

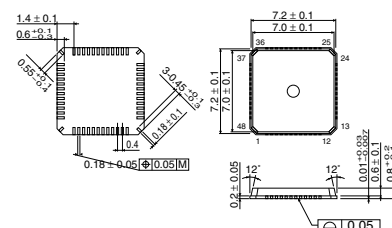
Power management IC for cellular phones

BH6039KN

●Description

BH6039KN is a compound power management IC incorporating regulator, detector, charge control circuit for charging lithium battery, and each driver for vibrator, LED, back light. The lithium battery charging circuit incorporates each monitor circuit such as the micro-controller charging current circuit.

●Dimension (Units : mm)



QFN48U

●Features

- 1) Built-in 5-channel CMOS type regulator
- 2) Built-in 4-channel detector circuit can vary delay time by external capacitor.
- 3) Built-in each driver for vibrator, LED, back light
- 4) Built-in charge control circuit for charging lithium battery in the set.
- 5) Small QFN48U package

●Applications

Cellular phones, Overseas cellular phones, PHS

●Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Power supply voltage	V _{CC}	7.0	V
Power dissipation	P _d	500 *	mW
Operating temperature range	T _{opr}	-30 ~ +75	°C
Storage temperature range	T _{stg}	-55 ~ +125	°C

*Derating : 5.0mW/°C for operation above Ta=25°C

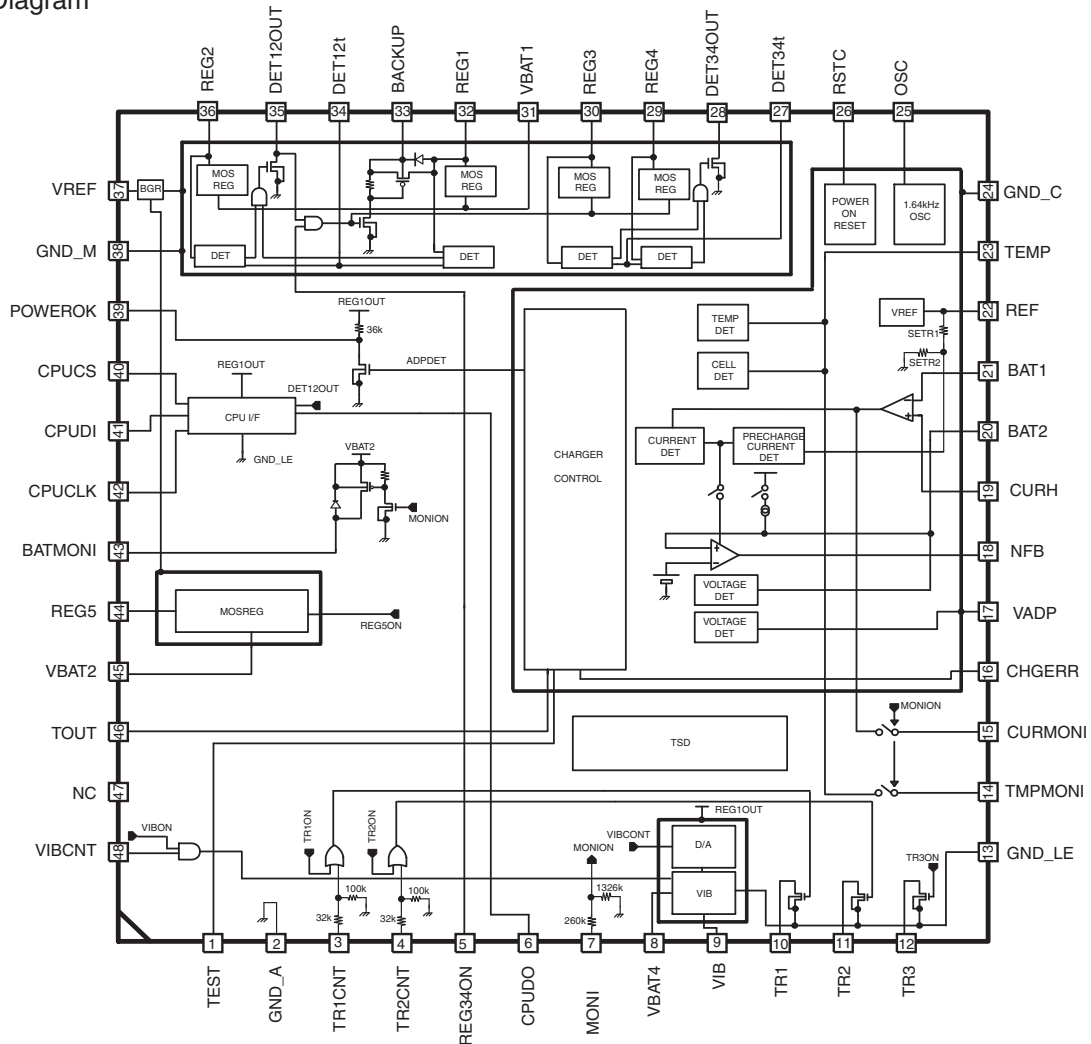
●Recommended Operating Conditions (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit
Battery voltage	V _{BAT}	3.20	3.60	4.50	V
Adapter voltage	V _{adp}	4.60	5.50	5.90	V

● Electrical characteristics (Unless otherwise noted: Ta=25°C, VBAT=3.6V, VADP=5.5V)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Circuit current						
Circuit current 1	IQ1	—	38	54	μA	REG1,2=ON (Power off mode)
Circuit current 4	IQ4	—	80	170	μA	REG1~5=ON, BACK UP=ON, (Full On1)
REG block						
REG1,3,5 output voltage	Vo1,3,5	2.79	2.85	2.91	V	Io=50,120, 80mA (REG1,3,5 order)
REG2,4 output voltage	Vo2,4	1.79	1.85	1.91	V	Io=30, 50mA (REG2,4 order)
REG ripple rejection rate	RR1~5	50	60	—	dB	VR=-20dBV, fR=120Hz, BW=20~20kHz, Io=50,30,120,50,80mA (REG1~5 order)
DET block						
DET1,3 detection voltage	VDET1,3	2.55	2.60	2.65	V	
DET2,4 detection voltage	VDET2,4	1.61	1.65	1.69	V	
CHG block						
Charge control voltage	VCHG	4.15	4.20	4.24	V	Ta=-10~60°C, charge current 60mA
Rapidity charge current	ICHG	0.9C	1C	1.1C		1C=500mA
SETR current	ISETR	60	76	92	μA	

● Block Diagram



Notes

- No technical content pages of this document may be reproduced in any form or transmitted by any means without prior permission of ROHM CO.,LTD.
- The contents described herein are subject to change without notice. The specifications for the product described in this document are for reference only. Upon actual use, therefore, please request that specifications to be separately delivered.
- Application circuit diagrams and circuit constants contained herein are shown as examples of standard use and operation. Please pay careful attention to the peripheral conditions when designing circuits and deciding upon circuit constants in the set.
- Any data, including, but not limited to application circuit diagrams information, described herein are intended only as illustrations of such devices and not as the specifications for such devices. ROHM CO.,LTD. disclaims any warranty that any use of such devices shall be free from infringement of any third party's intellectual property rights or other proprietary rights, and further, assumes no liability of whatsoever nature in the event of any such infringement, or arising from or connected with or related to the use of such devices.
- Upon the sale of any such devices, other than for buyer's right to use such devices itself, resell or otherwise dispose of the same, no express or implied right or license to practice or commercially exploit any intellectual property rights or other proprietary rights owned or controlled by
- ROHM CO., LTD. is granted to any such buyer.
- Products listed in this document use silicon as a basic material.
Products listed in this document are no antiradiation design.

The products listed in this document are designed to be used with ordinary electronic equipment or devices (such as audio visual equipment, office-automation equipment, communications devices, electrical appliances and electronic toys).

Should you intend to use these products with equipment or devices which require an extremely high level of reliability and the malfunction of which would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), please be sure to consult with our sales representative in advance.

About Export Control Order in Japan

Products described herein are the objects of controlled goods in Annex 1 (Item 16) of Export Trade Control Order in Japan.

In case of export from Japan, please confirm if it applies to "objective" criteria or an "informed" (by MITI clause) on the basis of "catch all controls for Non-Proliferation of Weapons of Mass Destruction.