New Product Announcement

AP72250

Synchronous Boost Converter with Ultra-Low Input Voltage Enables 5A Switch Current

The DIODES™ AP72250 is a high-current, synchronous boost converter providing high efficiency, excellent transient response, and high output voltage accuracy suitable for low-voltage fuel cells and other handheld devices.

The AP72250 utilizes two low $R_{DS(ON)}$ switches to support synchronous boost typology and generates output voltages across 1.7V to 5.5V from a wide range of input sources. It provides at least 2A output current for an output voltage of 5.2V across an input voltage range of 3V to 5V.

The device's high-side FET's body diode connects to either its VIN or its DRAIN, enabling both output short-circuit protection as well as a high-impedance path between VIN and VOUT during a fault or disabled state.

The AP72250's current control scheme utilizes fewer external components to deliver wide input- and output-voltage boost ratios, provide outstanding performance in line/load transient responses, and accommodate a seamless transition between boost and pass-through modes.

Protection features include undervoltage lockout (UVLO) protection, overtemperature protection (OTP), and overcurrent protection (OCP) to protect the circuit.

Packaged in the tiny X1-WLB1713-12 (1.6mmx1.2mm), the AP72250 provides a simplified high-power density boost solution.

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The DIODES™ Advantage

The AP72250 provides high-efficiency DC-DC boost conversion in low input voltage applications.

- **Wide 0.6V to 5.5V Input Voltage Range**
  Works across various battery-type voltage ranges
- **Wide 1.7V to 5.5V Output Voltage Range**
  Boosts standard voltage ranges and supports input pass-through mode
- **Power Good (PG) Indicator with 5MΩ Internal Pull-Up**
  Indicates output voltage status with reduced component count
- **Wide Protection Feature Set: Overcurrent, Short-Circuit, and Overtemperature Protections with UVLO and True Output-Load Disconnect from Input**
  Enhances reliability under normal and fault conditions

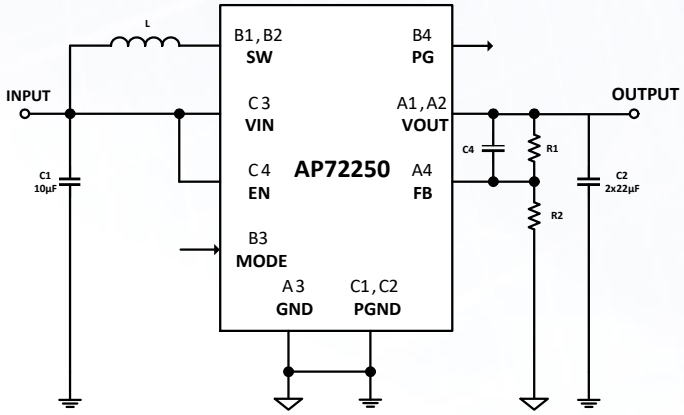
Applications

- Low-voltage fuel cells
- Portable consumer devices
- USB power supplies
- Power banks
- Industrial metering

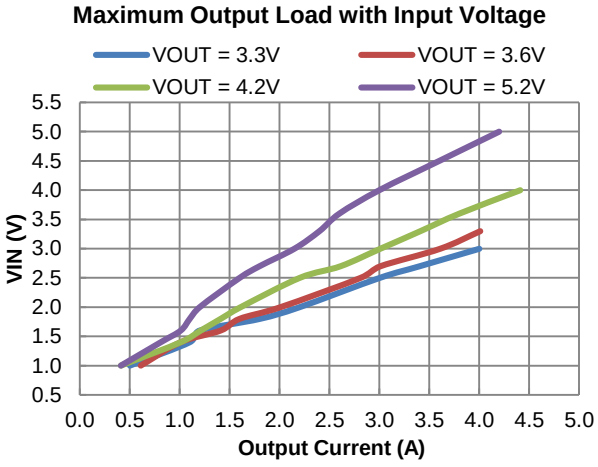
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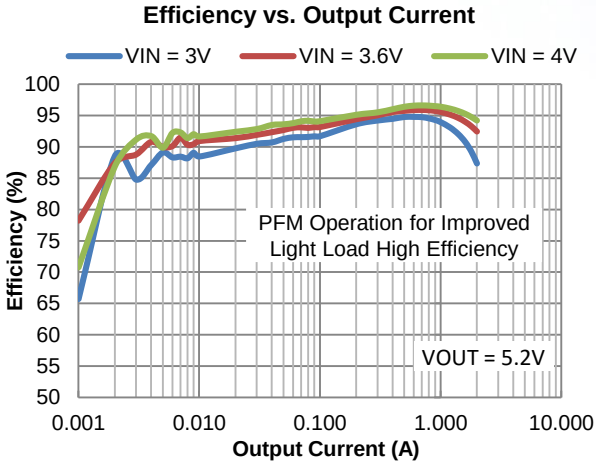
AP72250

Typical Circuit Configuration



Key Characteristics





Electrical Specification

Part Number	Input Voltage Range (V)	Output Voltage Range (V)	Maximum Output Voltage (V)	RDS(on) (mΩ)		Quiescent Current (mA)	Shutdown Current (µA)	Output Current (mA)	Switching Frequency (Hz)	Efficiency (%)	Package
				HS	LS						
AP72250	0.6 to 5.5	1.7 to 5.5	5.5	20	26	20	2.5	2000	900	97	X1-WLB1713-12

Ordering Information

Orderable Part Number	Package Code	Package	Moisture Sensitivity	Carrier	Tape Width (mm)	Quantity
AP72250CJ12-7	CJ12	X1-WLB1713-12	MSL-1	7” Tape & Reel	12	3,000