



New Product Announcement

AL5809Q

Simple Automotive Compliant Two-Terminal Constant Current Linear LED Driver

The AL5809Q is available in various fixed output current versions and provides a simple LED drive solution for Automotive lamps. The fixed output currents remove the need for external current-setting resistors,

The AL5809Q fixed output currents are 15mA, 20mA, 25mA, 30mA, 40mA, 50mA, 60mA, 90mA, 100mA, 120mA and 150mA; all with $\pm 5\%$ precision over a wide temperature range.

Its PowerDI[®]123 package is capable of dissipating up to 1.5W with excellent 20ppm/ $^{\circ}$ C temperature stability and high power supply rejection ratio.

All AL5809Q variants have been qualified to AEC-Q100 Grade 3 (Grade 1 planned for ≤ 50 mA variants).



The Diodes Advantage

Improved accuracy simple two-terminal fixed constant current linear solution with low BOM cost and small footprint.

- **Robust Power Package up to 1.5W for PowerDI123**
Extended power, dissipation-ambient temperature range
- **$\pm 5\%$ Accuracy over -40°C to $+150^{\circ}\text{C}$ Junction Temperature**
Provides high accuracy over wide lamp temperatures
- **2.5V to 60V Operating Voltage between Two Terminals**
Drives a large variety of LED chain lengths over wide operating voltage
- **Constant Current with Low Temperature Drift and High Power Supply Rejection Ratio**
Maintains accuracy and matching over wide range of conditions

Applications

- Automotive interior lamps
- Automotive Rear lamp cluster
- Automotive Instruments Backlighting

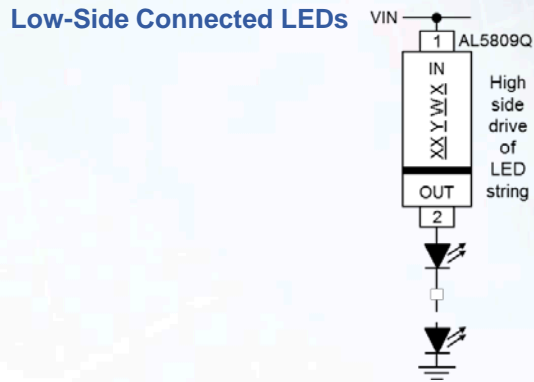
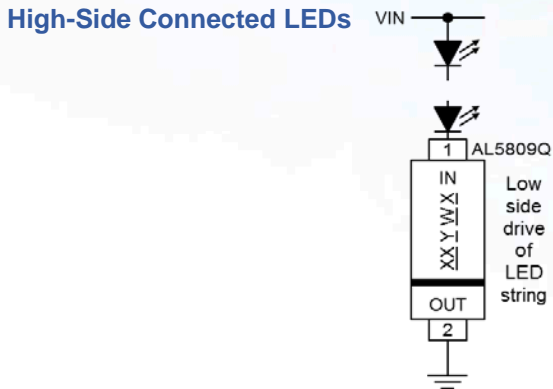
PowerDI[®] is a registered trademark of Diodes Incorporated



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Typical Application Schematics



Diodes Automotive Compliant Linear LED Drivers

Part Number	Qualified to AEC-Q10x	PPAP Capable	Min. Input Voltage	Max. Input Voltage	LED Channel Number	Max. Out put Voltage	Max. Out put Current	LED Current Accuracy	Dimming Method		Ambient Temperature °C	Package Outline
			V	V		V			mA	+/- %		
AL5801Q	Y	Y	5	100	1	100	560	-	-	Ext	-40 ~ +125	SOT26
AL5809Q	Y	Y	2.5	60	1	60	15~150	5	-	Ext.	-40 ~ +85 [‡]	POWERDI-123
AL8400Q	Y	Y	2.2	18	1	18	External BJT/MOS	3	-	Ext	-40 ~ +125	SOT353
BCR420UQ	Y	Y	1.4	40	1	40	350	-	-	No	-50 ~ +150	SOT26
BCR421UQ	Y	Y	1.4	40	1	40	350	-	-	Yes	-50 ~ +150	SOT26

[‡] Grade 3 AEC-Q100 ambient temperature range

Ordering Information

Device	LED Current	AEC-Q100 Grade	Packaging	Marking ID	Quantity
AL5809-15QP1-7	15mA	3	PDI123	C1	3,000
AL5809-20QP1-7	20mA	3	PDI123	C2	3,000
AL5809-25QP1-7	25mA	3	PDI123	CA	3,000
AL5809-30QP1-7	30mA	3	PDI123	C3	3,000
AL5809-40QP1-7	40mA	3	PDI123	C4	3,000
AL5809-50QP1-7	50mA	3	PDI123	C5	3,000
AL5809-60QP1-7	60mA	3	PDI123	C6	3,000
AL5809-90QP1-7	90mA	3	PDI123	C7	3,000
AL5809-100QP1-7	100mA	3	PDI123	CB	3,000
AL5809-120QP1-7	120mA	3	PDI123	C8	3,000
AL5809-150QP1-7	150mA	3	PDI123	C9	3,000

To find out more information:

Family page http://www.diodes.com/catalog/Linear_LED_Drivers_120

Datasheet: <http://diodes.com/datasheets/AL5809Q.pdf>