

Description

The LY323DCXXUL 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 IEC 61000-4-2 (ESD), $\pm 30\text{kV}$ air and $\pm 30\text{kV}$ 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.

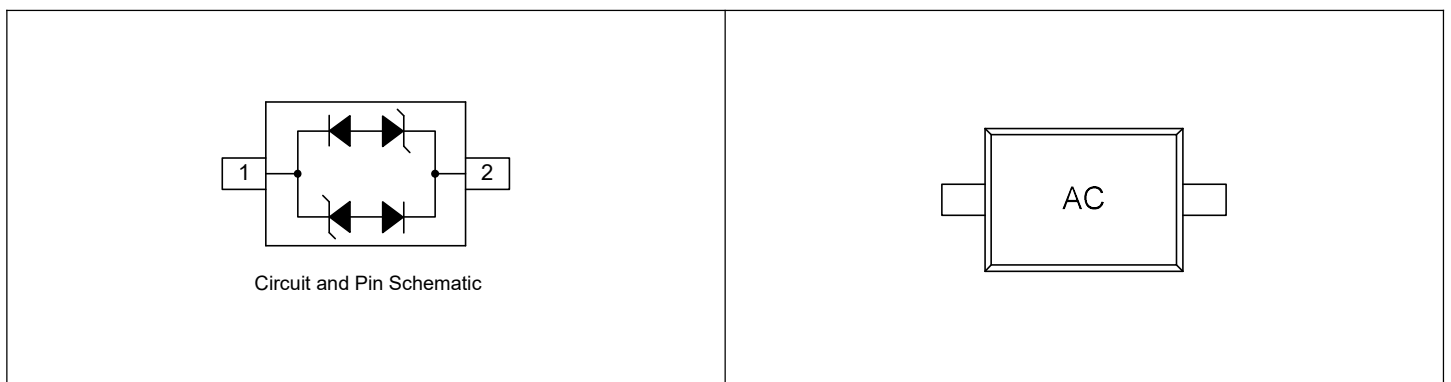
Features

- Low clamping voltage
- Ultra low leakage current
- Operating voltage: 3.3V~24V
- RoHS compliant
- IEC-61000-4-2 ESD $\pm 30\text{kV}$ Air, $\pm 30\text{kV}$ Contact
- Packaging: 7 inch reel, 3000pcs/reel

Applications

- USB Ports
- Smart Phones
- Wireless Systems
- Ethernet 10/100/1000 Bast T

Pin Configuration and Marking



Absolute Maximum Ratings ($T_A=25^\circ\text{C}$)

Parameter	Symbol	Value
Peak Pulse Power (8/20 μs)	P_{PP}	300W
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V_{ESD}	$\pm 30\text{kV}$ $\pm 30\text{kV}$
Ambient Temperature Range	T_A	-55°C to $+125^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55°C to $+150^\circ\text{C}$

Electrical Characteristics ($T_A=25^\circ\text{C}$)

Part Number	Marking	Reverse Working Voltage	Reverse Breakdown Voltage @ $I_T=1\text{mA}$	Reverse Leakage Current @ V_{RWM}	Clamping Voltage @8/20 μs		Peak Pulse Current	Junction Capacitance @ $V_R=0\text{V}$, $f=1\text{MHz}$
		V_{RWM} (V)	V_{BR} (V)	I_R (μA)	V_C (V)		I_{PP} (A)	C_J (pF)
		Max.	Min.	Max.	@1A	@ I_{PP} Max.	Max.	Typ.
LY323DC03UL	CC	3.3	4.4	0.2	7	16	21	1
LY323DC05UL	AC	5.0	6.0	0.2	10	20	18	1
LY323DC08UL	BC	8.0	8.5	0.2	9	19.5	18	1
LY323DC12UL	DC	12.0	13.3	0.2	18	25	14	1
LY323DC15UL	EC	15.0	16.7	0.2	21	30	10	1
LY323DC24UL	HC	24.0	27.0	0.2	36	55	6	1

Typical Characteristic Curves ($T_A=25^{\circ}\text{C}$)

Figure 1. Peak Pulse Power Rating Curve

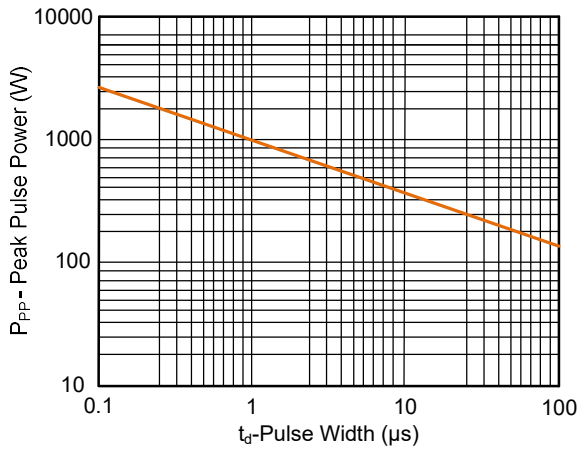


Figure 2. Pulse Derating Curve

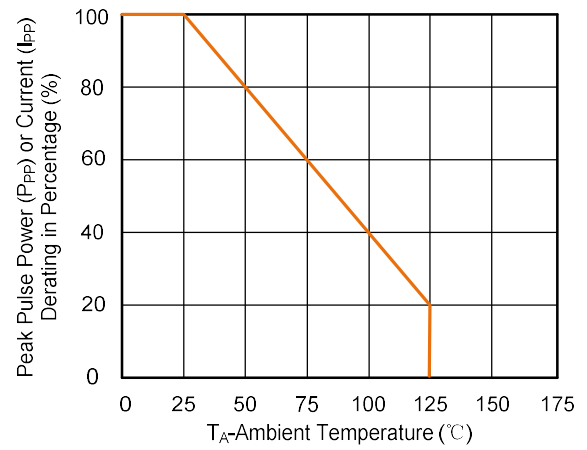


Figure 3. Pulse Waveform (8/20 μs)

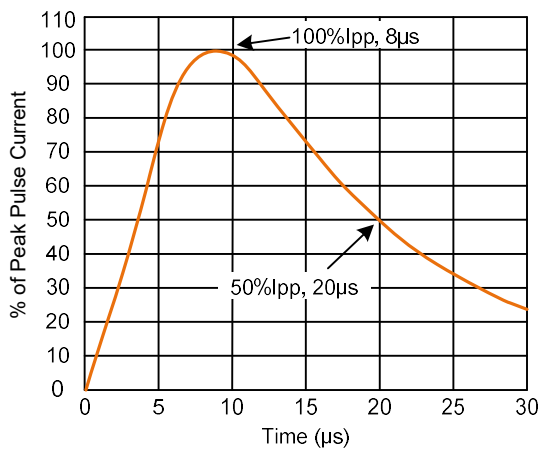
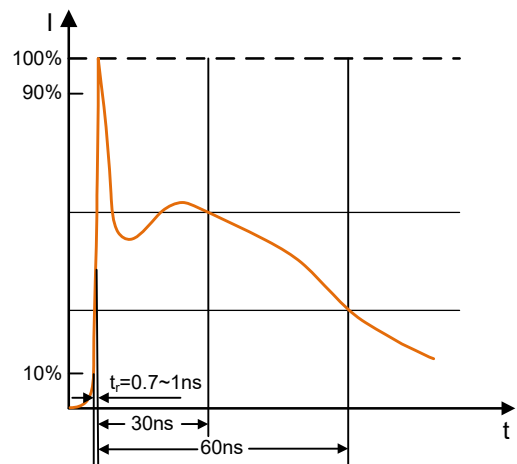
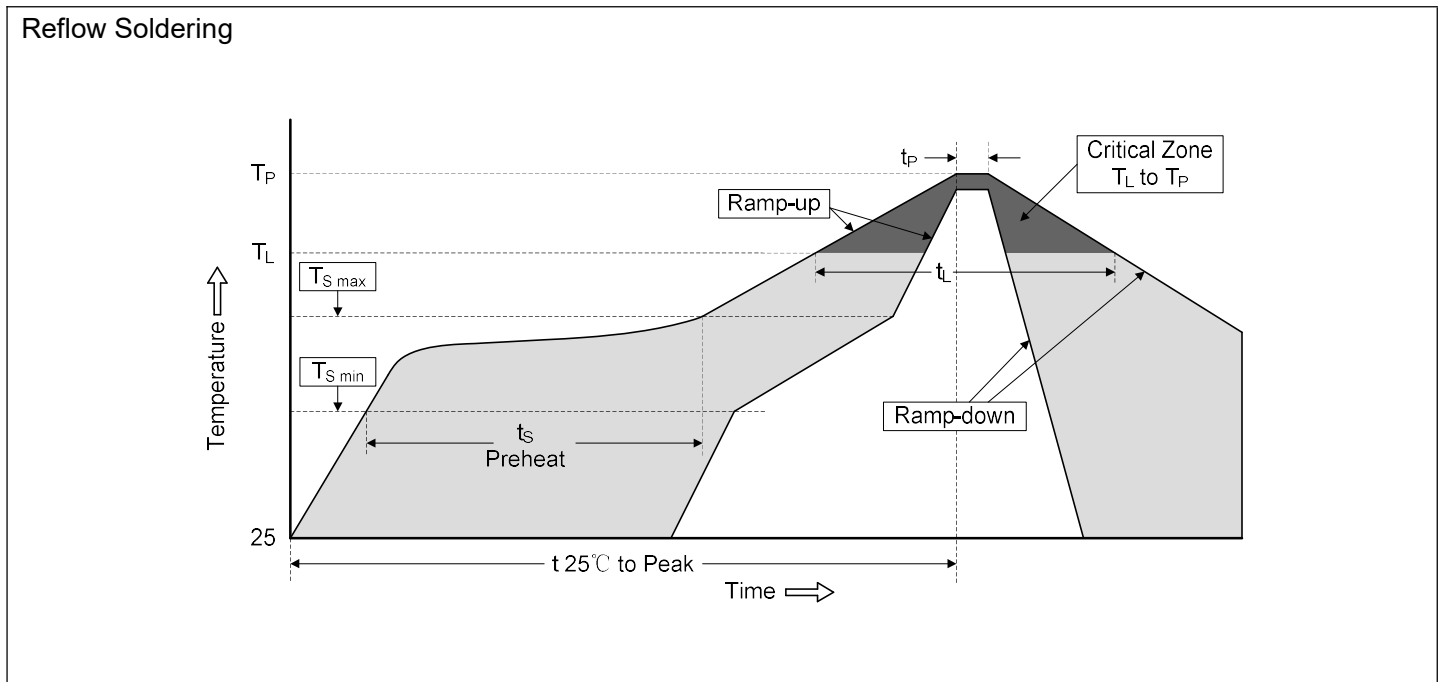


Figure 4. Pulse Waveform (IEC61000-4-2)

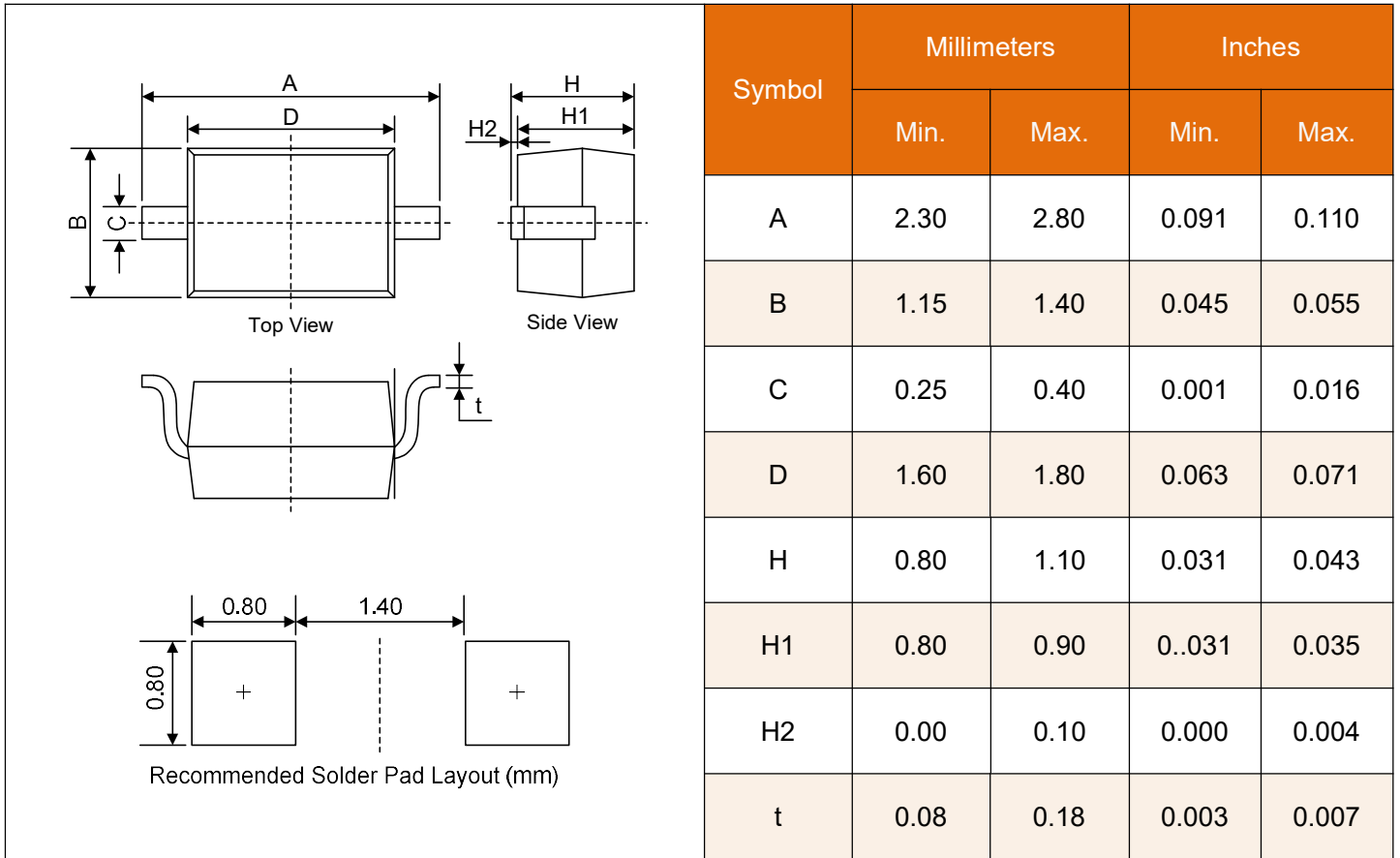


Soldering Parameters



Profile Feature	Pb-Free Assembly
Average ramp-up rate (T_L to T_P)	3°C/second max.
Preheat -Temperature Min ($T_{S\ min}$) -Temperature Max ($T_{S\ max}$) -Time (min to max) (t_s)	150°C 200°C 60-180 seconds
$T_{S\ max}$ to T_L -Ramp-up Rate	3°C/second max.
Time maintained above: -Temperature (T_L) -Time (t_L)	217°C 60-150 seconds
Peak Temperature (T_P)	260°C
Time within 5°C of actual Peak Temperature (t_p)	20-40 seconds
Ramp-down Rate	6°C/second max.
Time 25°C to Peak Temperature	8 minutes max.

Dimensions (SOD-323)



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