

## 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
- **Complies with VR12.5 Rev 1.3 requirement for SVID register 15h to have <200 μSec filter**
- Overclocking & Gaming Mode
- Switching frequency from 200kHz to 2MHz per phase
- IR Efficiency Shaping Features including Dynamic Phase Control and Automatic Power State Switching
- 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 IR3564B/70B 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 IR3564B/70B 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 IR3564B/70B provides extensive OVP, UVP, OCP and OTP fault protection and includes thermistor based temperature sensing with VRHOT signal.

The IR3564B/70B 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

## ORDERING INFORMATION

Base Part Number	Package Type	Standard Pack		Orderable Part Number
		Form	Quantity	
IR3564B IR3570B	QFN 5 mm x 5 mm	Tape and Reel	3000	IR3564BMxxyyTRP <sup>1</sup> R3570BMxxyyTRP <sup>1</sup>
IR3564B IR3570B	QFN 5 mm x 5 mm	Tape and Reel	3000	IR3564BMTRPBF IR3570BMTRPBF
IR3564B IR3570B	QFN 5 mm x 5 mm	Tray	4900	IR3564BMTYPBF IR3570BMTYPBF

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

**ORDERING INFORMATION**

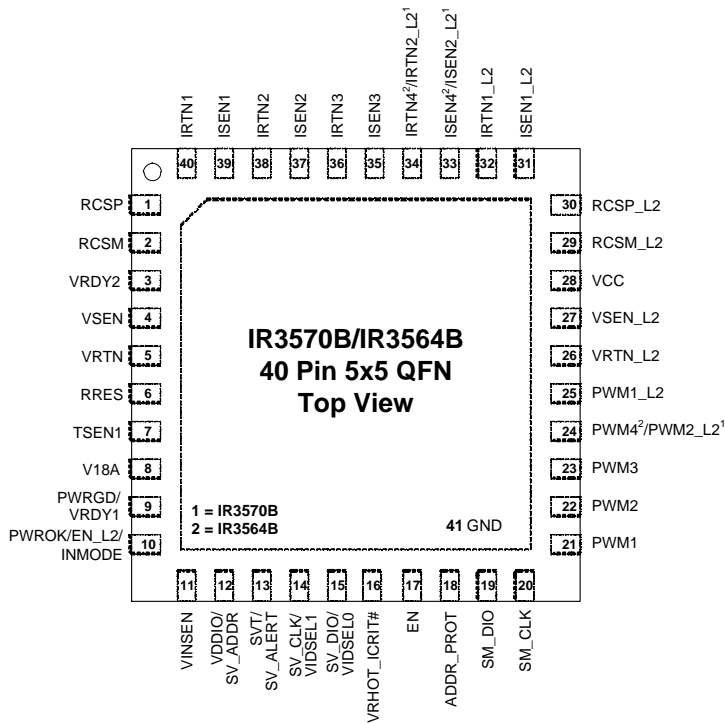
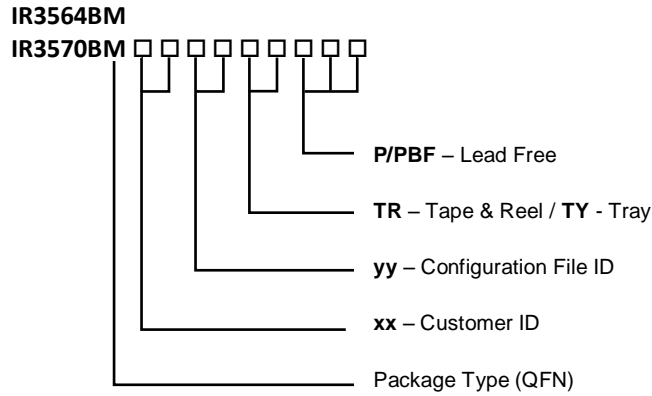


Figure 1: IR3564B/70B Pin Diagram Enlarged

**TYPICAL APPLICATION DIAGRAM**

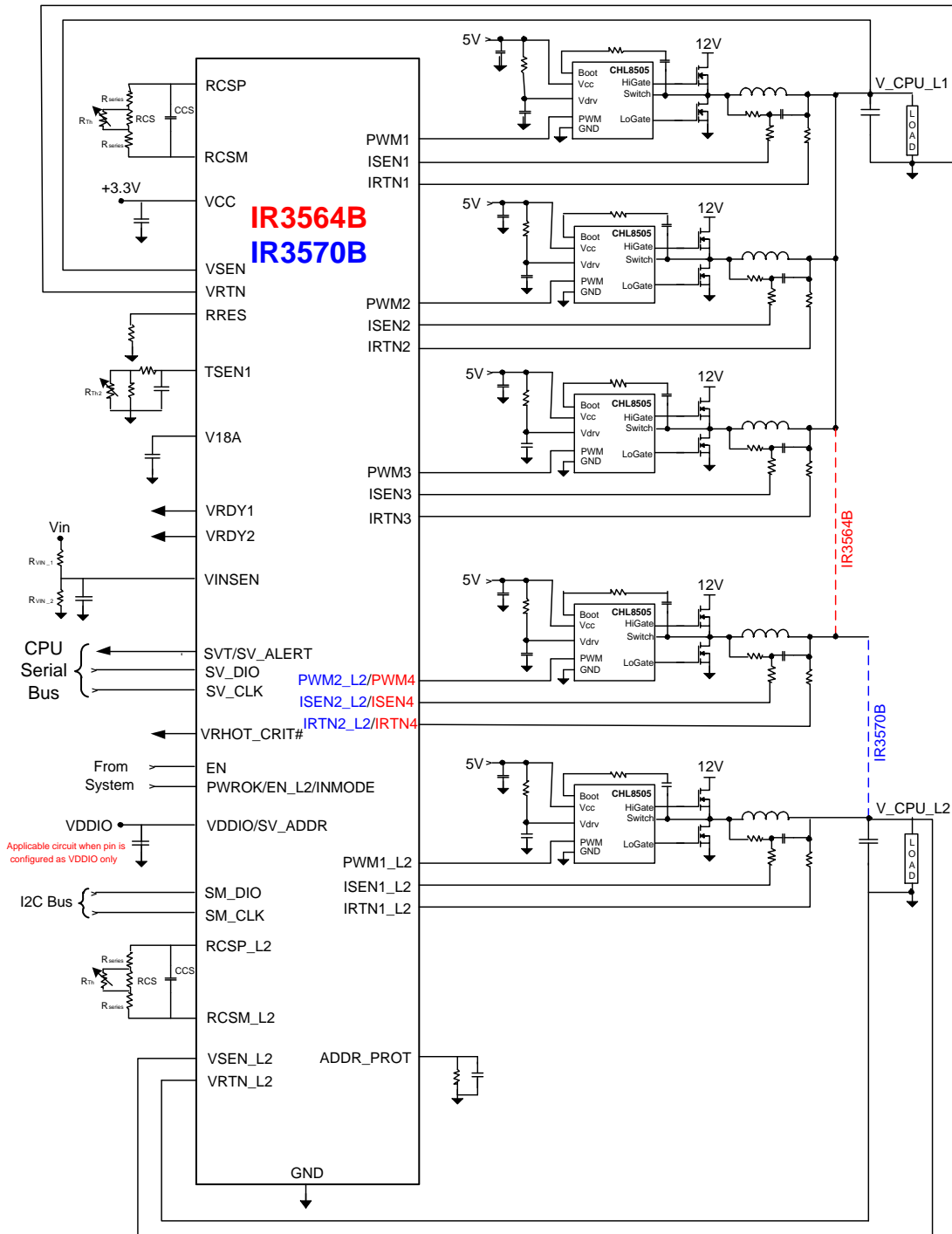


Figure 2: Dual-loop VR using IR3564B or IR3570B Controller and CHL8505 MOSFET Drivers in 4+1 or 3+2 Configuration

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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**IR** Rectifier

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