

Primary-Side-Control CC/CV Controller

FEATURES

- Constant-Current (CC) and Constant-Voltage (CV) Control with Primary Side Control
- Eliminates Opto-Coupler and TL431
- External Power NPN Transistor for Low Cost
- Adjustable Base Driver Improve System EMI (FT831B/2B/2C)
- Adjustable Cable compensation for all Loading (FT831A/2A/2C)
- Built-in Line Compensation
- Charger Status Indicator in Primary Side (FT832A/2B)
- Cycle-by-Cycle Current Limiting
- Over Voltage Protection (OVP)
- Over Temperature Protection (OTP)
- Open Circuit Protection
- Short Circuit Protection
- 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 FT83xx controller device is optimized for high-performance, low power switching mode power supply applications. The FT83xx 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), external adjustable base driver and cable compensation offer the users a high efficiency and low cost solution for AC/DC power applications.

Furthermore, FT83xx 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. FT83xx is available in SOT23-5, SOT23-6 and SOP8 packages.

Part #	Cable Compensation	Driving Capability	Charging Status LED driver
FT830A	Default	Default	X
FT831A	Programmable	Default	X
FT831B	Default	Programmable	X
FT832A	Programmable	Default	√
FT832B	Default	Programmable	√
FT832C	Programmable	Programmable	X

Table1: FT83xx Series

TYPICAL APPLICATION CIRCUIT

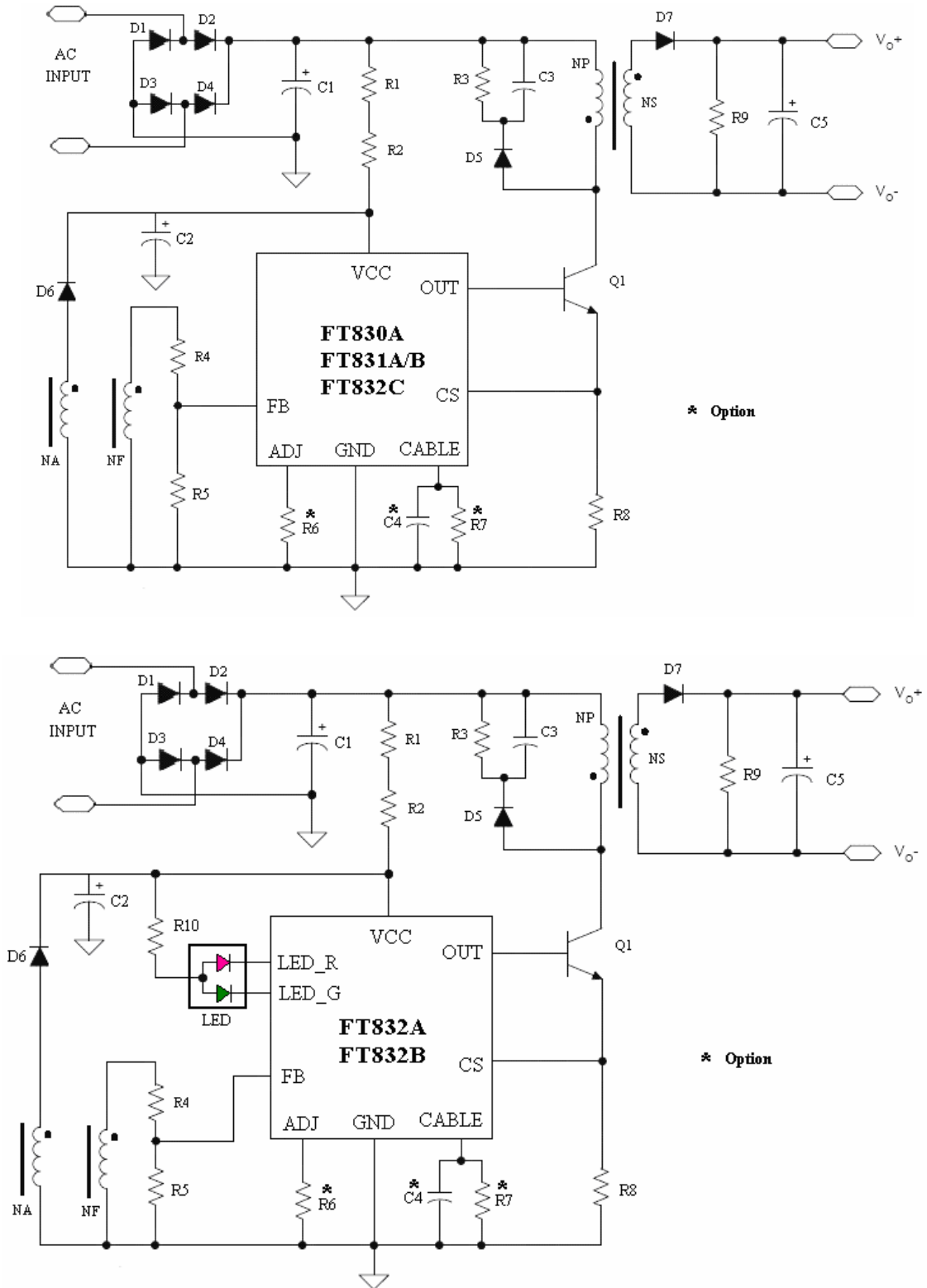


Figure 1: Typical Application Circuit



ABSOLUTE MAXIMUM RATINGS

FB to GND.....	-0.3V to +9V
CS to GND.....	-0.3V to +9V
VCC to GND.....	-0.3V to +18V
OUT to GND.....	-0.3V to +9V
LED_R to GND.....	-0.3V to +18V
LED_G to GND.....	-0.3V to +18V
CABLE to GND.....	-0.3V to +9V
ADJ 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
MM.....	500V

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

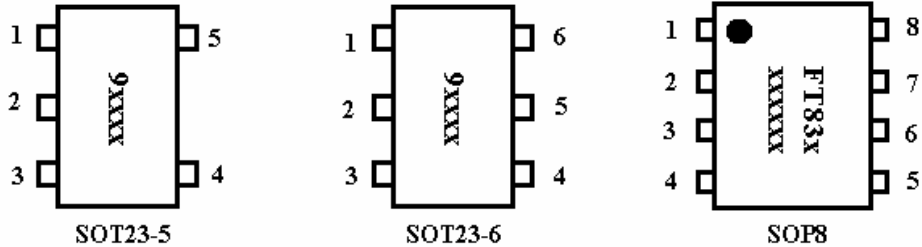


Figure 2: Pin Assignments

Pat NO.	Package	Pin Definition							
		1	2	3	4	5	6	7	8
FT830A	SOT23-5	CS	FB	GND	OUT	VCC			
FT831A	SOT23-6	CS	FB	GND	OUT	VCC	CABLE		
FT831B	SOT23-6	CS	FB	GND	OUT	VCC	ADJ		
FT832A	SOP8	LED_G	LED_R	VCC	OUT	GND	FB	CS	CABLE
FT832B	SOP8	LED_G	LED_R	VCC	OUT	GND	FB	CS	ADJ
FT832C	SOP8	ADJ	NC	VCC	OUT	GND	FB	CS	CABLE

Table 2: 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
LED_R	Connect to red LED for indicating charging state
LED_G	Connect to green LED for indicating charge completed state
CABLE	Adjust cable compensation by an external resistor and capacitor to GND
ADJ	Adjust base driver current by an external resistor to GND

Table 3

ORDERING INFORMATION

Product	Ordering Information
FT830A	FT830A
FT831A	FT831A
FT831B	FT831B
FT832A	FT832A
FT832B	FT832B
FT832C	FT832C

Table 4

MARKING RULE

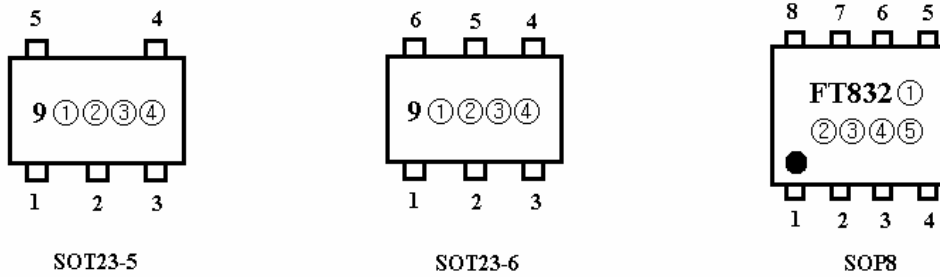


Figure 3: Marking Rule

SOT23-5/6:

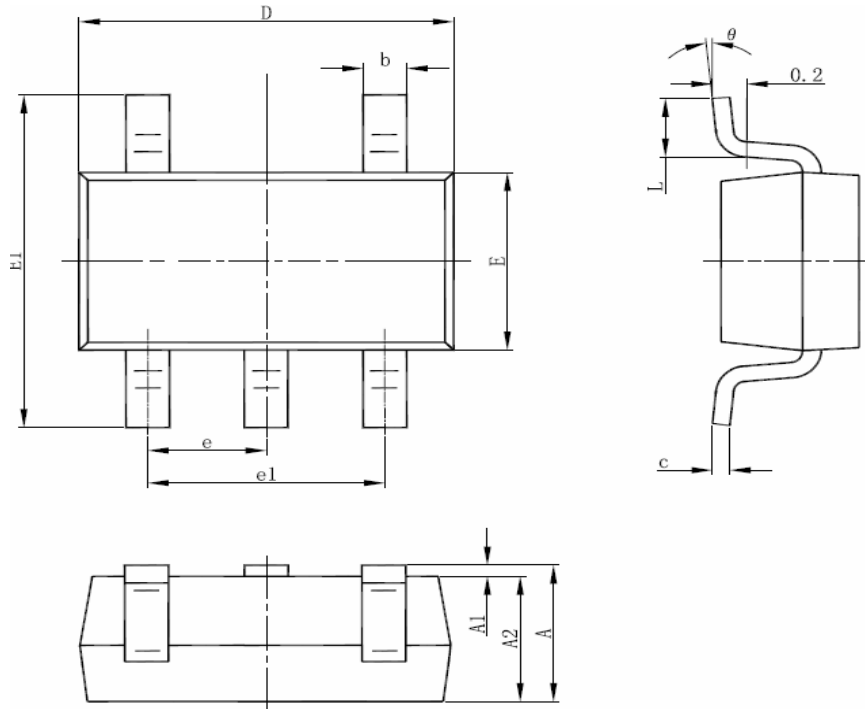
- ①: Represents Version (A or B)
- ②: Represents package (a: SOT23-5; b: SOT23-6)
- ③④: for internal reference

SOP8:

- ①: Represents Version (A, B or C)
- ②③④⑤: for internal reference

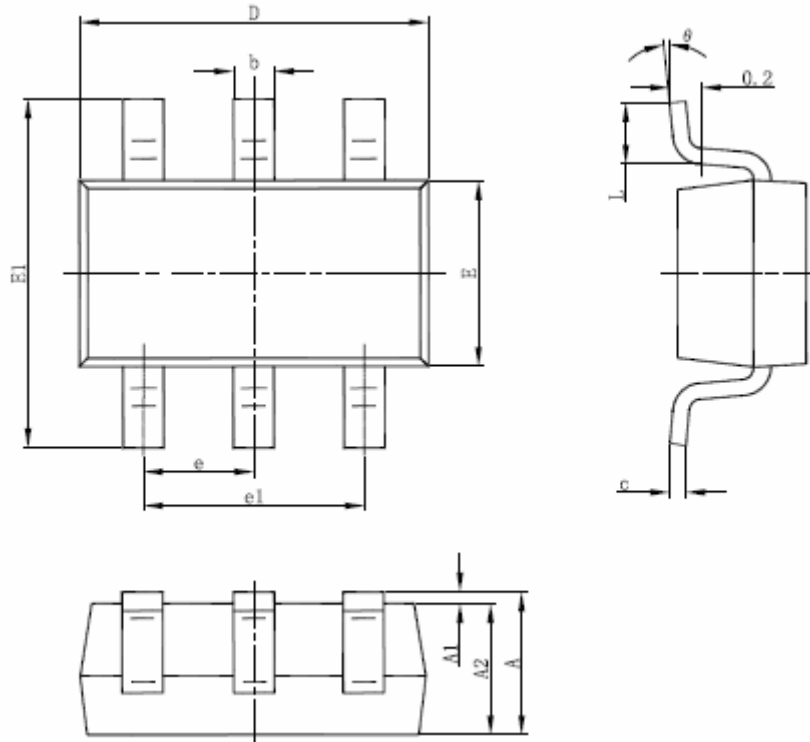
PACKAGE INFORMATION

SOT23-5 Package



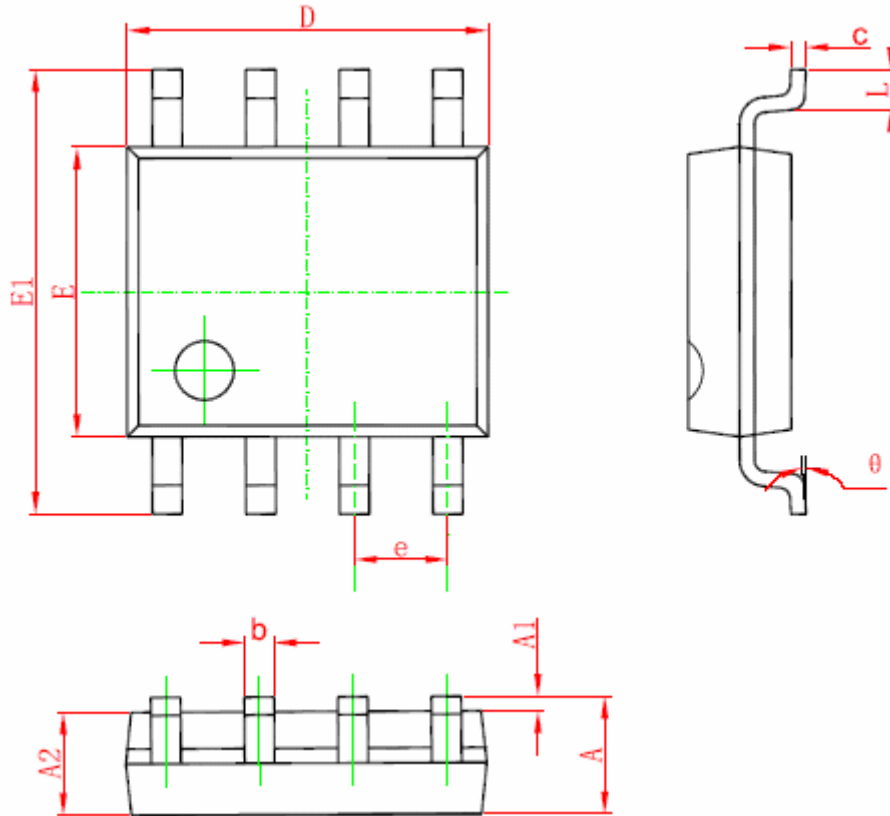
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.95 (BSC)		0.037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

SOT23-6 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	0.950 (BSC)		0.037 (BSC)	
e1	1.800	2.000		0.079
L	0.300	0.600		0.024
θ	0°	8°	0°	8°

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
θ	0°	8°	0°	8°



APPENDIX A: REVISION HISTORY

Version A0: Original data sheet for the FT83xx Series.

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