

## 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.

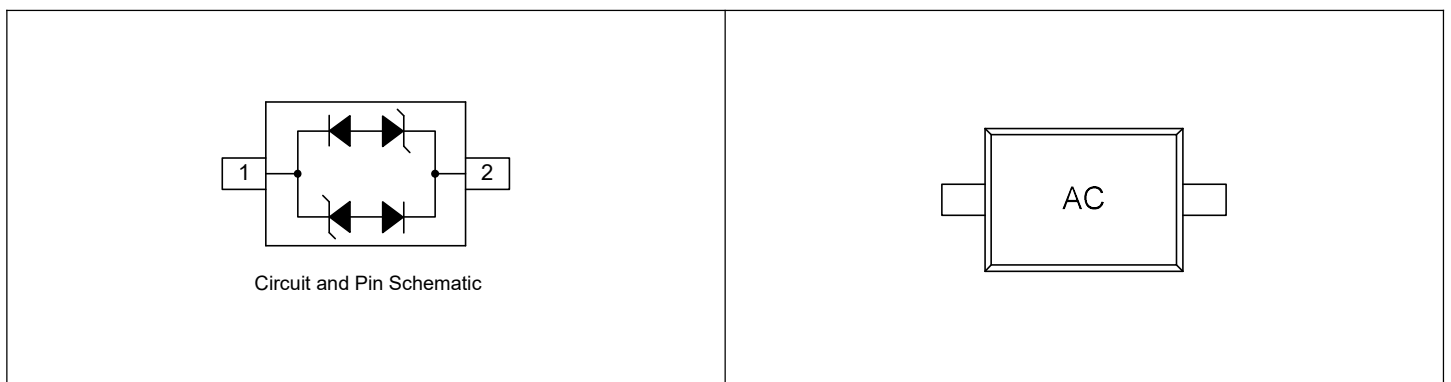
## Features

- 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 $\mu\text{s}$ )	$P_{PP}$	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	$T_A$	$-55^\circ\text{C}$ to $+125^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	$-55^\circ\text{C}$ 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 $\mu\text{s}$		Peak Pulse Current	Junction Capacitance @ $V_R=0\text{V}$ , $f=1\text{MHz}$
		$V_{RWM}$ (V)	$V_{BR}$ (V)	$I_R$ ( $\mu\text{A}$ )	$V_C$ (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

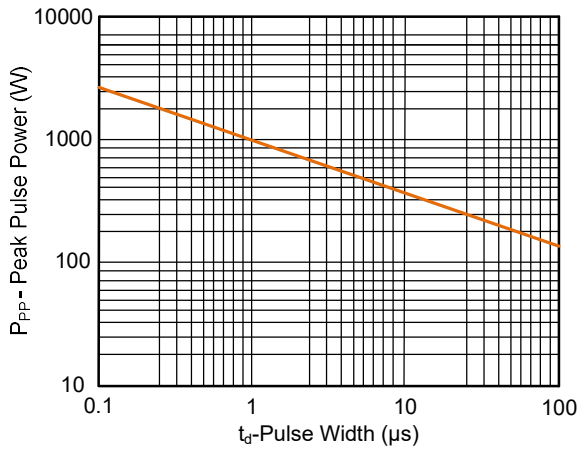


Figure 2. Pulse Derating Curve

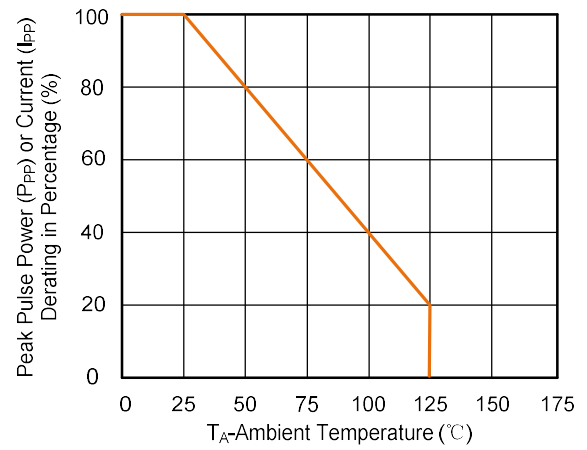


Figure 3. Pulse Waveform (8/20 $\mu\text{s}$ )

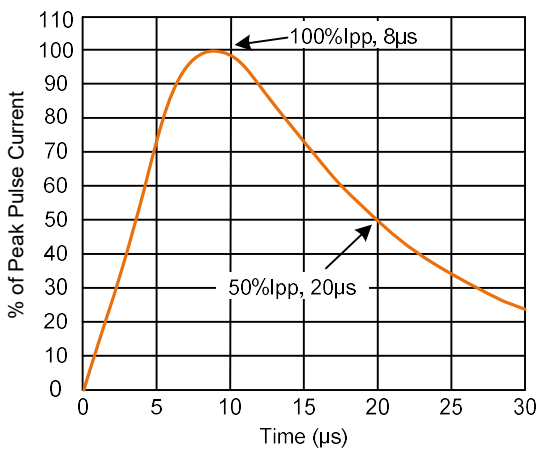
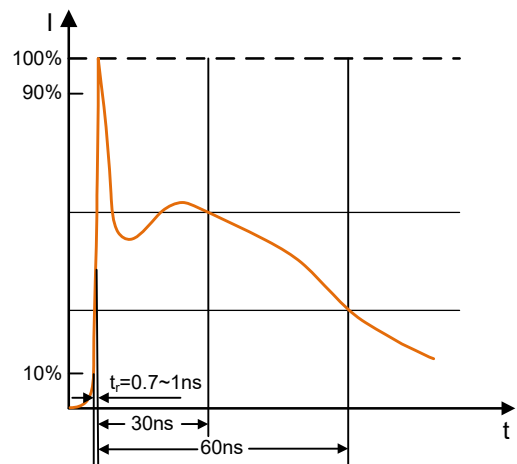
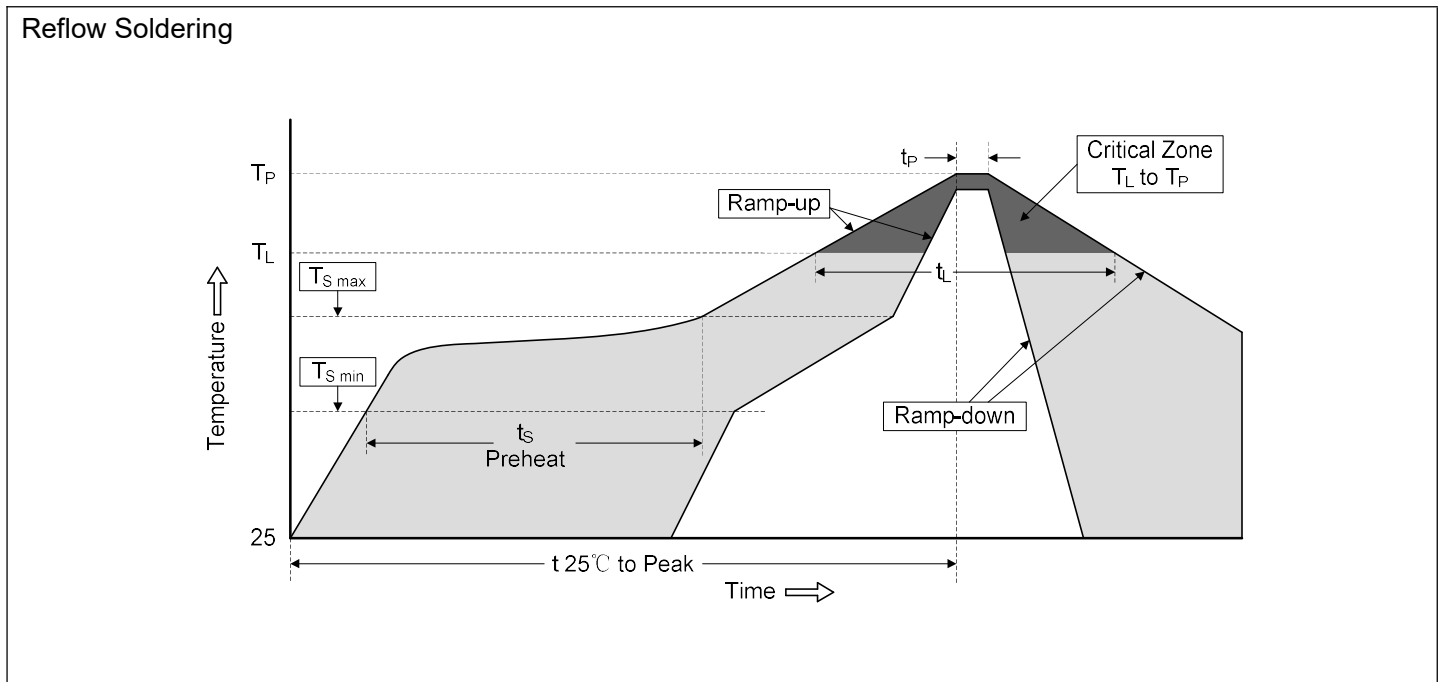


Figure 4. Pulse Waveform (IEC61000-4-2)

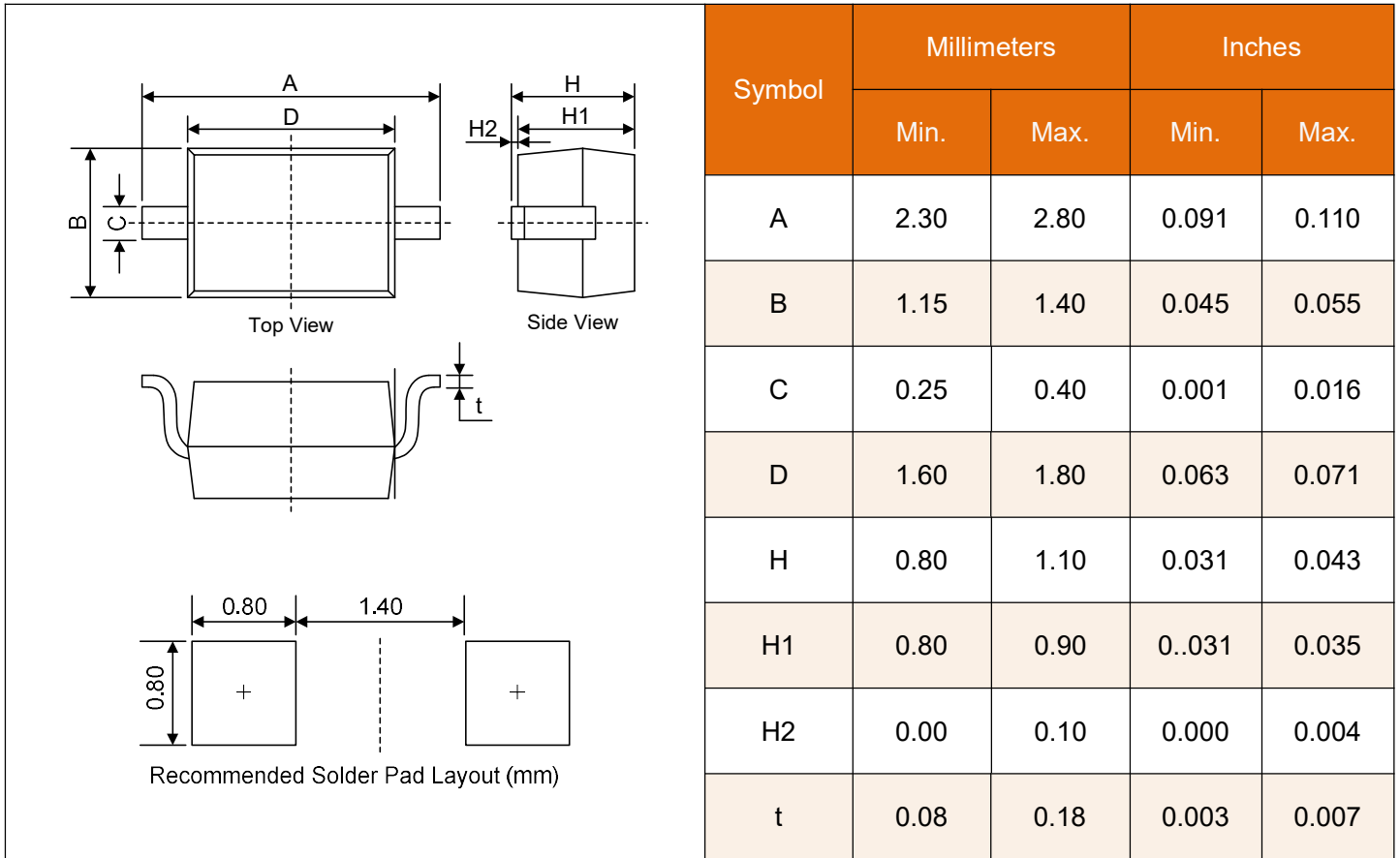


## Soldering Parameters



Profile Feature	Pb-Free Assembly
Average ramp-up rate ( $T_L$ to $T_P$ )	3°C/second max.
Preheat <ul style="list-style-type: none"> <li>-Temperature Min (<math>T_{S\ min}</math>)</li> <li>-Temperature Max (<math>T_{S\ max}</math>)</li> <li>-Time (min to max) (<math>t_s</math>)</li> </ul>	150°C 200°C 60-180 seconds
$T_{S\ max}$ to $T_L$ <ul style="list-style-type: none"> <li>-Ramp-up Rate</li> </ul>	3°C/second max.
Time maintained above: <ul style="list-style-type: none"> <li>-Temperature (<math>T_L</math>)</li> <li>-Time (<math>t_L</math>)</li> </ul>	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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