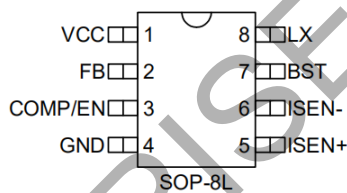


## GENERAL DESCRIPTION

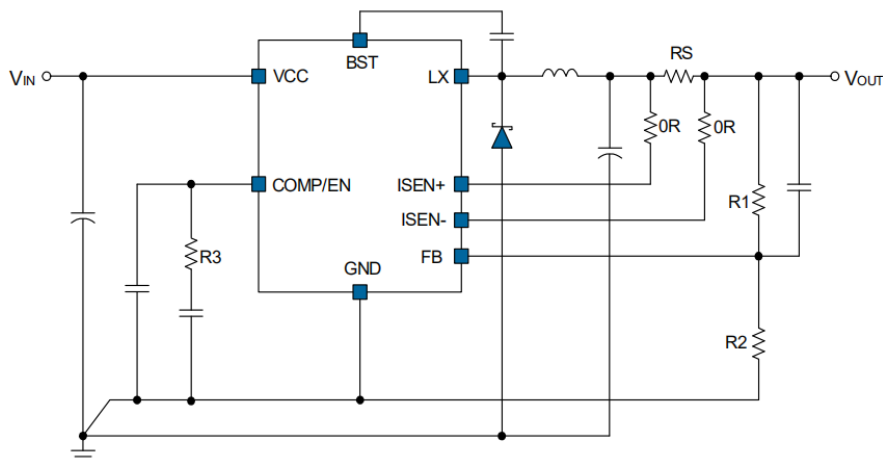
The NT3875B is a step-down PWM converter with a driving typical output current to 1.5A without additional transistor. It is designed to allow for operating a wide supply voltage range from 8V to 40V. The external shutdown function can be controlled by logic level to pull COMP/EN pin down, and then comes into standby mode. The external compensation makes feedback control have good line and load regulation with flexible external design. The NT3875B features a programmable CV/CC mode control functions. The CV mode (constant voltage) function provides a regulated voltage output and the CC mode (constant current) function provides a current limitation function. The CC current value is set by external resistor during current sense amplifier input stage.

The NT3875B is suitable for the DC/DC switching power applications where current limit function is required. The devices are available in PSOP-8L package and require very few external devices for operation.

## PIN CONFIGURATIONS



## TYPICAL APPLICATION CIRCUIT



## FEATURES

- Operates from 8V to 40V Supply Voltage with UVLO Protection
- 1.2V Feedback Voltage with 1% Accuracy Over Line Voltage
- CV/CC Mode Control (Constant Voltage and Constant Current)
- $\pm 5\%$  Current Limit Accuracy
- Output Short Circuit Protection
- Output Over Voltage Protection (Typical 5.9V)
- Over Temperature Protection
- Internal Soft Start  $\sim 12\text{ms}$
- Fixed Frequency 120kHz
- Duty Cycle Range (0  $\sim$  90%)
- Single Pin to External Compensation and Shutdown Control
- Over Temperature Protection
- Integrated 240m $\Omega$  Power N-MOSFET
- SOP-8L Package
- RoHS Compliant and Halogen-Free

## APPLICATIONS

- Car Chargers
- Portable Charging Devices
- High-Brightness Lightings
- General-Purposed DC/DC Converters with Current Limit

**FUNCTIONAL PIN DESCRIPTION**

Pin No.	Pin Name	Pin Function
1	VCC	<b>Power Supply Input.</b> Bypass this pin with a 0.1uF ceramic capacitor to GND, placed as close to the IC as possible.
2	FB	<b>Feedback Pin.</b> The voltage at this pin is regulated to 1.2V. Connect to the resistor divider between output and GND to set the output voltage.
3	COMP/EN	<b>Error Amplifier Output.</b> This is the output of the error amplifier (EA) and the non-inverting input of the PWM comparator. Use this pin in combination with the FB pin to compensate the voltage control feedback loop of the converter. Pulling COMP/EN to a level below 0.35V nominal will disable the controller and stops the internal oscillator.
4	GND	<b>Ground.</b> Return FB, and COMP to this GND and connect this GND to power GND at a single point for best noise immunity.
5	ISEN+	<b>The Current Sense Input (+) Pin.</b>
6	ISEN-	<b>The Current Sense Input (-) Pin.</b>
7	BST	<b>Bootstrap Pin.</b> This provides power to the internal higher MOSFET gate driver. Connect a 100nF capacitor from BST pin to LX pin.
8	LX	<b>Power Switching Output to External Inductor.</b>

**ORDERING INFORMATION**

Order Number	Package	Top Marking
NT3875BSA8	PSOP-8L	NT3875B

**Note:** Erised products are compatible with the current IPC/JEDEC J-STD-020 requirement. They are halogen-free, RoHS compliant and 100% matte tin (Sn) plating that are suitable for use in SnPb or Pb-free soldering processes.