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SuperESD - SDT23CXXL02

1. Description

The SDT23CXXL02 is a Transient Voltage Suppressor Arrays 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 15kV ESD pulses using the IEC61000-4-2 are discharge method.

2. Features

- IEC 61000-4-2 Level 4 ESD Protection
  - ±15kV Contact Discharge
  - ±15kV Air Discharge
- 450W Peak pulse Power (8/20us)
- Low clamping voltage
- Protects two bidirectional or two Unidirectional lines
- Low leakage current
- RoHS compliant

3. Applications

- Portable electronic
- Control & monitoring systems
- Servers, notebooks, and desktop PCs
- Set-top box
- Communications systems
- Cellular handsets and accessories

4. Ordering Information

Part Number	Package	Material	Packing	Quantity per reel	Flammability Rating	Reel Size
SDT23CXXL02	SOT-23	Halogen free	Tape & Reel	3,000 PCS	UL 94V-0	7 inches
Marking for the SDT23CXXL02 series						
V_{RWM}	3.3V	5V	8V	12V	15V	18V	24V	36V
Marking	-	-	-	C12	C15	-	C24	-

Table-1   Ordering information

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5. Pin Configuration and Functions
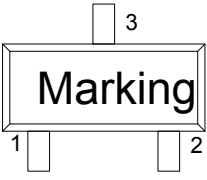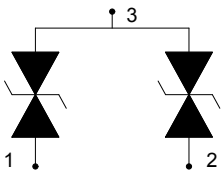
Pin	Name	Description	Outline	Circuit Diagram
1	IO	Connect to IO	Marking	
2	IO	Connect to IO		
3	GND	Connect to GND		

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}	-	±15	kV
ESD (IEC61000-4-2 contact discharge) @25℃	V_{ESD}	-	±15	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)
SDT23C12L02	12	13.3	20.0	12	37.0	1.0	70
SDT23C15L02	15	16.5	25.0	9.0	55.0	1.0	40
SDT23C24L02	24	26.0	40.0	6.0	63.0	1.0	30

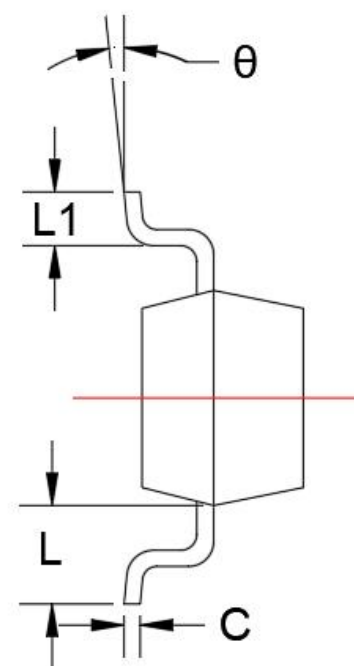Table-5   Electrical Characteristics for All Series
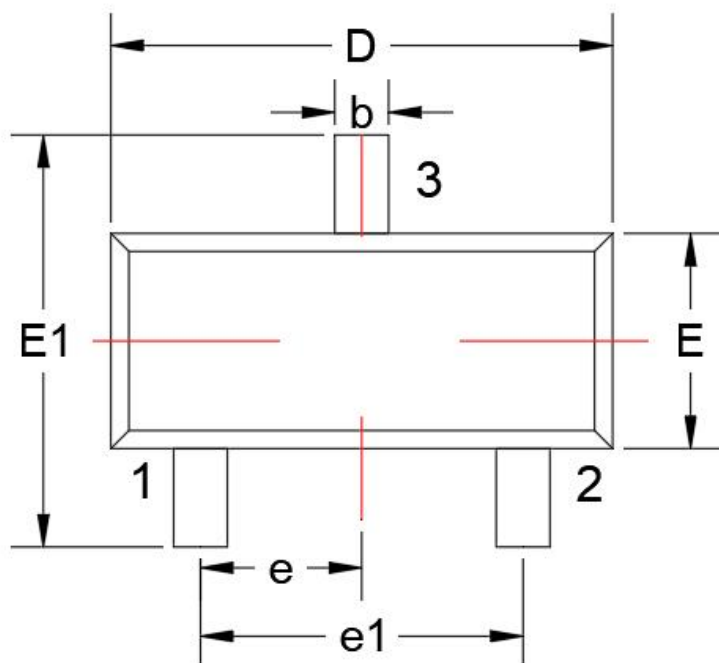
7. Typical Characteristic
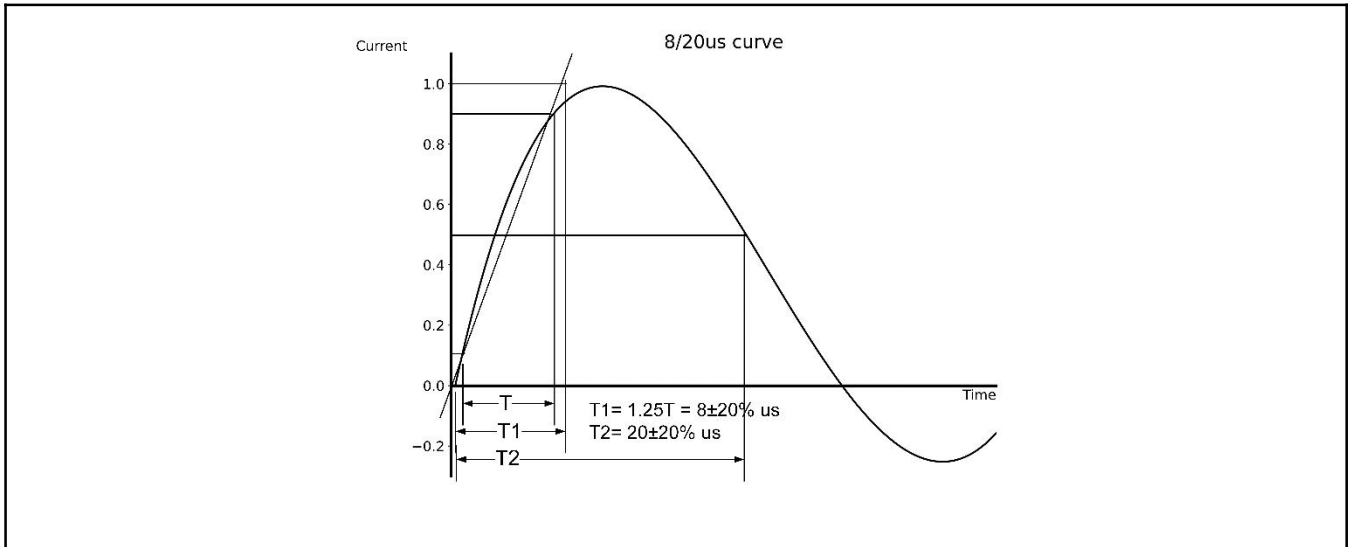
8. Typical Application
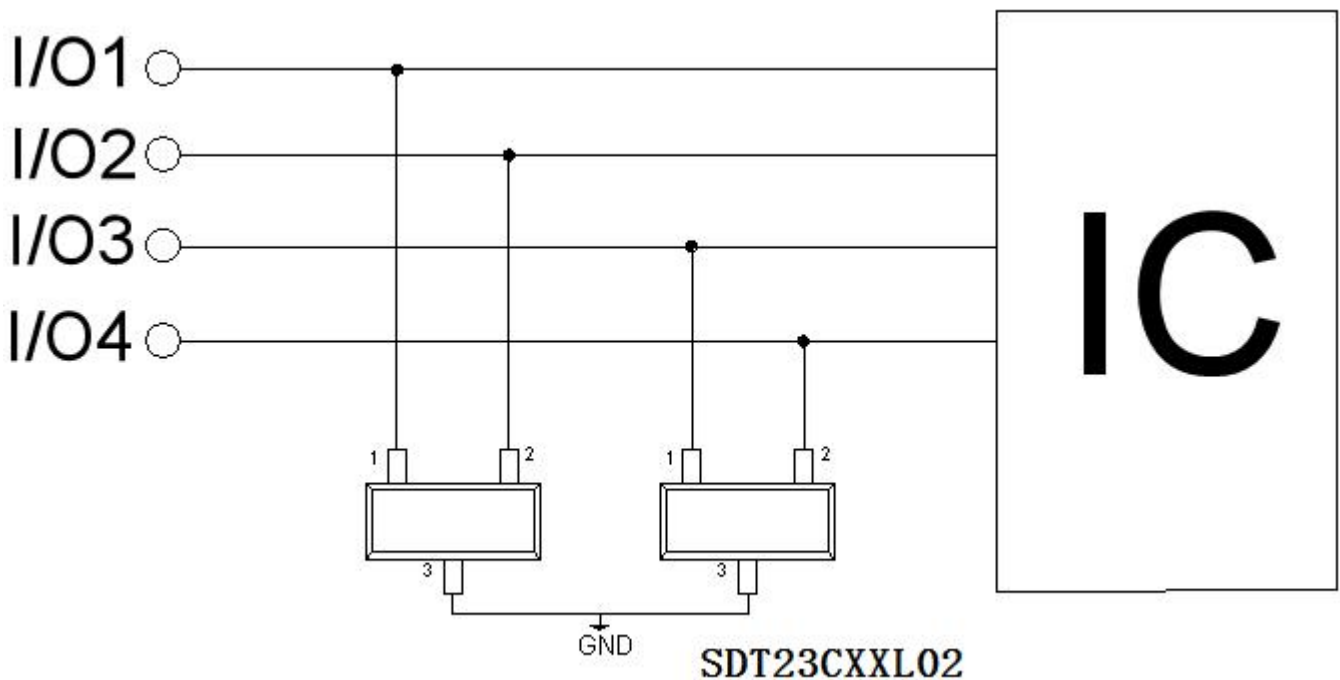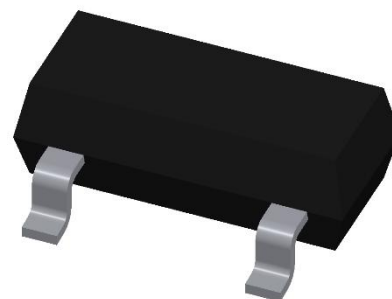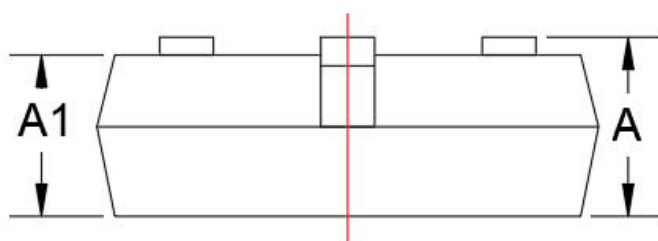

Typical Interface Application

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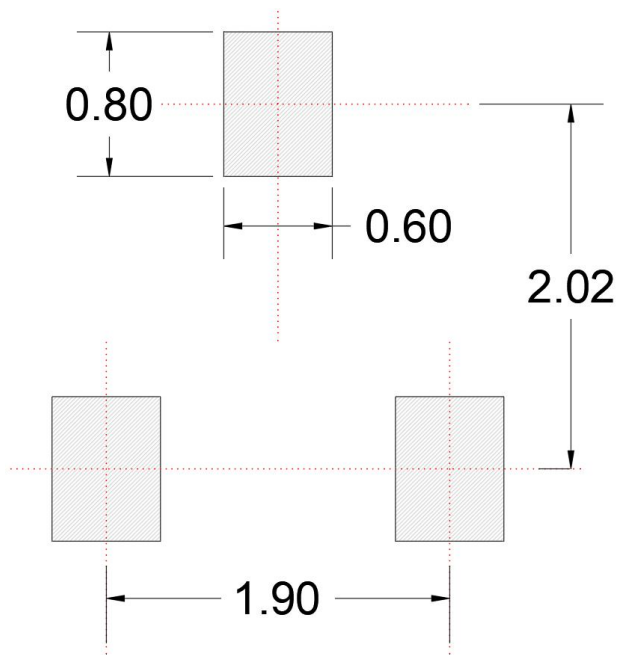## 9. Dimension

SOT-23

Dimensions in Millimeters					
Symbol	Min.	Max.	Symbol	Min.	Max.
A	0.9	1.15	e1	1.80	2.00
A1	0.90	1.05	L	0.55REF	
b	0.30	0.50	L1	0.30	0.50
C	0.08	0.15	θ	0°	8°
D	2.80	3.00			
E	1.20	1.40			
E1	2.25	2.55			
e	0.95TYP				

Table-5   Product dimensions

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10. Recommended Land Pattern

Note:

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

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