

HL7507

3MHz 1.5A Buck Converter

Overview

The HL7507 is a synchronous buck converter optimized to supply different sub systems of portable applications. Its input voltage range is 2.5-5.5V. Its output voltage is a factory pre-set value and 2 optional output ranges are available for various application fields.

The HL7507 can deliver up to 1.5A while maintaining over 80% efficiency at load currents as low as 10mA. It operates at a high frequency of 3MHz, which greatly reduces the value of the external components. A wide range of output capacitors can be used to optimize VOUT stability during load transients. The inductors from 0.33 μ H to 1.0 μ H may be used without affecting loop stability.

At moderate to light loads, the pulse frequency modulation (PFM) is used to maintain conversion efficiency with a typical non-switching quiescent current of 42 μ A. Even with such a low quiescent current, the HL7507 maintains excellent load and line transient responses. At higher loads, the system automatically switches to fixed-frequency pulse width modulation (PWM) operation at 3MHz for minimum VOUT ripple and optimal load transient response. In shutdown mode, the supply current drops below 1 μ A and reduces a power consumption. The PFM mode can be disabled if needed by setting MODE pin high.

The HL7507 can also synchronize to an external clock signal at MODE pin if it is qualified to have the correct frequency value around 1.5MHz.

The HL7507 is available in a 1.6mm x 1.6mm DFN-6 package.

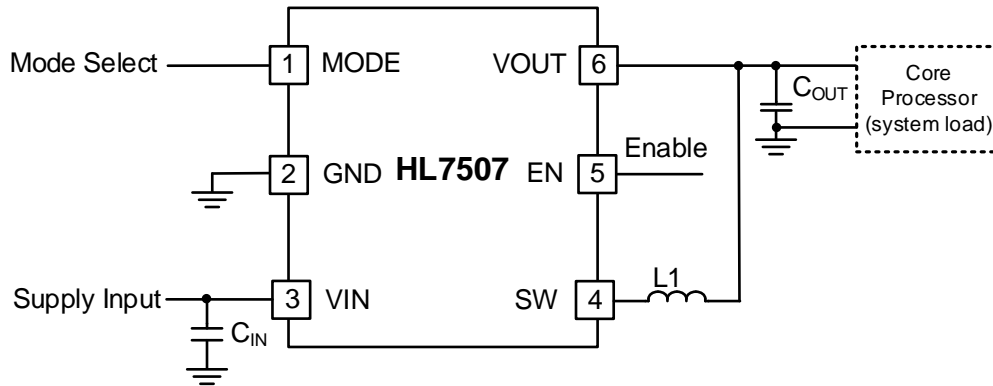
Features

- Input voltage ranges: 2.5-5.5V
- Output voltage ranges: 0.3-2.75V
- Factory programmable fixed output voltage
- Maximum output current: 1.5A
- 3MHz PWM with seamless PWM/PFM switching for light-load efficiency
- Excellent load and line transient
- Quiescent current in PFM tristate: 42 μ A
- Comprehensive protections
 - Input under-voltage lockout (UVLO)
 - Over-current and short-circuit protections
 - Thermal shutdown
- 1.6mm x 1.6mm DFN-6 package

Applications

- Memory, Hard Disk Drive, and SSD
- Data Cards
- Smartphones
- Tablets
- Handheld Devices

Simplified Application Diagram



Ordering Information

Part Number	Default VOUT	Max Load Current	Package	Packing Method
HL7507FN00	0.600V	1.5A	DFN-6	Tape & Reel
HL7507FN01	1.100V	1.5A		
HL7507FN02	1.800V	1.5A		
HL7507FN03	1.200V	1.5A		
HL7507FN04	1.225V	1.5A		
HL7507FN05	2.200V	1.5A		
HL7507FN06	0.900V	1.5A		
HL7507FN07	1.350V	1.5A		

Important Notice

Halo Microelectronics reserves the right to modify, improve, and terminate its products, services, documentations, etc. without advance notice. Customers are encouraged to contact Halo Microelectronics sales representatives to get the latest product information.

Without proper legal authorization, Halo products shall not be used for medical or military applications. Halo Microelectronics does not assume any liability of personal or property damages of any kind due to such applications.

All text, images, trademarks of this document, and any intellectual property contained in the product and in this document belong to Halo Microelectronics Co. Ltd. No part of this document may be used, copied, modified, distributed, or published without legal authorization from Halo Microelectronics.

© 2022 Halo Microelectronics. All rights reserved. www.halomicro.com