



New Product Announcement

AP61300Q AP61302Q

5.5V, 3A, Low IQ, Automotive-Compliant, Synchronous Buck Converters in the Tiny SOT563

The DIODES™ AP61300Q and DIODES™ AP61302Q are automotive-compliant, 3A, synchronous buck converters with a wide input voltage range of 2.4V to 5.5V.

The devices integrate a 70mΩ high-side power MOSFET and a 50mΩ low-side power MOSFET to provide high-efficiency stepdown DC-DC conversion.

The AP61302Q has a power-good output that can be used in sequencing control applications.

They are easily used by minimizing the external component count due to its adoption of Constant On-Time (COT) control to achieve fast transient response, easy loop stabilization, and low output voltage ripple.

The AP61300Q/AP61302Q use their enable (EN) pin to select whether they work in a forced-PWM mode for all loads or switch to PFM at lighter loads.

Both devices are available in the SOT563 package and are pin-compatible with their 1A counterparts (AP61100Q/AP61102Q).

Automotive compliant – AEC-Q100 grade 1 qualified in IATF 16949 certified manufacturing sites and supports PPAP documentation

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The DIODES™ Advantage

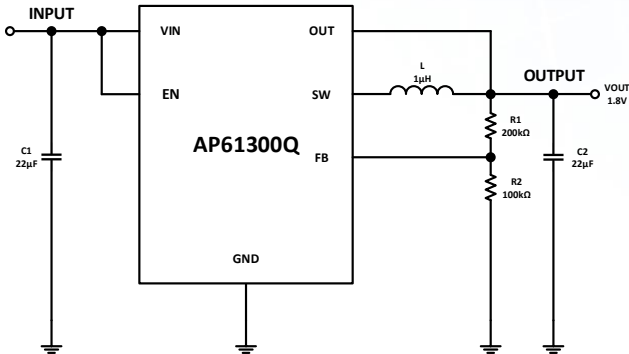
The AP61300Q and AP61302Q provide a high-efficiency, small foot-print, DC-DC buck converter solution for automotive applications.

- **PFM Mode: Higher Efficiency at Light Loads**
Provides 0.1µA shutdown current and a low 19µA quiescent current
- **High Design Flexibility**
 - Wide input range: 2.4V to 5.5V
 - Wide output voltage range: 0.6V to VIN
 - Multifunctional EN pin to control PFM and PWM operation modes
 - Built-in power-good output (AP61302Q)
- **High-Side and Low-Side Current-Sense Protection**
Improves design robustness by protecting both high-side and low-side switches
- **High 2.2MHz Switching Frequency**
Reduces the size and value of passive components while COT control minimizes external component count

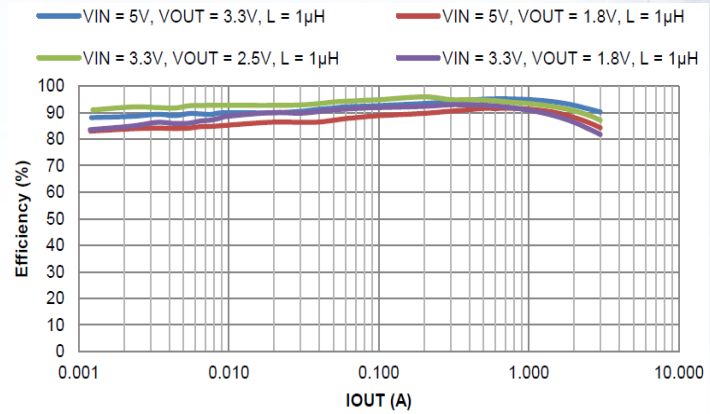
Automotive Applications

- 5V and 3.3V POL applications
- Infotainment
- Telematics
- Advanced driver assistance systems (ADAS)

Typical Application



Efficiency vs. Output Current



5V Automotive Compliant* DC-DC Buck Converter Portfolio

Part Number	VIN Range (V)	VOUT Range (V)	Output Current (A)	HS/LS R _{DS(on)} (mΩ)	Mode Prog.	Switching Frequency (MHz)	I _Q (µA)	Ambient Temperature (°C)	Power Good	Package
AP61300Q	2.4 – 5.5	0.6 – VIN	3	70 / 50	Yes	2.2	19	-40 to +125	No	SOT563
AP61302Q	2.4 – 5.5	0.6 – VIN	3	70 / 50	Yes	2.2	19	-40 to +125	Yes	SOT563
AP61100Q	2.3 – 5.5	0.6 – 3.6	1	110 / 80	Yes	2.2	15	-40 to +125	No	SOT563
AP61102Q	2.3 – 5.5	0.6 – 3.6	1	110 / 80	Yes	2.2	15	-40 to +125	Yes	SOT563

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Ordering Information

Orderable Part Number	Compliance (Only Automotive Supports PPAP)	Package Code	Package	Identification Code	Moisture Sensitivity	Reel Size	Tape Width	Quantity
AP61300QZ6-7	Automotive	Z6	SOT563	HPQ	MSL-1	7 inches	8mm	3000
AP61302QZ6-7	Automotive	Z6	SOT563	HRQ	MSL-1	7 inches	8mm	3000