YX21105 – 100V_{IN}, 100V_{OUT}, Synchronous Boost CC/CV Controller

1 Features

- **P2P to YX2165 to upgrade to 100V**
- Support driving GaN and Silicon MOSFET
- Wide VIN range: 3.5V to 100V
- Wide VOUT range: 0 to 100V
- Regulation Loops: CC2, FB
- CC/CV regulation with PG
- 5V Gate Drive Voltage
- External Clock Sync & Internal Clock OUTPUT
- Frequency Spread Spectrum (FSS)
- output current sense ISMON2
- Support Bidirectional Operation & LED Driver
- Up to 98% Power efficiency
- Ultra-wide switching frequency: 50KHz to 2MHz
- Gate driver: 0.5Ω pull-down, 1Ω pull-up
- 32-Lead QFN (5mmx5mm)

2 Applications

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

3 Description

The YX21105 is a synchronous boost controller suited for driving silicon (Si) MOSFET or Gallium Nitride (GaN) power transistors in highly efficient power converters. It supports a wide input ranges up to 100V with maximum 98% power efficiency. The YX21105 integrates both high side and low side gate drivers with UVLO protections. It provides programmable input/ output current limit, load current monitoring, and power good reporting. The CC/CV feature makes it suitable for battery charging application.

The YX21105 supports ultra-wide switching frequency range from 50KHz up to 3MHz and integrates frequency spread spectrum (FSS) for EMI optimization. It also features external compensation, programmable soft-start to reduce the inrush current during start up.

The YX21105 is available in 5mmx5mm 32-lead QFN package.

4 Device Information

PART NUMBER	PACKAGE	BODY SIZE (NOM)
YX21105CAJBE	32L QFN	5mm × 5mm

5 Typical Application circuit for Boost Converter & Power efficiency