

HL7505

2.2MHz 3A Buck Converter

Overview

The HL7505 is a synchronous buck converter optimized to supply different sub systems of portable applications. Its input voltage range is 2.5-5.5V.

The HL7505 can deliver up to 3A with 80% efficiency while maintaining over 80% efficiency at load currents as low as 10mA. It operates at a high frequency of 2.2MHz, 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 0.33 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 50 μ A. Even with such a low quiescent current, the HL7505 maintains excellent load and line transient responses. At higher loads, the system automatically switches to fixed-frequency pulse width modulation (PWM) operation at 2.2MHz 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 HL7505 is available in 8-pin, 0.5mm pitch, 2mm x 2mm DFN package.

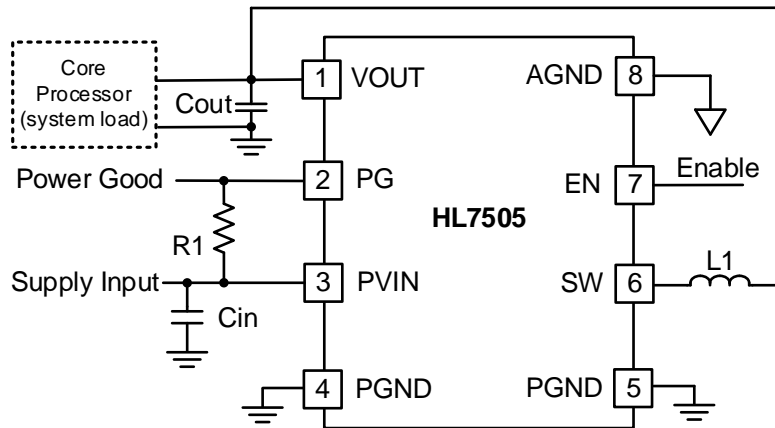
Features

- Input voltage ranges: 2.5-5.5V
- Output voltage ranges: 0.6-4.2V
- Maximum output current: 3A
- 2.2MHz PWM with seamless PWM/PFM switching for light-load efficiency
- Excellent load and line transient
- Quiescent current in PFM tristate: 50 μ A
- Comprehensive protections
 - Input under-voltage lockout (UVLO)
 - Over-current and short-circuit protections
 - Thermal shutdown
- Active discharge when disabled
- Automatic PFM
- Enable input
- Power good output
- Soft start
- Over-current protection
- 2mm x 2mm DFN-8 package

Applications

- Memory, Hard Disk Drive, and SSD
- Date Cards
- Smartphones
- Tablets
- Handheld Devices
- LCD TV
- Set-Top Box
- Access Point Router

Simplified Application Diagram



Ordering Information

Part Number	Output Voltage Option (VSEL 1 - 3)	Max Load Current
HL7505FN33	3.300V	3A

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