

BQ34Z100-R2

Multi-Chemistry Impedance Track Fuel Gauge

Features

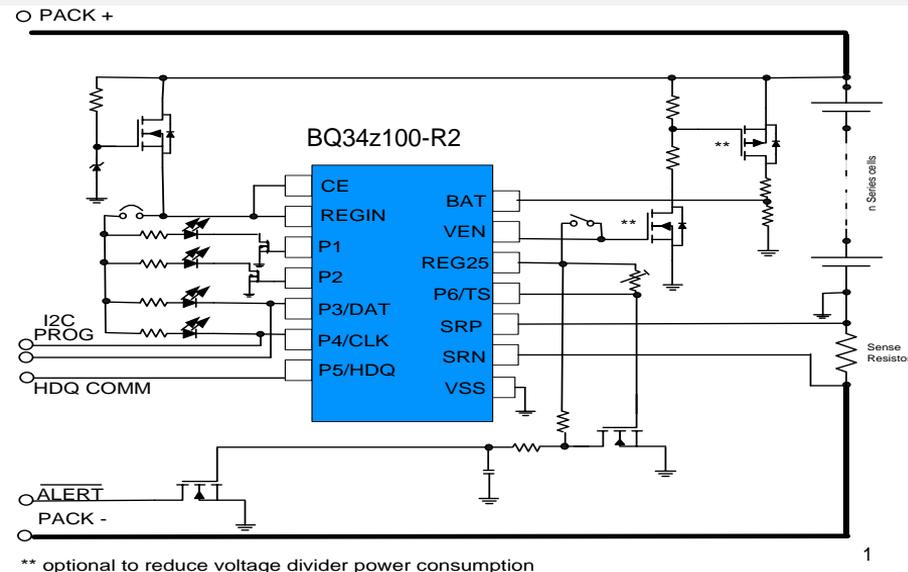
- Fuel Gauge Only: No Protection or Balancing
- Impedance Track™ Fuel Gauge Capacity Estimation for **Li-Ion, Polymer, LiFePO4, PbA, NiMH and NiCd**
- **Update to BQ34z100-G1**
- **Large Capacity** Batteries Supported (>65Ahr)
- **High Current** Applications Supported (Up to 8160A)
- **High Voltage** Applications Supported (Up to 16.7kV)
- Low Operating Current of <140uA, Sleep <64uA
- SHA-1 authentication
- External Thermistor Supported
- Optional Interfaces
 - Single wire (**HDQ**)/ Two-wire (**I2C**) Comm.
 - 1 or 4 LED display – More with expander IC
 - Configurable Warning signal
- 14-pin TSSOP

Applications

- Energy Storage Systems
- Battery backup, UPS and wireless base stations
- Power Assist, eBike
- Cordless home appliances
- General 12–48V battery packs
- Compatible 2nd Level Protectors: [BQ77915](#), [BQ7718](#), [BQ7716](#)

Benefits

- Very simple setup and configuration
- Accurate fuel gauging
- Independent of protection solution and cell balancing requirements
- Capable of gauging very high series cell batteries



BQ34z100-R2 FW Change Summary

1. Support larger size battery application > 16S (up to 16.7 kV and 8160 A)
 - Integrated voltage scaling
2. Better Support to PbA and NiMH chemistries
3. Seamless smoothing
 - Optimized smoothing for charging from negative TrueRM
 - Optimized smoothing for discharging near Terminate Voltage
4. Optimized IT algorithm for typical high burst current in backup system
5. Fix some know bugs(see next slide)

Bug Fixes

Change Description	Bq34z100-R2	Bq34z100-G1
RemainingTimeToEmpty Support	Shall support both constant power and constant current mode	Only support constant current mode
Fast Convergence Issue	Upon detecting negative scale, PassedCharge is corrected	Correct DOD0 as bq27z561 does
Different units used for AvailableEnergy when Smoothing and simulation	Use same measurement unit	Macro definition POWER_UNITS and UWATT_PER_CENTIWAT are used for same variable in different functions
CCA can not be disabled	Add descriptions on conditions for CCA bit to set	Not available
The unit of Taper Capacity does not align with TRM and bqStudio	Same same units for FW, TRM and bqStudio	Actual unit of taper capacity is 1/256mAH, but TRM and bqStudio use different units
OCVTaken set when charge is still under way	The OCVTaken bit could set when DOD0 is saved	Use REST bit and follow the rule for this bit as bq40z50 does
DOD0 found updated when the gauge switches between charge and discharge mode.	Caused by charge to discharge switching before SbsccFlags.normal_qtermination cleared, this bit is set true twice in function charge_qtermination_over	No second DOD0 update when transition from charge to discharge after VCT detection without full relax state is detected
FCC update frequently during discharge and relax	FCC update too frequent during discharge and relax	FCC update shall only happen under the condition specified in section 6.5 in sluubk0b.pdf(bq40z50TRM)