SuperESD - SLNC3Dxx1U

1. Description

The SLNC3Dxx1U 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 method.

2. Features

- IEC 61000-4-2 Level 4 ESD Protection
  - ±30kV Contact Discharge
  - ±30kV Air Discharge
- 450W Peak pulse Power (8/20us)
- RoHS compliance
- Unidirectional configuration
- Low clamping voltage
- Working voltage: 3.3V/5V/7V/12V/15V/18V/24V/36V

3. Applications

- Interfaces
  - USB 2.0/1.1
  - GPIO
  - Ethernet 10/100/1000 Mbps
  - Audio
  - Pushbuttons
- End Equipment
  - Industrial and Serve Robots
  - Laptops and Desktops
  - TV and Monitors
  - Wearables
  - Handheld-wireless Systems

4. Ordering Information

Part Number	Package	Material	Packing	Quantity per reel	Flammability Rating	Reel Size
SLNC3Dxx1U	SOD323	Halogen free	Tape & Reel	3,000 PCS	UL 94V-0	7 inches

Marking for the SLNC3Dxx1U series								
V_{RWM}	3.3V	5V	7V	12V	15V	18V	24V	36V
Marking	|03W	|05W	|07W	|12W	|15W	|18W	|24W	|36W

Table-1 Ordering information

5. Pin Configuration and Functions

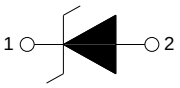
Pin	Name	Description	Outline	Circuit Diagram
1	IO	Connect to IO		
2	GND	Connect to GND		

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}	-	450	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}	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)

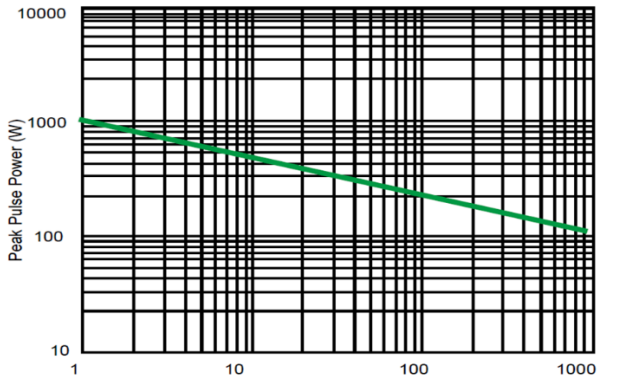
Table-4 Parameters Description

At TA = 25℃ unless otherwise noted

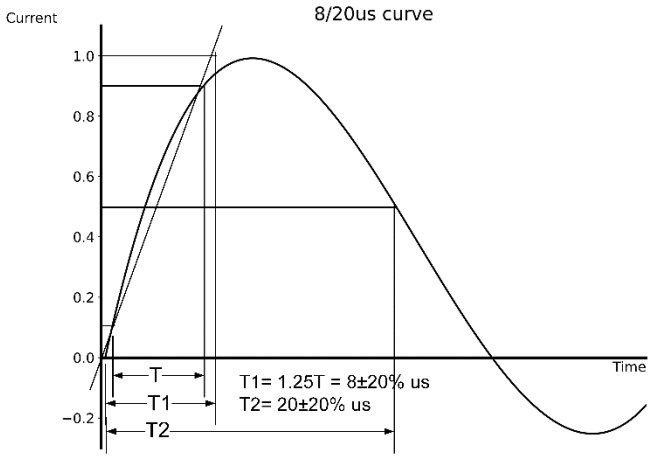
Part Number	V_{RWM} (Max.)	V_{BR}(Min.)	V_{CL}@I=1A (Typ.)	I_{PP} (Max.)	V_{CL}@I=I_{PP} (Typ.)	I_R (Max.)	C_O(Typ.)
	(V)	(V)	(V)	(A)	(V)	(uA)	(pF)
SLNC3D3V1U	3.3	4.5	8.0	30	13.0	1.0	200
SLNC3D5V1U	5.0	6.5	9.0	30	13.0	1.0	200
SLNC3D7V1U	7.0	7.5	9.0	25	13.0	1.0	200
SLNC3D12V1U	12.0	13.3	16.0	15	20.0	1.0	100
SLNC3D15V1U	15.0	16.5	20.0	12	28.0	1.0	80
SLNC3D18V1U	18.0	19.5	22.0	10	30.0	1.0	65
SLNC3D24V1U	24.0	26.0	34.0	8	45.0	1.0	50
SLNC3D36V1U	36.0	38.0	50.0	6	65.0	1.0	40

Table-5 Electrical Characteristics for All Series

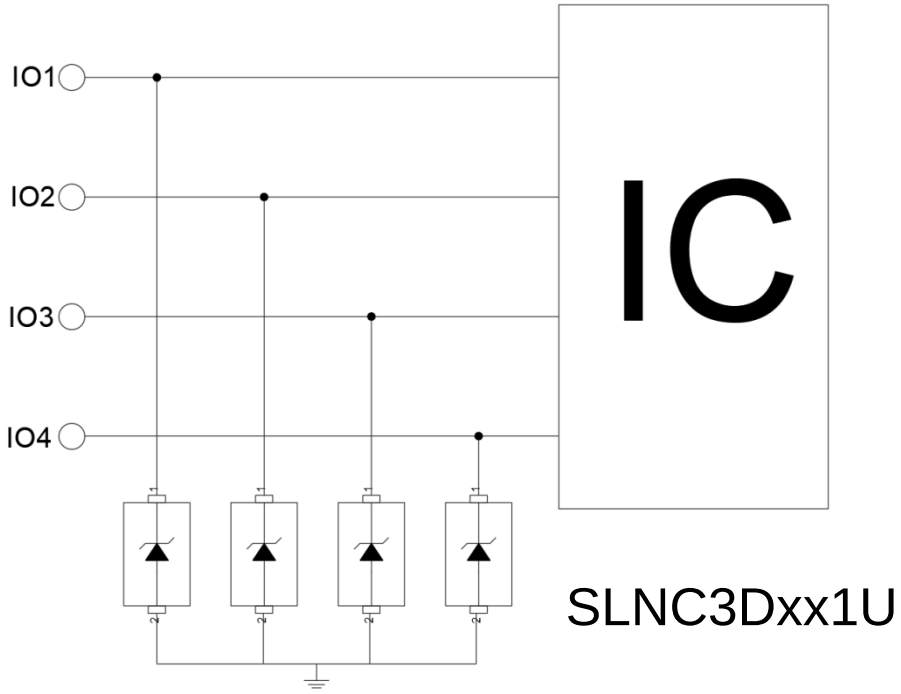
7. Typical Characteristic



Non-repetitive peak pulse power vs. pulse time

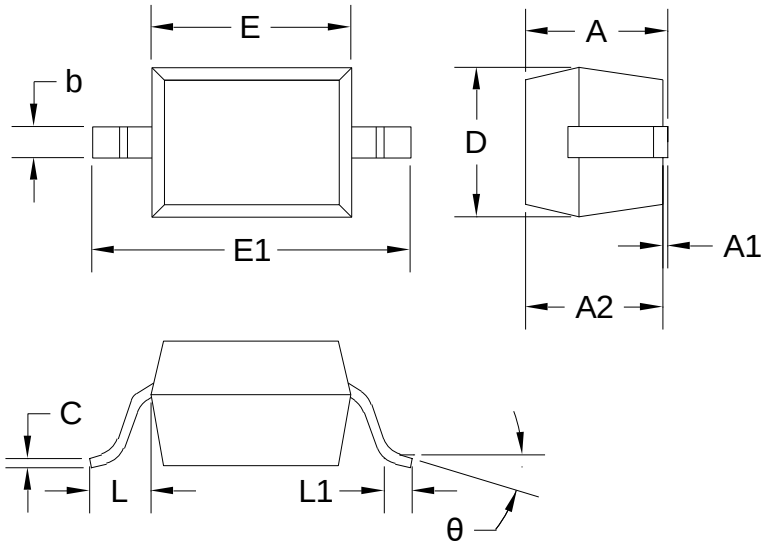


8. Typical Application



Pic-3 Typical Internet 1G Interface Application

9. Dimension (SOD-323)



Symbol	Dimensions in Millimeters		Dimensions in Inches	
	Min.	Max.	Min.	Max.
A		1.000		0.039
A1	0.000	0.100	0.000	0.004
A2	0.800	0.900	0.031	0.035
b	0.250	0.350	0.010	0.014
C	0.080	0.150	0.003	0.006
D	1.200	1.400	0.047	0.055
E	1.600	1.800	0.063	0.071
E1	2.550	2.750	0.100	0.108
L	0.475REF		0.019REF	
L1	0.250	0.400	0.010	0.016
θ	0°	8°	0°	8°