## FEATURES

- Dual output 3+1 phase PWM Controller
- 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 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
- 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, Halogen Free, RoHS, 6x6mm, 40-pin, 0.5 mm pitch QFN

## DESCRIPTION

The IR35211 is a dual loop digital multi-phase buck controller designed for CPU voltage regulation and is fully compliant to AMD® SVI1 & SVI2 Rev 1.2 & Intel© VR12 Rev 1.5 PWM specification and VR12.5 Rev 1.3 PWM specification.

The IR35211 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 IR35211 provides extensive OVP, UVP, OCP and OTP fault protection and includes thermistor based temperature sensing with VRHOT signal.

The IR35211 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

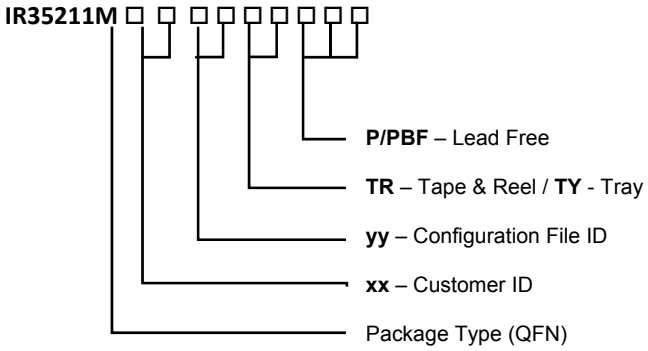
- AMD® SVI1 & SVI2, Intel® VR12 & VR12.5 based systems
- Desktop & Notebook CPU VRs
- High Performance Graphics Processors

## ORDERING INFORMATION

| Base Part Number | Package Type | Standard Pack | | Orderable Part Number |
|---|---|---|---|---|
| | | Form | Quantity | |
| IR35211 | QFN 6 mm x 6 mm | Tape and Reel | 3000 | IR35211MxxyyTRP[1] |
| IR35211 | QFN 6 mm x 6 mm | Tape and Reel | 3000 | IR35211MTRPBF |
| IR35211 | QFN 6 mm x 6 mm | Tray | 4900 | IR35211MTYPBF |

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

## ORDERING INFORMATION



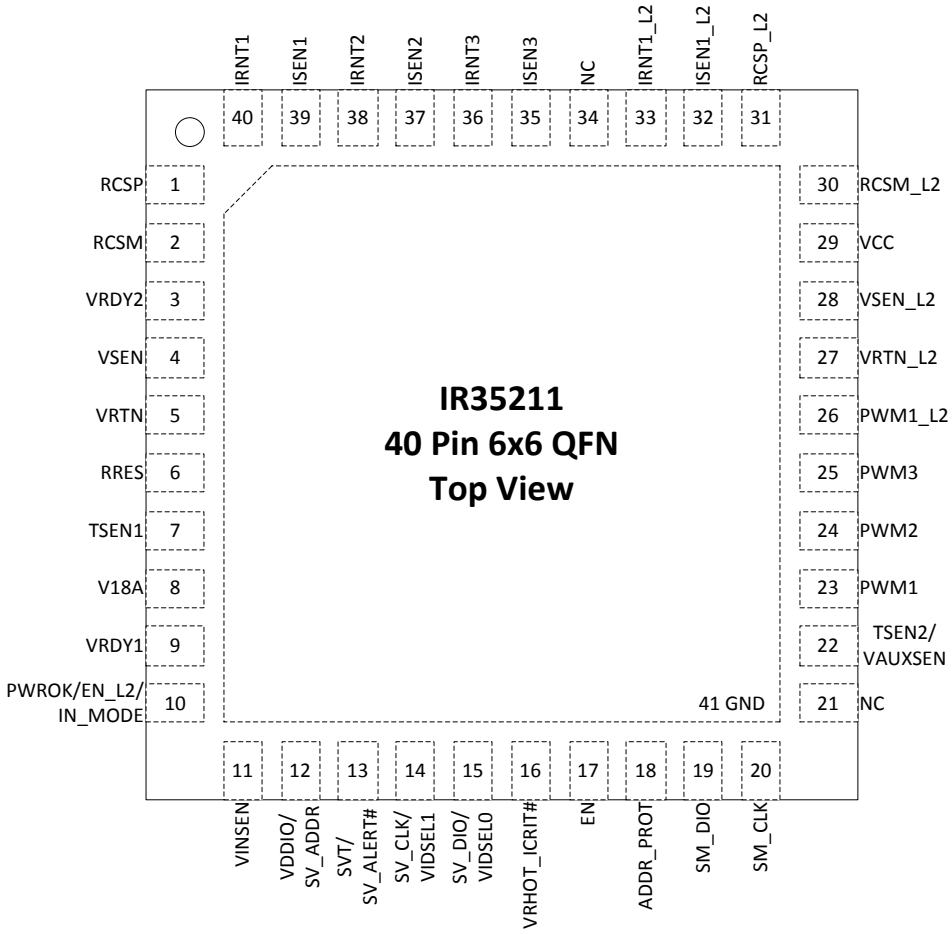




**Figure 1: IR35211 Pin Diagram**