

100V Synchronous Buck DC/DC Controller

1. Descriptions

MK9218 supports wide input voltage ranges from 6V to 100V. With appropriate external high-side and low-side MOSFETs and inductor, MK9218 delivers up to 30A output current.

MK9218 adopts a voltage mode control scheme to achieve excellent accurate voltage output. The switching frequency is adjustable up to 1MHz, which also can be synchronized to an external clock to eliminate beat frequencies.

Both Forced-PWM (FPWM) and diode emulation mode is supported by MK9218. FPWM helps to minimize EMI by operating at constant frequency, while diode emulation mode lowers current consumption at light-load condition.

Wide duty cycle from 1% to 98% is offered by MK9218 under appropriate switching frequency, so input and output voltages can be chosen easily.

MK9218 also provides a power good (PG) flag pin to indicate output voltage, and an internal LDO output (VCC pin). For high efficiency applications, an external bias power supply is recommended to apply to VCC pin after start-up.

2. Features

- Wide input voltage range of 6V-100V
- Adjustable output voltage from 0.8V to 60V
- 45ns Ton(min) for low duty ratio
- 145ns Toff(min) for high duty ratio
- Precision $\pm 1\%$ feedback reference
- Adjustable F_{sw} from 100kHz to 1MHz
- Configurable diode emulation or FPWM
- 2.5A source and 3.5A sink driver capability
- Prebias start-up
- SYNCI and SYNCO capability
- Open-Drain power good indicator
- Adjustable output voltage soft start
- Input UVLO with hysteresis
- VCC UVLO protection
- OC, OT protection with hiccup mode
- 3.5x4.5 QFN-20 package with thermal PAD

3. Applications

- PoL modules
- High-Power density DC – DC
- Datacenter and telecom
- Non-isolated PoE and IP cameras

4. Typical Application

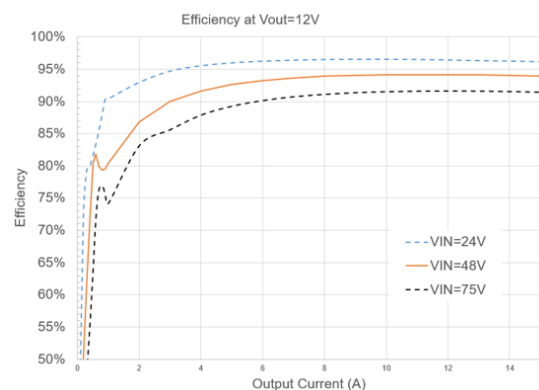
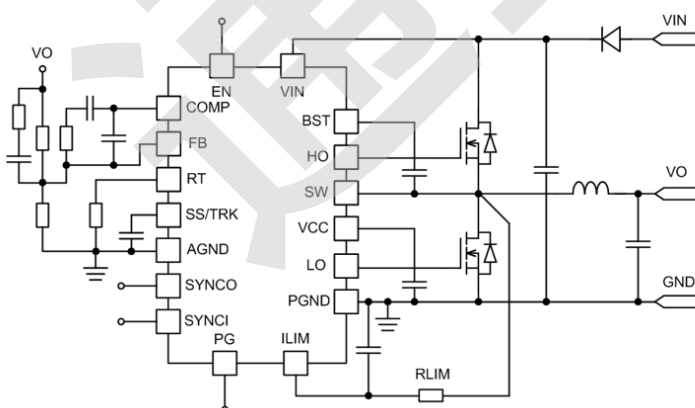


Figure 1. Typical Application Diagram and Efficiency