VFD Drive Module

AC 50 Hz supply module for VFD tube filaments

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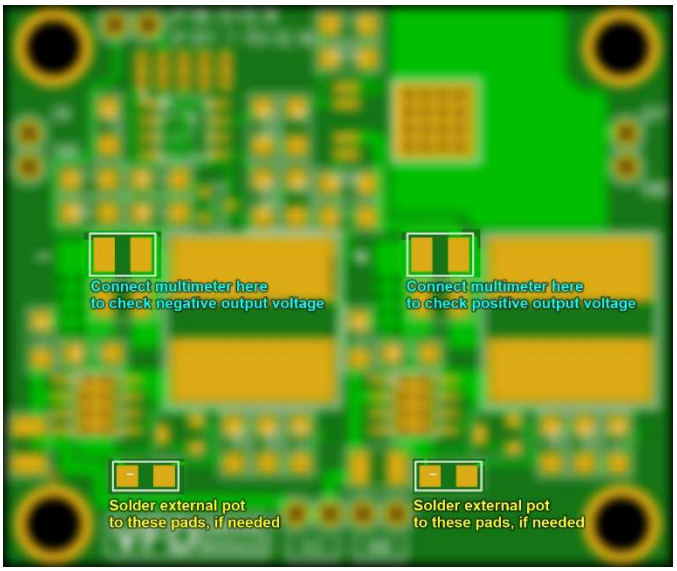
Overview:

VFD Drive module provides 50 Hz AC voltage to drive filaments of large, soviet made VFD modules in a "native" way, to avoid brightness gradient along the tube.



Tech specs:

Input voltage: 7-15V DC

Output voltage: 1.5-5.5V

Output current: Up to 3A*

Output type: square wave AC 50Hz

Control options: Output enable pin (Default ON), voltage adjustment pots

Physical dimensions: 51 X 43 X 8 mm (L-W-H).

Weight: <20 grams

*Heatsink is recommended if current consumption is above 2A

Electronic interfacing:

This module uses dual synchronous step-down converters with MOSFET output stage to deliver 50Hz AC output – True AC voltage, which goes below 0 volt, as it will do with the normal AC transformer. Module has soft-start function and enable pin (default active high, need to pull it down to stop operation).

Output voltage can be adjusted in 1.5-5.5V range (Either user adjustable or set at manufacturing stage). Module operates from 7-15V DC, but if your output is less than 4V and you need to run it from 5V DC, you can short the jumper pins located at the top of the PCB.

By default, unless otherwise specified when ordering, this module outputs 5V AC. If you need to adjust output voltage by yourself, connect scope to the output and rotate trim pots to set both halfwaves of AC voltage to the desired value. If you don't have the scope, you can attach multimeter to the output capacitors (as shown on the picture), and adjust output voltage that way.

Please note, these trim pots are for precise adjustment and not meant to be frequently rotated, so if you need to make manually adjustable power supply from this module, please set both trim pots to maximum output voltage and solder dual adjustable pot with 100K to the points shown on the drawing on the left.

There is a diagnostic orange led on the module, which blinks once when module is powered on and then remains steady while output is enabled. If led blinks rapidly or fades in-out, this means your input power source has not enough "juice" to power your circuitry and you need more powerful power supply.

This module uses high efficiency, synchronous DC-DC buck technology, so usually heat should not be an issue while operating under normal loads. However, if your clock cabinet is small and there's not enough ventilation, or if current consumption is above 2A, it is advisable to add small heatsink to the bottom of the PCB. Please do not attach heatsink directly, use insulating pad, to avoid short circuit.

This module can be customized to have different output voltage range, or it can be equipped with multi-turn resistors so you'll have better ability to fine tune output voltage for more experiments. In case of such need or just for ordering these modules, please contact orders@tiktoki.ge