

# HL7601

## 2A Boost Regulator with Bypass Mode

### Overview

The HL7601 provides a power supply solution for products powered by Li-ion battery. By combining built-in power transistors, synchronous rectification, and low supply current, this IC is optimized for single-cell portable applications like smartphones or tablet PCs.

The HL7601 is a boost regulator designed to provide a minimum output voltage from a single-cell Li-ion battery even when the battery voltage is below system minimum. This extends the battery run time and overcomes input current and voltage limitations of the powered system. The output voltage regulation is guaranteed up to a maximum load current of 2A. The regulator has a smooth transition between a bypass mode and a normal boost mode. The device can be forced into the bypass mode to reduce a quiescent current.

The HL7601 is available in a 16-bump, 0.4mm pitch, wafer-level chip-scale package (WLCSP).

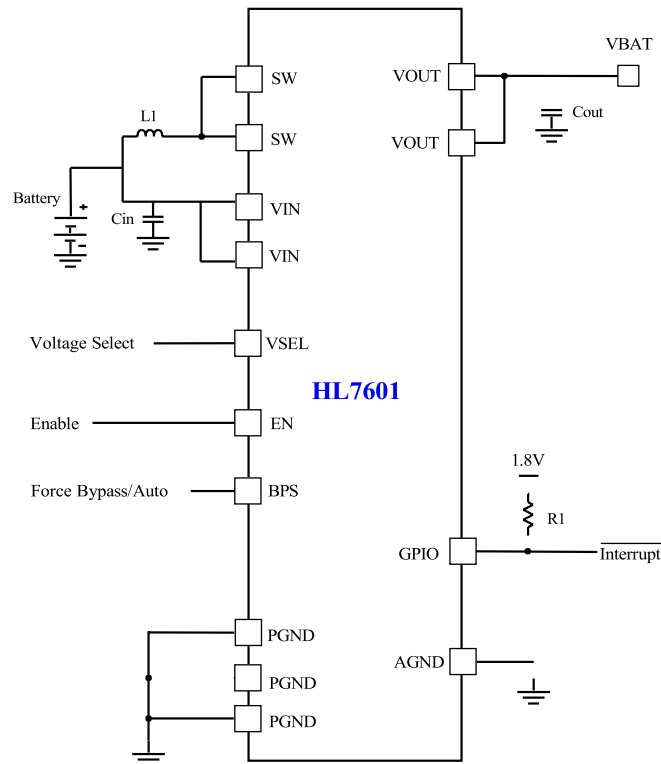
### Features

- Input voltage ranges: 2.3-5.5V
- Fixed output voltage options: 2.85-6V
- Maximum output current: 2A
- 2.5MHz operation frequency with seamless PWM/PFM transition for light-load efficiency
- Optional auto bypass mode and forced bypass mode
- Output capacitor discharge
- Low operating quiescent current
- Comprehensive protections
  - Input under-voltage lockout (UVLO)
  - Over-current and short-circuit protections
  - Thermal shutdown
- Soft start
- 16-bump, 0.4mm pitch WLCSP

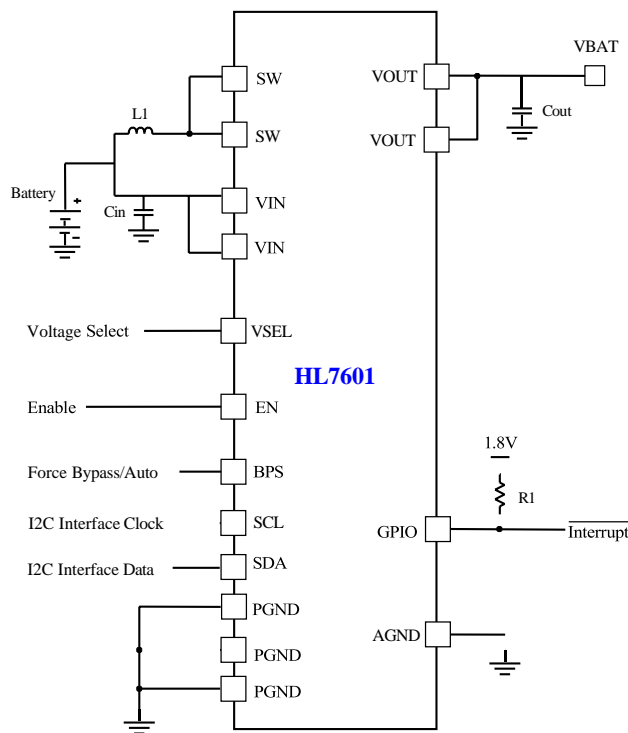
### Applications

- Smartphones
- Tablet PCs
- Wireless Communication Devices
- 2G/3G/4G RF Power Amplifiers
- Audio Power Amplifiers
- USB OTG Power Sources

**Simplified Application Diagrams**

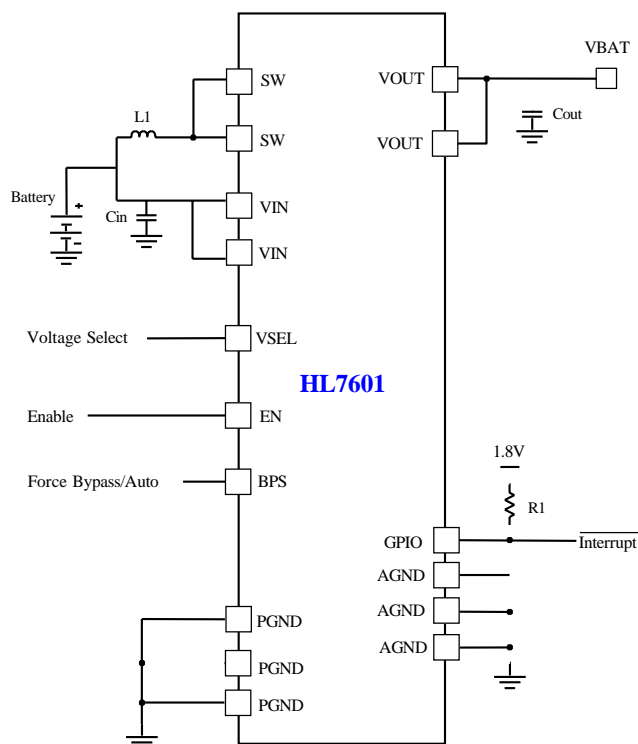


**Figure 1. HL7601WL01/02 Simplified Application Diagram**



**Figure 2. HL7601WL03 Simplified Application Diagram**

## Simplified Application Diagrams



**Figure 3. HL7601WL04 Simplified Application Diagram**

## Ordering Information

Part Number	VSEL Function	Max Load Current
HL7601WL01	VSEL=0, VOUT=3.15V (Adjustable with I <sup>2</sup> C) VSEL=1, VOUT=3.35V (Adjustable with I <sup>2</sup> C)	2A
HL7601WL02	VSEL=0, VOUT=4.50V (Adjustable with I <sup>2</sup> C) VSEL=1, VOUT=5.00V (Adjustable with I <sup>2</sup> C)	2A
HL7601WL03	VSEL=0, VOUT=5.10V (No I <sup>2</sup> C) VSEL=1, VOUT=5.30V (No I <sup>2</sup> C)	2A
HL7601WL04	VSEL=0, VOUT=3.50V (No I <sup>2</sup> C) VSEL=1, VOUT=3.70V (No I <sup>2</sup> C)	2A

For other default output voltage and maximum load current options, contact a Halo Micro Sales Representative.

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