



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!



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## 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
- 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 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 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 based systems
- Desktop & Notebook CPU VRs
- GPU & Memory VRs

## ORDERING INFORMATION

Base Part Number	Package Type	Standard Pack		Orderable Part Number
		Form	Quantity	
IR3564A IR3570A	QFN 5 mm x 5 mm	Tape and Reel	3000	IR3564AMxxyyTRP <sup>1</sup> R3570AMxxyyTRP <sup>1</sup>
IR3564A IR3570A	QFN 5 mm x 5 mm	Tape and Reel	3000	IR3564AMTRPBF IR3570AMTRPBF
IR3564A IR3570A	QFN 5 mm x 5 mm	Tray	4900	IR3564AMTYPBF IR3570AMTYPBF

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

**ORDERING INFORMATION**

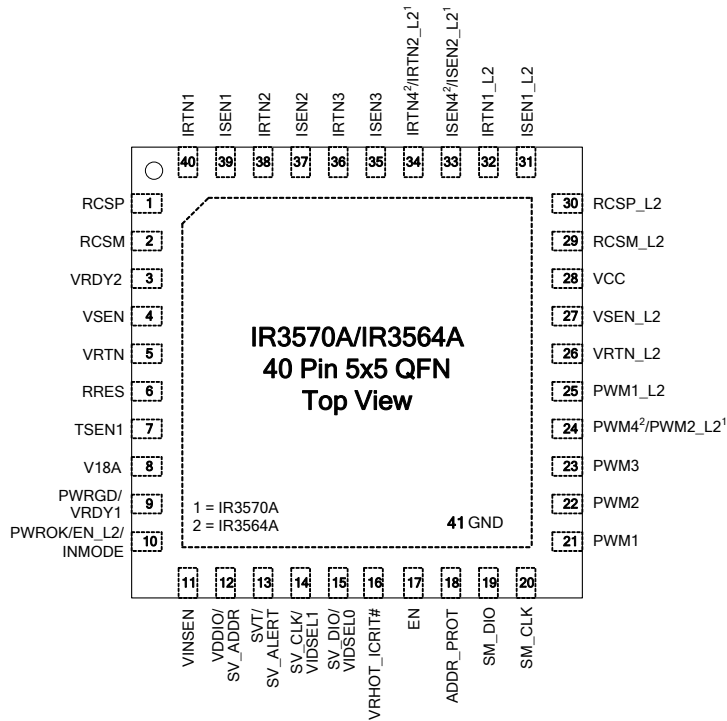
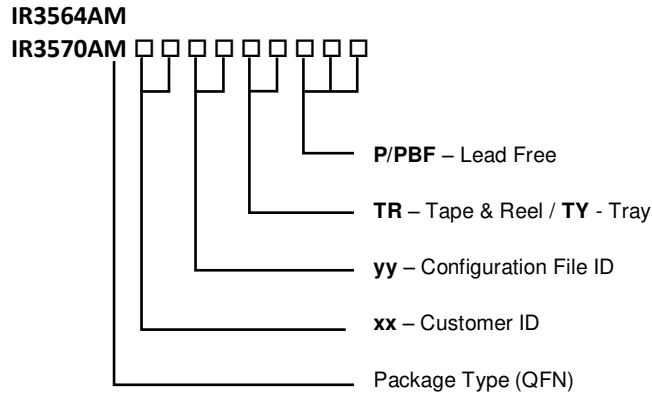


Figure 1: IR3564A/70A Pin Diagram Enlarge



**TYPICAL APPLICATION DIAGRAM**

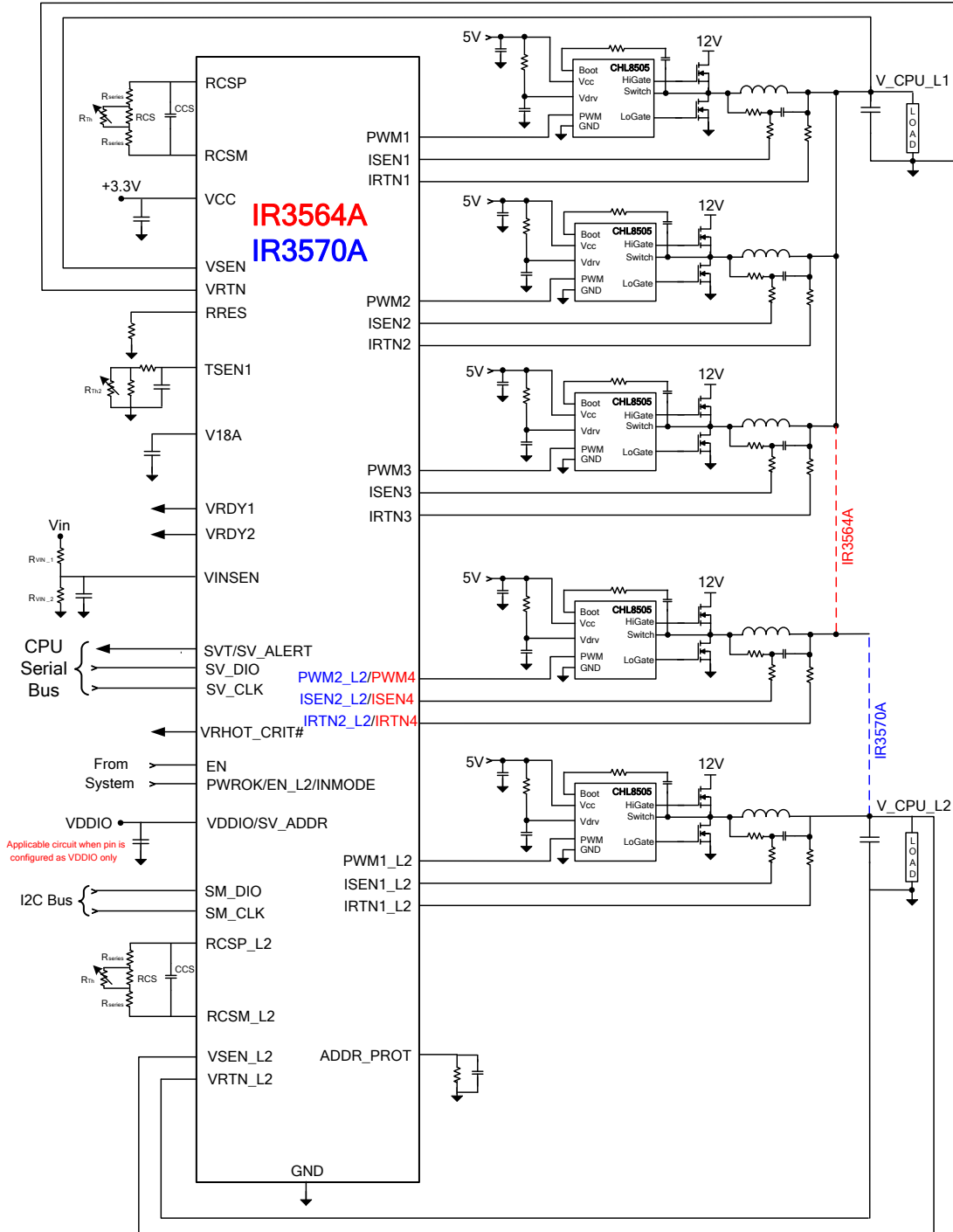


Figure 2: Dual-loop VR using IR3564A or IR3570A Controller and CHL8505 MOSFET Drivers in 4+1 or 3+2 Configuration

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.

International  
**IR** Rectifier

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