

## Features

- Wide input voltage range : 8V to 120VDC
- Constant output current
- Constant application current : 25mA±7.5%
- Parallel working for higher currents
- Dropout voltage: 1.5V
- RoHS and green compliant packages

## Applications

- Turn signal
- LED traffic light
- Signage or decorative LED lamp
- Constant source or constant sink

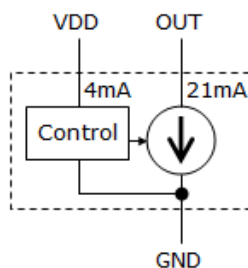
## General Description

The LD7609 is a cost-effective linear regulator optimized for high input voltage. It regulates to supply a constant application current 25mA±7.5% at input voltage of 8V to 120VDC with the enable control by VDD. The Device can be used as a constant current source or a constant current sink.

The typical application of LD7609 is to drive a string LED with a constant application current 25mA. The dropout voltage can be low as 1.5V. The parallel connection of LD7609 can be used to provide higher constant current. However, total constant current higher than 100mA is not encouraged.

For a wider application, the package is available in TO-92, SOT-89, TO-252.

## Equivalent Block Diagram

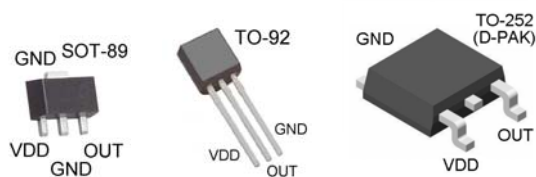


## Ordering Information

Part No.	Package	Packing Options		
		Tube(TU)	Bag(BG)	Tape & Reel(TR)
LD7609	SOT-89-3	N/A	LD7609L5-BG	LD7609L5-TR
	TO-92-3	N/A	LD7609T1-BG	N/A
	TO-252-3	LD7609T6-TU	N/A	LD7609T6-TR

- Package material default is "Green" package.

## Package Pin Out



## Product Marking

LD8888  
SSSSS...

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

## Thermal Characteristics

Package	Power Dissipation @T <sub>A</sub> =25°C	θ <sub>JC</sub> °C/W	θ <sub>JA</sub> °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
Operating Junction Temperature	-40 to +125	°C
Storage Temperature	-55 to +150	°C

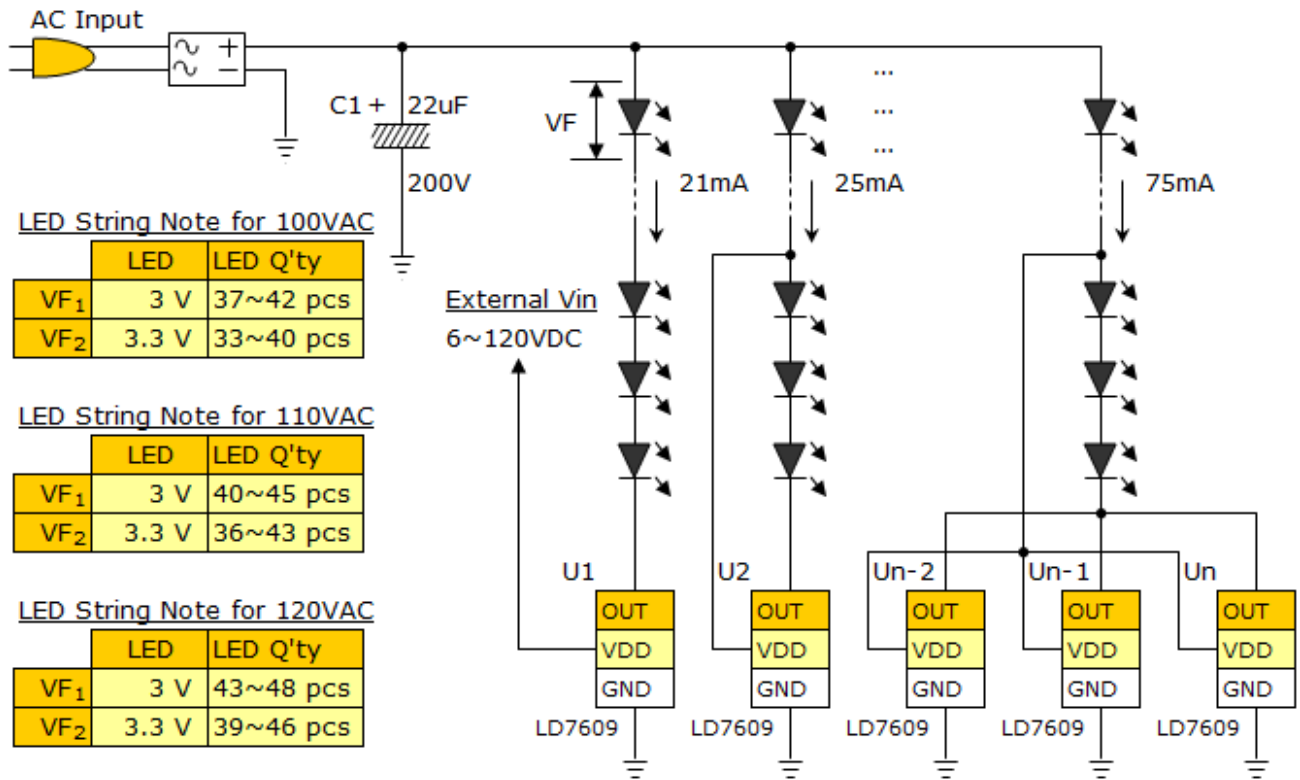
The values beyond the boundaries of absolute maximum rating may cause the damage to the device. Functional operation in this context is not implied. Continuous use of the device at the absolute rating level might influence device reliability. All voltages have their reference to device ground.

## Electrical Characteristics

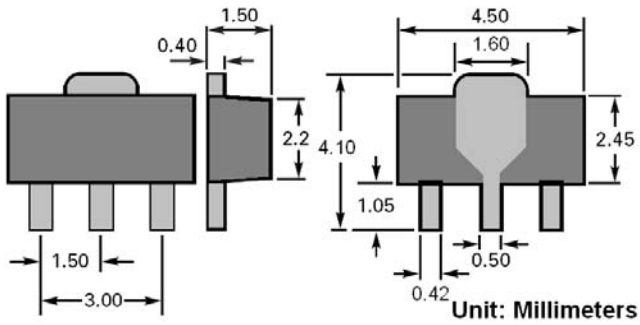
T<sub>A</sub>=25°C unless specified, otherwise minimum and maximum values are guaranteed by production testing requirements.

Parameter	Symbol	Condition	Minimum	Typical	Maximum	Units
Supply Voltage	V <sub>DD</sub>		8.0	–	120	V
Output Voltage at OUT	V <sub>OUT</sub>		1.5	–	120	V
VDD Current	I <sub>DD</sub>		–	4	5.0	mA
Regulated Constant OUT Current	I <sub>OUT</sub>	V <sub>OUT</sub> = 1.5V ~ 120V	19.1	21	22.9	mA
		V <sub>OUT</sub> < 1.5V	–	–	19.1	
Application Constant Current	I <sub>OUT</sub> + I <sub>DD</sub>	Bin 1 Category	21.3	–	23.8	mA
		Bin 2 Category	23.1	25	26.9	
		Bin 3 Category	26.3	–	28.8	
OUT Current while VDD open	I <sub>OUT(OFF)</sub>	V <sub>DD</sub> open	–	–	10	µA
OUT shut off VDD voltage	V <sub>OUT(OFF)</sub>	I <sub>DD</sub> < 10µA	–	–	3.0	V
Time for VDD applied	t <sub>ON</sub>		–	–	10	µS
Time for VDD off	t <sub>OFF</sub>		–	–	10	µS
Operating Junction Temperature	T <sub>J</sub>		-40		125	°C

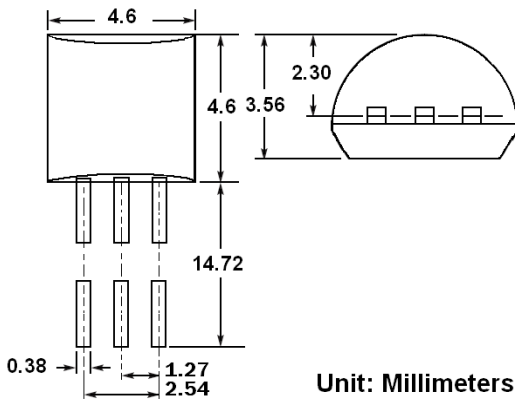
## Typical Application Circuit



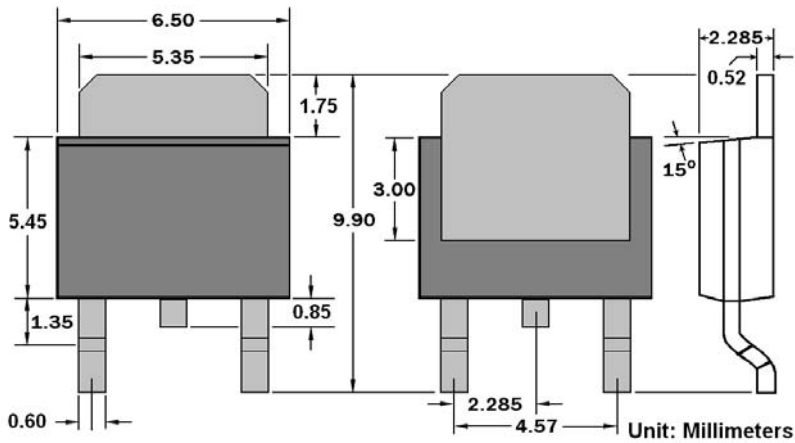
**Package Outline**  
**SOT-89:**



**TO-92:**



**TO-252:**



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