

#### **Discription**

The HESDUC5VU5LIL-A is a 5-channel ultra low capacitance rail clamp ESD protection diodes array. Each channel consists of a pair of ESD 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.

# 65 23

SOT-23-6L

# 1 2 3

Circuit Diagram

#### **Features**

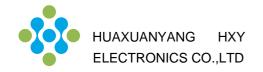
- ★5 channels of ESD protection;
- ★ Provides ESD protection to IEC61000-4-2 level 4
  - ±27kV air discharge
  - ±15kV contact discharge;
- ★ Channel I/O to GND capacitance: 0.4pF(Max)
- ★ Channel I/O to I/O capacitance: 0.8pF(Max)
- ★Low clamping voltage;
- ★Low operating voltage;
- ★Improved zener structure;
- ★ Optimized package for easy high speed data lines PCB layout;
- ★RoHS compliant.

#### **Ordering Information**

Product ID	Pack	Qty(PCS)	
HESDNC5VU5LI-A	SOT-23-6L	3000	

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

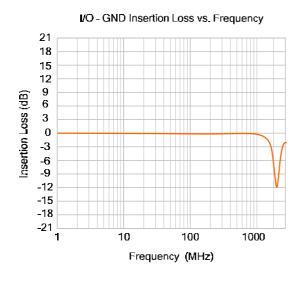
Characteristics	Symbol	Ratings	Unit
Peak Pulse Power(8/20µs)	P <sub>PP</sub>	55	W
Peak Pulse Current(8/20µs)	I <sub>PP</sub>	4	А
ESD per IEC 61000-4-2(Air)	V <sub>ESD1</sub>	±20kV	kV
ESD per IEC 61000-4-2(Contact)	V <sub>ESD2</sub>	±15kV	kV
Operating Temperature Range	Topr	-55 ~ +125	°C
Storage Temperature Range	Tstg	-55 ~ +150	°C

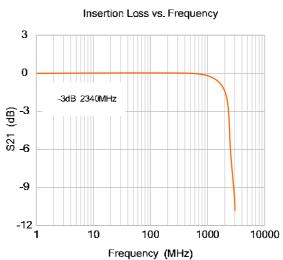


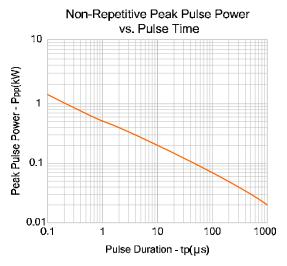
# **Electrical Characteristics**(Tamb=25°C)

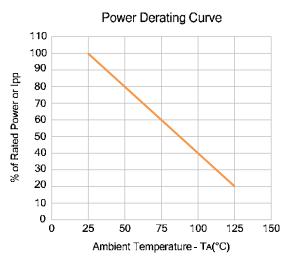
Characteristics	Symbol	Test Conditions	Min.	Тур.	Max.	Unit
Reverse Working	$V_{RWM}$	Any I/O pin to GND			5	V
Voltage						
Reverse Breakdown	$V_{BR}$	I t=1mA;	6			V
Voltage		Any I/O pin to GND				
Reverse Leakage	I <sub>R</sub>	V <sub>RWM</sub> =5V, T=25°C;			1	μΑ
Current		Any I/O pin to GND				
Positive Clamping Voltage	V <sub>C1</sub>	$I_{PP}=4A$ , $t_{P}=8/20 \mu s$ ;			12.0	V
		Positive pulse;		8.5		
		Any I/O pin to GND				
Negative Clamping Voltage	V <sub>C2</sub>	$I_{PP}=4A$ , $t_{P}=8/20\mu s$ ;	1			V
		Negative pulse;		1.8		
		Any I/O pin to GND				
Junction Capacitance	C <sub>J1</sub>	$V_R=0V$ , $f=1MHz$ ;		0.3	0.4	pF
Between Channel		Between I/O pins				
Junction Capacitance		V <sub>R</sub> =0V, f=1MHz;		0.0	0.0	nE
Between I/O And GND	$C_{J2}$	Any I/O pin to GND		0.6	0.8	pF

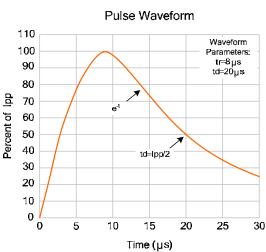
# **Typical Electrical Characteristics Curve**

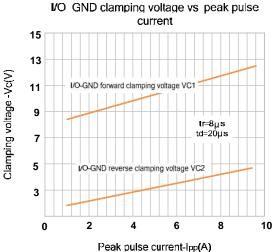


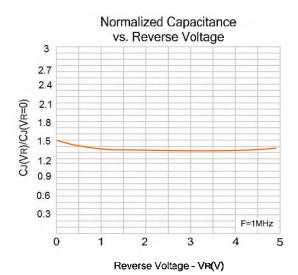






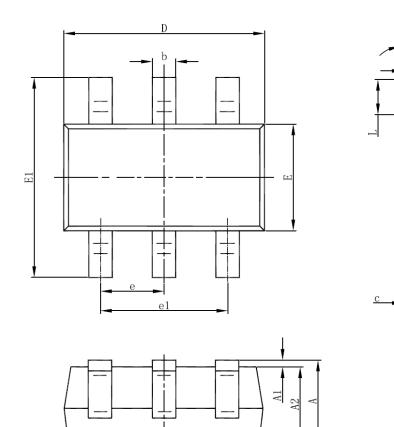








# **SOT-23-6L Package Information**



	Dimensions In Millimeters		Dimensions In Inches		
Symbol	Min	Max	Min	Max	
Α	1.050	1.250	0.041	0.049	
A1	0.000	0.100	0.000	0.004	
A2	1.050	1.150	0.041	0.045	
b	0.300	0.500	0.012	0.020	
С	0.100	0.200	0.004	0.008	
D	2.820	3.020	0.111	0.119	
Е	1.500	1.700	0.059	0.067	
E1	2.650	2.950	0.104	0.116	
е	0.950	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079	
L	0.300	0.600	0.012	0.024	
θ	0°	8°	0°	8°	

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