

## High Efficiency Synchronous Rectified Portable Battery Charger and Management System

*Parameters Subject to Change Without Notice*

### DESCRIPTION

JW<sup>®</sup>3631 is power management solution for portable battery charger system.

The device contains a full-featured battery charger with up to 3A charge current, a 3.1A output and battery protection functions.

Charge mode: The charger can be powered from 5V wall adaptor with  $\pm 10\%$  variation whereas over voltage lock out protects internal circuit during voltage surge.

The device automatically turns-off charging and bypassing function when input voltage exceeds 6.1V, and can sustain up to 10V continuous input voltage with charging and bypassing function in OFF status.

The device has a preset battery float voltage of 4.2V/4.35V programmable by external resistor with  $\pm 1\%$  accuracy at room temperature. The integrated charger minimizes the charger's physical footprint, maximizes charge efficiency, which reduces the power dissipation during charge.

Discharge mode: The system power the output with 3.1A capacity.

In both charge and discharge mode, PFM is engaged to maintain high efficiency at light load.

JW3631 guarantee robustness with short-circuit protection, thermal protection, and input under and over voltage lockout.

They are available in a 24-pin FCQFN4X4 package with exposed pad for low thermal resistance.

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### FEATURES

- Complete 5V portable battery charger system with integrated power FET and smart charge/discharge mode control
- Supports Battery Charging Specification 1.2 charging port types of Dedicated Charging Ports (DCP)
- Supports Chinese Communications Industry Standard YD/T 1591-2009
- Auto detect and charge for Apple, Samsung, BC1.2 compliant devices
- Sustain up to 10V with charging and bypassing function in OFF status
- 12V input instantaneous withstand voltage
- Charge termination and auto-recharge
- Ideal diode to minimize voltage drop
- Low quiescent current
- Selectable 4.2V/4.35V battery voltage with  $\pm 1\%$  accuracy
- Up to 3A charge current
- 3.1A output current limit
- 93% charge peak efficiency
- 97% discharge peak efficiency
- Automatic load detection
- NTC function for battery thermal protection
- Battery over charge and over discharge protection
- Safety timer to prevent prolonged charging
- Thermal and short circuit protection

### APPLICATIONS

- Portable battery charger system