

Description

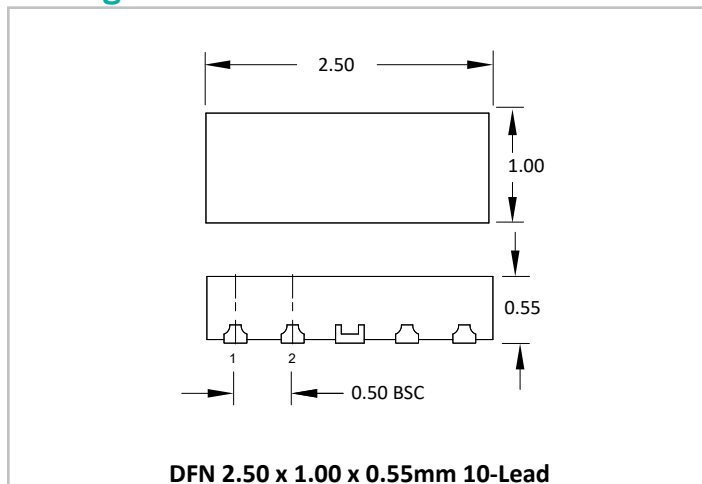
SVS0524PARU is specifically designed to protect sensitive components which are connected to high-speed data and transmission lines from overvoltage caused by ESD (electrostatic discharge).

SVS0524PARU has a typical capacitance of only 0.43 pF between I/O pins and GND. ESD characteristics are highlighted by high ESD withstand voltage ($\pm 15\text{kV}$ per IEC 61000-4-2 Contact), each device will protect four lines operating at 5 volts. SVS0524PARU is in a DFN 2.50 x 1.00 x 0.55mm 10-Lead package. The flow-through package design simplifies the PCB layout.

Applications

- HDMI 2.0
- Embedded Display Port (eDP)
- Display Port
- LVDS
- V-by-One

Package Dimension



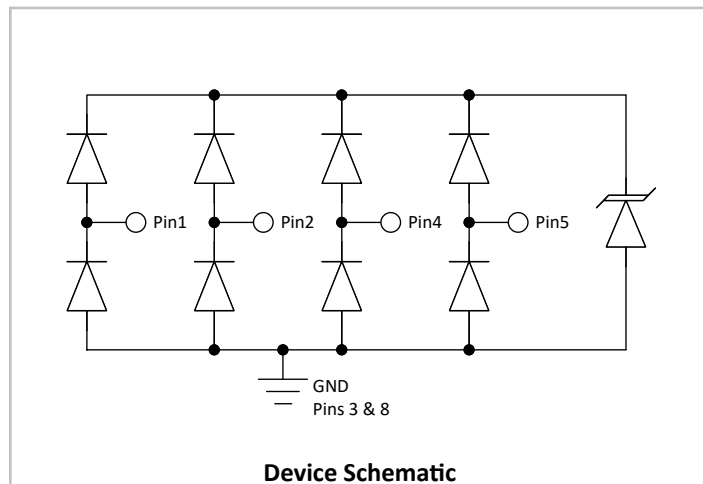
Features

- High ESD withstand Voltage
 - IEC 61000-4-2 (ESD): $\pm 15\text{kV}$ (Contact), $\pm 20\text{kV}$ (Air)
 - IEC 61000-4-5 (Lightning) 6A (8/20 μs)
- Protects four High-Speed Data Lines
- Package design optimized for high speed lines
- Working voltage: 5V
- Low clamping voltage
- Low capacitance: 0.43 pF typical (I/O to GND)
- Solid-State Silicon-Avalanche Technology

Mechanical Characteristics

- Package: DFN 2.50 x 1.00 x 0.55mm 10-Lead
- Pb-Free, Halogen Free, RoHS/WEEE Compliant
- Lead Finish: Pb-Free
- Marking: Marking Code + Date Code
- Packaging: Tape and Reel

Functional Schematic



Absolute Maximum Rating

RATING	SYMBOL	VALUE	UNITS
Peak Pulse Current ($t_p = 8/20\mu s$)	I_{PP}	6	A
ESD per IEC 61000-4-2 (Contact) ⁽¹⁾	V_{ESD}	± 15	kV
ESD per IEC 61000-4-2 (Air) ⁽¹⁾		± 20	
Operating Temperature	T_{OP}	-55 to +125	°C
Storage Temperature	T_{STG}	-55 to +150	°C

Electrical Characteristics

$T = 25^\circ\text{C}$ unless otherwise specified

All data taken from Any I/O pin to GND unless otherwise specified

PARAMETER	SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNITS
Reverse Stand-Off Voltage	V_{RWM}				5	V
Reverse Breakdown Voltage	V_{BR}	$I_t = 1\text{mA}$	6	8.8	10.5	V
Reverse Leakage Current	I_R	$V_{RWM} = 5\text{V}$			1	μA
Clamping Voltage	V_C	$I_{PP} = 1\text{A}$, $t_p = 8/20\mu s$		10.3	15	V
ESD Clamping Voltage ⁽²⁾	V_C	$I_{TLP} = 4\text{A}$, $t_p = 0.2/100\text{ns}$ (TLP)		12.8		V
		$I_{TLP} = 16\text{A}$, $t_p = 0.2/100\text{ns}$ (TLP)		19.5		
Dynamic Resistance ^{(2),(3)}	R_{DYN}	$t_p = 0.2/100\text{ns}$ (TLP)		0.56		Ω
Junction Capacitance	C_J	$V_R = 0\text{V}$, $f = 1\text{MHz}$, Any I/O pin to GND		0.43	0.60	pF
		$V_R = 0\text{V}$, $f = 1\text{MHz}$, Between I/O pins		0.21	0.40	

Notes:

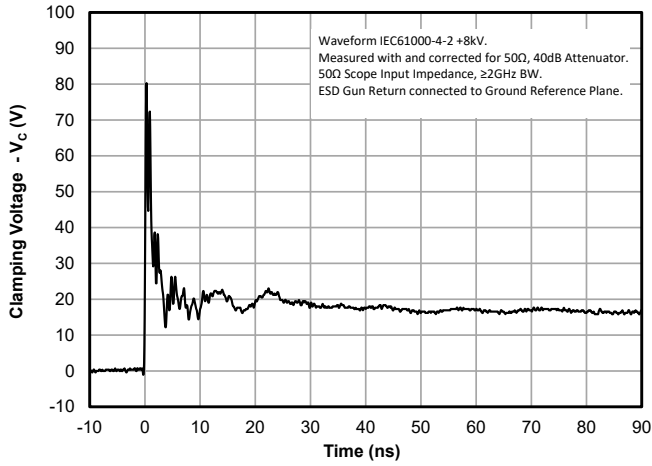
(1): ESD Gun return path to Ground Reference Plane (GRP).

(2): Transmission Line Pulse Test (TLP) Settings: $t_p = 100\text{ns}$, $t_r = 0.2\text{ns}$, I_{TLP} and V_{TLP} averaging window: $t_1 = 70\text{ns}$ to $t_2 = 90\text{ns}$.

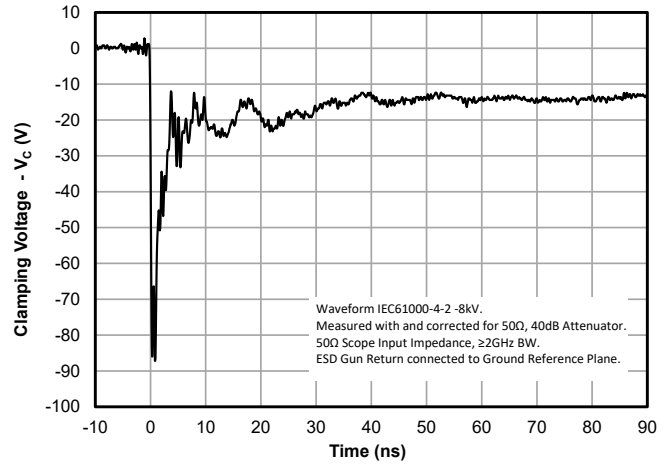
(3): Dynamic resistance calculated from $I_{TLP} = 4\text{A}$ to $I_{TLP} = 16\text{A}$.

Typical Characteristics

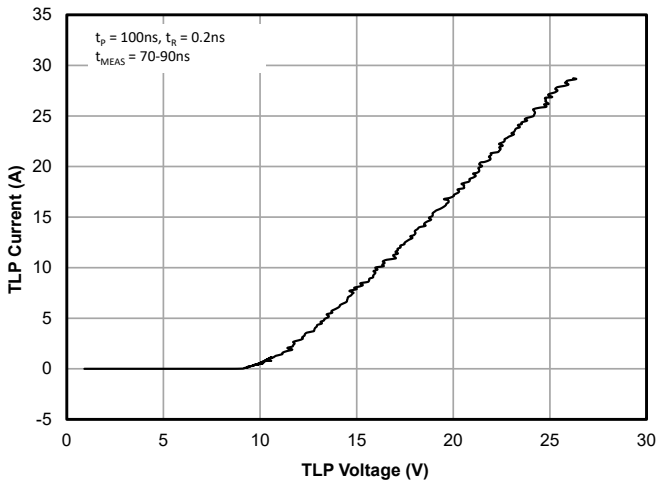
ESD Clamping (+8kV Contact per IEC 61000-4-2)



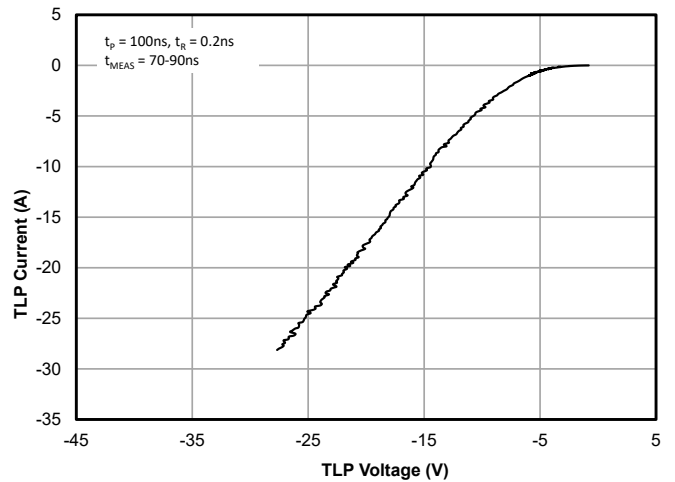
ESD Clamping (-8kV Contact per IEC 61000-4-2)



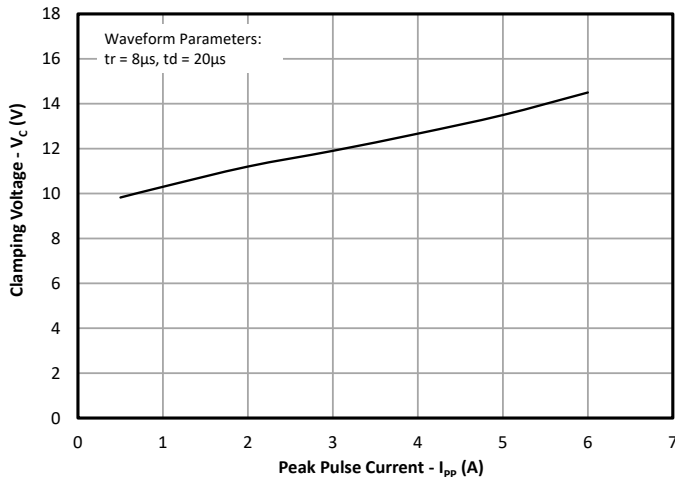
TLP Characteristics (Positive Pulse)



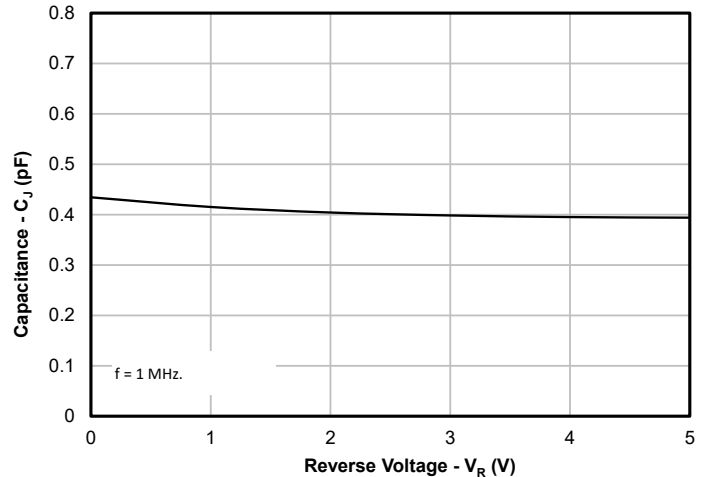
TLP Characteristics (Negative Pulse)



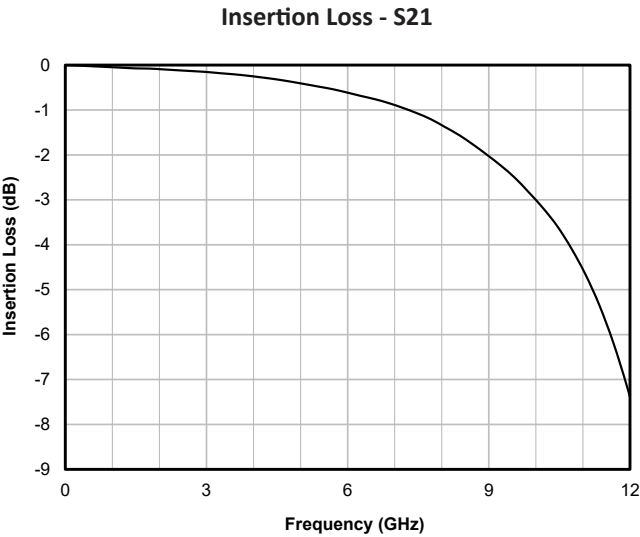
Clamping Voltage vs. Peak Pulse Current ($t_p=8/20\mu\text{s}$)



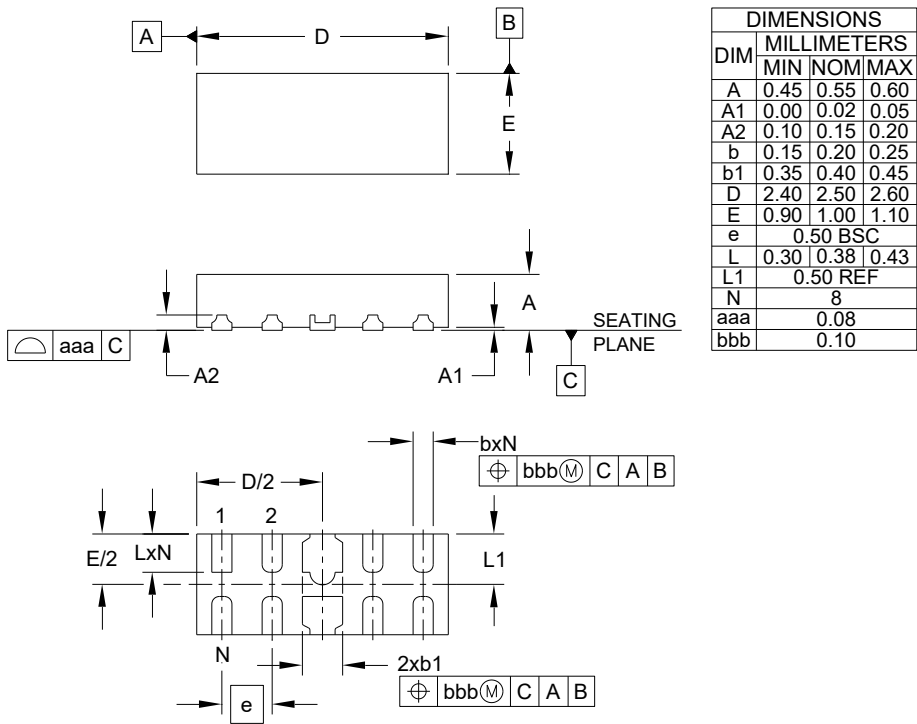
Capacitance vs. Reverse Voltage



Typical Characteristics

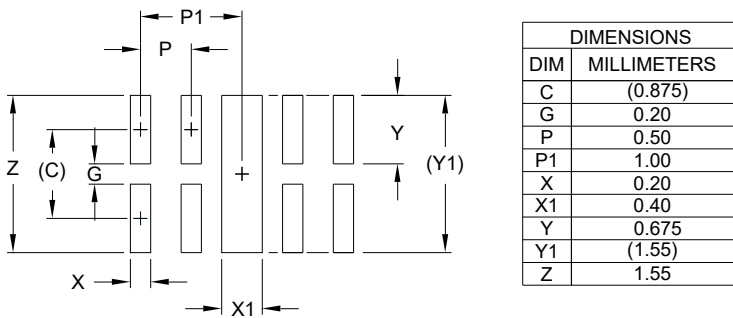


Outline Drawing - DFN 2.50 x 1.00 x 0.55mm 10-Lead



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

Landing Pattern - DFN 2.50 x 1.00 x 0.55mm 10-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
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Marking Code

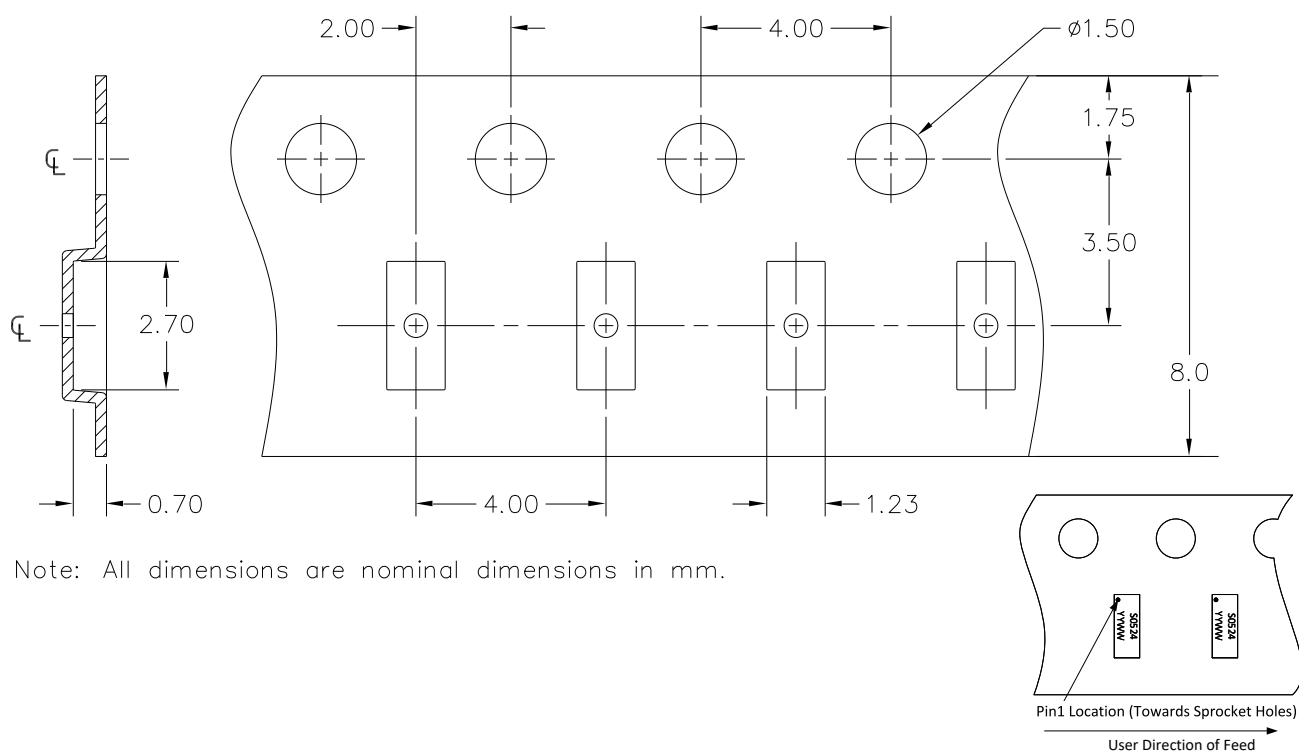
S0524

● YYWW

Notes:

- (1) Marking will also include Marking Code + Date Code.
- (2) Dot indicates Pin 1 location.

Tape and Reel Specification



Order Information

PART NUMBER	QTY PER REEL	REEL SIZE
SVS0524PARU.C	3,000	7"

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