1.Description

The PTVSHC3D12VU protects sensitive s emiconductor components from damage or upset due to electrostatic discharge (ESD) and other voltage induced transient events. The PTVSHC3D12VU is available in a SOD-323 package with working voltages of 12 volt.

2.Mechanical Characteristics

- Mounting position: Any
- temperature:260°C Device meets
- Pure tin plating: 7 ~ 17 um
- Pin flatness:≤3mil

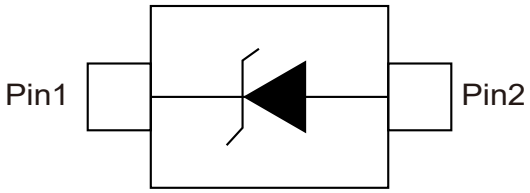
3.Features

- 1300W Peak pulse power per line (tp=8/20μs)
- Response time is typically < 1 ns
- Protect one I/O or power line
- Low clamping Voltage
- Transient protection for data lines to IEC 61000-4-2(ESD)
- ±30KV(air), ±30KV(contact); IEC 61000-4-4 (EFT) 40A (5/50ns)

4.Applications

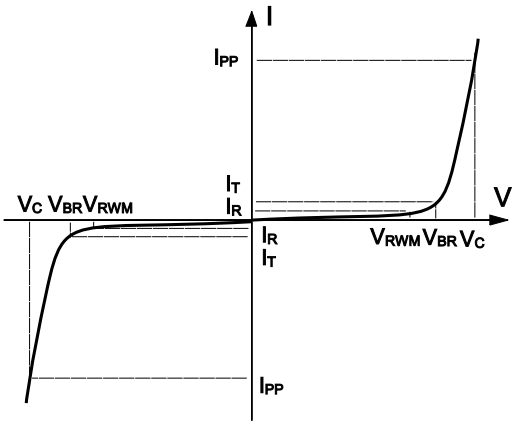
- Cell phone handsets and accessories
- Personal digital assistants (PDA's)
- Notebooks, desktops, and servers
- Portable instrumentation
- Cordless phones
- Digital cameras
- Peripherals
- MP3 players

5.Pinning information



SOD-323

6.Electrical Parameters (T_A=25°C unless otherwise noted)



Symbol	Parameter
V_{RWM}	Peak Reverse Working Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
P_{PP}	Peak Pulse Power
C_J	Junction Capacitance
I_F	Forward Current
V_F	Forward Voltage @ I_F

7.Electrical Characteristic (T_A=25°C unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Working Voltage	V_{RWM}				12	V
Breakdown Voltage	V_{BR}	I_T=1mA	13.5	15		V
Reverse Leakage Current	I_R	V_{RWM}=12V			1	μA
Clamping Voltage	V_C	I_{PP}=50A, t_p=8/20μs		24	30	V
Junction Capacitance	C_J	V_R=0V, f=1MHz	240	295	350	pF

8.Absolute maximum rating @ 25°C

Parameter	Symbol	Value	Units
Peak Pulse Power (tp=8/20μs)	P_{PP}	1300	W
Lead Soldering Temperature	T_L	260 (10 sec)	°C
Junction Temperature	T_J	-55 to 125	°C
Storage Temperature	T_{STG}	-55 to 150	°C

9.Typical characteristic

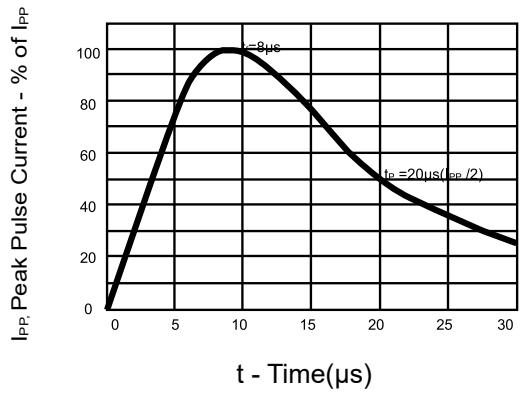


Figure 1: Pulse Waveform

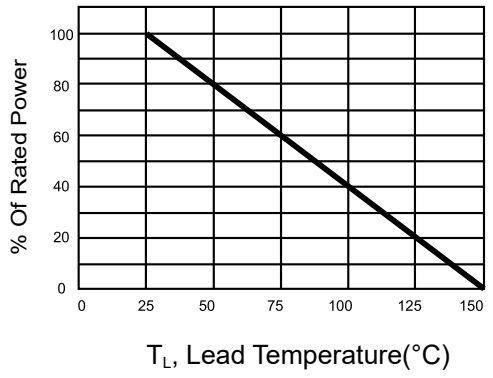


Figure 2: Power Derating Curve

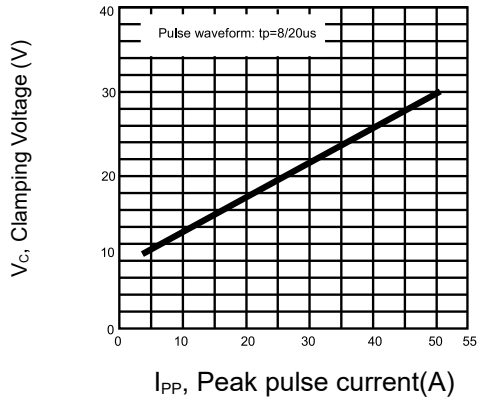


Figure 3: Clamping voltage vs. Peak pulse current

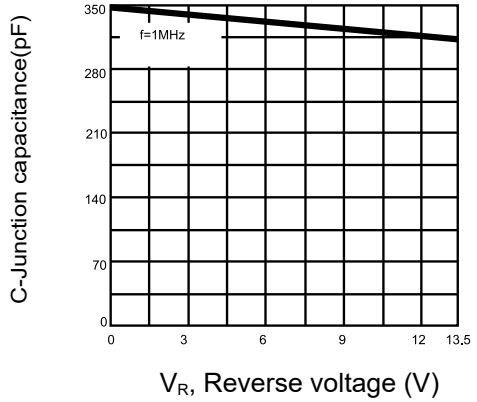


Figure 4: Capacitance vs. Reveres voltage

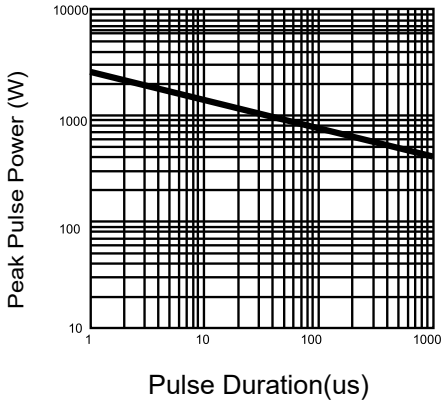


Figure 5: Non Repetitive Peak Pulse Power vs. Pulse time

10.Solder Reflow Recommendation

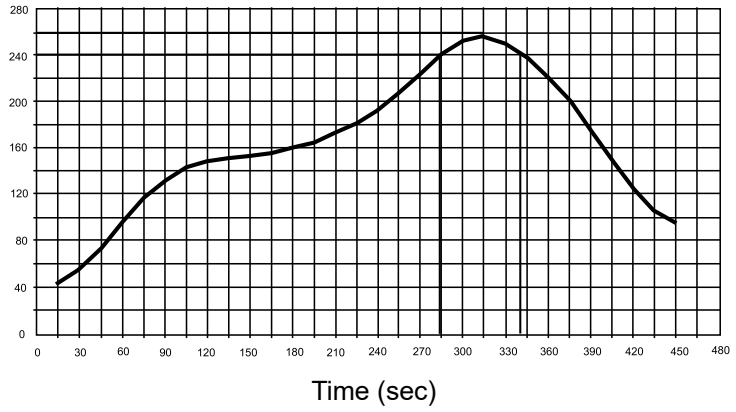
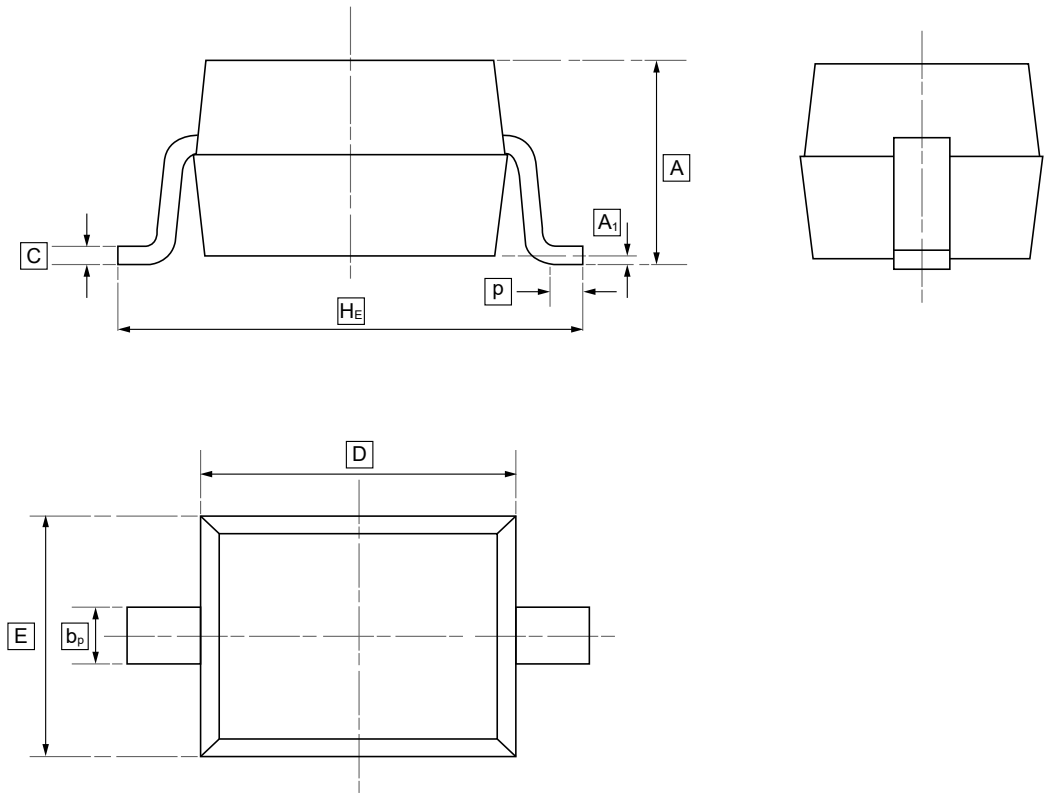


Figure 6: Peak Temp=257°C, Ramp Rate=0.802deg. °C/sec

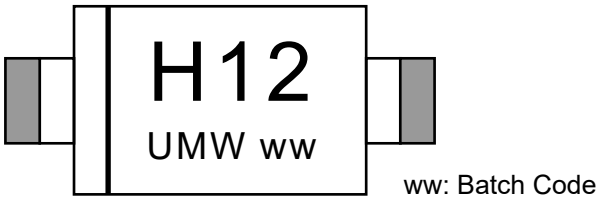
11.SOD-323 Package Outline Dimensions



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

12.Ordering information



Order Code	Package	Base QTY	Delivery Mode
UMW PTVSHC3D12VU	SOD-323	3000	Tape and reel

13.Disclaimer

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