

# Feeling Products

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瑞達科技股份有限公司

**KingpeX Technology Incorporated**

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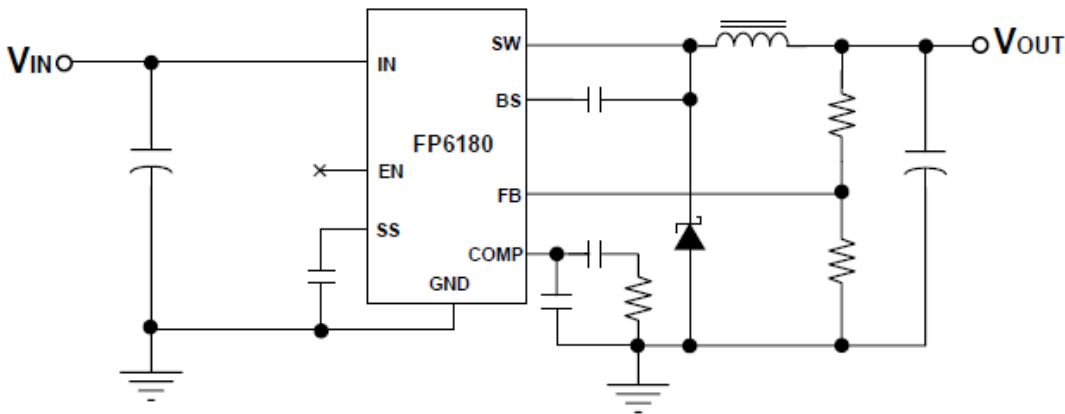
# *Asynchronous & Synchronous Step-Down Converter & Controller*

# FP6180 3A, 23V, 380KHz Step-Down Converter

## FEATURES

- 3A Output Current
- Adjustable Soft-Start
- 0.1Ω Internal Power MOSFET Switch
- Stable with Low ESR Output Ceramic Capacitors
- Up to 95% Efficiency
- 20μA Shutdown Mode Current
- Thermal Shutdown
- Cycle-by-Cycle Over Current Protection
- Wide 4.75 to 23V operating input Range
- Output Adjustable From 1.22 to 21V

## TYPICAL APPLICATION CIRCUIT



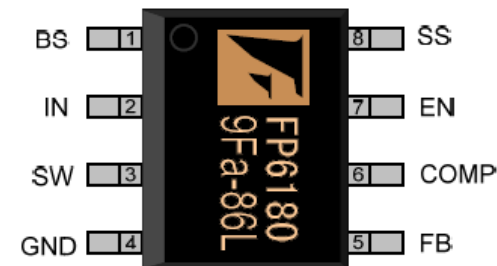
## PIN DESCRIPTION

Name	No.	I / O	Description
BS	1	I	Boost
IN	2	P	Power Supply
SW	3	O	Switch
GND	4	P	Ground
FB	5	I	Feedback
COMP	6	O	Compensation
EN	7	I	Enable
SS	8	I	Soft Start Control

## TYPICAL APPLICATION

- Distributed Power Systems
- Battery Charger
- Pre-Regulator for Linear Regulators

## PACKAGE SOP-8L (EP)

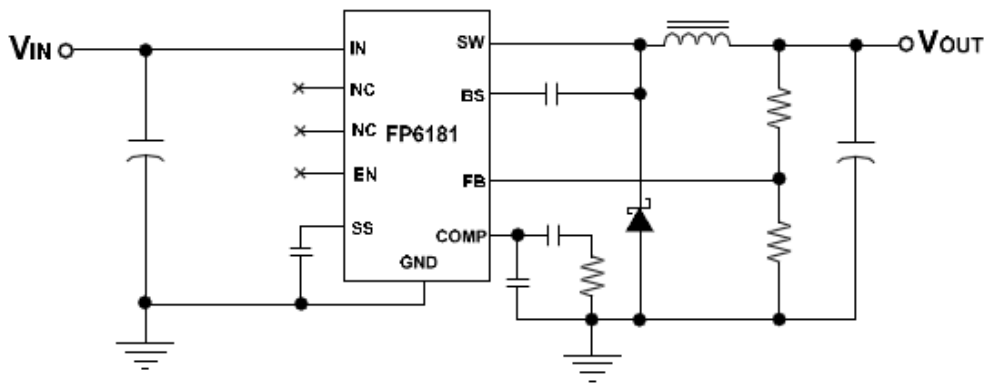


# FP6181 2A, 23V, 380KHz Step-Down Converter

## FEATURES

- 2A Output Current
- Adjustable Soft-Start
- 0.18Ω Internal Power MOSFET Switch
- Stable with Low ESR Output Ceramic Capacitors
- Up to 95% Efficiency
- 23μA Shutdown Mode Current
- Thermal Shutdown
- Cycle-by-Cycle Over Current Protection
- Wide 4.75 to 23V Operating Input Range
- Output Adjustable From 0.92 to 16V

## TYPICAL APPLICATION CIRCUIT



## PIN DESCRIPTION

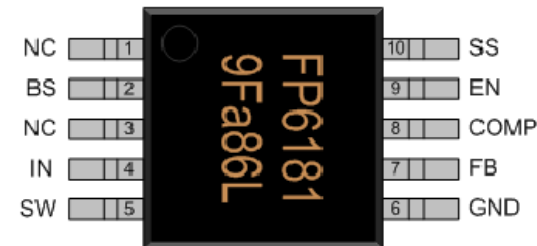
Name	No.	I / O	Description
NC	1		No connect
BS	2	O	Bootstrap
NC	3		No connect
IN	4	P	Supply Voltage
SW	5	O	Switch
GND	6	P	Ground
FB	7	I	Feedback
COMP	8	O	Compensation
EN	9	I	Enable / UVLO
SS	10	O	Programmable Soft Start

## TYPICAL APPLICATION

- Distributed Power Systems
- Battery Charger
- Pre-Regulator for Linear Regulators
- DSL Modems

## PACKAGE

MSOP-10L (EP)

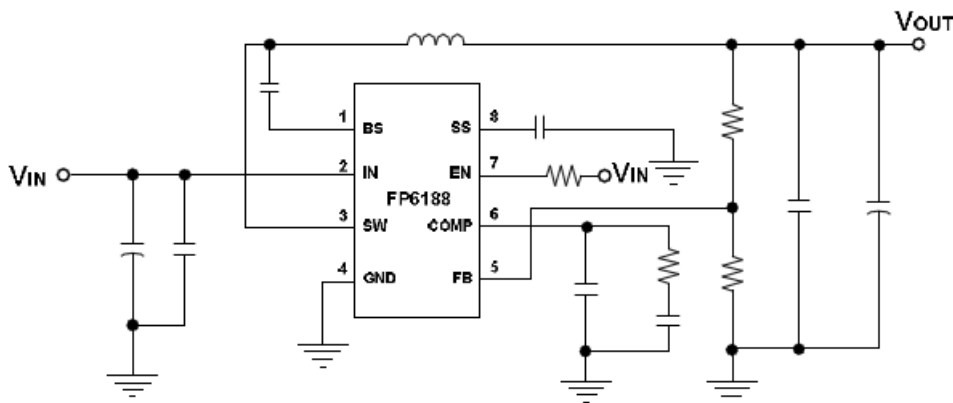


# FP6188 2A, 23V, 340KHz Synchronous Step-Down Converter

## FEATURES

- 0.13Ω Internal Power MOSFET Switches
- Stable with Low ESR Output Ceramic Capacitors Up to 93% Efficiency
- 1μA Shutdown Mode Current
- Programmable Soft-Start
- Thermal Shutdown
- Cycle-by-Cycle Over Current Protection
- Wide 4.5V to 23V Operating Input Range
- Output Adjustable From 0.923V to 16V
- Available SOP-8L & SOP-8L (EP) Package
- Input Under Voltage Lockout

## TYPICAL APPLICATION CIRCUIT



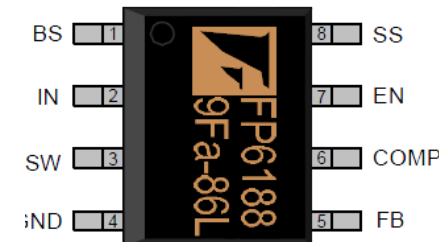
## PIN DESCRIPTION

Name	No.	I / O	Description
BS	1	O	Bootstrap
IN	2	P	Supply Voltage
SW	3	O	Switch
GND	4	P	Ground
FB	5	I	Feedback
COMP	6	O	Compensation
EN	7	I	Enable / UVLO
SS	8	O	Soft-Start
EP	9	P	Exposed PAD - Must connect to Ground

## TYPICAL APPLICATION

- Distributed Power Systems
- Battery Charger Network Cards
- Pre-Regulator for Linear Regulators
- DSL Modems

### PACKAGE SOP-8L (EP)

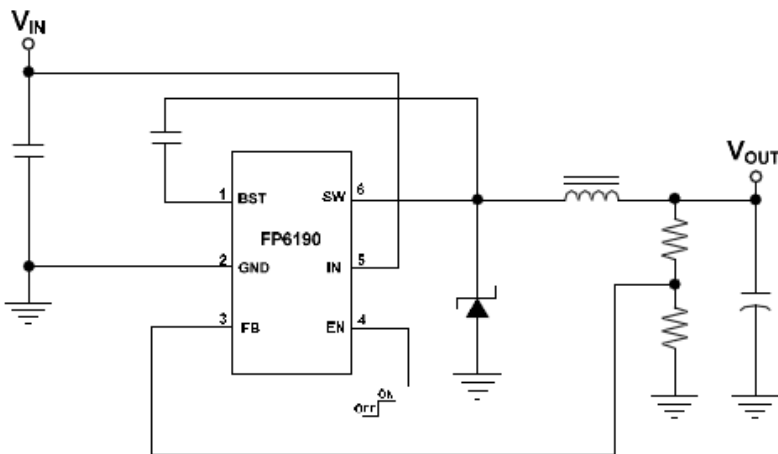


# FP6190 1.2A, 23V, 1.4MHz Step-Down Converter

## FEATURES

- 0.35Ω Internal High Side Power MOSFET Switch
- Stable with Low ESR Output Ceramic Capacitors
- Up to 92% Efficiency
- 0.1μA Shutdown Mode Current
- Fixed 1.4MHz Frequency
- Thermal Shutdown
- Cycle-by-Cycle Over Current Protection
- Wide 4.75 to 23V Operating Input Range
- Output Adjustable From 0.81 to 15V
- Available in TSOT23-6L / SOT23-6L Packages

## TYPICAL APPLICATION CIRCUIT



## PIN DESCRIPTION

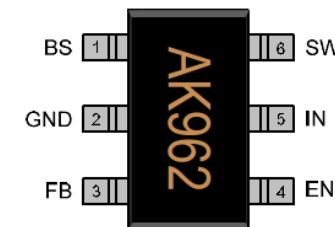
Name	No.	I / O	Description
BS	1	P	Bootstrap
GND	2	P	IC Ground
FB	3	I	Error Amplifier Compensation Output
EN	4	I	Enable / UVLO
IN	5	P	Supply Voltage
SW	6	O	Switch

## TYPICAL APPLICATION

- Distributed Power Systems
- Battery Charger
- Pre-Regulator for Linear Regulators
- DSL Modems

## PACKAGE

TSOT23-6L / SOT23-6L

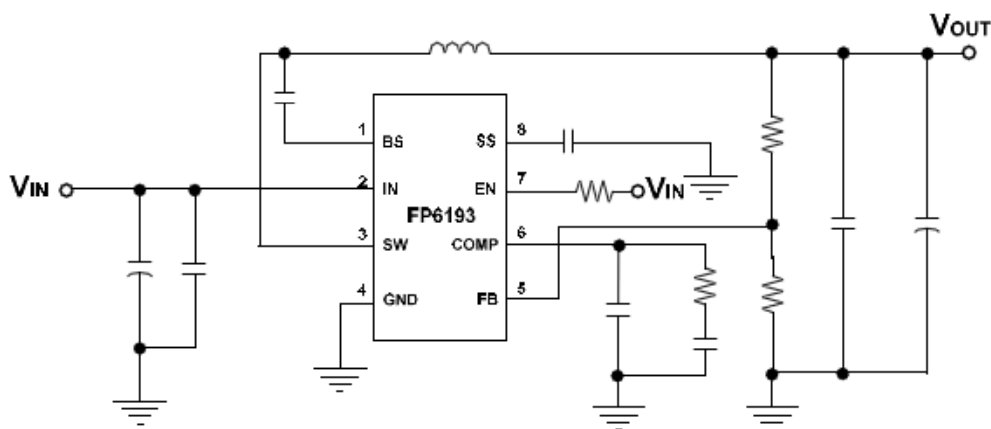


# FP6193 3A, 23V, 340KHz Synchronous Step-Down Converter

## FEATURES

- 85mΩ Internal Power MOSFET Switches
- Stable with Low ESR Output Ceramic Capacitors Up to 93% Efficiency
- 1μA Shutdown Mode Current
- Programmable Soft-Start
- Fixed 340KHz Frequency
- Thermal Shutdown
- Cycle-by-Cycle Over Current Protection
- Wide 4.75V to 23V Operating Input Range
- Output Adjustable From 0.923V to 20V
- Input Under Voltage Lockout

## TYPICAL APPLICATION CIRCUIT



## PIN DESCRIPTION

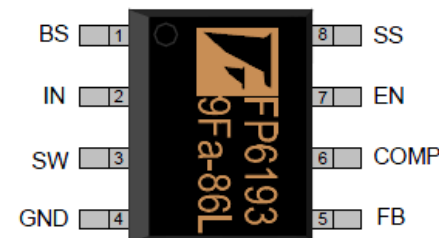
Name	No.	I / O	Description
BS	1	O	Bootstrap
IN	2	P	Supply Voltage
SW	3	O	Switch
GND	4	P	Ground
FB	5	I	Feedback
COMP	6	O	Compensation
EN	7	I	Enable / UVLO
SS	8	O	Soft-Start
EP	9	P	Exposed PAD is GND

## TYPICAL APPLICATION

- Distributed Power Systems
- Battery Charger Network Cards
- Pre-Regulator for Linear Regulators
- DSL Modems

## PACKAGE

SOP-8L (EP)

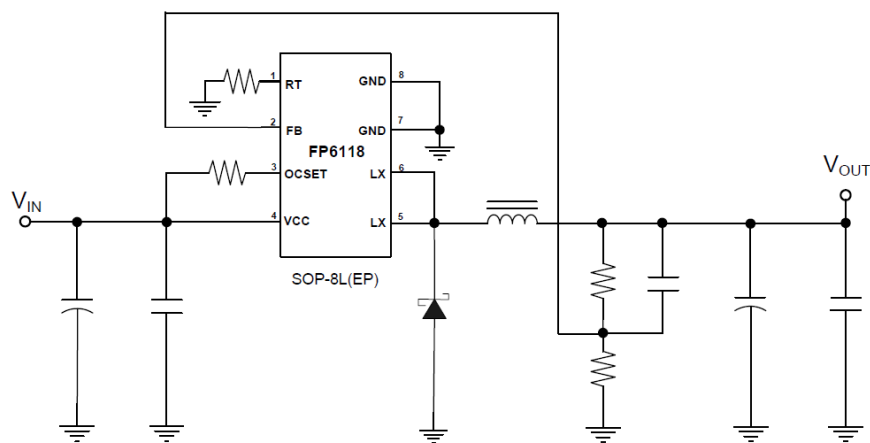


# FP6118 2.5A, Asynchronous Step-Down Regulator

## FEATURES

- Precision Feedback Reference Voltage:0.8V(2%)
- Wide Supply Voltage Operating Range:3.6 to 30V
- Low Current Consumption:3mA
- External Set Oscillator Frequency:100~300KHz
- Internal Soft-Start Function (SS)
- Built-In P-MOSFET for 2.5A output Loading
- Over Current Protection

## TYPICAL APPLICATION CIRCUIT

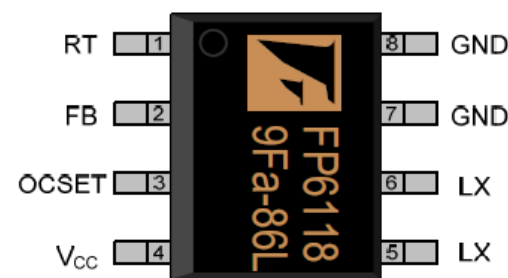


## PIN DESCRIPTION

Name	No.	I / O	Description
RT	1	I	Connect a Resistor for Oscillator
FB	2	I	Error Amplifier Inverting Input
OCSET	3	I	Set Switch Output Over Current
V <sub>CC</sub>	4	P	IC Power Supply (PMOS Source)
LX	5	O	PMOS High Current Output
LX	6	O	PMOS High Current Output
GND	7	P	IC Ground
GND	8	P	IC Ground
EP	9	P	Exposed PAD - Must connect to LX

## PACKAGE

### SOP-8L (EP)



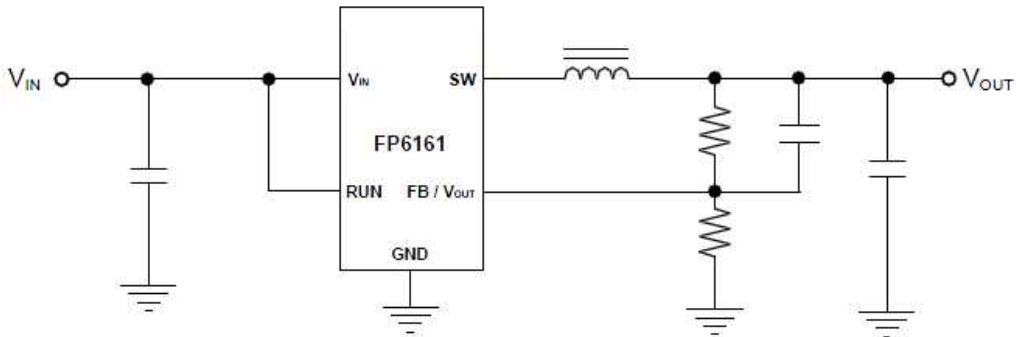


# FP6161 1.5MHz, 1A Synchronous Step-Down Regulator

## FEATURES

- Input Voltage Range: 2.5 to 5.5V
- Precision Feedback Reference Voltage: 0.6V ( $\pm 2\%$ )
- Output Current: 1A (Max.)
- Duty Cycle: 0~100%
- Internal Fixed PWM Frequency: 1.5MHz
- Low Quiescent Current: 100 $\mu$ A
- No Schottky Diode Required
- Built-in Soft Start
- Current Mode Operation
- Over Temperature Protection

## TYPICAL APPLICATION CIRCUIT



## PIN DESCRIPTION

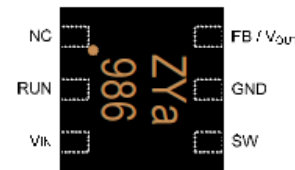
Name	I / O	Description
NC		No Connect
RUN	I	Enable Pin
V <sub>IN</sub>	P	Power Supply
SW	O	Switch
GND	P	Ground
FB / V <sub>OUT</sub>	I	Feedback
EP	P	Exposed PAD – Must Connect to Ground

## TYPICAL APPLICATION

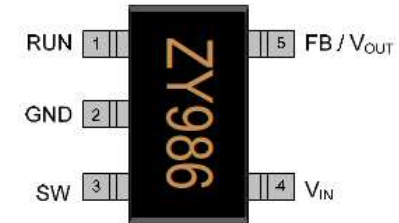
- Cellular Telephone
- Wireless and DSL Modems
- Digital Still Cameras
- Portable products , MP3 Players

## PACKAGE

### DFN-6L



### SOT23-5L / TSOT23-5L



# FP6162 1.5MHz, 1.5A Synchronous Step-Down Regulator

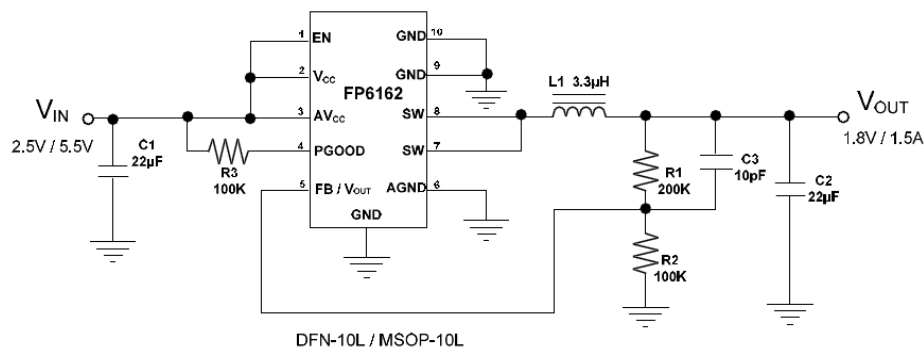
## FEATURES

- Input Voltage Range: 2.5 to 5.5V
- Adjustable Output Voltage From 0.6V to  $V_{IN}$
- Precision Feedback Reference Voltage: 0.6V ( $\pm 2\%$ )
- Duty Cycle: 0~100%
- Internal Fixed PWM Frequency: 1.5MHz
- Low Quiescent Current: 100 $\mu$ A
- No Schottky Diode Required
- Built-in Soft Start
- Current Mode Operation
- Over Temperature Protection

## PIN DESCRIPTION

Name	I / O	Description
EN	I	Enable / UVLO
V <sub>CC</sub>	P	Supply Voltage
AV <sub>CC</sub>	P	Analog Supply Voltage
PGOOD	O	Power Good Open Drain Output
FB / V <sub>OUT</sub>	I	Feedback
AGND	P	Analog Ground
SW	O	Switch
SW	O	Switch
GND	P	Ground
GND	P	Ground
EP	P	Exposed PAD - must connect to Ground

## TYPICAL APPLICATION CIRCUIT



## TYPICAL APPLICATION

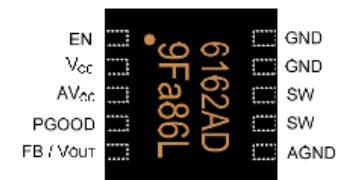
- Cellular Telephone , Wireless and DSL Modems
- Digital Still Cameras , Portable products , MP3 Players

## PACKAGE

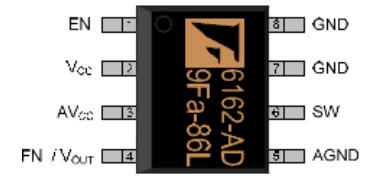
### MSOP-10L (EP)



### DFN-10L (EP)



### SOP-8L(EP)



# FP6163 1.5MHz, 2A Synchronous Step-Down Regulator

## FEATURES

- Input Voltage Range: 2.5 to 5.5V
- Adjustable Output Voltage From 0.6V to VIN
- Precision Feedback Reference Voltage: 0.6V ( $\pm 2\%$ )
- Duty Cycle: 0~100%
- Internal Fixed PWM Frequency: 1.5MHz
- Low Quiescent Current: 100 $\mu$ A
- No Schottky Diode Required
- Built-in Soft Start
- Current Mode Operation
- Over Temperature Protection

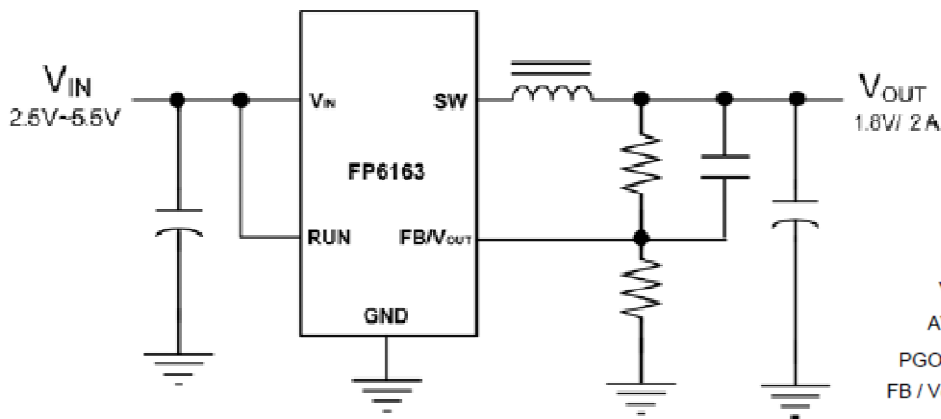
## TYPICAL APPLICATION

- Cellular Telephone
- Wireless and DSL Modems
- Digital Still Cameras
- Portable products
- MP3 Players

## PIN DESCRIPTION

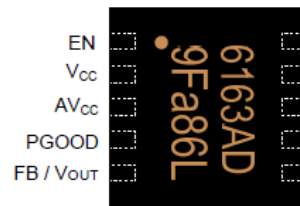
Name	No.	I / O	Description
EN	1	I	Enable / UVLO
V <sub>CC</sub>	2	P	Supply Voltage
AV <sub>CC</sub>	3	P	Analog Supply Voltage
PGOOD	4	O	Power Good Open Drain Output
FB / V <sub>OUT</sub>	5	I	Feedback
AGND	6	P	Analog Ground
SW	7	O	Switch
SW	8	O	Switch
GND	9	P	IC Ground
GND	10	P	IC Ground
EP	11	P	Exposed PAD - Must Connect to Ground

## TYPICAL APPLICATION CIRCUIT

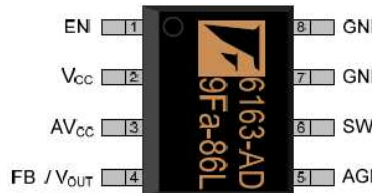


## PACKAGE

### DFN-10L(EP)



### SOP-8L(EP)



### MSOP-10L(EP)



# FP6165 1.5MHz, 3A Synchronous Step-Down Regulator

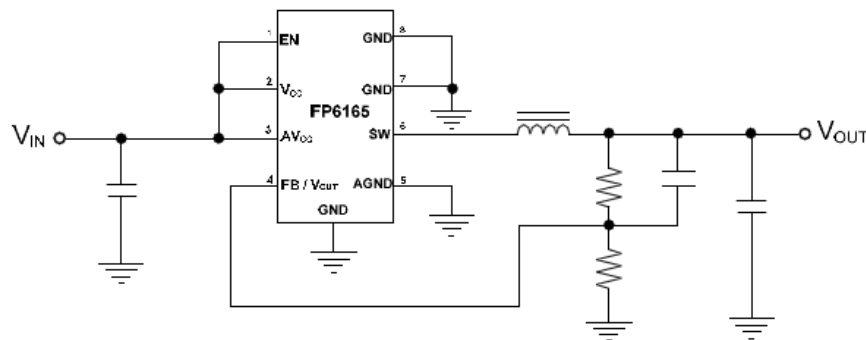
## FEATURES

- Input Voltage Range: 2.5 to 5.5V
- Adjustable Output Voltage From 0.6V to VIN
- Precision Feedback Reference Voltage: 0.6V ( $\pm 2\%$ )
- Duty Cycle: 0~100%
- Internal Fixed PWM Frequency: 1.5MHz
- Low Quiescent Current: 100 $\mu$ A
- No Schottky Diode Required
- Built-in Soft Start
- Current Mode Operation
- Over Temperature Protection

## TYPICAL APPLICATION

- Cellular Telephone
- Wireless and DSL Modems
- Digital Still Cameras
- Portable products
- MP3 Players

## TYPICAL APPLICATION CIRCUIT

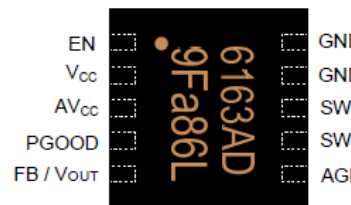


## PIN DESCRIPTION

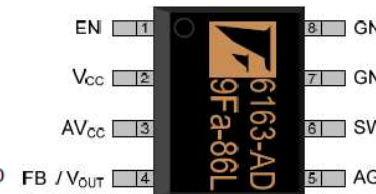
Name	No.	I / O	Description
EN	1	I	Enable / UVLO
V <sub>CC</sub>	2	P	Supply Voltage
AV <sub>CC</sub>	3	P	Analog Supply Voltage
PGOOD	4	O	Power Good Open Drain Output
FB / V <sub>OUT</sub>	5	I	Feedback
AGND	6	P	Analog Ground
SW	7	O	Switch
SW	8	O	Switch
GND	9	P	Ground
GND	10	P	Ground
EP	11	P	Exposed PAD - Must Connect to Ground

## PACKAGE

### DFN-10L(EP)



### SOP-8L(EP)



### MSOP-10L(EP)

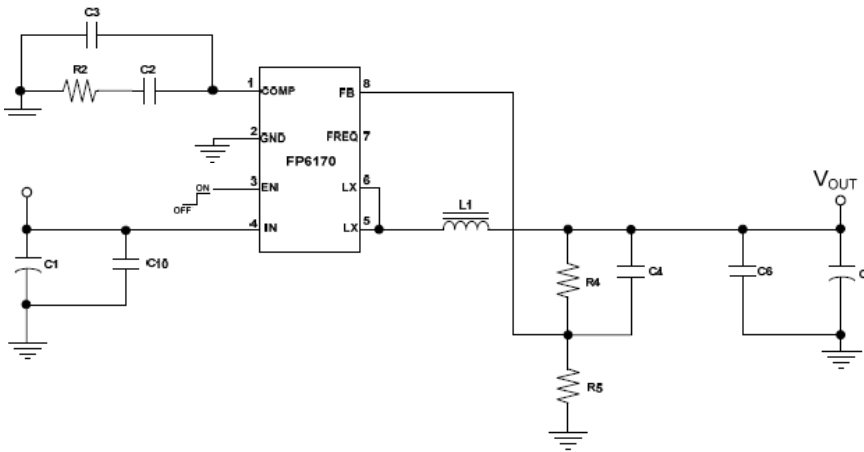


# FP6170 5V 4A Synchronous Step-Down Regulator

## FEATURES

- Input Voltage Range: 3 to 5.5V
- 4A Output Current
- Adjustable Output Voltage From 0.8V to  $V_{in}$
- Built-in Soft-Start
- Precision Feedback Reference Voltage: 0.8V ( $\pm 2\%$ )
- Adjustable PWM Frequency: 300KHz~1.4MHz
- Current Mode Operation
- Duty-Cycle 0%~100%
- Over Temperature Protection

## TYPICAL APPLICATION CIRCUIT



## PIN DESCRIPTION

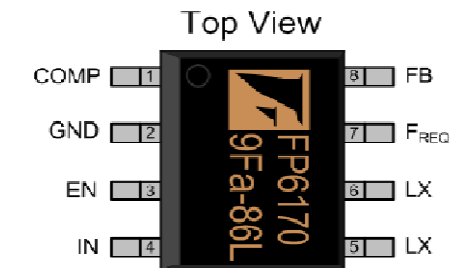
Name	No.	I / O	Description
COMP	1	I	Loop compensation pin. Add R/C network to stabilize the loop.
GND	2	P	Ground pin
EN	3	I	Chip enable pin. Active high. Internal pull high for auto start up.
IN	4	P	Input power supply pin.
LX	5	O	Switch pin
LX	6	O	Switch pin
FREQ	7		Frequency adjust pin. Add a resistor from this pin to ground to adjust the switching frequency.
FB	8	I	Feedback pin.
EP	9	P	Exposed pad - Must be connected to ground

## TYPICAL APPLICATION

- TV
- Wireless and DSL Modems
- Set Top Box

## PACKAGE

SOP-8L (EP)

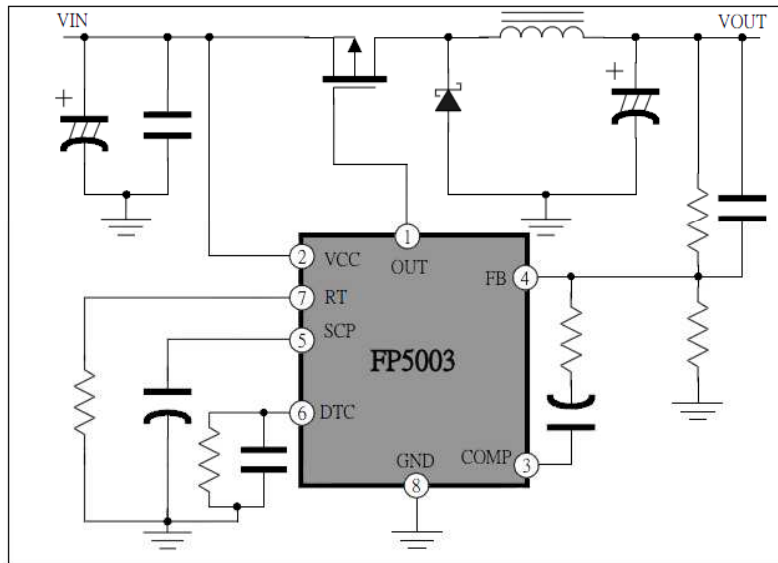


# FP5003 HIGH FREQUENCY PWM CONTROL IC

## FEATURES

- Reference Voltage Precision: 2%
- Output source/sink current up to 100mA
- Totem-Pole output for MOS drive
- Wide operating voltage range: 3.6~30V
- Variable dead-time control (DTC)
- Under voltage lockout protection function (UVLO)
- Short circuit shutdown protection / auto re-start function (SCSAR)
- Oscillator Frequency: Max. 1.5MHz

## TYPICAL APPLICATION CIRCUIT

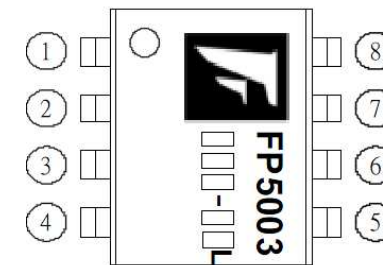


## PIN DESCRIPTION

	NO.	STATUS	DESCRIPTION
OUT	1	O	Totem-pole Transistors Pair Output
VCC	2	P	IC Power Supply
COMP	3	O	Error Amplifier Feedback Output
FB	4	I	Error Amplifier Inverting Input
SCSAR	5	I	Short Circuit Protection Input
DTC	6	I	Dead-Time Control Input
RT	7	I	A resistance of Oscillator
GND	8	P	IC Ground

## PACKAGE

SOP8/MSOP8/SOP8(EP)



# FP5108 LOW VOLTAGE DC/DC CONVERT CONTROL IC

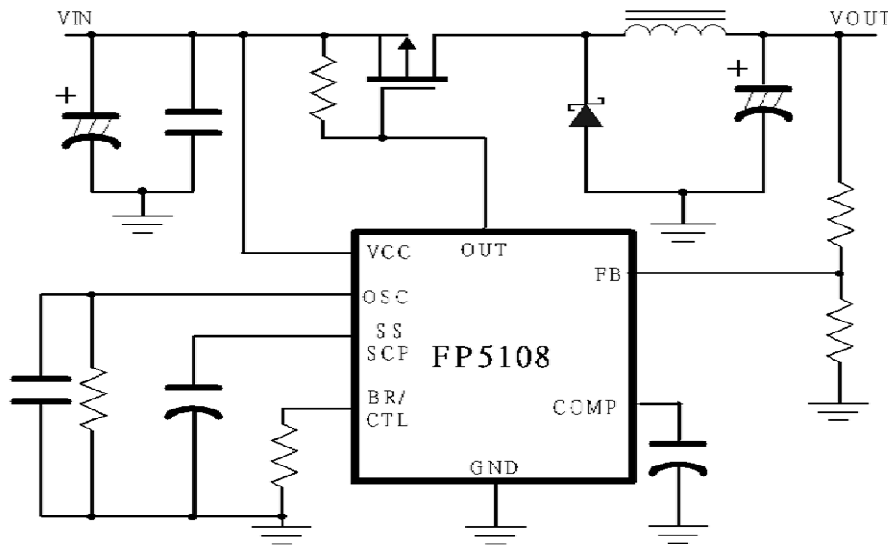
## FEATURES

- Precision Feedback reference voltage: 0.5V (2%)
- Wide supply voltage operating range: 1.8 to 12V
- Output source/sink current up to 50mA
- Low current consumption: Operation Mode 5.5mA  
Shutdown Mode 1 $\mu$ A
- High speed oscillator frequency: 600KHz
- Programmable Soft Start function (SS)
- Short Circuit Protection function(SCP): 0.87V
- Totem-pole output
- UVLO protection function (0.9V)
- Shutdown function with adjustable driving current

## PIN DESCRIPTION

Name	No.	I/O	Description
FB	1	I	Error amplifier inverting input pin
SCP	2	I	Connected a capacitor Soft start and SCP function pin
VCC	3	P	IC power supply
CTL	4	I	Shutdown or adjust driving current pin
OUT	5	O	Totem-pole output
GND	6	P	IC ground
OSC	7	I	Capacitor and resistor connected for the frequency of oscillation
COMP	8	O	Error amplifier compensation output

## TYPICAL APPLICATION CIRCUIT

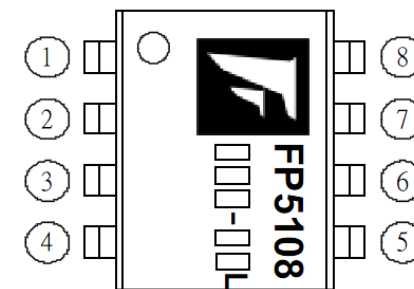


## TYPICAL APPLICATION

- Low input voltage DC/DC converter
- Low output voltage DC/DC converter
- Battery used Equipment

## PACKAGE

SOP8; TSSOP8; MSOP8; SOP8(EP)



# FP5453

## DUAL PWM CONTROL IC WITH SHORT CIRCUIT RESTART FUNCTION

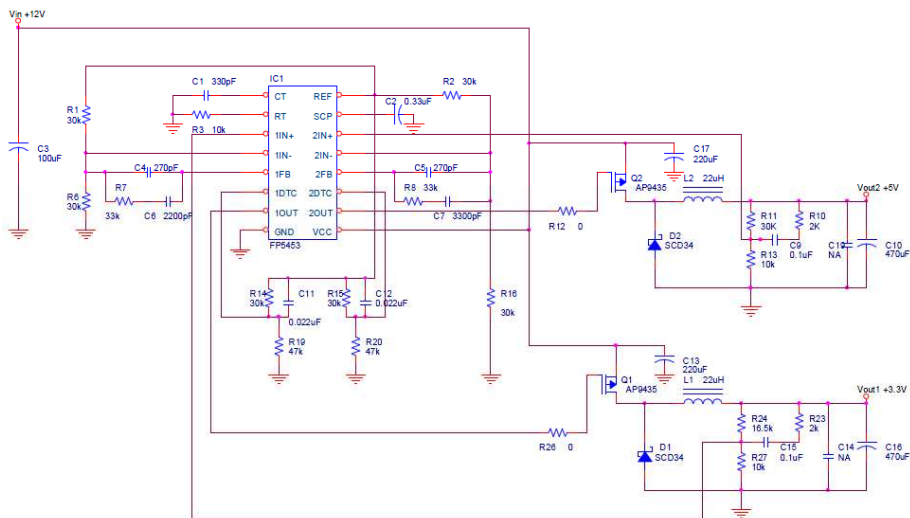
### FEATURES

- Fixed Reference Voltage: 2.5V
- Reference Voltage Precision: 2%
- Totem-pole output stage
- Low quiescent supply current under 4mA
- Wide operating voltage range: 3.6~25V
- Variable dead-time control (DTC)
- UVLO protection function
- Short circuit shutdown/auto re-start function (SCSAR)
- Oscillator Frequency: Max. 1.2MHz

### TYPICAL APPLICATION

- HUB/Router
- Set Top Box
- HDD Server
- CATV

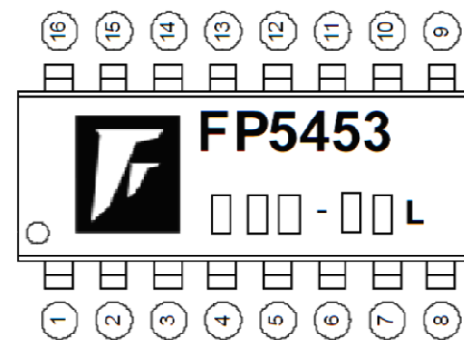
### TYPICAL APPLICATION CIRCUIT



### PIN DESCRIPTION

NAME	NO.	STATUS	DESCRIPTION
CT	1	I	Connect a Capacitor for Oscillator
RT	2	I	Connect a Resistor for Oscillator
EA1+	3	I	Error Amplifier 1 Non-inverting Input
EA1-	4	I	Error Amplifier 1 Inverting Input
FB1	5	O	Error Amplifier 1 Feedback Output
DTC1	6	I	Output 1 Dead-Time Comparator
OUT1	7	O	Totem-pole Output 1
GND	8	P	IC Ground
VCC	9	P	IC Power Supply
OUT2	10	O	Totem-pole Output 2
DTC2	11	I	Output 2 Dead-Time Comparator
FB2	12	O	Error Amplifier 2 Feedback Output
EA2-	13	I	Error Amplifier 2 Inverting Input
EA2+	14	I	Error Amplifier 2 Non-inverting Input
SCSAR	15	I	Short Circuit Protection Input
VREF	16	O	2.5V Reference Voltage Output

### PACKAGE SOP16/PDIP16/SSOP16/SOP16(EP)





# FP5102 1 CHANNEL SYNCHRONOUS PWM CONTROLLER

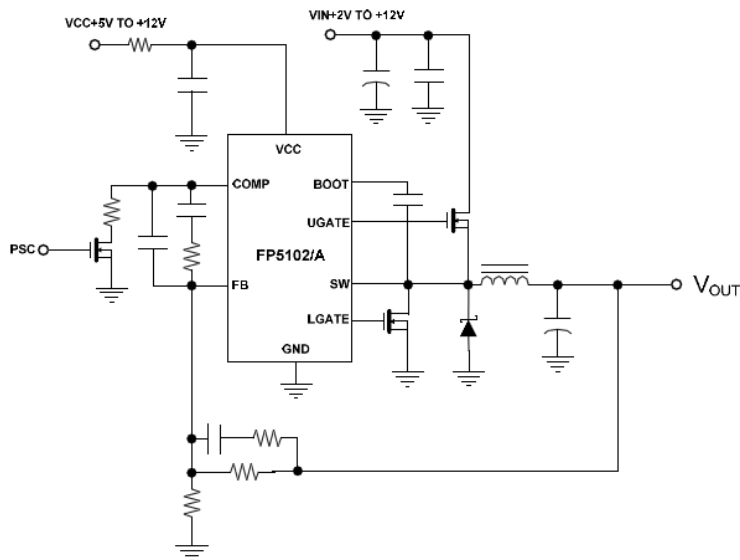
## FEATURES

- Operates from +5V to +12V Vcc Supply Voltage
- Feedback Reference Voltage: 0.8V ( $\pm 2\%$ )
- Fixed Frequency Oscillator: 300/600KHz
- Peak Output Driving Capability: 500mA
- Internal Soft Start Function
- High-Gain Voltage Mode PWM Control
- Over Current Protection by detecting Low-side MOS Voltage Drop

## PIN DESCRIPTION

Name	No.	I/O	Description
BOOT	1	P	Boosted Power Supply Pin for High Side MOS Gate Driving
UGATE	2	O	High Side Gate Driver Output
GND	3	P	Ground
LGATE	4	O	Low Side Gate Driver Output
V <sub>CC</sub>	5	P	IC Power Supply
FB	6	I	Error Amplifier Inverting Input
COMP	7	O	Error Amplifier Output
SW	8	I	Switch Signal Input

## TYPICAL APPLICATION CIRCUIT

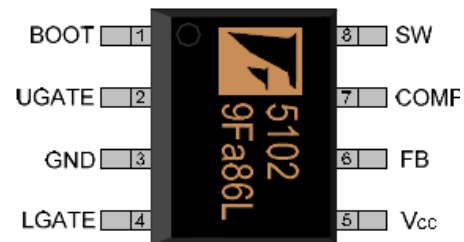


## TYPICAL APPLICATION

- Graphic Card
- Telecom and Datacom Applications
- High Power DC-DC Regulators

## PACKAGE

### SOP-8L



### SOP-8L (EP)



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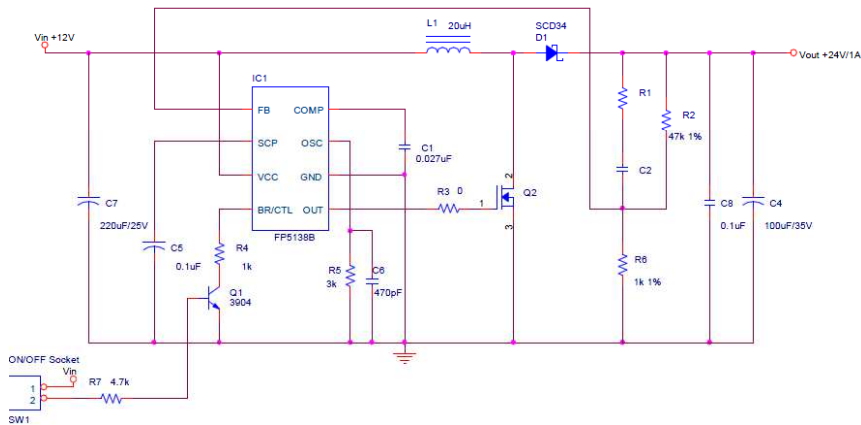
***BOOST CONVERT CONTROL IC***  
***Step-Up Current Mode PWM Converter***  
***Constant Current Switching Regulator for White LED***  
***Linear Li-Ion Battery Charger IC***  
***Low Dropout Regulator***

# FP5138B BOOST CONVERT CONTROL IC

## FEATURES

- Wide supply voltage operating range: 1.8 to 15V
- Reference voltage precision: 2%
- Low current consumption: Operation Mode 5.5mA  
Standby-by Mode 1μA
- High speed oscillator frequency: 1MHz max.
- Programmable Soft Start function (SS)
- Short Circuit Protection function(SCP)
- Totem-pole output with adjustable on/off current  
(for NPN transistors or n-channel MOSFET)
- Logic level control stand-by mode function

## TYPICAL APPLICATION CIRCUIT



## PIN DESCRIPTION

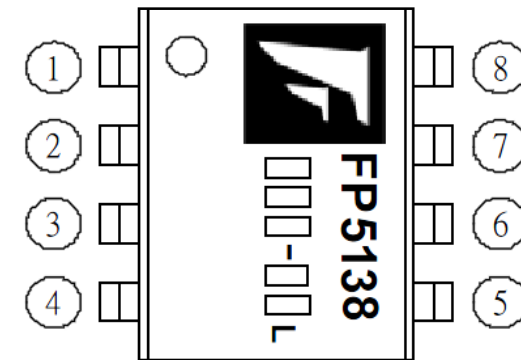
Name	No.	I/O	Description
FB	1	I	Error amplifier inverting input pin
SCP	2	I	Connected a capacitor Soft start and SCP function pin
V <sub>CC</sub>	3	P	IC power supply
BR/CTL	4	I	Output current setting and control pin
OUT	5	O	Totem-pole output
GND	6	P	IC ground
OSC	7	I	Capacitor and resistor connected for the frequency of oscillation
COMP	8	O	Error amplifier compensation output

## TYPICAL APPLICATION

- Digital Camera
- PDA
- Portable Equipment

## PACKAGE

SOP8/TSSOP8/MSOP8



# FP5139 BOOST CONVERT CONTROL IC

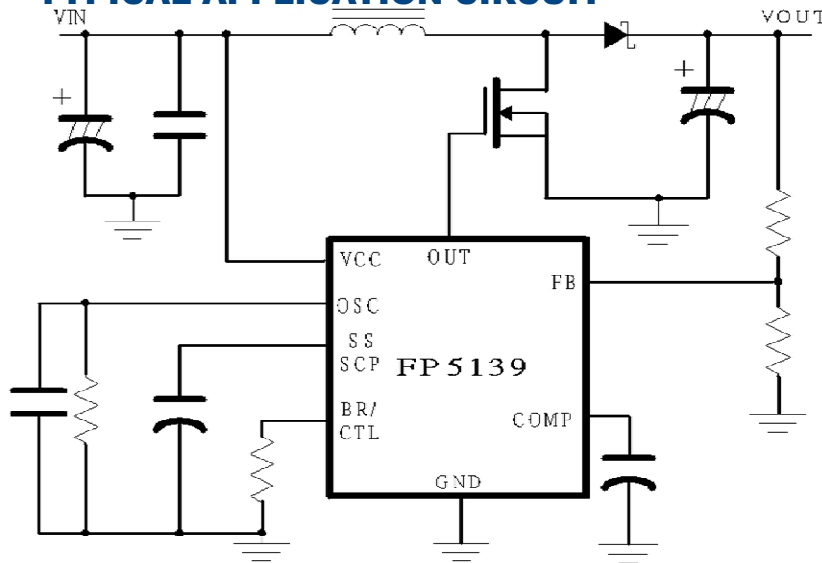
## FEATURES

- Wide supply voltage operating range: 1.8 to 15V
- Reference voltage precision: 0.5V (2%)
- Max duty cycle: 98%
- Low current consumption: Operation Mode 5.5mA  
Standby-by Mode 1 $\mu$ A
- High speed oscillator frequency: 1MHz max.
- Programmable Soft Start function
- Short Circuit Protection function
- Totem-pole output with adjustable on/off current
- UVLO protection function (0.9V)

## PIN DESCRIPTION

Name	No.	I/O	Description
FB	1	I	Error amplifier inverting input pin
SCP	2	I	Connected a capacitor Soft start and SCP function pin
V <sub>CC</sub>	3	P	IC power supply
BR/CTL	4	I	Output current setting and control pin
OUT	5	O	Totem-pole output
GND	6	P	IC ground
OSC	7	I	Capacitor and resistor connected for the frequency of oscillation
COMP	8	O	Error amplifier compensation output

## TYPICAL APPLICATION CIRCUIT

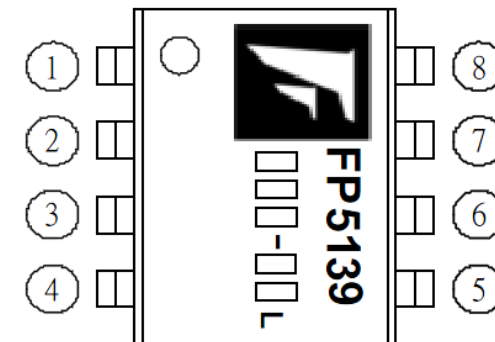


## TYPICAL APPLICATION

- Digital Camera
- PDA
- Portable Equipment

## PACKAGE

SOP8/TSSOP8/MSOP8



# FP6290 Low-Noise Step-Up Current Mode PWM Converter

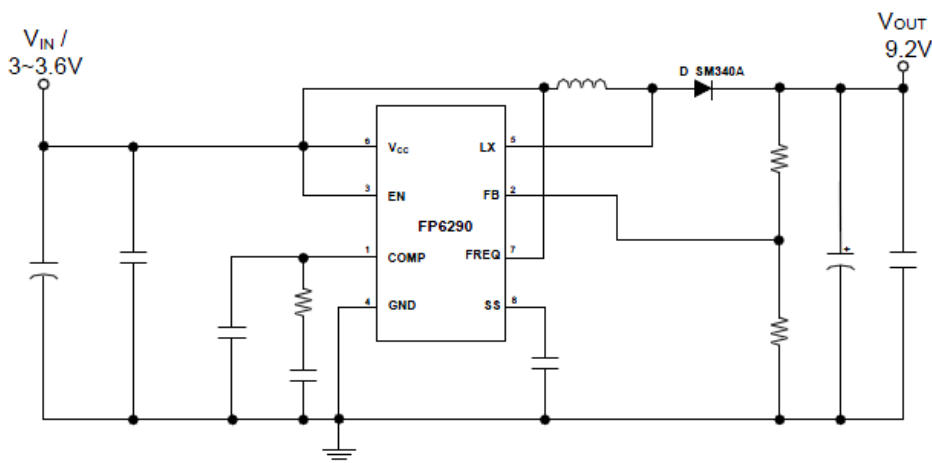
## FEATURES

- Adjustable Output from VCC to 12V
- Internal Fixed PWM Frequency: 640KHz / 1.2MHz
- Frequency Selection Pin
- Precision Feedback Reference Voltage: 1.24V
- Internal 0.2Ω, 1.6A, 14V Power MOSFET
- External Programmable Soft-Start Function (SS)
- Shutdown Current : 0.1μA
- Over Current Protection

## PIN DESCRIPTION

Name	No.	I / O	Description
COMP	1	O	Error Amplifier Compensation Output
FB	2	I	Error Amplifier Inverting Input
EN	3	I	Enable Control
GND	4	P	IC Ground
LX	5	O	Switch Output
V <sub>CC</sub>	6	P	IC Power Supply
FREQ	7	O	Frequency Selection
SS	8	I	Soft-start Control

## TYPICAL APPLICATION CIRCUIT

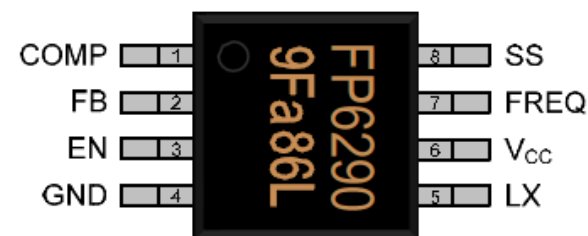


## TYPICAL APPLICATION

- LCD Display
- Digital Camera
- Hand-Held Device
- Portable products

## PACKAGE

MSOP-8L



# FP6290H Low-Noise Step-Up Current Mode PWM Converter

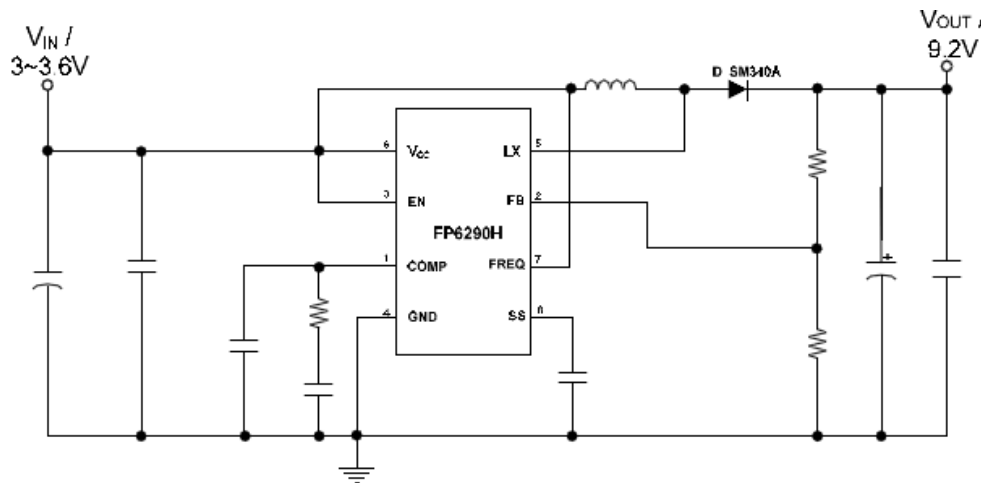
## FEATURES

- Adjustable Output from VCC to 12V
- Internal Fixed PWM Frequency: 640KHz / 1.2MHz
- Frequency Selection Pin
- Precision Feedback Reference Voltage: 1.24V
- Internal 0.15Ω, 3A, 14V Power MOSFET
- External Programmable Soft-Start Function (SS)
- Shutdown Current : 0.1μA
- Over Current Protection

## TYPICAL APPLICATION

- LCD Display
- Digital Camera
- Hand-Held Device
- Portable products

## TYPICAL APPLICATION CIRCUIT



## PIN DESCRIPTION

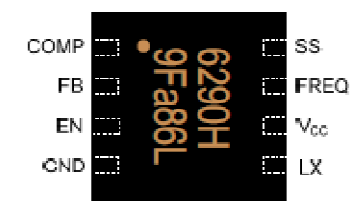
Name	No.	I / O	Description
COMP	1	O	Error Amplifier Compensation Output
FB	2	I	Error Amplifier Inverting Input
EN	3	I	Enable Control
GND	4	P	IC Ground
LX	5	O	Switch Output
V <sub>CC</sub>	6	P	IC Power Supply
FREQ	7	O	Frequency Selection
SS	8	I	Soft-Start Control
EP	9	P	Exposed PAD. Must connect to GND

## PACKAGE

### SOP-8L (EP)



### DFN-8L (EP)



# FP6291 1MHz, 2.5A Step-Up Current Mode PWM Converter

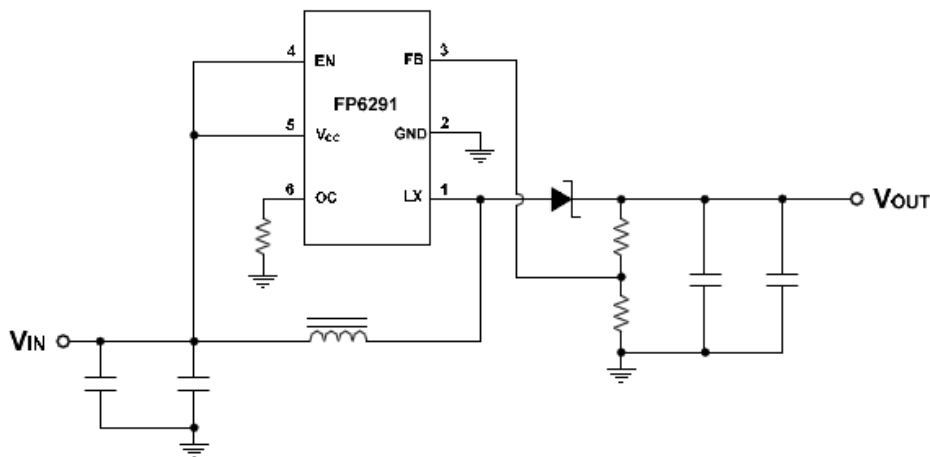
## FEATURES

- Input Voltage: 2.6V ~ 5.5V
- Internal Fixed PWM frequency: 1.0MHz
- Precision feedback reference voltage: 0.6V(±2%)
- Internal 0.2Ω, 2.5A, 16V Power MOSFET
- Over Temperature Protection
- Over Voltage Protection
- Adjustable Over Current Protection: 0.5A~2.5A
- Internal 0.2Ω, 2.5A, 16V Power MOSFET
- Shutdown Current : 0.1uA
- Adjustable Output up to 12V

## PIN DESCRIPTION

Name	No.	I / O	Description
LX	1	O	Power Switch Output
GND	2	P	IC Ground
FB	3	I	Error Amplifier Inverting Input
EN	4	I	Enable Control (Active High)
V <sub>CC</sub>	5	P	IC Power Supply
OC	6	I	Adjustable Current Limit (Floating Available)

## TYPICAL APPLICATION CIRCUIT

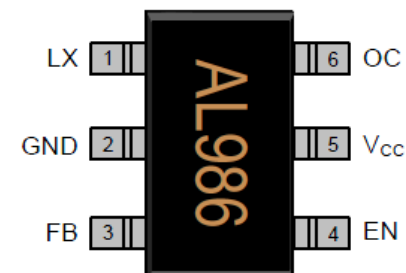


## TYPICAL APPLICATION

- Chargers
- LCD Displays
- Digital Cameras
- Handheld Devices
- Portable Products

## PACKAGE

### SOT23-6L



# FP6293 1MHz, 3.5A Step-Up Current Mode PWM Converter

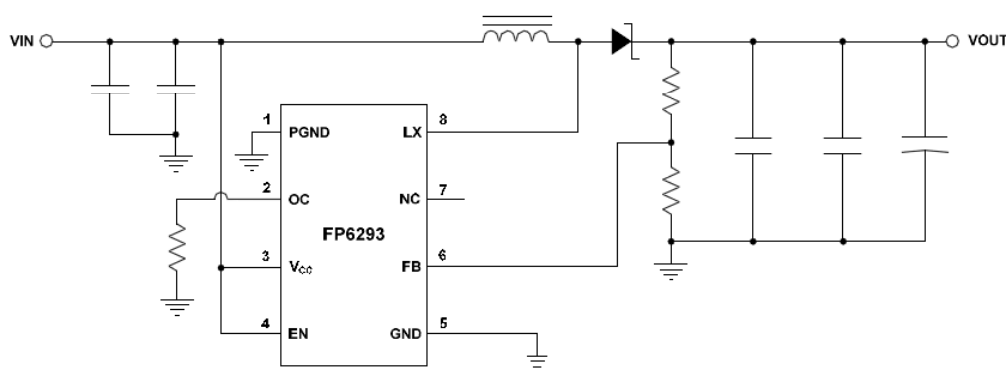
## FEATURES

- Input Voltage: 2.6V ~ 5.5V
- Precision feedback reference voltage: 0.6V ( $\pm 2\%$ )
- Internal Fixed PWM frequency: 1.0MHz
- Shutdown Current: 0.1uA
- Internal 0.14 $\Omega$ , 3.5A, 18V Power MOSFET
- Over Temperature Protection
- Adjustable Output up to 12V
- Over Voltage Protection
- Adjustable Over Current Protection: 0.5A~3.5A

## PIN DESCRIPTION

Name	No.	I / O	Description
PGND	1	P	IC Ground
OC	2	I	Adjustable Current Limit (Floating Available)
Vcc	3	P	IC Power Supply
EN	4	I	Enable Control (Active High)
GND	5	P	IC Ground
FB	6	I	Error Amplifier Inverting Input
NC	7	NA	Not Connected
LX	8	O	Power Switch Output
EP	9	P	Exposed PAD-Must connect to Ground

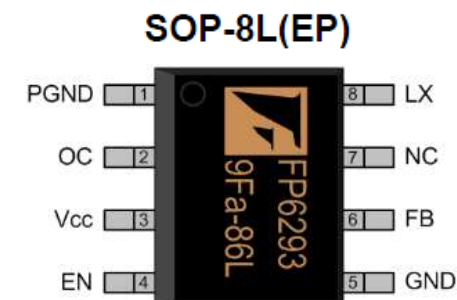
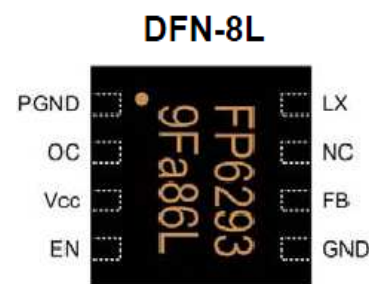
## TYPICAL APPLICATION CIRCUIT



## TYPICAL APPLICATION

- Chargers , LCD Display
- Digital Camera
- Handheld Devices
- Portable Products

## PACKAGE



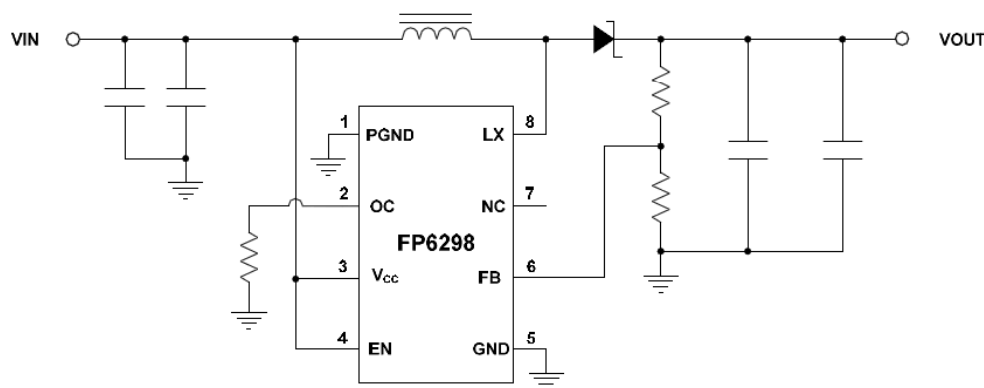


# FP6298 Low-Noise 4.5A Step-Up Current Mode PWM Converter

## FEATURES

- Input Voltage: 2.6V ~ 5.5V
- Precision feedback reference voltage: 0.6V ( $\pm 2\%$ )
- Internal Fixed PWM frequency: 500KHz
- Shutdown Current: 0.1uA
- Internal 0.08 $\Omega$ , 4.5A, 12V Power MOSFET
- Over Temperature Protection
- Adjustable Output up to 9V
- Over Voltage Protection
- Adjustable Over Current Protection: 0.5A~4.5A

## TYPICAL APPLICATION CIRCUIT



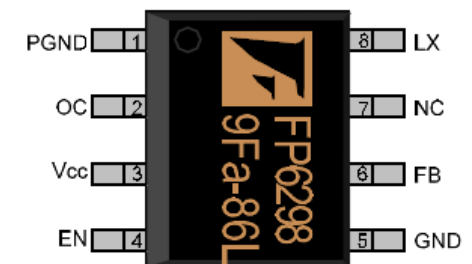
## PIN DESCRIPTION

Name	No.	I / O	Description
PGND	1	P	IC Ground
OC	2	I	Adjustable Current Limit (Floating Available)
Vcc	3	P	IC Power Supply
EN	4	I	Enable Control (Active High)
GND	5	P	IC Ground
FB	6	I	Error Amplifier Inverting Input
NC	7	NA	Not Connected
LX	8	O	Power Switch Output
EP	9	P	Exposed PAD (Must connect to Ground)

## TYPICAL APPLICATION

- Chargers , LCD Displays
- Digital Camera
- Handheld Devices
- Portable Products

## PACKAGE SOP-8L(EP)



# FP6286 Non-Synchronous PWM Boost Converter

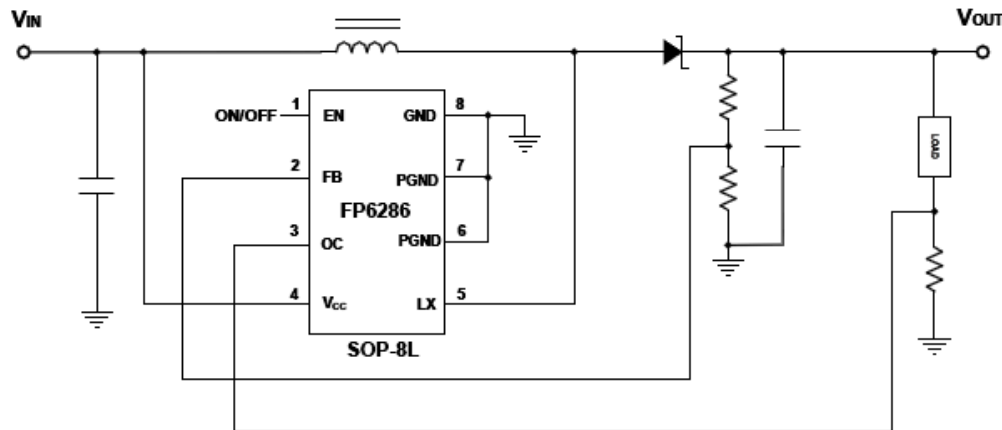
## FEATURES

- Input Voltage: 2.4V ~ 5.5V
- Precision feedback reference voltage: 0.6V ( $\pm 2\%$ )
- Internal Fixed PWM frequency: 550KHz
- Build-in 20V/4.5A MOSFET provides a high output Voltage
- Shutdown Current < 0.1uA
- Over Current Protection Function(OCP)
- Over Voltage Protection

## PIN DESCRIPTION

Name	No.	I / O	Description
EN	1	I	Enable Control (Active High)
FB	2	I	Error Amplifier Inverting Input
OC	3	I	Adjustable Output Current Protection
Vcc	4	P	IC Power Supply
LX	5	O	Power Switch Output
PGND	6	P	IC Power Ground
PGND	7	P	IC Power Ground
GND	8	P	IC Ground
EP	9	P	Exposed PAD. Must connect to LX

## TYPICAL APPLICATION CIRCUIT

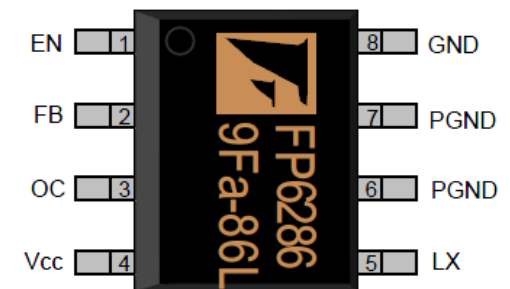


## TYPICAL APPLICATION

- Chargers , LCD Display
- Digital Camera
- Handheld Devices
- Portable Products

## PACKAGE

### SOP-8L(EP)

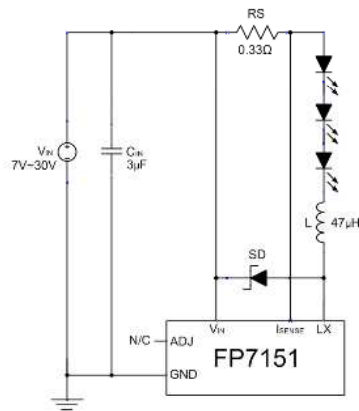


# FP7151 700mA LED Driver with Internal Switch

## FEATURES

- 700mA Output Current
- Internal 0.7Ω 30V Power MOSFET Switch
- Wide 7 to 30V Operating Input Range
- 20μA Shutdown Mode Current
- Typical 4% Output Current Accuracy
- Signal pin ON / OFF and Brightness Control
- Adjustable Soft-Start
- Up to 95% Efficiency
- Up to 1MHz Switching Frequency
- Internal Dimming Filter

## TYPICAL APPLICATION CIRCUIT



## TYPICAL APPLICATION

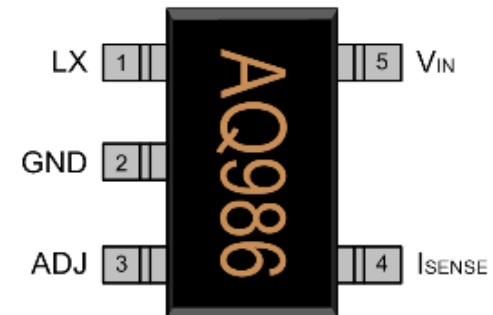
Low Voltage Halogen replacement LEDs  
LED back-up lighting

## PIN DESCRIPTION

Name	No.	I / O	Description
LX	1	O	Power Switch Output
GND	2	P	IC Ground
ADJ	3	I	Multi Function ON / OFF & Brightness Control
I <sub>SENSE</sub>	4	I	Current Sense Resistor Connected
V <sub>IN</sub>	5	P	IC Power Supply

## PACKAGE

### SOT23-5L

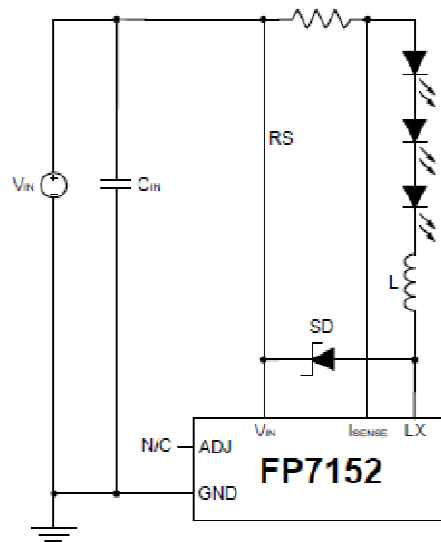


# FP7152 1A LED Driver with Internal Switch

## FEATURES

- Wide 7 to 30V Operating Input Range
- 1A Output Current
- Internal 0.5Ω 30V Power MOSFET Switch
- 20μA Shutdown Mode Current
- Typical 4% Output Current Accuracy
- Signal pin ON / OFF and Brightness Control
- Adjustable Soft-Start
- Up to 95% Efficiency
- Up to 1MHz Switching Frequency
- Internal Dimming Filter

## TYPICAL APPLICATION CIRCUIT



## PIN DESCRIPTION

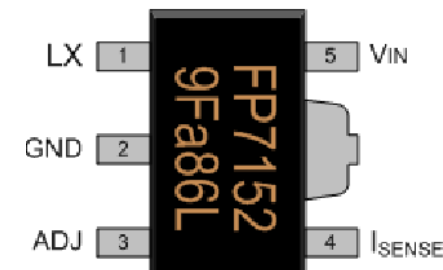
Name	No.	I / O	Description
LX	1	O	Power Switch Output
GND	2	P	IC Ground
ADJ	3	I	Multi Function ON / OFF & Brightness Control
$I_{SENSE}$	4	I	Current Sense Resistor Connected
$V_{IN}$	5	P	IC Power Supply

## TYPICAL APPLICATION

- Low Voltage Halogen replacement LEDs
- LED back-up lighting

## PACKAGE

### SOT89-5L



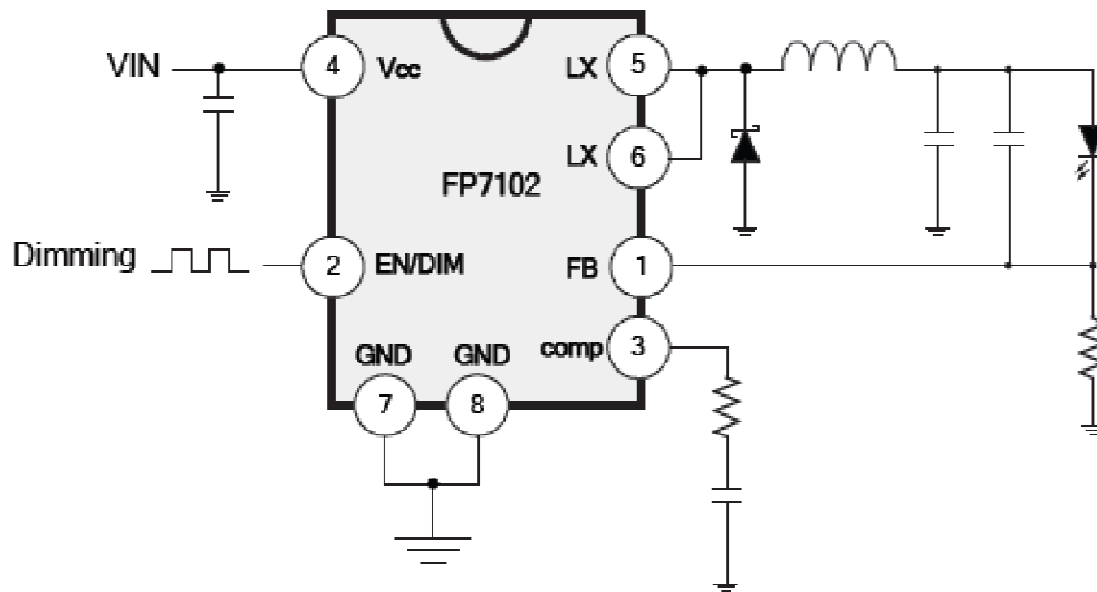
# FP7102

## 28V, 2A Buck Constant Current Switching Regulator for White LED

### FEATURES

- Wide Supply Voltage Operating Range: 3.6 to 28V
- Built-in P-MOSFET for 2A Loading Capability
- Precision Feedback Reference Voltage: 0.25V (2%)
- Low Current Consumption: 4mA
- Internal Fixed Oscillator Frequency: 320KHz (Typ.)
- Internal Soft-Start Function (SS)
- Over Current Protection

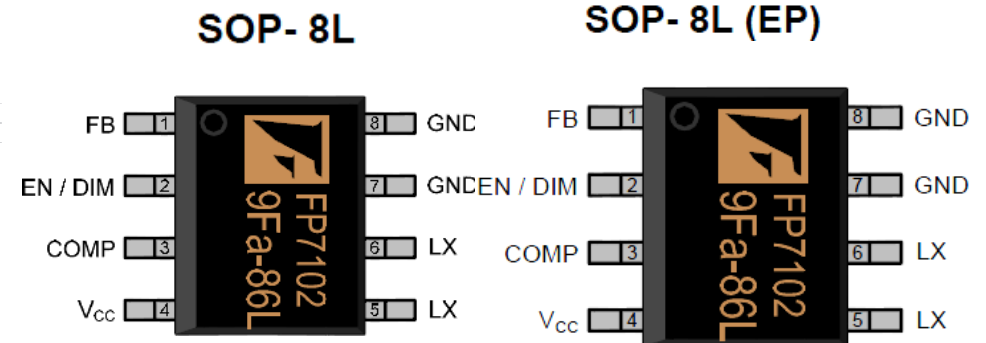
### TYPICAL APPLICATION CIRCUIT



### PIN DESCRIPTION

Name	No.	I / O	Description
FB	1	I	Error Amplifier Inverting Input
EN / DIM	2	I	Enable Control
COMP	3	O	Error Amplifier Compensation Output
V <sub>CC</sub>	4	P	IC Power Supply (PMOS Source)
LX	5	P	PMOS High Current Output
LX	6	P	PMOS High Current Output
GND	7	O	IC Ground
GND	8	O	IC Ground
EP	9	P	Exposed PAD. Must connect to LX

### PACKAGE



# FP7103

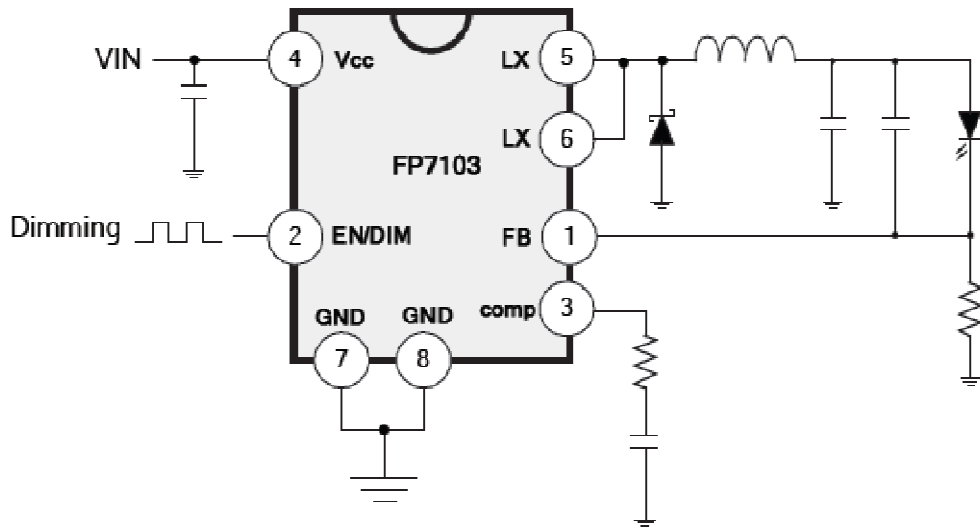
## 28V, 3A Buck Constant Current Switching Regulator for White LED

### FEATURES

- Wide Supply Voltage Operating Range: 3.6 to 28V
- Built-in P-MOSFET for 3A Loading Capability
- Precision Feedback Reference Voltage: 0.25V (2%)
- Low Current Consumption: 4mA
- Internal Fixed Oscillator Frequency: 320KHz (Typ.)
- Internal Soft-Start Function (SS)
- Over Current Protection

### TYPICAL APPLICATION LED Driver

### TYPICAL APPLICATION CIRCUIT

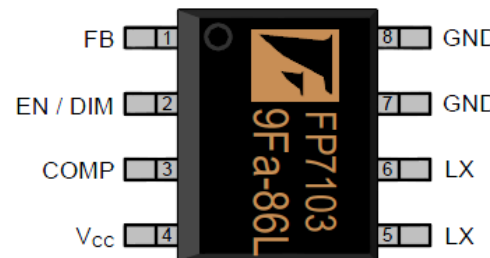


### PIN DESCRIPTION

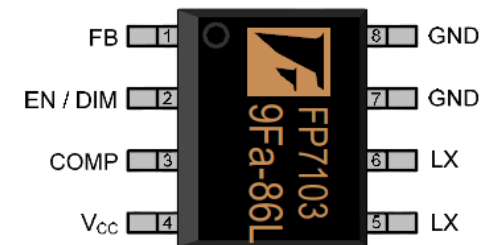
Name	No.	I / O	Description
FB	1	I	Error Amplifier Inverting Input
EN / DIM	2	I	Enable Control
COMP	3	O	Error Amplifier Compensation Output
V <sub>cc</sub>	4	P	IC Power Supply (PMOS Source)
LX	5	P	PMOS High Current Output
LX	6	P	PMOS High Current Output
GND	7	O	IC Ground
GND	8	O	IC Ground
EP	9	P	Exposed PAD. Must connect to LX

### PACKAGE

#### SOP-8L (EP)



#### SOP-8L



# FP7201 Constant Current Switching Regulator for White LED

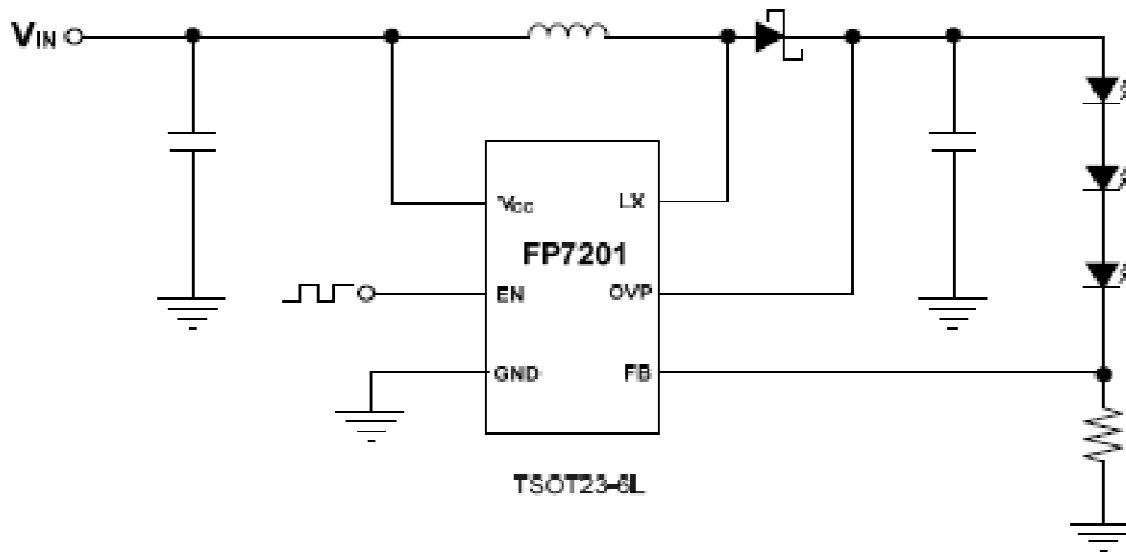
## FEATURES

- Precision Feedback Reference Voltage: 0.25V (4%)
- Under Voltage Lockout Protection
- Over Voltage Protection
- Over Temperature Protection
- Wide Frequency Range and Dimming with Zero-Inrush Current
- Internal Soft-Start
- Zero Shutdown Current
- Adjustable Output up to 27V

## PIN DESCRIPTION

Name	No.	I / O	Description
LX	1	O	Power Switch Output
GND	2	P	Ground
FB	3	I	Error Amplifier Inverting Input
EN	4	I	Enable Control (Active High)
OVP	5	O	Over Voltage Protection
V <sub>CC</sub>	6	P	IC Power Supply

## TYPICAL APPLICATION CIRCUIT

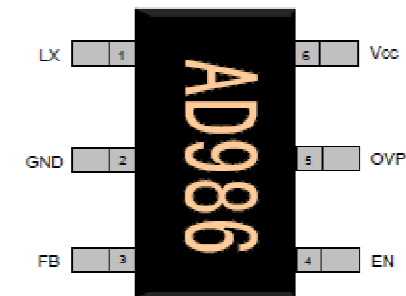


## TYPICAL APPLICATION

- Smart Phone LED Backlights
- Digital Cameras
- Camcorders
- PDA LED Backlights

## PACKAGE

TSOT23-6



# FP8102 1A Linear Li-Ion Battery Charger in SOP8/MSOP8

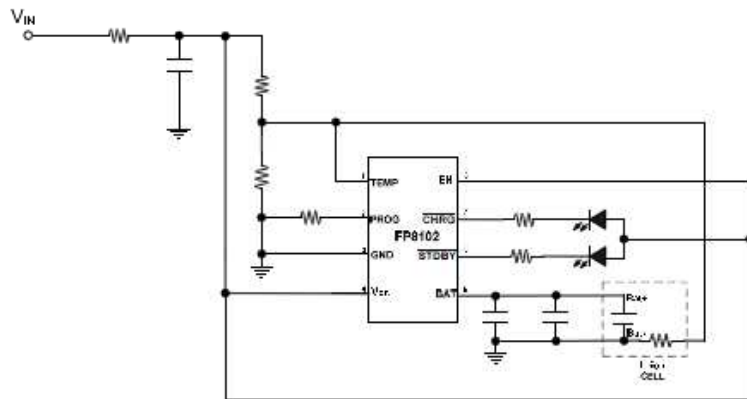
## FEATURES

- Standalone Linear Charger for Single Cell Li-Ion Batteries
- No External MOSFET, Sense Resistor, or Blocking Diode Required
- Up to 1A Programmable Charge Current
- Preset Charge Voltage with +/- 1% Accuracy
- Automatic Recharge
- 2.9V Trickle Charge Voltage, CV Output Voltage 4.2V
- C/10 Charge Termination
- 55uA Standby Supply Current
- Charge Status Indicators for No Battery and Charge Failure Display
- Soft-Start to limit Inrush Current
- Thermal Protection

## PIN DESCRIPTION

Name	No.	I / O	Description
TEMP	1	I	Battery Temperature Detector
PROG	2	I	CC Charge Current Setting & Monitor
GND	3	P	IC Ground
V <sub>cc</sub>	4	P	Supply Voltage
BAT	5	P	Battery Voltage
$\overline{\text{STDBY}}$	6	O	Charge State Indicator2
$\overline{\text{CHRG}}$	7	O	Charge State Indicator1
EN	8	I	Enable Control

## TYPICAL APPLICATION CIRCUIT



## TYPICAL APPLICATION

- Portable Information Appliances
- Charging Dock & Cradles
- Cellular Phones & PDAs
- Handheld Computers

## PACKAGE

### SOP-8L (EP)





# FP8103 1A Linear Li-Ion Battery Charger in SOP8

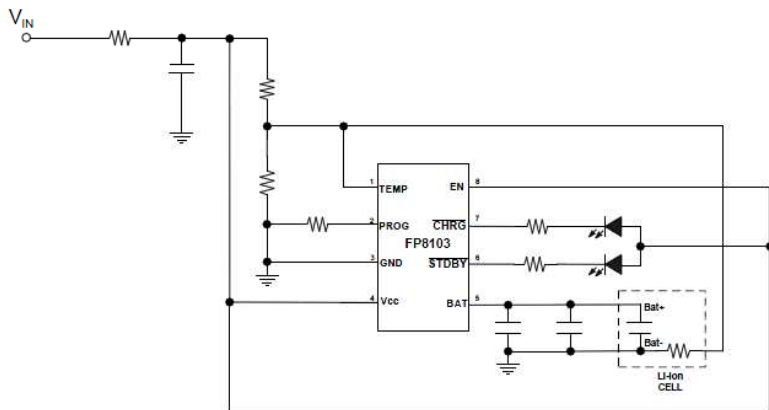
## FEATURES

- Standalone Linear Charger for Single Cell Li-Ion Batteries
- No External MOSFET, Sense Resistor, or Blocking Diode Required
- Up to 1A Programmable Charge Current
- Preset Charge Voltage with  $\pm 1\%$  Accuracy
- Automatic Recharge
- 2.9V Trickle Charge Voltage , CV Output Voltage 4.325V
- C/10 Charge Termination
- 55uA Standby Supply Current
- Charge Status Indicators for No Battery and Charge Failure Display
- Soft-Start to limit Inrush Current
- Thermal Protection

## PIN DESCRIPTION

Name	No.	I / O	Description
TEMP	1	I	Battery Temperature Detector
PROG	2	I	CC Charge Current Setting & Monitor
GND	3	P	IC Ground
V <sub>CC</sub>	4	P	Supply Voltage
BAT	5	P	Battery Voltage
$\overline{\text{STDBY}}$	6	O	Charge State Indicator2
$\overline{\text{CHRG}}$	7	O	Charge State Indicator1
EN	8	I	Enable Control
EP	9	P	Exposed PAD-Must connect to Ground

## TYPICAL APPLICATION CIRCUIT

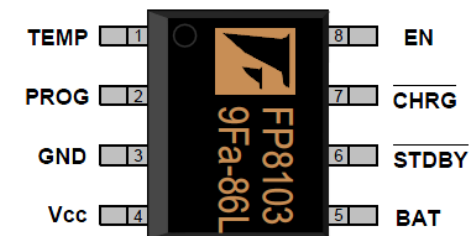


## TYPICAL APPLICATION

- Portable Information Appliances
- Charging Dock & Cradles
- Cellular Phones & PDAs
- Handheld Computers

## PACKAGE

SOP-8L (EP)



# FP9102 2A Low Dropout Regulator with Enable

## FEATURES

- Adjustable Output Low to 0.8V
- Input Voltage as Low as 1.6V and VDD Voltage 5V
- High Accuracy Output Voltage:  $\pm 2\%$
- 1.2V, 1.5V, 1.8V, 2.5V Options and Adjustable Externally Using Resistors
- Typically 360mV Dropout at 2A
- OCP, OVP & Thermal Shutdown Protections
- Power Good Output
- Output Voltage Pull Low Resistance when Disable

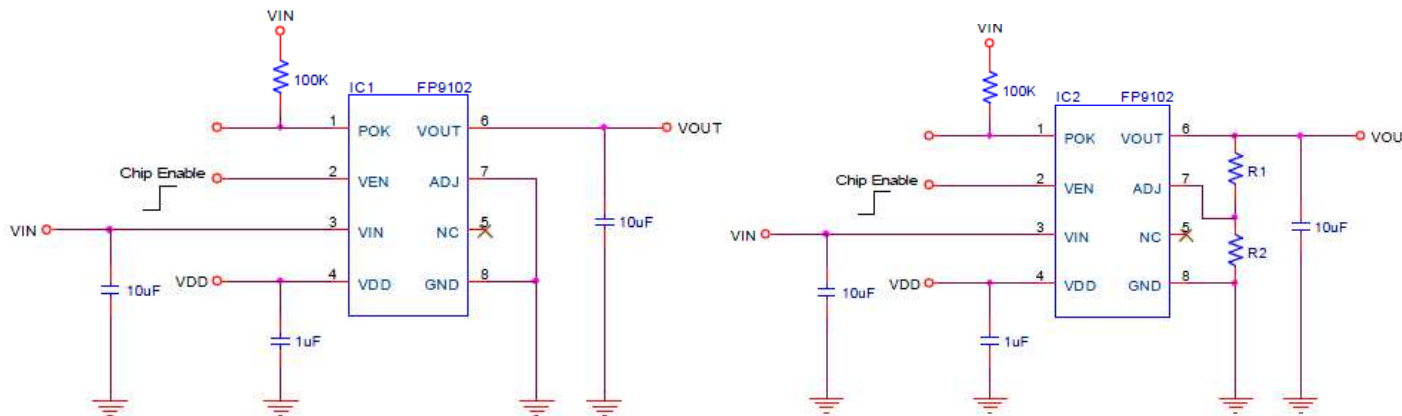
## PIN DESCRIPTION

Name	No.	I/O	Description
POK	1	O	Power Good Open Drain Output
EN	2	I	Enable Control
VIN	3	P	Supply Input Voltage
VDD	4	P	Supply Voltage of Control Circuit
NC	5	-	No Internal Connection
VOUT	6	O	Output Voltage
ADJ	7	I	Adjust Feedback Resistors or connect to Ground
GND	8	O	IC Ground

## TYPICAL APPLICATION

Motherboard Applications, Notebook PC Applications  
Network Cards

## TYPICAL APPLICATION CIRCUIT



## PACKAGE

### SOP-8L (EP)

