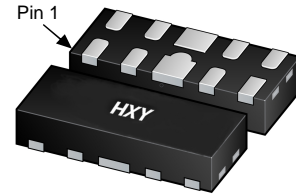




### Discription

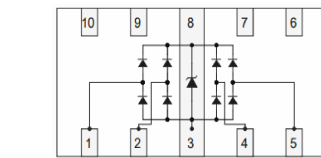
The HESDUC5VU4EF-A is a 4-channel ultra low capacitance rail clam ESD protection diodes array . Each channel consists of a pair of diodes that steer positive or negative ESD current to either the positive or negative rail . A zener diode is integrated in to the array between the positive and negative 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.



DFN-2510

### Features

- ★ 4 channels of ESD protection;
- ★ Provides ESD protection to IEC61000-4-2 level 4
  - ±15kV air discharge
  - ±8kV contact discharge;
- ★ Channel I/O to GND capacitance: 0.5pF (Max)
- ★ Channel I/O to I/O capacitance: 0.55pF (Max)
- ★ Low clamping voltage;
- ★ Low operating voltage;
- ★ Improved zener structure;
- ★ Optimized package for easy high speed data lines PCB layout;
- ★ RoHS compliant and Halogen Free.



Circuit Diagram

### Ordering information

Product ID	Pack	Qty(PCS)
HESDUC3V3U4EF-A	DFN-2510	3000

### Absolute Ratings (T<sub>amb</sub>=25°C )

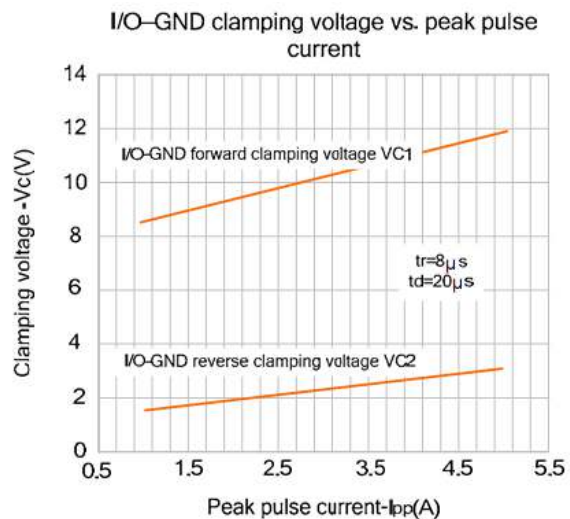
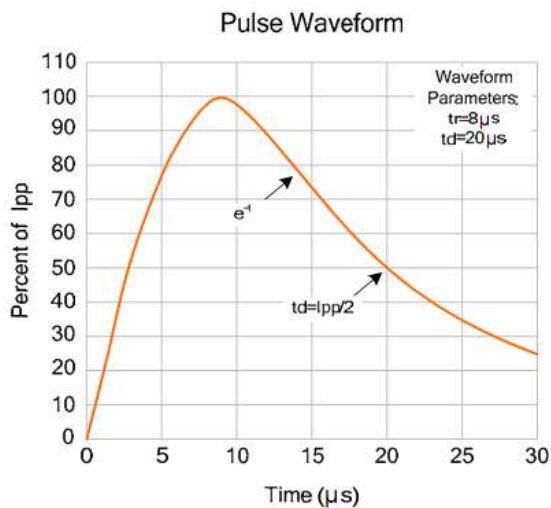
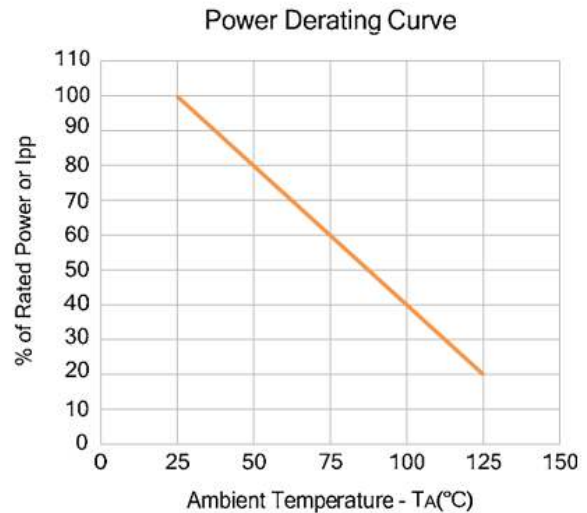
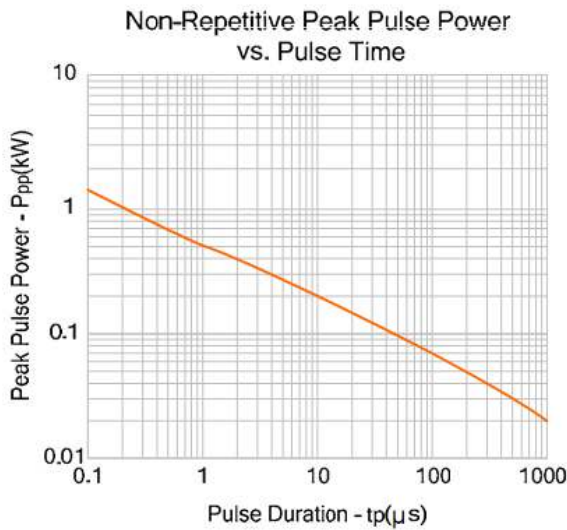
Symbol	Parameter	Value	Units	
P <sub>PP</sub>	Peak Pulse Power (t <sub>p</sub> = 8/20μs)	150	W	
I <sub>PP</sub>	Peak Pulse Current(8/20us)	4	A	
T <sub>L</sub>	Maximum lead temperature for soldering during 10s	260	°C	
T <sub>stg</sub>	Storage Temperature Range	-55 to +150	°C	
T <sub>op</sub>	Operating Temperature Range	-40 to +125	°C	
T <sub>j</sub>	Maximum junction temperature	150	°C	
	IEC61000-4-2 (ESD)	air discharge contact discharge	± 15 ± 8	KV

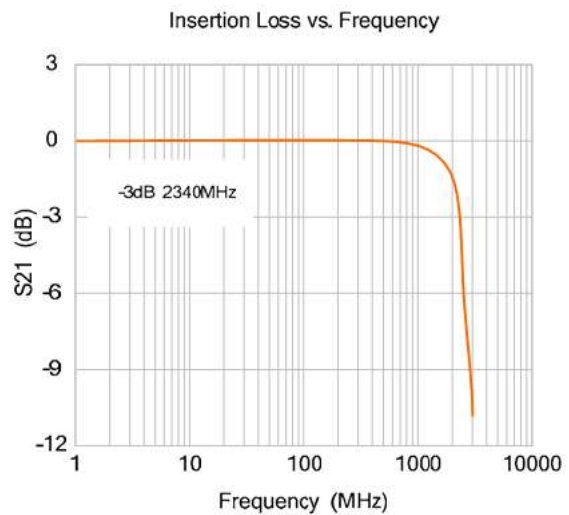
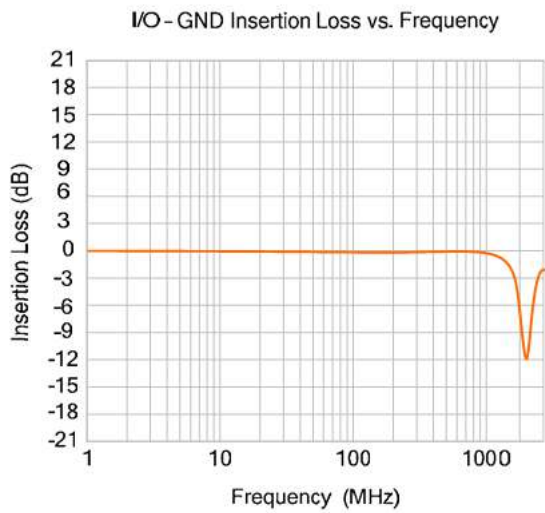
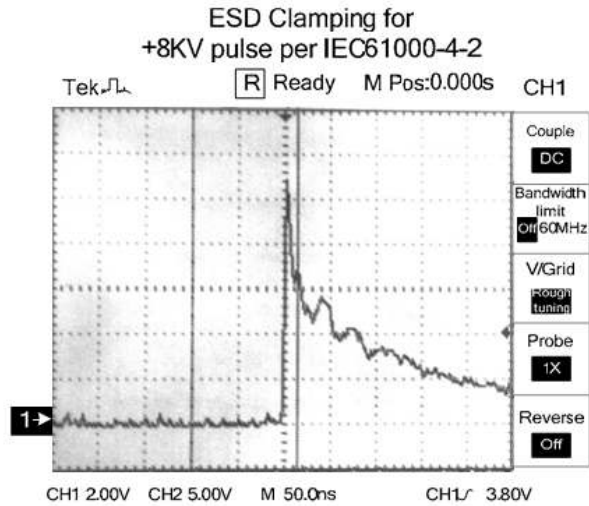
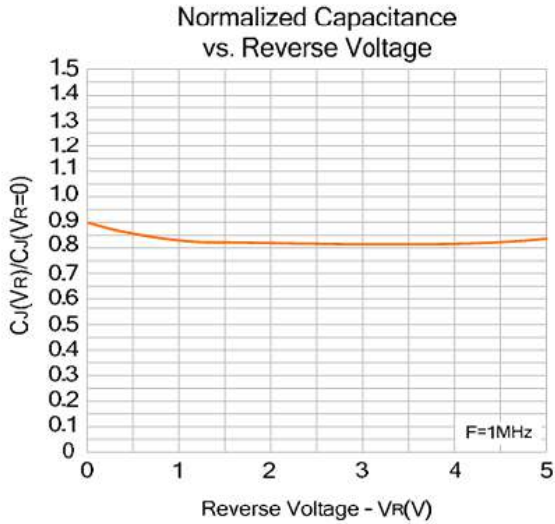


**ELECTRICAL CHARACTERISTICS (Ta= 25°C)**

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	It = 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	22	V	I <sub>PP</sub> =4A, t <sub>P</sub> =8/20μs; Positive pulse; Any I/O pin to GND
Negative Clamping Voltage	VC2	-	1.8	-	V	I <sub>PP</sub> =1A, t <sub>P</sub> =8/20μs; Negative pulse; Any I/O pin to GND
Junction Capacitance Between Channel	C <sub>J1</sub>	-	0.3	0.4	pF	VR=0V, f=1MHz; Between I/O pins
Junction Capacitance Between I/O And GND	C <sub>J2</sub>	-	0.5	0.7	pF	VR=0V, f=1MHz; Any I/O pin to GND

**TYPICAL ELECTRICAL CHARACTERISTICS CURVE**

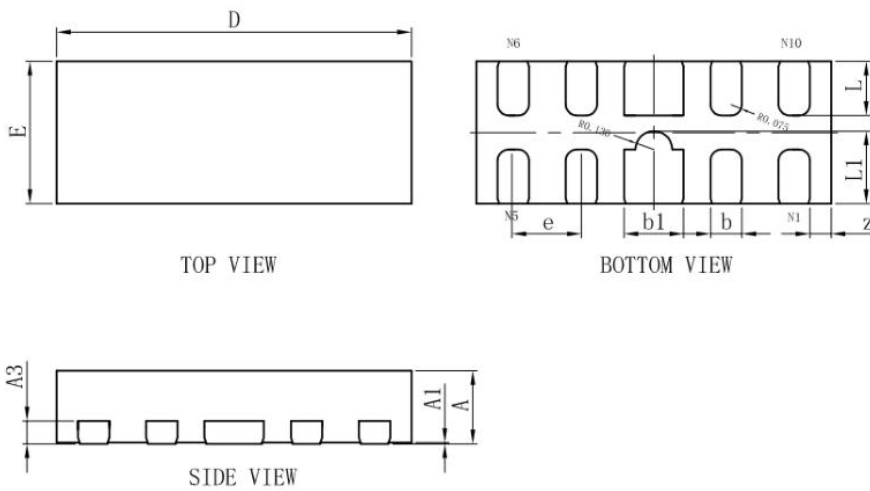






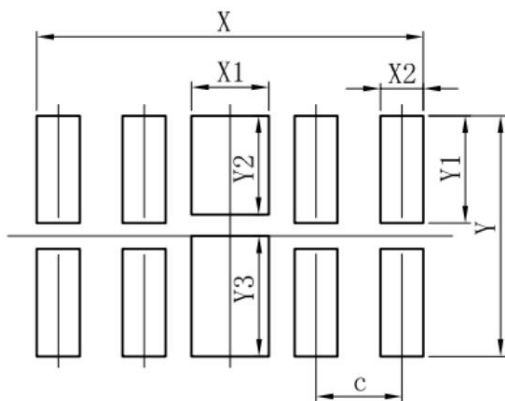
### Package Outline Dimension

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			

### 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



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