NCH6100HV High Voltage DC Power Supply

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Version 1.0.0

Attention

- Attention： High voltage circuit on the board, do not touch the circuit board and components if it’ s working.
- Warning: Overload prohibited (Input voltage/output current out of range).
- Warning: Exposing outdoor prohibited, using in moist or raining place prohibited.
- Warning: Board will generate heat, be sure the board is well heat dissipation.

Features

NCH6100HV high voltage power supply module is miniature step-up DC-DC converter with high efficiency and low heat operating from 12 to 24VDC input, with an output of 85 to 235VDC set by a precise potentiometer. Designed for Nixie tube, VFD tube, Magic eye etc. Shutdown mode are controlled via SHDN logic input. PCB terminals and pin headers are optional.

Technical specifications

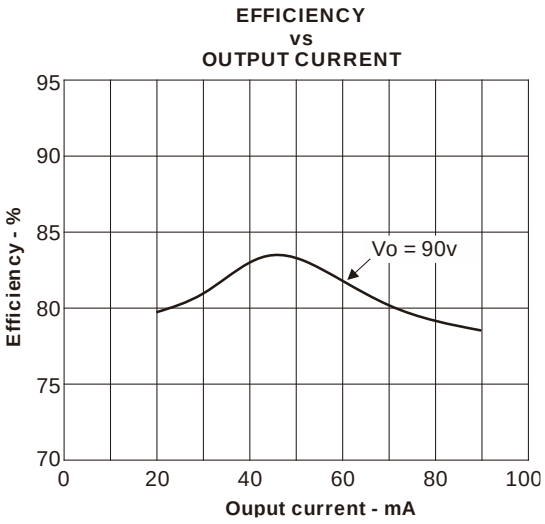
Electronic Specifications

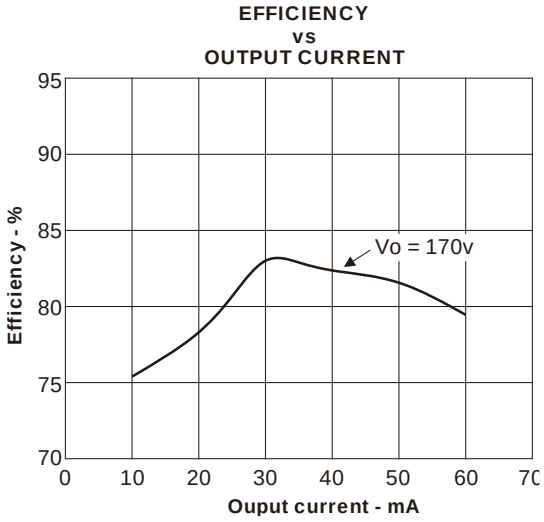
Specification	Symbol	Min	Typ	Max	Units
Input voltage	V_{IN}	10.00	12.00	24.00	Volts
Output voltage (Io = 10mA)	V_{OUT}	85.00	---	235.00	Volts
Output current (V_{IN} = 12V V_{OUT} = 90V)	I_{OUT}	0	45	95	mAmps
Output current (V_{IN} = 12V V_{OUT} = 170V)		0	35	55	mAmps
Output current (V_{IN} = 12V V_{OUT} = 220V)		0	24	35	mAmps
SHDN input voltage	V_{SHDN}	1.2	---	V_{IN}	Volts
SHDN input current	I_{SHDN}	---	---	2	mAmps
Shutdown current (V_{IN} = 12V V_{OUT} = 170V)	I_{OFF}	---	15	---	mAmps
Efficiency (V_{IN} = 12-18VDC, 50%-80% rated load)	Efficiency	---	80	---	%

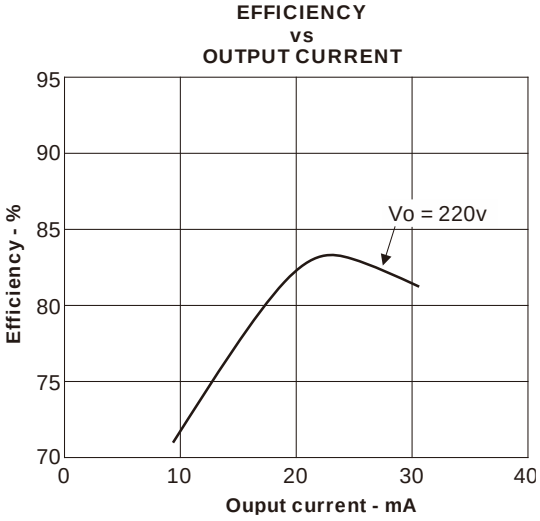
Notes:

1. **Ground or float SHDN to enable switcher, must be tied to V_{IN} to turn off switcher.**
2. **No input reverse polarity protection is provided.**

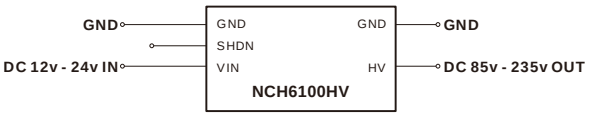
Efficiency curve (VIN = DC 12V)



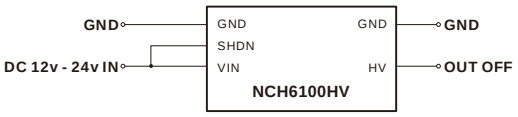




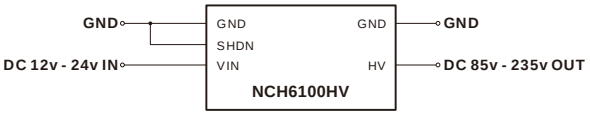
Typical connection



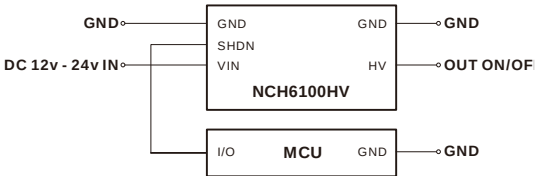
Always on - float SHDN



Off with connect SHDN to VIN



ON with connect SHDN to GND

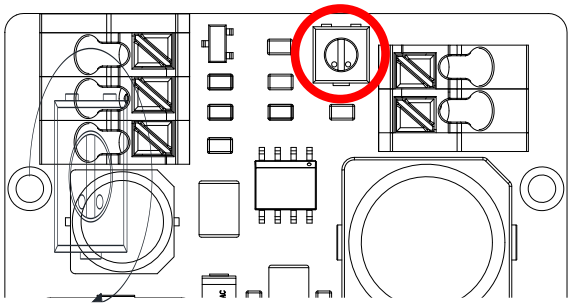


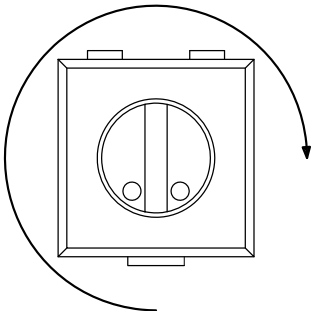
MCU control
SHDN High - Off
SHDN Low - On

Note:

1. **Recommended input capacitor if the module is located far from the power.**
2. **Module will generate heat, be sure the board is well heat dissipation.**

Adjust output voltage

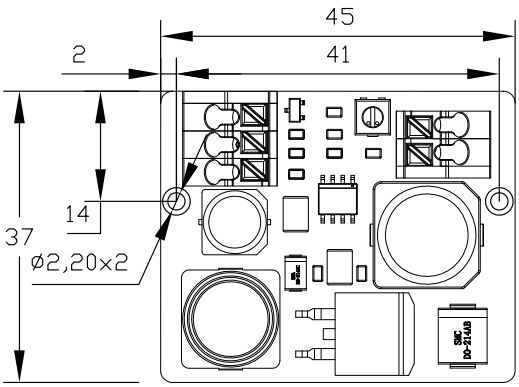


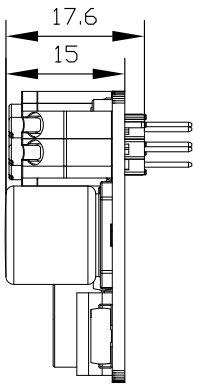


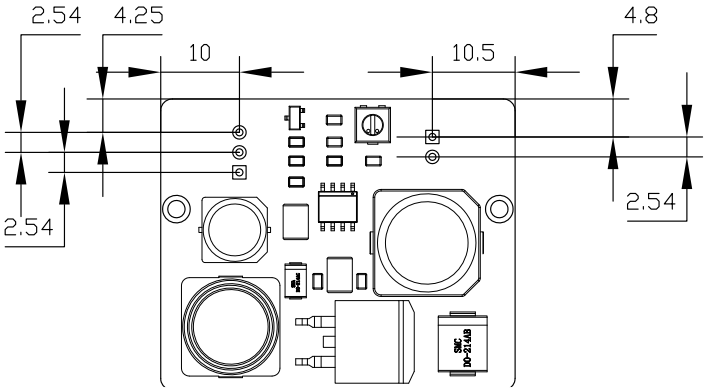
Adjust output voltage with a precise potentiometer on the board.
Rotate the potentiometer clockwise increase output voltage.

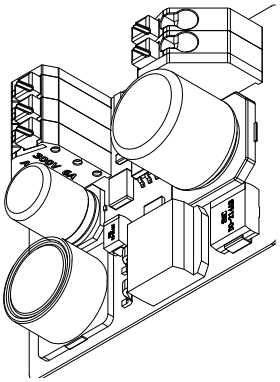
Output voltage increasing

Module outline

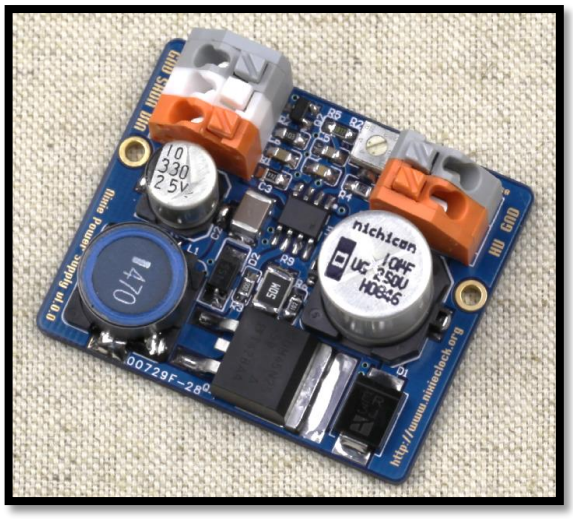




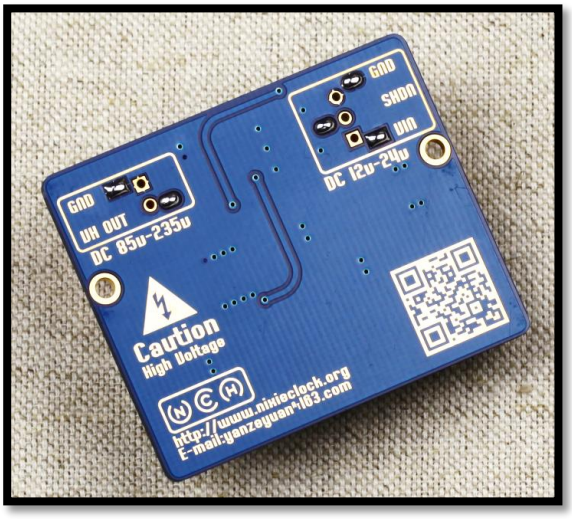




PCB terminals and pin headers are optional, check the outline follow the drawing above.

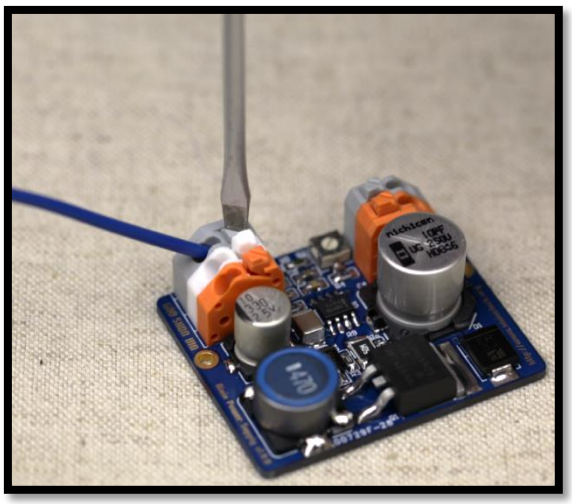


Picture of top of NCH6100HV



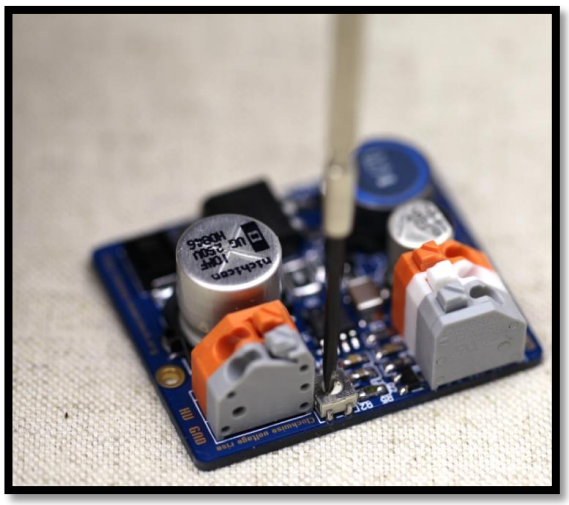
Picture of bottom of NCH6100HV

Instructions



Cables connection

1. **Press the PCB terminals with a screwdriver.**
2. **Insert the cable.**
3. **AWG22-16 cable recommended.**



Adjust output voltage

1. **Rotate the potentiometer with a screwdriver.**
2. **Rotate the potentiometer clockwise increase output voltage.**
3. **Disconnect load when adjust output voltage.**

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