## High Frequency Amplifier – User Manual

## **Design Requirements:**

1. Bandwidth: 20 kHz - 100 kHz

2. Minimum number of transistors: 3

3. Operating voltage: < 12V

4. Input: 0.1Vp-p (MAX)

5. It should be able to drive 8  $\Omega$  (headphone) load without significant waveform distortion or amplitude reduction.

#### **Design Stages:**

Pre-Amplifier
Common Emitter BJT amplifier

Power Amplifier
Class AB push pull amplifier

## Electrical specification:

Symbol	Parameter	Conditions	Min.	Тур.	Max.	Unit
BW	Bandwidth	$R_L=8\Omega$	0.05	50	700	kHz
A <sub>vo</sub>	Open loop voltage gain	R <sub>L</sub> =∞		21		
	Closed loop voltage gain	R <sub>L</sub> =8Ω		16.393		
R <sub>in</sub>	Input impedance	R <sub>L</sub> =8Ω		8.0108		Ω
R <sub>out</sub>	Output impedance	V <sub>s</sub> =0		2.188		kΩ
P <sub>out</sub>	Power Dissipation	R <sub>L</sub> =8 Ω	2.232	2.24	2.56	W

# Mechanical Specification:

