YX20105B – 100V_{IN}, 100V_{OUT}, Synchronous Buck CC/CV Controller

1 Features

- **Support Solar MPPT function**
- Support driving GaN and Si MOSFET
- Wide VIN range: 4V to 100V
- Wide VOUT range: 0V to 100V
- Regulation Loops: CC1, CC2, FB1, FB2
- CC/CV regulation capability
- Power good reporting
- 5V Gate Drive Voltage
- External Clock Sync In and Out
- Frequency Spread Spectrum (FSS)
- Input/output current sense ISMON1 & ISMON2
- Support Bidirectional Operation & LED Driver
- Up to 98% Power efficiency
- Ultra-wide switching frequency: 50KHz to 3MHz
- Gate driver: 0.5Ω pull-down, 1Ω pull-up
- 40-Lead QFN (5mmx5mm) Package

2 Applications

- Automotive infotainment
- Buck DC-DC supplies
- Solar energy MPPT optimizer/controller

3 Description

The YX20105B is a synchronous buck controller suited for driving Gallium Nitride (GaN) or Si MOSFET power transistors in highly efficient power converters. It supports wide input and output range up to 100V with seamless transitions between buck modes. It also supports Bidirectional operation& LED Driver. It provides programmable inductor peak current limit and input/output current limit functions with output instant current monitoring capability through ISMON1/ISMON2. The CC/CV regulation capability allows it to be fitting in battery charging systems.

The YX20105B supports ultra-wide switching frequency range from 50KHz up to 3MHz and integrates frequency spread spectrum (FSS) for EMI optimization. Optional external clock synchronization function facilitates the parallel operation. It also features external compensation, programmable soft-start to reduce the inrush current during start up.

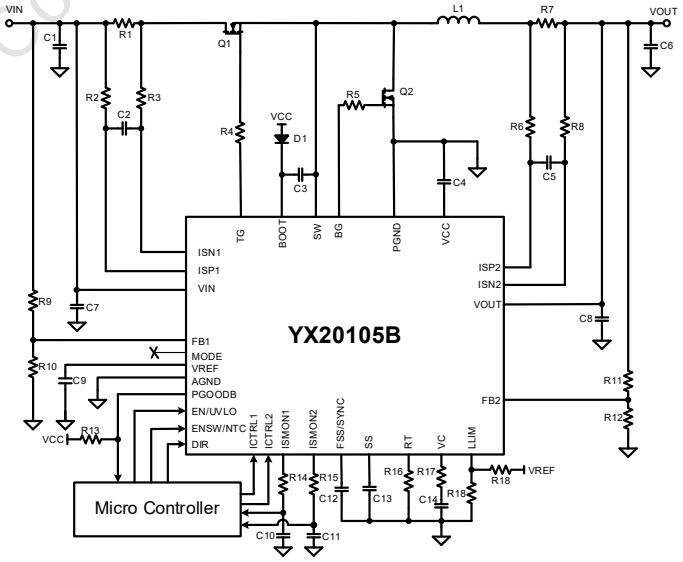
The YX20105B is available in 5mmx5mm 40L QFN package.

Ordering Information appears at page2 of datasheet.

4 Device Information

PART NUMBER	PACKAGE	BODY SIZE (NOM)
YX20105BCAJBM	40L QFN	5mm × 5mm

5 Typical Application circuit for Buck Converter & Power efficiency



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