Brief Description

The ZSPM1025A is a flexible true-digital single-phase PWM controller optimally configured for use with the Murata Power Solutions 25A Power Block OKLP-X/25-W12-C in smart digital power solutions.

The ZSPM1025A integrates a digital control loop, optimized for maximum flexibility and stability, as well as load step and steady-state performance. In addition, a rich set of protection and monitoring functions is provided. On-chip, non-volatile memory (NVM) and an I²C™ * interface facilitate configuration.

IDT's PC-based Pink Power Designer™ graphic user interface (GUI) provides a user-friendly and easy-to-use interface to the ZSPM1025A for communication, monitoring, and configuration of the protection and sequencing features.

A downloadable reference solution is available, including a graphical user interface, layout guide-lines, bill of materials, and step-by-step instructions.

Features

- Programmable digital control loop
- Advanced digital control techniques
  - Tru-sample Technology™
  - State-Law Control™ (SLC)
  - Sub-cycle Response™ (SCR)
- Improved transient response and noise immunity
- Protection features
  - Over-current protection
  - Over-voltage protection (VIN, VOUT)
  - Under-voltage protection (VIN, VOUT)
  - Overloaded startup
  - Continuous retry ("hiccup") mode for fault conditions
- Fuse-based NVM for improved reliability
- Operation from a single 5V or 3.3V supply
- Optional PMBus™ address selection without external resistors

Benefits

- Fast time-to-market using off-the-shelf, optimally configured controller and power block
- Fast configurability and design flexibility
- Simplified design flow and high reliability via proven system design solution
- Reduced component count through system level integration
- Simplified monitoring for system power and thermal management
- Pin-to-pin compatible with the ZSPM1025C and ZSPM1025D PWM controllers, enabling point-of-load platform designs with or without digital communication
- Higher energy efficiency across all output loading conditions

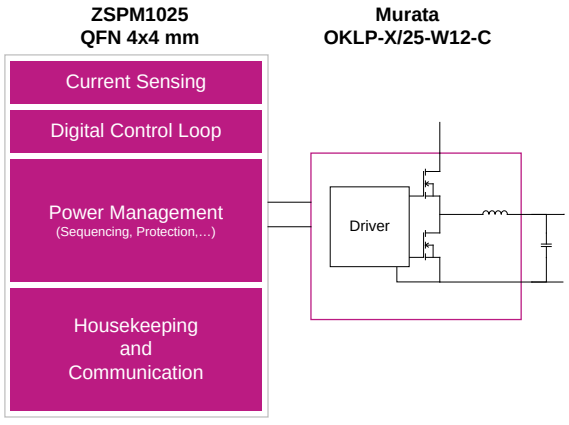
Available Support

- Evaluation Kit
- Reference Solution
- PC-based Pink Power Designer™ GUI

Physical Characteristics

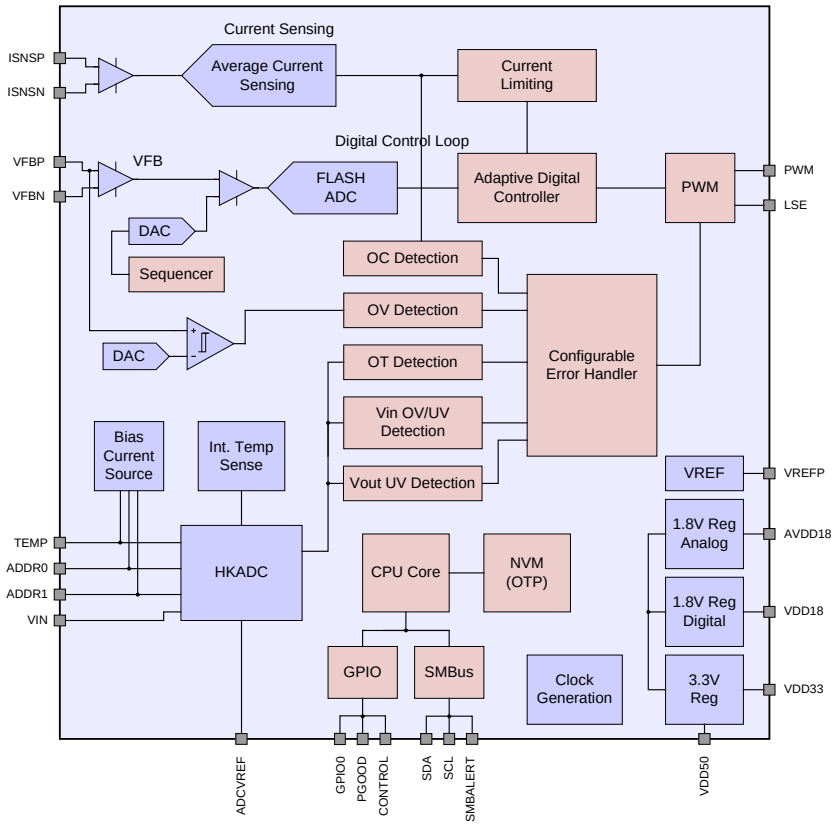
- Operation temperature: -40°C to +125°C
- V_{OUT}: 0.35V to 3.6V
- Lead free (RoHS compliant) 24-pin QFN package (4 mm x 4 mm)

ZSPM1025A Typical Application Diagram



* I²C™ is a registered trademark of NXP.

ZSPM1025A Block Diagram



Typical Applications

- *Telecom Switches*
- *Servers and Storage*
- *Base Stations*
- *Network Routers*
- *Industrial Applications*
- *Single-Rail/Single-Phase Supplies for Processors, ASICs, FPGAs, DSPs*

Ordering Information

Sales Code	Description	Package
ZSPM1025AA1W 1	ZSPM1025A Lead-free QFN24 — Temperature range: -40°C to +125°C	Reel
ZSPM8025-KIT	Evaluation Kit for ZSPM1025A with PMBus™ Communication Interface — Pink Power Designer™ GUI for kit can be downloaded from the IDT web site at www.IDT.com/ZSPM1025A	Kit

* This product is sold under a limited license from PowerOne, Inc. related to digital power technology as set forth in U.S. Patent 7000125 and other related patents owned by PowerOne, Inc. This license does not extend to stand-alone power supply products.

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