

Automotive-Compliant Linear LED Driver-Controller with Low Dropout and Enhanced Dimming

The AL5814Q is an adjustable, linear LED driver-controller offering excellent temperature stability and output current capability.

The AL5814Q works with a wide-input voltage range from 4.5V to 60V and drive up to 15mA output current, which enables it to drive external BJTs or MOSFETs.

AL5814Q supports analog dimming by adjusting the voltage on the VSET pin and PWM dimming with PWM control signal applied on the VFAULT pin. Thermal foldback is implemented with an external NTC resistor between VSET and GND.

AL5814Q provides LED open protection, undervoltage lockout, and overtemperature protections.

It is available in MSOP8-EP package and is automotive-compliant, qualified to AEC-Q101 Grade 1, is PPAP capable, and is manufactured in IATF16949:2016 certified facilities.



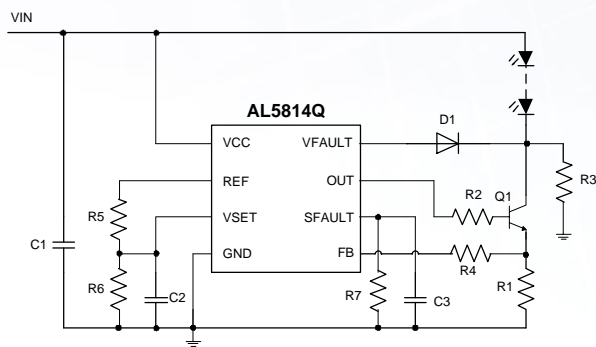
The Diodes Advantage

- **Input Voltage Range from 4.5V to 60V**
Supports wide-input voltage range for 12V/24V car batteries
- **Enhanced/Versatile Dimming Modes**
PWM dimming signal via VFAULT pin
Analog dimming via VSET pin
- **Configurable LED Current Setting for Better LED Control**
LED current foldback by NTC and resistor divider between REF and VSET pins
- **Up to 15mA Drive of External BJT/MOSFET**
Supports high-current and high-power linear LED applications
- **Robust Protections with Output Open Protection, Input Undervoltage Lockout, and Overtemperature Protection**
Reliable system performance

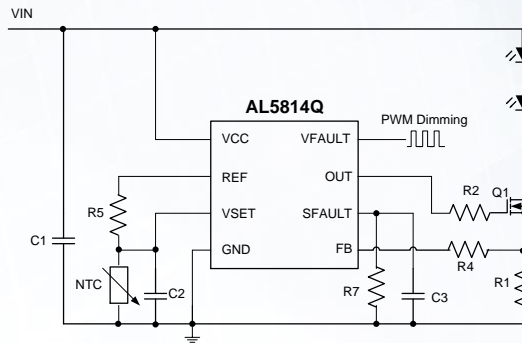
Applications

- Rear Light
- Interior Light
- Instrumentation Illumination
- Position Lamps
- Licence Plate Illumination

Typical Applications Circuits



AL5814Q BJT/Open LED Detection Application



AL5814Q Thermal Foldback/PWM Application

Product Portfolio

Part Number	Min. Input Voltage	Max. Input Voltage	Max. Output Current	Reference Voltage Accuracy	Operating Temp Range	Dimming Method		Package Outline
	V	V				Analog	PWM	
AL5809Q	2.5	60	150	5	-40 ~ +125	-	-	PowerDI123
AL5814Q	4.5	60	External BJT/ MOSFET	4	-40 ~ +125	Y	Y	MSOP-8EP
AL5816Q	4.5	60	External BJT/ MOSFET	4	-40 ~ +125	-	Y	SOT25
AL8400Q	2.2	18	External BJT/ MOSFET	3	-40 ~ +125	-	-	SOT353

Ordering Information

Part Number	Package Code	Packaging	13" Tape and Reel	
			Quantity	Part Number Suffix
AL5814QMP-13	MP	MSOP-8EP	2500/Tape & Reel	-13

For more information: <https://www.diodes.com/part/AL5814Q>