

Low Cost Green-Mode PWM Controller

Features

- Low Cost, Green-Mode PWM
- Very Low Start-up Current (about 5 μ A)
- Low Operating Current (about 2mA)
- Current Mode Operation
- Under Voltage Lockout (UVLO)
- Built-in Synchronized Slope Compensation
- Programmable PWM Frequency
- High-Voltage CMOS Process with ESD
- SOT-23-6L & DIP-8 Pb-Free Packaging
- Compatible with SG6848 and LD7550

Applications

- Switching AC/DC Adaptor
- Battery Charger
- Open Frame Switching Power Supply
- 384X Replacement

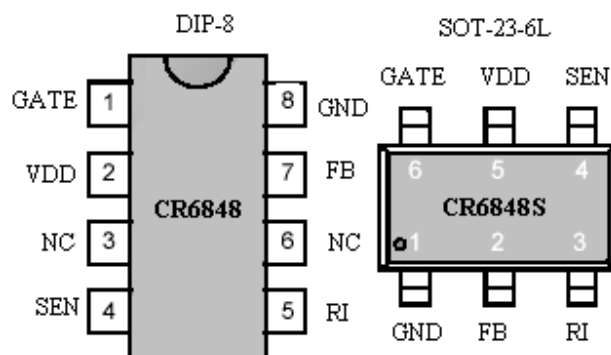
General Description

The CR6848 is a low cost, low startup current, current mode PWM controller with green-mode power-saving operation. The integrated functions such as the leading-edge blanking of the current sensing, internal slope compensation and the small SOT-23-6L package provide the users a high efficiency, low external component counts, and low cost solution for AC/DC power applications.

The special green-mode control is not only to achieve the low power consumption but also to offer a non-audible-noise operation when the SG6848 is operating under light load or no load condition.

The SG6848 is designed for the low power adaptor or charger applications. The SG6848 is with both SOT-23-6L and DIP-8 package.

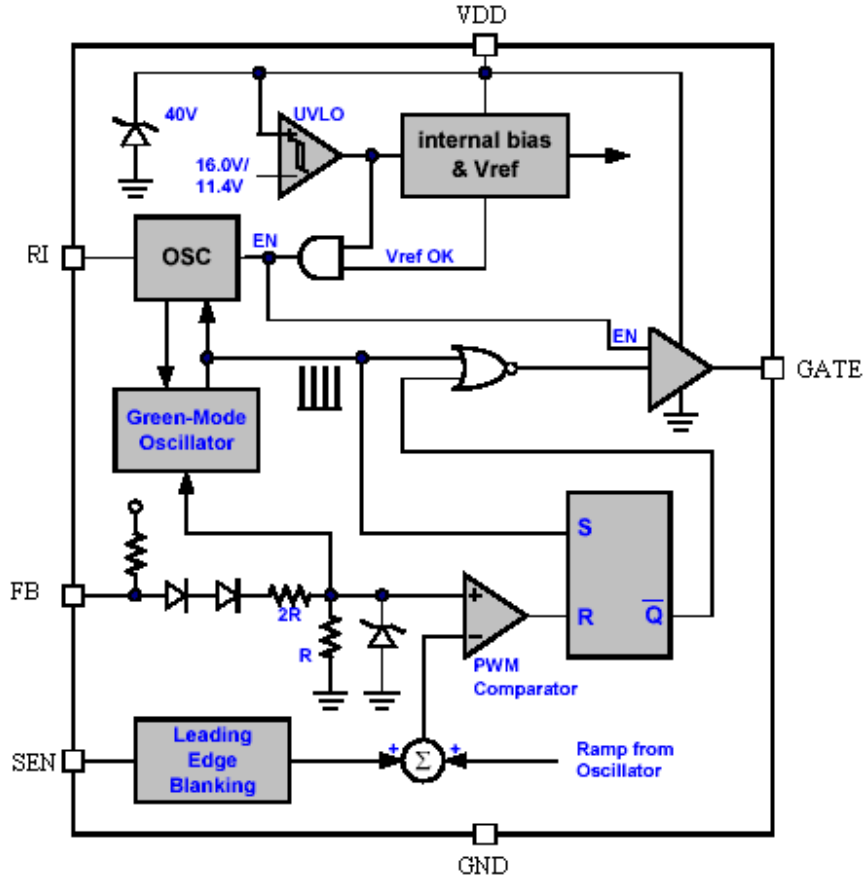
Pin Assignment



Pin Descriptions

Name	Description
GND	GND Pin
FB	Analog Input. Voltage feedback pin (same as the COMP pin in UC384X).
RI	This pin is to program the switching frequency. By connecting a resistor to ground to set the switching frequency.
SEN	Current sense pin, connect to sense the MOSFET current.
VDD	Supply voltage pin.
GATE	Gate drive output to drive the external MOSFET.

Block Diagram



Absolute Maximum Ratings

Symbol	Parameter	Rating	Unit
V _{DD}	Supply voltage Pin Voltage	40	V
V _{FB}	Input Voltage to FB Pin	-0.3 to 6V	V
V _{SEN}	Input Voltage to SEN Pin	-0.3 to 6V	V
P _D	Power Dissipation	300	mW
	ESD Capability, HBM Model	3000	V
	ESD Capability, Machine Model	300	V
T _L	Lead Temperature(Soldering)	SOT-23-6L (20sec)	220
		DIP-8(10sec)	260
T _{STG}	Storage Temperature Range	-55 to + 150	

Electrical Characteristics ($T_a=25^{\circ}\text{C}$ unless otherwise noted, $V_{DD} = 15\text{V}$.)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
Supply Voltage (V_{DD} Pin)						
I_{ST}	Startup Current	--		5	25	μA
I_{SS}	Operating Current	$V_{FB}=0\text{V}$		3	4	mA
		$V_{FB}=3\text{V}$		2		mA
		$V_{FB}=\text{Open}$		0.7		mA
	UVLO(off)	--	10.4	11.4	12.4	V
	UVLO(on)	--	14.8	16.0	17.5	V
Voltage Feedback (FB Pin)						
	Short Circuit Current	$V_{FB}=0\text{V}$		2.2	3.0	mA
	Open Loop Voltage	$V_{FB}=\text{Open}$		5.0		V
	Green Mode Threshold V_{FB}			2.35		V
Current Sensing (SEN Pin)						
	Maximum Input Voltage			0.85		V
	Delay to Output			300		ns
	Input Impedance			50		$\text{K}\Omega$
Oscillator (RI Pin)						
	Frequency	$R_I=90\text{K}\Omega$	65	70	75	KHz
	Frequency Temp. Stability	-30-85		5.0		$\%$
GATE Drive Output (GATE Pin)						
	Output Low Level	$V_{DD}=15\text{V}, I_O=20\text{mA}$			1	V
	Output High Level	$V_{DD}=15\text{V}, I_O=20\text{mA}$	8			V
	Rising Time	$C_L=1000\text{pF}$		50	200	ns
	Falling Time	$C_L=1000\text{pF}$		30	125	ns

Typical Application Circuit

