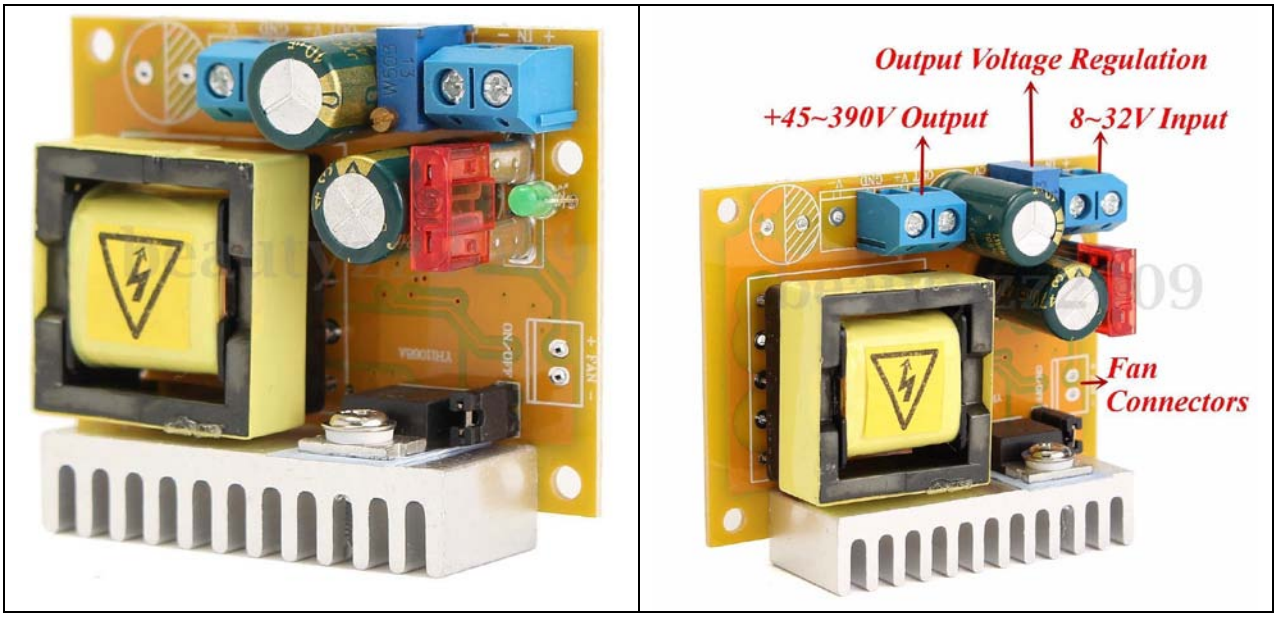
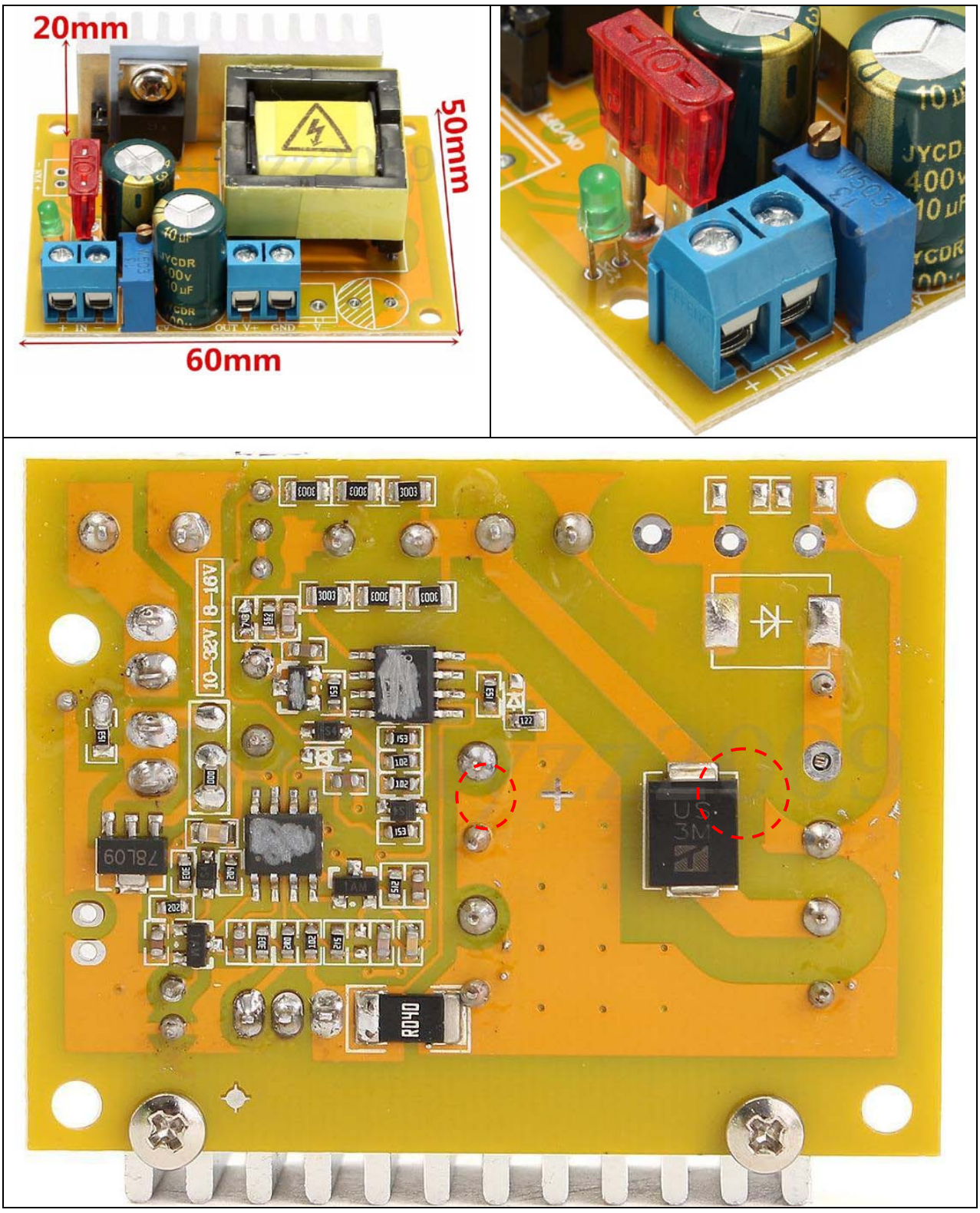
DC-DC Boost Converter 8~32V to 45~390V High Voltage Charging Booster Module 40W

eBay description:

High Voltage Boost Module
Module Properties: Non-isolated step-up module
Input Voltage: 8~32V input (the default is 10~32V input.)
Input Current: 5A (Max)
Quiescent current: 15mA (12V to 50V, the current will increase for higher output)
Output Voltage: +45~390V continuously adjustable (default output 50V)
Output Current: 0.2A Max (the higher the output voltage, output current is smaller)
Output Power: 40W (Peak 70W)
Working Temperature: -40 ~ + 85 degrees (ambient temperature is too high, please enhance heat dissipation)
Operating frequency: 75 KHz
Conversion efficiency: up to 88% (efficiency and input and output voltage, current, pressure-related)
Short circuit protection: Yes.
Over current protection: Yes. (Input current exceeds 4.5A, reducing the output voltage)
Over voltage protection: Yes. (Output voltage exceeds 410V, lowering the output voltage)
Input reverse polarity protection: Yes (non-self-healing, reverse burning fuse, try not reversed.)
Installation: Four 3 mm screws
Wiring: free wire output terminals
Size(L*W*H):60 x 50 x 20 mm

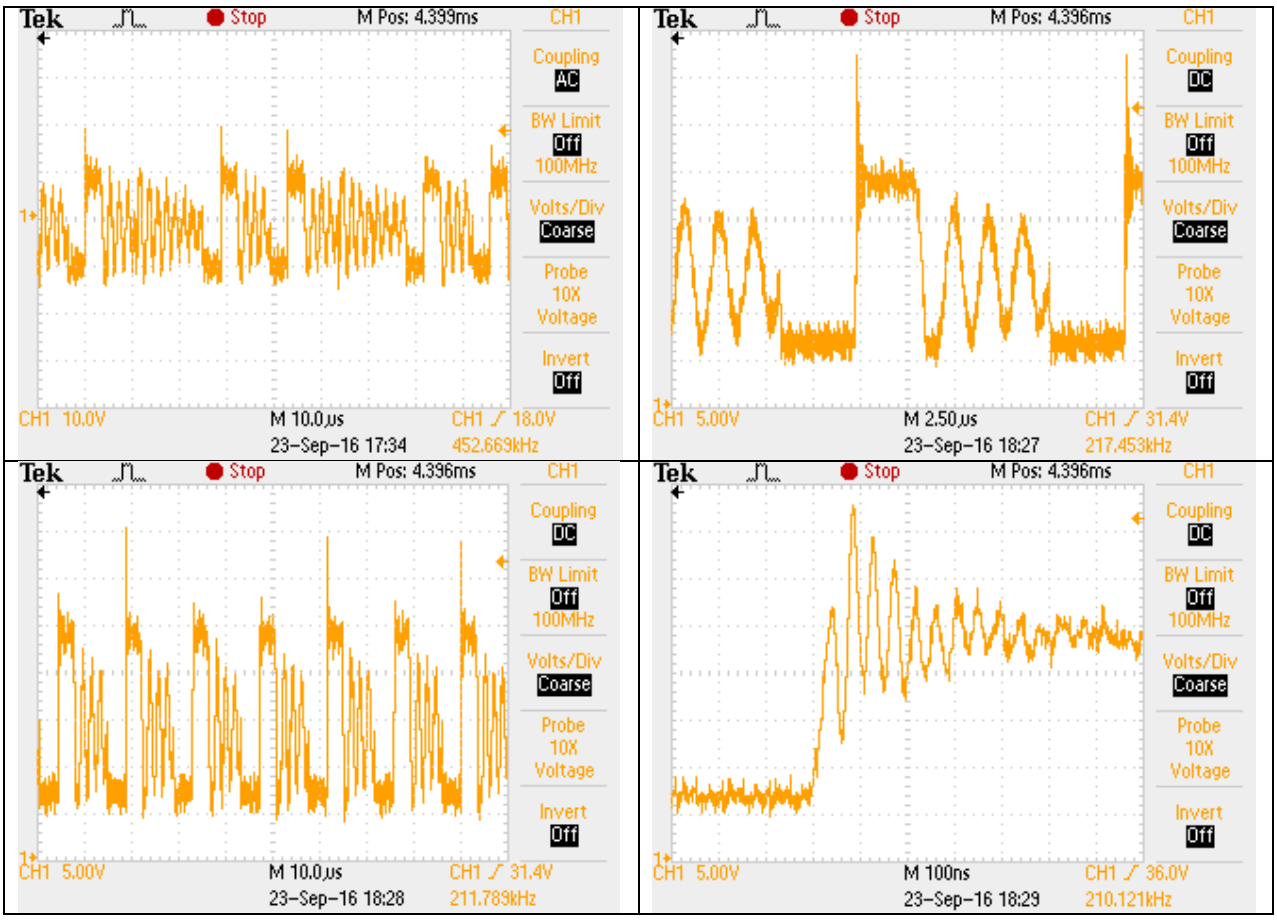
Measured idle power approx. 0.5W for 250V output, and 1W for 380V output. Measured switching frequency about 71kHz. Output voltage control includes pulse skipping and burst mode (? ripple can jump around and move between modes). PCB and transformer wired for bipolar output – but transformer pin cut, and negative output parts not loaded – negative output is not regulated. Fan output just connected to input voltage. Heatsink is floating.





Modifications

Smt caps added to rear side for bypassing each rail/electrolytic to minimise loop area.


Tek
Stop
M Pos: 4.399ms
CH1
Coupling
AC
BW Limit
Off
100MHz
Volts/Div
Coarse
Probe
10X
Voltage
Invert
Off
CH1 10.0V
M 10.0µs
CH1 ⁄ 18.0V
23-Sep-16 17:34
452.669kHz
Tek
Stop
M Pos: 4.396ms
CH1
Coupling
DC
BW Limit
Off
100MHz
Volts/Div
Coarse
Probe
10X
Voltage
Invert
Off
CH1 5.00V
M 2.50µs
CH1 ⁄ 31.4V
23-Sep-16 18:27
217.453kHz
Tek
Stop
M Pos: 4.396ms
CH1
Coupling
DC
BW Limit
Off
100MHz
Volts/Div
Coarse
Probe
10X
Voltage
Invert
Off
CH1 5.00V
M 10.0µs
CH1 ⁄ 31.4V
23-Sep-16 18:28
211.789kHz
Tek
Stop
M Pos: 4.396ms
CH1
Coupling
DC
BW Limit
Off
100MHz
Volts/Div
Coarse
Probe
10X
Voltage
Invert
Off
CH1 5.00V
M 100ns
CH1 ⁄ 36.0V
23-Sep-16 18:29
210.121kHz

4H1068A
INPUT
10A
15K
470μ
35V
RED
N/C 8
9V
78L09
7
RU7088R
H/S
6
2.2
30K
3
1K
4
5K1
40mΩ
5
OUTPUT
10μ
400V
300K
300K
300K
5K6
300K
300K
300K
1K
50K
5K6
15K
8
8K
8K2
2
1K2
(3)
2
1
ON/OFF
9V
2K7
1K
1