

Description

The LY323DC18 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 sensitive semiconductor components from damage. 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. It is designed to replace multilayer varistors (MLVs) in portable applications such as cell phones, notebook computers and PDA's.

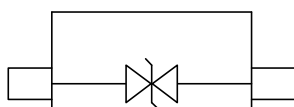
Features

- Protects one data or power line
- Ultra low leakage current
- Operating voltage: 18V
- RoHS compliant
- IEC-61000-4-2 ESD $\pm 30\text{kV}$ Air, $\pm 30\text{kV}$ Contact
- Packaging: 7 inch reel, 3000pcs/reel

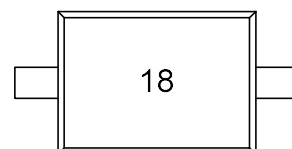
Applications

- Cellular Handsets and Accessories
- Personal Digital Assistants
- Notebooks and Handhelds
- Portable Instrumentation
- Peripherals
- Pagers Peripherals
- Desktop and Servers

Pin Configuration and Marking



Circuit and Pin Schematic



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

Parameter	Symbol	Value
Peak Pulse Power (8/20 μs)	P_{PP}	500W
Peak Pulse Current (8/20 μs)	I_{PP}	13A
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 ($T_A=25^{\circ}\text{C}$)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.
Reverse Working Voltage	V_{RWM}		-	-	18V
Breakdown Voltage	V_{BR}	$I_T = 1\text{mA}$	19.8V	-	-
Reverse Leakage Current	I_R	$V_{RWM} = 18\text{V}$	-	-	0.2 μA
Clamping Voltage	V_C	$I_{PP} = 1\text{A}$ (8/20 μs)	-	-	25V
		$I_{PP} = 13\text{A}$ (8/20 μs)	-	-	38V
Junction Capacitance	C_J	$V_R = 0\text{V}$, $f = 1\text{MHz}$	-	-	60pF

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

Figure 1. Peak Pulse Power Rating Curve

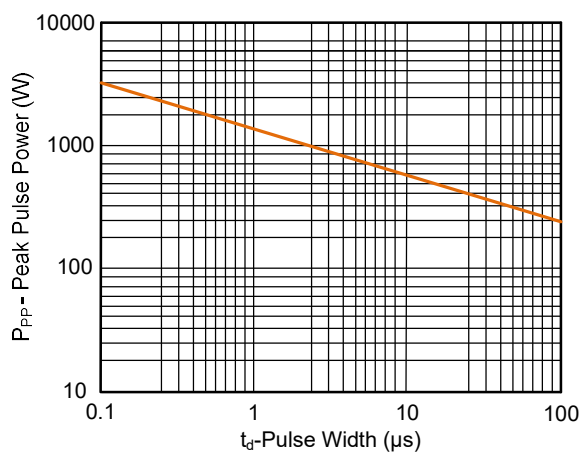


Figure 2. Pulse Derating Curve

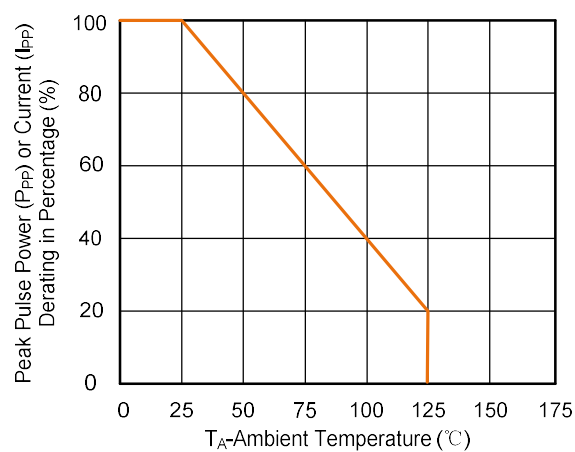


Figure 3. Pulse Waveform (8/20 μs)

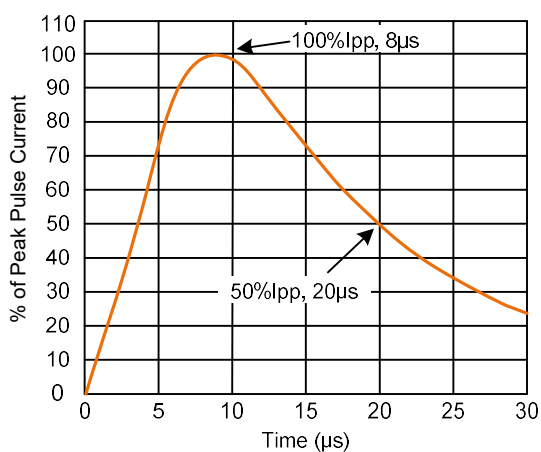
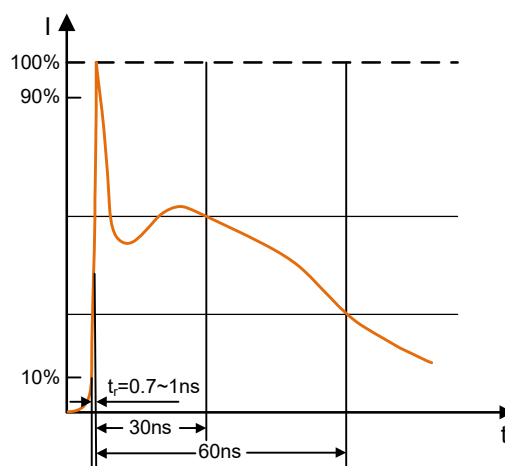
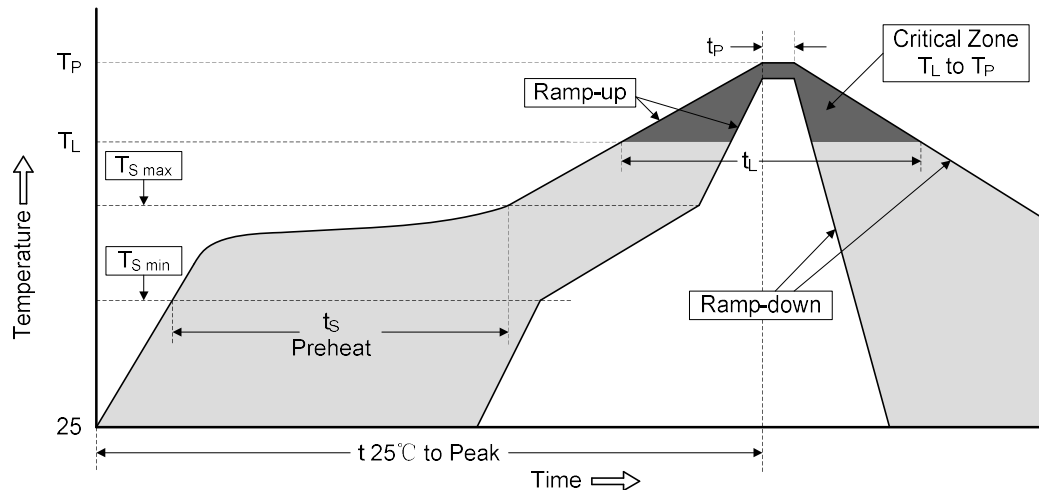


Figure 4. Pulse Waveform (IEC61000-4-2)



Soldering Parameters

Reflow Soldering



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)

