

36V, 20A高效异步升压转换器

36V, 20A Asynchronous Boost Converter

■ FEATURES

- Wide supply voltage operating range: 2.8V-36V
Output voltage range: up to 36V
- Built-in 40V 8mΩ Power NMOS
- Programmable switching frequency: 100K-1MHz
- Programmable switching MOSFET over current threshold: up to 20A
- Input under voltage and over temperature protection
- Packages: Pb-free Packages, ETSSOP20
- 宽输入电源范围2.8V-36V, 输出电压范围: 最高36V
- 内置40V 8mΩ功率NMOS
- 开关频率可调100K-1MHz
- 开关MOS过流阈值可调, 最高20A
- 欠压保护和过热关断保护
- 无铅封装, ETSSOP20

■ APPLICATIONS

- Bluetooth/Wi-Fi Speakers
- Chargers
- 蓝牙/ Wi-Fi音箱
- 充电
- Power Bank
- Electronic Cigarette
- 移动电源
- 电子烟
- High-power Emergency Power Supply
- 大功率应急电源

■ DESCRIPTION

The HTN865B is a high-power density, asynchronous boost converter with an 8mΩ power switch to provide a high efficiency and small size solution in portable systems.

The HTN865B has wide input voltage range from 2.8V to 36V to support different applications with different power supplies. The device has 20A switch current capability and can provide an output voltage up to 36V.

The HTN865B also implements a programmable soft-start function and an adjustable switching peak current limit function.

The HTN865B adjusts the switching frequency through an external resistor connected to the RT pin, with the switching frequency range being 100KHz-1000KHz.

The HTN865B adopts peak current mode control and an external compensation network, making the system more stable in a simpler and more flexible way.

HTN865B can be controlled to be turned on and off through EN.

HTN865B是一款高功率异步升压转换器, 集成8mΩ功率开关管, 为便携式系统提供高效的小尺寸解决方案。

HTN865B具有2.8V至36V宽输入电压范围, 可为不同应用的不同供电方式提供支持。该器件具备20A开关电流能力, 并且能够提供高达36V的输出电压。

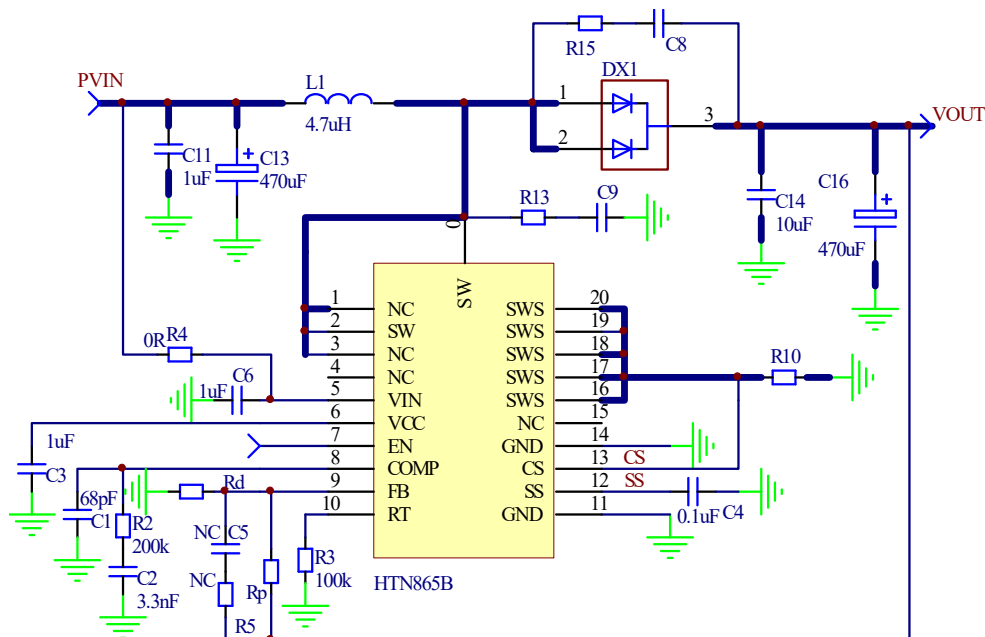
HTN865B还支持可编程的软启动, 以及可调节的开关峰值电流限制。

HTN865B通过RT管脚外接电阻调整开关频率, 开关频率范围为100KHz-1000KHz。

HTN865B采用峰值电流模式控制和外置补偿网络, 更简单更灵活的使系统稳定。

HTN865B通过EN可以控制开启和关断。

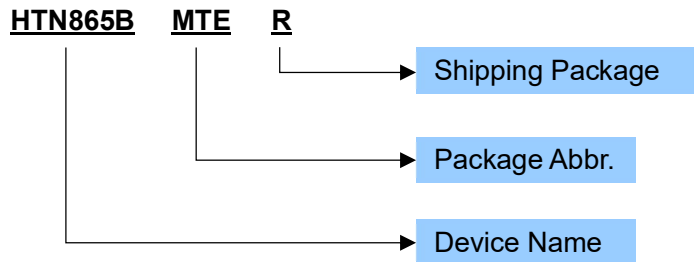
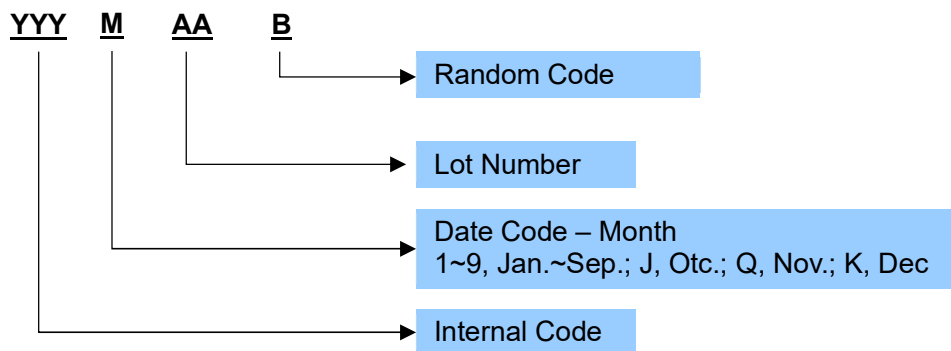
■ TYPICAL APPLICATION



1. R13, C9; R15, C8 均做预留，用于EMI调试。
2. 若单节锂电池输入使用，VIN脚需接升压输出VOUT。
3. EN直接外加电压建议低于5V；外接高压时（如连接至PVIN），需串接R14 (>200k)。
4. Comp典型参数（R2=200k, C2=3.3nF, C1=100pF）可适用于大多数应用。但若输出不稳，则需调整。
5. 输出电压由FB端电阻Rp和Rd设置： $V_{OUT} = 1.2 \times \left(1 + \frac{R_p}{R_d}\right)$ ；FB端R5, C5可不用。
6. 开关频率FSW由RT端电阻R1设置： $FSW(kHz) \approx \frac{13465}{R1(kohm)^{0.895}}$ ，或参看典型图表；RT端悬空，则为固定200kHz。
7. SS端电容可调节软起动时间，一般可直接使用0.1uF典型值。
8. 电感峰值电流 $I_{LIM}(A) = \frac{0.1}{R10(\Omega)}$ ，需设置一定的1.5倍以上余量；Rilim需大尺寸封装，承受功率 $P_o > \frac{0.01}{R10(\Omega)}$ ，建议使用1812及以上封装，或多个电阻并联。
9. L选型，大多数应用可推荐10uH或22uH，额定电流建议大于ILIM设置值，并留有余量。
10. D选型，反向击穿电压建议 $> 1.5 \times V_{OUT}$ ，峰值额定电流大于ILIM设置值，且平均额定电流大于平均输出电流IOUT。

ORDERING INFORMATION

Part Number	Package Type	Package Abbr.	Eco Plan	MSL Level	Marking	Shipping Package / MOQ
HTN865BMTER	ETSSOP20	MTE	RoHS	MSL3	HTN865B YYYMAAB ¹	Tape and Reel (R) / 3000pcs

Part Number

Production Tracking Code


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