The P8330 is a multi-channel power management IC tailored for use in solid-state drive applications. It features multiple regulator outputs, inrush current control, and holdup power management functions.

The P830 can be powered by single or dual 3.3V/5V and/or 5V/12V inputs, and provides a slew-rate limited turn-on for the external input switch. An I2C-compatible interface allows extensive programming and configuration of operating parameters. An internal multi-time programmable (MTP) memory allows permanent storage of configuration settings.

### Simplified Block Diagram

- **Inrush Current Control**
- **State Machine**
- **Fault Handling (OTP, OCP, UVP, OVP)**
- **Register Bank**
- **Backup Power & capacitor Test**
- **I2C**
- **Buck1**
- **Buck2**
- **Buck3**
- **Buck4**
- **Buck5**
- **Boost1**
- **Buck6**
- **Buck7**
- **CH1 (5A)**
- **CH2 (2A)**
- **CH3 (1A)**
- **CH4 (2A)**
- **CH5 (0.3A)**
- **CH6 (0.5A)**
- **CH7**
- **VIN1**
- **VIN2**
- **VSTOR**

### Features

- **Input Voltage Range:**
  - 2.75V to 5.75V on SRCA
  - 2.75V to 15V on SRCB
- **Operation with Single- or Dual-Input Supplies**
- **Multiple Output Regulator Channels**
  - Six step-down regulators with internal MOSFETs (Channels 1, 2, 3, 4, and 5)
  - One step-down regulator with internal drivers for external MOSFETs (Channel 7)
  - One step-up regulator with internal MOSFETs (Channel 6)
- **Wide Output Voltage Range on Each Channel:**
  - CH1: 0.55V to 1.825V
  - CH2 - CH5: 0.55V to 3.7375V
  - CH6: 11V to 14.1V
  - CH7: 0.55V to 3.7375V
- **External Regulator Enable Control and Monitor**
- **Integrated Holdup Power Manager with Drivers for External MOSFETs**
- **Integrated Inrush Current Control**
- **Comprehensive Fault Protection**
  - Input Overvoltage Protection
  - Input Undervoltage Lockout
  - Output Overvoltage Protection
  - Output Undervoltage Protection
  - Output Overcurrent Protection
  - Over-temperature Protection
- **Soft-start and Soft-stop on All Output Rails**
- **Reset Output**
- **Power Fail Interrupt Output**
- **General Interrupt Output**
- **I2C-compatible Interface**
- **Extensive Programmability and Configuration Via Internal Registers**
- **Internal MTP Memory**
- **Package:** 8 × 8 mm 68-lead QFN

### Typical Applications

- Solid-state drives
- Capacitor-based backup power sources
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