

Low-Power Off-Line CC/CV Controller

FEATURES

- Constant-Current (CC) and Constant-Voltage (CV) Control with Primary Side Control
- No-load power consumption < 30 mW at 230 Vac with typical application circuit (5-star rating)
- Primary-side feedback eliminates opto-coupler and TL431
- Built-in Cable Compensation
- Built-in Line Compensation
- Quasi-resonant operation for highest overall efficiency
- Direct drive of low-cost BJT switch
- Cycle-by-Cycle Current Limiting
- Over Voltage Protection (OVP)
- Over Temperature Protection (OTP)
- Open Circuit Protection
- Short Circuit Protection
- No audible noise over entire operating range
- Pb-Free Device

TYPICAL APPLICATION

- Adapter/Charger for Cell/Cordless Phones, PDAs, MP3 and Other Portable Apparatus
- Standby and Auxiliary Power Supplies Set Top Boxes (STB)

DESCRIPTION

The FT835x controller device is optimized for high-performance, low power switching mode power supply applications. The FT835x 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 FT835x can achieve both highest average efficiency and 30mW no-load power consumption, and have fast dynamic load response.

Furthermore, FT835x features fruitful protections like OTP (Over Temperature Protection), OVP (Over Voltage Protection), and Open Circuit Protection, Short Circuit Protection to eliminate the external protection circuits and provide reliable operation. FT835x is available in SOT23-5 and SOP8 packages.

TYPICAL APPLICATION CIRCUIT

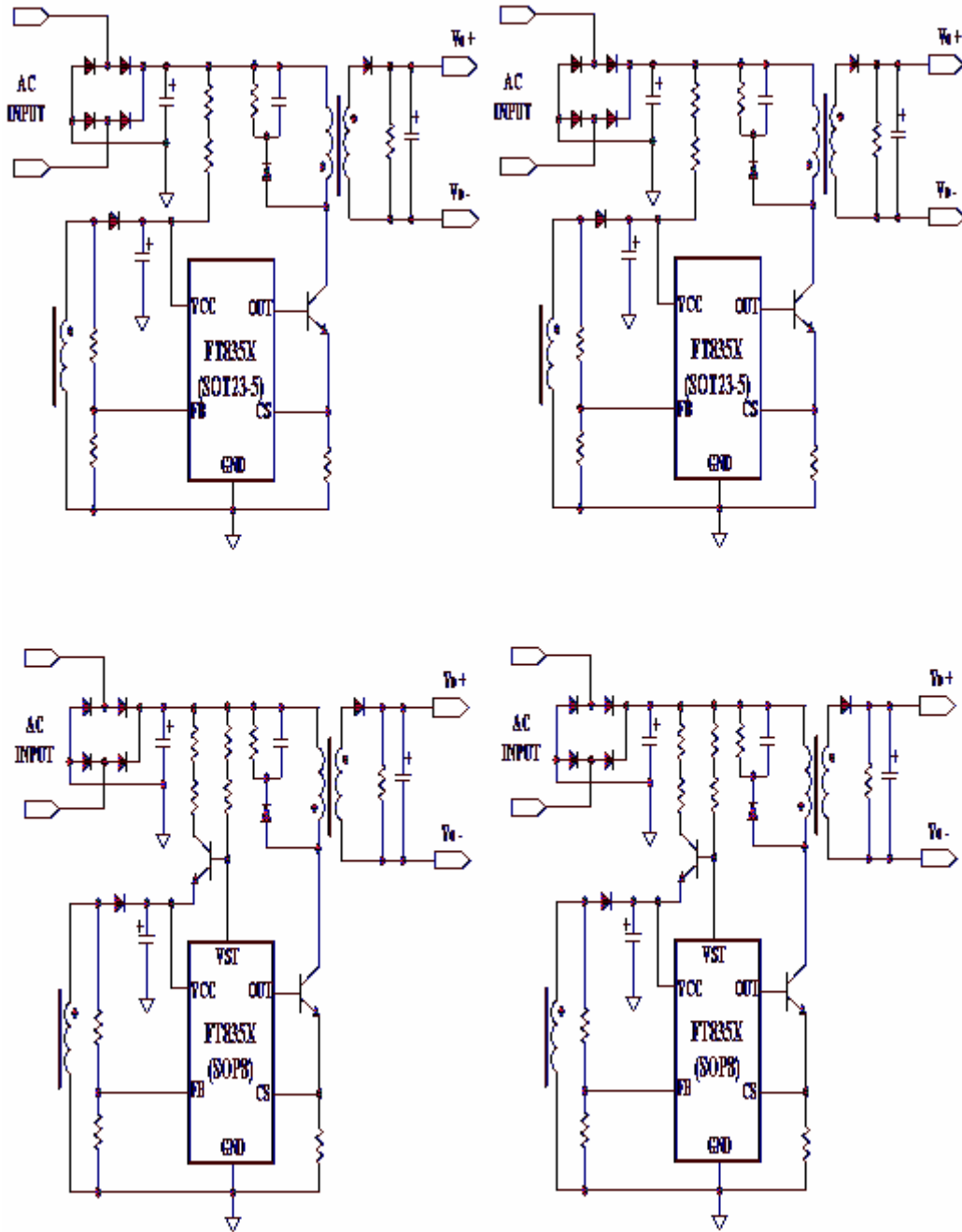


Figure 1: Typical Application Circuit

ABSOLUTE MAXIMUM RATINGS

FB to GND.....	-0.3V to +9V
CS to GND.....	-0.3V to +9V
VCC to GND.....	-0.3V to +20V
VST to GND.....	-0.3V to +20V
OUT to GND.....	-0.3V to +9V
Operating Temperature Range.....	-40°C to +125°C
Junction Temperature.....	-40°C to +150°C
Storage Temperature Range	-60°C to +150°C
ESD Protection HBM.....	2000V
ESD Protection MM.....	200V

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

PIN CONFIGURATION

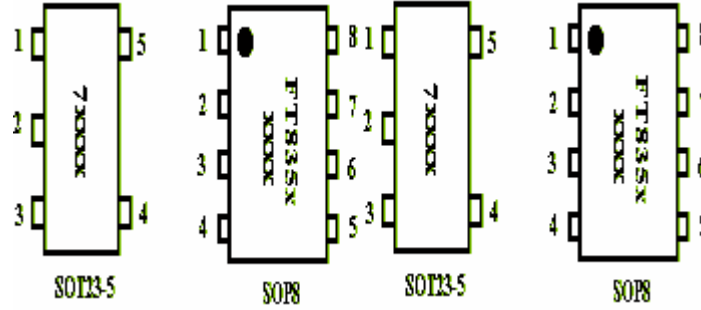


Figure 2: Pin Assignments

Pin Definition

Package	Pin Definition							
	1	2	3	4	5	6	7	8
SOT23-5	FB	GND	CS	OUT	VCC			
SOP8	VST	VCC	OUT	GND	CS	NC	NC	FB

Table1: Pin Definition

TERMINAL DEFINITION

Pin	Description
GND	Ground.
FB	Output voltage feedback pin
CS	Primary current sense
VCC	Supply voltage
OUT	NPN switch base driver
VST	Control signal for active start-up BJT

Table 2

ORDERING INFORMATION

FT835①-②

DESIGNATOR	SYMBOL	Options
①	0	Cable Comp = 0
	1	Cable Comp = 3%
	2	Cable Comp = 6%
	3	Cable Comp = 9%
②	SYMBOL	PACKAGE TYPE
	S	SOP-8
	L	SOT23-5

Table 4

MARKING RULE

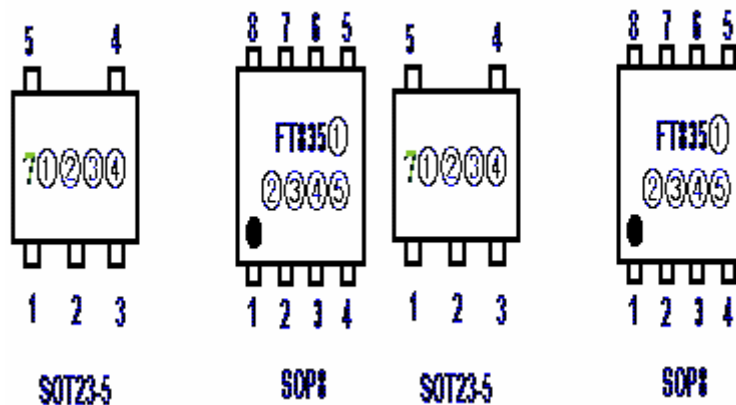


Figure 3: Marking Rule

SOT23-5

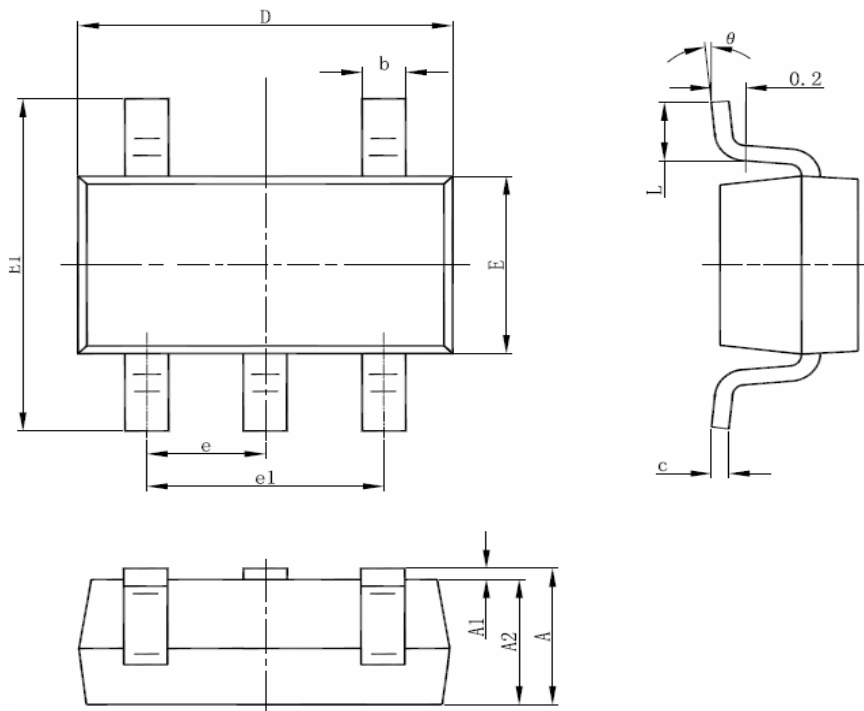
- ①: Represents Version (0,1,2 or 3)
- ②③④: for internal reference

SOP8

- ①: Represents Version (0,1,2 or 3)
- ②③④⑤: for internal reference

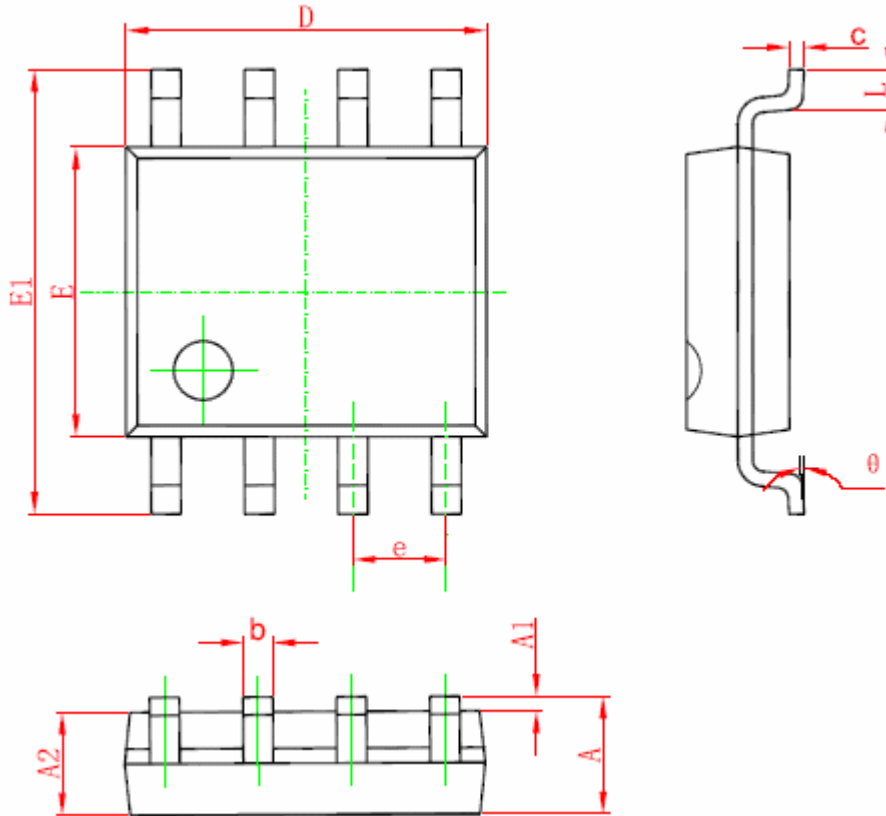
PACKAGE INFORMATION

SOT23-5 Package



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.95 (BSC)		0.037 (BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	6°

SOP8 Package



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.350	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.006	0.010
D	4.700	5.100	0.185	0.200
E	3.800	4.000	0.150	0.157
E1	5.800	6.200	0.228	0.244
e	1.270 (BSC)		0.050 (BSC)	
L	0.400	1.270	0.016	0.050
theta	0°	8°	0°	8°