SuperESD – SENC5Dxx1UA

1. Description

The SENC5Dxx1UA is a Transient Voltage Suppressor that designed to protect components which are connected to data and transmission lines against electrostatic discharge (ESD), electrical fast Transients (EFT), and lightning. All pins are rated to withstand 30kV ESD pulses using the IEC61000-4-2 air discharge methods.

2. Features

- IEC 61000-4-2 Level 4 ESD Protection
  - ±30kV Contact Discharge
  - ±30kV Air Discharge
- 250W Peak pulse Power (8/20us)
- RoHS compliance

- Unidirectional configuration
- Low clamping voltage
- Low leakage current
- Protects one power or I/O

3. Applications

- Portable electronics
- Control & monitoring systems
- Servers, notebooks, and desktop PCs

- Set-top box
- Communication systems
- Digital cameras

4. Ordering Information

Part Number	Package	Material	Packing	Quantity per reel	Flammability Rating	Reel Size
SENC5Dxx1UA	SOD523	Halogen	Tape & Reel	3000 PCS	UL 94V-0	7 inches
Marking for the SENC5Dxx1UA series						
V_{RWM}	3.3V	5V	7V	12V	15V	24V
Marking	||||N1	||||N2	Z.H.8	||||N3	||||N4	||||N5

Table-1   Ordering information

5. Pin Configuration and Functions
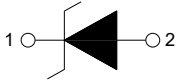
Pin	Name	Description	Outline	Circuit Diagram
1	IO	Connect to IO	1 ☐ Marking ☐ 2	1 ○—▷|—○ 2
2	GND	Connect to GND		

Table-2   Pin configuration

6. Specification

6.1. Absolute Maximum rating

Over operating free-air temperature range (unless otherwise noted)

Parameters	Symbol	Min.	Max.	Unit
Peak pulse power (tp=8/20us)@25℃	P_{pk}	-	250	W
Peak pulse current (tp=8/20us)@25℃	I_{PP}	-	Refer to Table-5	A
ESD (IEC61000-4-2 air discharge) @25℃	V_{ESD}	-	±30	kV
ESD (IEC61000-4-2 contact discharge) @25℃	V_{ESD}	-	±30	kV
Junction temperature	T_J	-	150	℃
Operating temperature	T_{OP}	-40	125	℃
Storage temperature	T_{STG}	-55	150	℃
Lead temperature	T_L	-	260	℃

Table-3   Absolute Maximum rating

6.2. Electrical Characteristics

Symbol	Description
V_{RWM}	Rated reverse stand-off voltage
V_{BR}	Minimum breakdown voltage @I_T = 1mA
V_{CL}	Typical Clamping voltage
I_{PP}	Maximum peak pulse current
I_R	Reverse leakage current @V_{RWM}
C_O	Typical line capacitance (V_{IO}=0V, V_{P-P} = 30mV, f = 1MHz)

Table-4   Parameters Description

At TA = 25℃ unless otherwise noted

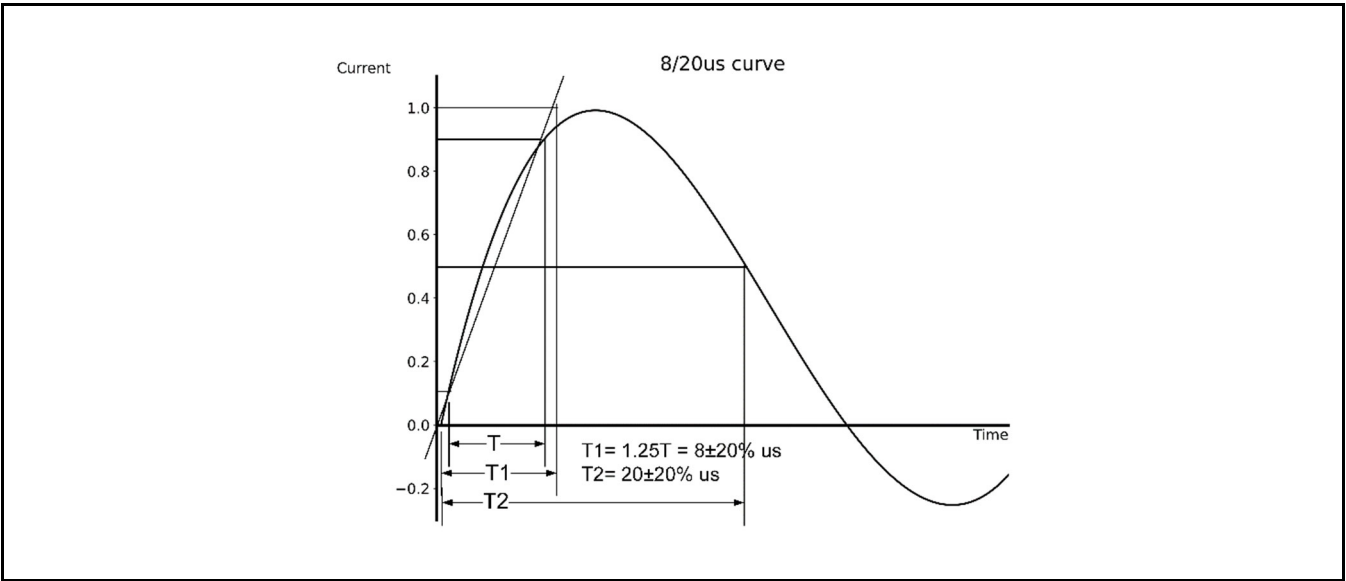| Part Number	V_{RWM}	V_{BR}	V_{CL}@I=1A	I_{PP}	V_{CL}@I=I_{PP}	I_R	C_O
	(V)	(V)	(V)	(A)	(V)	(uA)	(pF)
SENC5D3V1UA	3.3	4.5	8.5	16.0	18.0	1.0	200
SENC5D5V1UA	5.0	6.5	9.5	15.0	20.0	1.0	180
SENC5D7V1UA	7.0	7.5	11.0	12.0	22.0	1.0	140
SENC5D12V1UA	12.0	13.3	20.0	8.0	35.0	1.0	100
SENC5D15V1UA	15.0	16.5	25.0	6.0	45.0	1.0	60
SENC5D24V1UA	24.0	26.0	40.0	4.0	55.0	1.0	40

Table-5   Electrical Characteristics for All Series
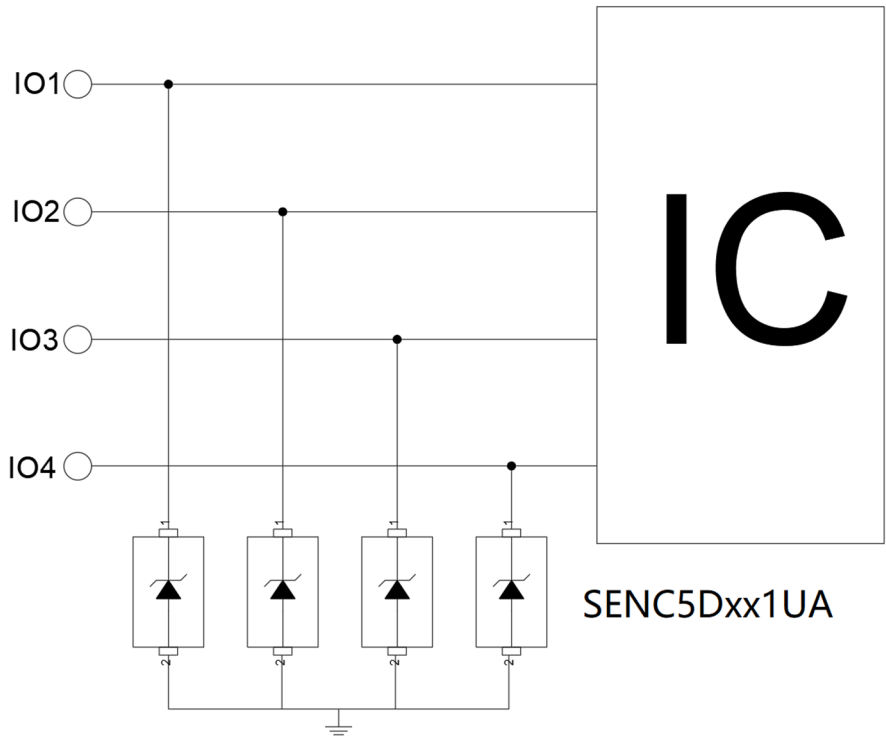
7. Typical Characteristic

8. Typical Application
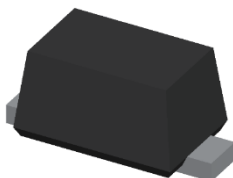

Pic-3 Typical Internet 1G Interface Application

Contact Us ✉
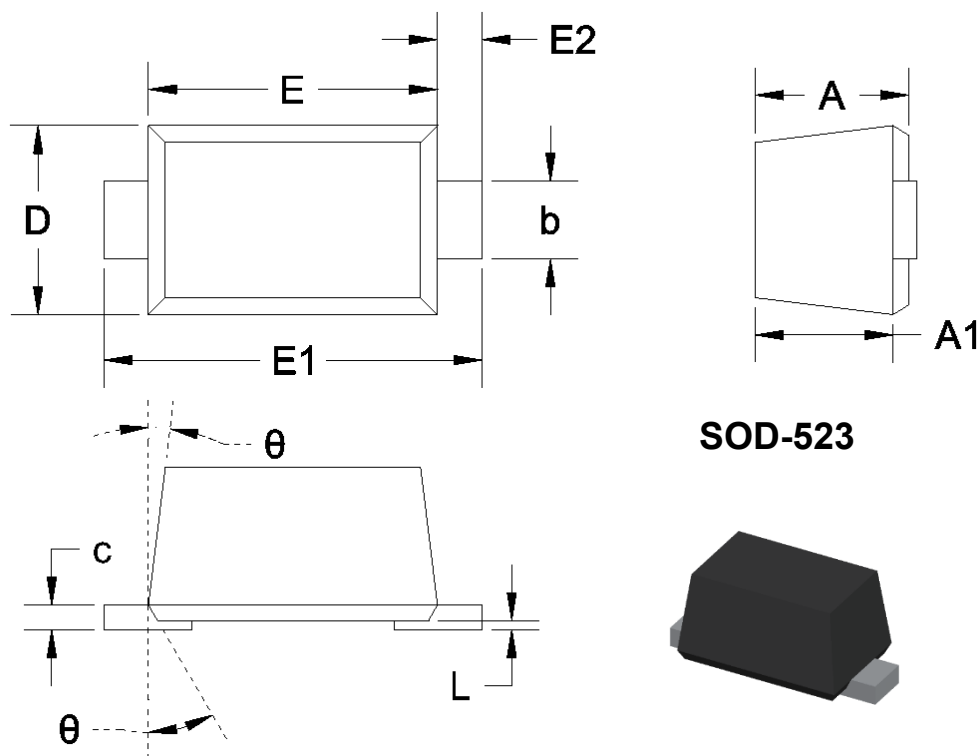
9. Dimension

SOD-523

Units: Millimeters

Unit	A	A1	b	c	D	E	E1	E2	L	θ
Max.	0.77	0.70	0.35	0.15	0.125	1.30	1.70	0.20	0.07	7°
Min.	0.51	0.50	0.25	0.08	0.75	1.10	1.50	REF.	0.01	REF.

Table-6   product dimensions

10. Recommended Land Pattern

1.42

0.70

0.60
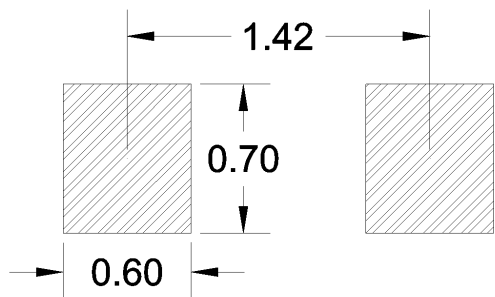
Note:

1. Controlling dimension: in millimeters
2. General tolerance: ±0.05mm
3. The pad layout is for reference only

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