



# New Product Announcement

## AP61200/AP61201 AP61202/AP61203

## 2A, Synchronous, COT, Buck Converters for High-Efficiency, Low-Voltage Rail, Point-of-Load Conversion

The AP61200, AP61201, AP61202 and AP61203 are 2A, synchronous buck converters with a wide input voltage range of 2.3V to 5.5V. They integrate a 110mΩ high-side power MOSFET and an 80mΩ low-side power MOSFET to provide high-efficiency, step-down, DC-DC conversion.

The AP61200 and AP61202 implement pulse frequency modulation (PFM), delivering up to 89% efficiency at 5mA light load. The AP61201 and AP61203 operate in PWM for fast load transient responses and low ripple across all load conditions.

The AP61200, AP61201, AP61202, and AP61203 use constant on-time (COT) control to achieve fast transient response, easy loop stabilization, and low output voltage ripple while minimizing the external component count. They minimize external component count by adopting a peak current mode control and integrated loop compensation network, which simplifies layout design, supports a small form factor, and lowers solution costs.

The AP61202 and AP61203 have an undervoltage/overvoltage (UV/OV) power good (PG) output with internal 5MΩ pull-up resistor.

All devices are available in the small SOT563 package and are pin compatible with their 1A and 3A counterparts.



### The DIODES Advantage

The AP61200/AP61201/AP61202/AP61203 provide high-efficiency, small footprint, buck converter solutions for 5V, 3.3V, and Li-ion cell point-of-load (POL) applications.

- **Wide 2.3V-5.5V Input Range**  
Supports 5V, 3.3V, Li-ion cell and core-core voltage rail regulation
- **AP61200/AP61202 with PFM have Low 15µA Quiescent Current**  
Delivers highest efficiency across all load conditions
- **AP61201/AP61203 with PWM Deliver Low Output Ripple**  
Minimizes ripple across all load conditions
- **AP61201/AP61203 with Built-In ±5% PG Monitors**  
Provides system status feedback and can be used for sequencing control
- **High 1.3MHz (Nominal) Switching Frequency**  
Reduces the size and value of passive components, while COT control minimizes external component count

### Applications

- 5V distributed power bus supplies
- White goods and small home appliances
- FPGA, DSP, and ASIC supplies
- Network video cameras
- Wireless routers
- Consumer electronics
- General purpose point of loads

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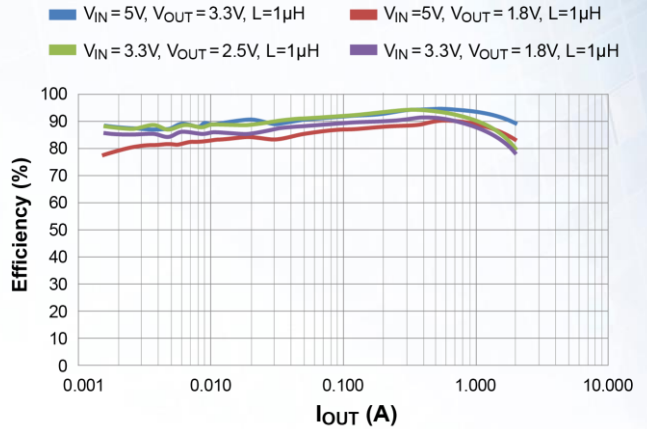
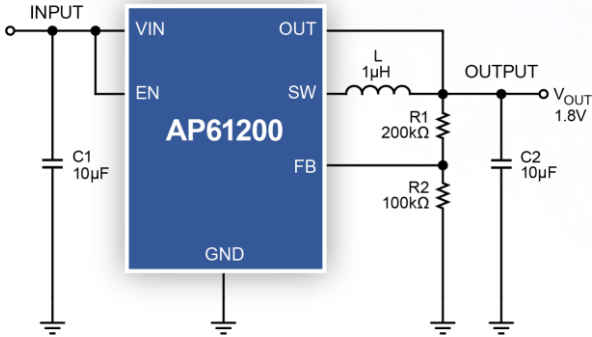
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## AP61200/AP61201 AP61202/AP61203

### Typical Application



### 5V DC-DC Buck Converter Portfolio

Part Number	V <sub>IN</sub> Range	V <sub>OUT</sub> Range	Output Current	R <sub>DS(ON)</sub> HS / LS	Mode	Power Good	Switching Frequency	I <sub>Q</sub>	Junction Temperature	Package
	V	V					MHz	µA	°C	
<a href="#">AP61100</a>	2.3 - 5.5	0.6 - 3.6	1	110 / 80	PFM or PWM	-	2.2	15	-40 to +125	SOT563
<a href="#">AP61102</a>	2.3 - 5.5	0.6 - 3.6	1	110 / 80	PFM or PWM	Y	2.2	15	-40 to +125	SOT563
<a href="#">AP61200</a>	2.3 - 5.5	0.6 - 3.6	2	110 / 80	PFM	-	1.3	19	-40 to +125	SOT563
<a href="#">AP61201</a>	2.3 - 5.5	0.6 - 3.6	2	110 / 80	PWM	-	1.3	19	-40 to +125	SOT563
<a href="#">AP61202</a>	2.3 - 5.5	0.6 - 3.6	2	110 / 80	PFM	Y	1.3	19	-40 to +125	SOT563
<a href="#">AP61203</a>	2.3 - 5.5	0.6 - 3.6	2	110 / 80	PWM	Y	1.3	19	-40 to +125	SOT563
<a href="#">AP61300</a>	2.3 - 5.5	0.6 - 3.6	3	70 / 50	PFM or PWM	-	2.2	15	-40 to +125	SOT563
<a href="#">AP61302</a>	2.3 - 5.5	0.6 - 3.6	3	70 / 50	PFM or PWM	Y	2.2	15	-40 to +125	SOT563

### Ordering Information

Orderable Part Number	Compliance (Only Automotive Supports PPAP)	Package	Moisture Sensitivity	Packing	
				Quantity	Carrier
<a href="#">AP61200Z6-7</a>	<a href="#">Standard</a>	SOT563	MSL-1	3,000	7" Tape & Reel
<a href="#">AP61201Z6-7</a>	<a href="#">Standard</a>	SOT563	MSL-1	3,000	7" Tape & Reel
<a href="#">AP61202Z6-7</a>	<a href="#">Standard</a>	SOT563	MSL-1	3,000	7" Tape & Reel
<a href="#">AP61203Z6-7</a>	<a href="#">Standard</a>	SOT563	MSL-1	3,000	7" Tape & Reel