

13V, 10A全集成同步升压转换器

■ 特点

- 输入电压范围 V_{IN} : 2.7V-13V
- 输出电压范围 V_{OUT} : 4.5V-13V
- 内部固定峰值电流: 10A
- 高转换效率:
 - 93% ($V_{IN} = 7.4V, V_{OUT} = 12V, I_{OUT} = 3A$)
 - 92% ($V_{IN} = 3.6V, V_{OUT} = 9V, I_{OUT} = 1A$)
- 脉频调制 (PFM) 方式
- 低关断功耗, 关断电流1 μ A
- 内部固定开关频率
- 内部固定软启动
- 输出过压 (14V)、逐周期过流、热关断等保护
- SOP8-PP, 无铅封装

■ 概述

HT7166是一款高功率、全集成升压转换器, 集成16m Ω 功率开关管和23m Ω 同步整流管, 为便携式系统提供高效的小尺寸解决方案。

HT7166具有2.7V至13V宽输入电压范围, 可为采用单节或两节锂电池的应用提供支持。该器件具备10A开关电流能力, 并且能够提供13V的输出电压。

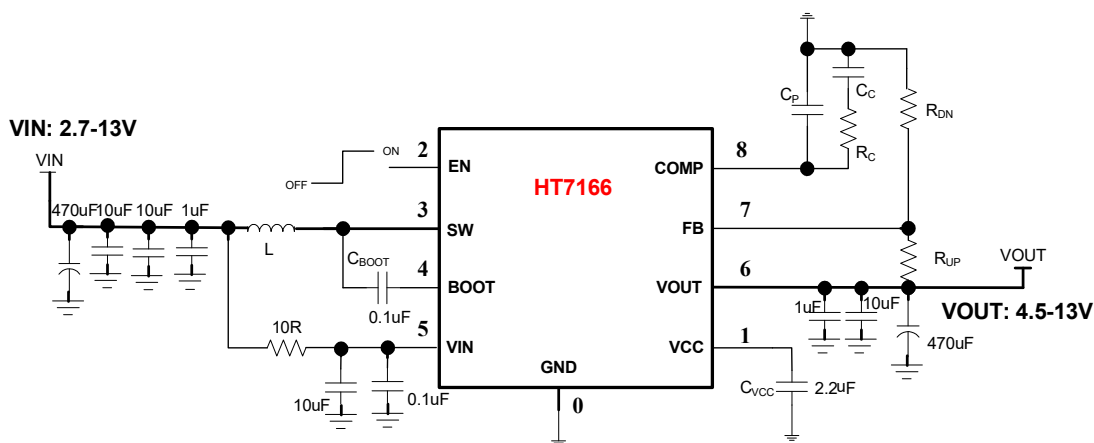
HT7166采用自适应恒定关断时间峰值电流控制拓扑结构来调节输出电压。在中等到重负载条件下, HT7166工作在PWM 模式。在轻负载条件下, 该器件工作在一种可提高效率的PFM模式。

此外, 该器件还提供有14V输出过压保护、逐周期过流保护和热关断保护。

■ 应用

- 无线音箱
- 便携式音箱
- 快充移动电源
- 电子烟
- USB TYPE-C 电源传输
- 拉杆音箱
- 平板电脑, 笔记本电脑
- POS机终端

■ 典型应用图



13V,10A Fully-Integrated Synchronous Boost Converter

■ FEATURES

- Input voltage range V_{IN} : 2.7V to 13V
- Output voltage range V_{OUT} : 4.5V to 13V
- switch peak current limit: up to 10A
- High Efficiency
93% ($V_{IN} = 7.4V, V_{OUT}=12V, I_{OUT} =3A$)
92% ($V_{IN} = 3.6V, V_{OUT}=9V, I_{OUT} =1A$)
- PFM modulation mode at light load
- 1.0 μ A current consumption during shutdown
- Fix switching frequency
- FIX soft start time
- Output overvoltage protection (at 14V), cycle-by-cycle overcurrent protection, thermal shutdown protection
- Pb-free Packages,SOP8-PP

■ APPLICATIONS

- Wireless/ Speakers • Portable Speakers
- Quick Charge Power Bank • E-Cigarette
- Power Interface (USB Type-C, Thunderbolt)
- POS Terminal • Tablet PC/Note Book

■ DESCRIPTION

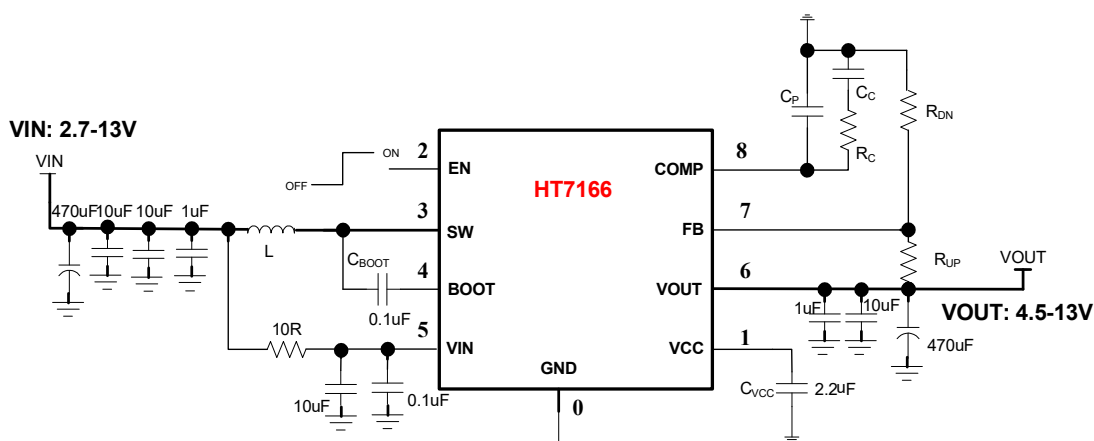
The HT7166 is a high-power density, fully integrated

synchronous boost converter with a 16m Ω power switch and a 23m Ω rectifier switch to provide a high efficiency and small size solution in portable systems. The HT7166 has wide input voltage range from 2.7 V to 13 V to support applications with single cell and two cell Lithium batteries. The device has 10A switch current capability and can provide an output voltage up to 13V.

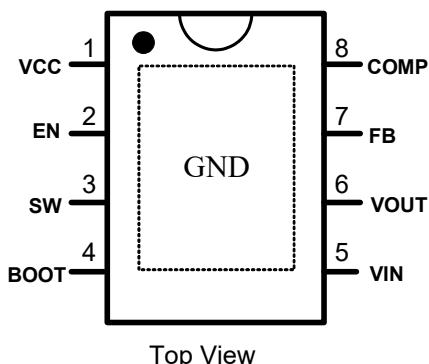
The HT7166 uses adaptive constant off-time peak current control topology to regulate the output voltage. In moderate to heavy load condition, it works in the PWM mode. In light load condition, the device works in the PFM mode to improve the efficiency. The switching frequency in the PWM mode is fixed.

The HT7166 also implements a fix soft-start function and a fixed switching peak current limit function. In addition, the device provides 14V output overvoltage protection, cycle-by-cycle overcurrent protection, and thermal shutdown protection

■ TYPICAL APPLICATION



■ TERMINAL CONFIGURATION



■ TERMINAL FUNCTION

Terminal No.	NAME	I/O ^{*1}	Description
1	VCC	O	Output of the internal regulator. A ceramic capacitor of 2.2uF is required between this pin and ground.
2	EN	I	Enable logic input. Logic high level enables the device. Logic low level disables the device and turns it into shutdown mode.
3	SW	PWR	The switching node pin of the converter.
4	BOOT	O	Power supply for high-side MOSTFET gate driver. A ceramic capacitor of 0.1μF must be connected between this pin and the SW pin.
5	VIN	I	IC power supply input.
6	VOUT	PWR	Boost converter output.
7	FB	I	Voltage feedback.
8	COMP	O	Output of the internal error amplifier, the loop compensation network should be connected between this pin and the GND pin.
0	GND	PWR	Power ground of the IC.

¹ I: input O: output PWR: power

ORDERING INFORMATION

Part Number	Package Type	Marking	Operating Temperature Range	Shipping Package / MOQ
HT7166SPET	SOP8-PP	HT7166	-40°C~85°C	Tube/100PCS

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