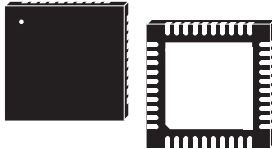


Dual digital multiphase controller with PMBus®



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

Revision history2



List of tables

Table 1. Document revision history 2

IMPORTANT NOTICE – READ CAREFULLY

STMicroelectronics NV and its subsidiaries ("ST") reserve the right to make changes, corrections, enhancements, modifications, and improvements to ST products and/or to this document at any time without notice. Purchasers should obtain the latest relevant information on ST products before placing orders. ST products are sold pursuant to ST's terms and conditions of sale in place at the time of order acknowledgment.

Purchasers are solely responsible for the choice, selection, and use of ST products and ST assumes no liability for application assistance or the design of purchasers' products.

No license, express or implied, to any intellectual property right is granted by ST herein.

Resale of ST products with provisions different from the information set forth herein shall void any warranty granted by ST for such product.

ST and the ST logo are trademarks of ST. For additional information about ST trademarks, refer to www.st.com/trademarks. All other product or service names are the property of their respective owners.

Information in this document supersedes and replaces information previously supplied in any prior versions of this document.

© 2023 STMicroelectronics – All rights reserved