

Integrated Driver and MOSFET Module

Features

- ★ **Excellent Low Power Mode power saving**
 - ✓ DISB#=Low (PS4), $I_Q = 0.025\mu A$
 - ✓ DISB#=High (PWM=floating), $I_{Q_VCC} = 32\mu A$
- ★ **Good Efficiency in Performance Mode**
 - ✓ Stronger driving for better switching loss
 - ✓ Smaller switching deadtime loss
 - ✓ Embedded bootstrap switch
 - ✓ Good MOSFETs characteristics
- ★ **High Speed Gate Driver Design to Enhance Performance**
 - ✓ Short PWM propagation delay for better closed loop stability and performance
 - ✓ Short the exit latency time of low power mode to support Intel PS4 requirement
- ★ **Better Controller Supportable**
 - ✓ Widely Tri-state Window from 1.2V~2.3V
 - ✓ Support 5V PWM Input
- ★ **Support High Switching Frequency**
- ★ **QFN 3.5x4.5 CMF package for Easy to design-in**
- ★ **RoHS Compliant and Halogen Free**

General Description

The PS1704B is an integrated gate driver and MOSFETs module for synchronous buck applications. The gate driver with embedded bootstrap switch to gain high switching frequency operation, 200kHz to 2MHz. The driver and MOSFETs are optimized for good efficiency in the synchronous buck converter. The driver features strong driving capability, robust control, adaptive deadtime control and low quiescent current. The MOSFETs feature low switching and conduction losses in the synchronous buck configuration. For switching loss, the high-side MOSFET is designed low capacitance to get lower gate charge. For conduction loss, the low-side MOSFET is designed low RON resistance.

The PS1704B provides 5V PWM input for compatibility with different controller. It also provides INTEL PS4 requirement, the PS4 exit time is 9.5 μs .

The PS1704B is available in the space-saving QFN-22L 3.5x4.5 package and is rated over a -40°C to +125°C ambient temperature range.

Applications

- ★ High Current DC-DC Converters
- ★ High Input Voltage DC-DC Converters
- ★ CPU and GPU Core Voltage Regulators

Typical Application Circuit

