

6.101 Final Project
High Voltage Class G Audio Amplifier

Mark Spatz

4/3/2014

Abstract

For my final project, I will be constructing a 70V audio amplifier capable of delivering about 200 watts into a network of transformer coupled loudspeakers. My design utilizes a class G (rail switching) output stage for increased efficiency and lessened cooling requirements. The rest of the amplifier circuit is fairly standard: an input differential pair with negative feedback from the amplifier output drives a compensated high gain stage, which controls current into the output stage. All matched pairs have low voltage and current requirements, and so can be implemented with discreet matched transistor arrays such as the LM3046. To start, I will be using a salvaged three winding 60Hz power transformer to provide the voltage rails for my amplifier. If time allows, I would like to refine and build an isolated ZVS full bridge converter that I previously designed for this application in 6.332, but that will not be the focus of this project.