FEATURES

- 8-phase single output PWM Controller
- Intel® VR12 and VR12.5 modes & Memory VR mode
- ***Complies with VR12.5 Rev 1.3 requirement for SVID register 15h to have <200 µSec filter***
- Overclocking & Gaming Mode
- PVI and SVI GPU VR modes
- Switching frequency from 200kHz to 2MHz per phase
- IR Efficiency Shaping Features including Variable Gate Drive, Dynamic Phase Control and Automatic Power State Switching
- IR Adaptive Transient Algorithm (ATA) minimizes output bulk capacitors and system cost
- Auto-Phase Detection with auto-compensation
- Fault Protection: OVP, UVP, OCP, OTP, CFP
- I2C/SMBus/PMBus system interface for telemetry of Temperature, Voltage, Current & Power
- 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; -40ºC to 85ºC ambient operation
- Pb-Free, RoHS, 6x6mm 48-pin, 0.4mm pitch QFN

APPLICATIONS

- Intel® VR12 and VR12.5 based systems
- Overclocked & Gaming platforms

DESCRIPTION

The IR3563B is a single-loop digital multi-phase buck controller that controls up to 8 phases. The IR3563B is fully Intel® VR12 and VR12.5 compliant.

The IR3563B includes IR's 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 based on real-time load current. IR's Dynamic Phase Control adds/drops phases based upon load current. The IR3563B can be configured to enter 1-phase operation and active 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.

The I2C/PMBus interface can communicate with up to 16 IR3563B-based VR loops. Device configuration and fault parameters are easily defined using the IR Digital Power Design Center (DPDC) GUI and stored in on-chip MTP. MTP storage saves pins and enables a small package size.

The IR3563B provides extensive OVP, UVP, OCP and OTP fault protection and includes thermistor based temperature sensing with VRHOT signal.

The IR3563B also 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.

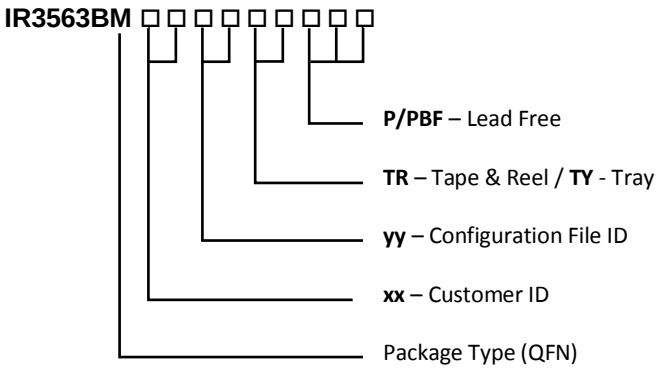
ORDERING INFORMATION

Base Part Number	Package Type	Standard Pack		Orderable Part Number
		Form	Quantity	
IR3563B	QFN 6 mm x 6 mm	Tape and Reel	3000	IR3563BMxxyyTRP[1]
IR3563B	QFN 6 mm x 6 mm	Tape and Reel	3000	IR3563BMTRPBF
IR3563B	QFN 6 mm x 6 mm	Tray	4900	IR3563BMTYPBF

Notes:

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

ORDERING INFORMATION



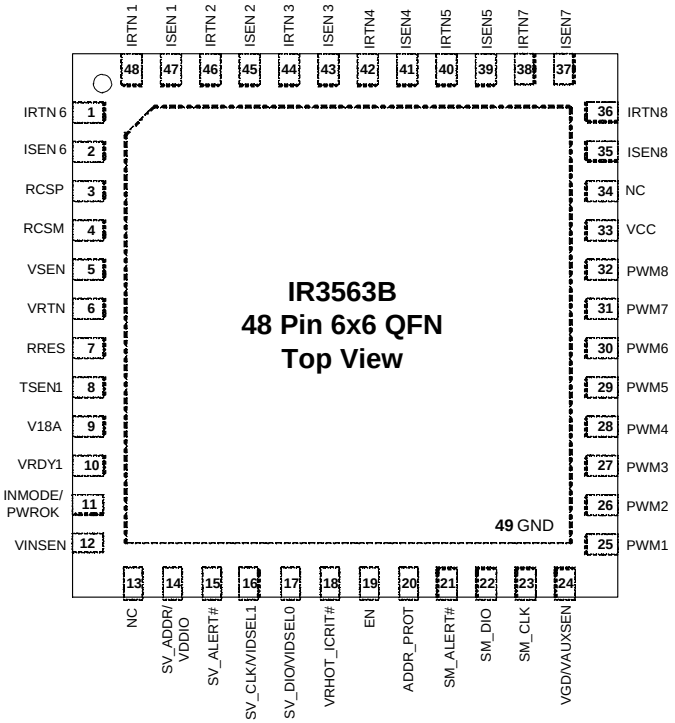


Figure 1: IR3563B Pin Diagram Enlarged