

Zetex single ended low cost class D solution

This circuit provides a very cost effective Class D solution. Whilst the circuit performance is reduced compared to a full bridge tied load solution, it still provides a high quality audio output.

The input op-amps have been replaced by a simple emitter follower and the regulator should not now be needed. The output is single ended (and connects to the grounded load via a cap), instead of using a full bridge configuration - this saves half the bridge components. The output power available is dependent on the supply voltage and load impedance and a bridge configuration can deliver 4X the power of single ended. With a 4 ohm load and 12V supply, the theoretical max SE sinewave output power is 4.5W and 6.125W with 14V.

Our initial measurements yielded (4ohm load, Fin=1KHz):-

12 V Supply
2.8W @ 0.6%THD
3.6W @ 4%THD
5.2W @ 10%THD

14 V Supply
3.9W @ 0.6%THD
5W @ 4%THD
7W @ 10%THD

These figures can be improved with the more complex solutions, however they have proved to be acceptable in applications such as hands free amplifiers and local tannoy / PA systems.

Zetex Class D 12v Open Loop Mono

