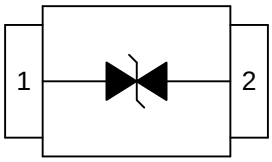
Description

The UBD32C05L01 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 ”flow-thru” design minimizes trace inductance and reduces voltage overshoot associated with ESD events. The low clamping voltage of the device minimizes the stress on the protected IC.



Features

- IEC61000-4-2 ESD 15KV Air, 8KV contact compliance
- SOD-323 surface mount package
- Protects one I/O line
- Working voltage: 5V
- Low leakage current
- Low operating and clamping voltages
- Solder reflow temperature: Pure Tin-Sn, 260~270℃

Applications

- High-speed data lines
- Microprocessor based equipment
- LAN / WAN equipment
- Desktops PC and serves
- Notebook, Laptop and Palmtop computers
- Portable instrumentation
- Peripherals
- Universal serial bus (USB) port protection

Maximum Ratings

Rating	Symbol	Value	Unit
Peak pulse current (tp=8/20μs waveform)	I_{PP}	3	A
ESD voltage (Contact discharge)	V_{ESD}	±8	kV
ESD voltage (Air discharge)		±15	
Storage & operating temperature range	T_{STG} ,T_J	-55~+150	℃

Electrical Characteristics (T_J=25℃)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Reverse stand-off voltage	V_{RWM}				5	V
Reverse breakdown voltage	V_{BR}	I_{BR}=1mA	6			V
Reverse leakage current	I_R	V_R=5V			1	μA
Clamping voltage (tp=8/20μs)	V_C	I_{PP}=1A			11	V
Clamping voltage (tp=8/20μs)	V_C	I_{PP}=3A			20	V
Off state junction capacitance	C_J	0Vdc,f=1MHz		0.4		pF

Typical Characteristics Curves

Figure 1. Power Derating Curve

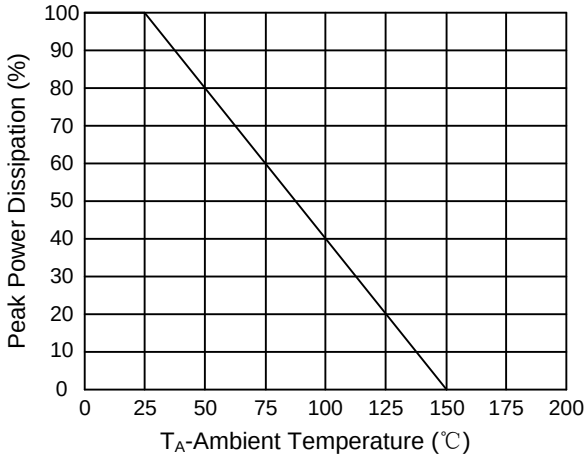


Figure 2. Pulse Waveform

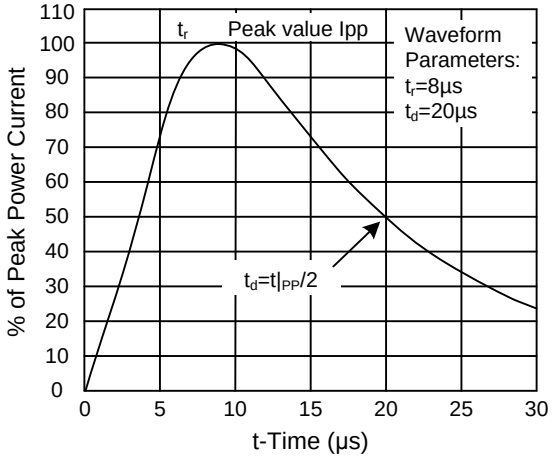


Figure 3. Normalized Capacitance vs. Reverse Voltage

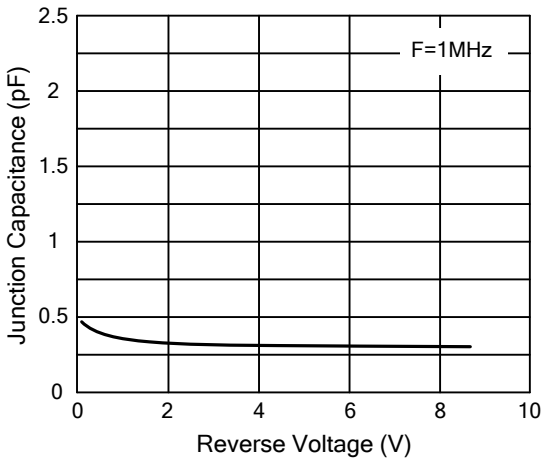
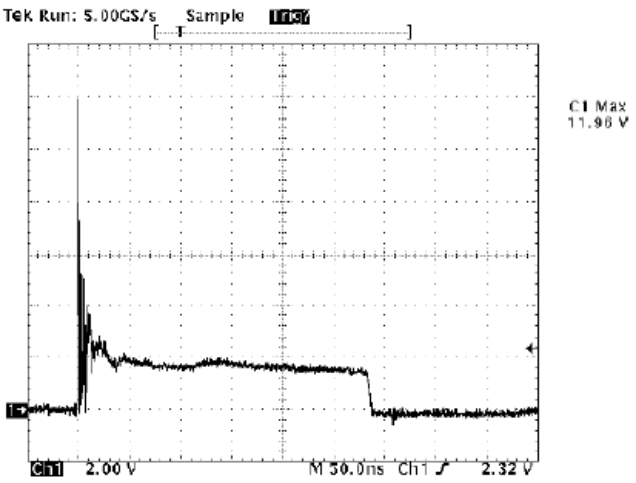
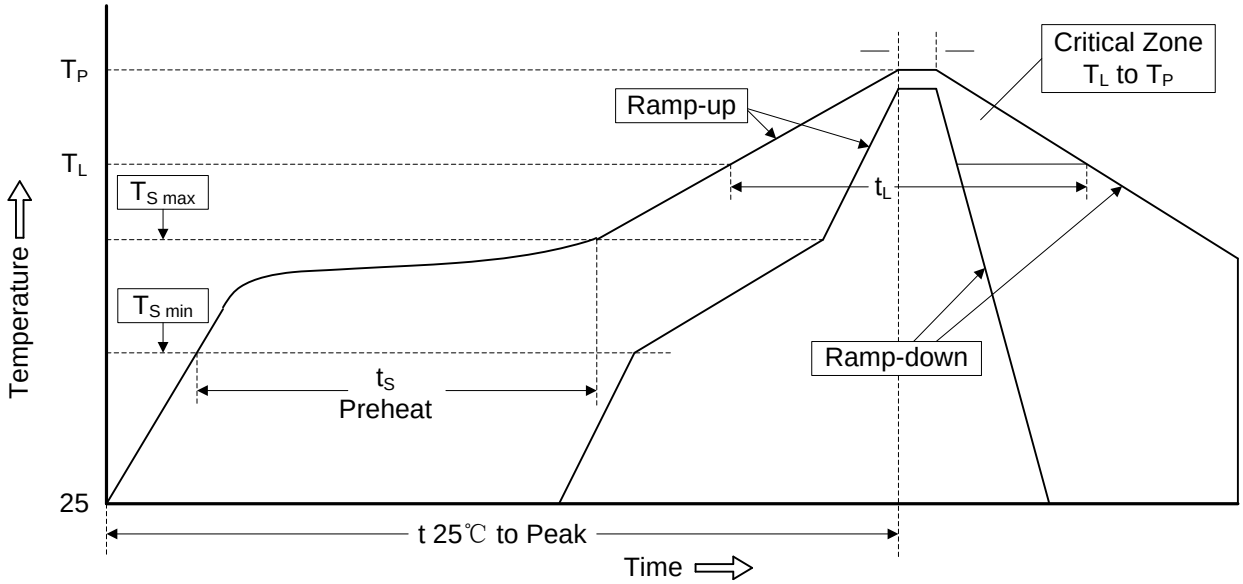


Figure 4. ESD Clamping (8kV Contact IEC61000-4-2)



Recommended Soldering Conditions

Reflow Soldering



Recommended Condition

Profile Feature	Pb Free Assembly
Average ramp-up rate (T_L to T_P)	3℃/second max.
Preheat -Temperature Min ($T_{S\ min}$) -Temperature Max ($T_{S\ max}$) -Time (min to max) (ts)	 150℃ 200℃ 60-180 seconds
$T_{S\ max}$ to T_L -Ramp-up Rate	 3℃/second max.
Time maintained above: -Temperature (T_L) -Time (t_L)	 217℃ 60-150 seconds
Peak Temperature (T_P)	260℃
Time within 5℃ of actual Peak Temperature (t_P)	20-40 seconds
Ramp-down Rate	6℃/second max.
Time 25℃ to Peak Temperature	8 minutes max.

Marking

Ordering information

Order code	Package	Base qty	Delivery mode
UMW UBD32C05L01	SOD-323	3000	Tape and reel

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