



New Product Announcement

AL5871Q

Automotive 55V Linear LED Driver with Fault Flag and Current Foldback

The DIODES™ AL5871Q is an automotive-compliant, single-channel, linear LED driver with separate PWM and analog dimming control. Its LED current can be adjusted up to 750mA and is set by a low-power resistor that is connected to the REF pin. It has built-in integrated MOSFET and system protection features.

Multi-devices FAULTB pin fault-flag: If any of the following are detected, then the FAULTB pin is pulled low – VIN below under-voltage lock-out (UVLO) threshold, LED-open/-short is detected, or overtemperature protection (OTP).

LED current Foldback: The AL5871Q monitors its junction temperature and reduces the LED current if the junction temperature exceeds its threshold temperature.

This device supports PWM and analog dimming with excellent performance. It enters standby mode to save power if no PWM signal is detected.

The AL5871Q is qualified to AEC-Q100 grade 1 and is available in the TSSOP-16EP (Type DX) package.

Automotive-compliant - AEC qualified, manufactured in IATF 16949 certified sites supporting PPAP documents.

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The DIODES™ Advantage

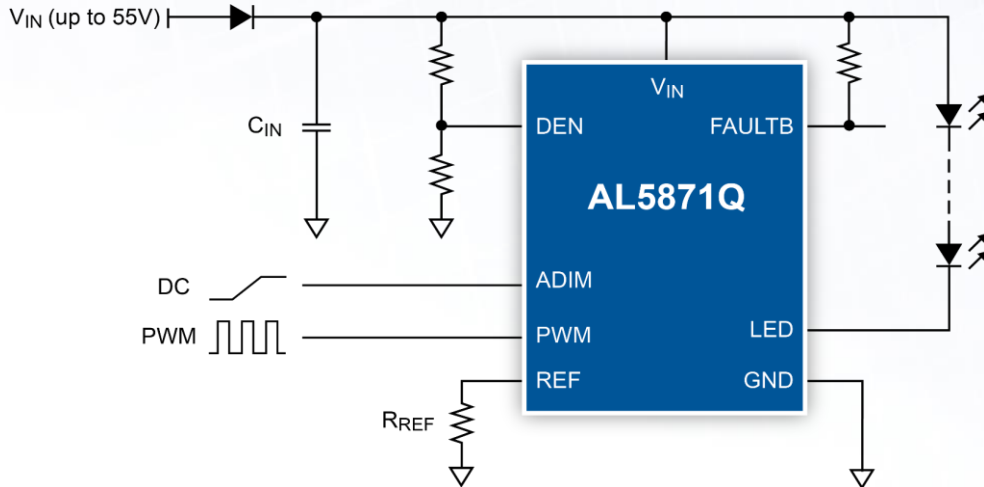
The AL5871Q provides a simple and reliable solution for automotive lighting with its adjustable LED current.

- **Wide Input Voltage Range from 5V to 55V**
Works across the automotive supply range including load dumps
- **Adjustable LED Current Up to 750mA Using Standard Resistors**
Provides adjustable high-output current capability
- **Thermal Foldback Protection of LED Current at High T_j**
Reduces likelihood of lamps flickering if they get too hot
- **Internal/External Fault Detection and Warning via Bidirectional Fault Pin**
Input UVLO, open-/short-LED string, and overtemperature conditions detected on up to four devices connected together
- **Supports Both PWM and Analog Dimming with Power Down Mode**
Optimized and versatile LED brightness control

Automotive Applications

- Exterior lamps
 - Tail and brake lights
 - Turn signal/parking lights
 - Rear fog lights
 - Reverse lights
- Interior lamps
 - Vanity lamps
 - Puddle lamps
 - Map reading lamps

Typical Application



Automotive-Compliant Linear LED Drivers

Part Number	Channels	Min. Input Voltage	Max. Input Voltage	Max. Output Current (Total)	Reference Voltage Accuracy	Ambient Temp. Range	Dimming Mode			Package
		V	V	mA	±%	°C	VIN	Analog	PWM	
AL5871Q	1	5	55	750	2	-40 to +125	Yes	Yes	Yes	TSSOP16-EP (Type DX)
AL5873Q	3	5	55	750	2	-40 to +125	Yes	Yes	Yes	TSSOP16-EP (Type DX)
AL5816Q	1	4.5	60	1,000	5	-40 to +125	No	No	Yes	SOT25

Ordering Information

Orderable Part Number	Compliance (Only Automotive Supports PPAPs)	Package	Moisture Sensitivity	Packing	
				Quantity	Carrier
AL5871QT16E-13	Automotive	TSSOP-16EP (Type DX)	MSL-1	2,500	13" Tape & Reel