



ESDHLC4V501D3

Uni-directional TVS Diode for ESD Protection

1. Features

SOD323

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



2. Mechanical Data

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



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

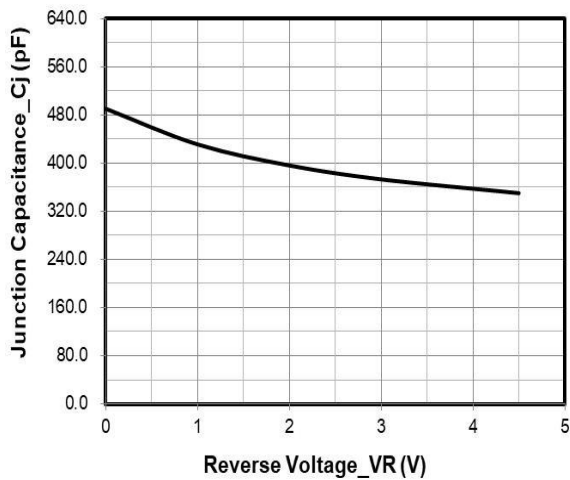
Parameter	Symbol	Value	Unit
Peak Pulse Power ($t_p=8/20\mu s$ waveform)	P_{pp}	2200	W
Peak Pulse Current (8/20 μs)	I_{pp}	130	A
ESD per IEC 61000-4-2 (Air)	V_{ESD}	± 30	kV
ESD per IEC 61000-4-2 (Contact)		± 30	
Operating Temperature Range	T_J	-55 to +125	°C
Storage Temperature Range	T_{stg}	-55 to +150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

Electrical Characteristics (TA=25°C unless otherwise noted)

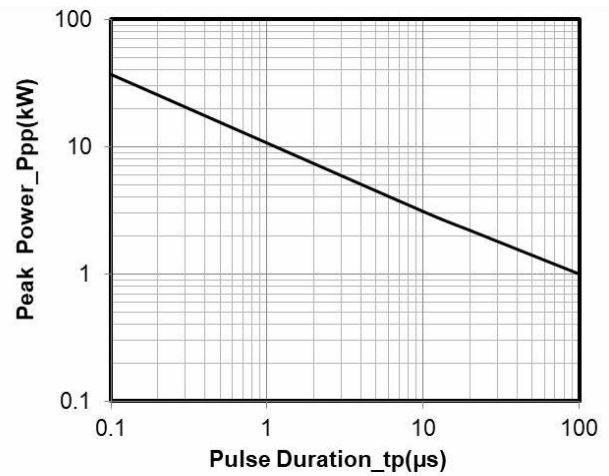
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V_{RWM}			4.5	V	
Breakdown Voltage	V_{BR}	4.7			V	$I_T = 1mA$
Reverse Leakage Current	I_R			1	μA	$V_{RWM} = 4.5 V$
Clamping Voltage	V_C			8.5	V	$I_{PP} = 20A$ (8 x 20 μs pulse)
Clamping Voltage	V_C			17	V	$I_{PP} = 130A$ (8 x 20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



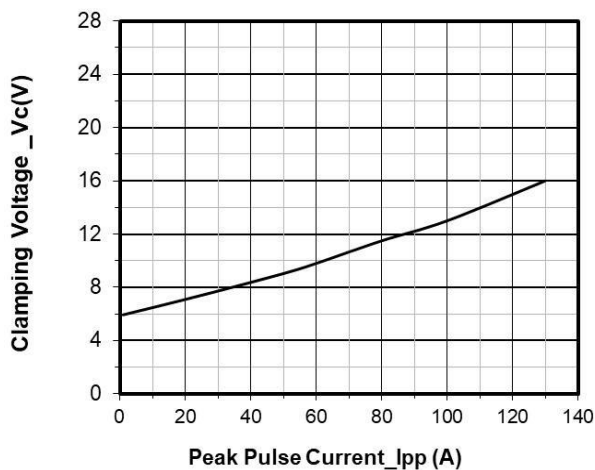
Rating And Characteristic Curves



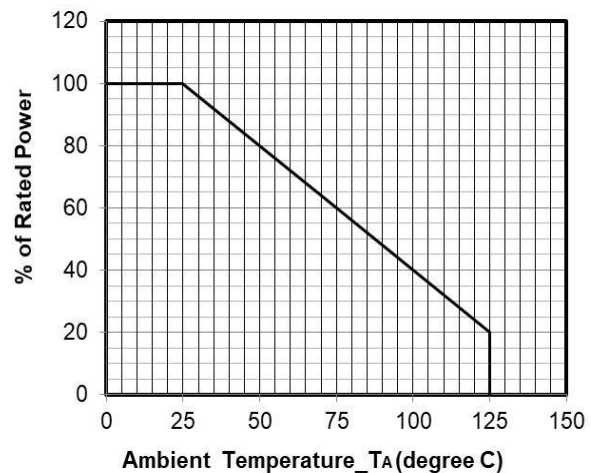
Junction Capacitance vs. Reverse Voltage



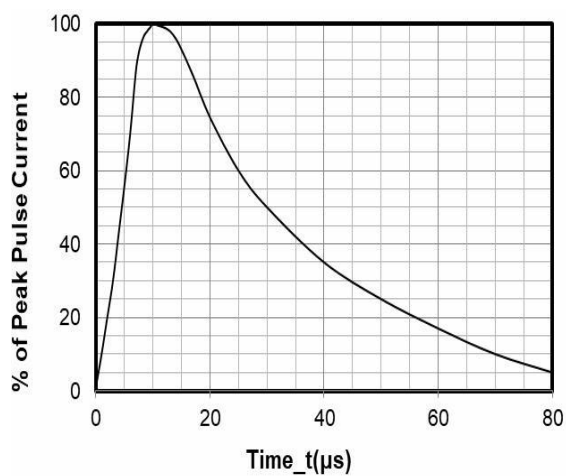
Peak Pulse Power vs. Pulse Time



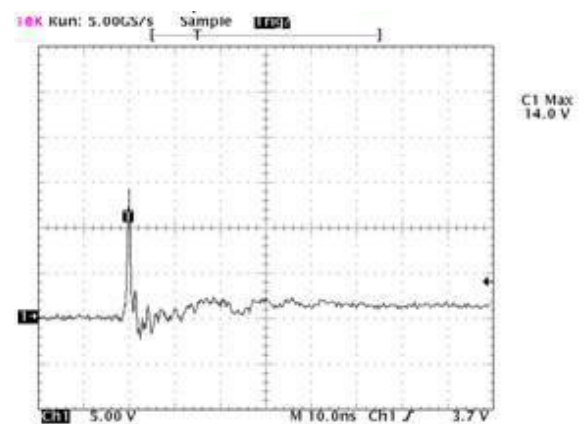
Clamping Voltage vs. Peak Pulse Current (tp = 8/20μs)



Power Derating Curve



8 X 20μs Pulse Waveform

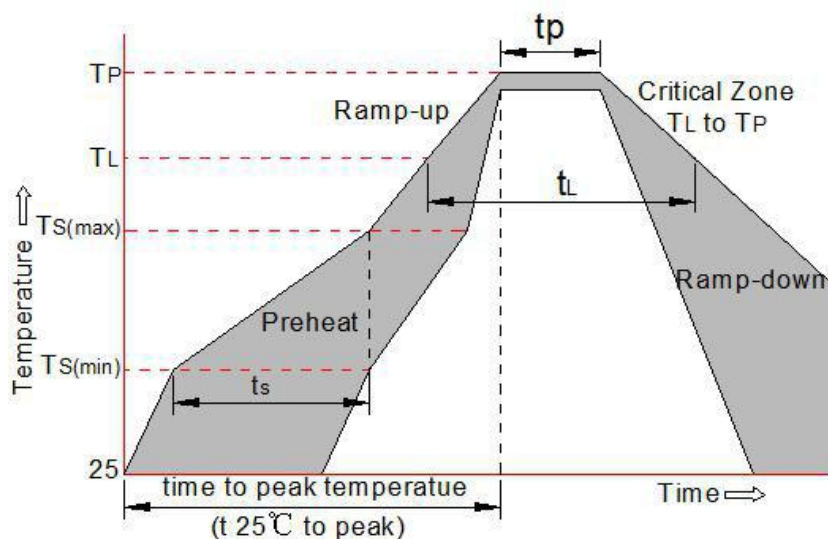


Note: Data is taken with a 10x attenuator
ESD Clamping Voltage
8 kV Contact per IEC61000-4-2



Soldering Parameters

Reflow Condition		Pb-Free assembly (see as bellow)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150°C
	-Temperature Max($T_{s(max)}$)	+200°C
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3°C/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature(T_L) (Liquid us)	+217°C
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_p)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (t_p)		30 secs. Max
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp (T_p)		8 min. Max
Do not exceed		+260°C

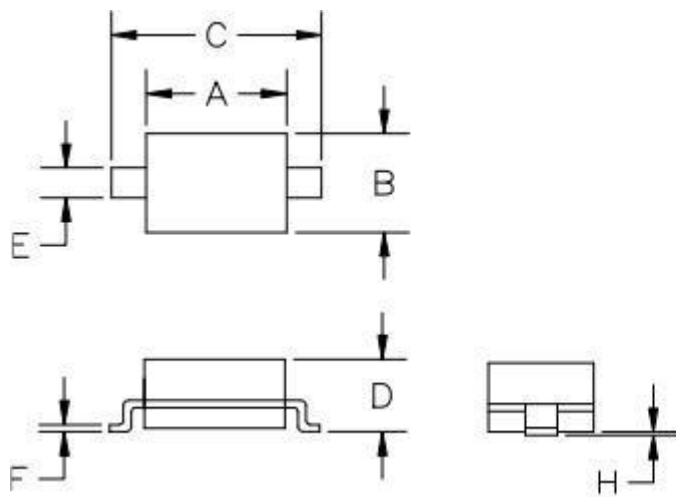




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Package Mechanical Data



SYM	DIMENSIONS			
	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



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