



New Product Announcement

AP63356Q

AP63357Q

3.5A Automotive, High-Power Density, Feature-Rich Synchronous Buck Converters

The AP63356Q and AP63357Q are 3.5A, automotive-compliant, synchronous buck converters with a 3.8V to 32V input voltage range and are AEC-Q100 Grade 1 qualified. Their 74mΩ high-side and 40mΩ low-side power MOSFETs provide high-efficiency step-down DC-DC conversion.

The AP63356Q has a fixed 450kHz frequency, regardless of load for low output voltage ripple. The AP63357Q transitions to Pulse Frequency Modulation (PFM) at light-load, with up to 86% efficiency at 5mA load.

Both devices have a proprietary ringing-resistant switching-node gate driver without sacrificing the switching rise and fall times, reducing high-frequency radiated EMI noise. The devices feature Frequency Spread Spectrum (FSS) to further reduce EMI.

Both devices are available in the high-power density V-DFN3020-13 (SWP) package with wettable flanks, which has an optimized pin configuration to simplify PCB layout and reduce trace inductances.



The Diodes Advantage

The AP63356Q/AP63357Q provides high efficiency DC-DC conversion for automotive applications.

- **Automotive Compliant**
AEC-Q100 qualified, manufactured in IATF16949 certified sites supporting PPAP documents
- **VIN 3.8V to 32V. Withstands 40V, 400ms Input Surges**
Works across the full voltage range of automotive
- **Ringing resistant SW node at 4ns rise time with FSS**
Delivers low EMI designs
- **AP63356Q (PWM) fixed 450kHz switching frequency**
Excludes MW frequency band
- **AP63357Q (PFM) with 22μA low quiescent current**
Supports standby operation in permanently-on systems and delivers high light-load efficiency
- **Power-Good and Compensation Pins**
Provides design flexibility

Applications

- 12V Automotive Power Systems
- Automotive Infotainments
- Automotive Telematics
- Automotive Instrument Clusters
- Automotive Body Electronics and Lighting
- Advanced Driver Assistance Systems

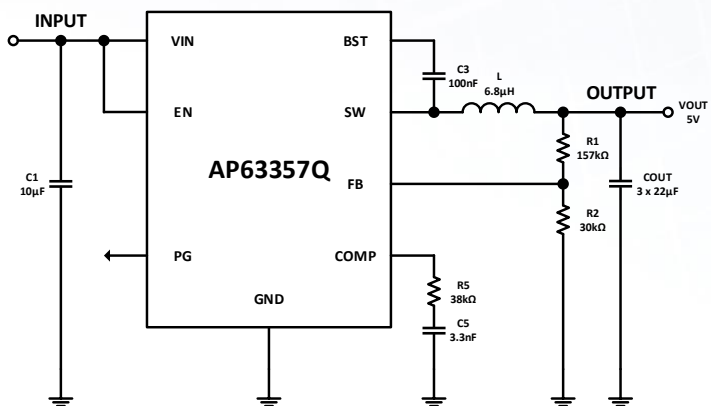


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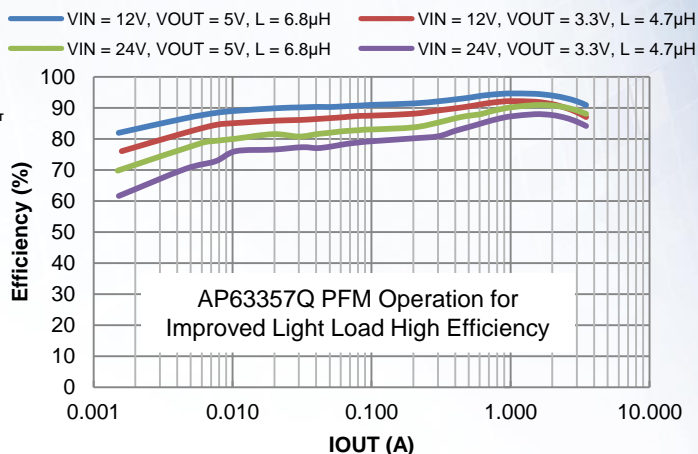
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Typical Application Circuit



Efficiency vs. Output Current



32V DC-DC Automotive Buck Converter Portfolio

Part Number	VIN Range (V)	VOUT Range (V)	IOUT (A)	HS / LS $R_{DS(ON)}$ (mΩ)	Operation Mode	I_Q (µA)	f_{sw} (kHz)	FSS	PG	Ambient Temperature (°C)	AEC-Q100 Grade	Package
AP63356Q	3.8 to 32	0.8 to VIN*	3.5	74 / 40	PWM Only	258	450	Yes	Yes	-40 to +125	1	V-DFN3020-13 (SWP)
AP63357Q					PFM/PWM	22						

*Devices have LDO Mode

To find out more information:

<https://www.diodes.com/part/AP63356Q>

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Ordering Information

Orderable Device	Package Code	Package	Identification Code	Reel Size	Tape Width	Quantity
AP63356QZV-7	ZV	V-DFN3020-13	K4Q	7 inches	12 millimeters	3000
AP63357QZV-7	ZV	V-DFN3020-13	K5Q	7 inches	12 millimeters	3000