

# Single-phase multifunctional DC-DC controller for Intel platforms

PM6652: High functional integration IC to supply CPU and GPU of IMVP6.5 platform and CPU of ATOM-based systems



The PM6652 is a multifunctional device able to operate in 3 different modes.

The device has been designed to supply:

- Graphics core of Intel Calpella Arrandale-based platform
- LV & ULV CPUs of Intel Calpella Arrandale-based platform
- CPUs of ATOM VR11 platform
- CPUs of ATOM PineTrail Pineview-based platform

An easy-to-use operating-mode selection provides the user with a really compact, flexible and cost effective solution for a wide range of applications.

The PM6652 is housed in a compact QFN5x5 32L package.

The controller, based on constant on-time architecture, allows real-time dynamic switching of the core operating voltages and frequencies. The high efficiency at light load, achieved with pulse skip working mode, and the extremely low shutdown and quiescent currents, make the PM6652 the ideal choice in battery-powered devices.

## Key features

- IMVP6.5 GPU/CPU and ATOM CPU mode selection
- Very fast load transient response using constant-on-time loop control
- 7-bit dynamic voltage positioning (VIDs)
- Programmable PWM frequency
- Lossless current sense with DCR inductor
- Negative current limit
- Boot diode embedded
- Latched OVP, UVP and over-temperature
- Pulse skip power saving mode at light load
- Output voltage ripple compensation
- Soft start and soft end
- Thermal throttling
- QFN-32 5x5 with exposed pad

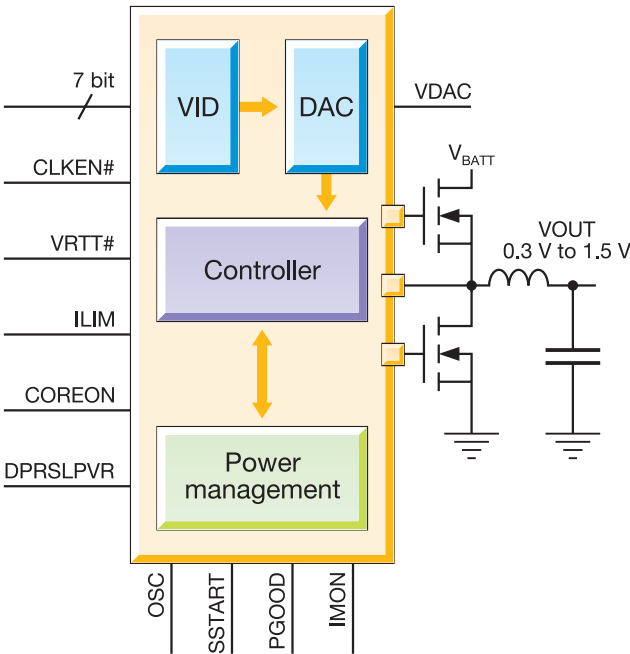
## Key benefits

- Covers a wide range of applications, thanks to its multifunctionality
- Saves application cost and space, thanks to the embedded bootstrap diode and lossless current sensing technique
- Best choice in battery-powered devices, thanks to low shutdown and quiescent currents
- High efficiency at any load suitable for long-life battery applications, thanks to pulse skip mode
- Full set of protective functions: OCP, OVP, UVP, thermal shutdown, to ensure the safest power design

## Targeted applications

- Notebook computers
- Netbook and nettop computers
- Handheld and PDAs

Simplified block diagram



PM6652 product table

Part number	Input voltage	VIDs	Output voltage	Output current	Fsw	Package
PM6652	4.5 to 28 V	7 bit DAC	0.3 to 1.5 V	20 A TDC	200 to 700 kHz	VFQFPN-32L 5x5



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