

High Efficiency, Integrated 802.3af PoE-PD Controller and DC/DC Controller

FEATURES

- IEEE 802.3af compliant PD controller
- Power delivery up to 13 Watt
- Integrated 100V 0.65Ω hot swap MOSFET
- Accurate 140 mA typical inrush current level
- Programmable classification
- Current limit at 450mA
- Programmable UVLO of hot swap switch
- Programmable DC/DC switching frequency
- Current mode pulse width modulator
- 80% max duty cycle w/ internal compensation
- Support for isolated/non-isolated converters
- Seamless support for local power down to 9V
- OCP, SCP, OVP and OTP protections
- -40°C to 85°C ambient temperature range
- TSSOP-14 Package

APPLICATIONS

- Wireless access points
- IP security cameras
- Digital signage
- VoIP phones
- IoT applications
- Safety backup power
- Thin/Zero Client Terminals
- IEEE 802.3af PoE powered device

GENERAL DESCRIPTION

The CY1112 is a power solution for PoE PD (Powered Device). It integrates an IEEE802.3 af compliant PoE PD controller and a high efficiency current mode DC/DC controller. The PD controller includes PoE detection, classification, under-voltage lockout (UVLO) and an inrush control.

With the inrush current limit mechanism, CY1112 is safely protected during the input capacitor charging and without interruption due to die heating. The PoE interface allows the classification is programmable through the adjusting of application circuits. Also, CY1112 input current limit is set at 450mA.

The CY1112 also implements all features which are necessary in DC/DC controller for a flexible, robust and highly efficient design, including programmable switching frequency, duty cycle up to 80%, slope compensation, soft startup, and bootstrap startup source. In addition, an appropriate gate driver is implemented to optimize the design of forward and flyback converters.

Besides, CY1112 supports different input voltage options either from PoE front input or rear external adapter dependent on users' preferences. The DC/DC converter is designed for 9V converter startup capability. Both isolated and non-isolated DC/DC converter topologies are supported.

To be a good power solution, CY1112 also incorporates a variety of protections: OCP(over current protection), SCP(short circuit protection) , OVP(over voltage protection) and OTP (over temperature protection).

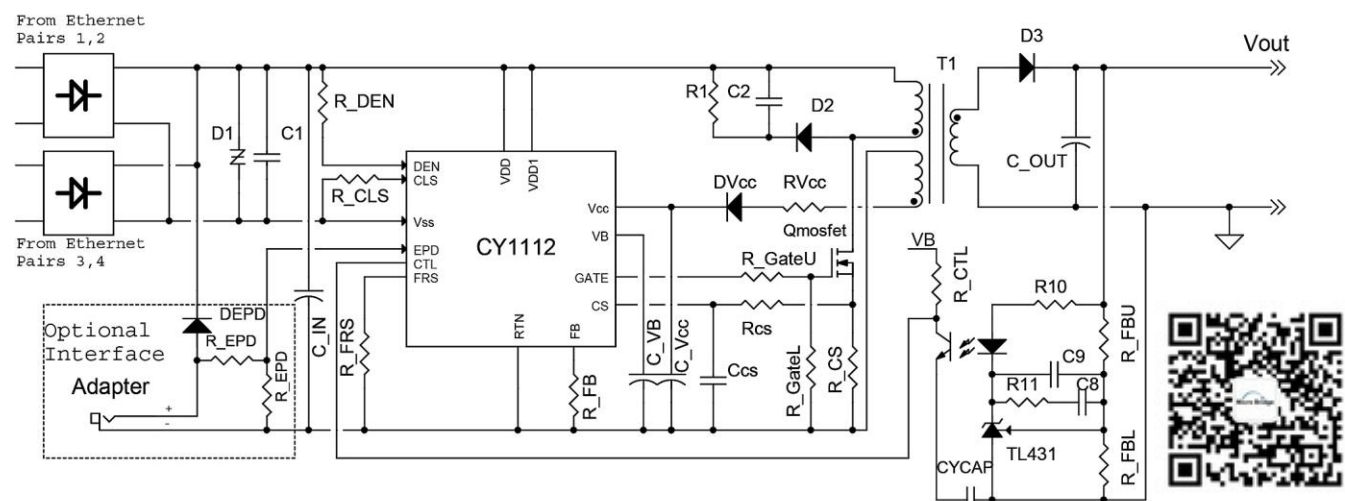


Figure 1. A Typical PoE PD Converter Using CY1112