LY323DC05UL1
General Purpose ESD Protection

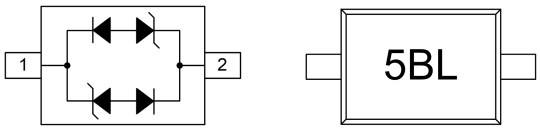
HF RoHS Pb



Description

The LY323DC05UL1 is a bi-directional TVS diode array, utilizing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive high-speed data lines. It complies with IEC61000-4-2 (ESD), ±30kV air and ±30kV contact discharge. It is assembled into a lead-free SOD-323 package. The small size, low capacitance and high ESD surge protection make it a ideal choice to protect cell phone, wireless systems, and communication equipment.

Pin Configuration and Marking



Circuit and Pin Schematic

Features

- Low clamping voltage
- Ultra low leakage current
- Operating voltage: 5V
- RoHS compliant
- IEC-61000-4-2 ESD ±30kV Air, ±30kV Contact

Applications

- Personal Digital Assistants
- USB Interface
- Cellular Phones
- Handheld - Wireless Systems
- Ethernet 10/100/1000 Bast T

Maximum Ratings
(T_A=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	P_{PP}	400	W
Peak Pulse Current (8/20μs)	I_{PP}	20	A
ESD (Air Discharge) ESD (Contact Discharge)	V_{ESD}	±30 ±30	kV
Operating Temperature Range	T_J	-55 to 125	℃
Storage Temperature Range	T_{STG}	-55 to 150	℃

Electrical Characteristics (T_A=25℃ unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.
Reverse Working Voltage	V_{RWM}		-	-	5V
Breakdown Voltage	V_{BR}	I_T =1mA	6V	-	--
Reverse Leakage Current	I_R	V_{RWM} =5V	-	--	1μA
Clamping Voltage	V_C	I_{PP}=20A (8/20μs)	-	-	20V
Junction Capacitance	C_J	V_R = 0V, f= 1MHz	-	1pF	-

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Typical Characteristic Curves (T_A=25℃ unless otherwise noted)

Figure 1:
Peak Pulse Power Rating Curve

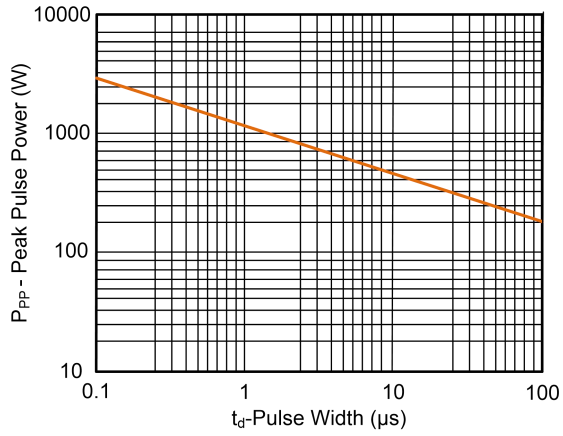


Figure 2:
Pulse Derating Curve

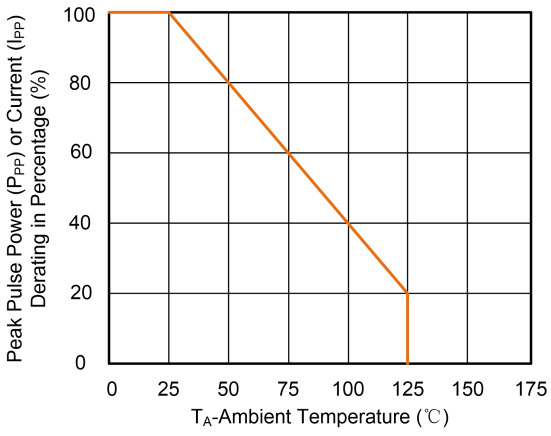


Figure 3:
Pulse Waveform (8/20μs)

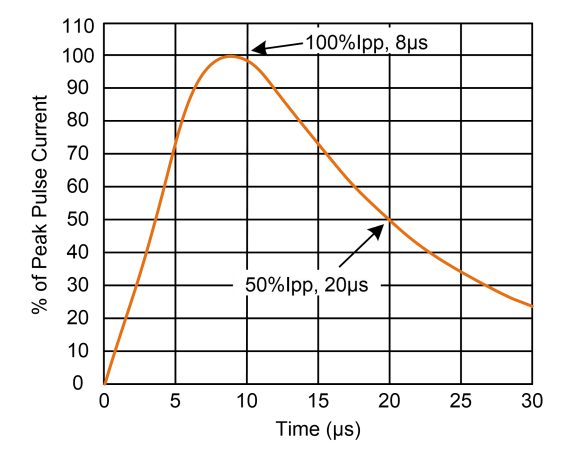
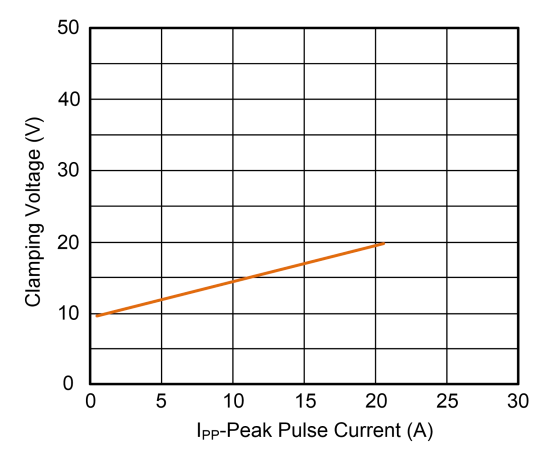


Figure 4:
Clamping Voltage vs. Peak Pulse Current

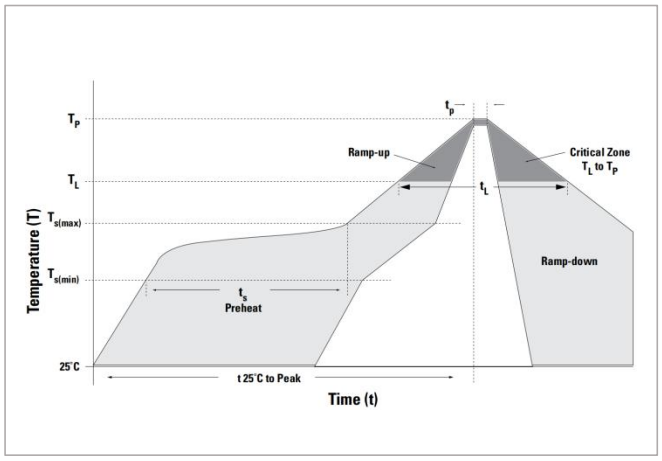


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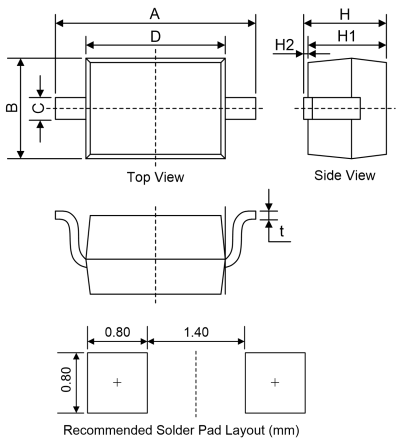
Soldering Parameters

Reflow Condition		Lead–free assembly
Pre Heat	**-Temperature Min ($T_{S\ min}$)**	150℃
	-Temperature Max ($T_{S\ max}$)	200℃
	-Time (min to max) (t_S)	60 – 180 secs
Average ramp-up rate(Liquidus Temp (T_L) to peak		3℃/second max.
$T_{S\ (max)}$ to T_L-Ramp-up Rate		3℃/second max.
Reflow	**-Temperature (T_L) (Liquidus)**	217℃
	-Time (min to max) (t_L)	60-150 seconds
Peak Temperature (T_P)		260℃
Time within 5℃ of actual Peak Temperature (t_P)		20-40 seconds
Ramp-down Rate		6℃/second max.
Time 25℃ to Peak Temperature		8 minutes max.
Do not exceed		260℃



Dimensions

SOD-323



Symbol	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.30	2.80	0.091	0.110
B	1.15	1.45	0.045	0.057
C	0.25	0.40	0.001	0.016
D	1.60	1.90	0.063	0.075
H	0.80	1.10	0.031	0.043
H1	0.80	1.00	0.031	0.039
H2	0.00	0.10	0.000	0.004
t	0.08	0.20	0.003	0.008

Packaging

Part number	Component Package	Quantity	Packaging Option	Packaging Specification
LY323DC05UL1	SOD-323	3000	Tape & Reel – 8mm tape/7" reel	EIA STD RS-481

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