SuperESD - SENC23T48V2B

1. Description

The SENC23T48V2B 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 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
- 1000W Peak pulse Power (8/20us)
- Low clamping voltage
- Working voltage: 48V
- Low leakage current
- RoHS compliant
- Protecting 2 bi-directional lines
- Junction capacitance: 10pF Typ.

3. Applications

- Portable electronics
- Control & monitoring systems
- Servers, notebooks, and desktop PCs
- CAN bus protection
- Automotive application
- Cellular handsets and accessories

4. Ordering Information

Part Number	Package	Marking	Material	Packing	Quantity per reel	Flammability Rating	Reel Size
SENC23T48V2B	SOT-23	C48	Halogen free	Tape & Reel	3,000 PCS	UL 94V-0	7 inches

Table-1 Ordering information

5. Pin Configuration and Functions

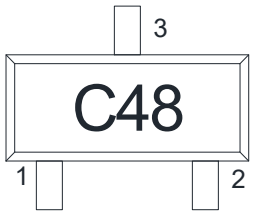
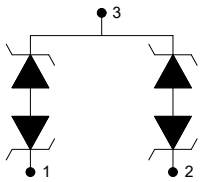
Pin	Name	Description	Outline	Circuit Diagram
1	IO	Connect to IO		
2	IO	Connect to IO		
3	GND	Connect to GND		

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}	-	1000	W
Peak pulse current (tp=8/20us)@25℃	I_{PP}		9	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

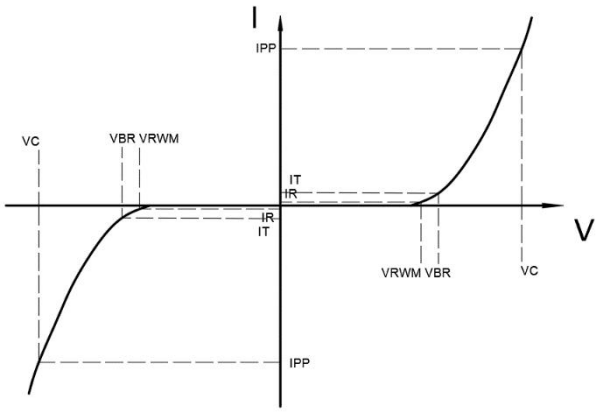
6.2. Electrical Characteristics

At TA = 25℃ unless otherwise noted

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}				48	V
Reverse Breakdown Voltage	V_{BR}	IT=1mA	52			V
Reverse Leakage Current	I_R	V_{RWM}=48V			1.0	uA
Clamping Voltage	V_C	I_{PP}=1A; tp=8/20us		65	70	V
Clamping Voltage	V_C	I_{PP}=9A; tp=8/20us		87	95	V
Junction Capacitance	C_J	V_R=0V; f=1MHz		10	20	pF

Table-4 Electrical Characteristics

Symbol	Parameters
V_{RWM}	Peak Reverse Working Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}



7. Typical Characteristic

Figure1: Clamping Voltage vs. Peak Pulse Current

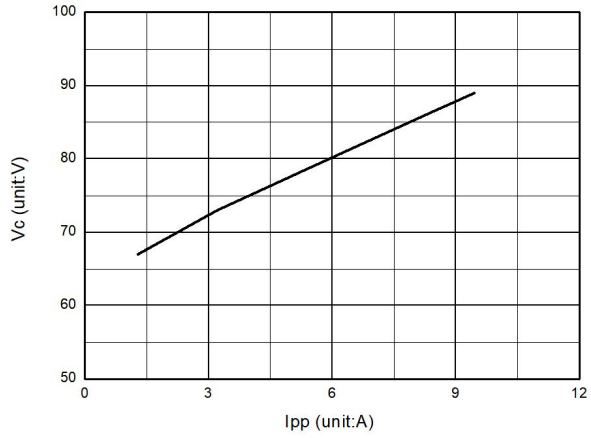


Figure2: Junction Capacitance vs, Reverse Voltage

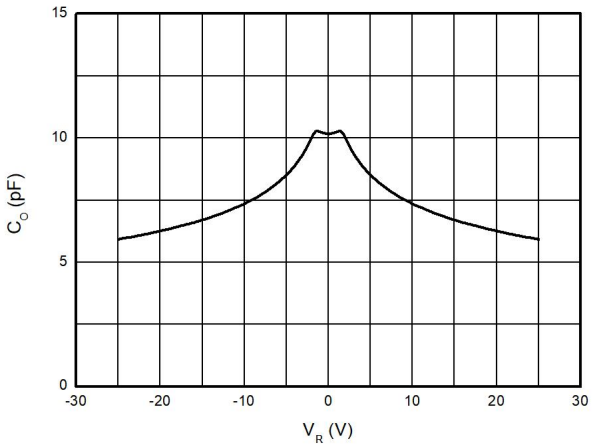


Figure3: 8 X 20us Pulse Waveform

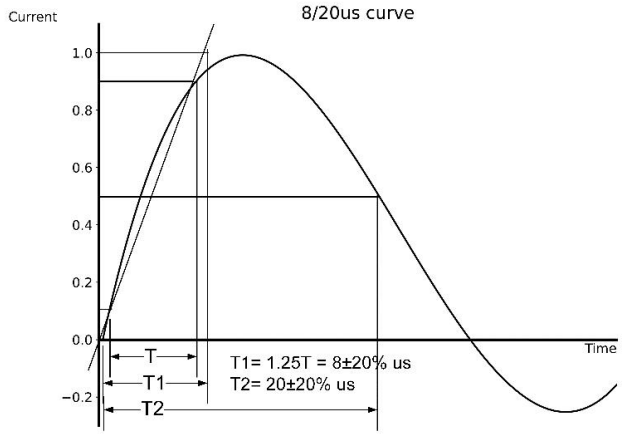
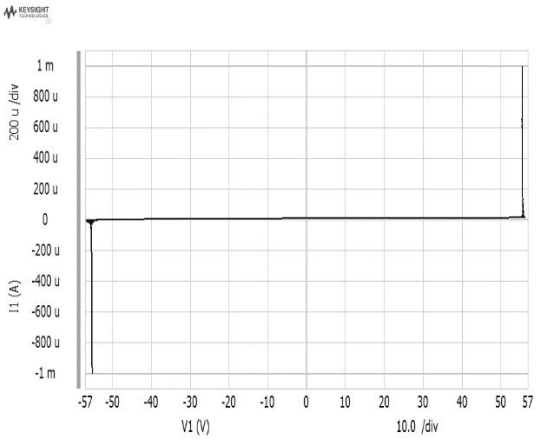
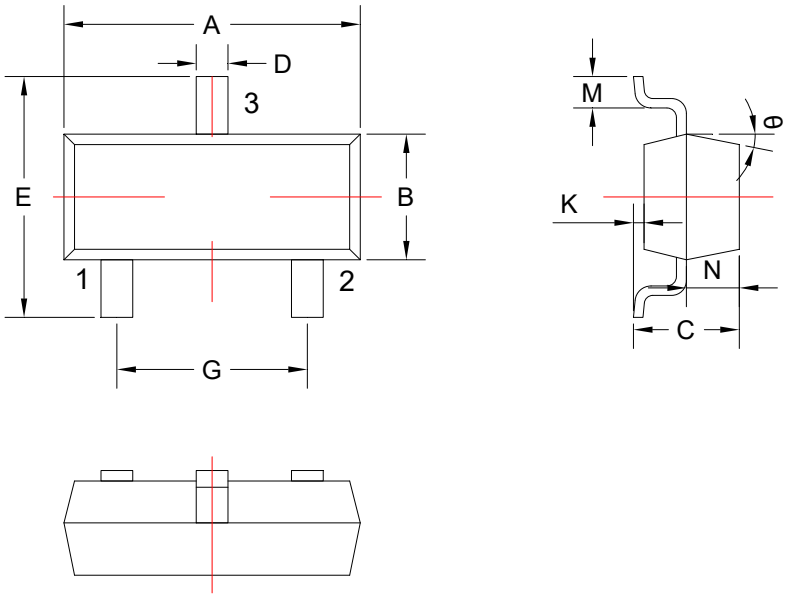


Figure4: I-V Curve



8. Dimension (SOT-23)



COMMON DIMENSIONS CUNITS MEASURE=MILLIMETER					
SYMBOL	MIN	MAX	SYMBOL	MIN	MAX
A	2.85	3.04	G	1.80	2.00
B	1.20	1.40	K	0	0.10
C	0.90	1.10	M	0.20	-
D	0.40	0.50	N	0.50	0.70
E	2.25	2.55	θ	5°	9°

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