XY6112

Cost-effective off-line switching power supply controller - Shanghai Vision Institute of Electronic Technology Co., Ltd. Page 1 of 13 version: 1.1 2008

I. Overview

XY6112 for high-performance , current-mode PWM controller. Built-in high-voltage power management, wide voltage AC85-350V Fan

Provides up to 12W of continuous output power within the circumference. Cost-effective production of bipolar control chip production process, combined with high

Pressure power tube integrated package to save the overall cost of the product to the maximum extent . The power supply controller can work in a typical

Flyback topology to form a simple AC / DC converter. IC's internal circuitry can be used to start the power switch itself

Amplification to complete start , greatly minimizes the power consumption of the starting resistor ; from the IC when the output power of the small

Automatically reduce the operating frequency , in order to achieve a very low standby power consumption ; patent switch drive circuit operates in the critical saturation

State, improve the efficiency of the system, the system can easily meet the standby power consumption and efficiency on "Energy Star"

Certification requirements. Down in achieving standby while limiting the operating frequency into the audio range, to prevent audible noise generation .

4-12V operating voltage range provides easy VCC voltage design space, but when VCC reaches 12V chip protection,

Or limit the output optocoupler feedback circuitry prevents damage caused by the output voltage is too high , IC also provides a comprehensive internal anti-

Overload and anti- saturation function , real-time guard against overload, transformer saturation , output short circuit or other abnormal conditions, to improve the supply of Reliability. IC also incorporates thermal protection , reduce the output power in the case of system overheating , or turn off the output .

The standards are now available DIP8 package and meet ROHS standards.

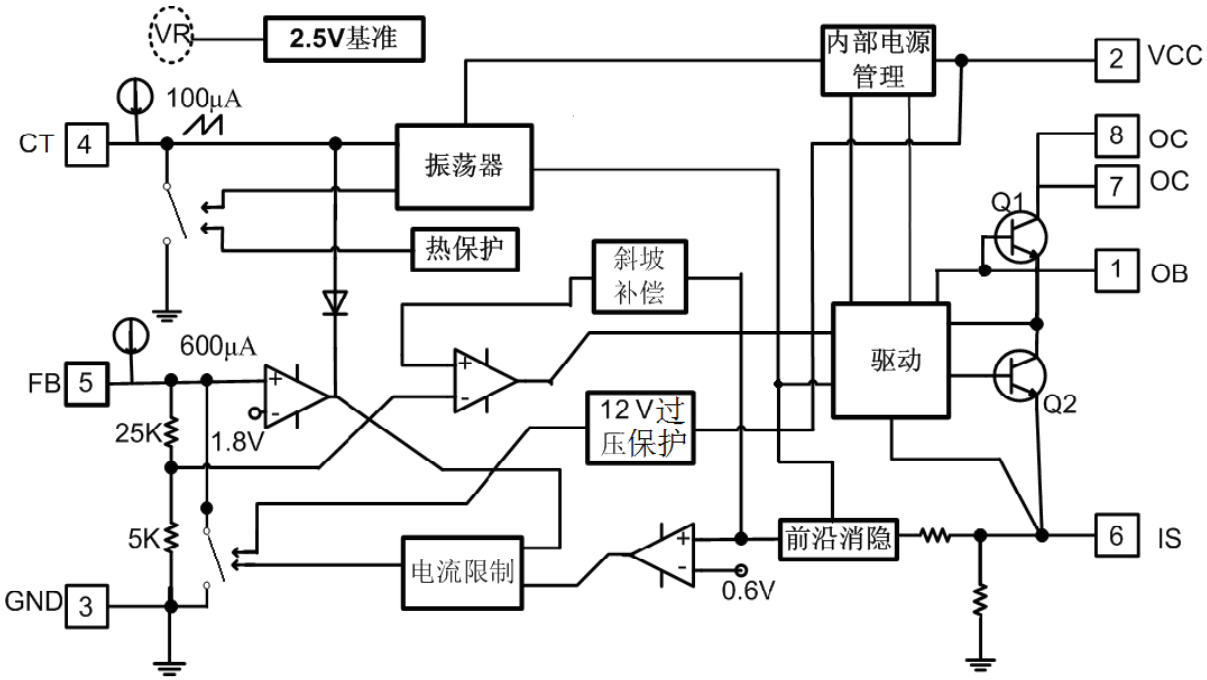


Figure 1

Second, the characteristics

□ meet the input voltage range AC85-350V design requirements.

□ has a standby frequency reduction function, no audio noise problem, the following 0.25W standby power consumption can be achieved

□ efficient drive circuit, 4-5% higher efficiency than similar products.

□ And similar products is reduced by 40% chip fever

□ to meet the latest Energy Star 2.0 requirements for efficiency and standby power consumption.

□ with temperature compensation, precision current control

□ low starting current and wide operating voltage range of low operating current,4-12V's.

□ wide voltage continuous output power up to 12W, peak output power up to 15W

□ over-temperature protection (OTP)

□ overvoltage protection (OVP)

□ high reliability

□ can be realized without Y capacitors System Design

□ minimal external components, the overall program cost is low

Third, the application

□ small appliances (eg: cooker)

□ Chargers

□ power adapter (such as communications terminal products)

□ DVD / DVB Power PC, LCD TV standby power

Fourth, the pin function description

Pin Symbol Pin definition describes

1 OB power tube base, the starting current, external startup resistor

2 VCC supply pin

3 GND

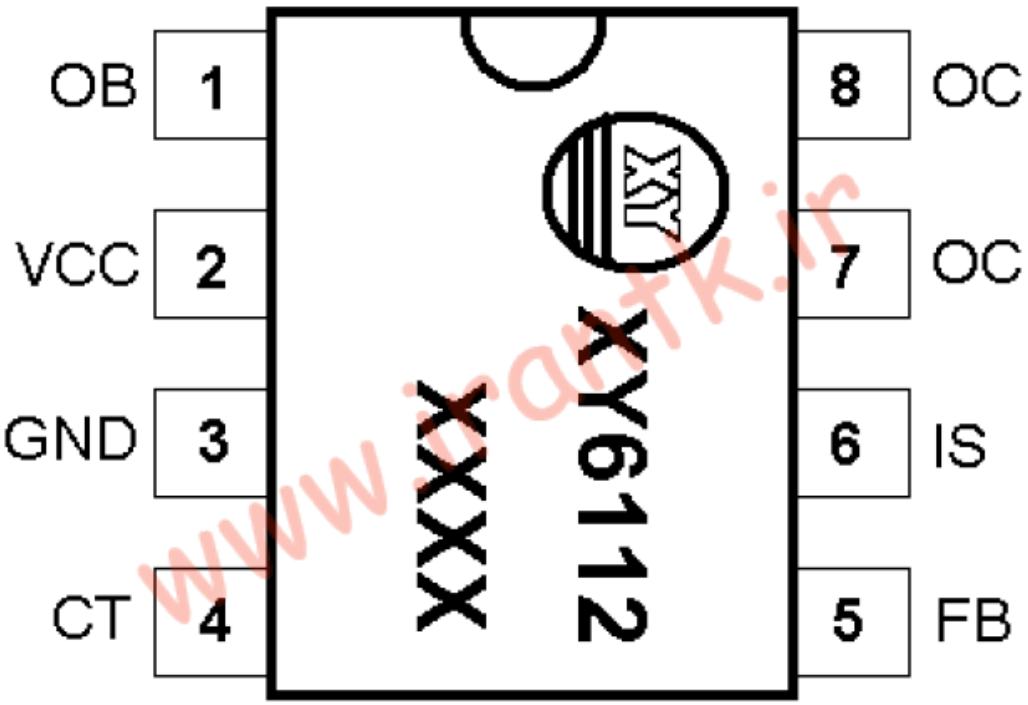
4 CT switching frequency setting pin, external fixed-frequency capacitance

5 FB feedback pin

6 IS switch current limit is set sampling and feet, an external current sense resistor

7,8 OC output pin, tap transformer

Note: PCB Layout Pin6 should be between 1mm Pin7 and keep a safe distance above, to avoid discharging.



Fifth, the limit parameter

Supply voltage VCC: 16V

Pin input voltage VCC: +0.3 V

OC collector withstand voltage:-0.3-750V

Peak switch current: 800mA

The total dissipated power: 1000mW

Operating temperature range :0 --- +125 ℃

Storage temperature range: -55 --- +150 ℃

Soldering temperature: +260 ℃, 10S

Sixth, the recommended operating conditions
Project Minimum Typical Maximum Unit
Supply voltage, VCC 5 10 V
Pin input voltage -0.3 - Vcc V
Peak reverse voltage - 700 V
Peak switch current - 650 mA
Timing capacitor 650 680 920 PF
65 61 45 KHz frequency corresponding
Operating temperature 0 125 ℃

Electrical parameters (Ta = 25 ℃, Vcc = 5.5-7.5V, Ct = 680PF, RS = 1Ω)

Item Test Conditions Min Typ Max Unit
The maximum pressure switch Ioc = 10mA 750 - V
Opened saturation voltage Ioc = 600mA - 1 V
Output Rise Time CL = 1nF - 75 ns
Output Fall Time CL = 1nF - 75 ns
Output current limit Tj = 0-100 ℃ 540 580 620 mA
Oscillator section
Item Test Conditions Min Typ Max Unit
Oscillation frequency Ct = 680PF 55 61 67 KHz
With the rate of change of frequency voltage Vcc = 5.5-9V - 1%
Frequency rate of change with temperature Ta = 0-85 ℃ - 1%
The leading edge blanking time Ct = 680PF - 800 - ns