



# New Product Announcement

## AP66200

## AP66300

### 60V, 2A/3A, Synchronous Buck Converters Deliver High Efficiency in Point-of-Load Applications

The AP66200 and AP66300 are 2A/3A, synchronous buck converters with a wide input voltage range of 3.8V to 60V. The device fully integrates a 185mΩ high-side power MOSFET and an 80mΩ low-side power MOSFET to provide highly efficient step-down DC-DC conversion. This efficiency is further enhanced using the bias feature, which converts power as high as 95% and makes the AP66200 and AP66300 well suited for point-of-load (PoL) applications.

They minimize external component count by adopting peak current mode control, along with integrated loop compensation network.

Both devices have an adjustable switching frequency, up to 2.5MHz, that can also be synchronized to an external clock. Their synchronization pin is multifunctional and allows the control to operate in PFM for high light-load efficiency or PWM for low output ripple. Other features include adjustable soft-start to reduce inrush current, and tracking for power sequencing.

The AP66200 and AP66300 designs are optimized for reducing electromagnetic interference (EMI). The devices simplify board layout and reduce space requirements with their high level of integration and minimal need for external components, making them ideal for distributed power architectures.

They are available in the U-QFN4040-16/SWP (Type UXB) package.

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#### The DIODES Advantage

**The AP66200 and AP66300 provide high-efficiency DC-DC conversion for industrial applications and solar panels.**

- **Wide 3.8V to 60V Input Voltage Range**  
Particularly suited for the industrial voltage range
- **High Switching Frequency from 300kHz to 2.5MHz**  
Delivers high efficiency and reduced footprint solutions
- **Low (43μA) Quiescent Current (I<sub>Q</sub>) and 2.2μA Shutdown Current**  
Enables systems to improve high light-load efficiency
- **Enhanced Efficiency Mode Feature**  
Reduces internal power dissipation up to 550mW
- **Selectable Operation Modes: PFM/PWM**  
Pulse frequency modulation increases light-load efficiency; pulse width modulation supports low output voltage ripple
- **Programmable Soft-Start with Tracking**  
Reduced inrush current with various tracking capabilities (Sequential, Ratiometric, or Absolute)
- **Tight V<sub>REF</sub> Tolerance**  
±1% across industrial temperatures

#### Applications

- General-purpose point-of-load DC/DC power conversion
- Telecommunication systems
- Distributed power supplies
- Home audio devices
- Consumer electronics
- Network supplies
- FPGA, DSP, and ASIC supplies
- Solar panels

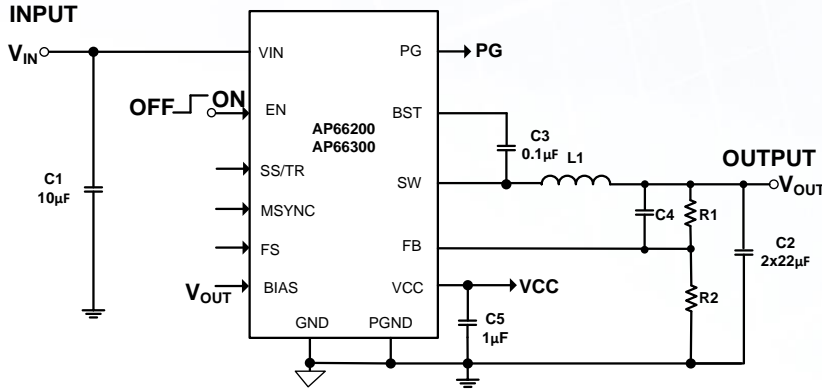


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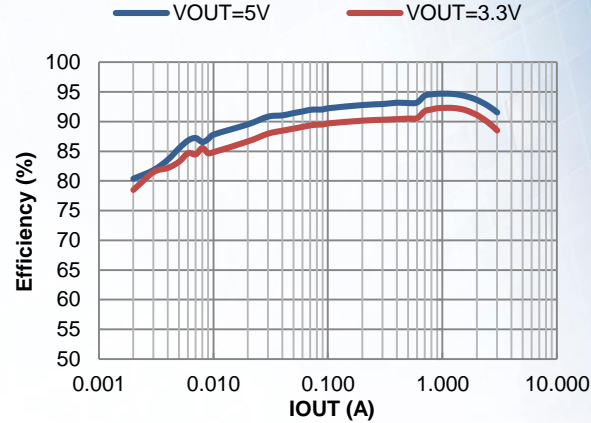
## AP66200

## AP66300

### Typical Application



### Efficiency vs. Load



## 40V - 60V High-Voltage Buck Converter Portfolio

Part Number	V <sub>IN</sub> Range	V <sub>OUT</sub> Range	Output Current	HS / LS R <sub>DS(ON)</sub>	Switching Frequency	I <sub>Q</sub>	Key Features				Junction Temperature	Package
	V	V					µA	Adj. f <sub>sw</sub>	Ext. Sync.	Ext. Comp.		
<a href="#">AP66200</a>	3.8 - 60	0.8 - 50	2.0	185 / 80	300 - 2,500	40	Y	Y	Y	Y	-40 to +125	U-QFN4040-16/SWP (Type UXB)
<a href="#">AP66300</a>			3.0	120 / 55		43	Y	Y	Y	Y		
<a href="#">AP64060</a>	4.5 - 40	0.8 - 24	0.60	600 / 300	2,200	90	-	-	-	-	-40 to +125	TSOT26
<a href="#">AP64100</a>	3.8 - 40	0.8 - V <sub>IN</sub>	1.0	150 / 80	100 - 2,200	25	Y	Y	Y	-	-40 to +125	SO-8EP
<a href="#">AP64102</a>							Y	Y	-	Y		
<a href="#">AP64200</a>	3.8 - 40	0.8 - V <sub>IN</sub>	2.0	150 / 80	100 - 2,200	25	Y	Y	Y	-	-40 to +125	SO-8EP
<a href="#">AP64202</a>							Y	Y	-	Y		
<a href="#">AP64350</a>	3.8 - 40	0.8 - V <sub>IN</sub>	3.5	75 / 45	100 - 2,200	22	Y	Y	Y	-	-40 to +125	SO-8EP
<a href="#">AP64351</a>							-	-	Y	Y		
<a href="#">AP64352</a>							Y	Y	-	Y		
<a href="#">AP64500</a>	3.8 - 40	0.8 - V <sub>IN</sub>	5.0	45 / 20	100 - 2,200	25	Y	Y	Y	-	-40 to +125	SO-8EP
<a href="#">AP64501</a>							-	-	Y	Y		
<a href="#">AP64502</a>							Y	Y	-	Y		

### Ordering Information

Orderable Part Number	Package Code	Package	Moisture Sensitivity	Packing	
				Quantity	Carrier
<a href="#">AP66200QFVBW-13</a>	FVBW	U-QFN4040-16/SWP (Type UXB)	MSL-1	3,000	13" Tape & Reel
<a href="#">AP66300QFVBW-13</a>	FVBW	U-QFN4040-16/SWP (Type UXB)	MSL-1	3,000	13" Tape & Reel