

Audio output behaves like a voltage source that droops as you draw more and more current. Output impedance, measured in ohms ( $\Omega$ ), characterizes the droop. More  $\Omega$  more droop. Typically a BJT will require 1/100th to 1/20th the current it is driving at 0.6V, e.g. you need 1-5mA of control current at 0.6V to drive a 100mA load current. How do typical audio outputs measure up to this requirement?

### Dell Laptop (174Ω, 0.89mA@0.6V)



### Android Nexus 5 Phone (222Ω, 3.8mA@0.6V)

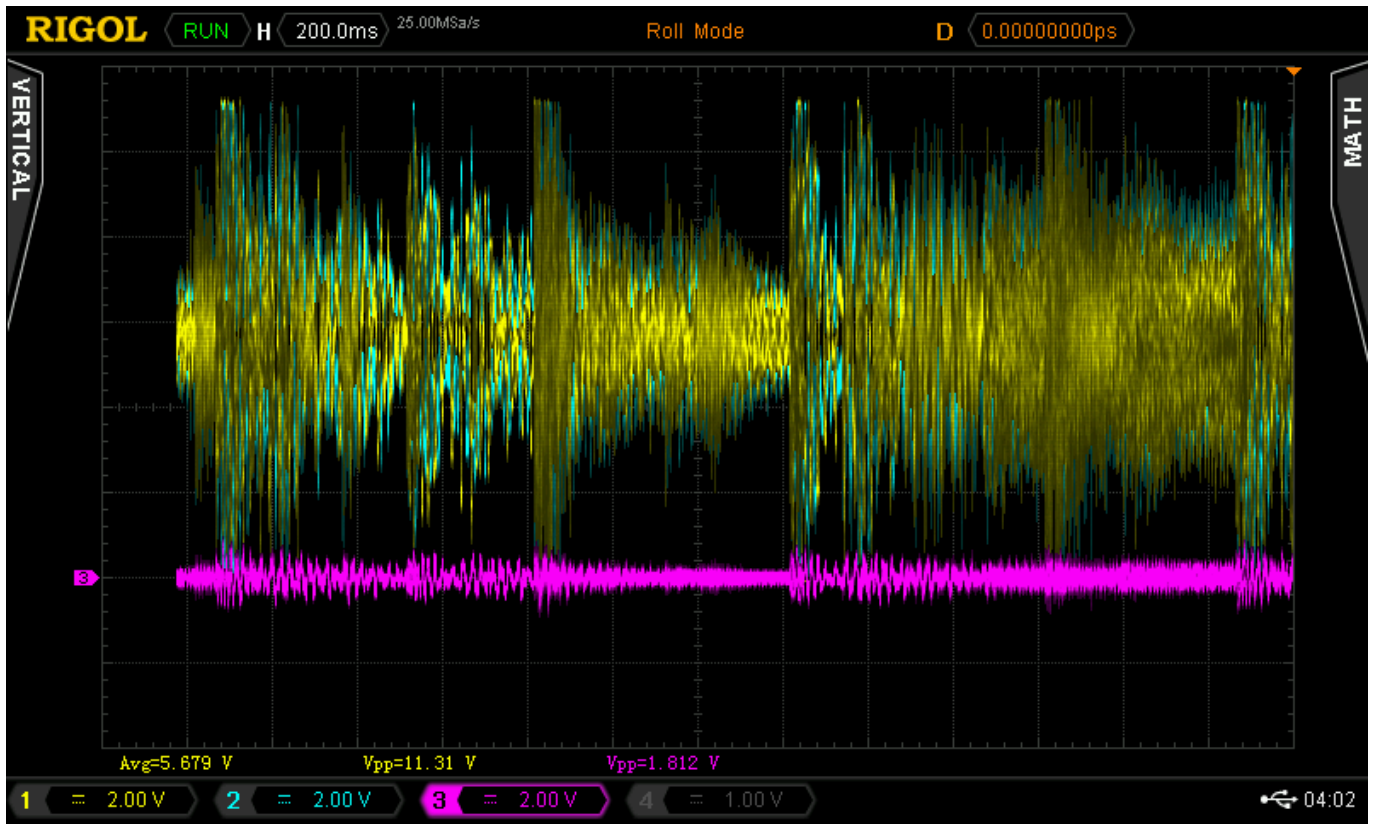


2013 MacBook (198Ω, 3.6mA@0.6V)



DROK TDA7297 12V amplifier

We can't drive an estim circuit directly from audio output - it can barely reach 1V at max volume let alone 100V+ - but can we use audio output to drive an off-the-shelf amplifier which in turn drives an estim? True to its claim, it can boost ~1V audio to 12V.



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Last update: 2016/07/03 06:43