



ACE53630X

30V Low Dropout Linear LED

Description

The ACE53630X is a universal purpose linear LED driver. The maximum input voltage is up to 36V and the operation input voltage from 3V to 30V. The operating voltage is well suited for all kinds of applications. Separated VDD can be easily configured for high voltage input.

The ACE53630X only need one current setting resistor. No capacitors are required. With a strong internal power transistor and 200mV low CS voltage, ACE53630X can drive up to 500mA current with only 500mV total dropout. Careful design and fine trimming keeps current accuracy within $\pm 5\%$.

PWM dimming can be as high as 1MHz, while still holding good dimming linearity. With a proprietary design, ACE53630X is also compatible with simple two wire switched dimming up to 1KHz frequency.

OTP function prevents ACE53630X from extreme conditions.

The ACE53630X is housed in 3 different types of packages, which are SOT23-5, ESOP-8 and DFN2*2-6L.

Features

- 30V operating voltage on VDD
- 32V maximum voltage on LED pin
- 500mA output current
- Small Dropout Voltage on LED pin 300mV@100mA (including 200mV CS voltage)
- Highly Accuracy: $\pm 5\%$
- Easily configurable for multi purposes
- Extreme simple application with only one setting resistor
- High dimming frequency up to 1MHz
- Over temperature protection
- SOT23-5, ESOP-8 and DFN2*2-6L package

Application

- LED lighting
- Isolated Offline LED lamps
- Automotive LED driver
- Constant Current source and sink
- Current limiting



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Absolute Maximum Ratings

Parameter		Value	
VDD, LED to GND voltage		-0.3V to 32V	
All other pins		-0.3V to 7V	
LED output current		500mA	
Operating temperature range		-40°C to 85°C	
Storage temperature range		-55°C to 150°C	
ESD Human body mode		2KV	
Thermal Resistance	SOT23-5	θ_{JA}	165°C/W
	ESOP-8		50°C/W
	SOT23-5	θ_{JC}	75°C/W
	ESOP-8		10°C/W

Note: Exceeding or exposure to these absolute rating limits may damage the device permanently or affect its reliability

Ordering information

ACE53630X XX + H

—	Halogen - free
—	Pb - free
—	BN : SOT-23-5
—	IM : ESOP-8
—	MN : DFN2*2-6L



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Notes

ACE does not assume any responsibility for use as critical components in life support devices or systems without the express written approval of the president and general counsel of ACE Technology Co., LTD. As used herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, and whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury to the user.
2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.