



G1165AF

High Precision CC/CV Primary-Side PWM Power Switch

1. General Description

G1165AF is a high performance offline PWM Power switch for low power AC/DC charger and adaptor application. It operates in primary side regulation. Consequently, opto-coupler and TL431 could be eliminated.

Proprietary Constant Voltage (CV) and Constant Current (CC) control is integrated as shown in the Fig.1. In CC control, the current and output power setting can be adjusted externally by the sense resistor R_{CS} at CS pin. In CV control, multi-mode operations are utilized to achieve high performance and high efficiency.

In addition, good load regulation is achieved by the built-in cable drop compensation. Device operates in PFM in CC mode as well at large load condition and it operates in PWM with frequency reduction at light/medium load.

G1165AF offers perfect protection function with auto-recovery features including Cycle-by-Cycle current limiting (OCP), VDD UVLO and OVP, VDD clamp, Secondary rectifier Diode short protection etc.

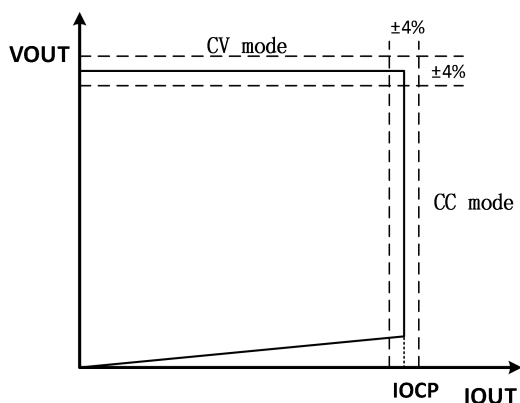


Fig.1. Typical CC/CV Curve

Features

- ◆ Built-in High-Voltage Power MOS
- ◆ 4% CV and CC Regulation at Universal AC input
- ◆ Standby Power consumption less than 70mW
- ◆ Programmable CV and CC Regulation
- ◆ No audible noise over entire operating range
- ◆ Programmable cable drop compensation
- ◆ Integrated line voltage and load voltage constant current compensation
- ◆ Built-in Leading Edge Blanking (LEB)
- ◆ comprehensive protection coverage
 - VDD under voltage lockout with hysteresis (UVLO)
 - VDD over voltage protection (VDD OVP)
 - Cycle-by-Cycle current limiting
 - Output over voltage protection (Output OVP)
 - Secondary rectifier diode Open and short circuit protection
 - Secondary winding Open and short circuit protection
 - CS pin to GND short circuit protection
 - brown-in/out and Line OVP protection
- ◆ Pb-free SOP7

Applications

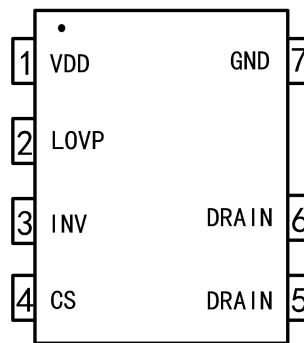
- ◆ Cell Phone Charger
- ◆ Digital Cameras Charger
- ◆ LED Driver
- ◆ Small Power Adapter
- ◆ Auxiliary Power for PC, TV etc.
- ◆ Linear Regulator/RCC Replacement

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2. Products Information

2.1 Pin configuration



SOP7 Package

Fig.2. G1165AF Pin Configuration

Pin Name	I/O	Description
VDD	Power Input	Power Supply
LOVP	Analog Input	Input Voltage Protection pin. LOVP pin is connected to the bulk capacitor with a resistive divider to achieve brown-in/out and input voltage OVP. A capacitor is recommended for this pin to GND.
INV	Analog Input	The Voltage feedback from auxiliary winding. Connected to resistor divider from auxiliary winding reflecting output voltage.
CS	Analog Input	Current sense input. Connected to primary current sensing resistor.
DRAIN	Output	HV MOSFET Drain Pin. The Drain pin is connected to the primary lead of the transformer
GND	Ground	Ground