

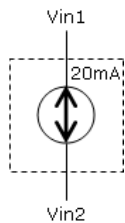
## Features

- Wide input voltage range :  $\pm 10V$  to  $\pm 120V$
- Bi-directional constant output current :  $20mA \pm 10\%$
- Parallel working for higher currents
- RoHS and green compliant packages
- Patent pending

## Applications

- AC/DC LED line bar driver (T5, T8)
- AC/DC LED lamp driver
- Christmas lighting
- Decorative lighting
- Constant source or constant sink

## Equivalent Block Diagram



## General Description

The LD7801 is an easy use and bi-directional constant current LED driver for high voltage applications. It regulates a constant current of  $20mA \pm 10\%$  at input voltage of  $\pm 10V \sim \pm 120V$ . The LD7801 can be used as a constant current source or a constant sink.

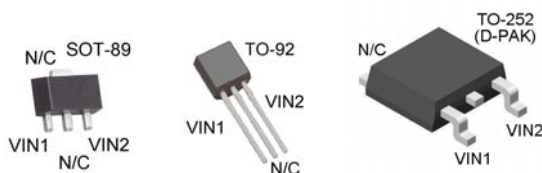
The typical application of LD7801 is to drive a string of LEDs with a constant current 20mA. The parallel connection of LD7801s can be used to provide higher constant current. However, total constant current higher than 100mA is not encouraged.

## Ordering Information

Part No.	Package	Packing Options		
		Tube(TU)	Bag(BG)	Tape & Reel(TR)
LD7801	SOT-89-3	N/A	LD7801L5-BG	N/A
	TO-92-3	N/A	LD7801T1-BG	N/A
	TO-252-3	LD7801T6-TU	N/A	LD7801T6-TR

- Package material default is "Green" package.

## Package Pin Out



Note: Pin2 must leave to non-connection

## Product Marking

LD8888	◇ Line 1 – "LD" is a fixed character
SSSSS...	8888: product name
●	◇ Line 2 – SSSSS...: lot number

## Thermal Characteristics

Package	Power Dissipation @ $T_A = 25^\circ C$	$\theta_{JC}$ $^\circ C/W$	$\theta_{JA}$ $^\circ C/W$
SOT-89	1.3W	15	80
TO-92	0.6W	125	180
TO-252	2.0W	8	50

## Absolute Maximum Ratings

Parameter	Maximum	Units
Maximum Operating Voltage	130	$V_{DC}$
Operating Junction Temperature	-40 to +125	$^{\circ}C$
Storage Temperature	-55 to +150	$^{\circ}C$

The values beyond the boundaries of absolute maximum rating may cause the damage to the device. Functional operation in this context is not implied. Continuous use of the device at the absolute rating level might influence device reliability. All voltages have their reference to device ground.

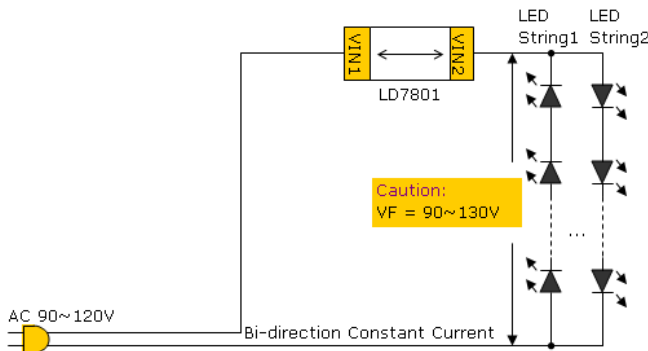
## Electrical Characteristics

$T_A=25^{\circ}C$  unless specified, otherwise minimum and maximum values are guaranteed by production testing requirements.

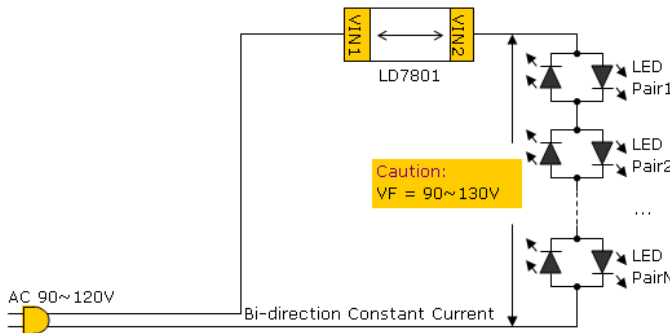
Parameter	Symbol	Condition	Minimum	Typical	Maximum	Units
Input Voltage Range	$V_{AC}$		7		85	$V_{AC}$
	$ V_{DC} $		10		120	$V_{DC}$
Regulated Constant Current	$ I_{DC} $	DC input: 10~120V	18	20	22	mA
Operating Junction Temperature	$T_J$		-40		125	$^{\circ}C$
Dynamic Resistance	$R_{AB}$			TBD		$\Omega$

## Typical Application Circuit

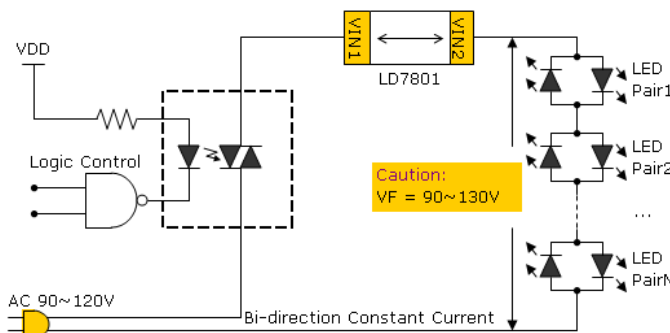
### LED Strings



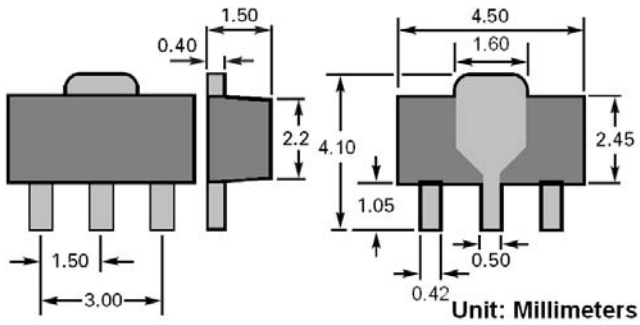
### LED Pair Chain



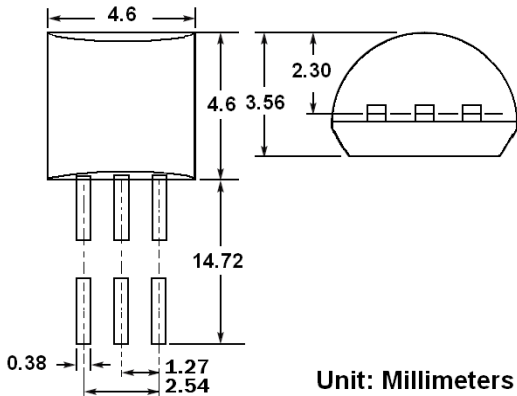
### LED Pair Chain with Logic Control



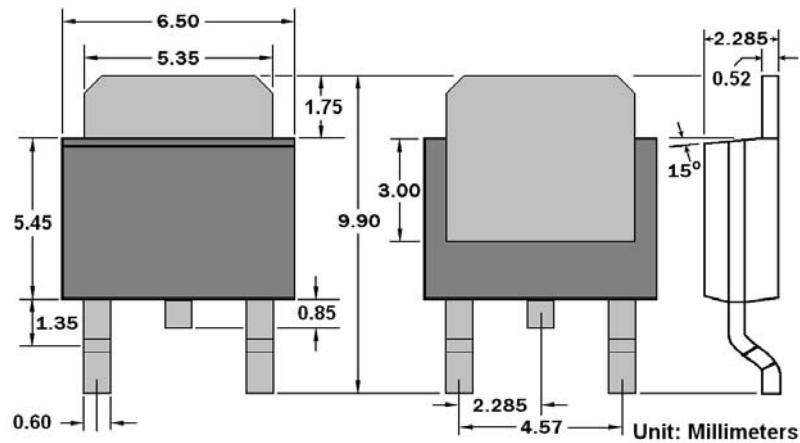
**Package Outline**  
**SOT-89:**



**TO-92:**



**TO-252:**



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