High-Integration Fast Charge Protocols Controller with Internal Feedback Compensation

General Description

The RT7203BT is a programmable controller with integration of super charge protocols, and the built-in feedback compensation. An internal MCU is designed in to handle various proprietary protocols via the D+/D- interface.

This controller is a specific design with high integration for off-line AC-DC converters possessing high power density. The RT7203BT integrates a constant voltage loop, a constant current loop and the built-in compensation in feedback control to better regulate the design, this IC not only possesses a feature of component saving via its feedback compensation, but also provides an enhanced transient response and safety protections via the integration of diverse functions.

In applications of high precision control, dual operational amplifiers are adopted in the Digital-to-Analog Converter (DAC) to provide reference voltages used for regulation of voltage loop and current loop in programming the constant voltage (CV) and the constant current (CC), respectively.

Ordering Information

RT7203BT □□-□

- Programmed Firmware Code AABBX
  - AA: Application Code
  - BB: Model Code
  - X: Customer Approved Version Code
- Package Type
  - S: SOP-8
- Lead Plating System
  - G: Green (Halogen Free and Pb Free)

Note:

The products are:

- RoHS compliant and compatible with the current requirements of IPC/JEDEC J-STD-020.
- Suitable for use in SnPb or Pb-free soldering processes.

Features

- **Protocol Support**
  - **Proprietary Protocols**
- **Highly Integrated**
  - **Suited for 3V to 13V VDD Range**
  - **Embedded MCU with a Mask ROM of 16kB, an OTP-ROM of 16kB, and an SRAM of 1.5kB**
  - **Built-In Shunt Regulators for Constant Voltage and Constant Current Control**
  - **Built-In Feedback Compensation**
  - **Built-In Temperature Sensing**
  - **Built-In 10-bit Analog-to-Digital Converter**
  - **VDD Pin for Quick Discharge of Output Capacitor**
  - **< 3.3mA Operating Current in Normal Mode**
  - **< 1.5mA Operating Current in Idle Mode**
  - **< 900μA Operating Current in Green Mode**
- **Protection**
  - **Adaptive Output Overvoltage Protection**
  - **Adaptive Undervoltage Protection**
  - **DP/DM Overvoltage Protection**
  - **RT Overvoltage Protection**
  - **Firmware-Programmable Constant Current Protection**
  - **Firmware-Programmable Overcurrent Protection**
  - **Firmware-Programmable Over-Temperature Protection**

Applications

- Travel Adapters with Fast Charge Protocols