ESDHLC5V001D3B

1-Line Bi-directional TVS Diode

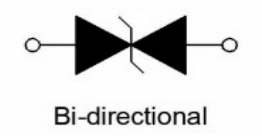
1. Features

SOD323

- 2-pin lead-less package
- Junction capacitance (Max value: 185pF)
- Peak Pulse current (8/20μs) Max:35A
- IEC61000-4-2 (ESD) ±30kV (air), ±30kV (contact)
- Low clamping voltage
- Low leakage current
- Working voltages:5V
- RoHS Compliant

2. Mechanical Data

- Case:Molded Plastic,SOD323.
- Epoxy:UL 94V-0 rate flame retardant.
- Terminals:Plated Leads Solderable per MIL-STD-750, Method-2026.
- Marking:05B
- Marking:marked on body.



3. Maximum Ratings

Electrical Characteristics Rating at 25℃ ambient temperature unless otherwise specified.

Characteristic	Symbol	Value	Unit
Peak Pulse Power (tp=8/20μs waveform)	P_{PP}	490	W
Peak Pulse Current (8/20μs)	I_{PP}	35	A
ESD per IEC 61000−4−2 (Air) ESD per IEC 61000−4−2 (Contact)	V_{ESD}	±30 ±30	KV
Junction Temperature	T_j	-55～+125	℃
Storage Temperature	T_{stg}	-55～+150	℃

4. Electrical Characteristics (T_A=25℃ unless otherwise noted)

Characteristics	Symbol	Condition	Min	TYP	Max	Unit
Reverse Working Voltage	V_{RWM}		-	-	5	V
Reverse Breakdown Voltage	V_{BR}	I_R = 1mA	6	-	9	V
Reverse Leakage Current	I_R	V_R =5V	-	-	0.5	uA
Clamping voltage	V_C	I_{PP} = 5A,T_P=8/20us	-	-	9.5	V
Clamping voltage	V_C	I_{PP} = 35A,T_P=8/20us	-	-	14	V
Junction capacitance	C_J	V_R =0V,f =1MHz	-	-	185	pF

5. Rating And Characteristic Curves

Fig.1 Power rating derating curve

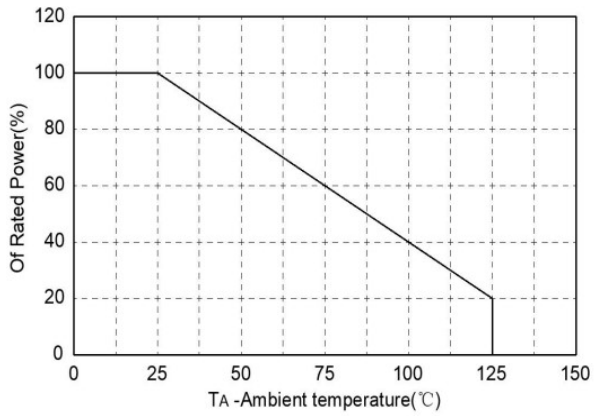


Fig.2 pulse Waveform

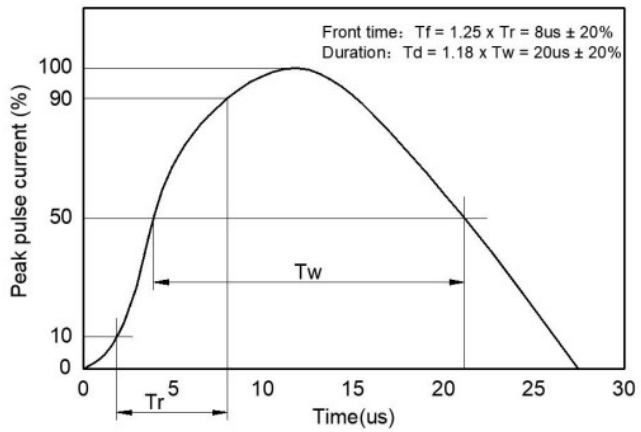


Fig.3 Capacitance between terminals characteristics

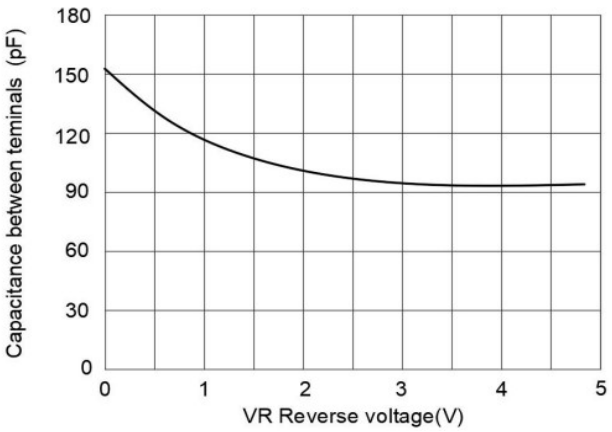
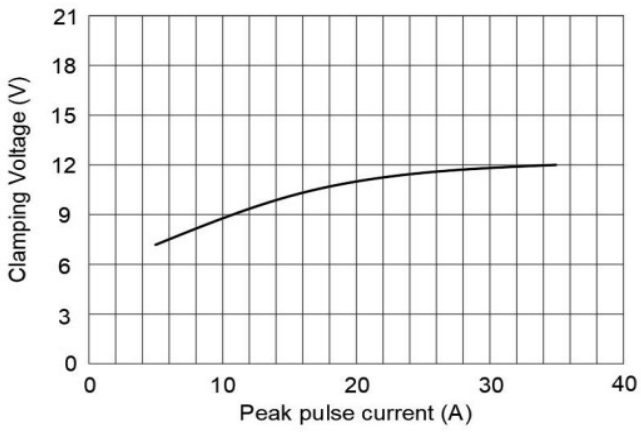
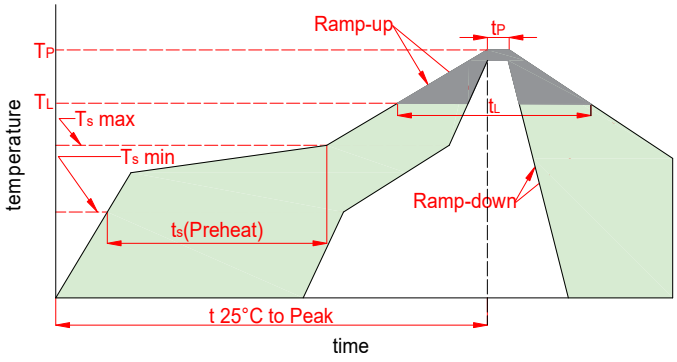


Fig.4 Clamping Voltage vs. Peak Pulse Current

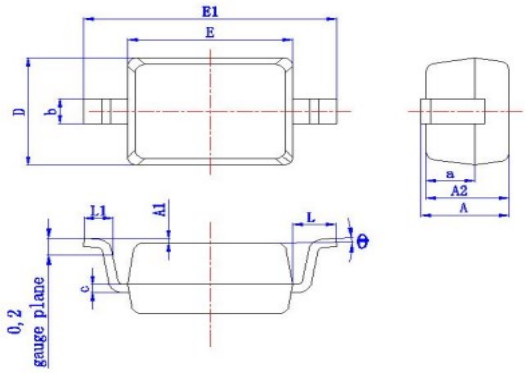


6. Soldering Parameters

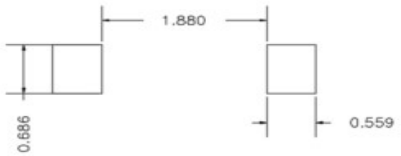


Reflow Condition		Lead-free
Pre Heat	Temp. min(T_s(min))	150℃
	Temp. max(T_s(min))	200℃
	Time(min to max)(t_s)	60~120s
Aver. ramp up rate(Liquidus Temp.)(T_L)to peak		3℃/s max
T_S(max) to T_L-Ramp-up Rate		3℃/s max
Reflow	Temp.(T_L)(Liquidus)	217℃
	Temp.(t_L)(Liquidus)	60~150s
Peak Temp.(T_P)		$260^{+0/-5}$℃
Time within actual peak Temp.(t_p)		30s max
Ramp-down Rate		6℃/s max
Time 25℃ to peak Tempe.(T_p)		8 minutes max
Do not exceed		260℃

7. Dimensions



Mounting PAD Layout



Symbol	Inches		Millimeters	
	Min	Max	Min	Max
A	0.031	0.045	0.80	1.15
A1	0.000	0.004	0.00	0.10
A2	0.031	0.039	0.80	1.00
a	0.020		0.50	
D	0.045	0.057	1.15	1.45
E	0.063	0.073	1.60	1.85
E1	0.098	0.110	2.50	2.80
b	0.010	0.016	0.25	0.40
c	0.003	0.006	0.08	0.15
L	0.019		0.48	
L1	0.010	0.018	0.25	0.45
θ	0°	8°	0°	8°

8. Part Marking System

Cathode Band

9. Package Information

Package	Part Number	Marking Code	Quantity(pcs)
SOD323	ESDHLC5V001D3B	05B	3000

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