



**Plate resistor selection**

47.5k Gain=2 Plate V<sub>1</sub> =12.8V Max out: 10V RMS Balanced  
 22k Gain=5 Plate V<sub>1</sub> = +4V Max out: 17.2V RMS Balanced  
 475k Gain=7 Plate V<sub>1</sub> = +2V Max out: 3V RMS Balanced

**Output buffers**

Install EITHER opamp buffer or JFET buffer  
 Opamp recommended for headphone use

**Notes:**  
 Voltages shown with +/-15V power  
 All resistors 1/4W 1%  
 Nonpolar caps 50V or 63V film capacitors  
 Populate JFET OR opamp buffers, not both!  
 If using single JFETs they should be matched in pairs

**Recommended components**

- 10uF 35V: Nichicon UKT1V100MDDT1
- 100uF 25V: Nichicon UFG1E101MPM
- 470uF 35V: Nichicon UHW1V471MPD
- 100uF MKS: Wima MKS28051001N005SD
- 100uF decoupling caps: Wima MKS2C31001A00M1C00
- 100uF PP caps: Wima MKP2C31001F005SD
- Opamp for headphone: OPAS51PA
- Opamp for line out: OPA134PA or your favorite

<b>Nutube Balanced Amp</b> www.pmllett.com	
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