

## SuperESD – SELC2.8-4

### 1. Description

The SELC2.8-4 is a low capacitance TVS (Transient Voltage Suppressor) array designed to protect high speed data interfaces. It has been specifically designed to protect sensitive electronic components which are connected to data and transmission lines from over-stress caused by Electrostatic Discharge (ESD), cable discharge events (CDE), lightning and other induced voltage surges.

### 2. Features

- IEC 61000-4-2 Level 4 ESD Protection
  - $\pm 30\text{kV}$  Contact Discharge
  - $\pm 30\text{kV}$  Air Discharge
- 450W Peak pulse Power (8/20us)
- Low clamping voltage
- Working voltage: 2.8V
- Low leakage current
- Low capacitance:  $C_j = 3\text{pF}$  typ.
- RoHS compliant
- Unidirectional configuration

### 3. Applications

- 10/100/1000 Ethernet
- WAN/LAN Equipment
- Desktops, Servers, and Notebooks
- Analog Inputs
- Base Station
- Switch Systems

### 4. Ordering Information

Part Number	Package	Marking	Material	Packing	Quantity per reel	Flammability Rating	Reel Size
SELC2.8-4	SOP-8	SLVU2.8-4	Halogen free	Tape & Reel	2,500 PCS	UL 94V-0	13 inches

Table-1 Ordering information

## 5. Pin Configuration and Functions

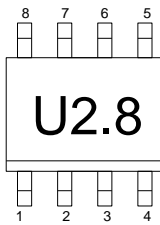
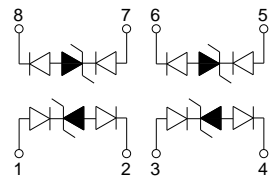
Pin	Name	Description	Outline	Circuit Diagram
1	IO	Connect to IO		
2	GND	Connect to GND		
3	IO	Connect to IO		
4	GND	Connect to GND		
5	IO	Connect to IO		
6	GND	Connect to GND		
7	IO	Connect to IO		
8	GND	Connect to GND		

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°C	P <sub>pk</sub>	-	450	W
Peak pulse current (tp=8/20us) @25°C	I <sub>PP</sub>		20	A
ESD (IEC61000-4-2 air discharge) @25°C	V <sub>ESD</sub>	-	±30	kV
ESD (IEC61000-4-2 contact discharge) @25°C	V <sub>ESD</sub>	-	±30	kV
Junction temperature	T <sub>J</sub>	-	125	°C
Operating temperature	T <sub>OP</sub>	-40	85	°C
Storage temperature	T <sub>STG</sub>	-55	150	°C
Lead temperature	T <sub>L</sub>	-	260	°C

Table-3 Absolute Maximum rating

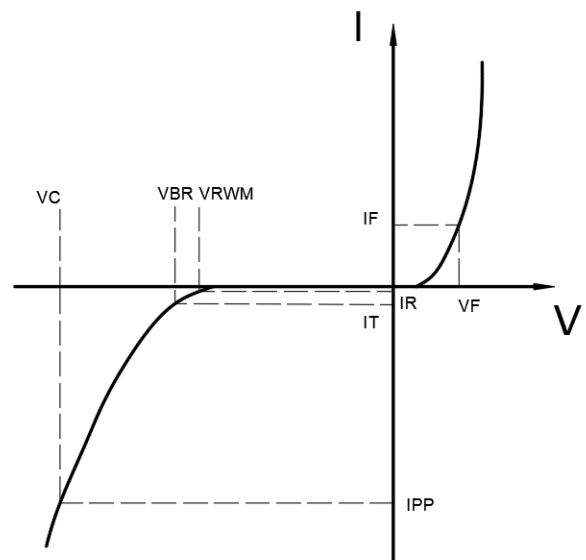
## 6.2. Electrical Characteristics

At  $T_A = 25^\circ\text{C}$  unless otherwise noted

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	$V_{RWM}$				2.8	V
Reverse Breakdown Voltage	$V_{BR}$	$I_T=1\text{mA}$	3			V
Reverse Leakage Current	$I_R$	$V_{RWM}=2.8\text{V}$			1.0	$\mu\text{A}$
Clamping Voltage	$V_C$	$I_{PP}=1\text{A}$ ; $t_p=8/20\mu\text{s}$		5		V
Clamping Voltage	$V_C$	$I_{PP}=20\text{A}$ ; $t_p=8/20\mu\text{s}$		25		V
Junction Capacitance	$C_J$	$V_R=0\text{V}$ ; $f=1\text{MHz}$		3		pF

Table-4 Electrical Characteristics

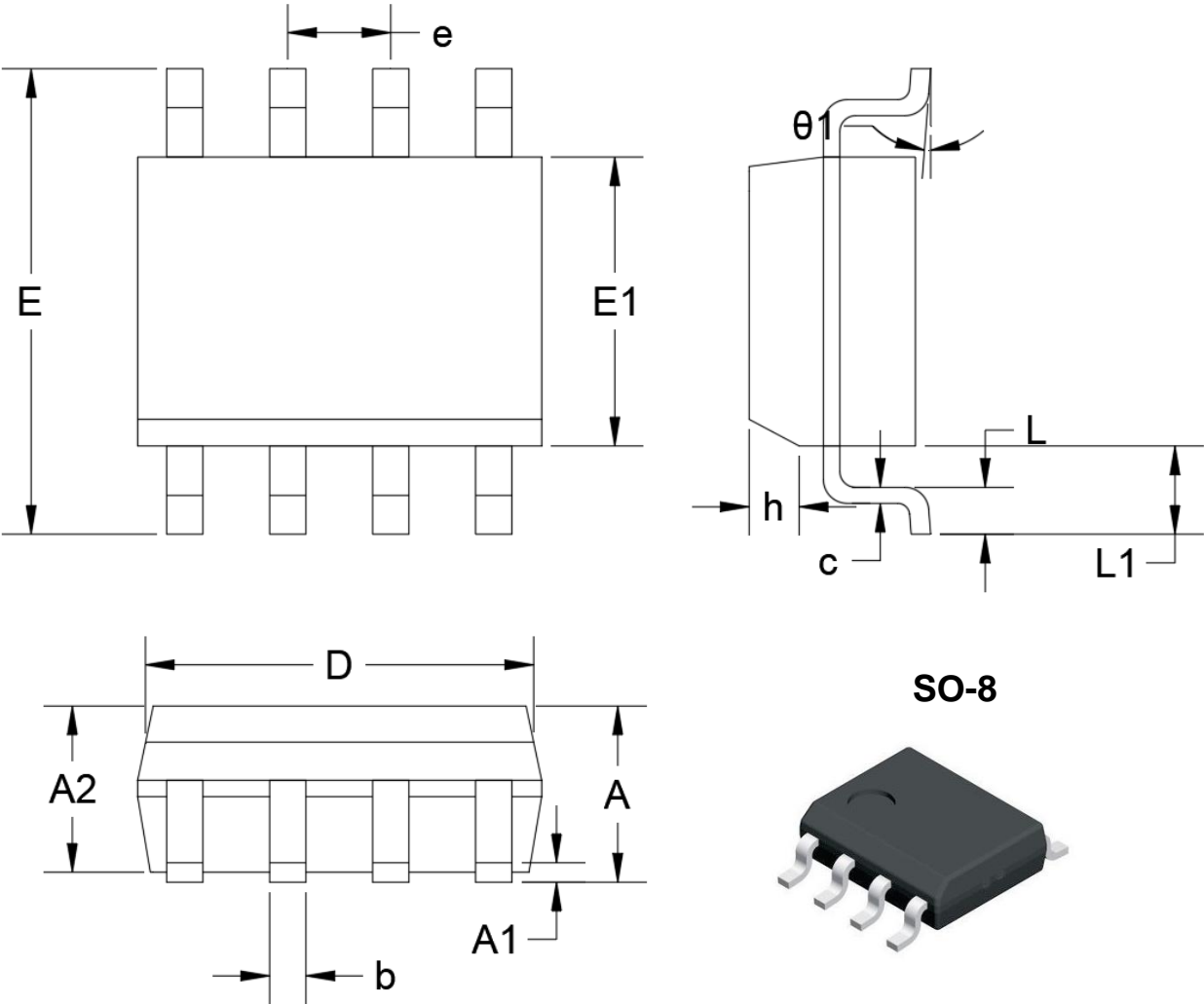
Symbol	Parameters
$V_{RWM}$	Peak Reverse Working Voltage
$I_R$	Reverse Leakage Current @ $V_{RWM}$
$V_{BR}$	Breakdown Voltage @ $I_T$
$I_T$	Test Current
$I_{PP}$	Maximum Reverse Peak Pulse Current
$V_C$	Clamping Voltage @ $I_{PP}$
$I_F$	Forward Current
$V_F$	Forward Voltage @ $I_F$



The graph shows a current waveform labeled "8/20us curve". The vertical axis is "Current" ranging from -0.2 to 1.0. The horizontal axis is "Time". The curve starts at the origin, rises to a peak of 1.0, and then decays. Two time intervals are marked:  $T_1 = 1.25T = 8 \pm 20\% \text{ us}$  and  $T_2 = 20 \pm 20\% \text{ us}$ . The curve is a standard 8/20 microsecond test waveform.

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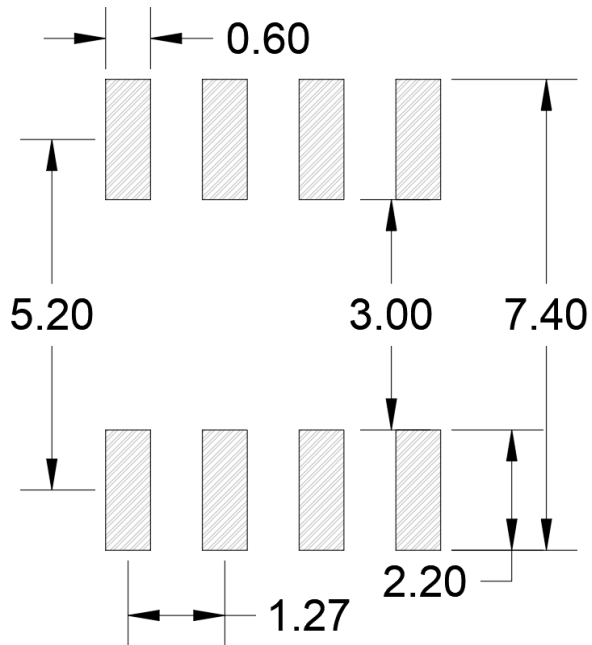
9. Dimension



Dimensions in Millimeters					
Symbol	Min.	Max.	Symbol	Min.	Max.
A	1.35	1.75	e	1.27 BSC	
A1	0.10	0.25	h	0.25	0.50
A2	1.25	1.65	L	0.40	1.04
b	0.31	0.51	L1	1.04	
c	0.17	0.25	θ 1	0°	8°
D	4.80	5.00			
E1	3.80	4.00			
E	6.00 BSC				

Table-5 Product dimensions

## 10. Recommended Land Pattern



**Note:**

1. Controlling dimension: in millimeters
2. General tolerance:  $\pm 0.05\text{mm}$
3. The pad layout is for reference only

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