

High-Integration Programmable Protocol Controller with Internal Feedback Compensation and Built-in Blocking N-MOSFETs

General Description

The RT7206KDA is a programmable controller with a high integration of the internal feedback compensation, blocking N-MOSFETs and the current sense. An internal MCU is designed to handle various the proprietary protocols via the D+/D- interface.

This controller is a specific design for off-line AC-DC converters to achieve the high power density of a fast charge system. The RT7206KDA integrates a constant voltage loop, a constant current loop and the built-in compensation in the feedback control so as to regulate output voltage and current. With the proprietary design, this controller not only possesses the feature of component-count saving via the built-in feedback compensation, but also provides the performance of enhanced transient response and safety level via the integration of diverse functions and protections.

In applications requiring high-precision control, a dual operational amplifier is adopted in the Digital-to-Analog Converter (DAC) to serve reference voltages used for regulation of voltage loop and current loop in programming the constant voltage (CV) and the constant current (CC).

Marking Information

For marking information, contact our sales representative directly or through a Richtek distributor located in your area.

Features

- **Protocol Support**
 - ▶ **Proprietary Protocols**
- **Highly Integrated**
 - ▶ **Suited for 3V to 13V VDD Range**
 - ▶ **Embedded MCU with an Mask ROM of 16kB, an OTP-ROM of 8kB, and an SRAM of 0.75kB**
 - ▶ **Built-in Blocking N-MOSFET and Current Sense**
 - ▶ **Built-in Shunt Regulators for Constant Voltage and Constant Current Control**
 - ▶ **Built-in Internal Feedback Compensation**
 - ▶ **Programmable Linear Cable Compensation**
 - ▶ **CC Tolerance < 100mA**
 - ▶ **VDD Pin for Quick Discharge of Output Capacitor**
 - ▶ **< 5mA Operating Current in Normal Mode**
 - ▶ **< 1.5mA Operating Current in Sleep Mode**
 - ▶ **< 900μA Operating Current in Green Mode**
- **Protection**
 - ▶ **Adaptive Output Over-Voltage Protection**
 - ▶ **Adaptive Under-Voltage Protection**
 - ▶ **CC1/CC2/D+/D-/RT Over-Voltage Protection**
 - ▶ **Firmware-Programmable Over-Current Protection**
 - ▶ **Firmware-Programmable Over-Temperature Protection**

Applications

- Travel Adapters with USB Type-C Control
- Travel Adapters with Fast Charge Protocols