

# Tiny 5.5V, 1A Synchronous Buck COT Converters for High-Efficiency Automotive Point of Load Applications

The AP61100Q and AP61102Q are 1A, automotive-compliant synchronous buck converters with a wide 2.3V to 5.5V input voltage range and are AEC-Q100 grade 1 qualified to provide high-efficiency step-down DC-DC conversion. Both devices integrate a 110mΩ high-side power MOSFET and an 80mΩ low-side power MOSFET.

The AP61100Q/AP61102Q can be set to operate in either Pulse Width Modulation (PWM) regardless of load for low output voltage ripple or Pulse Frequency Modulation (PFM) with up to 89% efficiency at 5mA light load.

The AP61100Q and AP61102Q both minimize external component count, due to their adoption of Constant On-Time (COT) control enabling them to achieve fast transient response, easy loop stabilization, and low output voltage ripple.

Both devices are available in the SOT563 package.



## The Diodes Advantage

**The AP61100Q and AP61102Q both provide a high efficiency, small foot-print DC-DC buck converter solution for automotive applications.**

- High Efficiency @ Light Loads**  
 0.1μA Shutdown Current  
 Low 15μA Quiescent Current in PFM Operation

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- High Design Flexibility**  
 Wide Input Voltage Range from 2.3V – 5.5V  
 Wide Output Voltage Range from 0.6V to 3.6V  
 Multifunctional EN Pin to Select PFM or PWM Operation Modes  
 Built-in PG with Internal Pull-Up Resistor (AP61102Q)

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- High Robustness**  
 Utilizes both High-side and Low-side Current Sense Protection

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- Compact Solution**  
 2.2MHz Fsw Allows the Use of Small Passive Components  
 COT Control Minimizes External Component Count

## Applications

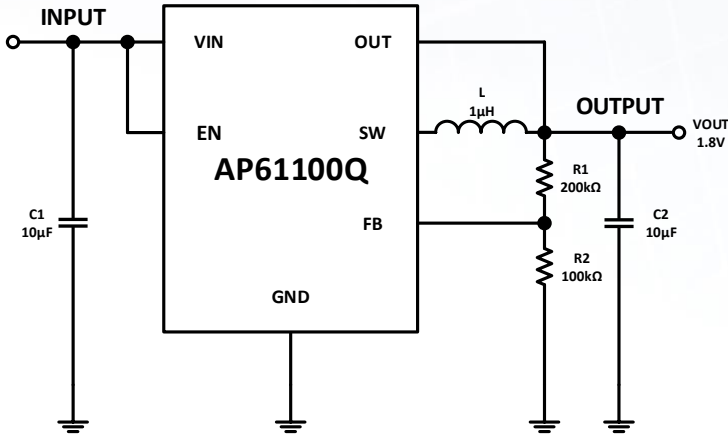
- Automotive 5-V and 3.3-V POL applications
- Automotive Infotainment
- Automotive Clusters
- Automotive Telematics
- Advanced Driver Assistance Systems



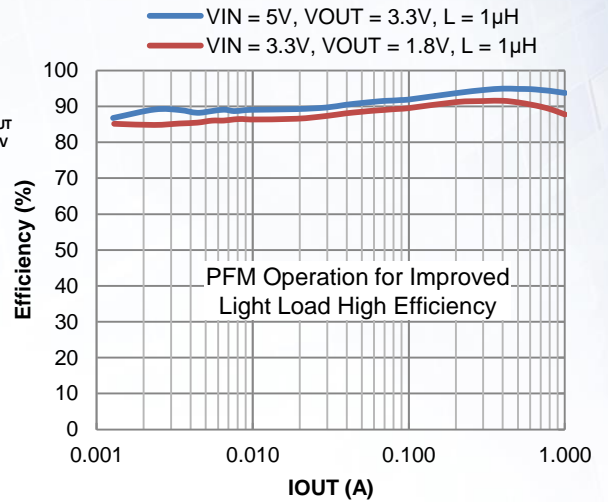
# New Product Announcement

## AP61100Q AP61102Q

### Typical Application Circuit



### Efficiency vs. Output Current



### Automotive 5.5V Input DC-DC Buck Converter Portfolio

Part Number	VIN Range (V)	VOUT Range (V)	Output Current (A)	HS / LS R <sub>DS(ON)</sub> (mΩ)	PWM/ PFM Mode	Switching Frequency (MHz)	I <sub>a</sub> (µA)	PG	Ambient Temperature (°C)	AEC-Q100 Grade	Package
AP61100Q	2.3 to 5.5	0.6 to 3.6	1	110 / 80	Adj by EN	2.2	15	No	-40 to +125	1	SOT563
AP61102Q								Yes			

To find out more information:

<https://www.diodes.com/part/AP61100Q>

<https://www.diodes.com/part/AP61102Q>

### Ordering Information

Orderable Device	Package Code	Package	Identification Code	Reel Size	Tape Width	Quantity
AP61100QZ6-7	Z6	SOT563	HJQ	7 inches	8 millimeters	3000
AP61102QZ6-7	Z6	SOT563	HKQ	7 inches	8 millimeters	3000