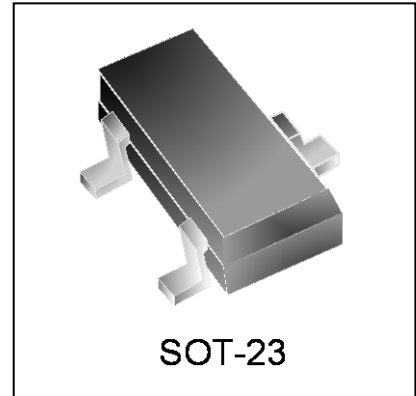


Features

- 500 Watts peak pulse power ($t_p=8/20\mu s$)
- One device protects one unidirectional line
- Two devices protect two high-speed data line pairs
- Low capacitance
- Low leakage current
- Low operating and clamping voltage
- Solid-state Punch through Avalanche TVS process technology



IEC COMPATIBILITY (EN61000-4)

- IEC 61000-4-2 (ESD) $\pm 20kV$ (air), $\pm 15kV$ (contact)
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 20A (8/20 μs)

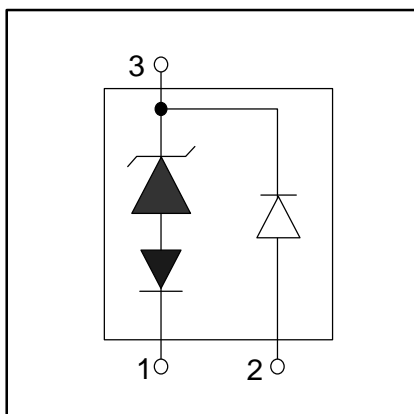
Mechanical Characteristics

- JEDEC SOT-23 package
- Molding compound flammability rating: UL 94V-0
- Marking: Marking Code
- Packaging: Tape and Reel
- RoHS Compliant

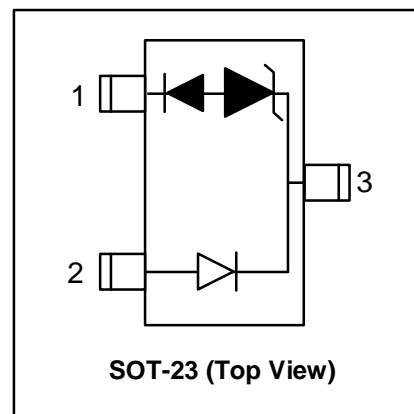
Applications

- Switching Systems
- WAN/LAN Equipment
- Desktops, Servers, Notebooks & Handhelds
- T1/E1 secondary IC Side Protection
- Laser Diode Protection
- 10/100 Ethernet
- Base Stations

Circuit Diagram



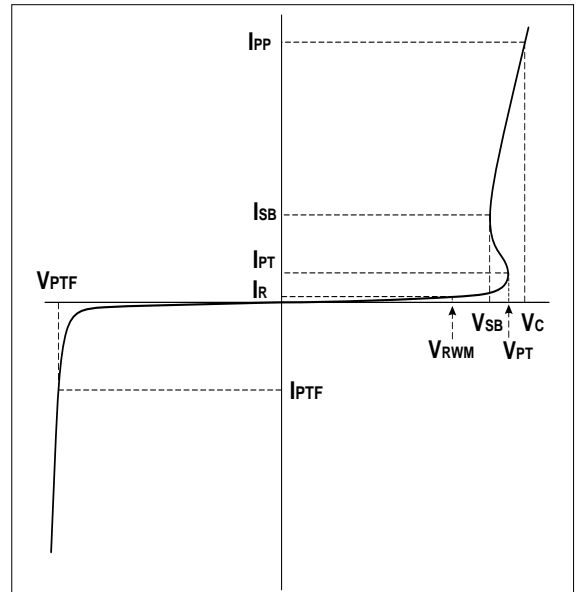
Schematic & PIN Configuration



Absolute Maximum Rating			
Rating	Symbol	Value	Units
Peak Pulse Power ($t_p=8/20\mu s$)	P_{PP}	500	Watts
Peak Pulse Current ($t_p=8/20\mu s$)	I_{PP}	20	A
Lead Soldering Temperature	T_L	260(10sec)	$^{\circ}C$
Operating Temperature	T_J	-55 to + 125	$^{\circ}C$
Storage Temperature	T_{STG}	-55 to +150	$^{\circ}C$

Electrical Parameters (T=25 $^{\circ}C$)

Symbol	Parameter
I_{PP}	Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Working Peak Reverse Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{PT}	Punch-through Breakdown Voltage @ I_{PT}
V_{SB}	Snap-Back Voltage @ I_{SB}
I_{SB}	Snap-Back Current
I_{PT}	Punch-through Current
V_{PTF}	Forward Punch-through Breakdown Voltage @ I_{PTF}
I_{PTF}	Forward Test Current



Electrical Characteristics(T=25 $^{\circ}C$)

DW2.8LVU-S						
Parameter	Symbol	Conditions	Minimum	Typical	Maximum	Units
Reverse Stand-Off Voltage	V_{RWM}	Pin 3 to 1 or Pin 2 to 1			2.8	V
Punch-through Voltage	V_{PT}	$I_{PT}=2\mu A$, Pin 3 to 1	3.0			V
Snap-Back Voltage	V_{SB}	$I_{SB}=50mA$, Pin 3 to 1	2.8			V
Reverse Leakage Current	I_R	$V_{RWM}=2.8V$ Pin 3 to 1 or Pin 2 to 1			1	μA
Clamping Voltage (Note1)	V_C	$I_{PP}=2A$, $t_p=8/20\mu s$ Pin3 to 1			6.0	V

Electrical Characteristics (Cont)

Parameter	Symbol	Conditions	Minimum	Typical	Maximum	Units
Clamping Voltage	V_C	$I_{PP}=5A$, $t_p=8/20\mu s$ Pin3 to 1			9.0	V
Clamping Voltage	V_C	$I_{PP}=20A$, $t_p=8/20\mu s$ Pin3 to 1			22	V
Clamping Voltage	V_C	$I_{PP}=5A$, $t_p=8/20\mu s$ Pin2 to 1			10	V
Clamping Voltage	V_C	$I_{PP}=20A$, $t_p=8/20\mu s$ Pin2 to 1			25	V
Junction Capacitance (Note2)	C_j	Pin3 to Pin 1&2 (Pin 1 and 2 tied together) $V_R = 0V$, $f = 1MHz$		20	50	pF
Junction Capacitance	C_j	Pin 2 to 1 (Pin 3 NC) $V_R = 0V$, $f = 1MHz$		3	6	pF
Steer Diode						
Reverse Breakdown Voltage	V_{BR}	$I_T = 10\mu A$ Pin 3 to 2	40			V
Reverse Leakage Current	I_R	$V_{RWM} = 2.8V$ Pin 3 to 2			1	μA
Forward Voltage (Note3)	V_F	$I_F = 10mA$ Pin2 to 3			2	V

NOTES:

1. The 8/20 μs test pulse wave is shown in figure3, and the clamping voltage vs. I_{PP} is shown in figure4.
2. The Junction Capacitance vs. Reverse Voltage is shown in figure5.
3. The Forward Voltage vs. Forward Current for Steer diode is shown in figure6.

Typical Characteristics

Figure 1: Peak Pulse Power vs. Pulse Time

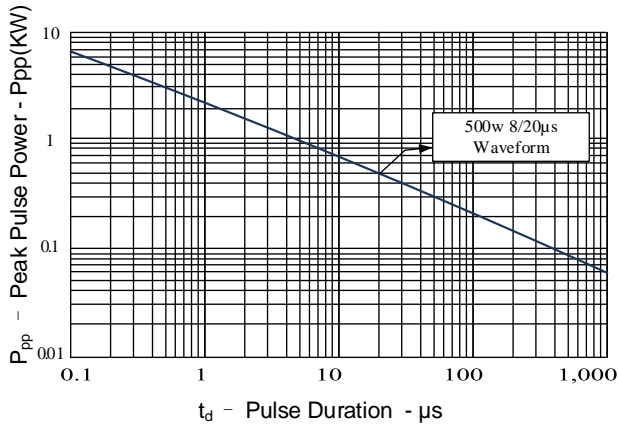


Figure 2: Power Derating Curve

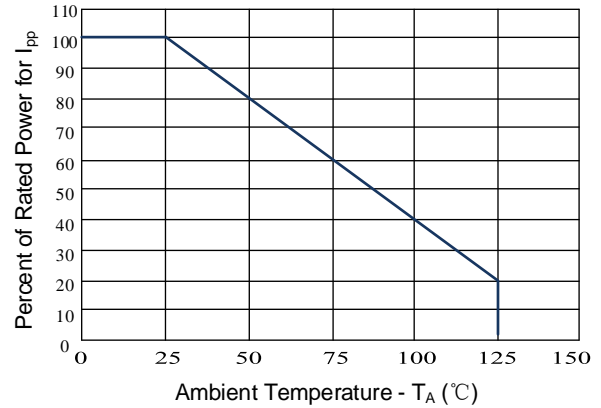


Figure3: Pulse Waveform

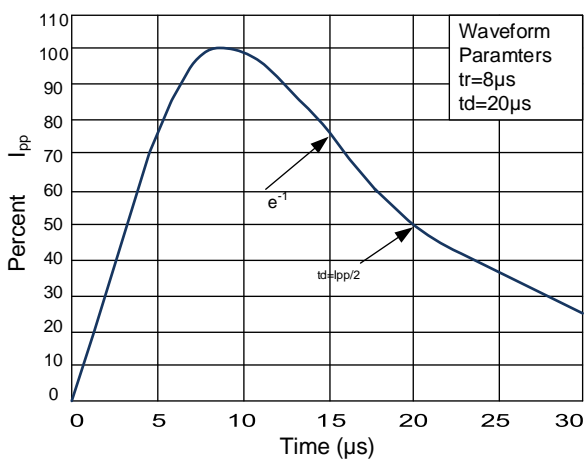


Figure 4: Clamping Voltage vs. Peak Pulse Current

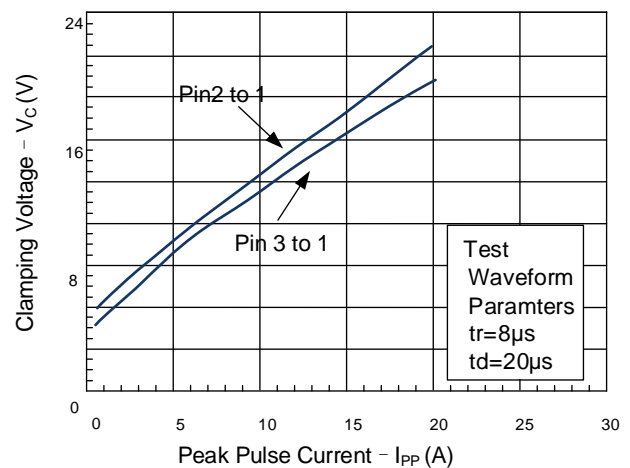


Figure 5: Capacitance vs. Reverse Voltage

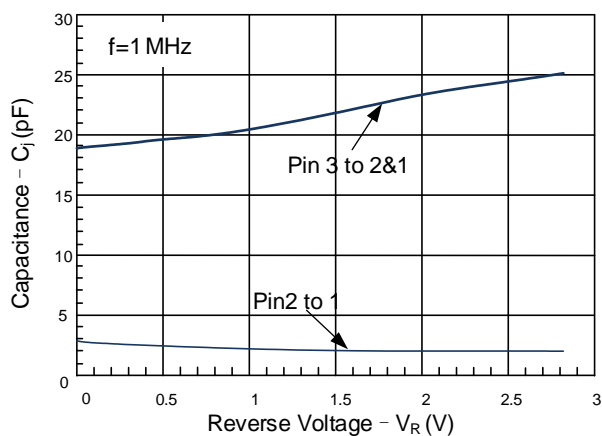
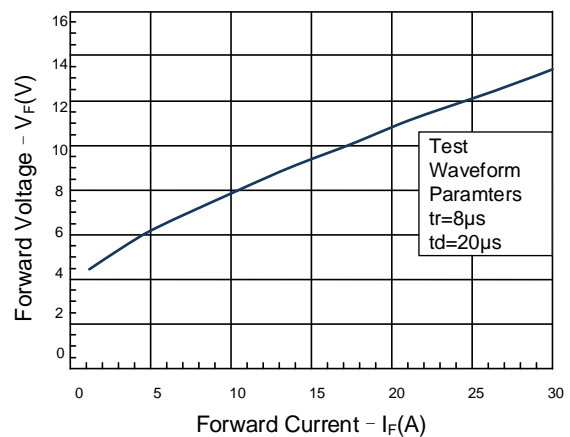


Figure 6: Forward Voltage vs. Forward Current



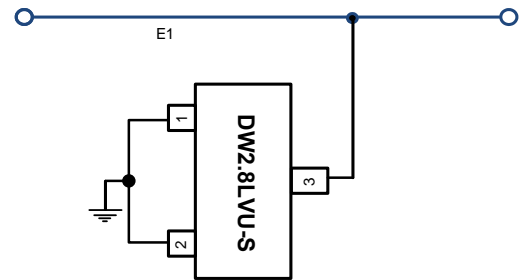
Application Information

The DW2.8LVU-S is designed to providing protection for electronic equipment that is susceptible to damage caused by Electrostatic Discharge (ESD), Electrical Fast Transients (EFT) and tertiary lightning effects. This product is offered in a unidirectional configuration and provides both common-mode and differential-mode protection.

Unidirectional Common-mode Protection

One DW2.8LVU-S provides one line of unidirectional protection in a common-mode configuration. Pins 3 is connected to Line1

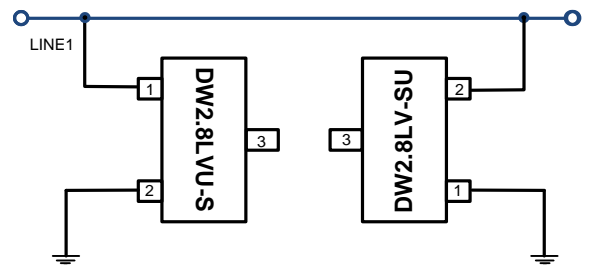
- Pin 1 and 2 are connected to ground
- Pin 3 to Pin 1 clamp the positive transient
- Pin 2 to pin 3 clamp the negative transient



Bidirectional Common-mode Protection

Two DW2.8LVU-S devices provide one line of bidirectional protection in a common-mode configuration.

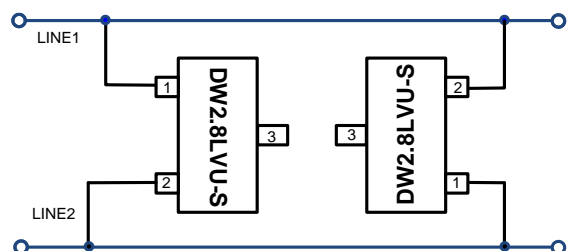
- Pin 1 of first and Pin 2 of second is connected to Line1
- Pin 2 of first and Pin 1 of second is connected to ground
- Pin 3 of both is not connected



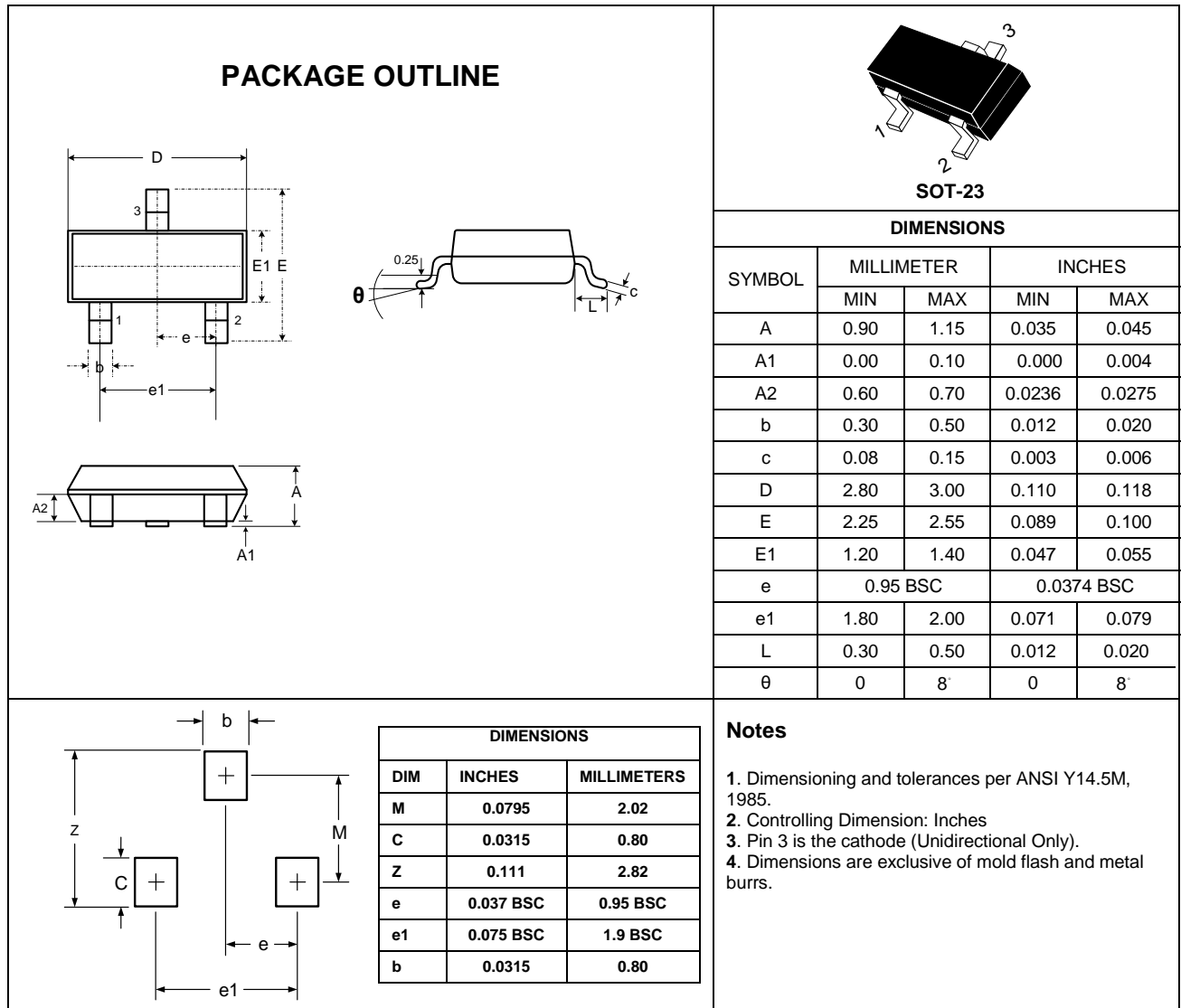
Bidirectional Differential-mode Protection

Two DW2.8LVU-S devices provide two lines of bidirectional protection in a differential-mode configuration.

- Pin 1 of first and Pin 2 of second is connected to Line1
- Pin 2 of first and Pin 1 of second is connected to Line2
- Pin 3 of both devices is not connected



Outline Drawing – SOT-23



Marking Codes

Part Number	DW2.8LVU-S
Marking Code	U2.8

Package Information

Qty: 3k/Reel