



New Product Announcement

AL3069

60V Boost Controller with Four 80V Current Sinks and Dual PWM Dimming Enhances Response Time

The AL3069 is a high-efficiency boost controller with four-channel LED current sinks for LED backlight applications.

The boost controller operates over a wide 4.5V to 60V input voltage range with a switching frequency from 100kHz to 1MHz.

The four sink-channels have an 80V operating voltage and a current range (adjusted by an external resistor) up to 250mA DC. Their channel-to-channel current matching is typically $\pm 0.5\%$.

The AL3069 supports two independent dimming modes: direct PWM dimming and PWM to analog dimming. This flexible dimming function makes the AL3069 suitable for high-contrast LED backlight dimming applications.

Robust protection features include:

- Cycle-by-cycle current limit
- Soft-start
- Undervoltage lockout
- Adjustable V_{OUT} overvoltage
- Overtemperature
- Open-/short-LED protection
- Schottky diode-short/open
- Inductor short-circuit
- V_{OUT} -short

The AL3069 is available in the SO-16 package.



The DIODES Advantage

This flexible LED backlight solution is for large LED TVs and monitors.

- **Supports Wide Input Voltage from 4.5V to 60V**
Operates from standard 5V, 12V, 24V, and 48V supply rails
- **250mA (400mA pulse) per String Drive Current with 80V Withstand**
Drives up to 26 LED/channels supporting light output power
- **Adjustable Operating Frequency from 100kHz to 1MHz**
Enables low frequency for higher efficiency, and high frequency for smaller form factor
- **Good 0.5% Channel-to-Channel Matching**
Ensures screen brightness consistency
- **Versatile Direct-PWM and PWM-to-Analog Dimming**
Supports wide dimming control for high-contrast LED backlight, high dynamic range (HDR), and motion picture response time (MPRT) compliant displays

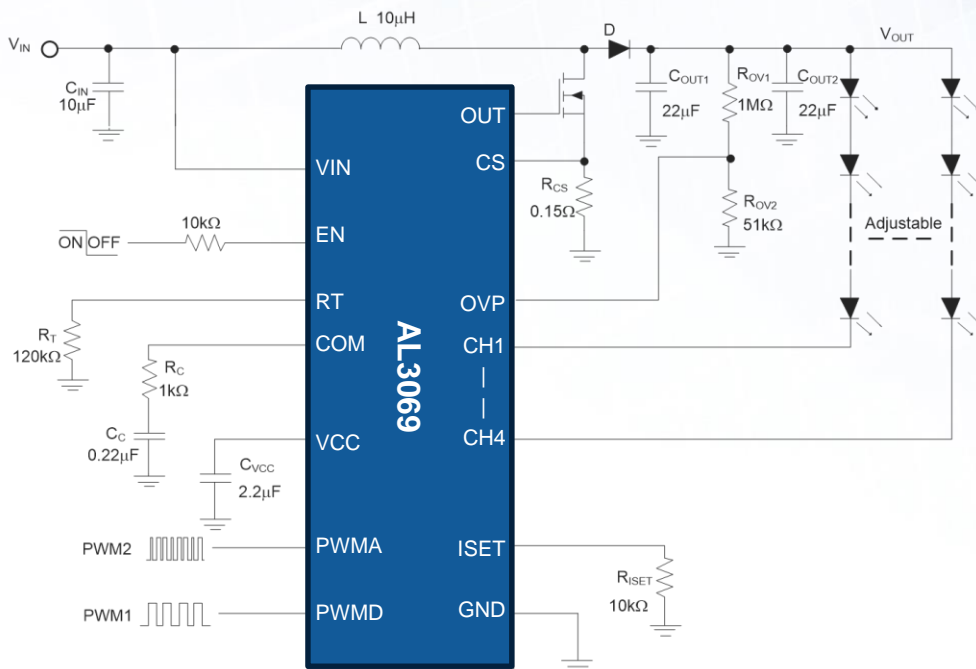
Applications

- Monitors and TVs
- Home appliances
- LCD display modules
- UV cleansers
- LCD panel displays for industrial equipment

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Typical Application Circuit



LED Backlight Product Portfolio

Part Number	Input Voltage Range	Max. Boosted Output Voltage	CH1~4 Output Voltage	Channel Output Current	Number of Channels	Current Accuracy	Channel-to-Channel Matching	Switching Frequency Range	LED Dimming Control		Ambient Temp. Range	Package Outline
	V	V	V	mA	#	%	+/- %	kHz	PWM to DC	PWM	°C	
AL3069	4.5 ~ 60	External MOSFET	80	250	4	±5.0	0.5	100 ~ 1000	Yes	Yes	-40 to +85	SO-16
AP3041	5 ~ 27	External MOSFET	External MOSFET	External MOSFET	1	±2.0	N/A	100 ~ 500	No	Yes	-40 to +85	SO-16

Ordering Information

Orderable Part Number	Compliance (Only Automotive Supports PPAP)	Package Code	Packaging	Moisture Sensitivity	Packing	
					Quantity	Carrier
AL3069S16-13	Standard	S16	SO-16	MSL-1	2,500	13" Tape & Reel