



New Product Announcement

AP62500 AP62800

High-Efficiency 5A and 8A Synchronous Buck Converters Provide Flexibility and Simple Optimization of POL Designs

The AP62500 and AP62800 are high-efficiency 5A and 8A synchronous step-down DC-DC converters. By adopting constant on-time (COT) control, fast transient response and simple loop stabilization are achieved.

The AP62500 has a 4.5V to 18V input voltage range while the AP62800 operates from 4.5V to 17V. Both devices have adjustable output voltages down to 0.6V.

To help designers optimize performance, the AP62500 and AP62800 have three selectable switching frequencies along with three selectable operation modes. Additionally, their soft-start times can be adjusted to prevent start-up inrush currents while also supporting tracking functions.

Both buck converters include a full set of protection features to make the system more robust. This includes overcurrent protection, undervoltage lockout, and thermal shutdown.

The AP62500 and AP62800 are available in the very small V-QFN2030-12 (2mm x 3mm) and have the same pinout as the released AP62600.



The DIODES Advantage

The AP62500 and AP62800 provide highly efficient, flexible solutions for high-current point-of-load (POL) applications.

- **Selectable Switching Frequency: 400kHz/800kHz/1.2MHz**
Easily optimized for converter efficiency and solution size
- **Selectable Operation Modes: PFM/USM/PWM**
Pulse Frequency Modulation – increases light-load efficiency;
Ultrasonic Mode – avoids audible frequency range;
Pulse Width Modulation – reduces output voltage ripple
- **Adjustable Soft-Start and Tracking**
Reduces inrush current and supports various tracking capabilities (ratiometric, coincidental, and sequencing) required by modern systems
- **Tight $\pm 1\%$ V_{REF} Tolerance Across Industrial Temperatures**
Maintains accurate output voltage

Applications

- 5V and 12V input distributed power bus supplies
- FPGA, DSP, and ASIC supplies
- Television sets and monitors
- Home audio
- White goods and small home appliances
- Network systems
- Gaming consoles
- General purpose point of loads
- Consumer electronics

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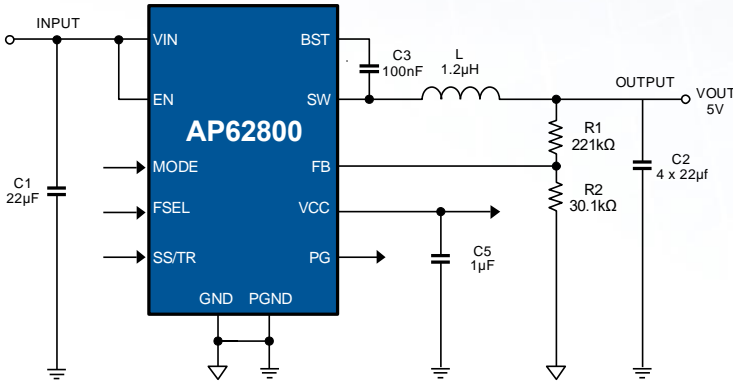


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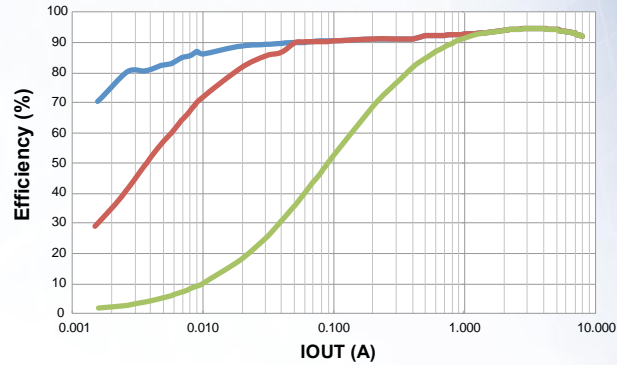
AP62500

AP62800

Typical Application



High Efficiency



12V-Rail, High-Current DC-DC Buck Converter Portfolio

Part Number	V _{IN} Range	V _{OUT} Range	Output Current	R _{DS(ON)} HS / LS	Switching Frequency	I _q	Junction Temperature	Package
	V	V		mΩ		kHz	µA	
AP62500	4.5 - 18	0.6 - 7	5	47 / 18	400/800/1200	195	-40 to +125	V-QFN2030-12 (Type A)
AP62800	4.5 - 17	0.6 - 7	8	22 / 10	400/800/1200	195	-40 to +125	V-QFN2030-12 (Type A)
AP62600	4.5 - 18	0.6 - 7	6	36 / 14	400/800/1200	360	-40 to +125	V-QFN2030-12 (Type A)

Ordering Information

Orderable Part Number	Compliance (Only Automotive Supports PPAP)	Package	Identification Code	Moisture Sensitivity	Packing	
					Quantity	Carrier
AP62500SJ-7	Standard	V-QFN2030-12 (Type A)	KA	MSL-1	3,000	7" Tape & Reel
AP62800SJ-7	Standard	V-QFN2030-12 (Type A)	KD	MSL-1	3,000	7" Tape & Reel