

## Family of 18V Synchronous DC-DC Buck Converters for Consumer and Industrial Applications

The AP62xxx family of high-efficiency synchronous step-down DC-DC converters includes the AP62250 (2.5A), AP62300 (3A), AP62301 (3A), and AP62300T (3A). The devices operate from a 4.2V to 18V input voltage range supporting 5V and 12V power rails.

All members of the family have an adjustable output voltage range of  $V_{REF}$  to 7V, where  $V_{REF}$  is 0.763V for the AP62300T and 0.8V for the other parts. The AP62250 has a higher 1.3MHz operating switching frequency whereas all others have switching frequencies at 750kHz.

The AP62301 operates only in PWM mode regardless of load. The other members of this family operate in PFM at light loads to increase efficiency.

These buck converters include a full protection feature set that make the system more robust including overcurrent protection, undervoltage lockout, and thermal shutdown.

The AP62300T is available only in the TSOT26 package. All other devices are pin compatible with each other and are available in both SOT563 and TSOT26 packages.



### The Diodes Advantage

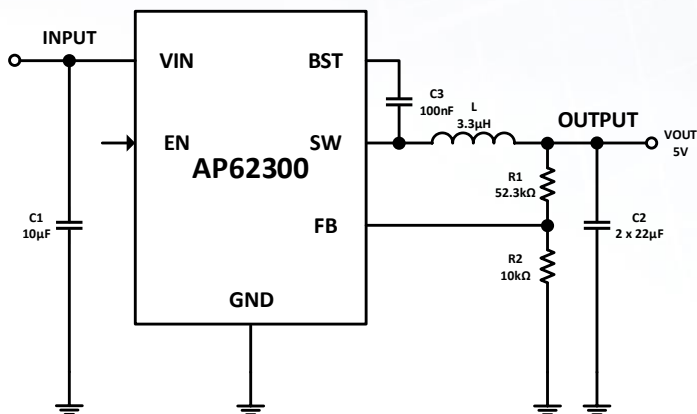
#### A Broad Portfolio of High Efficiency DC-DC Converters that Provide High Design Flexibility

- **4.2V to 18V Operating Voltage Range**  
Works across the full 5V~12V range of appliance and consumer electronics applications
- **Built-in Current Source on EN Pin**  
Supports automatic start-up, UVLO threshold adjust, and sequencing
- **Internal 2.5ms Soft-start Time**  
Reduces start-up inrush currents
- **Constant On-Time (COT) Control**  
Provides fast transient response and eases loop stabilization
- **Pin Compatibility Among Versions in SOT563 & TSOT26 Packages**  
Simple PCB layout with design flexibility

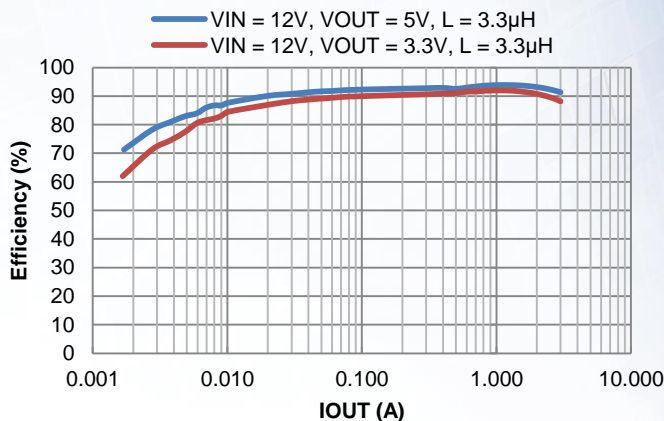
### Applications

- 5V and 12V Distributed Power Bus Supplies
- Flat Screen TV Sets and Monitors
- Set-top Boxes and Gaming Consoles
- Home Appliances and Home Audio Systems
- Servers, Cloud Computing, and Storage
- Network Systems

### Typical Application Circuit



### Efficiency vs. Output Current



### Product Portfolio

Part Number	VIN Range (V)	VOUT Range (V)	Output Current (A)	R <sub>DS(ON)</sub> (mΩ) HS / LS	Switching Frequency (kHz)	Mode	I <sub>a</sub> (µA)	Ambient Temperature (°C)	Package(s)
AP62250	4.2 – 18	0.8 – 7	2.5	75 / 45	1300	PFM/PWM	155	-40 to +85	SOT563/TSOT26
AP62300	4.2 – 18	0.8 – 7	3	75 / 45	750	PFM/PWM	155	-40 to +85	SOT563/TSOT26
AP62301	4.2 – 18	0.8 – 7	3	75 / 45	750	PWM Only	155	-40 to +85	SOT563/TSOT26
AP62300T	4.2 – 18	0.763 – 7	3	75 / 45	750	PFM/PWM	275	-40 to +85	TSOT26

To find out more information:

<https://www.diodes.com/part/AP62250>

<https://www.diodes.com/part/AP62300>

<https://www.diodes.com/part/AP62301>

<https://www.diodes.com/part/AP62300T>

### Ordering Information

Orderable Device	Package Code	Package	Identification Code	Reel Size	Tape Width	Quantity
AP62250Z6-7	Z6	SOT563	HG	7 inches	8 millimeters	3000
AP62250WU-7	WU	TSOT26	HH	7 inches	8 millimeters	3000
AP62300Z6-7	Z6	SOT563	HE	7 inches	8 millimeters	3000
AP62300WU-7	WU	TSOT26	HF	7 inches	8 millimeters	3000
AP62301Z6-7	Z6	SOT563	HX	7 inches	8 millimeters	3000
AP62301WU-7	WU	TSOT26	HY	7 inches	8 millimeters	3000
AP62300TWU-7	WU	TSOT26	TP	7 inches	8 millimeters	3000