



**Plate resistor selection**  
 47.5k: Gain=2 Plate V: +12.8V Max out: 18V RMS Balanced  
 221k: Gain=5 Plate V: +5.4V Max out: 12V RMS Balanced  
 475k: Gain=7 Plate V: +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% 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 UK1V1V100MDDT1  
 100uF 25V: Nichicon UFG1E101MPM  
 470uF 35V: Nichicon UHW1V47JMPD  
 10uF MKS: Wima MKS28051001N00J5SD  
 100nF decoupling caps: Wima MKS2C031001A00MCC0  
 100nF PP caps: Wima MKP2C031001F00J5SD  
 Opamp for headphone: OPA551PA  
 Opamp for line out: OPA134PA or your favorite

# Nutube Balanced Amp

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