



New Product Announcement

AL5810Q

60V, Adjustable-Current, Linear, Automotive-Compliant LED Driver Provides a Simple Solution for Automotive Lamps

The DIODES™ AL5810Q is an automotive-compliant and linear LED driver with adjustable LED currents up to 200mA. The LED output current is set by an external standard value resistor, and the AL5810Q also offers excellent temperature and voltage current stability.

The device's IN pin is a combined supply rail and open drain output that can swing from 2.5V up to 60V. This allows it to regulate LED currents across the whole automotive operating voltage range, including load dumps, in both high-side and low-side configurations of LED strings.

The AL5810Q has been qualified to AEC-Q100 Grade 2 and is available in the TO252 (DPAK) package. The device is also available in the W-DFN2020-3/SWP (2mm x 2mm) package with wettable flanks, supporting automatic optical inspection (AOI) for automotive requirements.



The DIODES™ Advantage

The AL5810Q provides a small footprint, high-power-density solution for automotive LED lamps.

- **Wide Operating Voltage Range from 2.5V to 60V**
Drives multiple LEDs in series across a wide range of input conditions, including load dumps
- **LED Output Current Adjusted by High-Value External Resistor**
Simplifies system design and logistics
- **Wide 5mA to 200mA LED Current Adjustment Range**
Suitable for a wide range of LED applications
- **Suitable for High-Side And Low-Side Driving of LEDs, Including Paralleling of Devices**
Supports higher LED current applications and simplifies system design
- **Available in W-DFN2020-3/SWP and TO252 Packages**
Wettable flank DFN meets automotive AOI requirements, and the TO252'S lower θ_{JA} is suitable for enhanced ambient temperatures

Applications

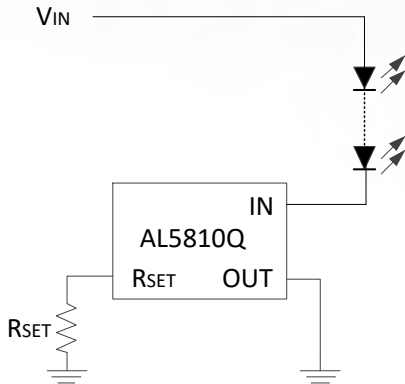
- Interior and exterior automotive LED lighting
- Puddle lighting
- Side-marker lights
- Instrumentation illumination
- Automotive mirror-turning indicators
- LED strings for dome and mood lighting

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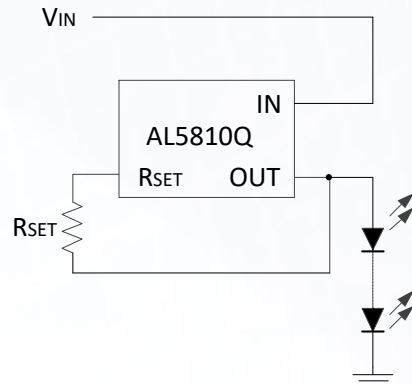
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Typical Application



LED High-Side Configuration



LED Low-Side Configuration

Product Portfolio

Part Number	Min. Input Voltage	Max. Input Voltage	Output Channels	Max. Output Current	Reference Voltage Tolerance	Operating Temperature Range	Dimming Supported			Package
	V	V		mA	±%	°C	PWM VIN	Analog	PWM	
AL5809Q	2.5	60	1	150	5	-40 ~ +85	Y	-	Ext	PowerDi123®
AL5810Q	2	60	1	200	3	-40 ~ +105	Y	-	Ext	W-DFN2020-3/ SWP TO252
AL5873Q	5	55	3	250	4	-40 ~ +125	-	Y	Y	TSSOP-16EP

Input voltage is measured between IN and OUT pins

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Ordering Information

Orderable Part Number	Package	Package Code	Moisture Sensitivity	Packing	
				Quantity	Carrier
AL5810QFJ3-7	W-DFN2020-3/SWP (Type A)	FJ3	MSL1	3000	7" Tape and Reel
AL5810QD-13	TO252 (DPAK)	D	MSL1	2500	13" Tape and Reel