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PRODUCT DATASHEET

Electro-Static Discharge

SLVU2.8-4 ESD

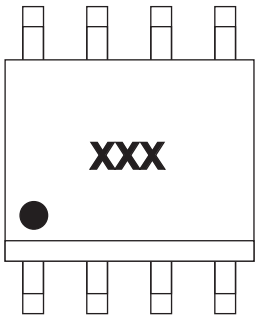
Features

- Package: SO-8
- 600W peak pulse power (8/20μs)
- Protects two line pairs (four lines)
- Ultra low leakage: nA level
- Low operating voltage: 2.8V
- Very low capacitance: 2pF
- Ultra low clamping voltage
- Complies with following standards:
  - – IEC 61000-4-2 (ESD) immunity test
    - Air discharge: ±30kV
    - Contact discharge: ±30kV
  - – IEC61000-4-5 (Lightning) 30A (8/20μs)
- RoHS compliant

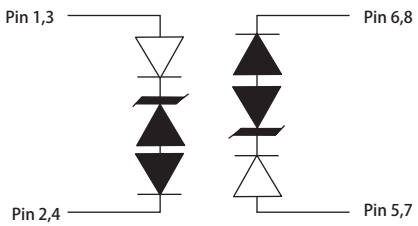
Applications

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

Pin Description



Schematic Diagram



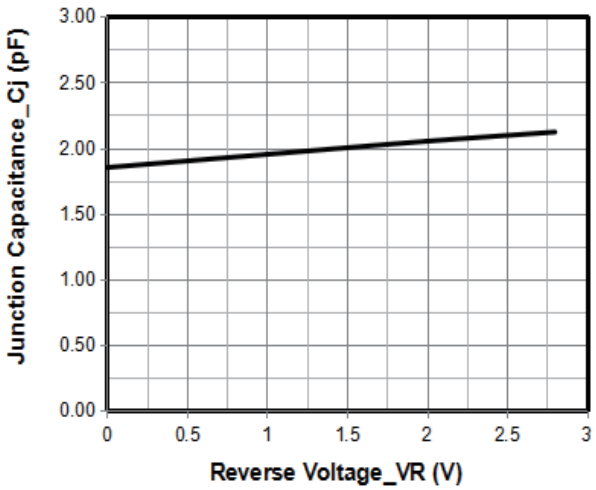
Limiting Values(T_A = 25 °C, unless otherwise specified)

Symbol	Parameter	Conditions	Value	Unit
V_{ESD}	Electrostatic Discharge Voltage	IEC 61000-4-2;Contact Discharge	±30	kV
		IEC 61000-4-2;Air Discharge	±30	kV
P_{PP}	Peak Pulse Power	t_P=8/20μs	600	W
I_{PP}	Peak Pulse Current	t_P=8/20μs	30	A
T_J	Operating Temperature Range	-	-55 to +125	°C
T_{stg}	Storage Temperature Range	-	-55 to +150	°C

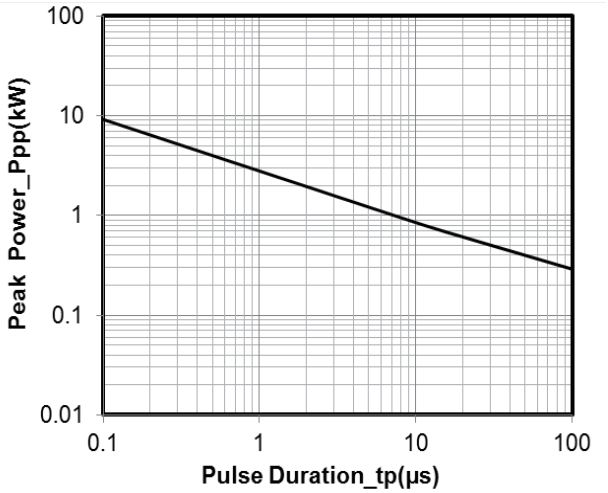
Electrical Characteristics(T_A = 25 °C, unless otherwise specified)

Symbol	Parameter	Conditions	Min	Typ.	Max	Unit
V_{RWM}	Reverse Working Voltage	T_A=25°C	-	-	2.8	V
V_{BR}	Breakdown Voltage	I_T=2μA	3.0	-	-	V
V_{SB}	Breakdown Voltage	I_{SB}=50mA	3.0	-	-	V
I_R	Reverse Leakage Current	V_{RWM}=2.8V	-	0.001	1	μA
V_C	Clamping Voltage	I_{PP}=5A(8x20μs pulse)	-	-	8.5	V
V_C	Clamping Voltage	I_{PP}=25A(8x20μs pulse)	-	-	18	V
V_C	Clamping Voltage	I_{PP}=30A(8x20μs pulse)	-	-	20	V
C_J	Junction Capacitance	V_R=0V,f=1 MHZ	-	2	3	pF

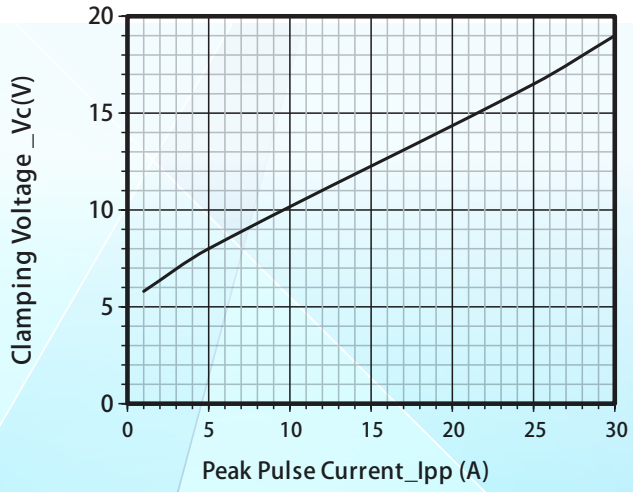
Typical Characteristics



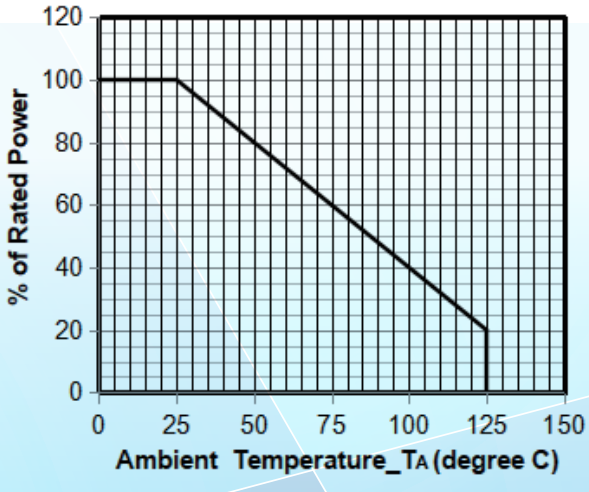
Junction Capacitance vs. Reverse Voltage



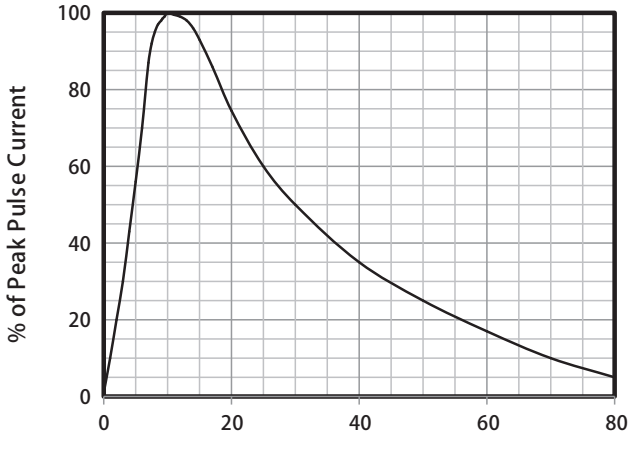
Peak Pulse Power vs. Pulse Time



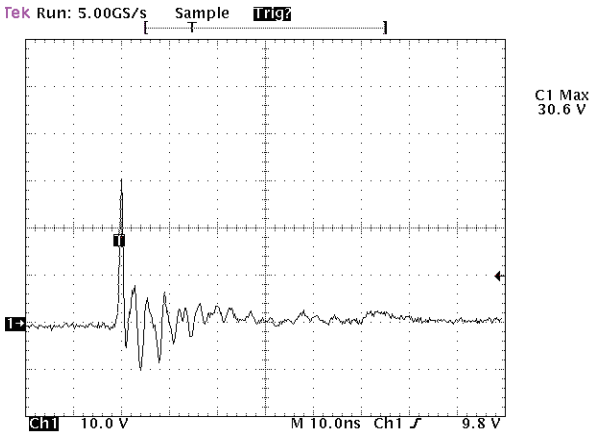
Clamping Voltage vs. Peak Pulse Current (tp = 8/20 μ s)



Power Derating Curve



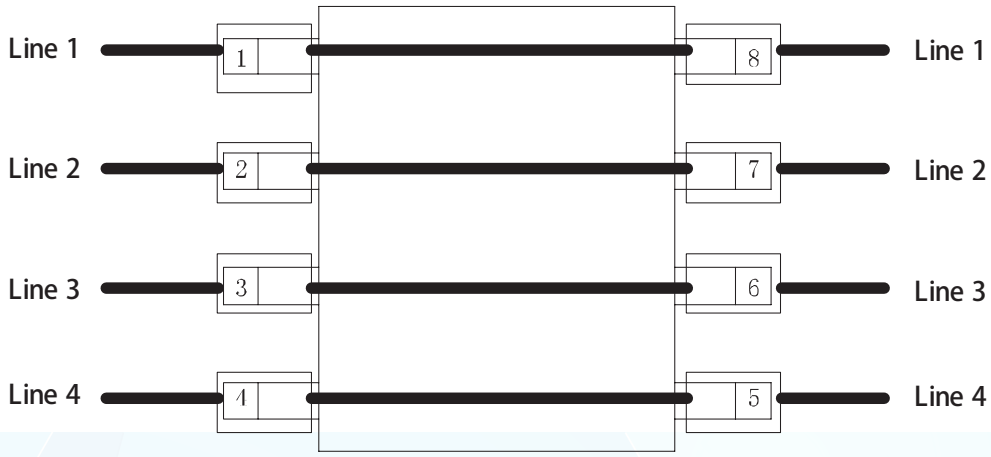
8x20 μs Pulse Waveform



Note: Data is taken with a 10x attenuator
ESD Clamping Voltage
8 kV Contact per IEC61000-4-2

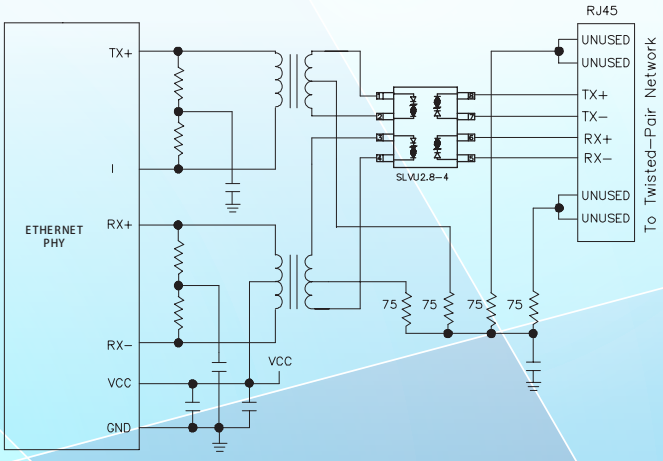
Typical Application

The SLVU2.8-4 is designed such that the data lines are routed through the device. The first line pair enters at pins 1 and 2 and exit at pins 8 and 7 respectively. The second line pair enters at pins 3 and 4 and exits at pins 6 and 5. The traces must be connected at the bottom of the device as shown.

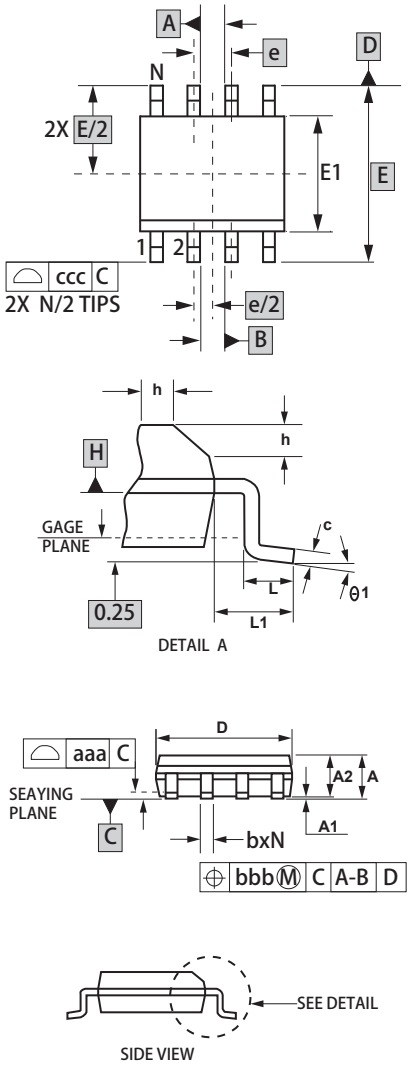


Low capacitance protection of two differential line pairs

SLVU2.8-4 on Ethernet Application:

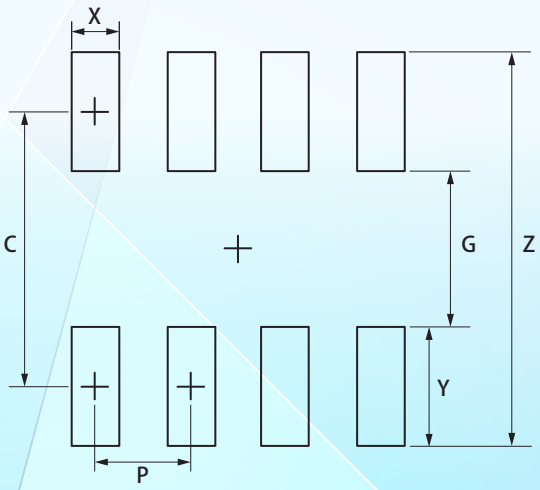


Physical Dimensions(mm.)



Symbol	Dimensions In Millimeters			Dimensions In Inches		
	Min	NOM	Max	Min	NOM	Max
A	1.35	-	1.75	0.053	-	0.069
A1	0.10	-	0.25	0.004	-	0.010
A2	1.25	-	1.65	0.049	-	0.065
b	0.31	-	0.51	0.012	-	0.020
c	0.17	-	0.25	0.007	-	0.010
D	4.80	4.90	5.00	0.189	0.193	0.197
E1	3.80	3.90	4.00	0.150	0.154	0.157
E	6.00 BSC			0.236 BSC		
e	1.27 BSC			0.050 BSC		
h	0.25	-	0.50	0.010	-	0.020
L	0.40	0.72	1.04	0.016	0.028	0.041
L1	1.04			0.041		
N	8			8		
θ1	0°	-	8°	0°	-	8°
aaa	0.10			0.004		
bbb	0.25			0.010		
ccc	0.20			0.008		

Suggested Land Pattern

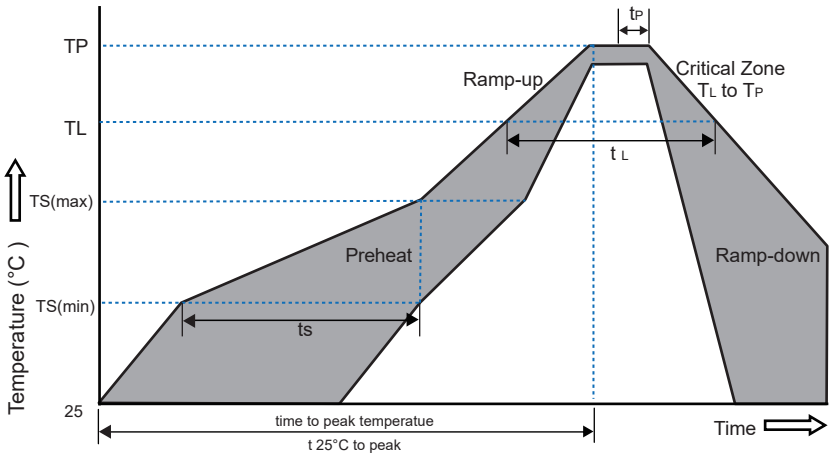


Symbol	Dimensions	
	Millimeters	Inches
C	5.20	0.205
G	3.00	0.118
P	1.27	0.050
X	0.60	0.024
Y	2.20	0.087
Z	7.40	0.291

Packaging Quantity

Part Number	Delivery Form	Delivery Quantity
SLVU2.8-4	13”T&R	2500

Soldering Parameters



Reflow Condition		Pb-Free Assembly
Pre-heat	-Temperature Min($T_{s(min)}$)	+150°C
	-Temperature Max($T_{s(max)}$)	+200°C
	-Time(Min to Max)(ts)	60~180 secs.
Average ramp up rate (Liquid us Temp(T_L) to peak)		3°C/sec. Max
Ts(max) to T_L - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature(T_L)(Liquid us)	+217°C
	-Temperature (t_L)	60~150 secs.
Peak Temp (T_P)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (t_p)		30 secs. Max
Ramp-down Rate		6°C/sec. Max
xTime 25°C to Peak Temp (TP)		8 min. Max
Do not exceed		+260°C