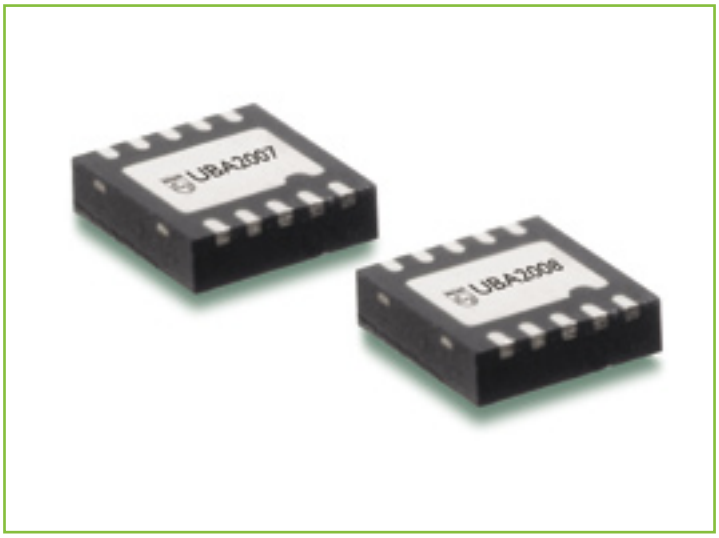
UBA2007/2008

Intelligent charge switches for charging circuit applications

Small, fail-safe charge switch solutions for charging applications in handheld products.

Semiconductors



Key features

- One integrated low-ohmic fast charge switch (charger-to-battery) with soft switching and adjustable current limitation (50 mA to 2 A).
- One integrated low-ohmic reverse mode switch (battery-to-charger) with current limitation (600 mA).
- One integrated constant current source (charger-to-battery) for slow charging or top-off charging (130 mA).
- Fail-safe operation through current limitation, over-voltage protection of battery, and thermal protections
- Output for precise current measurement
- Open drain charger detection output
- Small-footprint HVSON10 package (3x3 mm^2)
- UBA2007 used with PCF50604 PMU
- UBA2008 used as stand-alone charge switch

Developed for charging circuit applications, the Philips UBA2007 and UBA2008 are intelligent charge switches used between the charger input and the battery.

The UBA2007 and UBA2008 offer the same integrated features – a low-ohmic, bi-directional switch and a constant current source – but are designed for use with different Philips products. The UBA2007 is recommended for use with the PCF50604 power management unit (PMU), while the UBA2008 is typically used as a stand-alone device controlled by the host controller.

Depending on the control signals, the UBA2007/8 can perform either as a low-ohmic switch or as a current source. As a low-ohmic switch, the device controls current - from the charger to the battery, or from the battery to the charger - with soft switching and built-in current limitation. An external resistor can be used to adjust the current limit of the fast-charge switch. Also, by measuring the voltage drop over the external resistor, precise information on the charge current can be obtained. As a constant current source, the UBA2007/8 provides current from the charger to the battery, and can be used to pre-charge empty batteries.

Several integrated features prevent electrical malfunction and guarantee fail-safe operation. On the charger side, there is an over voltage (to 20 V), and a reverse voltage (to -20 V) protection. Built-in protection circuitry limits voltage when the battery is taken off-line during charging. Internal protection logic safeguards against erroneous control signals. Internal temperature protections prevent damage caused by overload or current limitation conditions.

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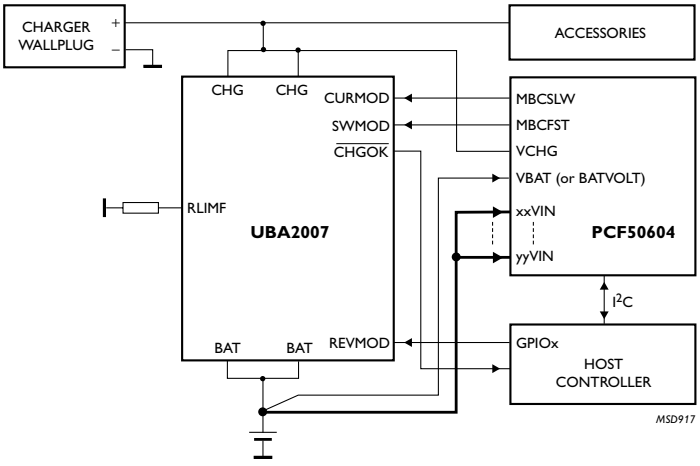
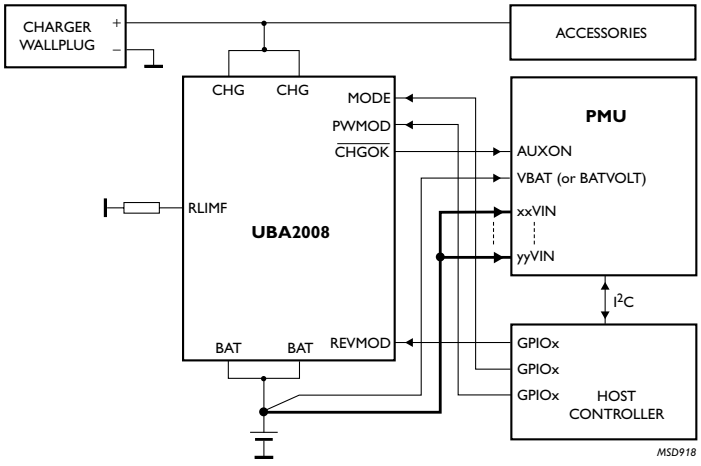
UBA2007 application diagram with PCF50604



UBA2008 application for stand-alone use



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