

Description

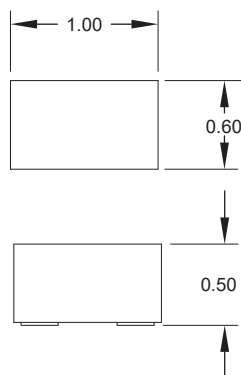
SVS0541P1UU is in a DFN 1.00 x 0.60 x 0.50mm 2-lead package. Leads are spaced at a pitch of 0.65mm. It gives the designer the flexibility to protect single lines in applications where arrays are not practical. Each device will protect one unidirectional line operating at 5 volts.

SVS0541P1UU may be used to meet the ESD immunity requirements of IEC 61000-4-2 ($\pm 30\text{kV}$ contact & air discharge). The combination of small size and high ESD surge capability makes them ideal for use in applications such as cellular phones, industrial equipment, and portable instrumentation.

Applications

- Cellular Handsets & Accessories
- OLED Displays
- VBUS
- Notebooks & Handhelds
- Portable Instrumentation

Nominal Dimensions



Nominal Dimensions in mm

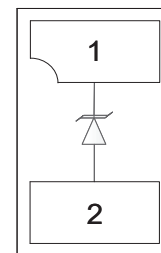
Features

- High ESD withstand Voltage
 - IEC 61000-4-2 (ESD): $\pm 30\text{kV}$ (Contact), $\pm 30\text{kV}$ (Air)
 - IEC 61000-4-5 (Lightning): 18A (8/20 μs)
- Ultra-small package
- Protects one I/O or power line
- Low ESD clamping voltage
- Working voltage: +5V
- Low leakage current
- Solid-state silicon-avalanche technology

Mechanical Characteristics

- Package: DFN 1.00 x 0.60 x 0.50mm 2-Lead
- Pb-Free, Halogen Free, RoHS/WEEE Compliant
- Lead Finish: Pb-Free
- Marking: Marking Code + Date Code
- Packaging: Tape and Reel

Schematic and Pin Configuration



DFN 1.00 x 0.60 x 0.50mm 2-Lead (Bottom View)

Absolute Maximum Rating

RATING	SYMBOL	VALUE	UNITS
Peak Pulse Power (tp = 8/20μs)	P _{PK}	230	W
Peak Pulse Current (tp = 8/20μs)	I _{PP}	18	A
ESD per IEC 61000-4-2 (Contact) ⁽¹⁾	V _{ESD}	±30	kV
ESD per IEC 61000-4-2 (Air) ⁽¹⁾		±30	
Operating Temperature	T _J	-55 to +125	°C
Storage Temperature	T _{STG}	-55 to +150	°C

Electrical Characteristics

T=25°C unless otherwise specified

All data measured from Pin 1 to 2 unless otherwise specified

PARAMETER	SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNITS
Reverse Stand-Off Voltage	V _{RWM}				5	V
Reverse Breakdown Voltage	V _{BR}	I _t = 1mA	6	7.2	8	V
Reverse Leakage Current	I _R	V _{RWM} = 5V		<0.1	1	μA
Forward Voltage	V _F	I _F = 10mA, Pin 2 to 1	0.4	0.8	1.1	V
Clamping Voltage	V _C	I _{PP} = 1A, t _p = 8/20 μs		7.3	8.5	V
		I _{PP} = 18A, t _p = 8/20 μs		10	13	
ESD Clamping Voltage ⁽²⁾	V _C	I _{TLP} = 4A, t _p = 0.2/100ns (TLP)		7.8		V
		I _{TLP} = 16A, t _p = 0.2/100ns (TLP)		9.1		
Dynamic Resistance ^{(2),(3)}	R _{DYN}	t _p = 0.2/100ns (TLP)		0.11		Ω
Junction Capacitance	C _J	V _R = 0V f = 1MHz		140	160	pF

Notes:

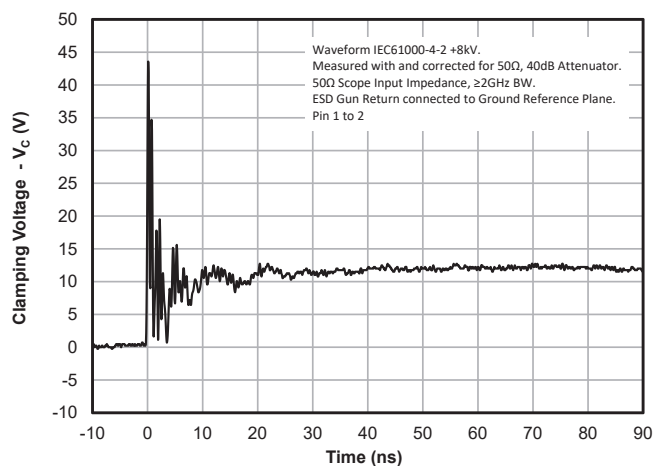
(1): ESD gun return path connected to Ground Reference Plane (GRP)

(2): Transmission Line Pulse Test (TLP) Settings: tp = 100ns, tr = 0.2ns, I_{TLP} and V_{TLP} averaging window: t₁ = 70ns to t₂ = 90ns.

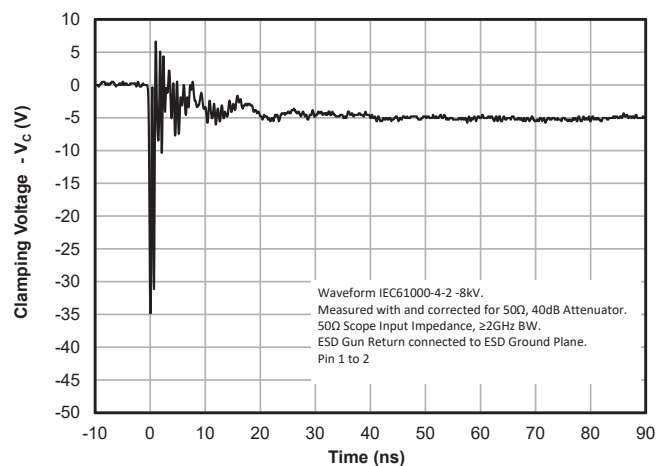
(3): Dynamic resistance calculated from I_{TLP} = 4A to I_{TLP} = 16A

Typical Characteristics

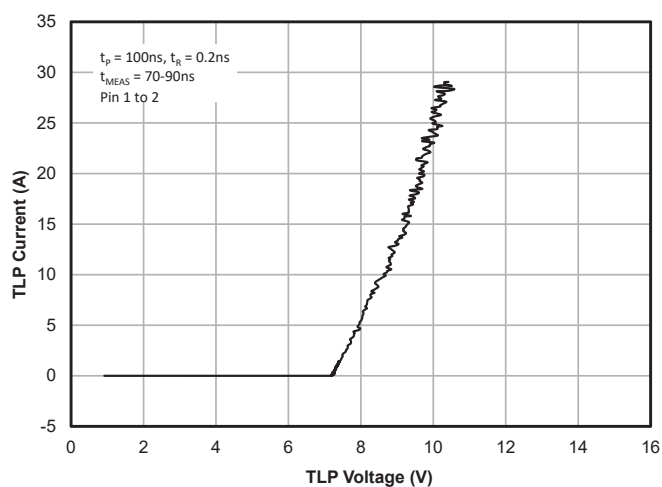
ESD Clamping (+8kV Contact per IEC 61000-4-2)



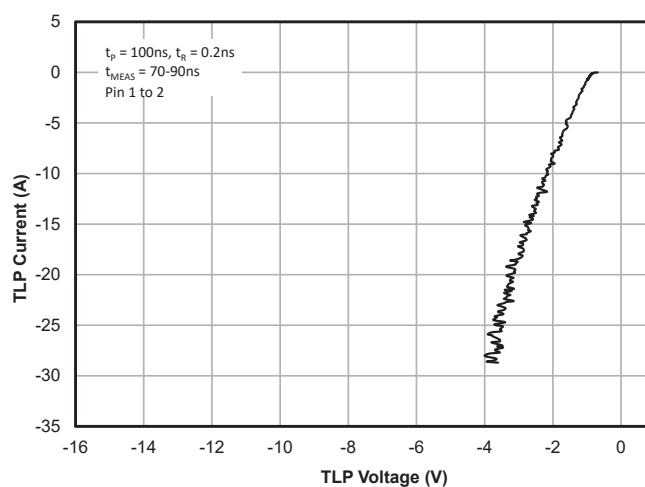
ESD Clamping (-8kV Contact per IEC 61000-4-2)



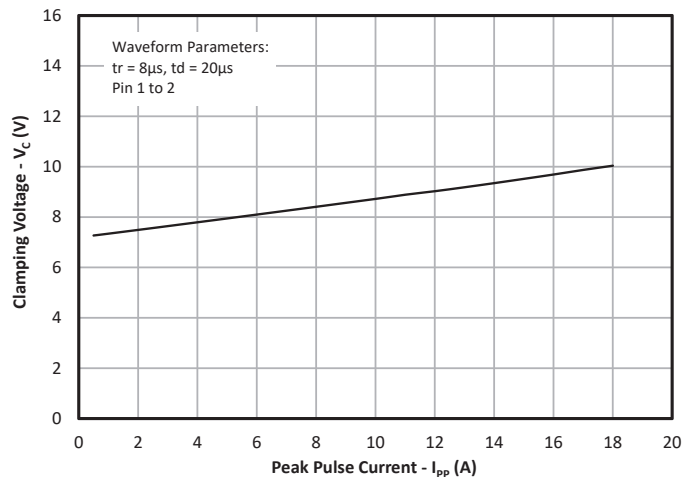
TLP Characteristics (Positive Pulse)



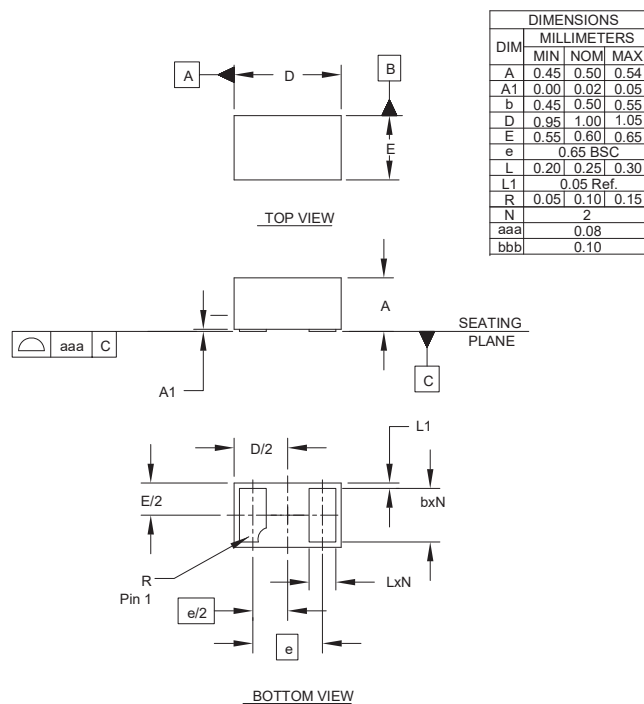
TLP Characteristics (Negative Pulse)



Clamping Voltage vs. Peak Pulse Current ($t_p=8/20\mu\text{s}$)

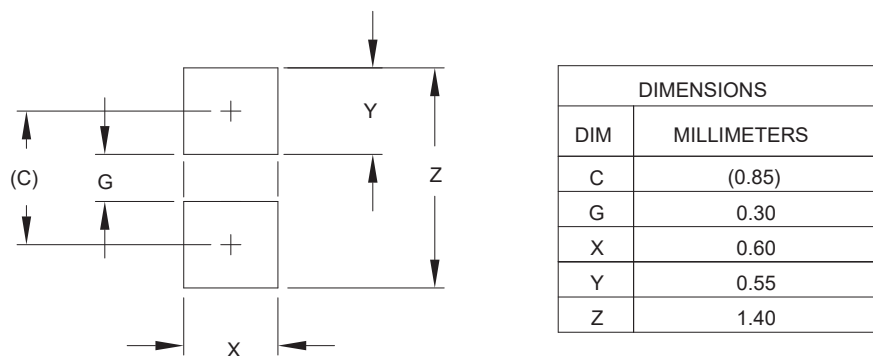


Outline Drawing - DFN 1.00 x 0.60 x 0.50mm 2-Lead

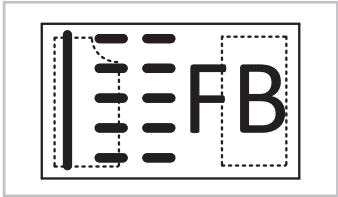


NOTES:
1. CONTROLLING DIMENSIONS ARE IN MILLIMETERS (ANGLES IN DEGREES).

Landing Pattern - DFN 1.00 x 0.60 x 0.50mm 2-Lead



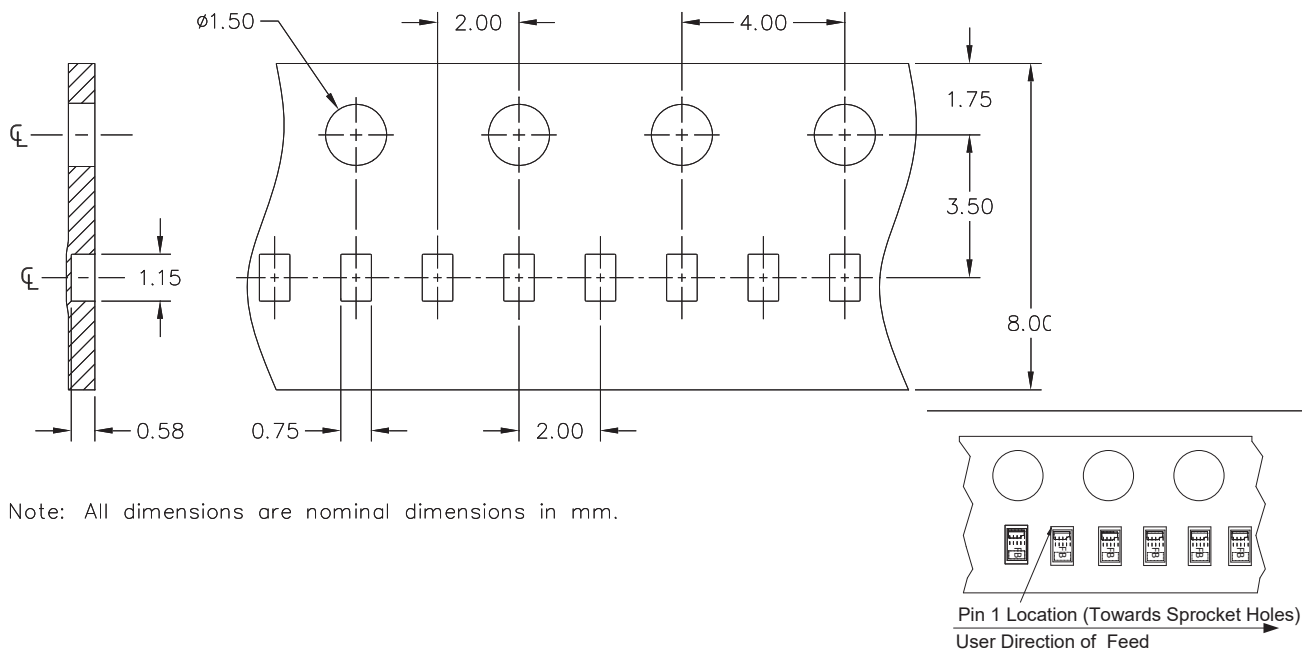
NOTES:
1. CONTROLLING DIMENSIONS ARE IN MILLIMETERS (ANGLES IN DEGREES).
2. THIS LAND PATTERN IS FOR REFERENCE PURPOSES ONLY.
CONSULT YOUR MANUFACTURING GROUP TO ENSURE YOUR
COMPANY'S MANUFACTURING GUIDELINES ARE MET.



Notes:

- (1) Dashes indicate line matrix date code
(2) Bar indicates Pin 1 location

Tape and Reel Specification



Order Information

PART NUMBER	QTY PER REEL	REEL SIZE
SVS0541P1UU.F	15,000	7"

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