

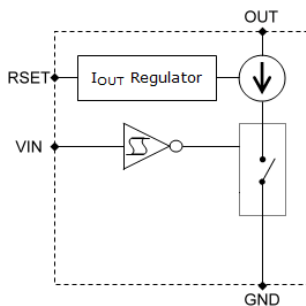
## Features

- Input voltage range: 6V to 60V
- Output driving voltage: 60V(maximum)
- Output current : 750mA(maximum)
- Output dropout voltage 0.8V at 700mA
- Adjustable output current
- RoHS and green compliant packages

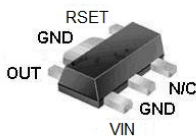
## Applications

- High power LED driver
- LED table lamp
- Display backlight

## Equivalent Block Diagram



## Package Pin Out



## Thermal Characteristics

Package	Power Dissipation PD @T <sub>A</sub> =25°C	Thermal Resistance θ <sub>JA</sub>
SOT89-5L	1.2W	80 °C/W

Note: Temperature vs. Current Chart is shown on the right.  
Please apply the V<sub>OUT</sub> under 70 °C to prevent over heating.

## General Description

The LD7655 is a continuation of Lighting Device's successful and most widely adopted linear regulator for high input voltage. It provides a further overall cost reduction alternative to the existing LED power design. It features as the previous regulator with high integration of the Lighting Device perfection technology that has proven to be high-quality and most reliable.

The outstanding chip regulates to supply a constant current up to 750mA at input voltage of 6V ~ 60Vdc. The output current is programmable by adding an external resistor.

The typical application of LD7655 is to drive a high power LED with a constant current 750mA. The Built-in thermal protection is made to prevent the chip from over-heating damage.

## Ordering Information

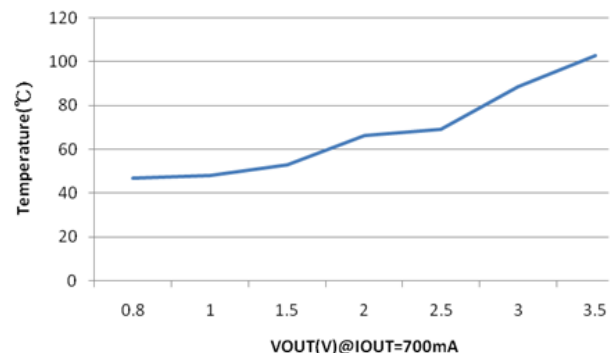
Part No.	Package	Packing Options	
		Tube(TU)	Tape & Reel(TR)
LD7655	SOT89-5L	LD7655T7-TU	LD7655T7-TR

- Package material default is "Green" package.

## Product Marking

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

**Temperature vs. V<sub>OUT</sub> Chart**



## Absolute Maximum Ratings

Parameter	Maximum	Units
V <sub>DD</sub> , OUT	60	V
C <sub>ST</sub>	5	V
Operating Junction Temperature	-40 to +150	°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

V<sub>DD</sub>=24V, T<sub>A</sub>=25°C unless specified; or minimum and maximum values are guaranteed by production testing requirements.

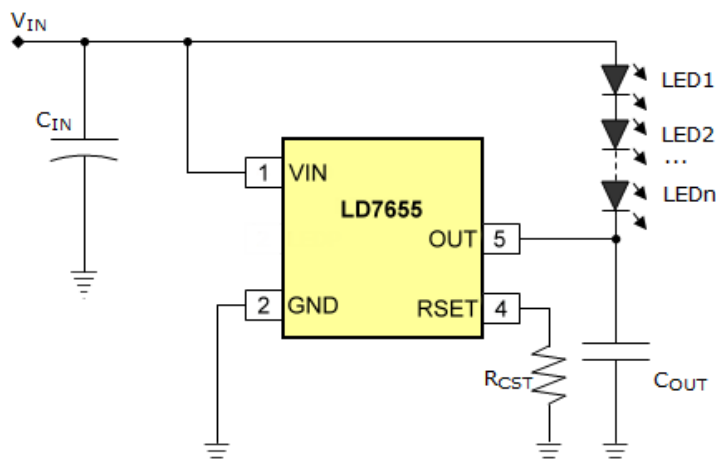
Parameter	Symbol	Condition	Minimum	Typical	Maximum	Units
Output Current	I <sub>OUT</sub>	V <sub>OUT</sub> =0.8V, R <sub>CST</sub> =3Ω	–	100	–	mA
		V <sub>OUT</sub> =0.8V, R <sub>CST</sub> =0.85Ω	–	350	–	
		V <sub>OUT</sub> =0.8V, R <sub>CST</sub> =0.4Ω	–	750	–	
Output Current Deviation	I <sub>OUTD</sub>	V <sub>OUT</sub> =0.8V, R <sub>CST</sub> =0.4~3Ω	–	–	±5	%
CST Current Range	I <sub>CST</sub>		100	–	750	mA
Maximum Output Current	I <sub>OUT</sub>	I <sub>CST</sub> =750mA	–	750	–	mA
Output Dropout Voltage	V <sub>DROP</sub>	I <sub>CST</sub> =750mA	–	0.8	–	V
Supply Current	I <sub>DD</sub>		–	–	1	mA
Line Regulation	REG <sub>LINE</sub>	V <sub>OUT</sub> =0.8V, I <sub>OUT</sub> =750mA V <sub>DD</sub> =5V to 50V	–	–	1	mA/V
Load Regulation	REG <sub>LOAD</sub>	V <sub>OUT</sub> =0.8V to 3V	–	–	3	mA/V
Power On Delay Time <sup>*1</sup>	t <sub>DR</sub>	V <sub>DD</sub> on to I <sub>OUT</sub> on	–	20	–	μS
Power Off Delay Time <sup>*1</sup>	t <sub>DF</sub>	V <sub>DD</sub> off to I <sub>OUT</sub> off	–	30	–	μS
Thermal Shutdown Temperature <sup>*1</sup>	T <sub>STDN</sub>	Hysteresis 20°C	–	160	–	°C

Note: \* guaranteed by design, no production tested

## Pin Description

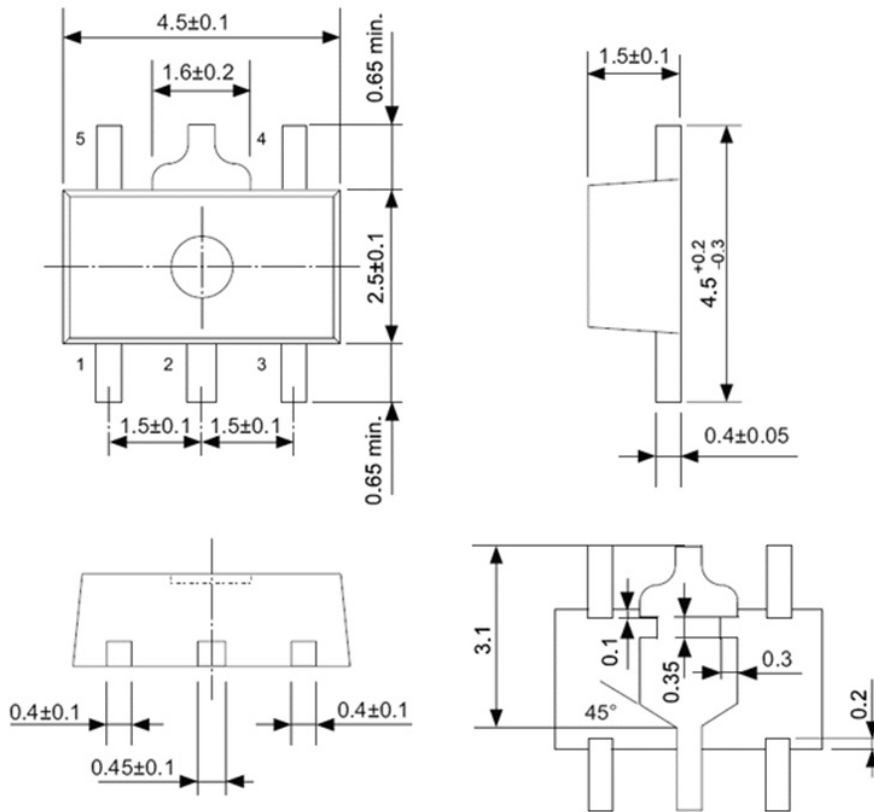
Pin #	Name	Description
1	V <sub>IN</sub>	Power supply to device
2	GND	Device ground
3	NC	
4	RSET	Output current setting. R <sub>CST</sub> from RSET to GND to set bias current, I <sub>CST</sub> = 0.3V/R <sub>CST</sub>
5	OUT	Output pin. Sink current is adjusted by the current on R <sub>CST</sub> , I <sub>OUT</sub> = 0.3V/R <sub>CST</sub>

## Typical Application Circuit



## Package Outline

SOT89-5:



## LD Tech Corporation

Tel: +886-3-567-8806  
 Fax: +886-3-567-8706  
 E-mail: [sales@ldtech.com.tw](mailto:sales@ldtech.com.tw)  
 Website: [www.ldtech.com.tw](http://www.ldtech.com.tw)