

VIN 45V异步PWM升压/SPEIC/反激式控制器

VIN 45V Asynchronous PWM BOOST/SPEIC/Flyback Controller

■ FEATURES

- Wide supply voltage operating range: 2.8V-45V
- Programmable switching frequency: 100K-1000KHz
- Programmable switching MOSFET over current threshold
- Input under voltage and over temperature protection
- Packages: Pb-free Packages, ESOP8
- 宽输入电源范围2.8V-45V
- 开关频率可调100K-1000KHz
- 开关MOS过流阈值可调
- 欠压保护和过热关断保护
- 无铅封装, ESOP8

■ APPLICATIONS

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

■ DESCRIPTION

The HTN5157 is an asynchronous current mode DCDC boost controller for wide operating voltage (2.8V-50V) applications.

HTN5157 provides built-in gate driver pin for driving external NMOS.

The HTN5157 adjusts the switching frequency through an external resistor connected to the RT pin, with the switching frequency range being 100KHz-1000KHz.

HTN5157 has programmable inductor peak current limit by external resistor from CS to GND.

The HTN5157 adopts peak current mode control and an external compensation network, making the system more stable in a simpler and more flexible way.

HTN5157 can be controlled to be turned on and off through EN.

HTN5157是一颗异步电流模式DCDC升压控制器,支持宽工作电压范围(2.8V-45V)应用。

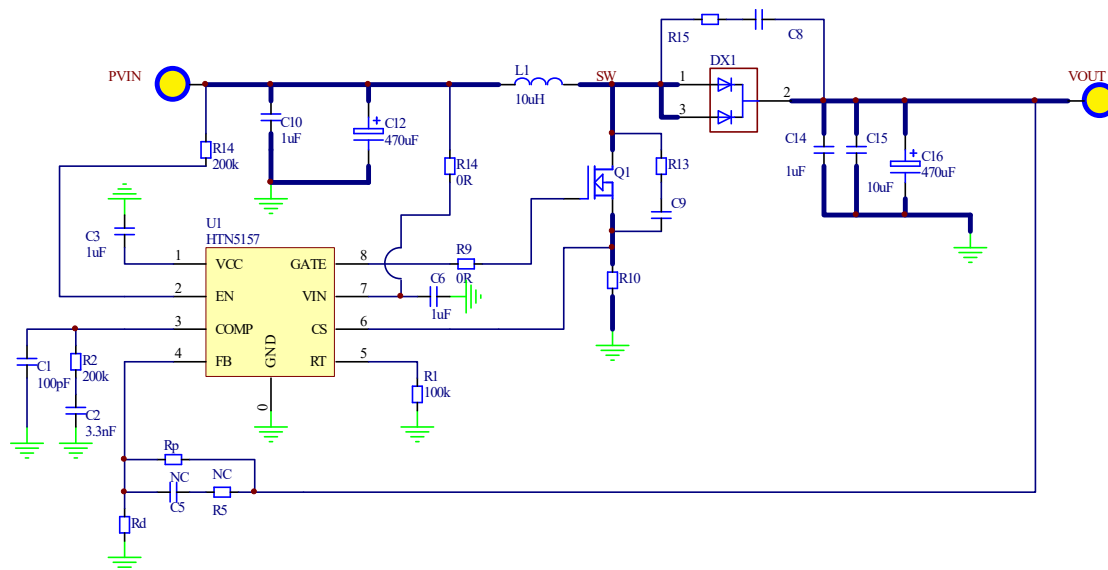
HTN5157内置栅极驱动器,通过GATE管脚驱动外置NMOS。

HTN5157通过RT管脚外接电阻调整开关频率,开关频率范围为100KHz-1000KHz。

HTN5157通过CS管脚外接电阻调整电感峰值电流。

HTN5157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。

HTN5157通过EN可以控制开启和关断。

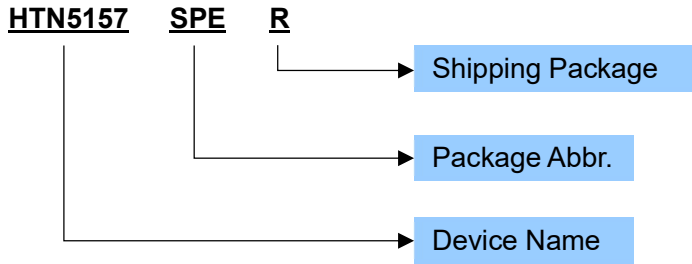
TYPICAL APPLICATION


1. 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)。
2. 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。
3. 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。**
4. 开关频率FSW由RT端电阻R1设置： $FSW(\text{kHz}) \approx \frac{13465}{R1(\text{kohm})^{0.895}}$ ，或参看典型图表；RT端悬空，则为固定200kHz。
5. 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。
6. VIN < 45V应用，使用1uF电容下地；**若单节锂电池输入使用，VIN脚需接升压输出VOUT。**
7. Q1选型，V_{DS} 耐压> 1.5×VOUT。
8. R13, C9; R15, C8 均做预留，用于EMI调试。
9. L选型，大多数应用可推荐10uH或22uH，额定电流建议大于I_{LIM}设置值，并留有余量。
10. D选型，反向击穿电压建议> 1.5×VOUT，峰值额定电流大于I_{LIM}设置值，且平均额定电流大于平均输出电流I_{OUT}。

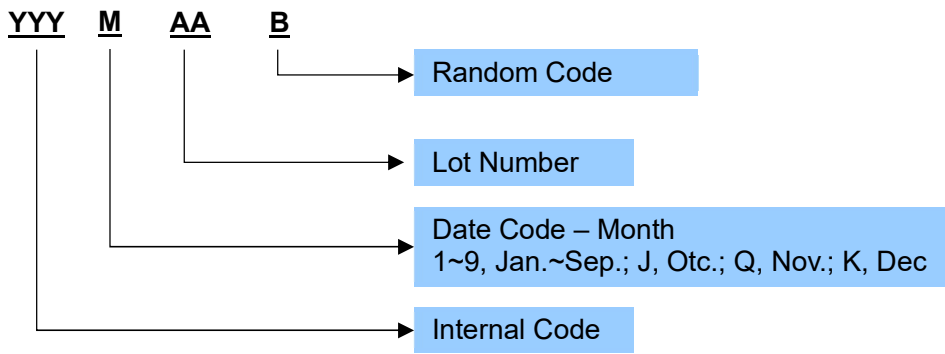
ORDERING INFORMATION

| Part Number | Package Type | Package Abbr. | Eco Plan | MSL Level | Marking | Shipping Package / MOQ |
|-------------|--------------|---------------|----------|-----------|---------------------------------|--------------------------------|
| HTN5157SPER | ESOP8 | SPE | RoHS | MSL3 | HTN5157 YYYMAAB ¹ | Tape and Reel (R) / 2500pcs |

Part Number



Production Tracking Code



¹ YYYMAAB is production tracking code
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