PM6611N

2 to 4-cell Li-ion, Li-$FePO_4$ battery charger with SMBus interface, N-channel RBFET and BATFET MOSFET selectors

Data brief

Features

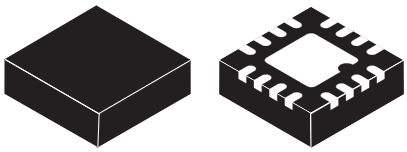
- Buck converter
  - Synchronous buck converter with N-channel high-side, low-side Power MOSFET integrated drivers
  - 350 kHz or 700 kHz switching frequency, selectable with SMBus
  - AC adapter input voltage range 9 V - 24 V
  - 5 V bias input voltage supply
  - Battery charge voltage range 2.5 V - 18 V
  - ±0.5% charge voltage accuracy
  - 0.1% cell charge voltage resolution
  - ±3% charge current accuracy
  - Overvoltage, overcurrent protection
  - Battery, inductor, Power MOSFET short-circuit protection
  - Internal loop compensation network
  - Integrated soft-start
- Selector
  - N-channel BATFET MOSFET driver
  - N-channel ACFET and RBFET MOSFET driver
- System
  - 1 mA quiescent supply current
  - 17 µA - 35 µA sleep mode current (BATFET charge pump OFF - ON)
  - Thermal shutdown

Applications

- Mobile PC:
  - UMPC/MID and tablets
  - Netbook and notebook computers

Description

The PM6611N is a high efficiency battery charger with SMBus communication interface. It includes a synchronous switching DC-DC converter with N-channel high-side and low-side Power MOSFET drivers. The possibility to set the switching frequency with SMBus by choosing one of the two preset values of 350 kHz or 700 kHz assures the best trade-off between power conversion efficiency and application component cost and pcb size.



QFN 3x3x1.0 16L

Integrated loop compensation network and soft-start allow the reduction of the number of external components.

The PM6611N integrates 2 charge pumps to drive N-channel BATFET and ACFET - RBFET MOSFETs.

The SMBus communication interface is used to set the battery charge current and voltage.

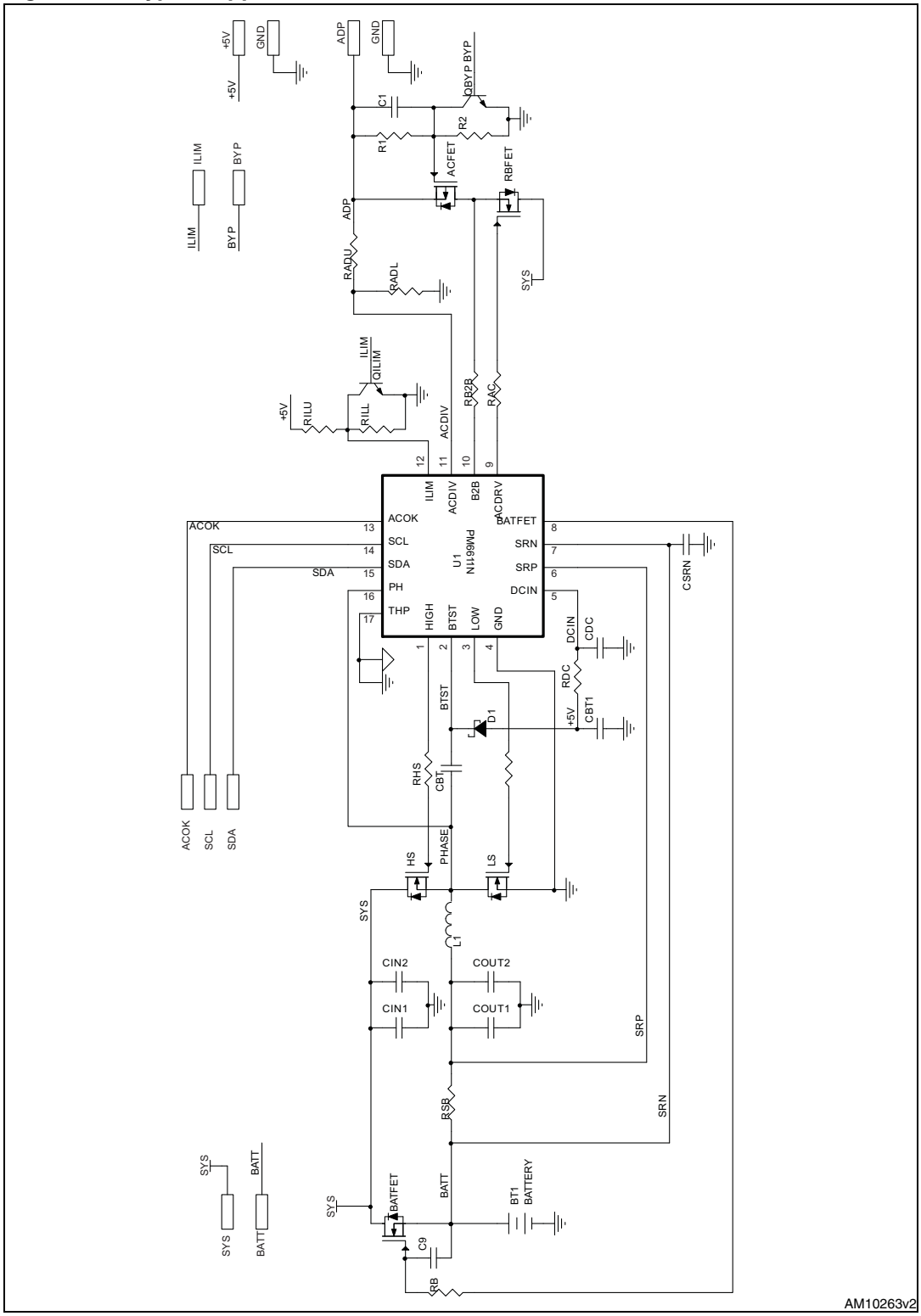
The PM6611N charges 2 to 4-series Li-Ion or $LiFePO_4$ cells, for mobile PC applications. It is available in a 16-pin, 3x3 mm, QFN package.

Table 1. Device summary

Order code	Package	Packing
PM6611N	QFN 3x3x1.0 16L	Tape and reel

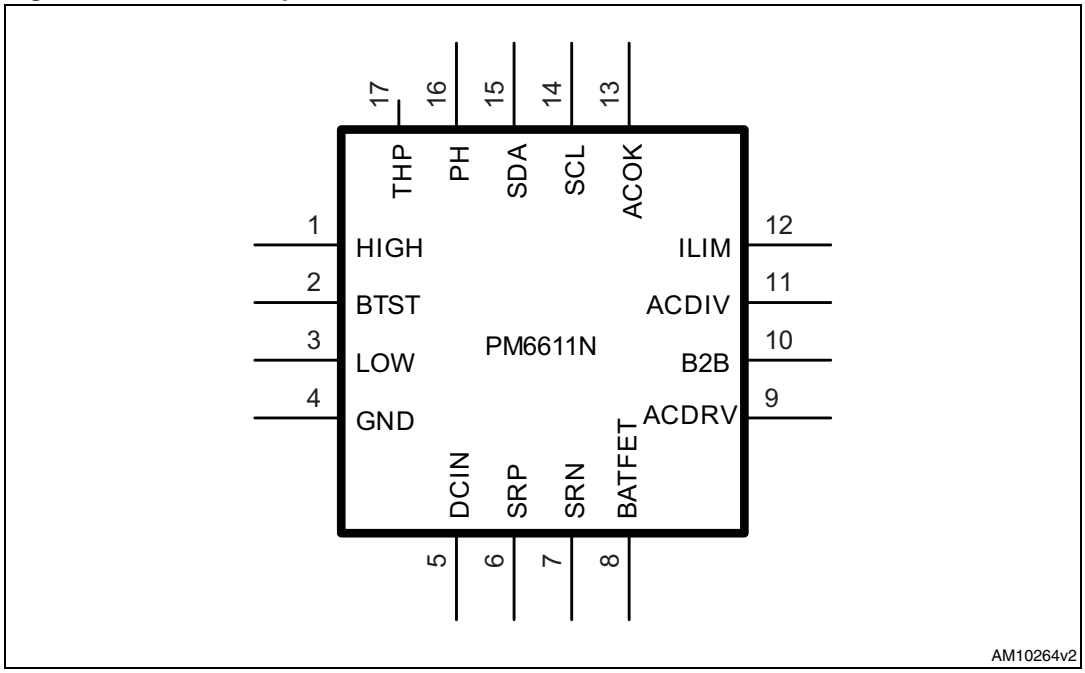
1 Typical application circuit

Figure 1. Typical application circuit



2 Device pinout

Figure 2. PM6611N pinout



3 Package mechanical data

In order to meet environmental requirements, ST offers these devices in different grades of ECOPACK® packages, depending on their level of environmental compliance. ECOPACK specifications, grade definitions and product status are available at: *www.st.com*. ECOPACK is an ST trademark.

Table 2. QFN 3x3x1.0 16L mechanical data

Dim.	mm.		
	Min.	Typ.	Max.
A	0.80	0.90	1.00
A1		0.02	0.05
A2		0.65	1.00
A3		0.20	
b	0.18	0.25	0.30
D	2.85	3.00	3.15
D1		1.50	
D2	See *Table 3*		
E	2.85	3.00	3.15
E1		1.50	
E2	See *Table 3*		
e	0.45	0.50	0.55
L	0.30	0.40	0.50
ddd			0.08

Table 3. Exposed pad variation

Variation	D2			E2		
	Min.	Typ.	Max.	Min.	Typ.	Min.
A	0.95	1.10	1.25	0.95	1.10	1.25
B	1.45	1.60	1.75	1.45	1.60	1.75

Figure 3. QFN 3x3x1.0 16L mechanical data drawing

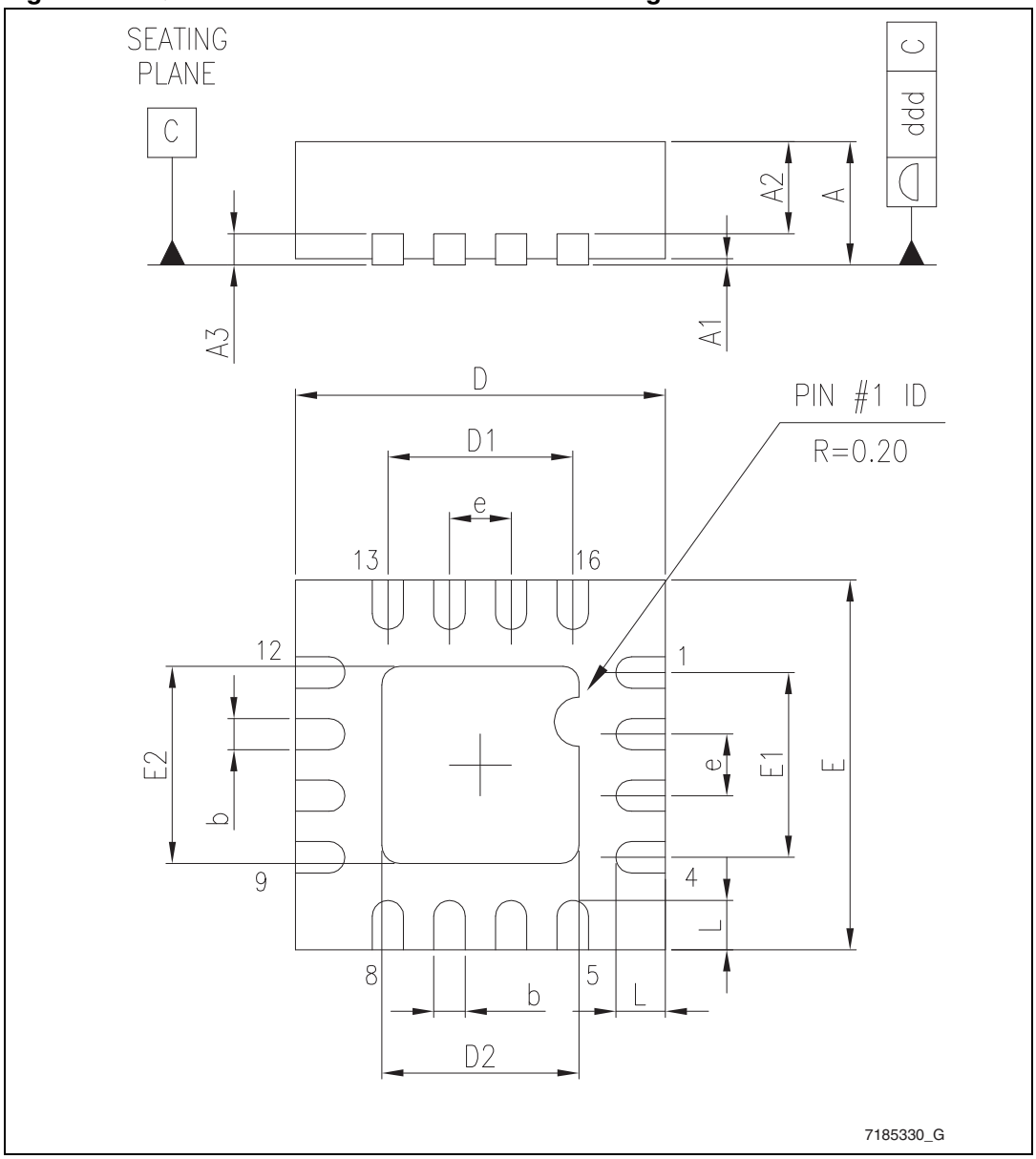
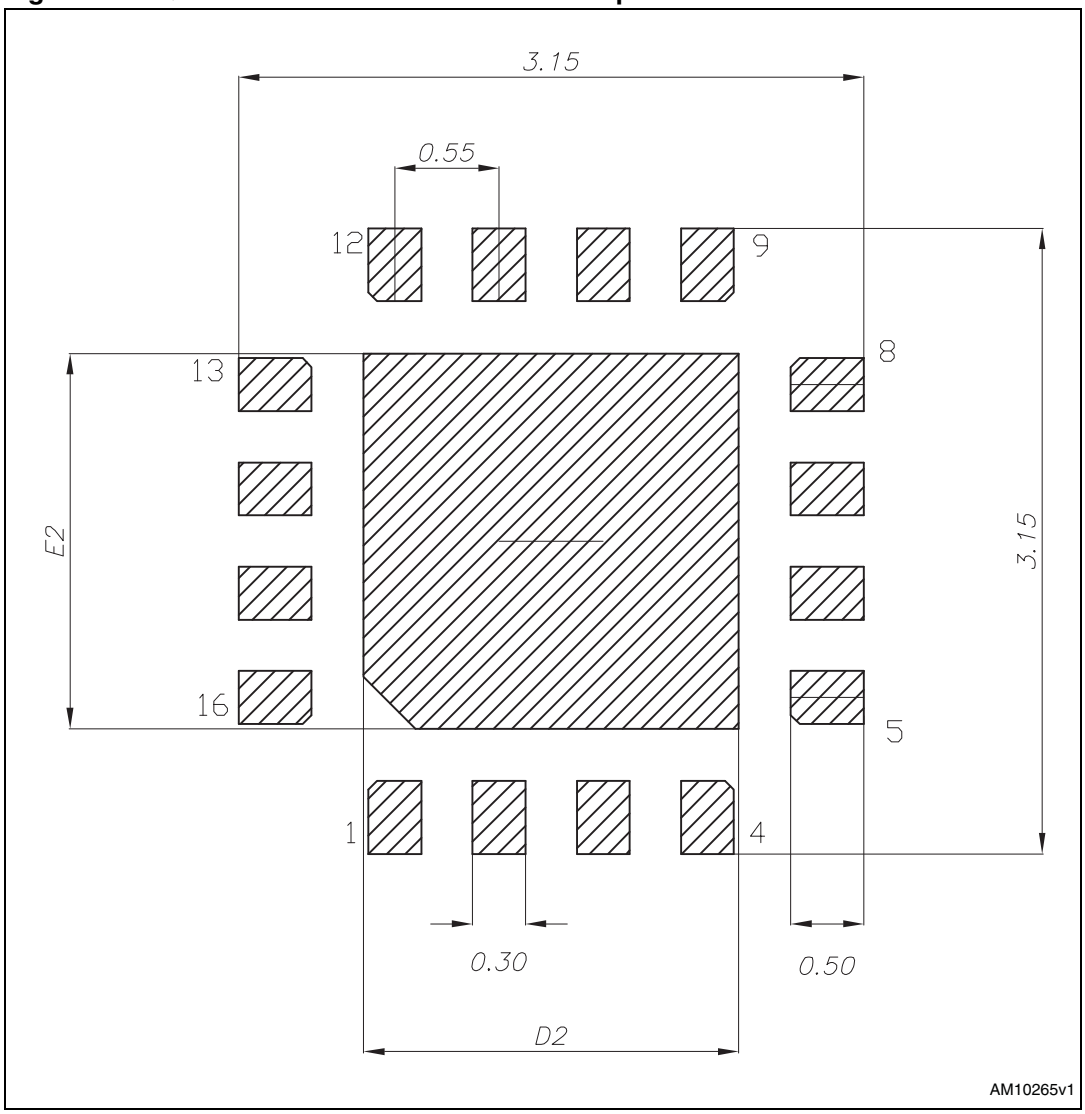


Figure 4. QFN 3x3x1.0 16L recommended footprint



4 Revision history

Table 4. Document revision history

Date	Revision	Changes
01-Feb-2012	1	Initial release.

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