



New Product Announcement

AP63356
AP63357

32V/3.5A High Power Density, Synchronous Buck Converters for Industrial PoL Applications with Unique Noise Reduction Features

The AP63356 and AP63357 are 3.5A, synchronous buck converters with a 3.8V to 32V input voltage with power-good (PG) and external compensation.

Their 74m Ω high-side and 40m Ω low-side power MOSFETs provide high efficiency step-down DC-DC conversion. For optimized light-load efficiency, the AP63357 operates in Pulse Frequency Modulation (PFM) with up to 86% efficiency at 5mA load. For the lowest output voltage ripple, the AP63356 operates in Pulse Width Modulation (PWM) with fixed 450kHz frequency, regardless of load.

Both devices have a proprietary ringing resistant switching-node gate driver without sacrificing the switching rise and fall times, reducing high-frequency radiated EMI noise. The devices feature Frequency Spread Spectrum (FSS) to further reduce EMI.

Both devices have the same pinout in the high-power density V-DFN3020-13 package, which has an optimized pin configuration to simplify PCB layout and reduces trace inductances.



The Diodes Advantage

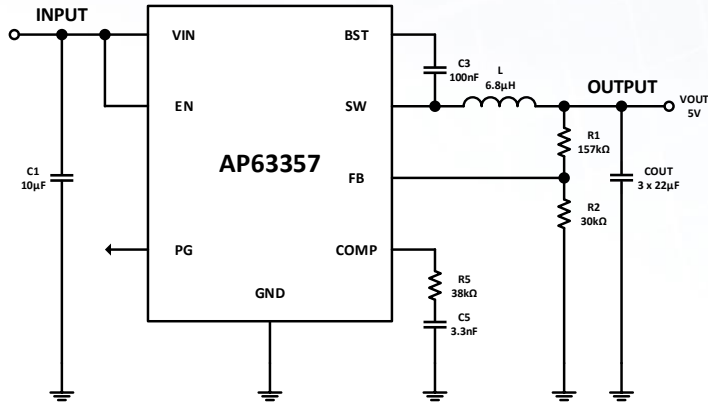
The AP63356/AP63357 provides high efficiency DC-DC conversion for industrial PoL applications.

- **AP63357 PFM Operation Delivers High Efficiency at Light Loads**
 - Low 22 μ A quiescent current and up to 86% efficiency at 5mA load
 - 1 μ A shutdown current
- **High Design Flexibility**
 - Wide input range: 3.8V to 32V
 - Wide output voltage range: 0.8V to near 100% of VIN (LDO Mode)
 - Optional external compensation setting for tuning loop response
 - Built-In PG with internal 5M Ω pull-up resistor for power sequencing
- **High Robustness**
 - Withstands 40V, 400ms input surges
- **Ease of Layout Design**
 - Optimized switching loop

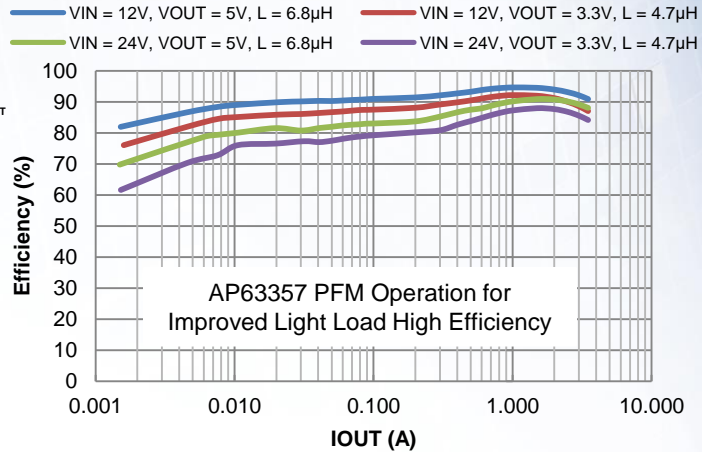
Applications

- 12V and 24V Industrial Distributed Power Buses
- Power Tools
- White Goods and Small Home Appliances
- Home Audio Systems
- Network Systems

Typical Application Circuit



Efficiency vs. Output Current



32V DC-DC Buck Converter Portfolio

Part Number	VIN Range (V)	VOUT Range (V)	Output Current (A)	HS / LS R _{DS(ON)} (mΩ)	Operation Mode	I _Q (µA)	Switching Frequency (kHz)	FSS	Features	Package
AP63356	3.8 to 32	0.8 to VIN	3.5	74 / 40	PWM Only	258	450	Yes	EN, PG, Optional Ext. Compensation	V-DFN3020-13
AP63357					PWM / PFM	22		Yes		
AP63300	3.8 to 32	0.8 to VIN	3	75 / 40	PWM / PFM	22	500	Yes	EN	TSOT26
AP63301					PWM Only	280		No		
AP63200	3.8 to 32	0.8 to VIN	2	125 / 68	PWM / PFM	22	500	Yes	EN	TSOT26
AP63201					PWM Only	258		No		
AP63203		3.3			PWM / PFM	22	1100	Yes		
AP63205		5.0			PWM / PFM	22		Yes		

To find out more information:

<https://www.diodes.com/part/AP63356>

<https://www.diodes.com/part/AP63357>

Ordering Information

Orderable Device	Package Code	Package	Identification Code	Reel Size	Tape Width	Quantity
AP63356DV-7	DV	V-DFN3020-13	J4	7 inches	12 millimeters	3000
AP63357DV-7	DV	V-DFN3020-13	J5	7 inches	12 millimeters	3000