

LY323EA36

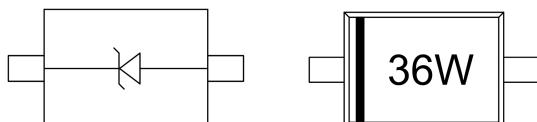
General Purpose ESD Protection


Description

The LY323EA36 is a uni-directional TVS diode, using leading monolithic silicon technology to provide fast response time and ultra 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), $\pm 15\text{kV}$ air and $\pm 8\text{kV}$ 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.

Pin Configuration and Marking



Circuit and Pin Schematic

Maximum Ratings

($T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	P_{PP}	500	W
Peak Pulse Current (8/20 μs)	I_{PP}	6	A
ESD (Air Discharge) ESD (Contact Discharge)	V_{ESD}	± 15 ± 8	kV
Operating Temperature Range	T_J	-55 to 125	°C
Storage Temperature Range	T_{STG}	-55 to 150	°C

Features

- Low clamping voltage
- Low leakage current
- Operating voltage: 36V
- RoHS compliant
- IEC-61000-4-2 ESD $\pm 15\text{kV}$ Air, $\pm 8\text{kV}$ Contact

Applications

- Personal Digital Assistant
- Cell Phone Handsets and Accessories
- Microprocessor Based Equipment
- Notebooks, Desktops and Servers
- Portable Instrumentation

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

Parameter	Symbol	Test Condition	Min.	Typ.	Max.
Reverse Working Voltage	V_{RWM}		-	-	36V
Breakdown Voltage	V_{BR}	$I_T = 1\text{mA}$	39V	-	-
Reverse Leakage Current	I_R	$V_{RWM} = 36\text{V}$	-	-	0.1 μA
Clamping Voltage	V_C	$I_{PP}=1\text{A}$ (8/20 μs)	-	45V	55V
		$I_{PP}=6\text{A}$ (8/20 μs)	-	60V	65V
Junction Capacitance	C_J	$V_R = 0\text{V}$, $f = 1\text{MHz}$	-	35pF	45pF

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

Figure 1:

Peak Pulse Power Rating Curve

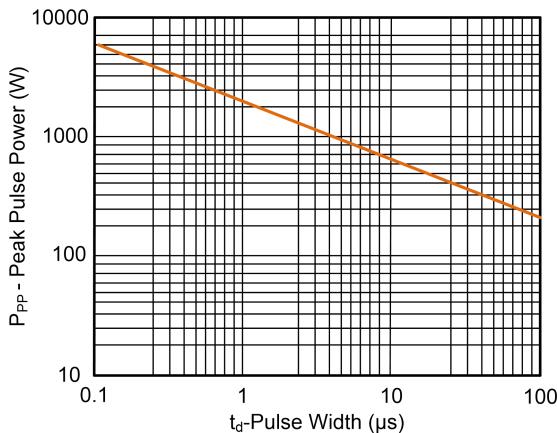


Figure 2:

Pulse Derating Curve

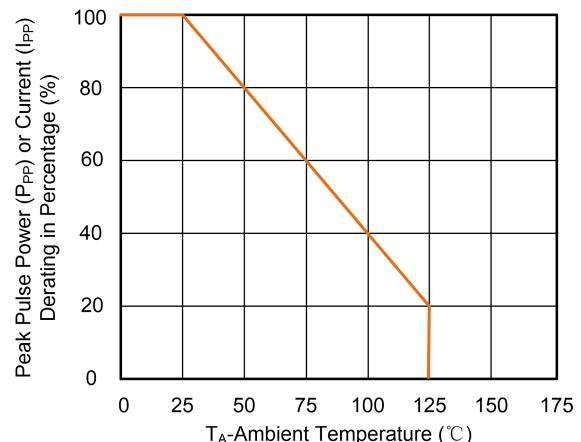


Figure 3:

Pulse Waveform (8/20μs)

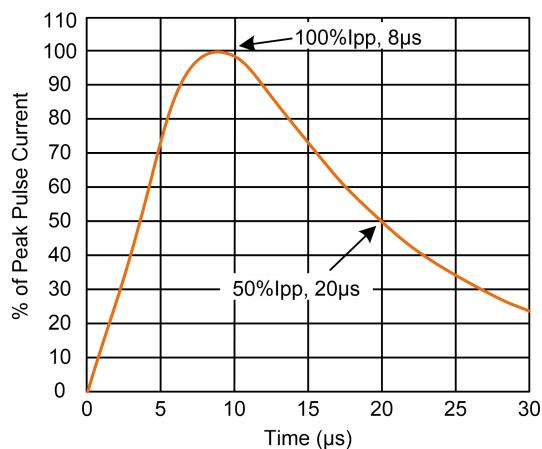
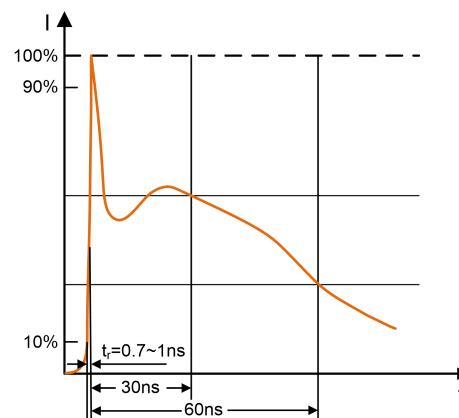


Figure 4:

Pulse Waveform (IEC61000-4-2)

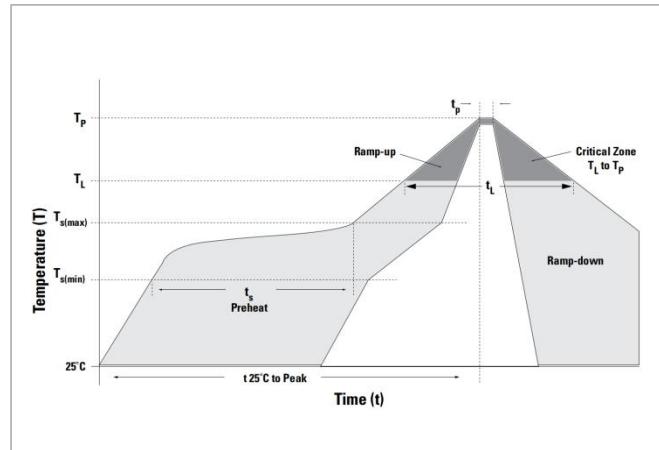


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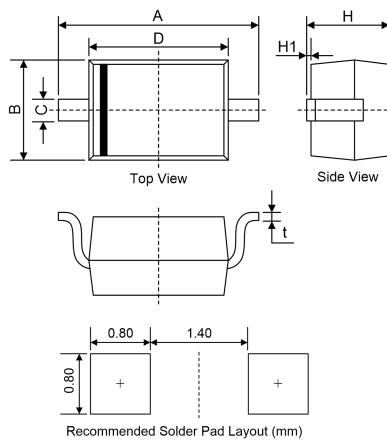
Soldering Parameters

Reflow Condition		Lead-free assembly
Pre Heat	-Temperature Min ($T_{S\ min}$)	150°C
	-Temperature Max ($T_{S\ max}$)	200°C
	-Time (min to max) (t_s)	60 – 180 secs
Average ramp-up rate(Liquidus Temp (T_L) to peak		3°C/second max.
$T_{S\ (max)}$ to T_L -Ramp-up Rate		3°C/second max.
Reflow	-Temperature (T_L) (Liquidus)	217°C
	-Time (min to max) (t_L)	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.
Do not exceed		260°C



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	-	1.10	-	0.043
H1	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
LY323EA36	SOD-323	3000	Tape & Reel – 8mm tape/7" reel	EIA STD RS-481

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