



600mA Buck Regulator Plus Dual 250mA LDOs

FEATURES

- 600mA Buck DC/DC Plus Dual 250mA LDOs in One IC
- 2.5V to 5.5V Input Voltage Range
- Independent Enable Pin for Buck and LDO
- Standard MSOP-10 Pb-free Packages

Buck Channel

- High Efficiency – Up to 95%
- No External Schottky Diode Needed
- Adjustable Output Voltages From 0.6V to VIN
- Fixed Output Voltage Options Available
- 100% Duty Cycle Low-Dropout Operation
- 1.5MHz Constant Frequency Operation

LDO Channel

- High Ripple Rejection: 70dB @ 1KHz
- Ultra Low Output Noise: 30 μ Vrms
- Low Dropout Voltage: 120mV@100mA
- Low Power Consumption: 65 μ A (TYP.)

TYPICAL APPLICATIONS

- Cellular and Smart Phones
- Handheld Products
- Portable Instruments

DESCRIPTION

The FT451 is a triple power supply composed of a 600mA synchronous buck regulator and two 250mA ultra low noise LDOs. The input supply range of 2.5V to 5.5V is especially well-suited for a single cell Lithium-Ion (Li+) battery.

The buck regulator features 1.5MHz constant frequency, with slope compensated current mode. The buck converter integrates a main switch and a synchronous rectifier for high efficiency without an external Schottky diode.

Both LDOs feature low output noise, high ripple rejection ratio, low dropout. The EN used to control both channels and each channel can supply up to 250mA current. The output voltages of each channel are selectable within the range of 1.2V to 3.6V. Standard output voltage versions are 1.2, 1.8, 2.5, 2.7, 2.8, 3.0, 3.3V. Both LDOs are fully compatible with low ESR ceramic capacitors, reducing cost and improving output stability.

TYPICAL APPLICATION CIRCUIT

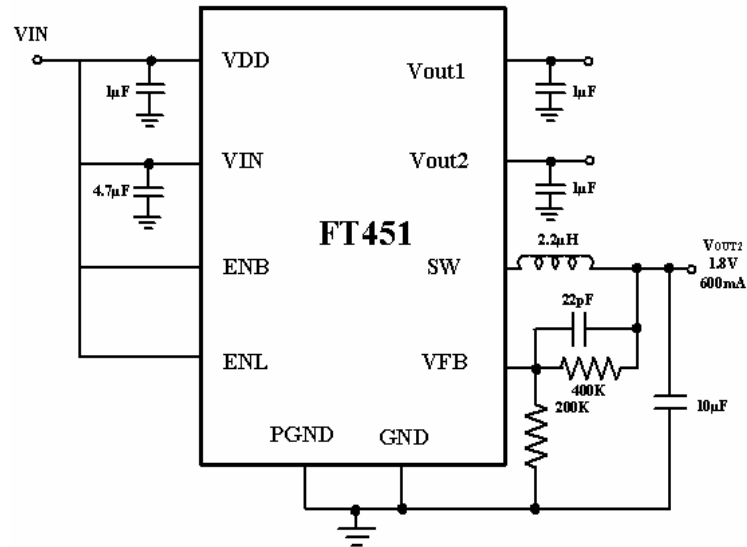


Figure 1: Typical Application Circuit

PIN COMFIGURATION

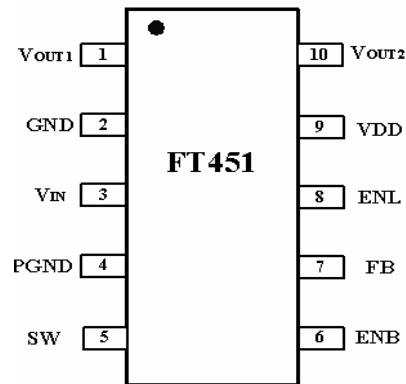


Figure 2: Package Top View (MSOP-10)

TERMINAL DEFINITION

Pin	Name	Description
1	V _{OUT1}	LDO regulator output pin1.
2	GND	Ground pin.
3	V _{IN}	Input supply pin. To provide the input supply voltage.
4	PGND	Power Ground pin.
5	SW	Switch node pin. To connects the internal main and synchronous power MOSFET switches to the external inductor for the buck regulator.
6	ENB	Buck enable control pin.
7	FB	Buck regulator feedback pin. To receive the buck regulator's feedback voltage from an external resistive divider.
8	ENL	LDO enable control pin.
9	VDD	LDO power input pin.
10	V _{OUT2}	LDO regulator output pin2.

Table 1

**ORDERING INFORMATION**

FT451①②③

Designator	Symbol	Buck Output Voltage
①	A	Adjustable
	B	1.5V
	C	1.8V
	D	2.5V

Table 2

DESIGNATOR	SYMBOL	LDO OUTPUT VOLTAGE
②	A	Channel 1=1.2V
	B	Channel 1=1.5V
	C	Channel 1=1.8V
	D	Channel 1=2.5V
	E	Channel 1=2.8V
	F	Channel 1=3.0V
	G	Channel 1=3.3V
	H	Channel 1=3.6V
③	A	Channel 2=1.2V
	B	Channel 2=1.5V
	C	Channel 2=1.8V
	D	Channel 2=2.5V
	E	Channel 2=2.8V
	F	Channel 2=3.0V
	G	Channel 2=3.3V
	H	Channel 2=3.6V

Table 3