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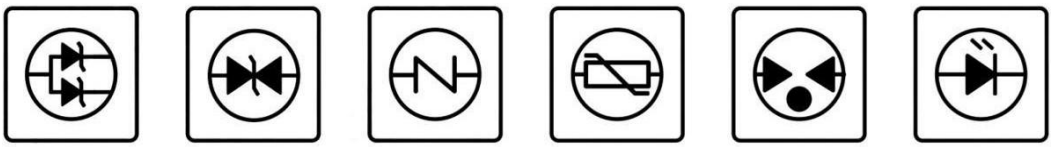
SEMICONDUCTOR



SLVU2.8-8-MS

Product specification

SLVU2.8-8-MS

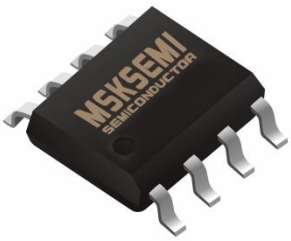
Features

- 400 W Peak Pulse Power per Line (tp=8/20 s)
- Protects four line pairs
- Low capacitance
- Low Leakage Current.
- Low Operating and Clamping Voltages.
- Transient Protection for High Speed Data Lines to
  IEC61000-4-2(ESD)
  15kV(air), 8kV(Contact)
  IEC61000-4-4(EFT) 40A(5/50ns)
  IEC61000-4-5(lightning) 24A(8/20us)

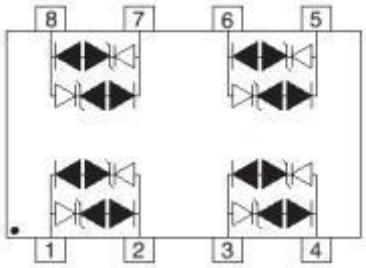
Applications

- Ethernet – 10/100/1000 Base T
- WAN/LAN Equipment
- Desktops,Servers,Notebooks & Handhelds,base stations Laser Diode Protection

Reference News

SOP-8	Marking
	

Pin Configuration



Absolute Maximum Ratings

Parameter	Symbol	Value	Units
Peak Pulse Power (t_p = 8/20μs) - See Fig1.	P_{PK}	400	W
Peak Pulse Current (t_p = 8/20μs)	I_{PP}	24	A
Storage Temperature Range	T_{STG}	-55 to 150	°C
Operating Junction Temperature Range	T_J	-55 to 150	°C

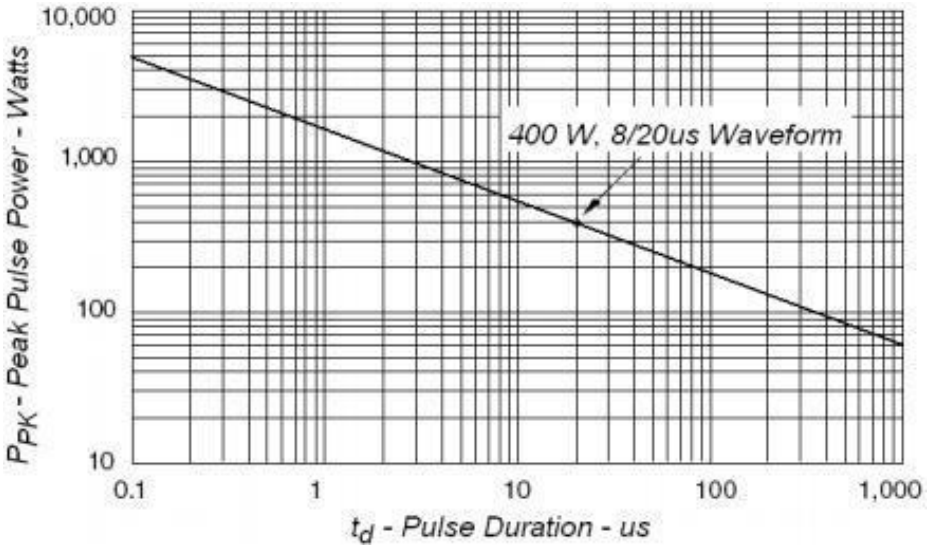
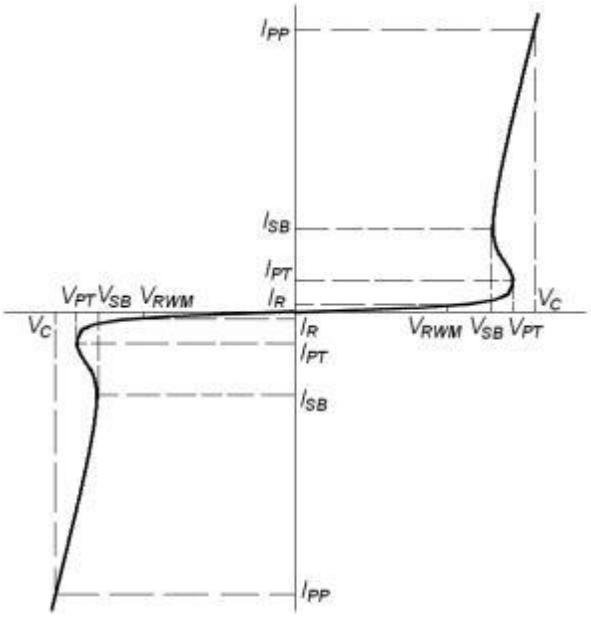


Fig1. Peak Pulse Power VS Pulse Time

Electrical Parameter

Symbol	Parameter
I_{PP}	Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Reverse Stand-Off Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{SB}	Snap-Back Voltage @ I_{SB}
I_{SB}	Snap-Back Current
V_{PT}	Punch-Through Voltage
I_{PT}	Punch-Through Current



Electrical Characteristics

Parameter	Symbol	Conditions	Minimum	Typical	Maximum	Units
Reverse Stand-Off Voltage	V_{RWM}				2.8	V
Punch-Through Voltage	V_{PT}	I_{PT} = 2uA	3.0			V
Snap-Back Voltage	V_{SB}	I_{SB} = 50mA	2.8			V
Reverse Leakage Current	I_R	V_{RWM} =2.8V, T=25℃ (Each Line)			1	uA
Clamping Voltage	V_C	I_{PP} =2A, t_P=8/20us (Each Line)			5.5	V
Clamping Voltage	V_C	I_{PP} =5A, t_P=8/20us (Each Line)			8.5	V
Clamping Voltage	V_C	I_{PP} =24A, t_P=8/20us (Each Line)			15	V
Junction Capacitance	C_j	VR =0V, f =1MHz (Each Line)		7	10	pF

Typical Characteristics

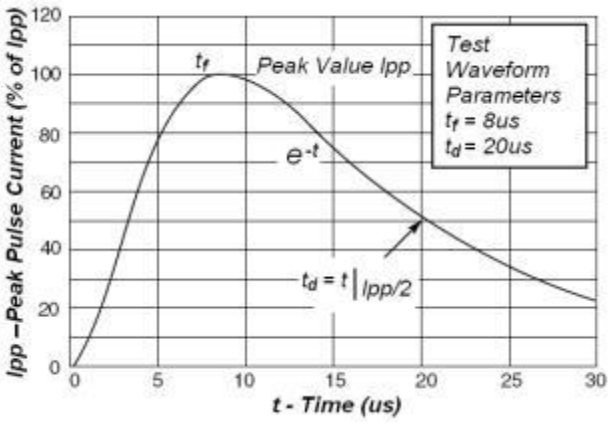


Fig3. Pulse Waveform

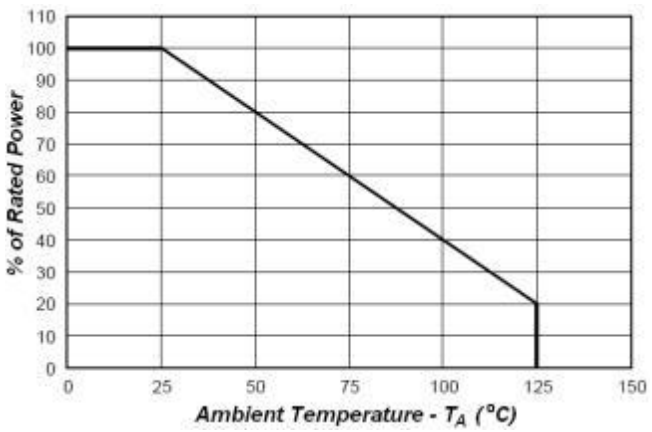


Fig4. Power Derating Curve

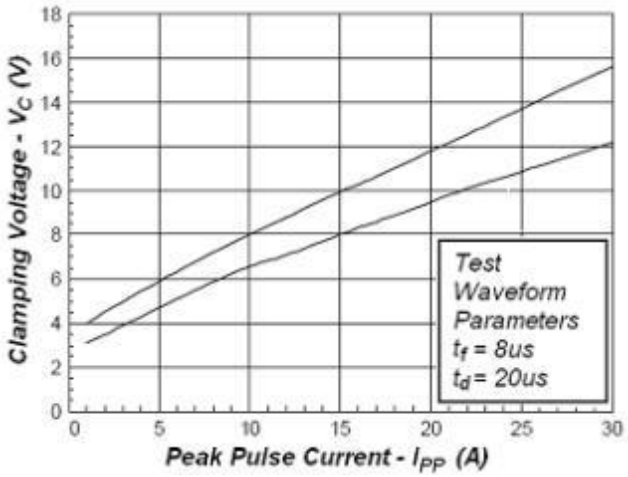


Fig5. Clamping Voltage vs. Peak Pulse Current

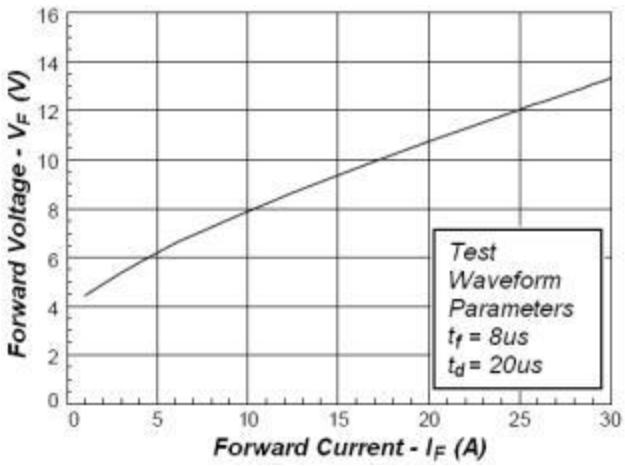


Fig6. Forward Voltage vs. Forward Current

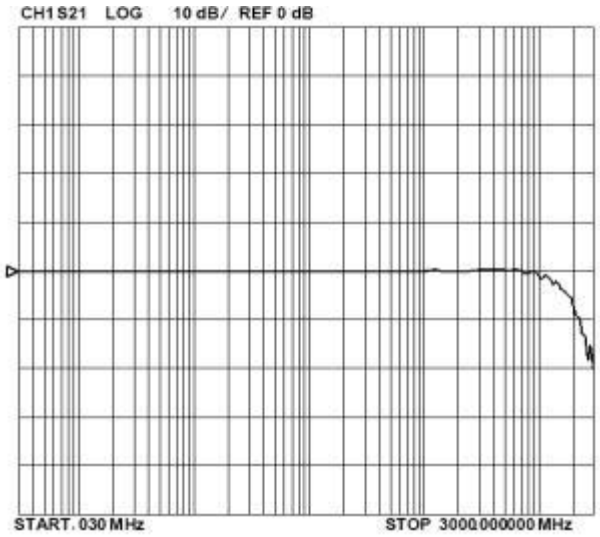


Fig7. Insertion Loss S21

ApplicationNote

Electronic equipment is susceptible to damage caused by Electrostatic Discharge (ESD), Electrical Fast Transients (EFT), and tertiary lightningeffects. Knowing that equipment can be damaged, the SLVU2.8-8 -MS was designed to provide the level of protection required to safe guard sensitive equipment.This product can be used in different configurations to provide a level of protection to meet unidirectional line requirements as well as bidirectional requirements either in a common-mode or differential-mode configuration.

Bidirectional Common-Mode Protection (Figure 9)

The SLVU2.8-8-MS provides up to four lines of protection in a common-mode configuration as depicted in figure 9.

Circuit connectivity is as follows:

- Line 1 is connected to Pin 1
- Line 2 is connected to Pin 7
- Line 3 is connected to Pin 3
- Line 4 is connected to Pin 5
- Pins 2, 4, 7 and 8 are connected to ground

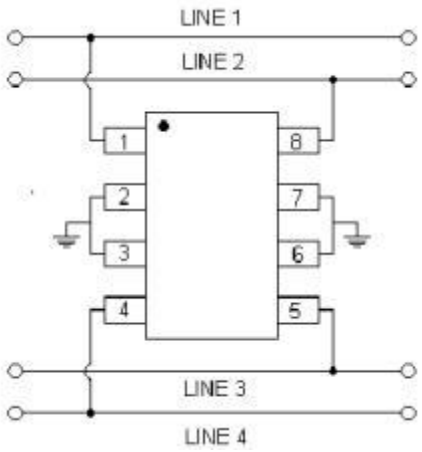


Fig 9.

Bidirectional different--Mode Protection (Figure 10)

The SLVU2.8-8-MS provides up to two-line pairs of protection in a differential-mode configuration as depicted in figure 11.

Circuit connectivity is as follows:

- Line Pair 1 is connected to Pins 1 & 2
- Line Pair 2 is connected to Pins 3 & 4
- Line Pair 3 is connected to Pins 7 & 8
- Line Pair 4 is connected to Pins 5 & 6

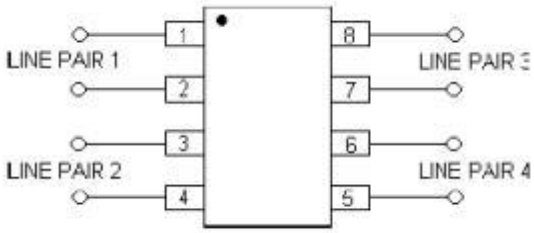


Fig10.

Circuit Board Layout Protection

Circuit board layout is critical for Electromagnetic Compatibility (EMC) protection. The following guidelines are recommended:

- The protection device should be placed near the input terminals or connectors, the device will divert the transient current immediately before it can be coupled into the nearby traces.
- The path length between the TVS device and the protected line should be minimized.
- All conductive loops including power and ground loops should be minimized.
- The transient current return path to ground should be kept as short as possible to reduce parasitic inductance.
- Ground planes should be used whenever possible. For multilayer PCBs, use ground vias.

Typical Applications

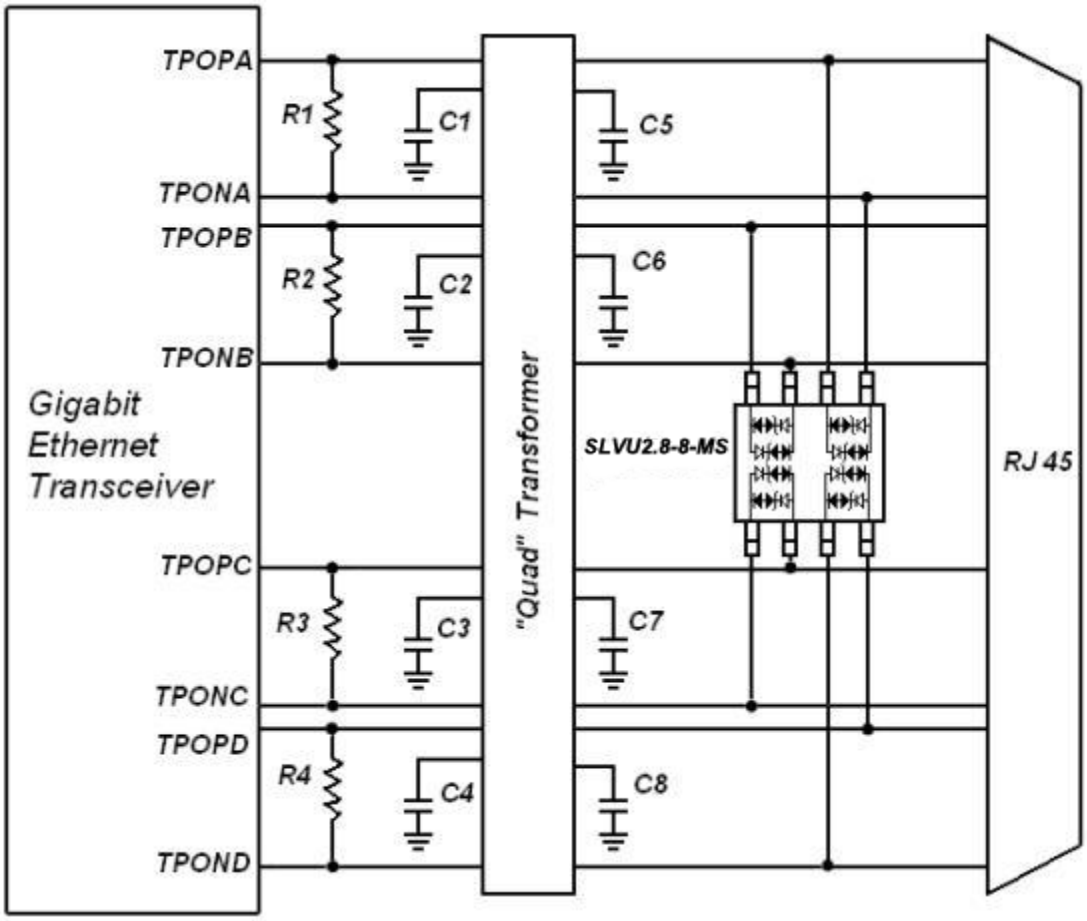


Fig11. Gigabit Ethernet Protection Circuit

Typical Applications

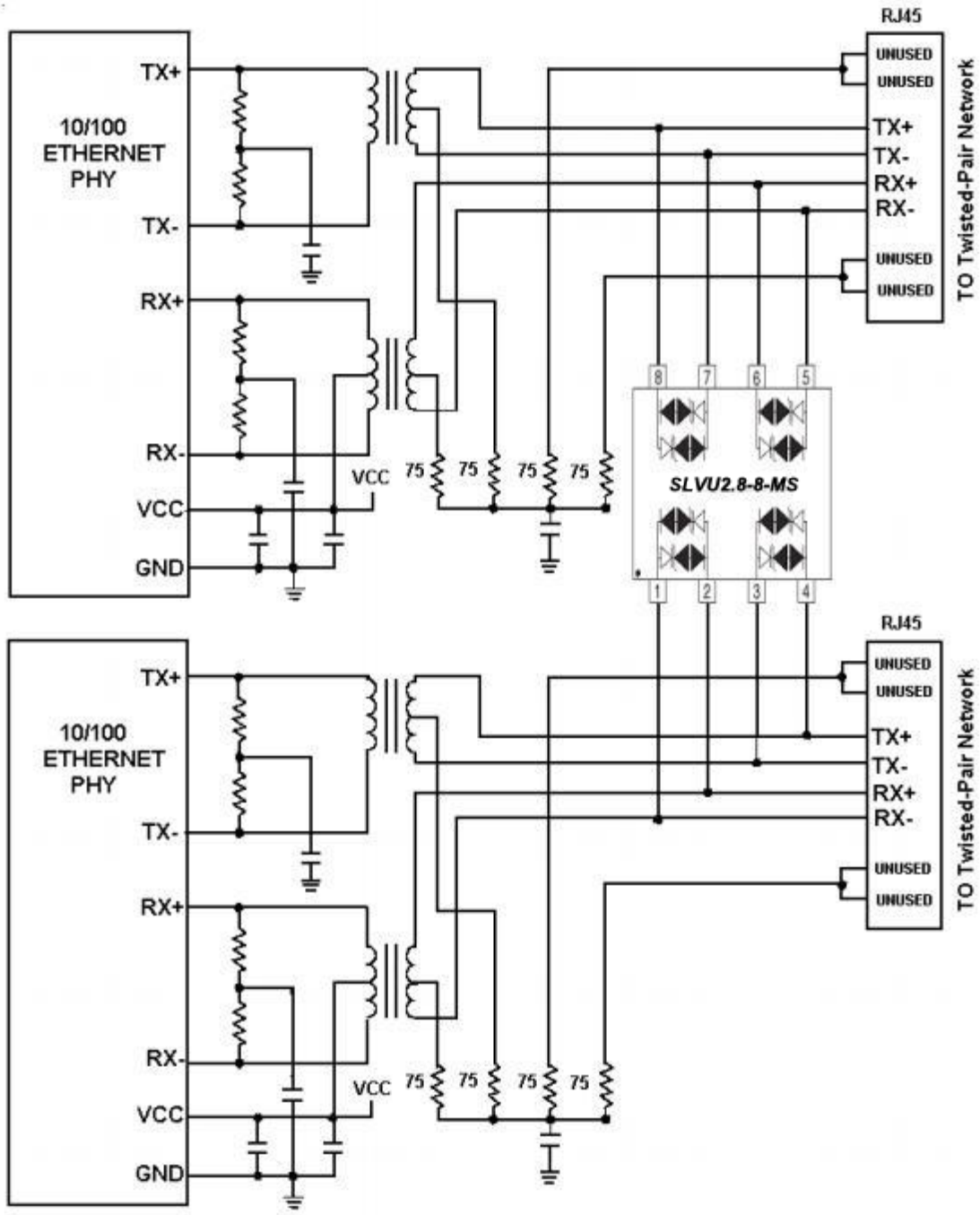
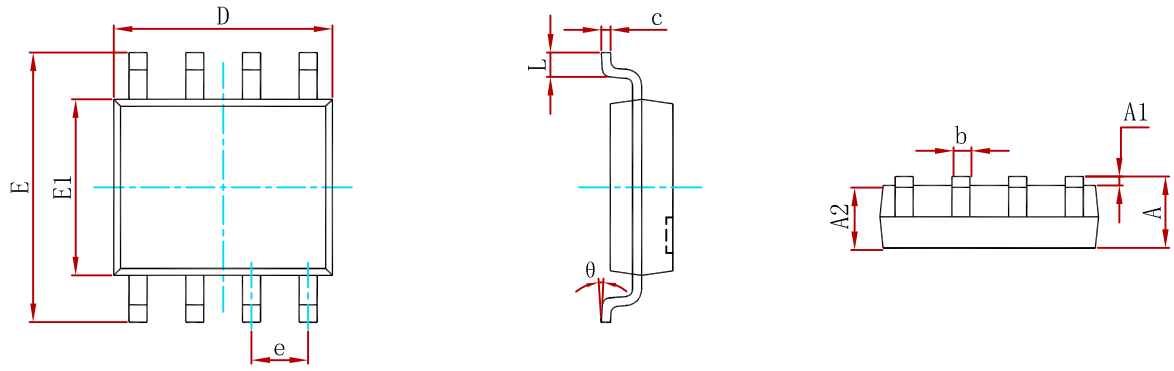


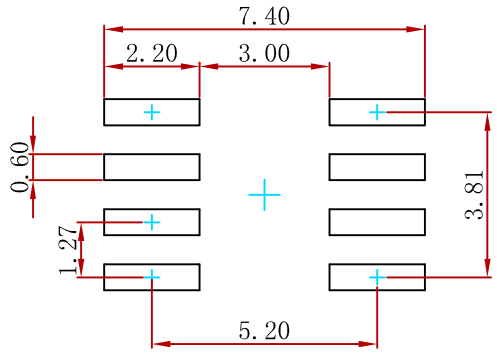
Fig12. One SLVU2.8-8-MS Protecting Two 10/100 Ethernet Port

PACKAGEMECHANICALDATA



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.350	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.007	0.010
D	4.800	5.000	0.189	0.197
e	1.270 (BSC)		0.050 (BSC)	
E	5.800	6.200	0.228	0.244
E1	3.800	4.000	0.150	0.157
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°

Suggested Pad Layout



Note:
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.05mm.
3.The pad layout is for reference purposes only.

Order information

Orderable Device	Package	Packing Option
SLVU2.8-8-MS	SOP-8	2500PCS

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