



ZHEJIANG UNIÜ-NE Technology CO., LTD

浙江宇力微新能源科技有限公司



## U3500 Data Sheet

V 3.0

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# 120V Input, Switching Current Limit Step-Down Converter

## General Description

The U3500 is a high-voltage, step-down, switching regulator that drives External power MOSFET with a current limit of 10A, typically. The wide 10V to 120V input range accommodates a variety of step-down applications, making it ideal for automotive, industry, and lighting applications. Hysteretic voltage-mode control is employed for very fast response. UNI's proprietary feedback control scheme minimizes the number of required external components.

The switching frequency is 70KHz, allowing for small component size. Thermal shutdown and short-circuit shutdown (SCS) provide reliable and fault-tolerant operations. Low quiescent current allows the U3500 to be used in battery-powered applications.

The U3500 is available in a ESOP-8 package with an exposed pad.

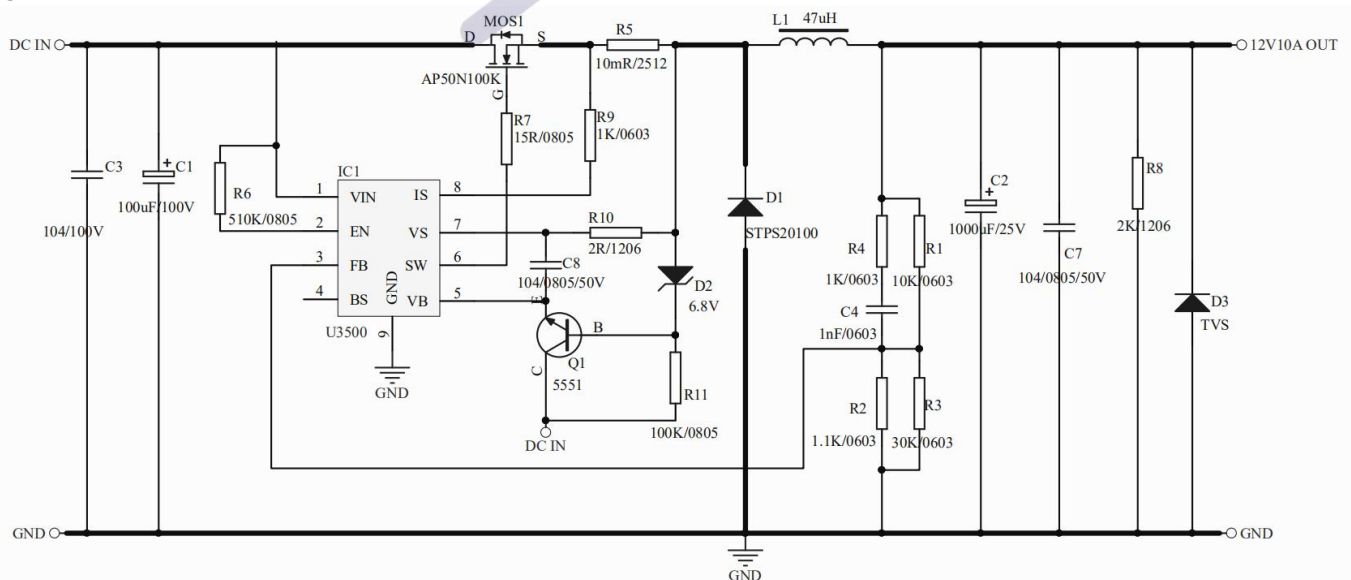
## Key Features

- Wide 10V to 120V Input Range
- DC-DC 12V/10A Typical Switching Current Application
- Hysteretic Control: No Compensation
- 70KHz Switching Frequency
- PWM Control Input for step-down Application
- Short-Circuit Shutdown (SCS) with Integrated IC
- Low Quiescent Current
- Thermal Shutdown
- Available in a ESOP-8 Package with an Exposed Pad

## Applications

- Scooters, E-Bike Control Power Supplies
- Solar Energy Systems
- Automotive System Power
- Industrial Power Supplies
- High-Power LED Drivers

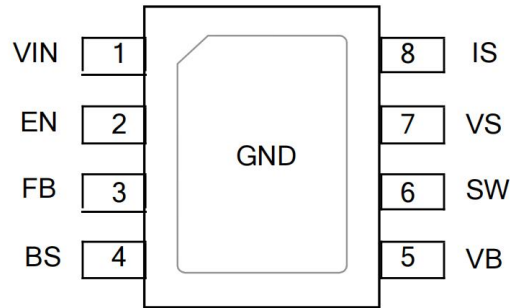
## Typical Application



### Ordering Information

Part Number	Package	Vo	VIN MAX	Load Current
U3500	ESOP-8	>2V	120V	Io<=10A

### Pin Description



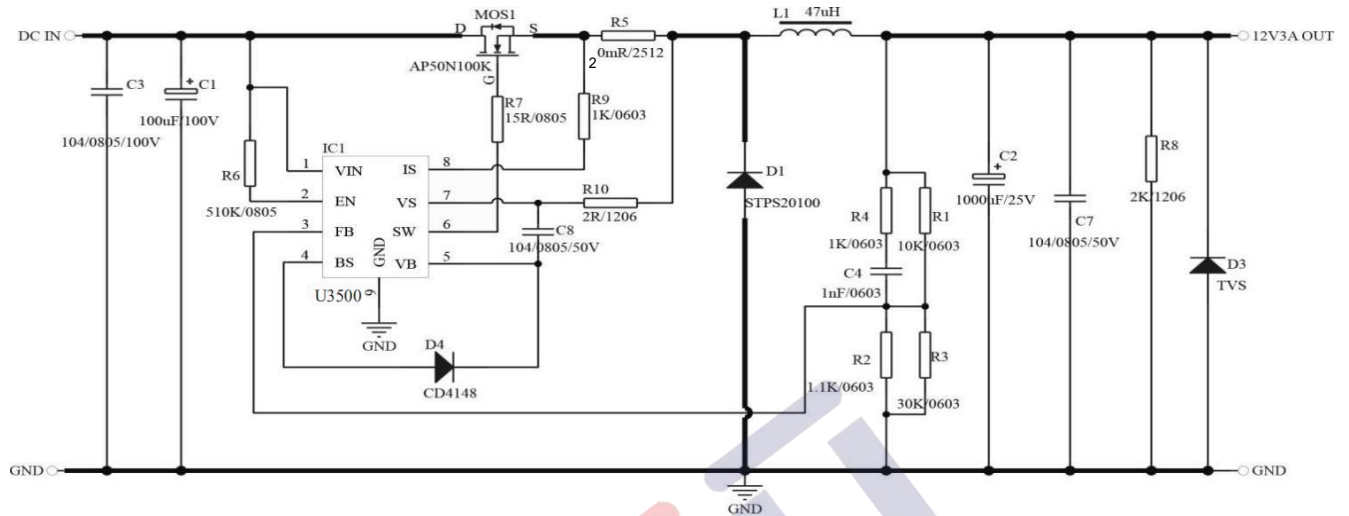
SOP-8 EP

### Pin Functions

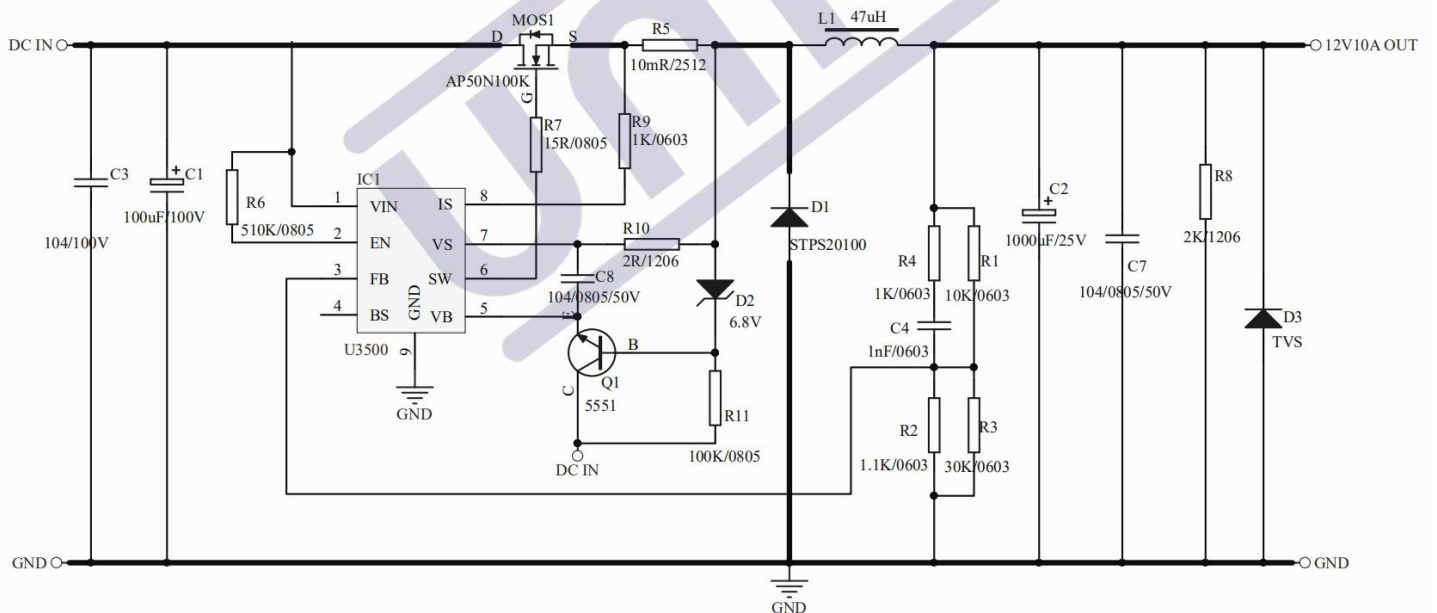
SOP-8 EP Pin #	Name	Description
1	VIN	Input supply. VIN supplies power to all of the internal control circuitries, both BST regulators, and the high-side switch. A decoupling capacitor to ground must be placed close to VIN to minimize switching spikes.
2	EN	Enable input. Pull EN below the specified threshold to shut down the U3500. Pull EN above the specified threshold or leave EN floating to enable the U3500.
3	FB	Feedback. FB is the input to the voltage hysteretic comparators. The average FB voltage is maintained at 200mV by loop regulation.
4	BS	Bootstrap. Connected to a bootstrap diode 1N4148.
5	VB	Boot. BST is the positive power supply for the internal, floating, high-side MOSFET driver. Connect a bypass capacitor between BST and SW.
6	SW	Switch node. SW is the output, drives External power MOSFET
7	VS	Switch source. Upper drive low potential
8	IS	Current detection. Current Sensing Input
9	EP-GND	Ground. GND should be placed as close to the output capacitor as possible to avoid the high-current switch paths. Connect the exposed pad to GND plane for optimal thermal performance.

# Typical Application Circuit

**APP1:  $V_{OUT}=12.5V, I_{OUT}=3A$**



**APP2:  $V_{OUT}=12.5V, I_{OUT}=10A$**





## 1.版本记录

DATE	REV.	DESCRIPTION
2018/04/ 19	1.0	First Release
2019/05/21	2.0	Package is changed SOP-8
2021/05/21	3.0	Package is changed to ESOP-8

## 2.免责声明

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