

IEEE 802.3af Standard PD and Integrated DC/DC Controller Integrated Power MOSFET V2.0

Overview

XS2123 is a controller that integrates both Power Device (PD) and DC/DC functionalities based on the IEEE 802.3af standard.

The PD controller provides a complete power interface for PD in PoE systems. It offers detection signals, classification signals, and an integrated isolated power MOSFET with surge current control. The integrated power MOSFET has a voltage rating of 100 V, an on-resistance of 0.4 Ω , and supports working current up to 880 mA. It also features undervoltage protection and over-temperature protection, along with wide hysteresis and long-duration pulse shielding to compensate for the resistive attenuation of twisted-pair cables, ensuring interference-free transmission during power-on and power-off.

The DC/DC controller portion includes an integrated 200V power MOSFET and adopts a primary-side regulation (PSR) method, suitable for Flyback topology. It supports CCM and DCM, providing precise constant voltage control. The multi-stage curve control using PWM+PFM modes optimizes efficiency across different load conditions while effectively reducing noise.

Typical Application

- ◆ IP camera
- ◆ VoIP
- ◆ Wireless AP

Order Information

PART	TEMP RANGE	PIN-PACKAGE
XS2123	-40 °C to 105 °C	SOP16L

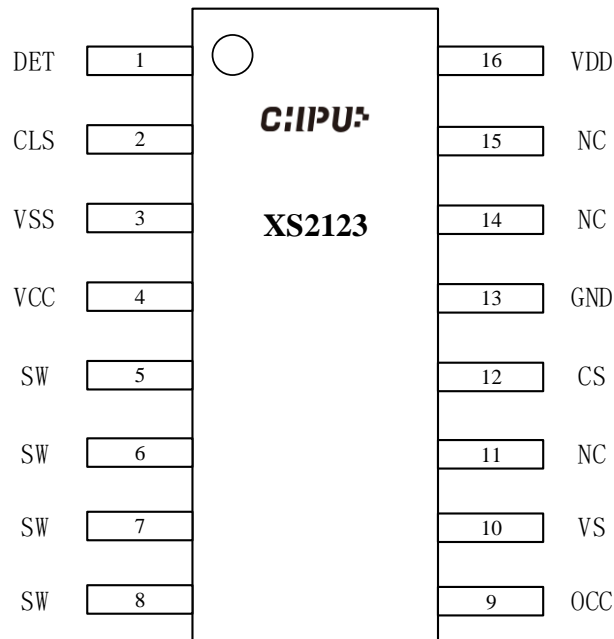
Features

PD Controller

- ◆ Compatible with IEEE 802.3af PD power interface
- ◆ Integrated with 100V, 0.4 Ω isolated power MOSFET
- ◆ Undervoltage protection
- ◆ Over temperature protection
- ◆ MOSFET supports current of 880 mA
- ◆ Maximum surge current limit of 180 mA
- ◆ Current limiting and fold-back protection
- ◆ Normal operating current limit between 760 mA and 1000 mA

DC/DC Controller

- ◆ Supports primary-side control mode for both CCM and DCM
- ◆ Integrated with high-voltage MOSFET switch of 200 V
- ◆ Maximum output power of 12 W
- ◆ Low start-up current (approximately 7 μ A)
- ◆ Frequency reduction at light loads to reduce energy consumption
- ◆ Integrated with active cycle resonant technology
- ◆ Output short-circuit protection and overcurrent protection
- ◆ Output overvoltage protection and VCC overvoltage protection
- ◆ Soft start feature
- ◆ Peak current control mode
- ◆ Integrated leading-edge blanking (LEB)

Pin Description

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