



New Product Announcement

AP4312Q

AP4312Q Automotive Grade Constant Voltage/ Constant Current Controller

The AP4312Q is an Automotive Compliant Constant-Voltage/ Constant Current controller that is AEC-Q100 grade 1 qualified.

It provides a highly integrated solution for switching and linear regulator applications that require: **Voltage regulation** with overcurrent protection or **Constant-current regulation** with overvoltage protection.

1. Highly integrated:

It contains two voltage references (1.21V and 70mV) and two operational amplifiers.

2. Voltage control loop:

one operational amplifier with a 1.21V voltage reference makes a simple voltage controller for use in battery chargers and DC-DC/linear regulators.

3. Current control loop :

The 2nd operational amplifier with the low 70mV voltage reference provides low-side current sensing for a simple output current limiter/regulator.

The AP4312Q is available in an industry standard SOT26 pin out and supports PPAP documentation.



The Diodes' Advantage

The AP4312Q provides a high-performance, cost-effective solution for automotive isolated DC-DC power supplies and Linear regulators.

■ Automotive Grade 1 with AEC-Q100 qualification

Supports PPAP documentation for ambient temperatures up to 125°C

■ Two control loops for voltage and current regulation:

Provides either

- a) Voltage regulation with overcurrent protection, or
- b) Current regulation with overvoltage protection

■ Two accurate references built-in

1.21V for voltage feedback loop,
70mV for current feedback loop → reduces power losses

■ Industry Standard SOT26 Pinout

Pin-to-pin to AP4305/AP4306

Applications

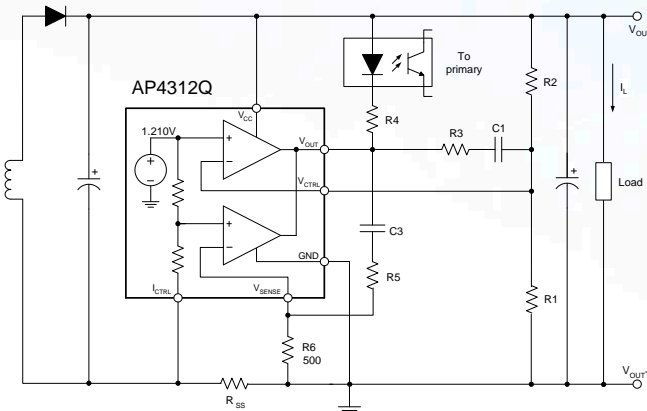
- Automotive adapters
- Automotive linear regulators
- Automotive phone chargers
- Automotive isolated power supplies



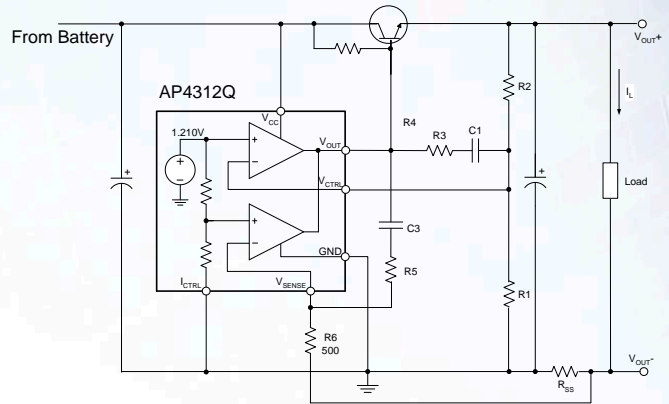
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Typical Application Schematic



Isolated Automotive Adapter



Application in Linear Regulator

Diodes' Automotive Grade Constant Voltage and Constant Current Controller

Part Number	Constant Voltage		Constant Current		MAX V_{CC} (V)	Supply Current (mA)	Package
	Reference Voltage (V)	Reference Tolerance (%)	VSENSE (mV)	VSENSE Tolerance (%)			
AP4312Q	1.21	± 0.5	70	± 3	18	0.18	SOT26

Ordering Information

Part Number	Operating Junction Temperature	Packaging	Marking ID	Packing
AP4312QK6TR-G1	-40 to +125	SOT26	GKD	3,000/Tape & Reel