

LY8AC15UL1

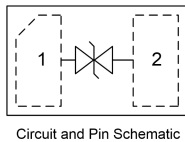
General Purpose ESD Protection



Description

The LY8AC15UL1 is a bi-directional TVS diode, 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), $\pm 15\text{kV}$ air and $\pm 12\text{kV}$ contact discharge. It is assembled into an ultra-small lead-free DFN1006 package. The small size, ultra-low capacitance and high ESD surge protection make it an ideal choice to protect cell phone and high-power USB.

Pin Configuration and Marking



TB

Maximum Ratings

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

Parameter	Symbol	Value	Unit
Peak Pulse Current (8/20 μs)	I_{PP}	6	A
ESD (Air Discharge) ESD (Contact Discharge)	V_{ESD}	± 15 ± 12	kV
Operating Temperature Range	T_J	-55 to 125	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55 to 150	$^\circ\text{C}$

Features

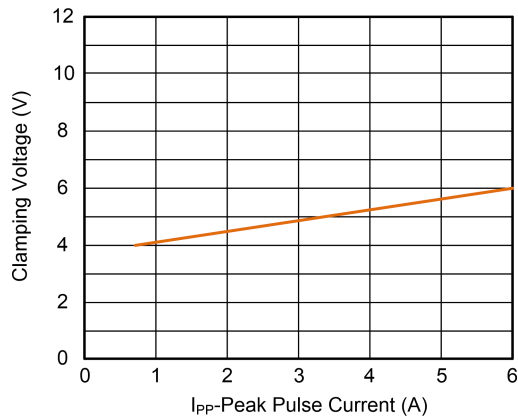
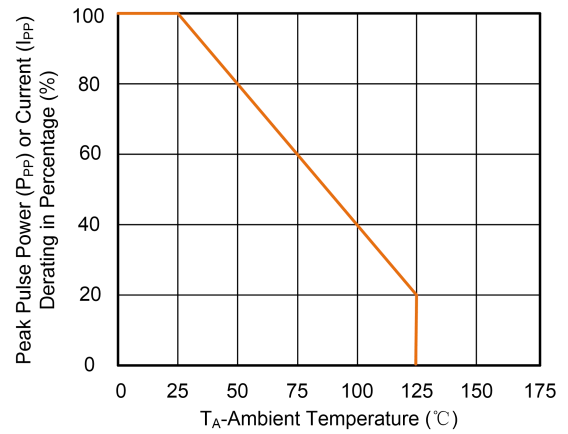
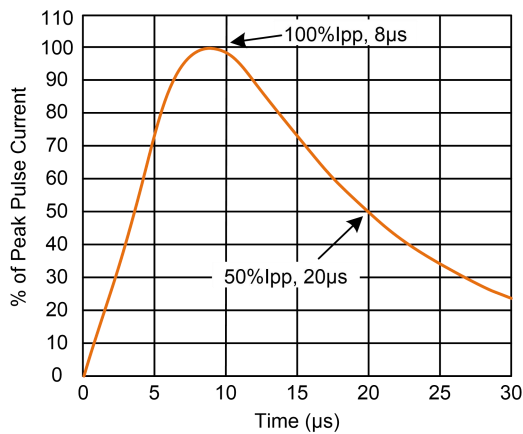
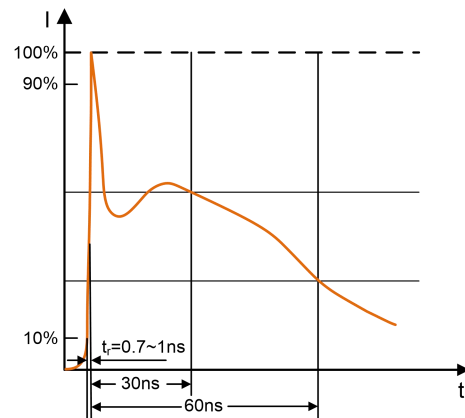
- Low clamping voltage
- Low leakage current
- Operating voltage: 15V
- RoHS compliant
- IEC-61000-4-2 ESD $\pm 15\text{kV}$ Air, $\pm 12\text{kV}$ Contact

Applications

- Cellular Handsets and Accessories
- Personal Digital Assistant
- Portable Instrumentation
- Communication Systems
- Microprocessor Based Equipment

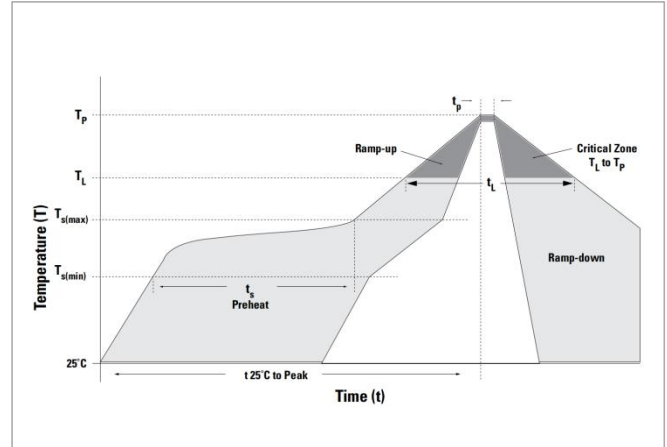
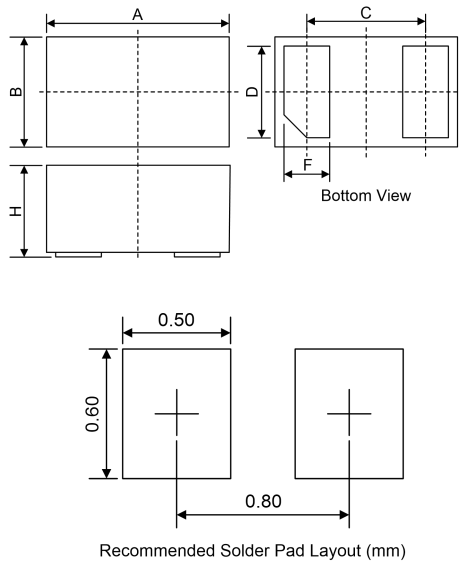
Electrical Characteristics ($T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.
Reverse Working Voltage	V_{RWM}		-	-	15V
Breakdown Voltage	V_{BR}	$I_T = 1\text{mA}$	16.7V	-	-
Reverse Leakage Current	I_R	$V_{RWM} = 15\text{V}$			0.5 μA
Clamping Voltage	V_C	$I_{PP} = 6\text{A}$ (8/20 μs)	-	6V	8V
Junction Capacitance	C_J	$V_R = 0\text{V}$, $f = 1\text{MHz}$	-	0.45pF	0.54pF

LY8AC15UL1**General Purpose ESD Protection****Typical Characteristic Curves** ($T_A=25^\circ\text{C}$ unless otherwise noted)**Figure 1:**
Clamping Voltage vs. Peak Pulse Current**Figure 2:**
Pulse Derating Curve**Figure 3:**
Pulse Waveform (8/20 μs)**Figure 4:**
Pulse Waveform (IEC61000-4-2)

LY8AC15UL1**General Purpose ESD Protection****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****DFN1006**

Symbol	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.95	1.05	0.037	0.041
B	0.55	0.65	0.022	0.026
C	0.65BSC		0.026BSC	
D	0.45	0.55	0.018	0.022
F	0.20	0.30	0.008	0.012
H	0.40	0.55	0.016	0.022

Packaging

Part number	Component Package	Quantity	Packaging Option	Packaging Specification
LY8AC15UL1	DFN1006	10000	Tape & Reel – 8mm tape/7" reel	EIA STD RS-481

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