



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

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



FEATURES

- 5-phase & 8-phase dual output PWM Controller with phases flexibly assigned between Loops 1 & 2
- Dynamic voltage control by 2-bit parallel interface with Gamer Mode override and Vmax setting
- Input Voltage Management for up to 3 Input Voltages
- ICritical Monitor and Phase Current Capture Mode
- Phase Switching frequency from 200kHz to 1.2MHz
- IR Efficiency Shaping Features including Variable Gate Drive, Dynamic Phase Control
- Programmable 1-phase or 2-phase for Light Loads and Active Diode Emulation for Very Light Loads
- IR Adaptive Transient Algorithm (ATA) minimizes output bulk capacitors and system cost
- Per-Loop Fault Protection: OVP, UVP, OCP, OTP
- I2C/SMBus/PMBus system interface for telemetry of Temperature, Voltage, Current & Power for both loops
- Non-Volatile Memory (NVM) for custom configuration
- Compatible with IR ATL and 3.3V tri-state Drivers
- +3.3V supply voltage; 0°C to 85°C ambient operation
- Pb-Free, RoHS, 6x6 40-pin & 8x8 56-pin QFN, MSL2 package

APPLICATIONS

- Multiphase GPU systems

DESCRIPTION

The CHL8225G/8G are dual-loop, digital multi-phase buck controllers. The CHL8225G drives up to 5 phases and the CHL8228G drives up to 8 phases. They feature Input Voltage Management allowing up to 3 input voltages to be monitored to ensure adequate power is delivered to the load. Dynamic voltage control is provided by 4 registers which are programmed through I2C/SMBus/PMBus and then selected using a 2-bit parallel bus for fast access.

The CHL8225G/8G includes the IR Efficiency Shaping Technology to deliver exceptional efficiency at minimum cost across the entire load range. IR Variable Gate Drive optimizes the MOSFET gate drive voltage as a function of real-time load current. IR Dynamic Phase Control adds and drops phases based upon load current. The CHL8225G/8G can be configured to enter 1-phase operation and active diode emulation based upon load current or by command.

IR's unique Adaptive Transient Algorithm (ATA), based on proprietary non-linear digital PWM algorithms, minimizes output bulk capacitors.

The I2C/PMBus interface can communicate with up to 16 CHL8225G/8G-based VR loops. Device configuration and fault parameters are defined using the IR Digital Power Design Center (DPDC) GUI and stored in on-chip NVM.

The CHL8225G/8G provides extensive OVP, UVP, OCP and OTP fault protection and includes thermistor based temperature sensing with VRHOT signal. The CHL8225G/8G includes numerous features like register diagnostics for fast design cycles and platform differentiation, simplifying VRD design and enabling fastest time-to-market with its "set-and-forget" methodology.

PIN DIAGRAM

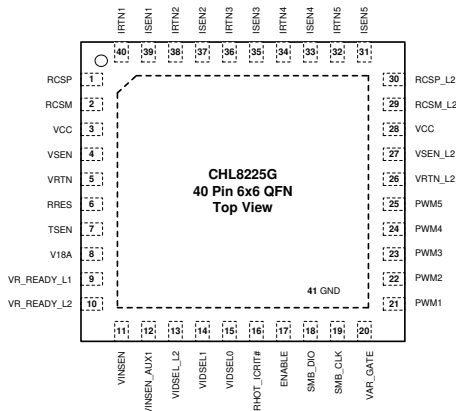


Figure 1: CHL8225G Package Top View

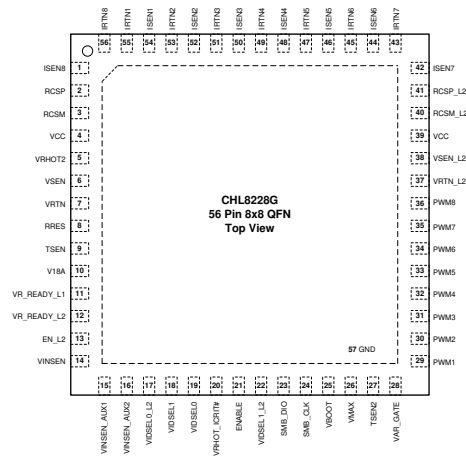


Figure 2: CHL8228G Package Top View

FUNCTIONAL BLOCK DIAGRAM

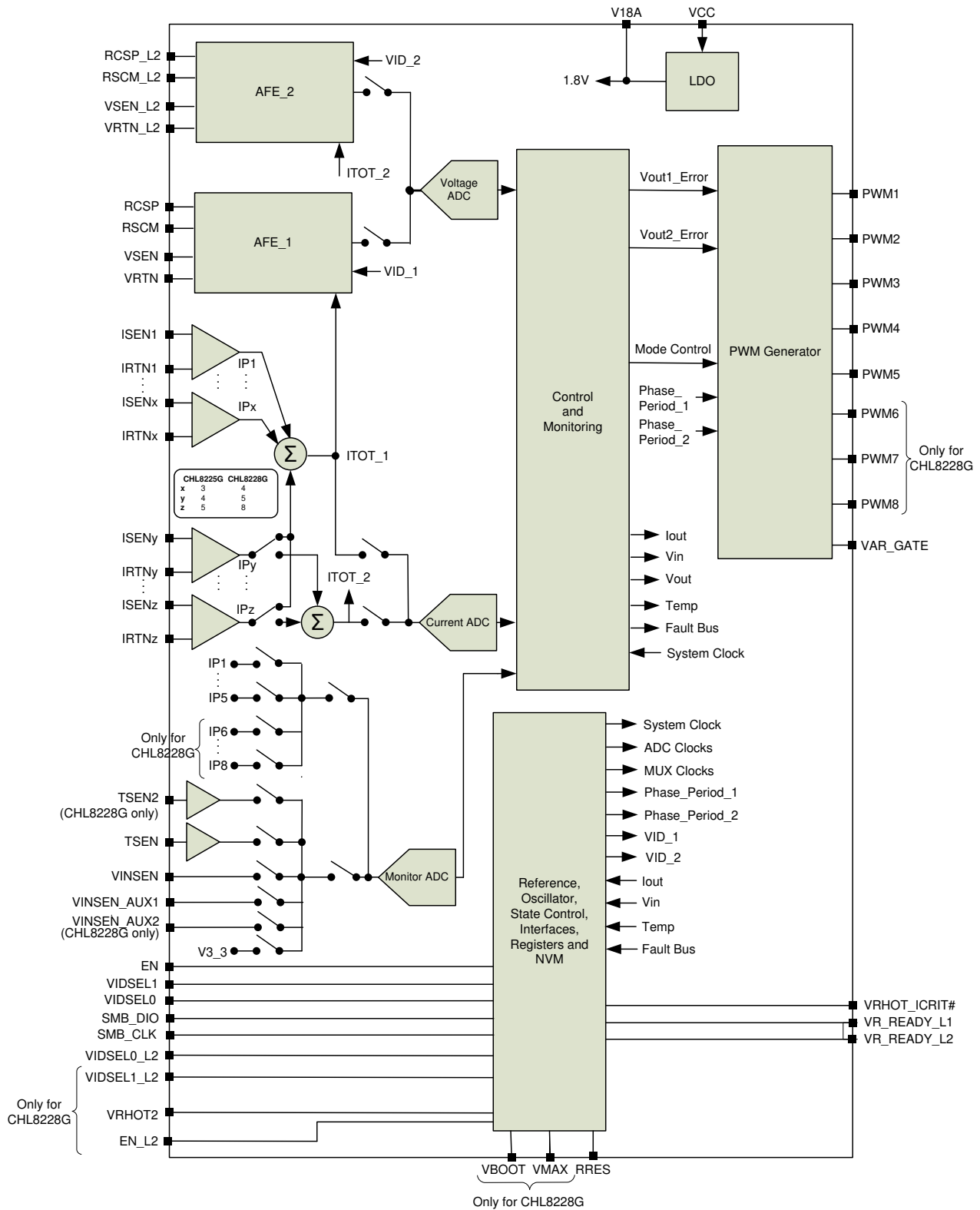


Figure 5: CHL8225G & CHL8228G Functional Block Diagram