FEATURES

- Dual output 4+1 and 3+2 phase PWM Controllers
- Easiest layout and fewest pins in the industry
- Fully supports AMD® SVI1 & SVI2 with dual OCP and Intel® VR12 & VR12.5
- Overclocking & Gaming Mode
- Switching frequency from 200kHz to 2MHz per phase
- IR Efficiency Shaping Features including Dynamic Phase Control and Automatic Power State Switching
- Programmable 1-phase or 2-phase operation for Light Loads and Active Diode Emulation for Very Light Loads
- IR Adaptive Transient Algorithm (ATA) on both loops minimizes output bulk capacitors and system cost
- 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
- Multiple Time Programming (MTP) with integrated charge pump for easy custom configuration
- Compatible with IR ATL and 3.3V tri-state Drivers
- +3.3V supply voltage; -40°C to 85°C ambient operation
- Pb-Free, RoHS, 5x5mm, 40-pin, 0.4mm pitch QFN

DESCRIPTION

The IR3564A/70A is a dual-loop digital multi-phase buck controller designed for CPU voltage regulation and is fully compliant with AMD® SVI1 & SVI2 and Intel® VR12 & VR12.5 specifications.

The IR3564A/70A includes IR's Efficiency Shaping Technology to deliver exceptional efficiency at minimum cost across the entire load range. IR's Dynamic Phase Control adds/drops active phases based upon load current and can be configured to enter 1-phase operation and diode emulation mode automatically or by command.

IR's unique Adaptive Transient Algorithm (ATA), based on proprietary non-linear digital PWM algorithms, minimizes output bulk capacitors and Multiple Time Programmable (MTP) storage saves pins and enables a small package size. Device configuration and fault parameters are easily defined using the IR Digital Power Design Center (DPDC) GUI and stored in on-chip MTP.

The IR3564A/70A provides extensive OVP, UVP, OCP and OTP fault protection and includes thermistor based temperature sensing with VRHOT signal.

The IR3564A/70A includes numerous features like register diagnostics for fast design cycles and platform differentiation, simplifying VRD design and enabling fastest time-to-market (TTM) with "set-and-forget" methodology.

APPLICATIONS

- AMD® SVI1 & SVI2, Intel® VR12 & VR12.5 based systems
- Desktop & Notebook CPU VRs
- GPU & Memory VRs

BASIC APPLICATION

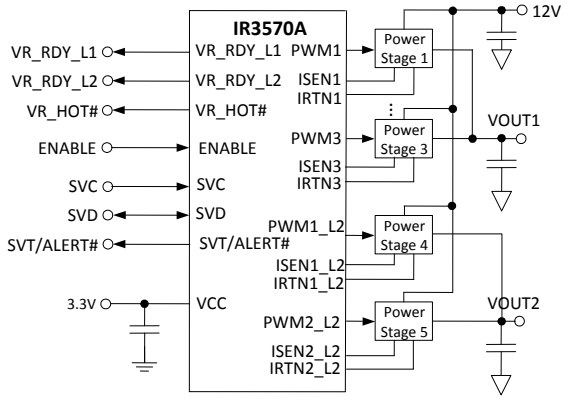

Figure 1: IR3564A/70A Basic Application Circuit

PIN DIAGRAM

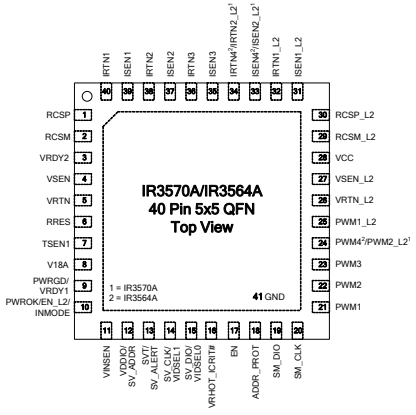

Figure 2: IR3564A/70A Package Top View

ORDERING INFORMATION

IR3564AM
IR3570AM

P/PBF – Lead Free

TR – Tape & Reel / **TY** - Tray

yy – Configuration File ID

xx – Customer ID

Package Type (QFN)

Package	Packing Qty	Part Number	Programming
QFN	3000	**IR3564AMTRPBF** **IR3570AMTRPBF**	Default
QFN	3000	**IR3564AMxxyyTRP**[1] **IR3570AMxxyyTRP**[1]	Customer Configuration

Notes:

1. Customer Specific Configuration File, where xx = Customer ID and yy = Configuration File (Codes assigned by IR Marketing).

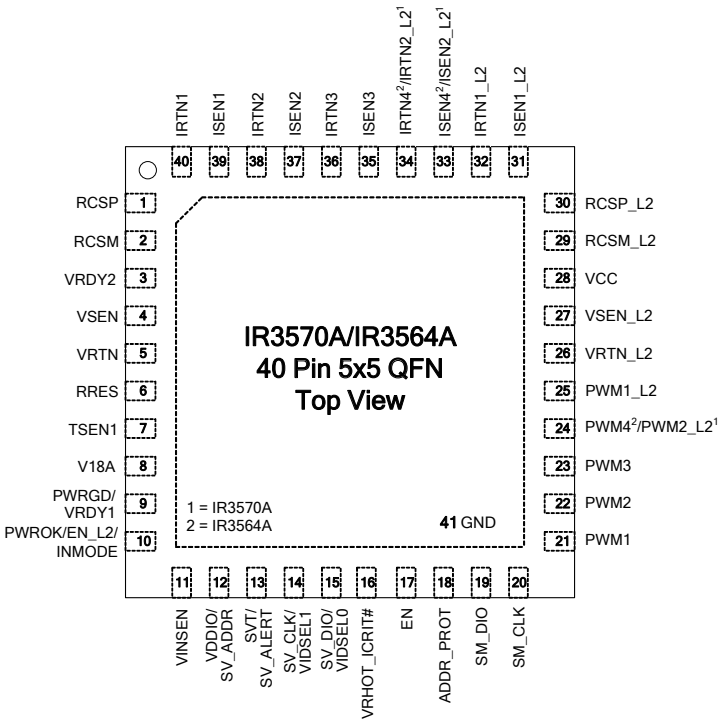

Figure 3: IR3564A/70A Pin Diagram Enlarge

TYPICAL APPLICATION DIAGRAM

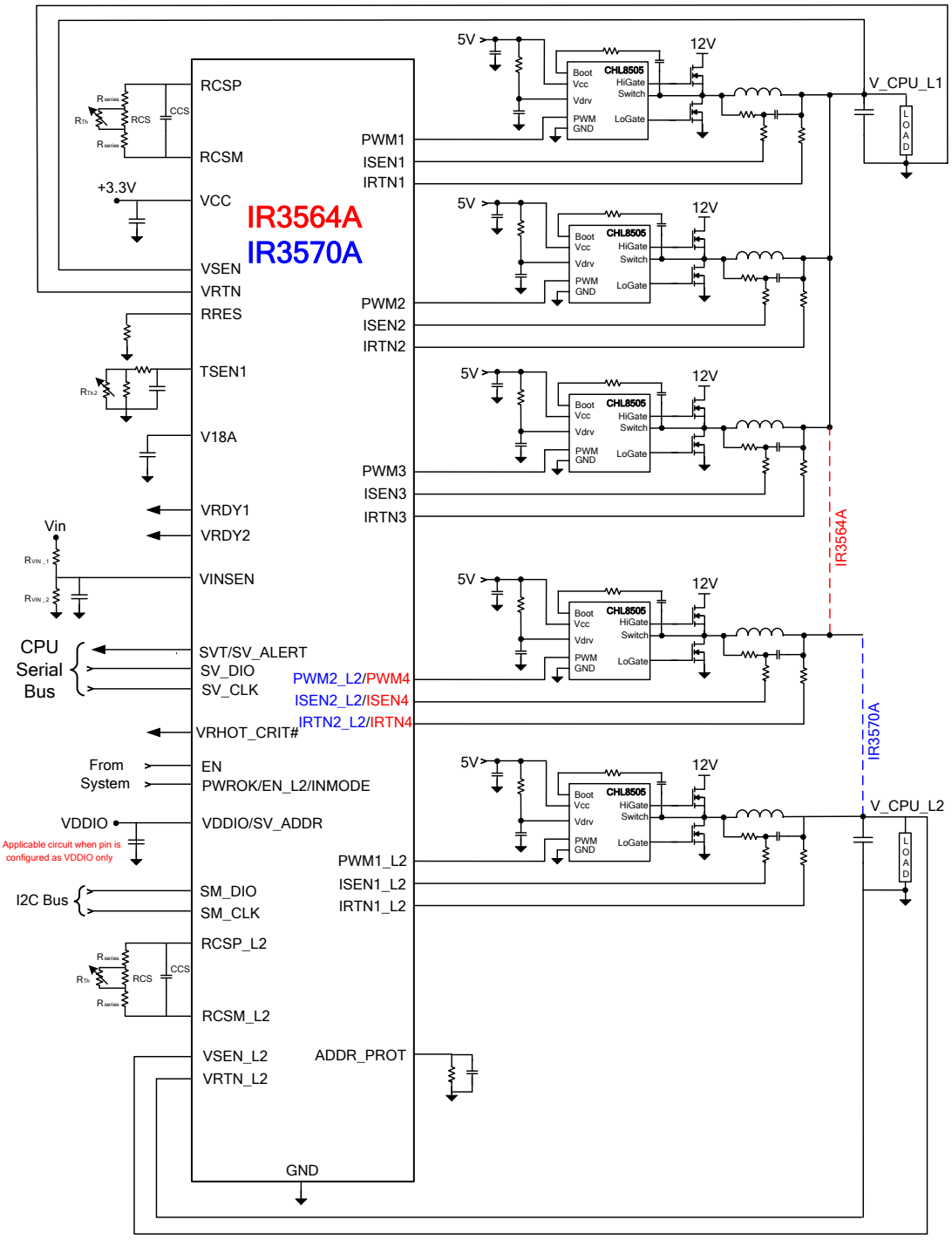

Figure 4: Dual-loop VR using IR3564A or IR3570A Controller and CHL8505 MOSFET Drivers in 4+1 or 3+2 Configuration

Data and specifications subject to change without notice.
This product will be designed and qualified for the Consumer market.
Qualification Standards can be found on IR's Web site.

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