

Surface Mount Ultra low capacitance TVS For ESD Protection
DESCRIPTION

The SESD05LCD3U is an uni-directional TVS diode, utilizing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive high-speed data lines. The SESD05LCD3U has an ultra-low capacitance with a typical value at 0.6pF, and complies with the IEC 61000-4-2 (ESD) standard with $\pm 25\text{kV}$ air and $\pm 20\text{kV}$ contact discharge. It is assembled into an ultra-small $1.0 \times 0.6 \times 0.5\text{mm}$ lead-free DFN package. The small size, ultra-low capacitance and high ESD surge protection make SESD05LCD3U an ideal choice to protect cell phone, digital video interfaces and other high speed ports.

FEATURES

- Ultra small package: $1.0 \times 0.6 \times 0.5\text{mm}$
- Ultra low capacitance: 0.6pF typical
- Ultra low leakage : nA level
- Operating voltage : 5V
- Low clamping voltage
- 3-pin leadless package
- Up to 2-line protects

APPLICATIONS

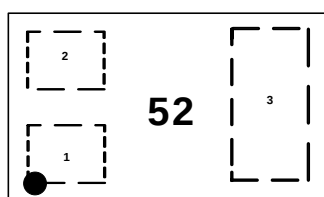
- Cellular Handsets and Accessories
- Display Ports
- MDDI Ports
- USB 2.0 and 3.0 Ports
- HDMI 1.3 and 1.4
- Digital Visual Interface(DVI)
- PCI Express and Serial SATA Ports
- Notebook Computer
- IEEE 1394

MECHANICAL DATA

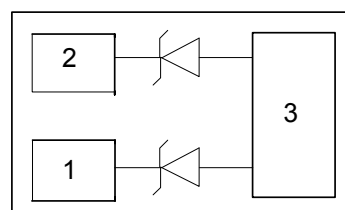
- Case : Molded, plastic DFN1006-3L
- Polarity : Shown follows
- Epoxy : UL94-V0 rated flame retardant

IEC COMPATIBILITY

- IEC 61000-4-2 (ESD) $\pm 25\text{kV}$ (air), $\pm 20\text{kV}$ (contact)
- IEC 61000-4-5 (Lightning) 5A (8/20 μs)

**SCHEMATIC DIAGRAM
DFN1006-3L PACKAGE**


52 = Device Marking Code
Dot denotes Pin1

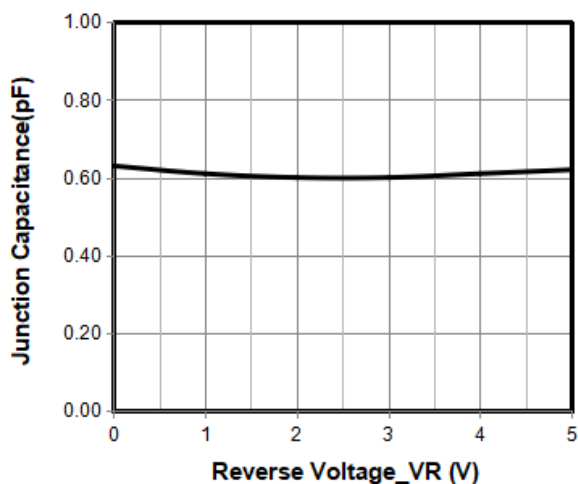
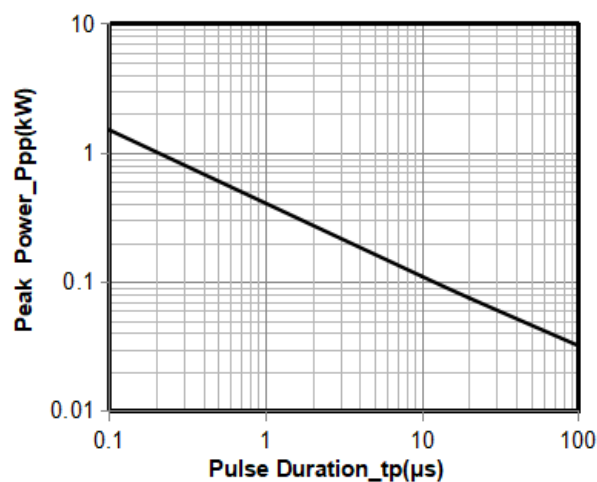
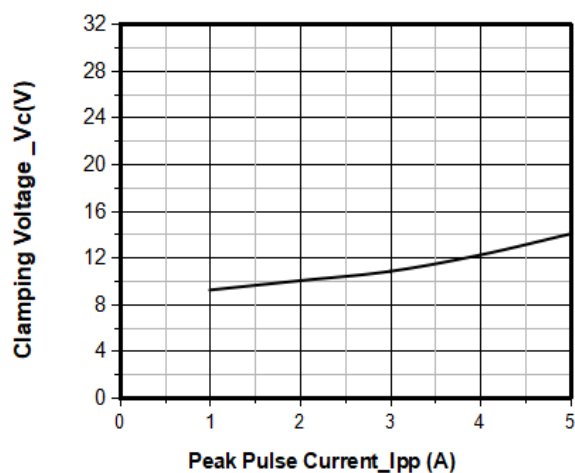
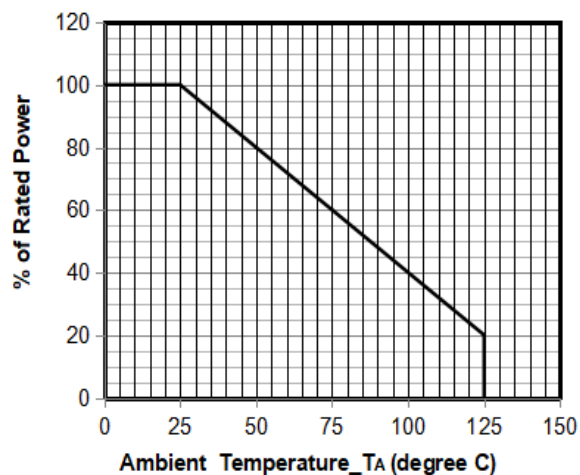
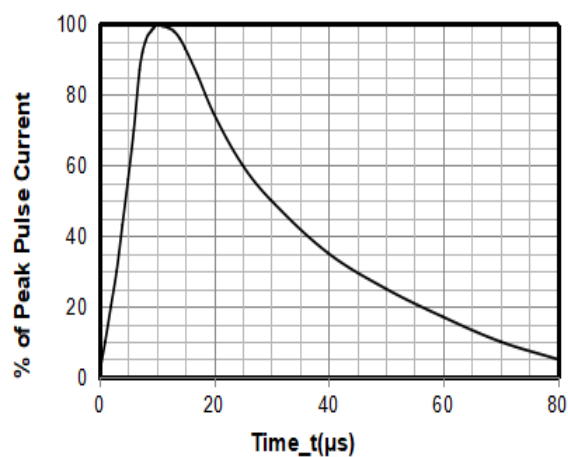
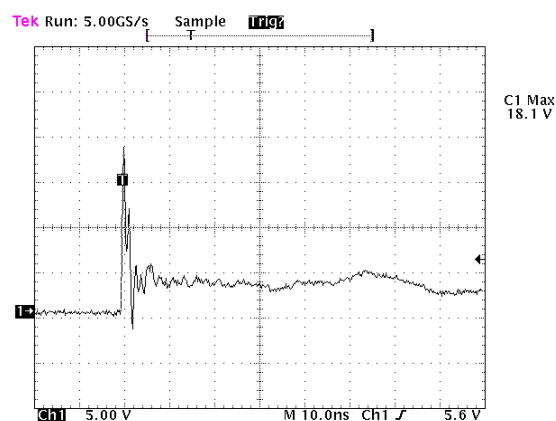
**SCHEMATIC
PIN CONFIGURATION**


**Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise specified)**

Parameter	Symbol	Value	Unit
Peak Pulse Power(8/20 μs)	Ppk	75	W
Peak Pulse Current(8/20 μs)	I _{PP}	5	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V _{ESD}	± 25 ± 20	kV
Operating Temperature Range	T _J	-55 to +125	$^{\circ}\text{C}$
Storage Temperature Range	T _{stg}	-55 to +150	$^{\circ}\text{C}$

Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V _{RWM}			5	V	Pin 1 or pin 2 to pin 3 and between pin 1 and pin 2
Breakdown Voltage	V _{BR}	6			V	I _T = 1mA, pin 1 or pin 2 to pin 3 and between pin 1 and pin 2
Reverse Leakage Current	I _R			0.5	μA	V _{RWM} = 5V, Pin 1 or pin 2 to pin 3 and between pin 1 and pin 2
Clamping Voltage	V _C			10	V	I _{PP} = 1A (8 x 20 μs pulse), pin 1 or pin 2 to pin 3
Clamping Voltage	V _C			15	V	I _{PP} = 5A (8 x 20 μs pulse), pin 1 or pin 2 to pin 3
Junction Capacitance	C _J		0.3	0.5	pF	V _R = 0V, f = 1MHz, between pin 1 and pin 2
Junction Capacitance	C _J			0.8	pF	V _R = 0V, f = 1MHz, pin 1 or pin 2 to pin 3

Typical Performance Characteristics (TA=25°C unless otherwise Specified)

Junction Capacitance vs. Reverse Voltage

Peak Pulse Power vs. Pulse Time

Clamping Voltage vs. Peak Pulse Current

Power Derating Curve

8 X 20μs Pulse Waveform


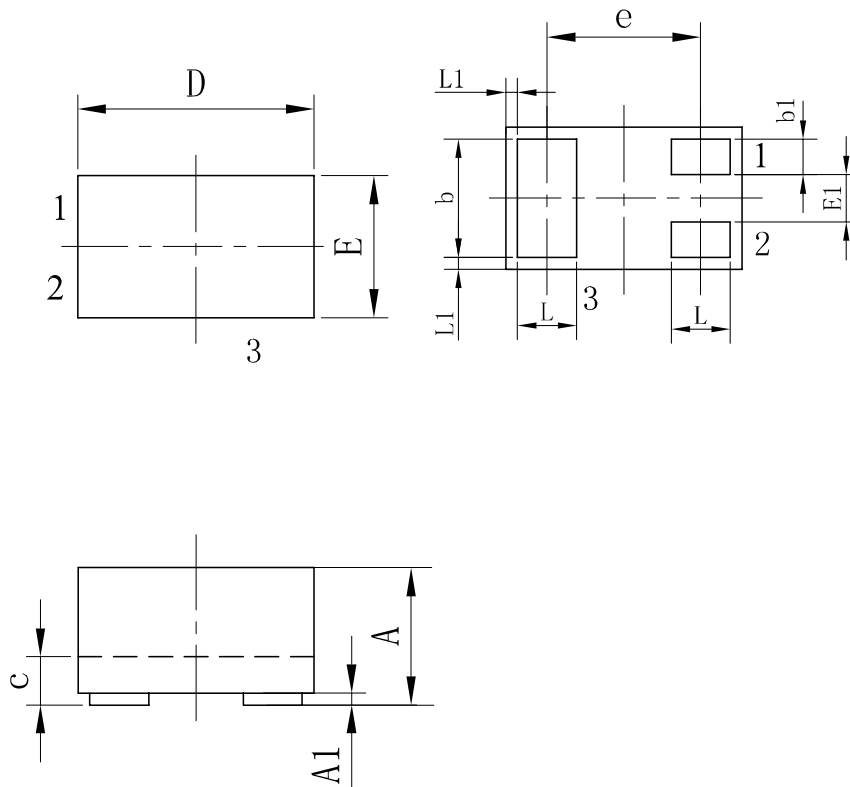
Note: Data is taken with a 10x attenuator

ESD Clamping Voltage

8 kV Contact per IEC61000-4-2

Outline Drawing

DFN1006-3L



SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.45	0.50	0.55	0.018	0.020	0.022
A1	0.00	0.02	0.05	0.000	0.001	0.002
b	0.45	0.50	0.55	0.018	0.020	0.022
b1	0.10	0.15	0.20	0.004	0.006	0.008
c	0.12	0.15	0.18	0.005	0.006	0.007
D	0.95	1.00	1.05	0.037	0.039	0.041
e	0.65 BSC			0.026 BSC		
E	0.55	0.60	0.65	0.022	0.024	0.026
E1	0.15	0.20	0.25	0.006	0.008	0.010
L	0.20	0.25	0.30	0.008	0.010	0.012
L1	0.05 REF			0.0002 REF		

Rev.B

Ordering Information:

Device PN	Packing
SESD05LCD3U -T ⁽¹⁾ H ⁽²⁾ -WS ⁽³⁾	Tape&Reel: 10 Kpcs/Reel

Note: (1) Packing code, Tape & Reel Packing

(2) Halogen free product for packing code suffix "H"

(3) WS : Willas brand abbreviation, Label Type does not display

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