

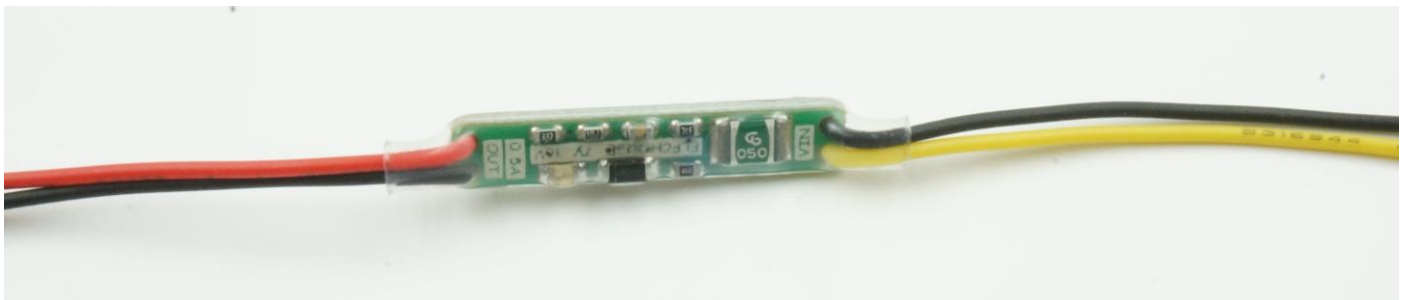
5V Power Buck Wire

Overview

This mini-buck module is designed based on BUCK topology. Output voltage is stable 5V. It has plastic cover outside, which could prevent dust and moisture. Input side contains a self-recovery fuse PPTC. With the Zener diode, they could protect the module against voltage pulse.

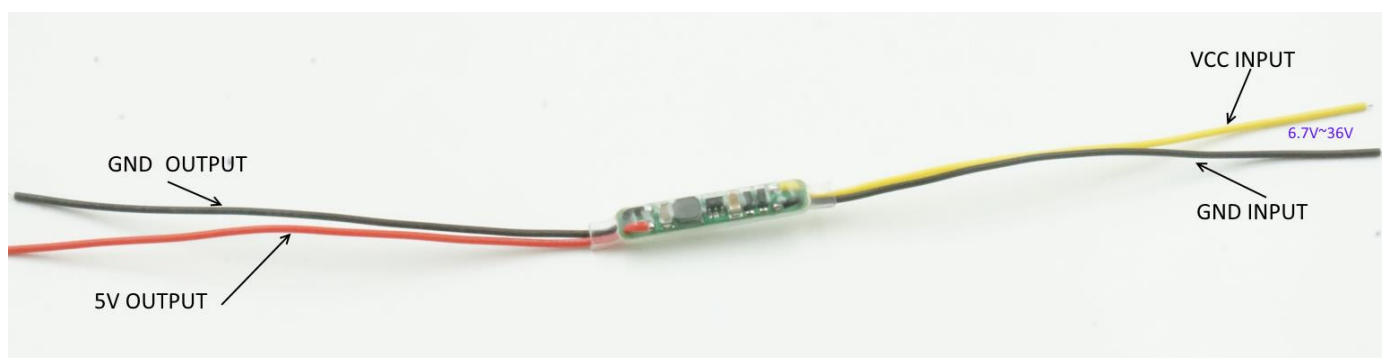
Features

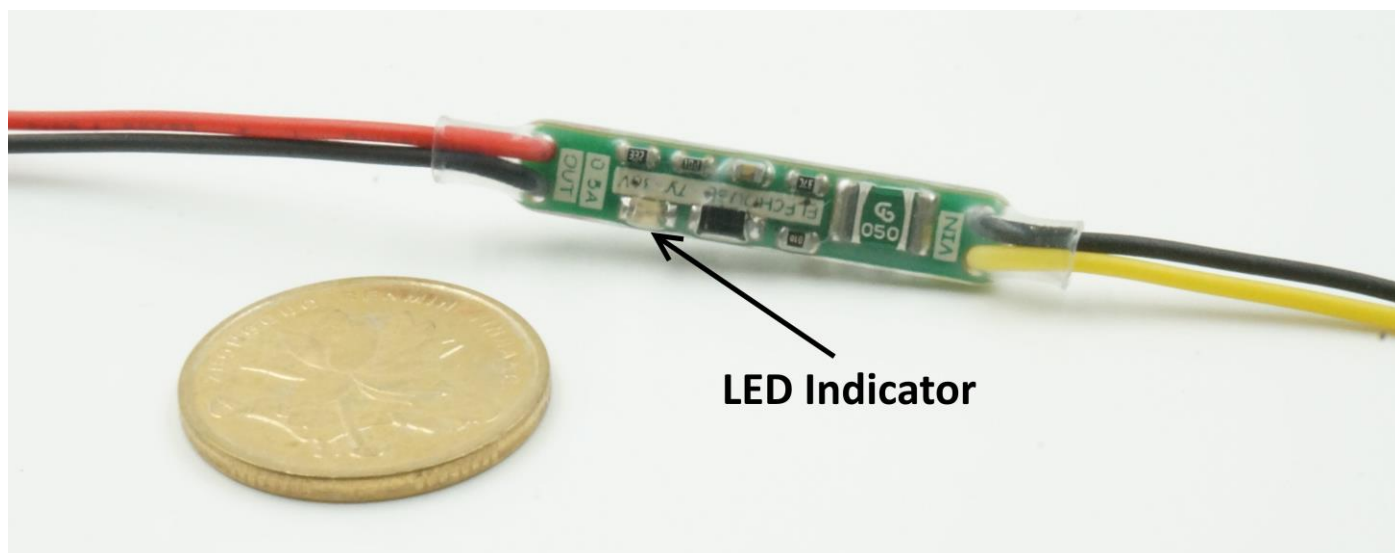
1. Input Voltage 6.7V-36V, output 5V, 500mA.
2. Ultra-small dimension, like a wire
3. Wide input voltage range
4. Plastic protection against circuit shorting, dust and moisture.
5. Ultra-Low static power self-consumption, as low as 560uA.



Wiring diagram

Yellow and black wires connected to the input, the red and black wire to the output.





Electrical parameters

Basic Parameter

Parameter	Value	Notification
Input voltage	6.7V ~ 36V	
Output Voltage	5V±4%	
Max Output Current	500mA	Depends on Input Voltage, See below table
Input Quiescent Current	950uA@6.7V 560uA @ 24V 620uA @ 35V	If remove the LED, the current could become much smaller, almost half of the value
Reverse Input Protection	Yes	
Over-voltage Protection	No	If INPUT > 36V, it could bear 2 seconds

Output current and Temperature

(V_{in} : Input Voltage; I_{out} : Output Current; ΔT : rising temperature)

	IOUT = 100MA	IOUT = 300MA	IOUT = 500MA
VIN = 6.7V	$\Delta T = 5^{\circ}\text{C}$	$\Delta T = 15^{\circ}\text{C}$	$\Delta T = 30^{\circ}\text{C}$
VIN = 24V	$\Delta T = 16^{\circ}\text{C}$	$\Delta T = 36^{\circ}\text{C}$	$\Delta T = 56^{\circ}\text{C}$
VIN = 36V	$\Delta T = 20^{\circ}\text{C}$	$\Delta T = 45^{\circ}\text{C}$	Dangerous!! Burn.

Note:

- The measured temperature is the highest temperature of the main chip. As the chip is small, the temperature is high. However, the entire module temperature is not high.
- $V_{in} = 36V, I_{out} \leq 300mA$

Output ripple

Voltage Ripple	@Vin & Iout
V _{pp} ≤10mV	@ 7V & 0mA
V _{pp} ≤14mV	@ 7V & 100mA
V _{pp} ≤14mV	@ 7V & 300mA
V _{pp} ≤14mV	@ 7V & 500mA
V _{pp} ≤23mV	@ 12V & 100mA
V _{pp} ≤50mV	@ 24V & 100mA

Dimension

- PCB dimensions: 4.8mm * 23.8mm
- Total length: 210mm (w/ wires); 29mm (w/o wires)
- Thickness: 5.5mm * 4.3mm (with plastic cover)
- Wire Diameter: 1.2mm (w/ cover); 0.4mm (w/o cover, copper diameter)

Disclaimer and Revisions

This document might be changed without any notification. Please visit our website to contact us if you need any help: www.elechouse.com

Revision History

Rev.	Date	Author	Notification
1.0	2015-03-15	Wilson	Initial Version