

AS7620

500mA Hysteretic High Voltage Step-Down Converter with Dual Power Monitor

1 General Description

The AS7620 is an easy-to-use, high-efficiency, high-voltage, hysteretic step-down DC-DC converter, operating in asynchronous mode. Its low-power architecture extends hold-up time in battery-backed and critical applications where maximum up-time over a wide input supply voltage range is needed, while still providing for high efficiencies of up to 90% during peak current demands.

Although the AS7620 is optimized for 24V applications found in industrial and medical systems, its ability to support 100% Duty Cycle makes the AS7620 ideal for applications demanding maximum up-time and soft power fail behavior. In combination with low idle current of only 30 μ A, on-demand switching reduces operating current at low load currents.

By selecting an appropriate inductor value, operating current can be lowered and switching frequencies tuned to certain load conditions.

A pin-strapped current limit input minimizes inductor peak current and thus inductor size and cost for any given application.

The device further includes output short-circuit protection and thermal shutdown. In shutdown mode, only 1 μ A (typ) of current is consumed.

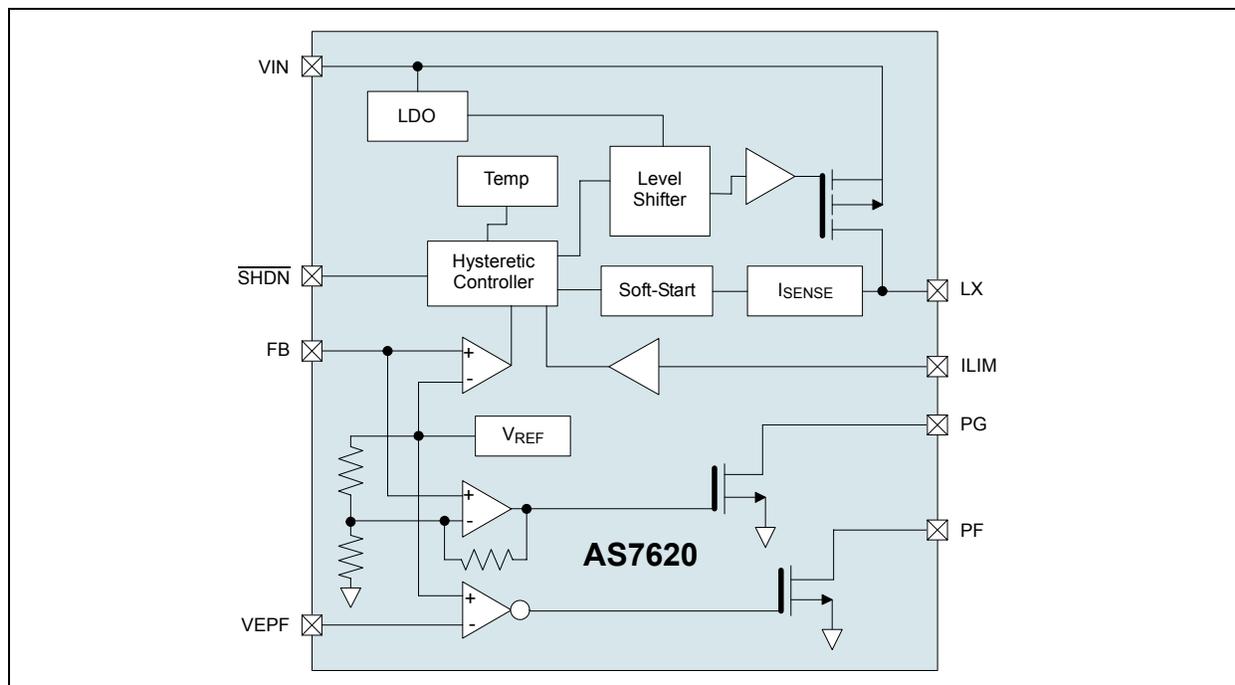
2 Key Features

- Low quiescent current for efficient partial load operation
- Wide Supply Voltage Range, 3.6V to 32V
- 100% Duty Cycle extends operating range
- Pin-programmable cycle-by-cycle current limit
- Integrated PMOS eliminates bootstrap capacitor
- Resistor-programmable Early Power Fail Warning Input
- Power-Good Flag
- Thermal Shutdown
- Fixed 3.3V and adjustable output (1.2V to V_{IN})
- Small 4x4mm 12-Lead MLPQ Enhanced Power Package
- Specified from -40°C to +125°C junction and 85°C maximum ambient temperatures

3 Applications

The AS7620 is suitable for Industrial 24VDC applications like PLCs, robotics; Home Security and Building Control applications; Solid-state utility meters; Signage and LED column power; and Sensor interfaces.

Figure 1. Block Diagram



Copyrights

Copyright © 1997-2008, austriamicrosystems AG, Schloss Premstaetten, 8141 Unterpremstaetten, Austria-Europe. Trademarks Registered ®. All rights reserved. The material herein may not be reproduced, adapted, merged, translated, stored, or used without the prior written consent of the copyright owner.

All products and companies mentioned are trademarks or registered trademarks of their respective companies.

Disclaimer

Devices sold by austriamicrosystems AG are covered by the warranty and patent indemnification provisions appearing in its Term of Sale. austriamicrosystems AG makes no warranty, express, statutory, implied, or by description regarding the information set forth herein or regarding the freedom of the described devices from patent infringement. austriamicrosystems AG reserves the right to change specifications and prices at any time and without notice. Therefore, prior to designing this product into a system, it is necessary to check with austriamicrosystems AG for current information. This product is intended for use in normal commercial applications. Applications requiring extended temperature range, unusual environmental requirements, or high reliability applications, such as military, medical life-support or life-sustaining equipment are specifically not recommended without additional processing by austriamicrosystems AG for each application. For shipments of less than 100 parts the manufacturing flow might show deviations from the standard production flow, such as test flow or test location.

The information furnished here by austriamicrosystems AG is believed to be correct and accurate. However, austriamicrosystems AG shall not be liable to recipient or any third party for any damages, including but not limited to personal injury, property damage, loss of profits, loss of use, interruption of business or indirect, special, incidental or consequential damages, of any kind, in connection with or arising out of the furnishing, performance or use of the technical data herein. No obligation or liability to recipient or any third party shall arise or flow out of austriamicrosystems AG rendering of technical or other services.



Contact Information

Headquarters

austriamicrosystems AG
A-8141 Schloss Premstaetten, Austria

Tel: +43 (0) 3136 500 0
Fax: +43 (0) 3136 525 01

For Sales Offices, Distributors and Representatives, please visit:

<http://www.austriamicrosystems.com/contact>