

Electrostatic Discharged Protection Devices (ESD) Data Sheet

Description

The UDT23A2.8L01 of transient voltage suppressors are designed to protect low voltage state-of-the-art CMOS semiconductors from transients caused by electrostatic discharge(ESD), cable discharge events (CDE), lightning and other induced voltage surges.

The device provides low stand off voltages with significant reductions in leakage currents and capacitance over silicon avalanche diode processes. It features integrated low capacitance compensation diodes that reduce the typical capacitance 2.5pF per line.

This combined with low leakage current, means signal integrity preserved in high-speed suplications such as 10/100 Ethernet.



Contact : $\pm 8\text{kV}$
Air : $\pm 15\text{kV}$

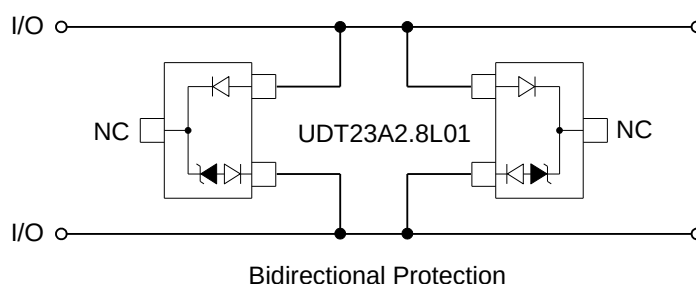
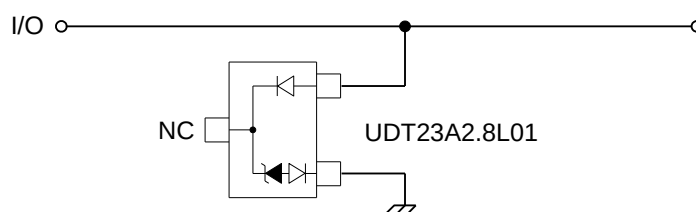
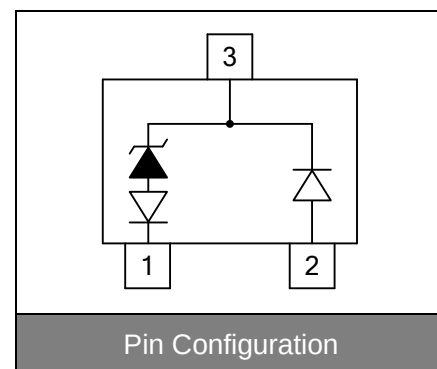


Features

- IEC61000-4-2 ESD 15KV Air, 8KV contact compliance
- SOT-23 surface mount package
- Protects one line
- Working voltage: 2.8V
- low capacitance
- Low leakage current
- Low operating and clamping voltages
- Solid-state silicon avalanche technology
- Lead Free/RoHS compliant
- Solder reflow temperature: Pure Tin-Sn, 260~270°C
- Flammability rating UL 94V-0
- Meets MSL level 1, per J-STD-020
- Marking: B SZ4

Applications

- 10/100 Ethernet
- WAN/LAN Equipment
- High current switching systems
- Desktops, servers and notebook
- Instrumentation
- Analog inputs
- Base stations
- High-speed data line protection



Maximum Ratings

Rating	Symbol	Value	Unit
Peak pulse power (tp=8/20μs waveform)	P _{PP}	400	W
ESD voltage (Contact discharge)	V _{ESD}	±8	kV
ESD voltage (Air discharge)		±15	
Storage & operating temperature range	T _{STG} , T _J	-55~+150	°C

Electrical Characteristics (T_J=25°C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Reverse stand-off voltage	V _{RWM}				2.8	V
Reverse breakdown voltage	V _{BR}	I _{BR} =1mA	3			V
Reverse leakage current	I _R	V _R =2.8V			5	μA
Clamping voltage (tp=8/20μs)	V _C	I _{PP} =2A			5.5	V
Clamping voltage (tp=8/20μs)	V _C	I _{PP} =5A			8.5	V
Off state junction capacitance	C _J	0Vdc, f=1MHz Between I/O pins and GND		2.5	5	pF

Typical Characteristics Curves

Figure 1. Power Derating Curve

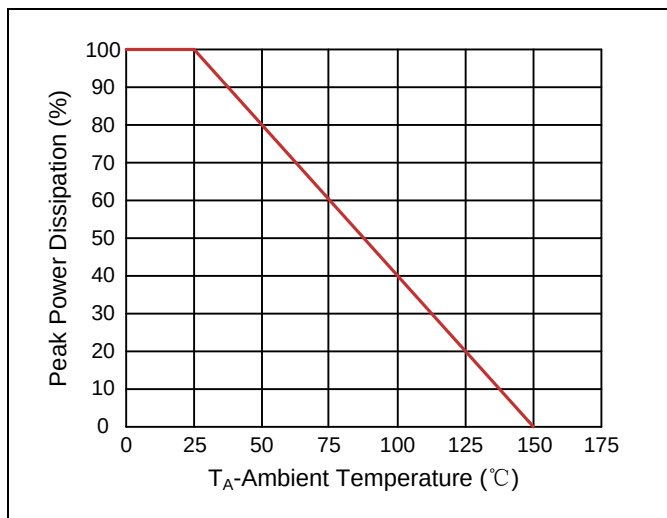


Figure 2. Pulse Waveforms

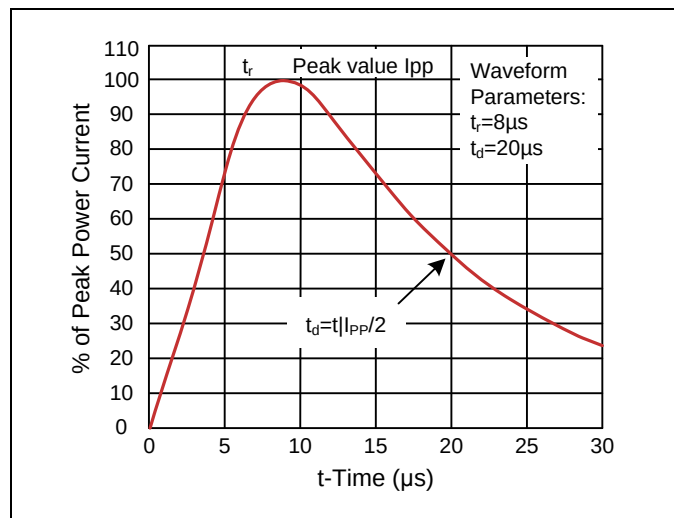


Figure 3. Non-Repetitive Peak Pulse vs. Pulse Time

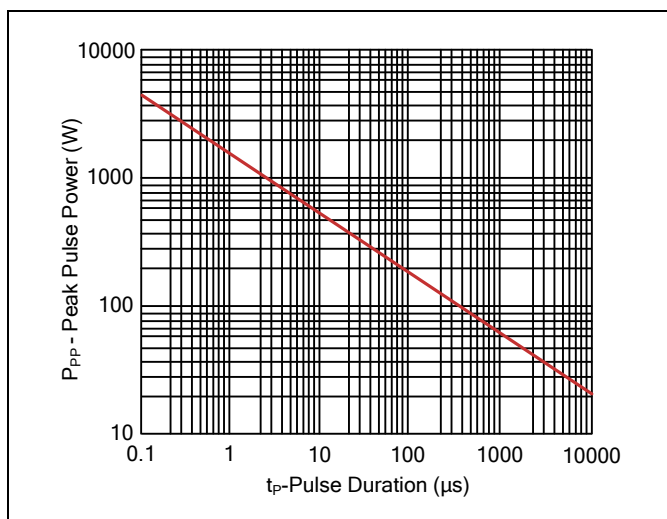


Figure 4. Capacitance vs. Reverse Voltage

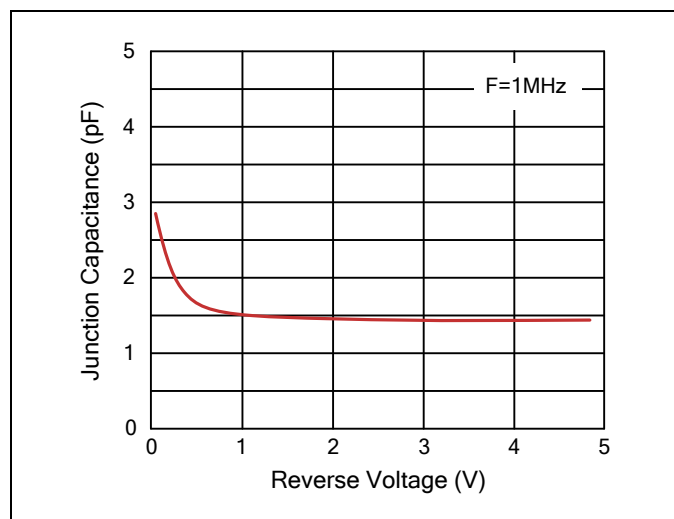
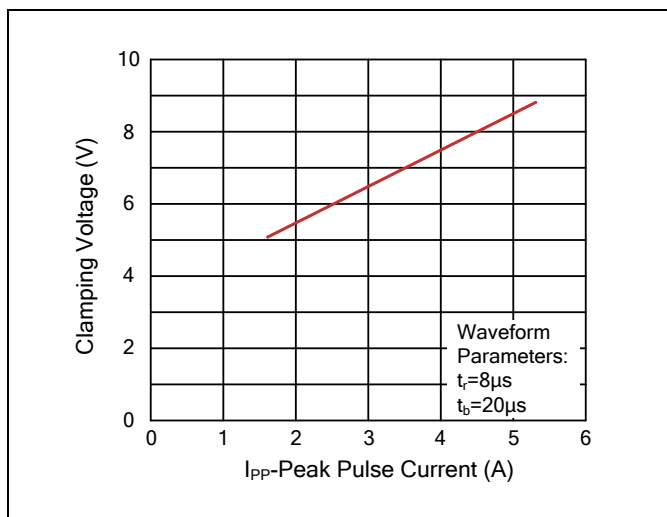
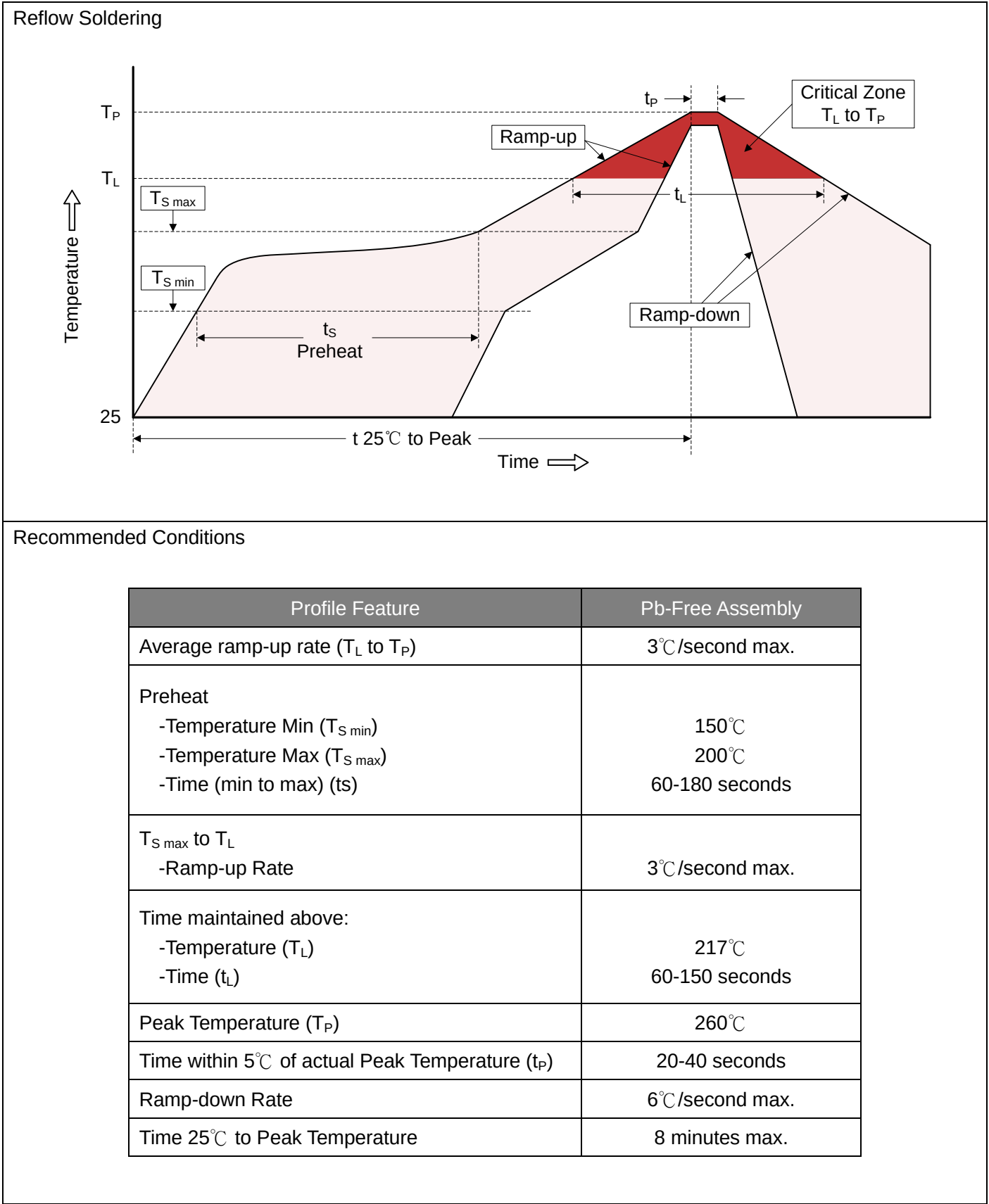


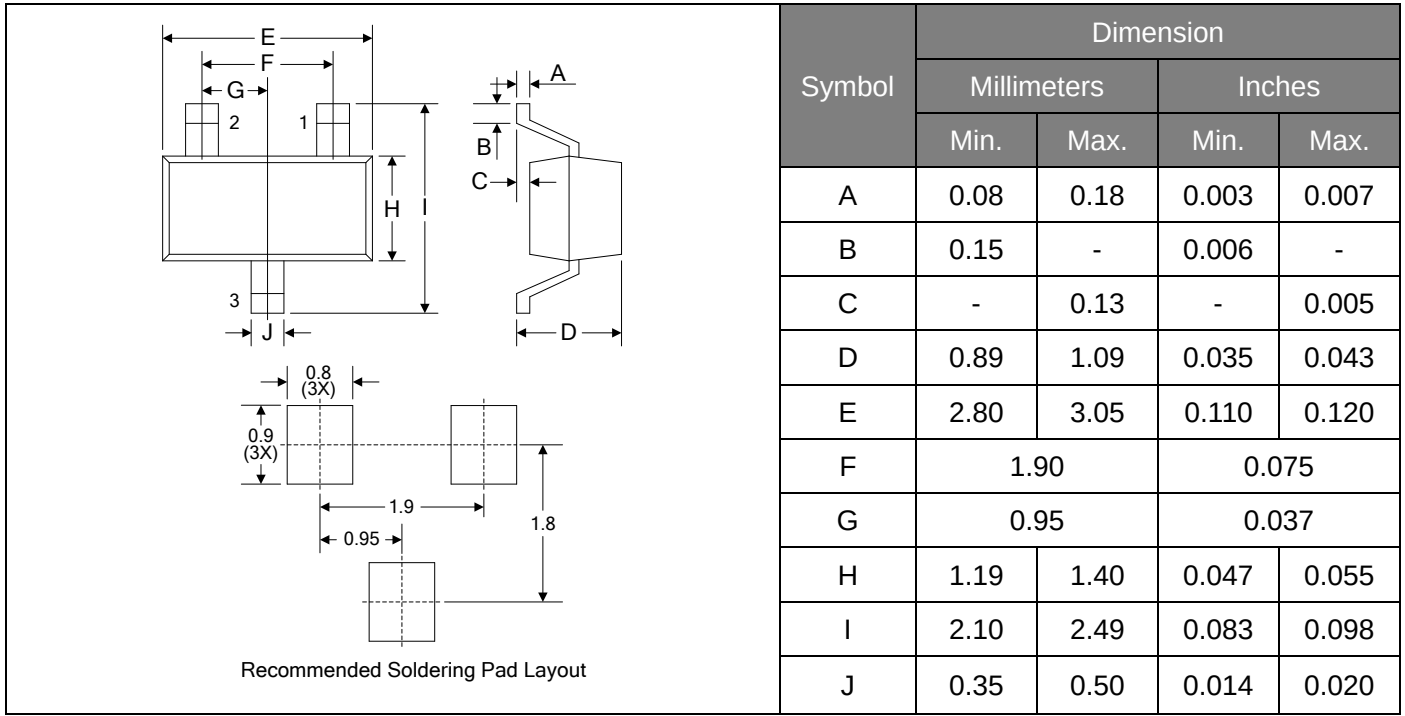
Figure 5. Clamping Voltage vs. Peak Pulse Current



Recommended Soldering Conditions



Dimensions (SOT-23)



Packaging

