Passion 15 MKII 100W Mono Block User Manual

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INTRODUCTION

Passion 15 MKII mono block uses a complementary high power MOSFET 2SK1529 and 2SJ200 which is capable to deliver 100W average output power, 120W maximum. Two resistor trimmers can be used to adjust the biasing current so as to set either class AB amplification with unity gain, and also for output DC offset cancellation. Two mono block forms a high fidelity stereo with low linearity distortion and high dynamic. The output voltage exactly preserves the originality of the input voltage. Also, it requires either AC or DC input power with wide voltage ranges.

Features

1. Uses high power MOSFET transistor 2SK1529 and 2SJ200.
2. Average Output Power: 100W, maximum up to 120W
3. Support either AC power supply +/- 20 to +/-27V AC or DC power supply +/-24 to +/-38V DC
4. Unity gain and high linearity, class AB amplifier.
5. Two resistor trimmers can be used to adjust the biasing current and also cancel the output DC offset voltage.
6. High dynamic range and high output voltage headroom which depends on the voltage supply.
7. PCB dimension: 142 x 66 mm, double layers, thickness 2.4mm with 2oz copper.

SPECIFICATION

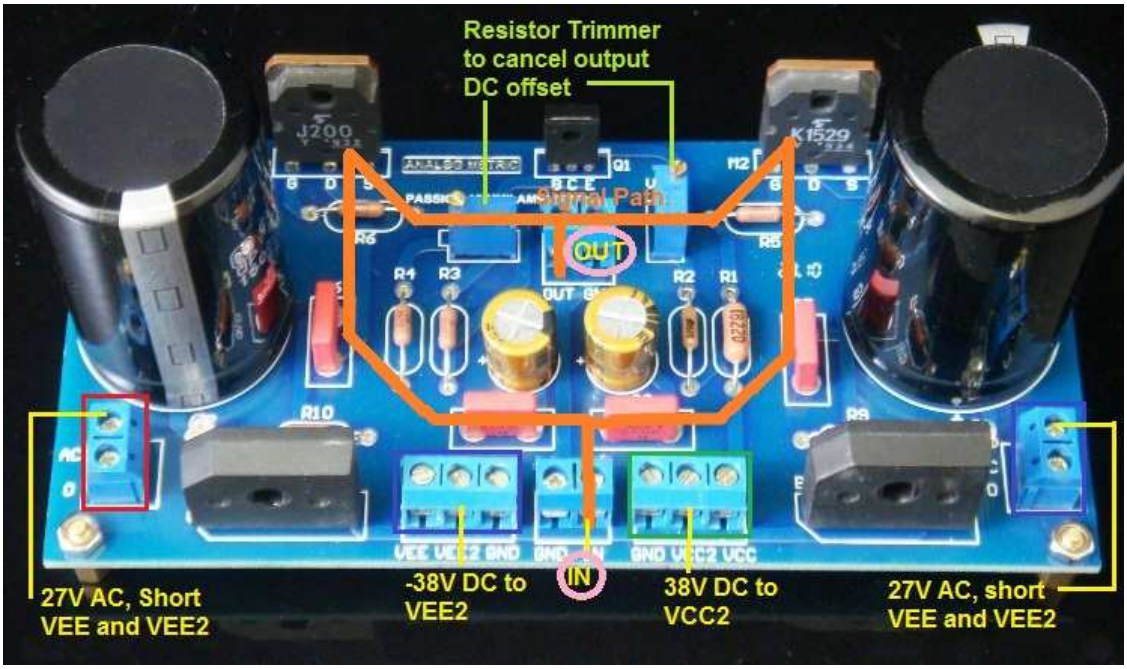
- Voltage gain: 0dB
- Gain flatness: <0.03dB for 20-20KHz
- Frequency range: 20-20KHz
- Bandwidth: >100kHz
- Input Impedance: 75K Ohms
- Output Impedance: 36 Ohms
- Input Sensitivity: 6V RMS
- S/N Ratio > 95dB and >106dB A-weighted at 1kHz
- THD+N < 0.1% @1KHz
- Mono single-end input and output

PRECAUTIONS

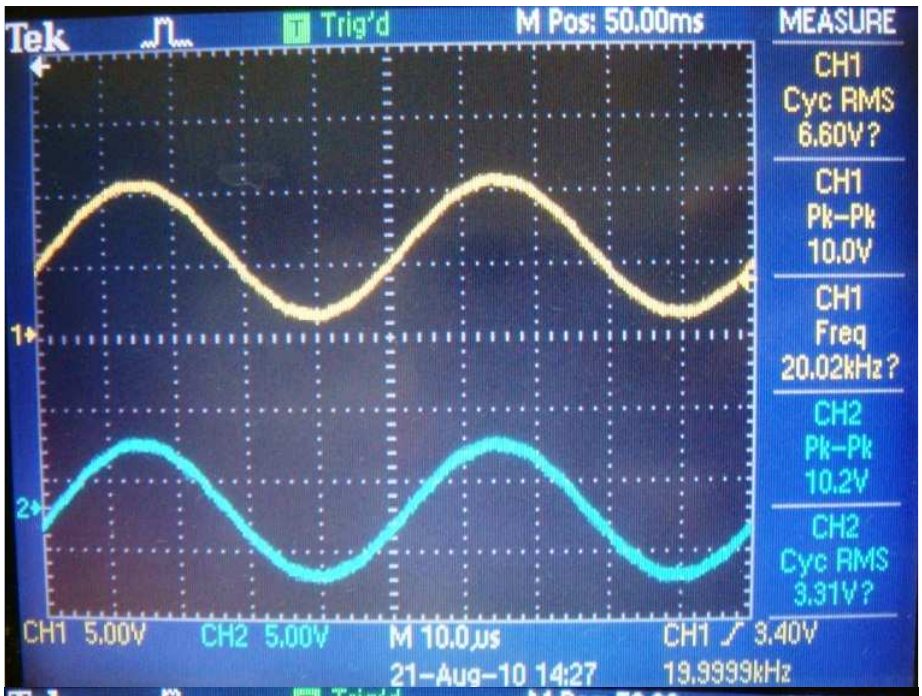
- Use a power transformer with fuse (6A) socket to limit the supply current in case of short circuit or incorrect assembly.
- Double check the assembled components with the schematics.
- Turn off the power supply if you observe any smokes or hear strange sound coming out from the transformer or board. If there is short circuit, the transformer will be getting very hot shortly.

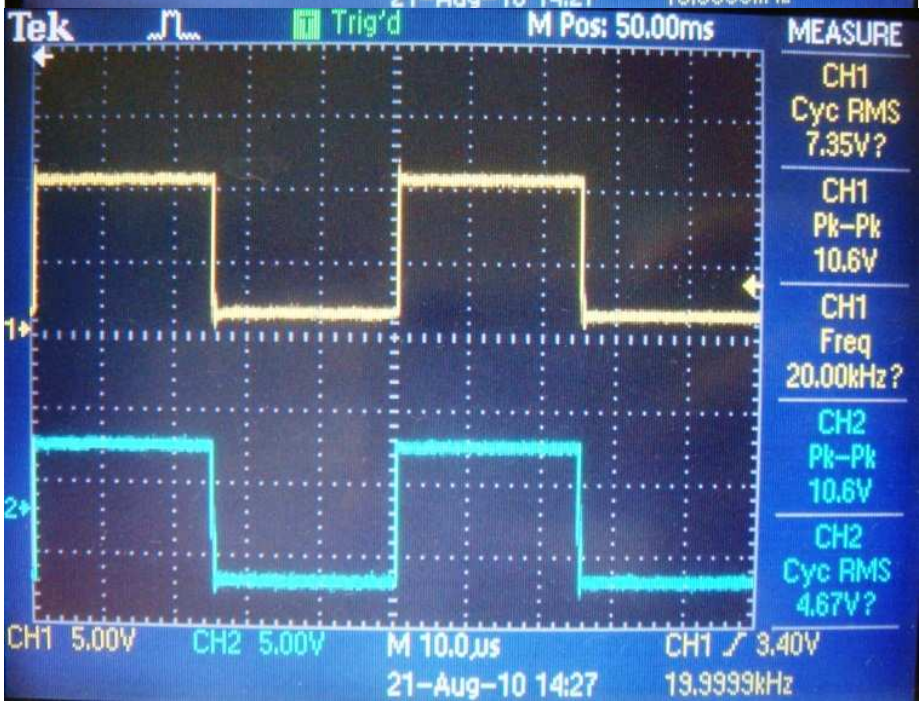
PROCEDURES

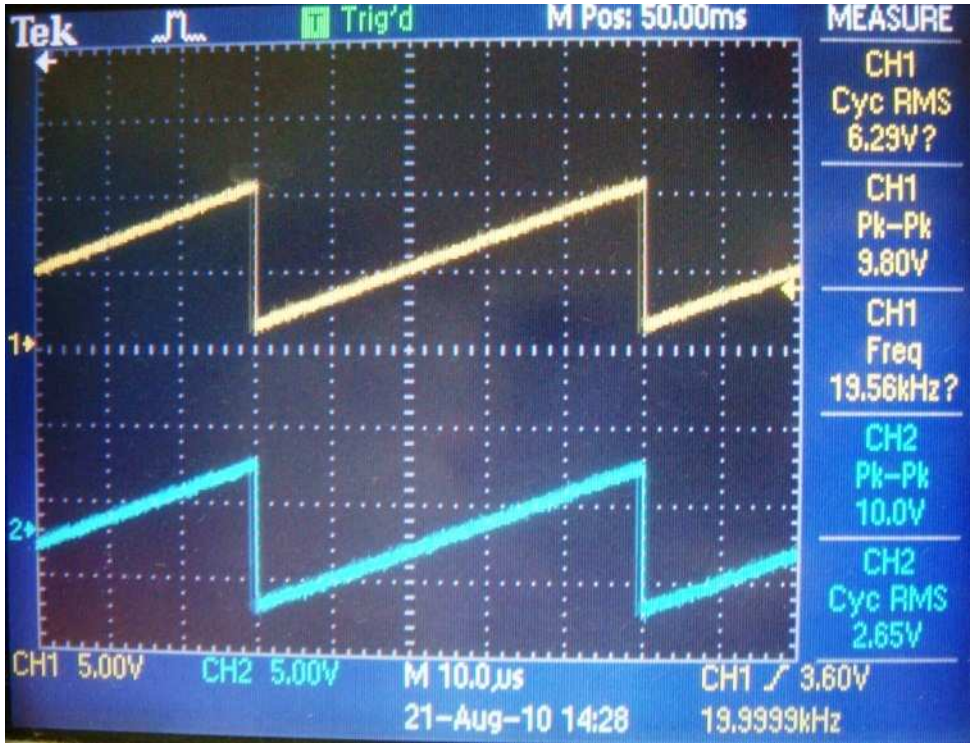
- Assembly all the components according to the part list. Notice the polarity of the electrolytic capacitors. There are no polarities of the thin film capacitors.
- Mount the heat sinks to the power transistors 2SK1529 and 2SJ200. The transistors will be overheated or damaged if without mounting on a heat sink. The maximum temperature is 150 degree Celsius.
- Apply power supply with current limit. e.g. 200mA. For AC power supply, apply two 20-27V AC to the “AC 0” connector, short VCC to VCC2 and VEE to VEE2 by a wire, accordingly; for DC power supply, apply both positive and negative 24-38V DC to VCC2 and VEE2, respectively.
- The current limit can be simply done by connecting a serial resistor 10Ohms 10W between VCC and VCC2, and VEE and VEE2 for AC supply; or adding the resistor before applying to VCC2 and VEE2.
- After power up, adjust the biasing current by resistor trimmers VR1, so that the current reach 100mA (actually, this current can be over 100mA to get rid of the class B stage. The maximum drain current is 10A). The biasing current can be calculated either by Ibias = V/R7 or Ibias = V/R8. After setting the biasing current, set the output DC voltage to ~0V DC by resistor trimmer VR2.
- To protect the loudspeaker, a speaker protection module should be connected to the output of the amplifier to eliminate the undesirable output DC voltage.



Testing Waveforms







If you have any questions on assembly, please contact us by email tech@analogmetric.com