Chipsmall

Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!
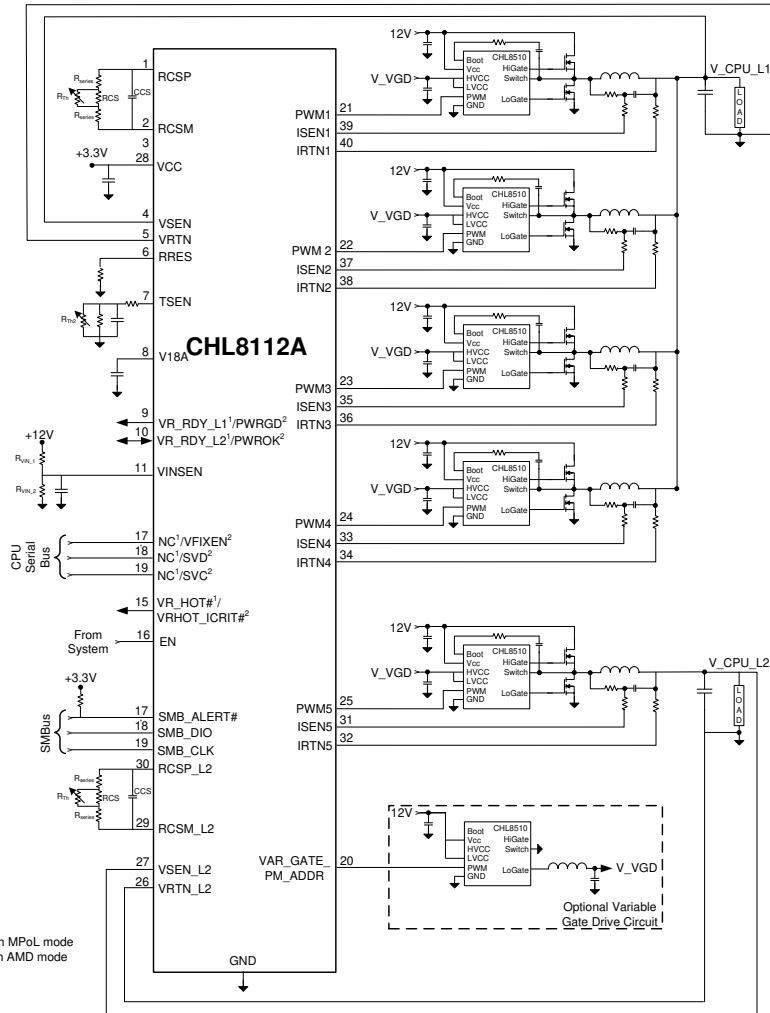
Contact us

FEATURES

- 5-phase dual output PWM Controller
- Phases are flexibly assigned between Loops 1 & 2
- AMD® SVI/G34 & Memory MPoL modes
- Dual OCP support for I-spike enhanced AMD CPUs
- SMB_Alert Pin for Servers
- PMBus Address pin or Variable Gate Drive (CHL8112A)
- 2nd Temperature Sense (CHL8112B)
- Overclocking & Gaming Mode with Vmax setting
- Switching frequency from 200kHz to 1.2MHz per phase
- CHiL Efficiency Shaping Features including Variable Gate Drive (CHL8112A only), Dynamic Phase Control
- Programmable 1-phase or 2-phase for Light Loads and Active Diode Emulation for Very Light Loads
- CHiL Adaptive Transient Algorithm (ATA) on both loops minimizes output bulk capacitors and system cost
- Designed for use with coupled inductors
- Auto-Phase Detection with auto-compensation
- Per-Loop Fault Protection: OVP, UVP, OCP, OTP, CFP
- I2C/SMBus/PMBus system interface for telemetry of Temperature, Voltage, Current & Power for both loops
- Non-Volatile Memory (NVM) for custom configuration
- Compatible with CHiL ATL and 3.3V tri-state Drivers
- +3.3V supply voltage; 0ºC to 85ºC ambient operation
- Pb-Free, RoHS, 6x6 40 pin QFN package

DESCRIPTION

The CHL8112A/B are dual-loop digital multi-phase buck controllers that drive up to 5 phases. The CHL8112A/B is fully AMD® SVI compliant on both loops and provides a Vtt tracking function for DDR memory.

NVM storage saves pins and enables a small package size.

The CHL8112A/B includes the CHiL Efficiency Shaping Technology to deliver exceptional efficiency at minimum cost across the entire load range. CHiL Variable Gate Drive optimizes the MOSFET gate drive voltage as a function of real-time load current. CHiL Dynamic Phase Control adds/drops active phases based upon load current. The CHL8112A/B can be configured to enter 1-phase operation and active diode emulation mode automatically or by command.

CHiL's unique Adaptive Transient Algorithm (ATA), based on proprietary non-linear digital PWM algorithms, minimizes output bulk capacitors. In addition, a coupled inductor mode, with phases added/dropped in pairs, enables further improvement in transient response and form factor.

The I2C/PMBus interface can communicate with up to 16 CHL8112A/B based VR loops. Device configuration and fault parameters are easily defined using the CHiL Intuitive Power Designer (IPD) GUI and stored in on-chip NVM.

The CHL8112A/B provides extensive OVP, UVP, OCP and OTP fault protection and includes thermistor based temperature sensing with VRHOT signal.

The CHL8112A/B also includes numerous features like register diagnostics for fast design cycles and platform differentiation, truly simplifying VRD design and enabling fastest time-to-market with its "set-and-forget" methodology.

Figure 1. CHL8112A & CHL8112B Packages

APPLICATIONS

- AMD® SVI based systems
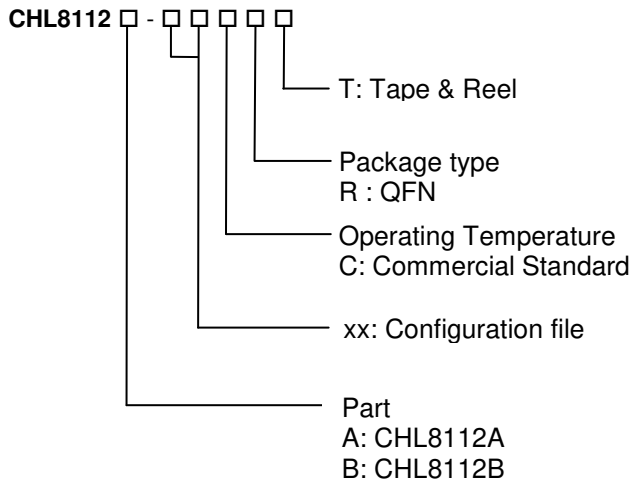- DDR Memory with Vtt tracking
- Overclocked & Gaming platforms

TYPICAL APPLICATIONS BLOCK DIAGRAMS

Notes
[1] Pin definition in MPoL mode
[2] Pin definition in AMD mode

ORDERING INFORMATION

CHL8112 □ - □ □ □ □ □

T: Tape & Reel

Package type
R : QFN

Operating Temperature
C: Commercial Standard

xx: Configuration file

Part
A: CHL8112A
B: CHL8112B

Package	Tape & Reel Qty	Part Number
QFN	3000	CHL8112A-00CRT[1]
QFN	3000	CHL8112A-xxCRT[2]
QFN	3000	CHL8112B-00CRT[1]
QFN	3000	CHL8112B-xxCRT[2]

Notes
1. For unprogrammed/default parts, use configuration file 00. Unprogrammed parts will not start up until programmed in order to insure a safe power up.
2. -xx indicates a customer specific configuration file