



PM6613N

2 to 4-cell Li-Ion, Li-FePO₄ battery charger with SMBus interface, N-channel RBFET and BATFET MOSFET selectors

Data brief

Features

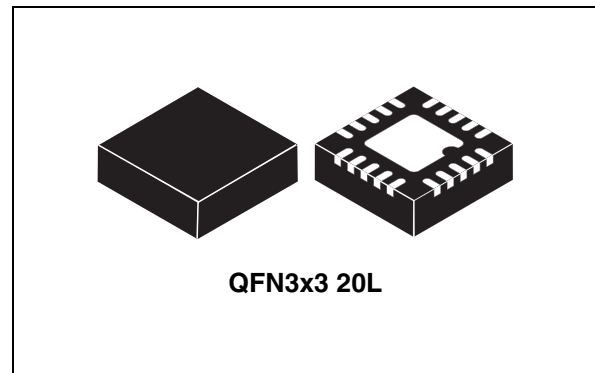
- Buck converter
 - Synchronous buck converter with N-channel high-side, low-side power MOSFET integrated drivers
 - 350 kHz or 700 kHz switching frequency, selectable with SMBus
 - AC adapter input voltage range 9 V - 24 V
 - 5 V bias input voltage supply
 - Battery charge voltage range 2.5 V - 18 V
 - ±0.5% charge voltage accuracy
 - 0.1% cell charge voltage resolution
 - ±3% charge current accuracy
 - ±3% input current accuracy
 - Overvoltage, overcurrent protection
 - Battery, inductor, power MOSFET short-circuit protection
 - Internal loop compensation network
 - Integrated soft-start
- Selector
 - N-channel ACFET/RBFET MOSFET driver
 - N-channel BATFET 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 PM6613N 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 PCB cost and size.

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

The PM6613N integrates 2 charge pumps to drive N-channel ACFET/RBFET and BATFET MOSFETs.

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

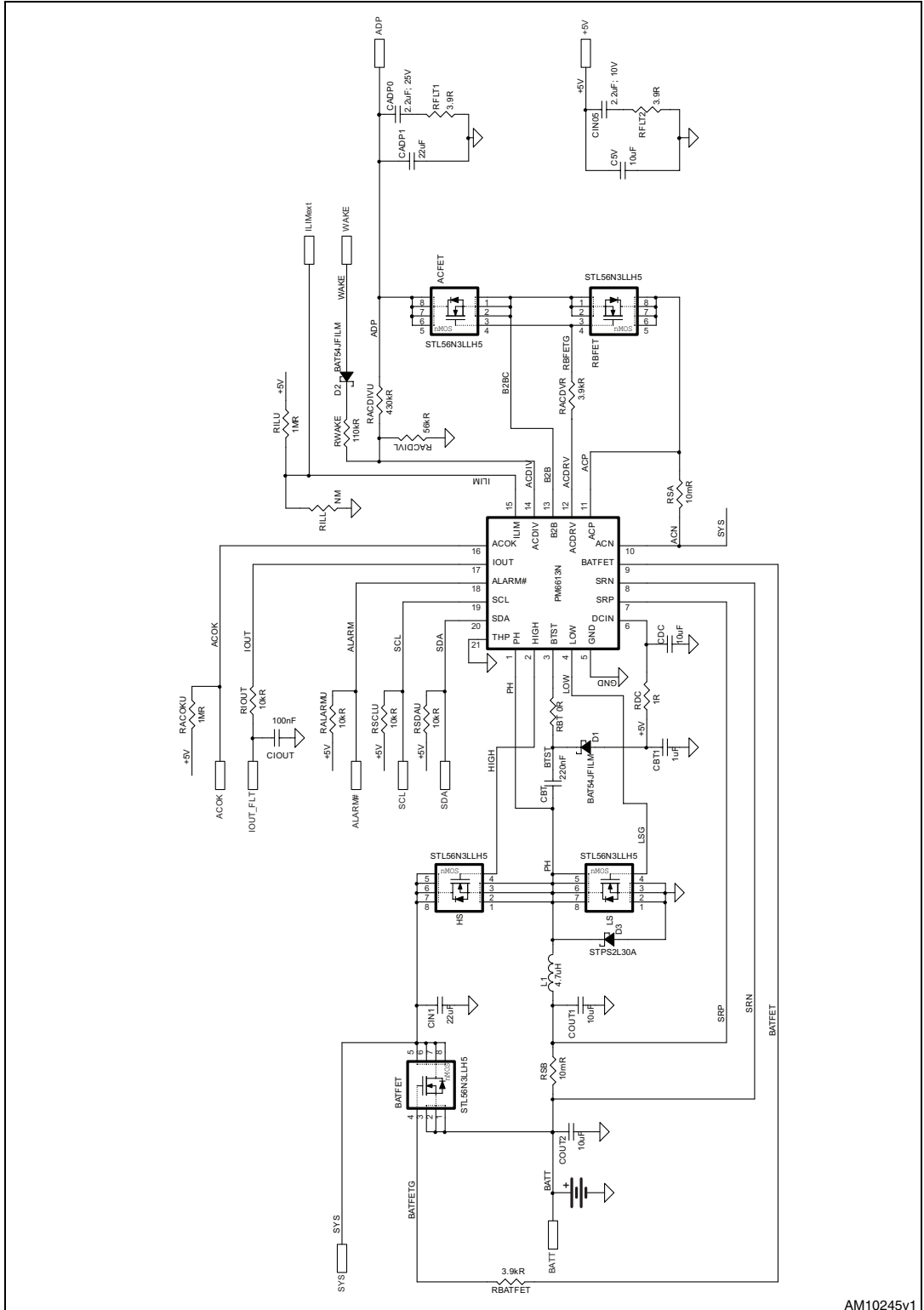
The PM6613N charges 2 to 4 series Li-Ion or LiFePO₄ cells, for mobile PC applications. It is available in a compact QFN20L 3x3 mm, package.

Table 1. Device summary

Order code	Package	Packing
PM6613N	QFN3x3 20L	Tape and reel

1 Typical application circuit

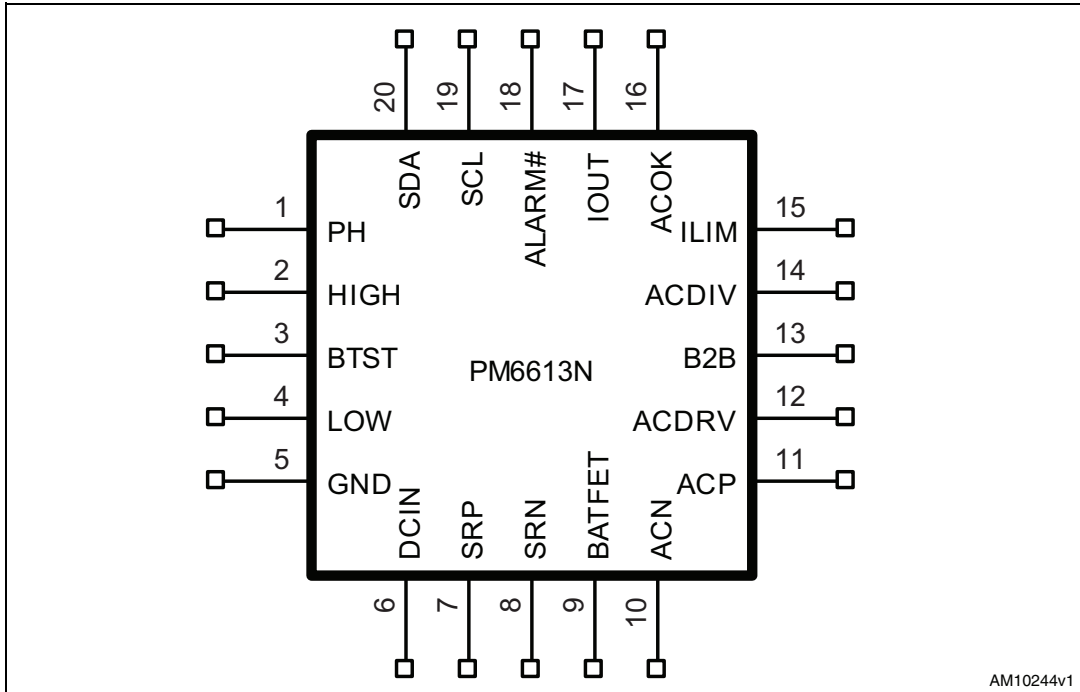
Figure 1. Typical application circuit



AM10245v1

2 Device pinout

Figure 2. PM6613N pinout



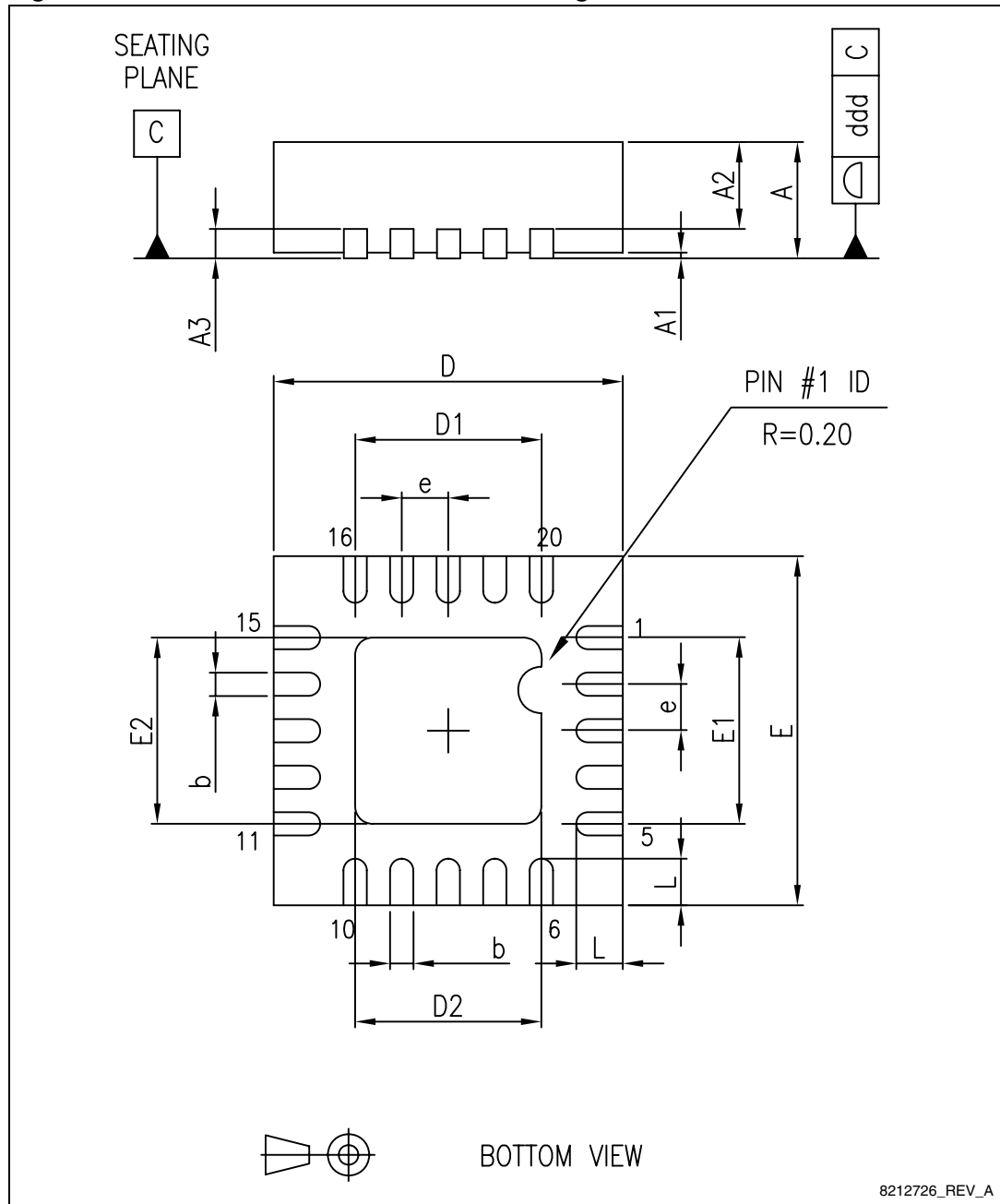
3 Package mechanical data

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. QFN3x3 20L 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	0.15	0.20	0.25
D	2.85	3.00	3.15
D1		1.60	
D2	1.50	1.60	1.70
E	2.85	3.00	3.15
E1		1.60	
E2	1.50	1.60	1.70
e	0.35	0.40	0.45
L	0.30	0.40	0.50
ddd			0.07

Figure 3. QFN3x3 20L mechanical data drawing



4 Revision history

Table 3. Document revision history

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

Please Read Carefully:

Information in this document is provided solely in connection with ST products. STMicroelectronics NV and its subsidiaries ("ST") reserve the right to make changes, corrections, modifications or improvements, to this document, and the products and services described herein at any time, without notice.

All ST products are sold pursuant to ST's terms and conditions of sale.

Purchasers are solely responsible for the choice, selection and use of the ST products and services described herein, and ST assumes no liability whatsoever relating to the choice, selection or use of the ST products and services described herein.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted under this document. If any part of this document refers to any third party products or services it shall not be deemed a license grant by ST for the use of such third party products or services, or any intellectual property contained therein or considered as a warranty covering the use in any manner whatsoever of such third party products or services or any intellectual property contained therein.

UNLESS OTHERWISE SET FORTH IN ST'S TERMS AND CONDITIONS OF SALE ST DISCLAIMS ANY EXPRESS OR IMPLIED WARRANTY WITH RESPECT TO THE USE AND/OR SALE OF ST PRODUCTS INCLUDING WITHOUT LIMITATION IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE (AND THEIR EQUIVALENTS UNDER THE LAWS OF ANY JURISDICTION), OR INFRINGEMENT OF ANY PATENT, COPYRIGHT OR OTHER INTELLECTUAL PROPERTY RIGHT.

UNLESS EXPRESSLY APPROVED IN WRITING BY TWO AUTHORIZED ST REPRESENTATIVES, ST PRODUCTS ARE NOT RECOMMENDED, AUTHORIZED OR WARRANTED FOR USE IN MILITARY, AIR CRAFT, SPACE, LIFE SAVING, OR LIFE SUSTAINING APPLICATIONS, NOR IN PRODUCTS OR SYSTEMS WHERE FAILURE OR MALFUNCTION MAY RESULT IN PERSONAL INJURY, DEATH, OR SEVERE PROPERTY OR ENVIRONMENTAL DAMAGE. ST PRODUCTS WHICH ARE NOT SPECIFIED AS "AUTOMOTIVE GRADE" MAY ONLY BE USED IN AUTOMOTIVE APPLICATIONS AT USER'S OWN RISK.

Resale of ST products with provisions different from the statements and/or technical features set forth in this document shall immediately void any warranty granted by ST for the ST product or service described herein and shall not create or extend in any manner whatsoever, any liability of ST.

ST and the ST logo are trademarks or registered trademarks of ST in various countries.

Information in this document supersedes and replaces all information previously supplied.

The ST logo is a registered trademark of STMicroelectronics. All other names are the property of their respective owners.

© 2012 STMicroelectronics - All rights reserved

STMicroelectronics group of companies

Australia - Belgium - Brazil - Canada - China - Czech Republic - Finland - France - Germany - Hong Kong - India - Israel - Italy - Japan - Malaysia - Malta - Morocco - Philippines - Singapore - Spain - Sweden - Switzerland - United Kingdom - United States of America

www.st.com

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [Battery Management](#) category:

Click to view products by [STMicroelectronics](#) manufacturer:

Other Similar products are found below :

[MP2602DQ-LF-P](#) [MP26053DQ-LF-Z](#) [MP2611GL-P](#) [NCP347MTAHTBG](#) [LM3658SD-AEV/NOPB](#) [MP2607DL-LF-P](#) [MP26121DQ-LF-P](#)
[MP26123DR-LF-P](#) [MP2617AGL-P](#) [MP2633GR-P](#) [MP2637GR-P](#) [BQ24212EVM-678](#) [NCP1855FCCT1G](#) [MP2636GR-P](#) [FAN54063UCX](#)
[MAX14680EWC+T](#) [MAX14634EWC+T](#) [DS2745U+T&R](#) [MAX14578EETE+T](#) [DS2781EVKIT+](#) [DS2781E+T&R](#) [MP2605DQ-LF-P](#)
[DS2710G+T&R](#) [MAX17040G+T](#) [MAX14525ETA+T](#) [MP2615GQ-P](#) [MAX14578EEWC+T](#) [LC05132C01NMTTGTG](#) [MAX8971EWP+T](#)
[MAX14630EZK+T](#) [MAX1873TEEE+T](#) [AXP221](#) [PSC5415A](#) [AUR9811DGD](#) [SN2040DSQR](#) [DS2715BZ+T&R](#) [MAX14921ECS+T](#)
[MAX77301EWA+T](#) [BD8668GW-E2](#) [MAX16024PTBS+T](#) [DS2715Z+T&R](#) [MAX16024LTBZ18+T](#) [DS2782G+T&R](#) [MAX1908ETI+T](#)
[ISL95522HRZ](#) [ARD00558](#) [NCP4371AAEDR2G](#) [BD8665GW-E2](#) [MAX8934EETI+T](#) [MP2624GL-P](#)