

Tiny 5.5V, 3A, Synchronous COT Buck Converter

The AP61300/AP61302 is a 3A, synchronous buck converter with a wide input voltage range of 2.4V to 5.5V. The device fully integrates a 70mΩ high-side power MOSFET and a 50mΩ low-side power MOSFET to provide high-efficiency step-down DC-DC conversion.

The AP61300/AP61302 can be set to operate in either Pulse Width Modulation (PWM) regardless of load or Pulse Frequency Modulation (PFM) with up to 84% efficiency at 5mA light load (5VIN, 1.8VOUT).

The AP61300/AP61302 device is 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 device is available in a SOT563 package.



The Diodes Advantage

The AP61300/AP61302 provides a high-efficiency DC-DC solution for general POL applications.

- High Efficiency @ Light Loads**
 - 0.1μA shutdown current
 - Low 19μA quiescent current in PFM Operation
- High Design Flexibility**
 - Wide input range from 2.4V – 5.5V
 - Wide Output Voltage range: 0.6V to VIN
 - Multifunctional EN Pin to Control PFM and PWM operation modes
 - Built-in PG with Internal 5MΩ Pull-Up Resistor (AP61302)
- High Robustness**
 - Utilizes both high-side and low-side current sense protection
- Ease of Layout Design**
 - 2.2MHz switching frequency allows the use of small passive
 - COT control minimizes external component count

Application(s):

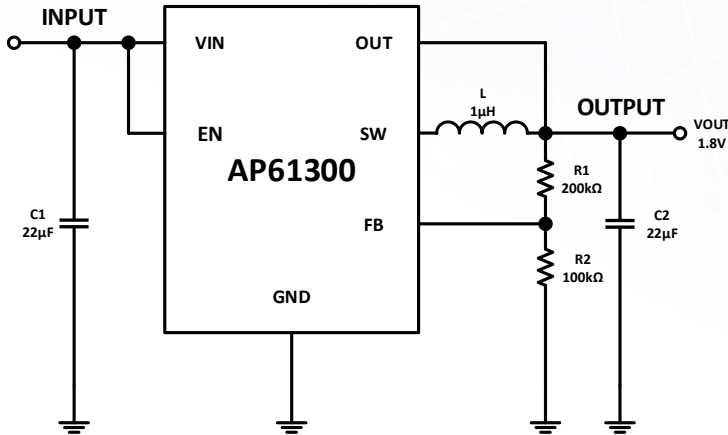
- 5V Distributed Power Bus Supplies
- White Goods and Small Home Appliances
- FPGA, DSP, and ASIC Supplies
- Network Video Cameras
- Wireless Routers
- Consumer Electronics



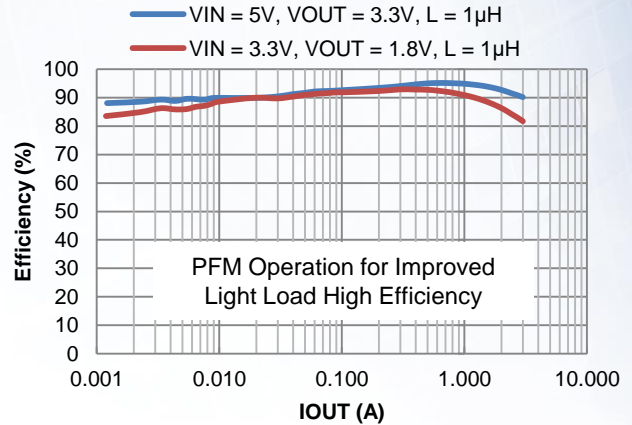
New Product Announcement

AP61300
AP61302

Typical Application Circuit



Efficiency vs. Output Current



5V DC-DC Buck Converter Portfolio

Part Number	VIN Range (V)	VOUT Range (V)	Output Current (A)	R _{DS(ON)} (mΩ) HS / LS	Mode Prog.	Switching Frequency (MHz)	I _q (µA)	Ambient Temperature (°C)	PG	Package
AP61300	2.4 – 5.5	0.6 – VIN	3	70 / 50	Yes	2.2	19	-40 to +85	No	SOT563
AP61302	2.4 – 5.5	0.6 – VIN	3	70 / 50	Yes	2.2	19	-40 to +85	Yes	SOT563
AP61100	2.3 – 5.5	0.6 – 3.6	1	110 / 80	Yes	2.2	15	-40 to +85	No	SOT563
AP61102	2.3 – 5.5	0.6 – 3.6	1	110 / 80	Yes	2.2	15	-40 to +85	Yes	SOT563

More information:

<https://www.diodes.com/part/AP61300>

<https://www.diodes.com/part/AP61302>

Ordering Information

Orderable Device	Package Code	Package	Identification Code	Reel Size	Tape Width	Quantity
AP61300Z6-7	Z6	SOT563	HP	7 inches	8 millimeters	3000
AP61302Z6-7	Z6	SOT563	HR	7 inches	8 millimeters	3000
AP61100Z6-7	Z6	SOT563	HJ	7 inches	8 millimeters	3000
AP61102Z6-7	Z6	SOT563	HK	7 inches	8 millimeters	3000