

DDR5 Client PMIC With I2C/I3C Interface

1 Description

The SY5889 is a power management IC (PMIC) for DDR5 CSODIMM/CUDIMM/SODIMM/UDIMM. and integrates three high efficiency Buck DC-DC converters, two LDOs, and flexible interface.

The device provides three channels buck outputs:SWA/SWB/SWC.SWAand SWB default are single phase and can be configured dual phase with current share operation.

VOUT_1.8V/VOUT_1.0V LDOs are intended to power supply SPD hub,Temp Sensor and CKD on DIMM.SY5889 is available FC-QFN28 3mmx4mm package, and is halogen and lead free, compliant with RoHS.

2 Applications

CKD Small Outline DIMM(CSODIMM)

CKD Un-Buffered DIMM(CUDIMM)

Other DDR5-Based Dual in-line Memory

Modules

(DIMM)

3 Features

- ◆ VIN/VIN_Bulk Supply Range: 4.25V to 5.5V

- ◆ Three Buck Regulators:
 - SWA (1 phase, default 1.1V/6 .5A Valley) 0.8V~2 .2V, 5mV/10mV step + offset
 - SWB (1phase, default 1.1V/6 .5A Valley) 0.8V~2 .2V, 5mV/10mV step + offset
 - SWC (1 phase, default 1.8V/ 2 .5A Valley) 1.5V~2 .135V, 5mV step
- ◆ SWA/BC VOUT Accuracy:±0 .75% DC(FCCM) ±2 .5% DC+AC
- ◆ FSW: 0.75Mhz to 1.5Mhz with 250Khz step
- ◆ Support acoustic noise prevent operation
- ◆ SWA/B Dual Phase Operation Configure
- ◆ Two Linear Regulators:
 - VOUT_1.8V: 1.7V to 2.0V with 0.1V step
 - VOUT_1.0V: 0.9V to 1.2V with 0.1V step
- ◆ Max to 1.0Mhz I2C Interface
- ◆ Support I2C 1.0V to 3.3VIO
- ◆ Max to 1.0VIO 12.5MHZ I3C Interface
- ◆ Support Intel XMP3 .0 OC Spec
- ◆ Support LDOs Power Reset
- ◆ Built-in MTP Non-Volatile Memory
- ◆ Support Secure & Programmable Mode
- ◆ Integrate ADC For Vol/Current/Power Consumption Monitor
- ◆ Support ADC fine resolution 31.25mA/31.25mW/125mA/125mW
- ◆ VIN_OVP/VIN_UVP/SWA/SWB/SWC OCP/UVP
- ◆ Over Temperature Protection
- ◆ PWR_GOOD&GSI_n to Indicate Status
- ◆ Compliant with JESD301-6/2 V1 .0

4 Typical Application Circuit

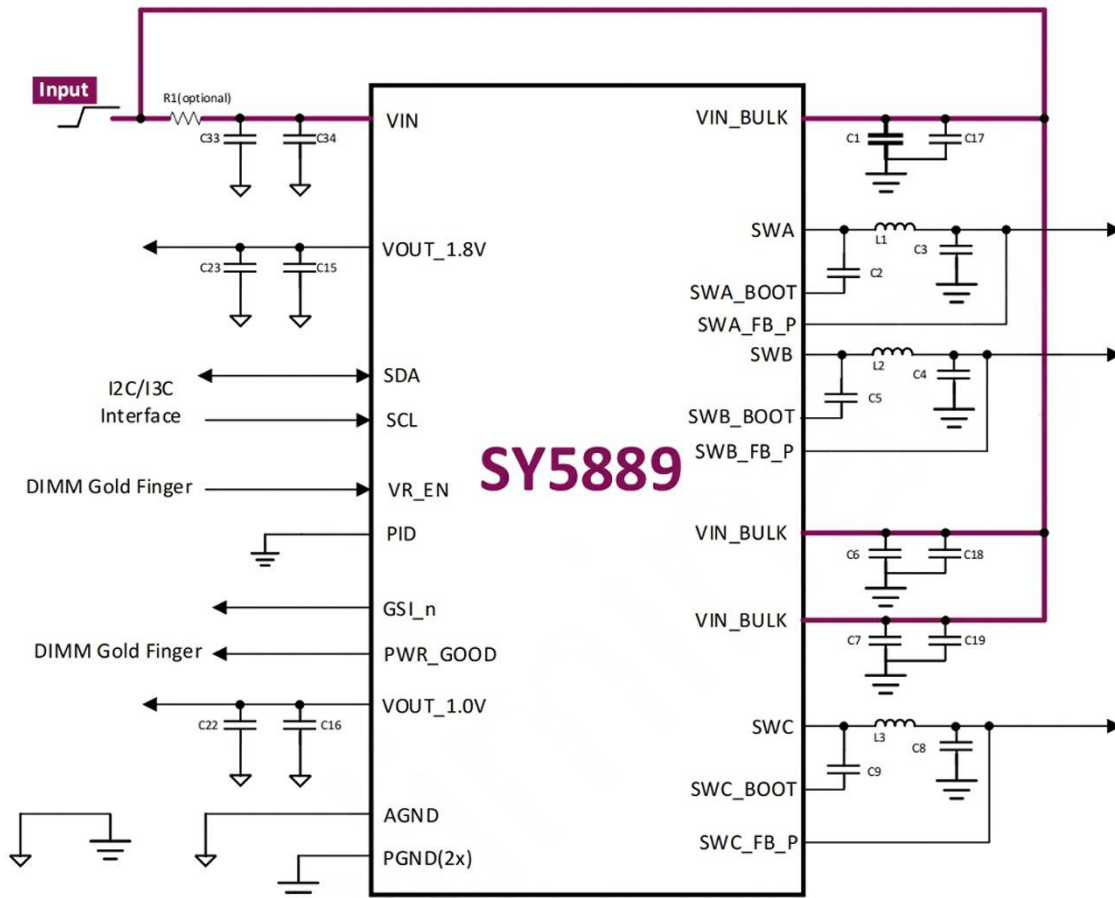


Fig 1. SWA/B Single Phase Application