

## 13V,10A全集成同步升压转换器

### 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: 10A
  - High Efficiency  
93% ( $V_{IN} = 7.4V, V_{OUT}=12V, I_{OUT} = 3A$ )  
92% ( $V_{IN} = 3.6V, V_{OUT}=9V, I_{OUT} = 1A$ )
  - 1.0 $\mu$ A current consumption during shutdown
  - Fixed switching frequency: ~450kHz
  - Output overvoltage protection (at 14V), cycle-by-cycle overcurrent protection, thermal shutdown protection
  - Pb-free Packages, ESOP10
- 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% ( $V_{IN} = 3.6V, V_{OUT}=9V, I_{OUT} = 1A$ )
  - 低关断功耗, 关断电流1 $\mu$ A
  - 内部固定开关频率: ~450kHz
  - 输出过压 (14V)、逐周期过流、热关断等保护
  - ESOP10, 无铅封装

#### ■ APPLICATIONS

- Wireless/ Speakers
- Portable Speakers
- Quick Charge Power Bank
- E-Cigarette
- Power Interface (USB Type-C, Thunderbolt)
- POS Terminal
- Tablet PC/Note Book
- 无线音箱
- 便携式音箱
- 快充移动电源
- USB TYPE-C 电源传输
- 平板电脑, 笔记本电脑
- 电子烟
- 拉杆音箱
- POS机终端

### DESCRIPTION

The HT71663 is a high-power density, fully integrated synchronous boost converter with a 16mΩ power switch and a 23mΩ rectifier switch to provide a high efficiency and small size solution in portable systems. The HT71663 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 HT71663 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 operates in PFM mode to improve the efficiency. The switching frequency in the PWM mode is fixed.

In addition, the device provides 14V output overvoltage protection, cycle-by-cycle overcurrent protection, and thermal shutdown protection.

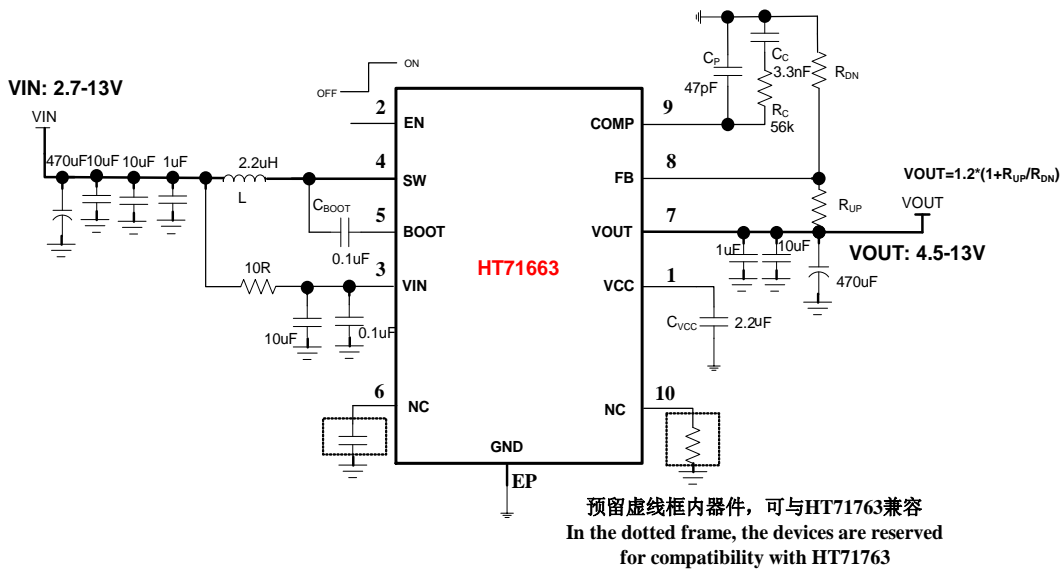
HT71663是一款高功率、全集成升压转换器,集成16mΩ功率开关管和23mΩ同步整流管,为便携式系统提供高效的小尺寸解决方案。

HT71663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,并且能够提供最高13V的输出电压。

HT71663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。在中等到重载条件下,HT71663工作在PWM模式。在轻负载条件下,该器件工作在可提高效率的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。

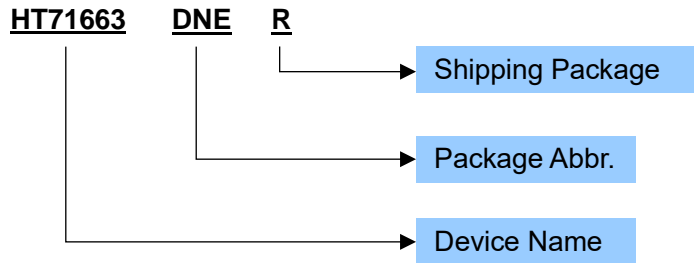
### TYPICAL APPLICATION



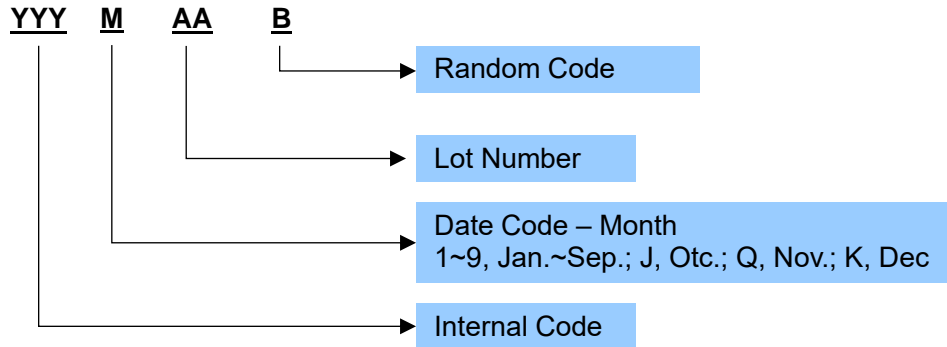
**ORDERING INFORMATION**

Part Number	Package Type	Package Abbr.	Marking	Shipping Package / MOQ
HT71663SPER	ESOP10	SPE	HT71663 YYYMAAB <sup>1</sup>	Tape and Reel / 2500

**Part Number**

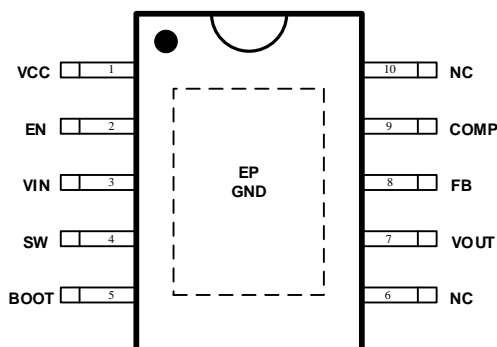


**Production Tracking Code**



<sup>1</sup> YYYMAAB is production tracking code  
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## ■ TERMINAL CONFIGURATION



Top View

## ■ TERMINAL FUNCTION

Terminal No.	Name	I/O <sup>1</sup>	Description
1	VCC	O	Output of the internal regulator. A ceramic capacitor of 2.2uF is required between this pin and ground. 接2.2uF到地。
2	EN	I	Enable logic input. Logic high level enables the device. Logic low level disables the device and turns it into shutdown mode. 使能输入，接高电平使能，低电平关断
3	VIN	P	IC power supply input. 电源输入脚
4	SW	P	The switching node pin of the converter. 升压开关节点
5	BOOT	O	Power supply for high-side MOSTFET gate driver. A ceramic capacitor of 0.1uF must be connected between this pin and the SW pin. 接0.1uF电容到SW
6, 10	NC	-	No connection, connect to GND. 内部无连接，可连接到地。
7	VOUT	P	Boost converter output. 升压输出
8	FB	I	Voltage feedback. 电压反馈
9	COMP	O	Output of the internal error amplifier, the loop compensation network should be connected between this pin and the AGND pin. 接阻容补偿网络到地。
EP	GND	G	Provides both <b>electrical and thermal connection</b> from the device to the board. <b>A matching ground pad must be provided on the PCB and the device connected to it via solder.</b> For proper electrical operation, this ground pad must be connected to the system ground. 既是地，又是散热PAD

<sup>1</sup> I: Input; O: Output; G: Ground; P: Power; BST: BOOT Strap; OD: Open drain

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