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 74mΩ high-side and 40mΩ 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 22µA quiescent current and up to 86% efficiency at 5mA load
  - 1µA 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 5MΩ 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
### New Product Announcement

**AP63356**  
**AP63357**

#### Typical Application Circuit

![Typical Application Circuit](image)

#### Efficiency vs. Output Current

**AP63357 PFM Operation for Improved Light Load High Efficiency**

#### 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 
<table>
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<td>0.8 to VIN</td>
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<td>0.8 to VIN</td>
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To find out more information:

- [https://www.diodes.com/part/AP63356](https://www.diodes.com/part/AP63356)  
- [https://www.diodes.com/part/AP63357](https://www.diodes.com/part/AP63357)

#### Ordering Information

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<th>Orderable Device</th>
<th>Package Code</th>
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