1.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.

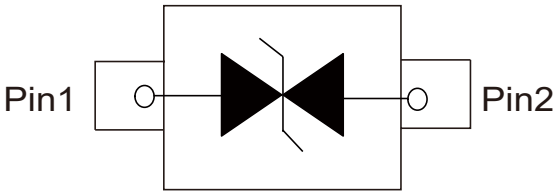
2.Applications

- 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

3.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°C

4.Pinning information



SOD-323

5.Absolute Maximum Ratings

Parameter	Symbol	Maximum	Units
Peak pulse power (tp=8/20us waveform)	I_{PP}	3	A
ESD voltage (Contact discharge)	V_{ESD}	±8	kV
ESD voltage (Air discharge)		±15	kV
Storage & Junction temperature range	T_{STG}, T_J	-55 to 150	°C

6.Electrical Characteristics (T_J=25°C)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
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

7.Typical characteristic

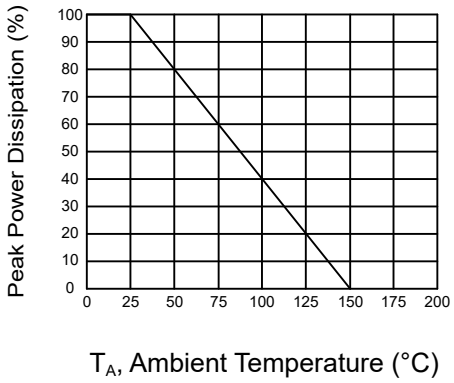


Figure 1: Power Derating Curve

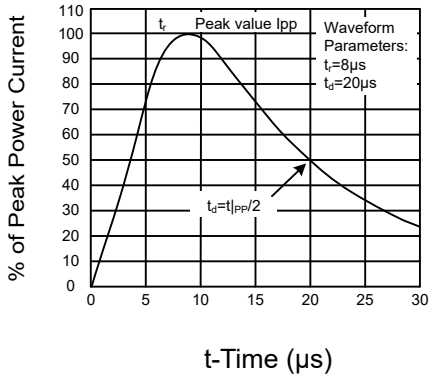


Figure 2: Pulse Waveform

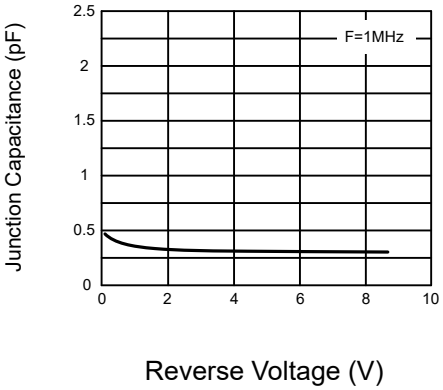


Figure 3: Normalized Capacitance vs. Reverse Voltage

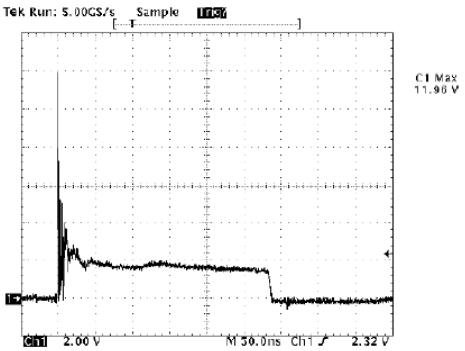
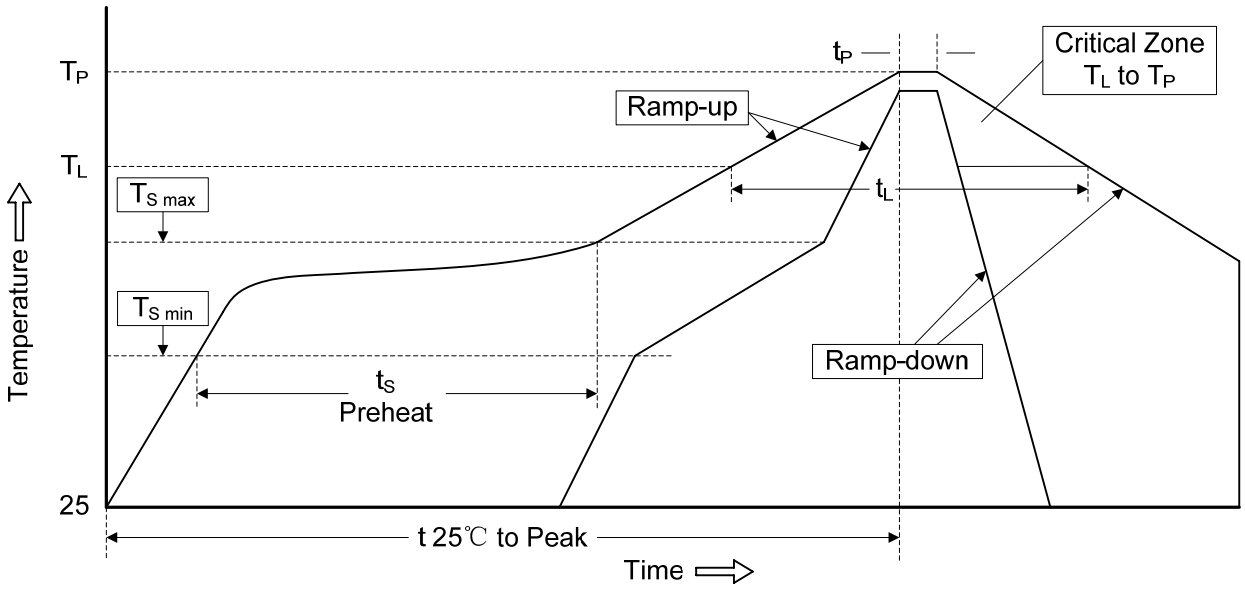


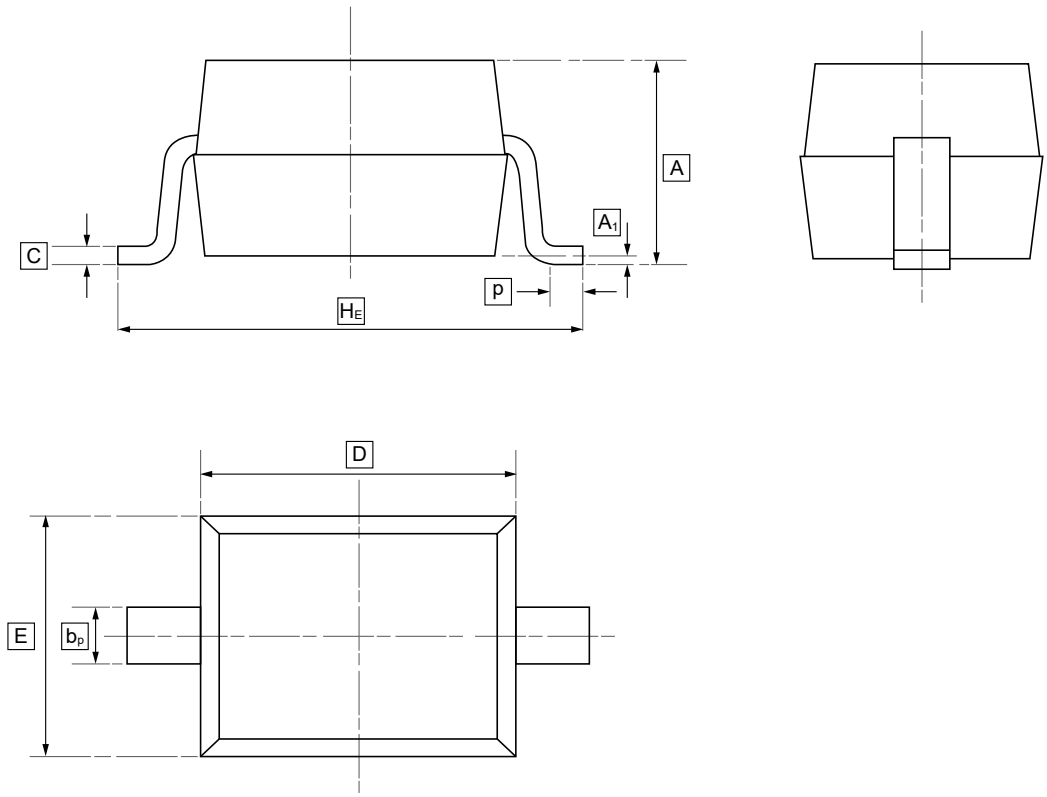
Figure 4: ESD Clamping (8kV Contact IEC61000-4-2)

8.Recommended Soldering Conditions

Profile Feature		Pb-Free Assembly
Average ramp-up rate (T_L to T_P)		3°C/second max.
Preheat	-Temperature Min ($T_{s(min)}$)	150°C
	-Temperature Max ($T_{s(max)}$)	200°C
	-Time (Min to Max) (t_s)	60-180 secs.
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max
Time maintained above	-Temperature (T_L)	217°C
	-Time (T_L)	60-150 secs.
Peak Temperature (T_p)		260°C
Time within 5°C of actual Peak Temperature (T_p)		20-40 seconds
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temperature		8 min. Max



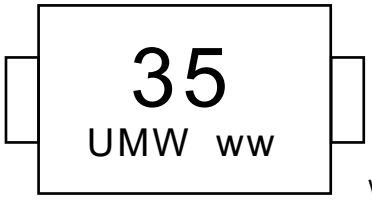
9.SOD-323 Package Outline Dimensions



DIMENSIONS (mm are the original dimensions)

Symbol	A	b_p	C	D	E	H_E	A_1	P
Min	0.90	0.25	0.10	1.60	1.15	2.30	0.01	0.20
Max	1.20	0.40	0.15	1.80	1.35	2.80	0.10	0.50

10.Ordering information



ww: Batch Code

Order Code	Package	Base QTY	Delivery Mode
UMW UBD32C05L01	SOD-323	3000	Tape and reel

11.Disclaimer

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