



BQ24610 Stand-Alone Synchronous Switch-Mode Li-Ion or Li-Polymer Battery Charger

General Description:

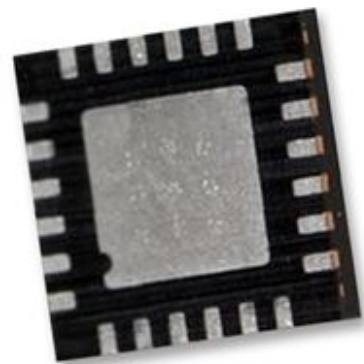
The bq24610/7 is highly integrated Li-ion or Li-polymer switch-mode battery charge controller. It offers a constant-frequency synchronous switching PWM controller with high accuracy charge current and voltage regulation, charge preconditioning, termination, adapter current regulation and charge status monitoring.

The bq24610/7 charges the battery in three phases:

Preconditioning, constant current and constant voltage. Charge is terminated when the current reaches a minimum user-selectable level. A programmable charge timer provides a safety backup. The bq24610/7 automatically restarts the charge cycle if the battery

voltage falls below an internal threshold, and enters a low-quiescent current sleep mode when the input voltage falls below the battery voltage.

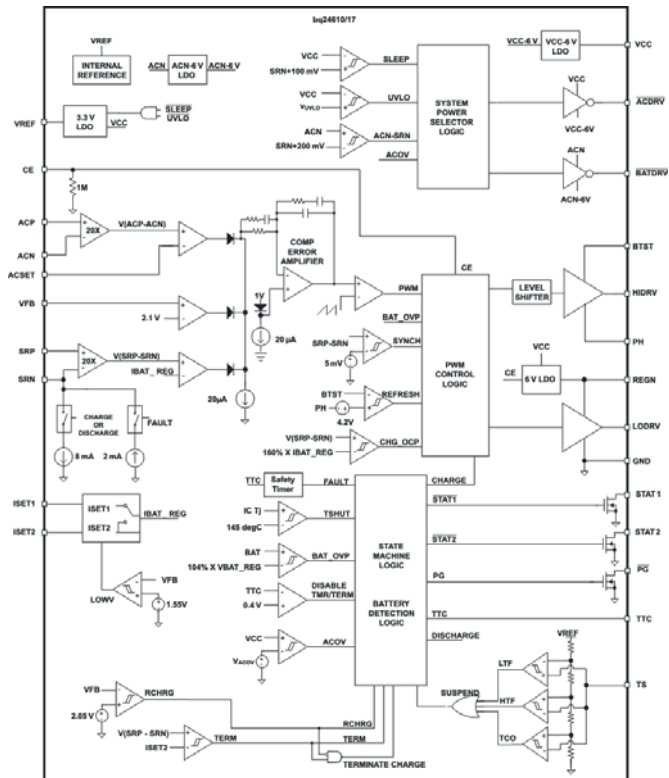
The bq24610/7 controls external switches to prevent battery discharge back to the input, connect the adapter to the system, and to connect the battery to the system using 6-V gate drives for better system efficiency. The bq24610/7 features Dynamic Power Management (DPM). These features reduce battery charge current when the input power limit is reached to avoid overloading the AC adapter when supplying the load and the battery charger simultaneously. A highly-accurate current-sense amplifier enables precise measurement of input current from the AC adapter to monitor the overall system power.



Key Features:

- 600 kHz NMOS-NMOS Synchronous Buck Converter
- Stand-alone Charger Support for Li-Ion or Li-Polymer
- 5V–28V VCC Input Operating Range and Support 1-6 Battery Cells (bq24610)
- 5V–24V VCC Input Operating Range and Support 1-5 Battery Cells (bq24617)
- Up to 10A Charge Current and Adapter Current
- High-Accuracy Voltage and Current Regulation
 - $\pm 0.5\%$ Charge Voltage Accuracy
 - $\pm 3\%$ Charge Current Accuracy
 - $\pm 3\%$ Adapter Current Accuracy Integration
 - Automatic System Power Selection from Adapter or Battery
 - Internal Loop Compensation

- Internal Soft Start
- Dynamic Power Management Safety Protection
- Input Over-Voltage Protection
- Battery Thermistor Sense Hot/Cold Charge
- Suspend
 - Battery Detection
 - Reverse Protection Input FET
 - Programmable Safety Timer
 - Charge Over-Current Protection
 - Battery Short Protection
 - Battery Over-Voltage Protection
 - Thermal Shutdown
- Status Outputs
 - Adapter Present
 - Charger Operation Status
- Charge Enable Pin
- 6V Gate Drive for Synchronous Buck
- Converter
- 30ns Driver Dead-time and 99.5% Max
- Effective Duty Cycle



Applications:

- Netbook, Mobile Internet Device and
- Personal Digital Assistants
- Handheld Terminals
- Industrial and Medical Equipment
- Portable Equipment

Related Products Information:

Mfr Part #	Farnell #	Newark #	Description
BQ24610RGET	1815718	60R2408	BQ24610 Stand-Alone Synchronous Switch-Mode Li-Ion or Li-Polymer Battery Charger- QFN-24

