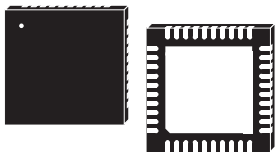
PM6780

Data brief

Dual digital multiphase controller with PMBus®



VFQFPN40 5x5 mm

Product status link
PM6780

Product summary		
Order code	Package	Packing
PM6780	VFQFPN40 5x5x1 mm	Tape and reel

Features

- N+M phases compact digital controller
- Programmable phase assignment between two loops; from 8+0 up to 4+4
- Flexible CPU / GPU support
  - Intel® VR14 spec rev. 1.9
  - AVS bus rev. 1.3.1 part III
- PMBus® rev. 1.2 at 400 kHz
- High-performance digital control loop (Digital STVCoT™)
- Fully configurable through PMBus®
- Auto DPM - (Dynamic Phase Management)
- Output voltage range: 0.25 to 2.5 V
- Remote sense; 0.5% V_{out} accuracy
- Configurable current monitor signal
- Programmable voltage positioning
- OV, UV, and FB disconnection protection
- Embedded non-volatile memory (NVM)
- VFQFPN40 5x5 mm package

Applications

- High current power regulation for Intel® VR14/13-based microprocessors
- High current power regulation for AVS-based microprocessors
- DDR memory power regulation
- High current POL and networking application

Description

The PM6780 is a high performance dual digital loop controller designed to power next-generation high performance microprocessors: it can be configured to work with Intel's VR14 or AVS compliant microprocessors. All the required parameters are programmable through the PMBus® interface.

The device utilizes digital technology to implement all control and power management functions to provide maximum flexibility and performance. NVM is embedded to store custom configurations. The PM6780 can support up to 8 phases on a single rail (4+4 in dual rail) and allows programmable phase assignment between the two loops.

The PM6780 supports pulse skipping, and programmable DPM, maintaining the best efficiency over all loading conditions without compromising transient response. The device assures fast and independent protection against load overcurrent, under/overvoltage, and feedback disconnections.

The device is available in VFQFPN40 5x5mm compatible with common footprint directions.

Revision history

Table 1. **Document revision history**

Date	Version	Changes
13-Dec-2023	1	Initial release.

Contents

List of tables