

SuperESD – SEL3F5V2U

1. Description

The SEL3F5V2U is a low capacitance TVS designed to protect high speed data interface. It has been specifically designed to protect sensitive electronic components which are connected to data and transmission lines from over-stress caused by ESD. The SEL3F5V2U incorporates one pair of steering diodes of low capacitance plus a TVS diode.

2. Features

- IEC 61000-4-2 Level 4 ESD Protection
 - ±15kV Contact Discharge
 - ±10kV Air Discharge
- 80W Peak pulse Power (8/20us)
- Low clamping voltage
- Working voltage: 5V
- Low leakage current
- RoHS compliant
- Protecting two Uni-directional lines
- Junction capacitance: 0.6pF Typ.

3. Applications

- USB 2.0 and USB 3.0
- SATA and eSATA
- DVI
- IEEE 1394
- PCI Express
- Notebooks
- HDMI 1.3 and HDMI 1.4

4. Ordering Information

Part Number	Package	Marking	Material	Packing	Quantity per reel	Flammability Rating	Reel Size
SEL3F5V2U	DFN1006 -3L	L05	Halogen free	Tape & Reel	10,000 PCS	UL 94V-0	7 inches

Table-1 Ordering information

5. Pin Configuration and Functions

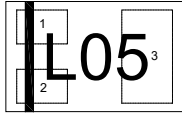
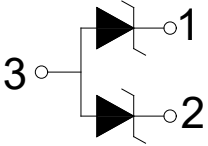
Pin	Name	Description	Outline	Circuit Diagram
1	IO	Connect to IO		
2	IO	Connect to IO		
3	GND	Connect to GND		

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°C	P _{pk}	-	80	W
Peak pulse current (tp=8/20us)@25°C	I _{PP}		4	A
ESD (IEC61000-4-2 air discharge) @25°C	V _{ESD}	-	±15	kV
ESD (IEC61000-4-2 contact discharge) @25°C	V _{ESD}	-	±10	kV
Junction temperature	T _J	-	125	°C
Operating temperature	T _{OP}	-40	85	°C
Storage temperature	T _{STG}	-55	150	°C
Lead temperature	T _L	-	260	°C

Table-3 Absolute Maximum rating

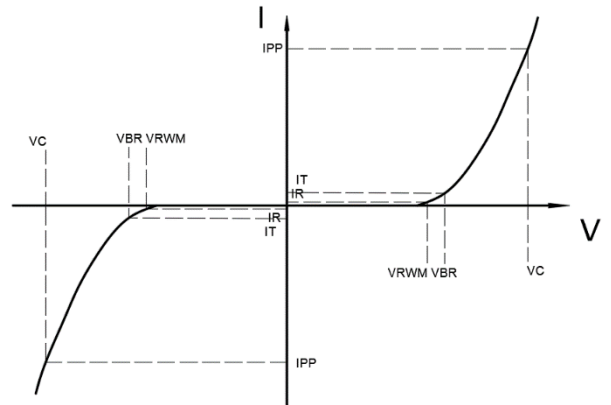
6.2. Electrical Characteristics

At TA = 25°C unless otherwise noted

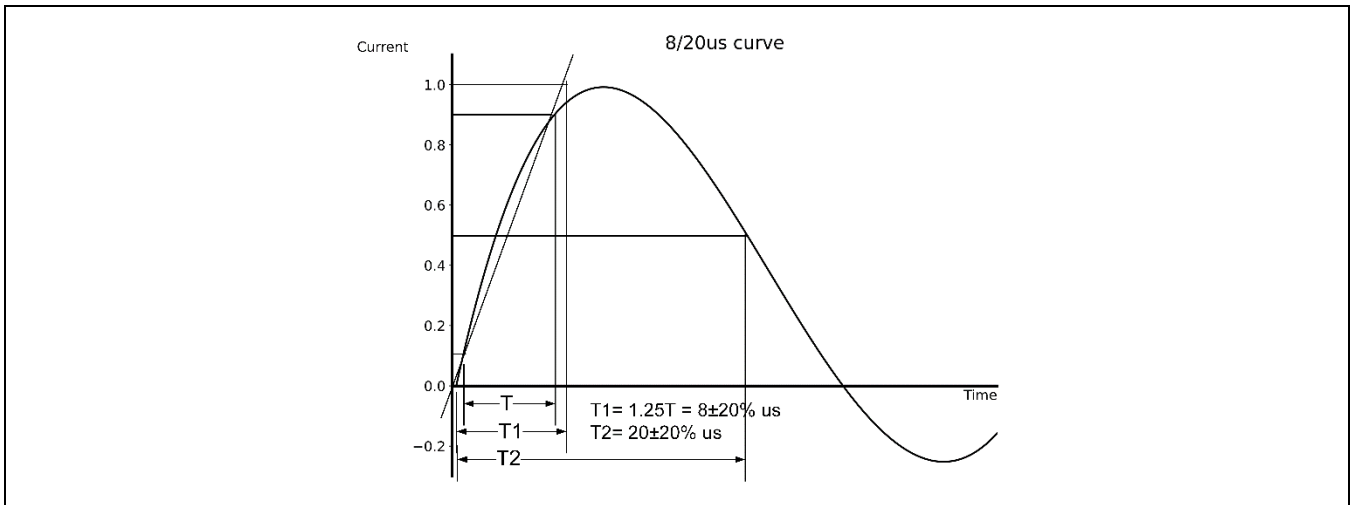
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}				5	V
Reverse Breakdown Voltage	V_{BR}	$I_T=1mA$	6.0			V
Reverse Leakage Current	I_R	$V_{RWM}=5V$			1	μA
Clamping Voltage	V_C	$I_{PP}=1A$; $t_p=8/20\mu s$		10		V
Clamping Voltage	V_C	$I_{PP}=4A$; $t_p=8/20\mu s$		25		V
Junction Capacitance	C_J	I/O to GND; $V_R=0V$; $f=1MHz$		0.6		pF

Table-4 Electrical Characteristics

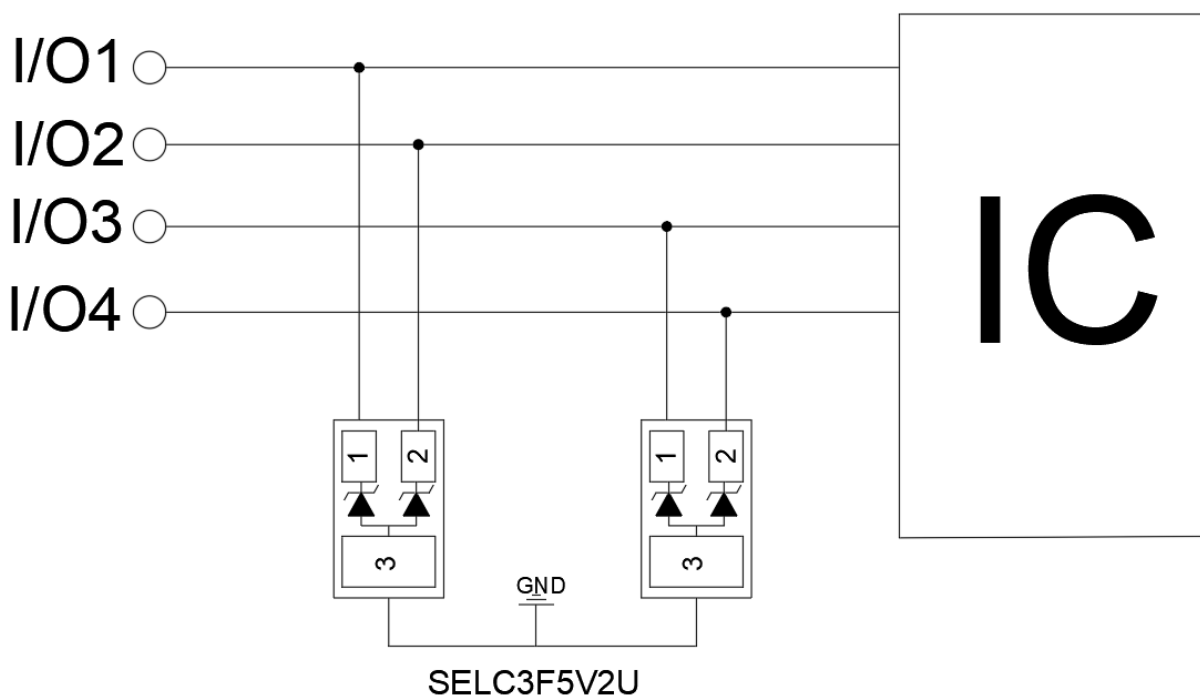
Symbol	Parameters
V_{RWM}	Peak Reverse Working Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
I_F	Forward Current
V_F	Forward Voltage @ I_F



7. Typical Characteristic

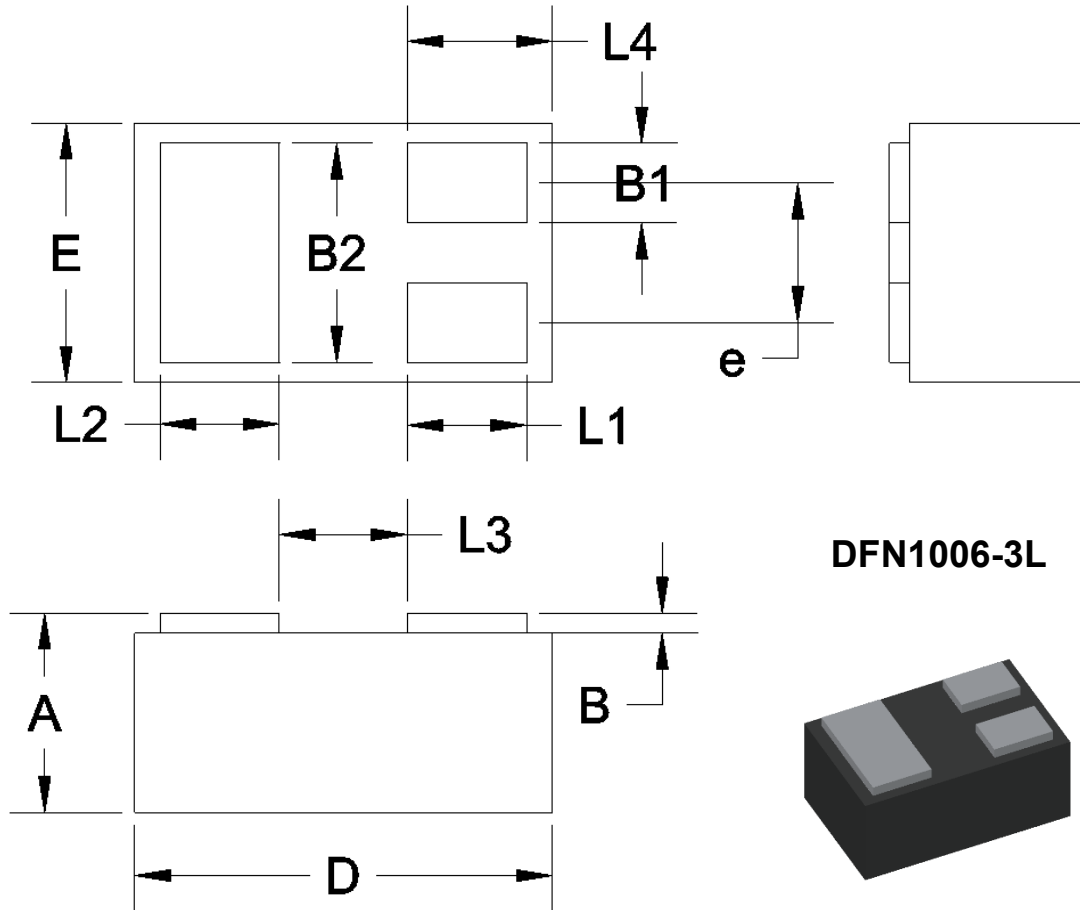


8. Typical Application



Typical Interface Application

9. Dimension

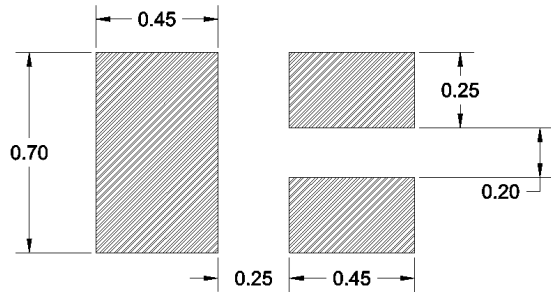


Units in millimeters

SYMBOL	MIN	NOM	MAX
A	0.40	0.45	0.50
B	0.00	0.02	0.05
B1	0.10	0.15	0.20
B2	0.45	0.50	0.55
D	0.90	1.00	1.05
E	0.50	0.60	0.65
e	0.35 BSC		
L1	0.20	0.25	0.30
L2	0.20	0.25	0.30
L3	0.39 BSC		
L4	0.25	0.30	0.35

Table-6 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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