ESDHLC4V501D3

Uni-directional TVS Diode for ESD Protection

1. Features

SOD323

- 2200 Watts peak pulse power per line (t_P=8/20μs)
- Protects one uni-directional I/O line
- Low clamping voltage
- Working voltage:4.5V.
- Low leakage current
- RoHS compliant
- IEC61000-4-2 (ESD) ±30kV (air), ±30kV (contact)

+ (2)

(1) -

2. Mechanical Data

- Case:Molded Plastic,SOD323.
- Epoxy:UL 94V-0 rate flame retardant.
- Mounting Position : Any.

1 ○—▷|—○ 2

Uni-directional

Maximum Ratings (TA=25ºC, RH=45%-75%, unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak Pulse Power (tp=8/20μs waveform)	P_{pp}	2200	W
Peak Pulse Current (8/20μs)	I_{pp}	130	A
ESD per IEC 61000−4−2 (Air)	V_{ESD}	±30	kV
ESD per IEC 61000−4−2 (Contact)		±30	
Operating Temperature Range	T_J	−55 to +125	°C
Storage Temperature Range	T_{stg}	−55 to +150	°C

Electrical Characteristics (TA=25℃ unless otherwise noted)

| Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V_{RWM}			4.5	V	
Breakdown Voltage	V_{BR}	4.7			V	I_T = 1mA
Reverse Leakage Current	I_R			1	μA	V_{RWM} = 4.5 V
Clamping Voltage	V_C			8.5	V	I_{PP} = 20A (8 x 20μs pulse)
Clamping Voltage	V_C			17	V	I_{PP} = 130A (8 x 20μs pulse)
Junction Capacitance	C_J		500		pF	V_R = 0V, f = 1MHz

Rating And Characteristic Curves
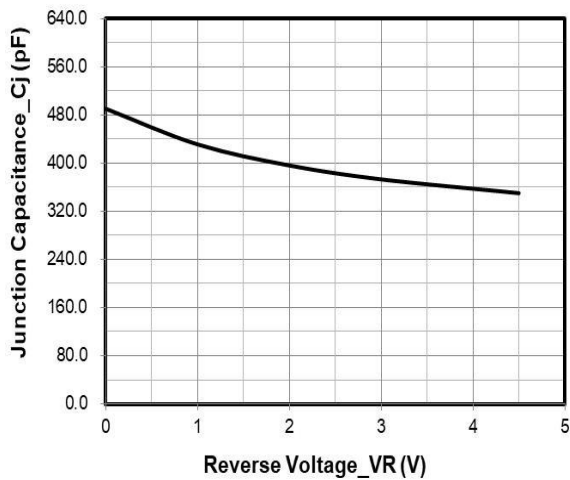
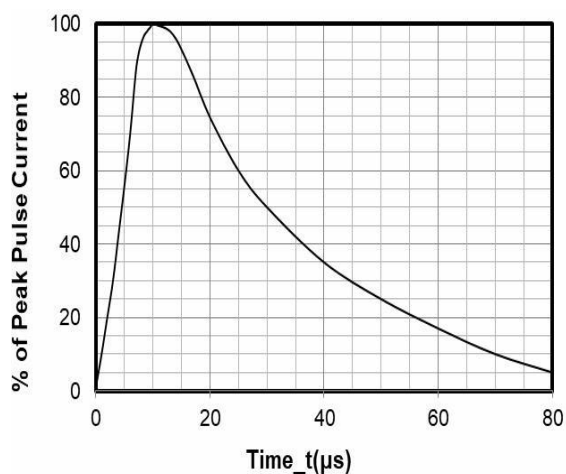Junction Capacitance vs. Reverse Voltage
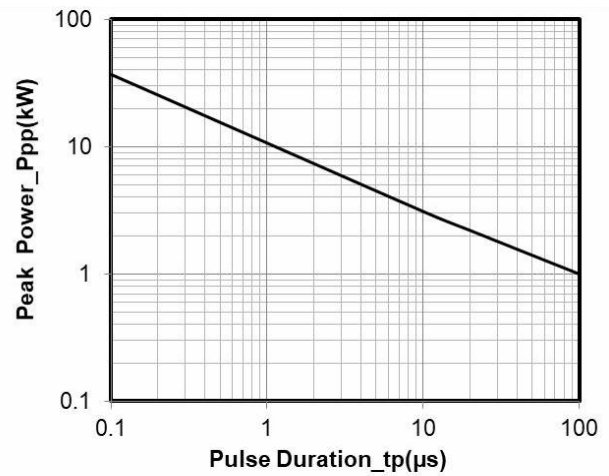
Peak Pulse Power vs. Pulse Time
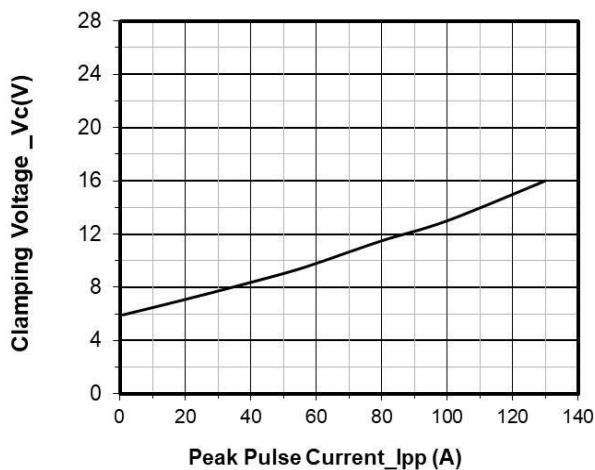
Clamping Voltage vs. Peak Pulse Current (tp = 8/20μs)
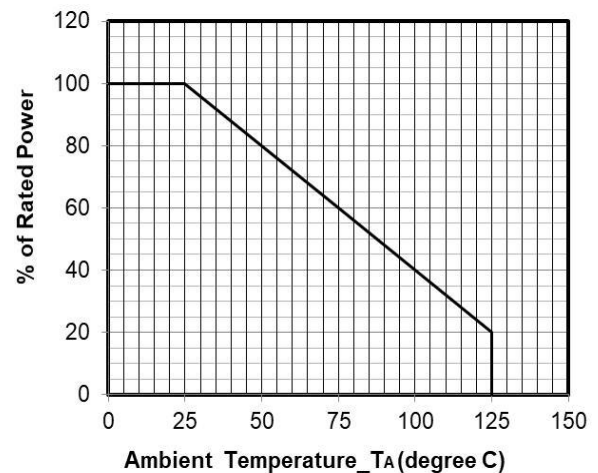

Power Derating Curve

8 X 20μs Pulse Waveform

Note：Data is taken with a 10x attenuator
ESD Clamping Voltage
8 kV Contact per IEC61000−4−2

Soldering Parameters

Reflow Condition		Pb-Free assembly (see as bellow)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150℃
	-Temperature Max($T_{s(max)}$)	+200℃
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3℃/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3℃/sec. Max
Reflow	-Temperature(T_L) (Liquid us)	+217℃
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_p)		+260(+0/-5)℃
Time within 5℃ of actual Peak Temp (t_p)		30 secs. Max
Ramp-down Rate		6℃/sec. Max
Time 25℃ to Peak Temp (T_P)		8 min. Max
Do not exceed		+260℃
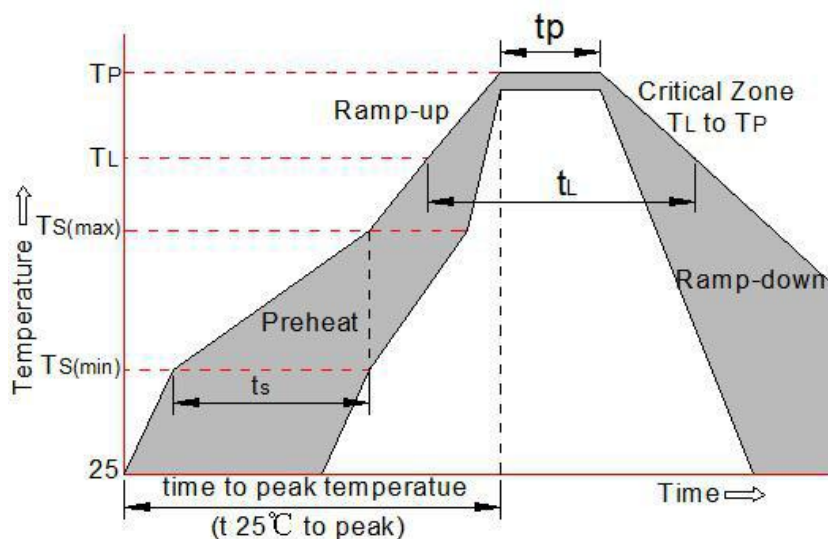
Package Mechanical Data
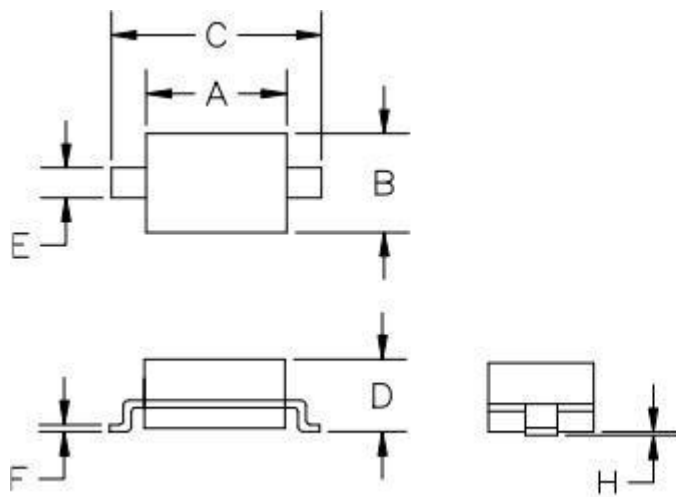
SYM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.50	1.80	0.060	0.071
B	1.20	1.40	0.045	0.054
C	2.30	2.70	0.090	0.107
D	-	1.10	-	0.043
E	0.30	0.40	0.012	0.016
F	0.10	0.25	0.004	0.010
H	-	0.10	-	0.004

Important Notice and Disclaimer

● Reproducing and modifying information of the document is prohibited without from XINNUO.

● XINNUO reserves the right to make changes to this document and its products and specifications.

● XINNUO disclaims any and all liability arising out of the application or use of any product including damages incidentally and consequentially occurred.

● XINNUO does not assume any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

●Applications shown on the here in document are examples of standard use and operation. Customers are responsible in comprehending the suitable use in particular applications.XINNUO makes no representation or warranty that such applications will be suitable for the specified use without further testing or modification.

● The products shown her are not designed and authorized for equipments requiring high level of reliability or relating to human life and for any applications concerning life-saving or life-sustaining, such as medical instruments, transportation equipment, aerospace machinery et cetera. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify XINNUO for any damages resulting from such improper use or sale.

● Since XINNUO uses lot number as the tracking base, please provide the lot number for tracking when complaining.