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Exar Releases New DDR 3 SDRAM Memory Bus Termination Regulator

Active Termination Provides Signal and Data Integrity during Data Access for DDR 1, 2 and 3 Memories

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XRP7708

Quad Channel Digital PWM Step Down Controller

Features

- Four-channel Step Down Controller
 - 2 x 5A Channels & 2 x 8A Channels
 - Programmable Output Voltage 0.9V-5.1V
 - Programmable 1.5MHz DPWM Frequency
- 6.5V-20V Single Input Voltage Range
- Up to 6 reconfigurable GIPO pins
- Fully programmable via I2C interface
- Independent Digital Pulse Width Modular (DWPM) channels
- Complete power monitoring and reporting
- Full On Broad Protection OTP, UVLO, OCP and OVP
- Built-in 3.3v/5V LDO
- Green/Halogen Free 40-pin TQFN

Applications

- Multi-Channel Programmable Power Supplies
- Audio-Video Equipment
- Industrial & Telecom Equipment
- Processors & DSP-Based Equipment

Description

The XRP7708 is a quad-output pulse-width modulated (PWM) step-down DC-DC controller with a built-in LDO for standby power and GPIOs. The device provides a complete power management solution in one IC and is fully programmable via an I2C serial interface. Independent Digital Pulse Width Modulator (DPWM) channels regulate output voltages and provide all required protection functions such as current limiting and over-voltage protection.

Each output voltage can be programmed from 0.9V to 5.1V without the need of an external voltage divider. The wide range of the programmable DPWM switching frequency (from 300 KHz to 1.5 MHz) enables the user to optimize between efficiency and component size. Input voltage range is from 6.5V to 20V. Two controllers support a load of up to 5A, while the other two controllers support up to 8A. I2C bus interface is provided to program the IC as well as to communicate with the host for fault reporting and handling, power rail parameters monitoring, etc.

The device offers a complete solution for soft-start and soft-stop. The start-up delay and ramp of each PWM regulator can be independently controlled. The device can start up a pre-biased PWM channel without causing large negative inductor current.

The Exar Model XRP77xxEVB-XCM and XRP77xxEVB-XPM ("Evaluation Board") provides designers with a simple, quick and inexpensive means of evaluating and prototyping new designs using PowerXR devices. This Evaluation Board is designed only for low volume engineering purposes; not production volumes. For production requirements commercial programmers must be used. The Evaluation Board is provided "as is and whereas" and without any warranty as to results, merchantability or purpose. Exar is not responsible for misuse of the Evaluation Board.

Part Number	Package Type	RoHS	Status	Buy Now	Order Samples
XRP7708ILBTR-F	TQFN-40		Active		
XRP7708ILB-F	TQFN-40		Active		
XRP7708EVB	Board		Active		

Part Status Legend

Active - the part is released for sale, standard product.

EOL (End of Life) - the part is no longer being manufactured, there may or may not be inventory still in stock.

CF (Contact Factory) - the part is still active but customers should check with the factory for availability. Longer lead-times may apply.

PRE (Pre-introduction) - the part has not been introduced or the part number is an early version available for sample only.

OBS (Obsolete) - the part is no longer being manufactured and may not be ordered.

NRND (Not Recommended for New Designs) - the part is not recommended for new designs.

Specifications

Vin Range	6.5V – 20V
Vout Range	0.9V – 5.1V
Gate DrivePull Up/Down	5ohm / 1.8ohm
IQ (µA)	9mA
Package Type	TQFN40
Junction Temperature Range	-40°C to 125°C

Documents

Datasheets

[Datasheet](#)
Version 1.2.0
April 2011
1.00 MB

Application Notes

[ANP-31, PowerXR Configuration and Programming](#)
Version 1.0.0
August 2010
405.48 KB

[ANP-32, Practical Layout Guidelines for PowerXR Designs](#)
Version 1.0.0
August 2010
1.26 MB

[ANP-35, XRP77XX: Extending the MOSFET Gate Drive Conductors](#)
Version 1.0.0
May 2011
2.00 MB

Manuals

[Exar Configuration Module \(XCM\) Evaluation Board Manual](#)
Version 1.1.0
April 2011
1.04 MB

Process Qualification Report

[XRP77XX Family Reliability and Qualification Report](#)
Version 1.0.0
July 2010

35.03 KB

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