

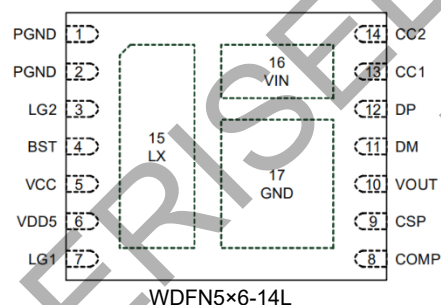
GENERAL DESCRIPTION

The NT3885B is a synchronous-rectified step-down converter capable of delivering 3A output current and 3.6V ~ 12V output voltage, dedicatedly designed for CLA applications. Integrated 30mΩ MOSFETs enables high efficiency and minimizes thermal loading. The NT3885B is designed to work with a wide supply voltage range from 9V to 30V.

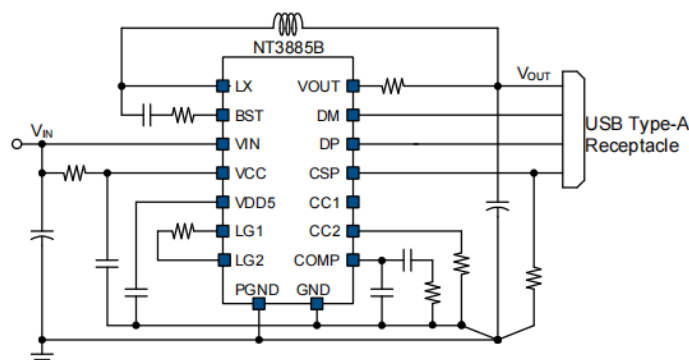
The NT3885B integrates smart DP/DM interface that complies with Qualcomm® Quick Charge™ 3.0 specification and Hi Silicon Fast Charging Protocol (FCP). The output voltage is adjustable through Quick Charge™ 3.0 protocol. It also features constant current operation ($V_{OUT} < 6.5V$ typ.) and constant power operation ($V_{OUT} > 6.5V$ typ.), fulfilling power profile requirement of Qualcomm® Quick Charge™ 3.0. The external compensation makes feedback control have good line and load regulation with flexible external design.

The NT3885B features input over voltage, output over voltage, output under voltage and over temperature protections. It is available in WDFN5x6-14L package.

PIN CONFIGURATIONS



TYPICAL APPLICATION CIRCUIT



FEATURES

- High Efficiency Power Conversion
 - Integrate 30mΩ Switches
 - Capable of Delivering 3A Output Current
 - 125kHz Fixed Frequency Operation
 - 0% ~ 95% Duty Cycle
 - 1.5% Output Voltage Accuracy Over Line
 - 7% Constant Current Accuracy
 - 3.6V ~ 12V Adjustable Output Voltage
 - Cable Compensation
- Smart USB Charger Identification Circuit
 - Compliant with Quick Charge 2.0/3.0 Class A
 - Support Apple 2.4A Applications
 - Support BC1.2 & YD/T 1591 Battery Charging Specifications
- CC/CP Power Profile
- Comprehensive Protections
 - Input Over Voltage Protection
 - Output Over Voltage Protection
 - Output Under Voltage Protection
 - Over Temperature Protection
 - Output Voltage Discharge Function
- WDFN5x6-14L 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, 2	PGND	Power Ground
3	LG2	Gate of Lower MOSFET
4	BST	Bootstrap Pin. This pin provides power to the internal higher MOSFET gate driver. Connect a 470nF capacitor from BST pin to LX pin.
5	VCC	Power Supply Input. Bypass this pin with a 1uF ceramic capacitor to GND, placed as close to the IC as possible.
6	VDD5	Output Pin for the Internal 5V LDO. Bypass the VDD5 with a 1uF ceramic capacitor physically near the IC.
7	LG1	Low Side Gate Driver Output.
8	COMP	Error Amplifier Output. This is the output of the error amplifier (EA) and the non-inverting input of the PWM comparator.
9	CSP	Current Sensing Input.
10	VOUT	Output Voltage Sensing.
11	DM	Negative Data Line for USB.
12	DP	Positive Data Line for USB.
13	CC1	Configuration Channel 1 for USB Type-C receptacle. This pin is internally pulled high to VDD5 with a 10kΩ resistor.
14	CC2	Configuration Channel 2 for USB Type-C receptacle. This pin is internally pulled high to VDD5 with a 10kΩ resistor.
15	LX	Power Switching Output to External Inductor.
16	VIN	Exposed Pad. The exposed is connected to drain of the internal high-side MOSFET. Large PCB area is required for thermal dissipation.
17	LG2	Ground.

ORDERING INFORMATION

Order Number	Package	Top Marking
NT3885BDEC	WDFN5×6-14L	NT3885B

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.