

## High Efficiency Off-Line CC/CV Switch

### FEATURES

- Constant-Current (CC) and Constant-Voltage (CV) with Primary Side Control
- Proprietary technology enabling high efficiency and fast dynamic response
- No audible noise over entire operating range
- Optimization for capacitive loading
- FT838Dx: external power NPN/MOS  
FT838R: external power NPN/MOS  
FT838Nx: Built-in power NPN  
FT838RNx: Built-in power NPN
- Built-in Cable Compensation
- Built-in Line Compensation
- Primary-side feedback eliminates opto-coupler and TL431
- Cycle-by-Cycle Current Limiting
- Over Temperature Protection
- VCC Over Voltage Protection
- CV Open-loop Protection
- Excellent capacitive loading start-up performance

### TYPICAL APPLICATION

- Adapter/Charger for Cell/Cordless Phones, PDAs, MP3 and Other Portable Apparatus
- Standby and Auxiliary Power Supplies Set Top Boxes (STB)
- Adapter for ADSL / WiFi Wireless
- AC/DC LED Driver applications

### DESCRIPTION

The FT838xx controller device is optimized for high-performance, low power switching mode power supply applications. The FT838xx facilitates CC/CV charger design by eliminating an opto-coupler and TL431. Its highly integrated functions such as Under Voltage Lockout (UVLO), Leading Edge Blanking (LEB) and built-in cable compensation offer the users a high efficiency and low cost solution for AC/DC power applications.

Power supplies built with FT838xx can achieve both highest average efficiency, fast dynamic load response and super low standby power.

FT838R/838RNA are optimized for LED driver applications with slightly higher standby current (~22uA) to avoid LED flickering after power off.

Furthermore, FT838xx features fruitful protections like Open Circuit Protection and Over Temperature Protection to eliminate the external protection circuits and provide reliable operations.

FT838Dx is available in SOT23-5 package.  
FT838R is available in SOT23-5 package.  
FT838Nxx is available in SOP8 package.  
FT838RNx is available in SOP8 package.

TYPICAL APPLICATION CIRCUIT

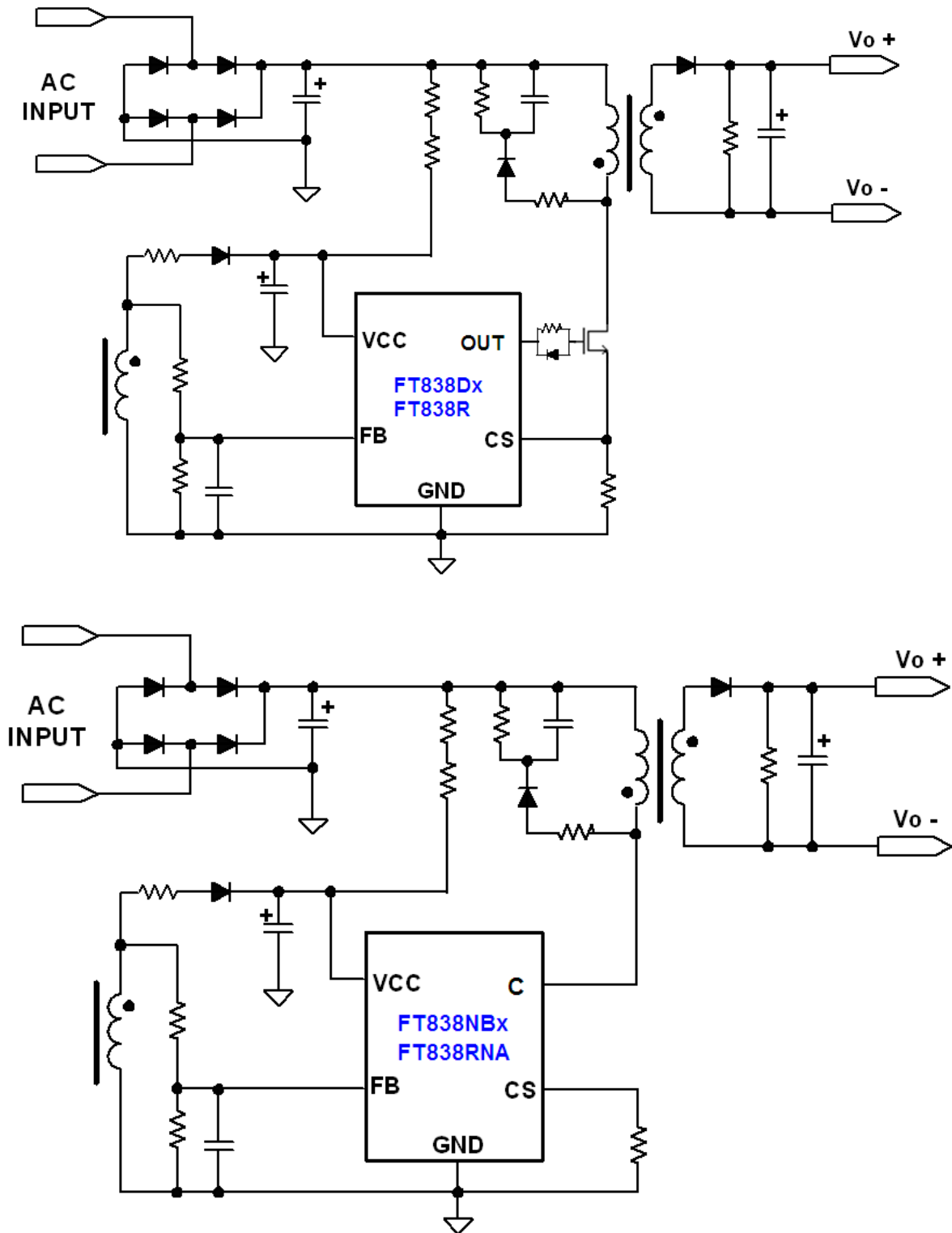


Figure 1: FT838xx Typical Application Circuit

## PIN CONFIGURATION

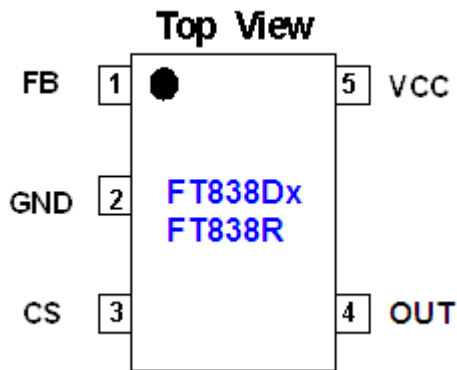


Figure 2: FT838Dx/FT838R (SOT23-5)

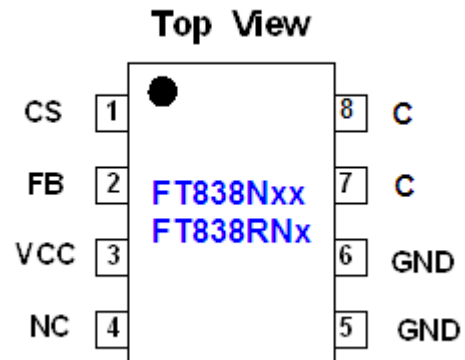


Figure 3: FT838Nx/FT838RNx (SOP8)

## TERMINAL DEFINITION

SOP8	SOT23-5	Name	Description
1	3	CS	Primary current sense
2	1	FB	Output voltage feedback pin
3	5	VCC	Supply voltage
4		NC	No Connection
5/6	2	GND	Ground.
7/8		C	C: the Collector of the power NPN for FT838Nx/838RNx; This pin is connected to the primary lead of the transformer
	4	OUT	NPN base or MOS gate driver for FT838D/838R

Table 1