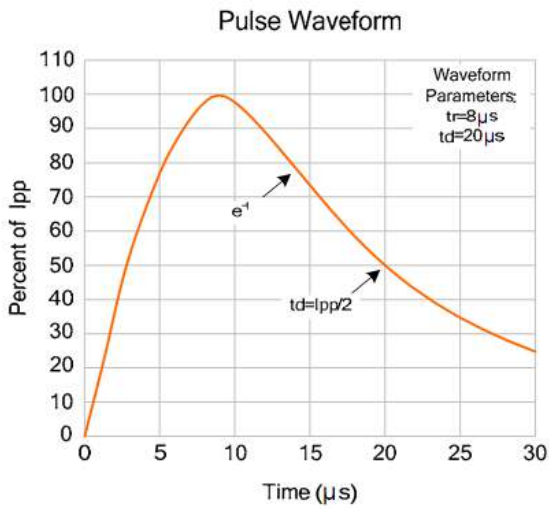
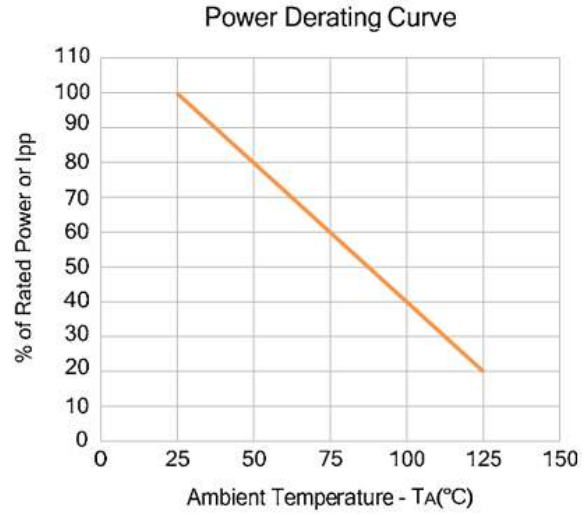
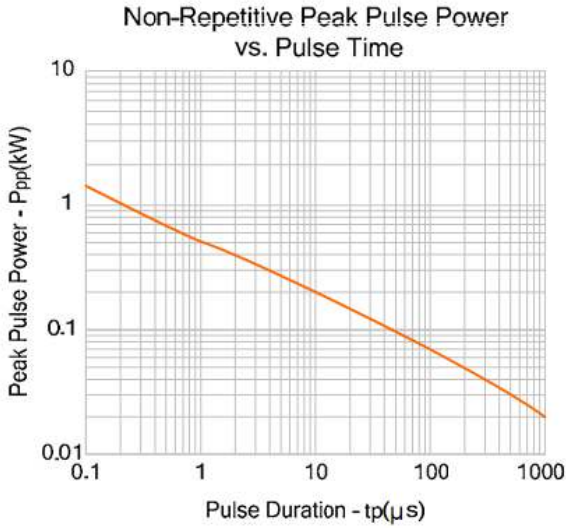
Parameter	Symbol	Limits	Unit
Peak Pulse Power(8/20us)	PPP	150	W
Peak Pulse Current(8/20us)	IPP	5	A
ESD per IEC 61000-4-2(Air)	VESD1	±15kV	kV
ESD per IEC 61000-4-2(Contact)	VESD2	±8kV	kV
Operating Temperature Range	T <sub>opr</sub>	-55 ~ +125	°C
Storage Temperature Range	T <sub>stg</sub>	-55 ~ +150	°C

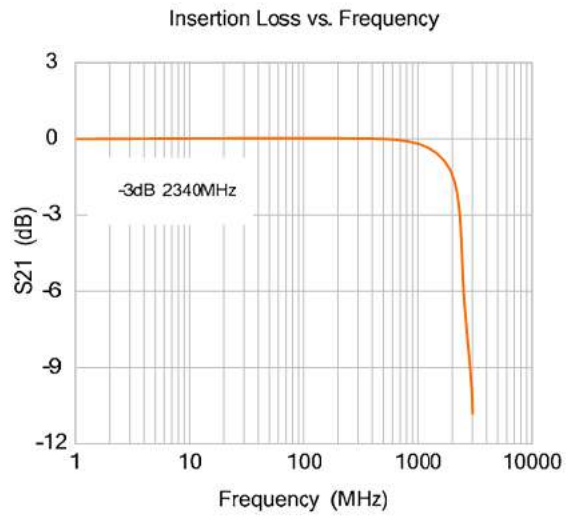
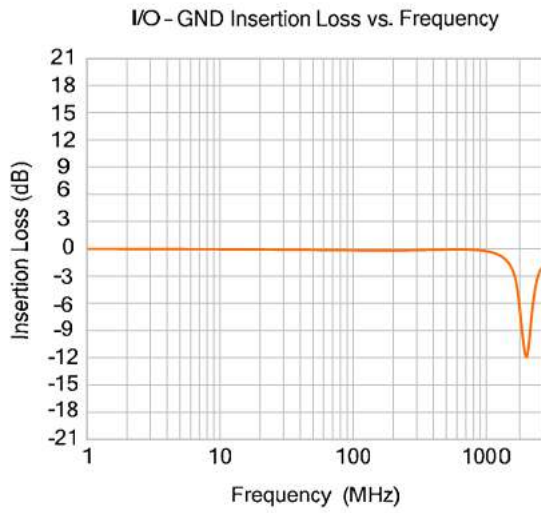
● **ELECTRICAL CHARACTERISTICS (T<sub>a</sub>= 25°C)**

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Reverse Working Voltage	VRWM	–	–	5	V	Any I/O pin to GND
Reverse Breakdown Voltage	VBR	6	–	–	V	I <sub>t</sub> = 1mA; Any I/O pin to GND
Reverse Leakage Current	IR	–	–	1	μA	VRWM = 5V, T = 25°C; Any I/O pin to GND
Positive Clamping Voltage	VC1	–	8.5	12	V	IPP = 1A, tP = 8/20μs; Positive pulse; Any I/O pin to GND
Negative Clamping Voltage	VC2	–	1.8	–	V	IPP = 1A, tP = 8/20μs; Negative pulse; Any I/O pin to GND
Junction Capacitance Between Channel	CJ1	–	0.35	0.45	pF	VR = 0V, f = 1MHz; Between I/O pins
Junction Capacitance Between I/O And GND	CJ2	–	–	0.9	pF	VR = 0V, f = 1MHz; Any I/O pin to GND

# LRC099-04DT1G

## TYPICAL ELECTRICAL CHARACTERISTICS CURVE

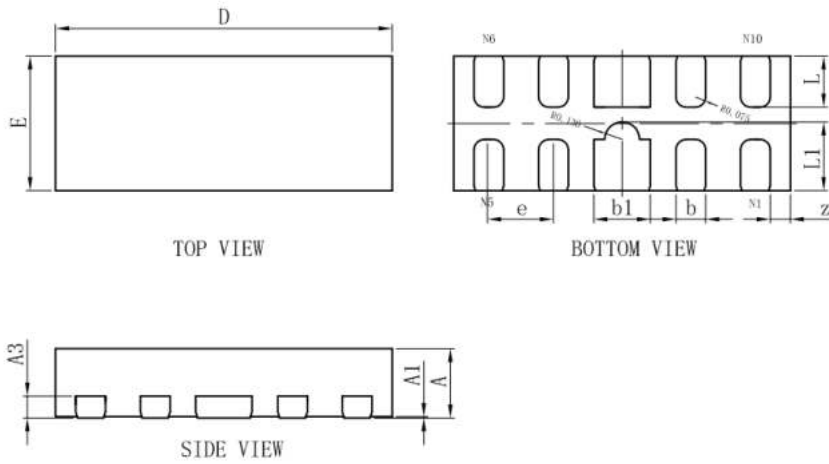


**LRC099-04DT1G****TYPICAL ELECTRICAL CHARACTERISTICS CURVE**

## LRC099-04DT1G

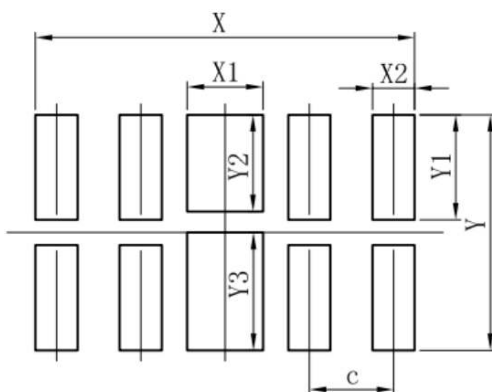
### OUTLINE AND DIMENSIONS

DFN2510



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			

### SOLDERING FOOTPRINT



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