

HL7504

3MHz 2A Buck Converter in DFN Package

Overview

The HL7504 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 between 1.05V and 3.3V.

The HL7504 can deliver up to 2.0A with 80% efficiency 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 1.0 μ H to 2.2 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 60 μ A. Even with such a low quiescent current, the HL7504 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 HL7504 is available in 2mm x 2mm DFN-6 package.

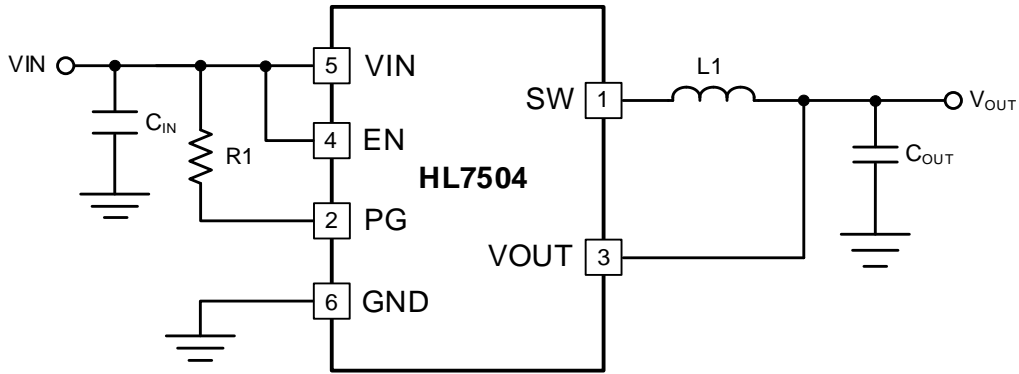
Features

- Input voltage range: 2.5-5.5V
- Output voltages: 1.2V, 1.86V, 3.30V, 1.05V, 1.80V, 1.10V, 3.10V, 1.08V
- Maximum output current: 2A
- 3MHz PWM with seamless PWM/PFM switching for light-load efficiency
- Excellent load and line transient
- Quiescent current in PFM tristate: 60 μ A
- Comprehensive protections
 - Input under-voltage lockout (UVLO)
 - Input over-voltage lockout (OVLO)
 - Over-current and short-circuit protections
 - Thermal shutdown
- Active discharge when disabled
- Automatic PFM
- Enable input
- Power good output
- Soft start
- 2mm x 2mm DFN-6 package

Applications

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

Simplified Application Diagram



Ordering Information

Part Number	V _{OUT}	Max Load Current	Pin 2 Function	Soft-Start (t _{SS})	Package	Packing Method
HL7504FN01	1.20V	2A	Power Good	1ms	DFN-6	Tape & Reel
HL7504FN02	1.86V	2A	Power Good	1ms		
HL7504FN03	3.30V	2A	Power Good	1ms		
HL7504FN04	1.05V	2A	Power Good	1ms		
HL7504FN06	1.50V	2A	Power Good	1ms		
HL7504FN07	1.80V	2A	Power Good	300μs		
HL7504FN08	1.10V	2A	Power Good	300μs		
HL7504FN09	3.10V	2A	Power Good	300μs		
HL7504FN10	1.08V	2A	Power Good	300μs		

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