

JLH 2005 measurements 5.

2015.02.07

Power from Lab power supply. + 18V , -18V.

DC offset at output less than 4 mV.

1. Transistors :

Q1= MJ15003 (nr1). hFE=56 at 140mA.

Q2=Mj15003 (nr3). hFE=64 at 140mA. Slightly higher than Q1.

Q3=BD139c

Q8=BD140

Q4, Q5, Q6, Q7 = BC560.

R load = 8 Ohm.

1a Iq = 1 A.

Max output Voltage=9,05 V RMS, beginning of clip on Oscilloscope. (10,2W).

Frequency respons (2,83V, 1W):

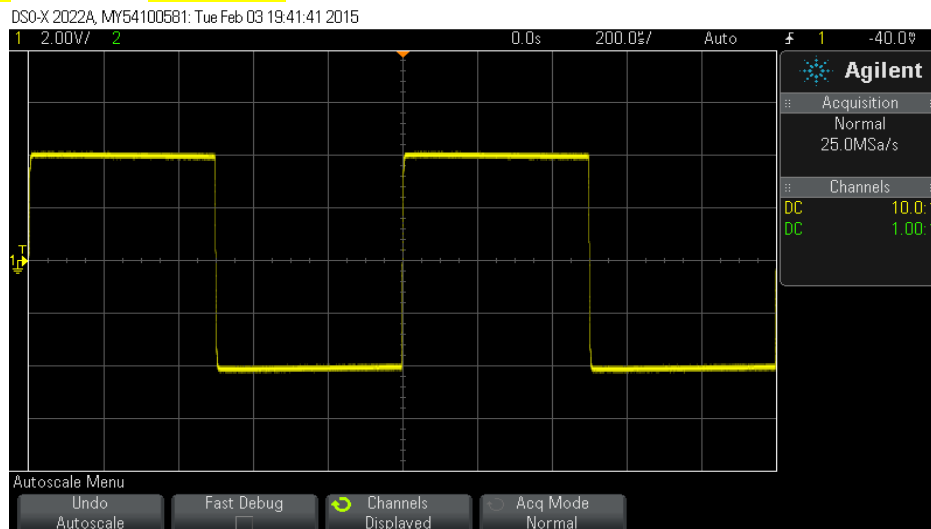
frekv. Hz	Volt	dB
10	2,54	-0,94
20	2,740	-0,28
400	2,830	0
1 000	2,830	0
20 000	2,760	-0,21
50 000	2,530	-0,97
80 000	2,250	-1,99
90 000	2,150	-2,39
100 000	2,050	-2,8
120 000	1,880	-3,55

THD + Noise : 10 Hz - 300 kHz :

frekv. Hz	2,83V out	1,00V out	8,00V out
	THD + N	THD + N	THD + N
20	0,0316%	0,0146%	0,1310%
40	0,0339%	0,0147%	0,1330%
63	0,0347%	0,0150%	0,1340%
125	0,0358%	0,0160%	0,1340%
400	0,0366%	0,0156%	0,1370%
1 000	0,0371%	0,0157%	0,1380%
5 000	0,0378%	0,0160%	0,1430%
10 000	0,0390%	0,0162%	0,1530%
20 000	0,0417%	0,0169%	0,1740%

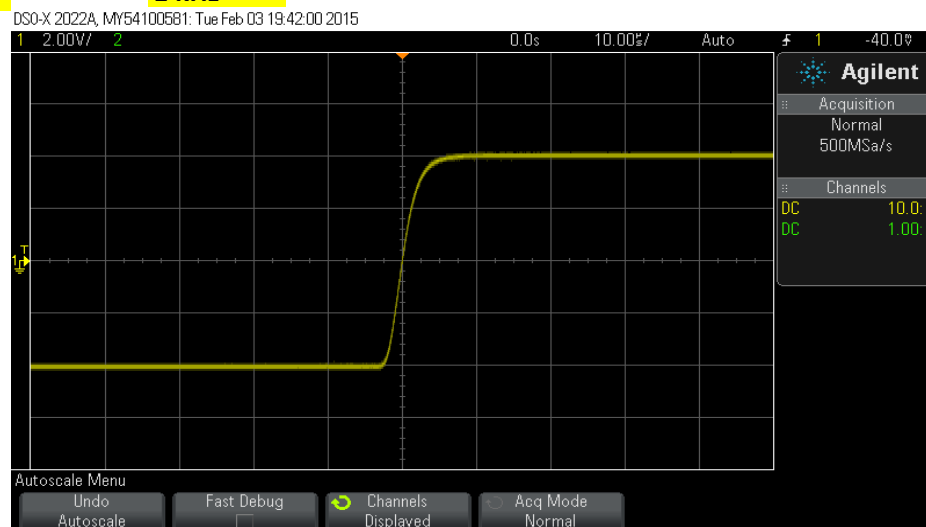
1c.

1 kHz



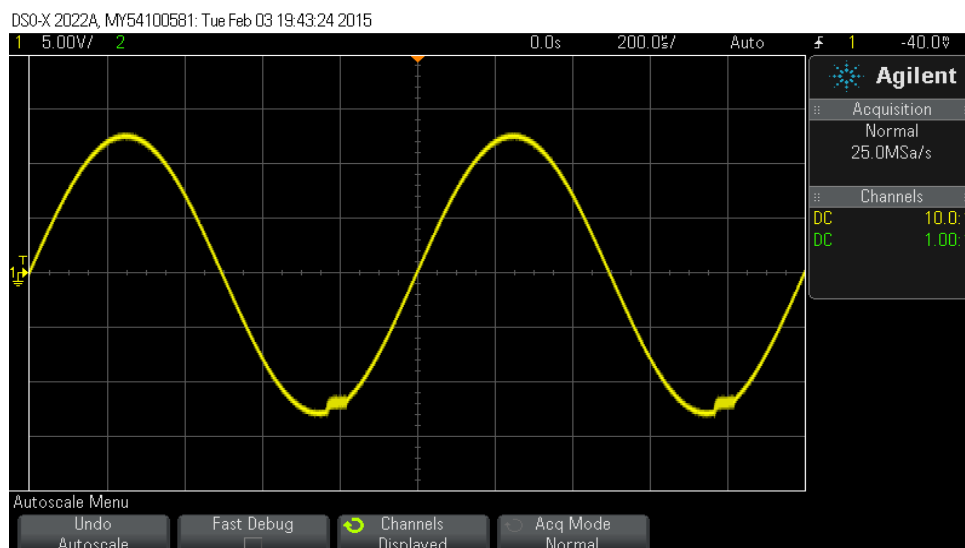
1d.

1 kHz



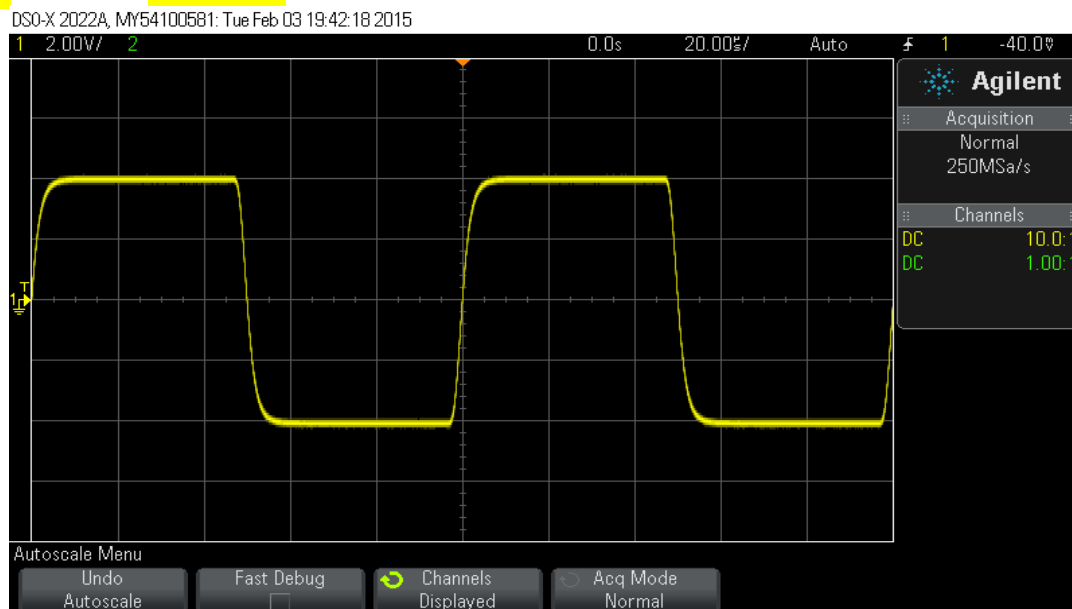
1e.

max output. "clip". Negative side.



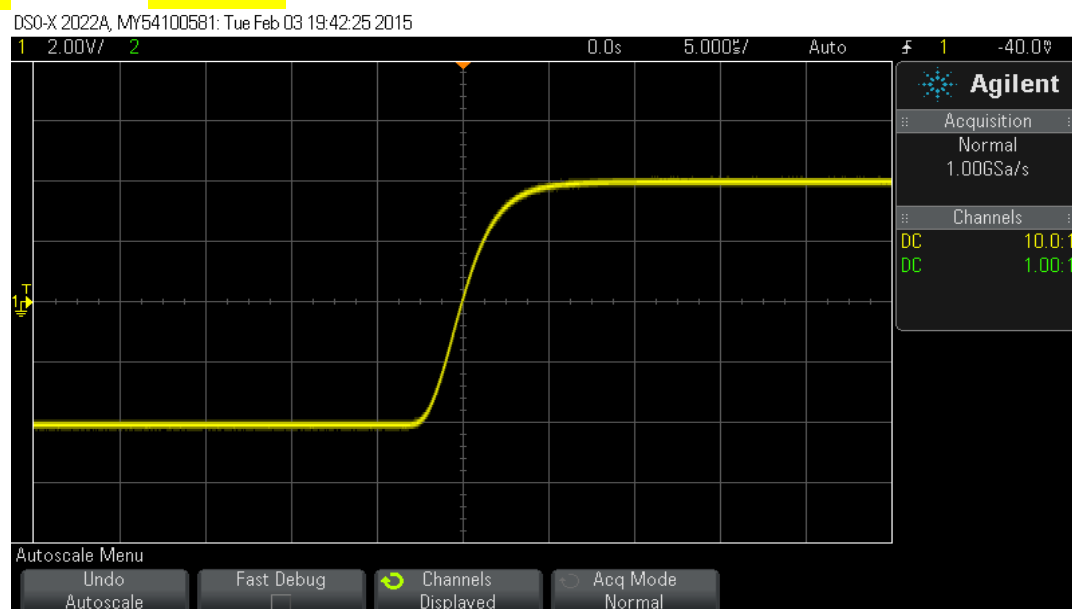
1f.

10 kHz



1g.

10 kHz



1h.

S/N measurements.

Ref. 2,83 V output (1W) in 8 Ohm. 1Khz.

Result :

S/N = 96,2 dB, unwtd , BW= 22Hz - 22 kHz.

S/N = 105,1 dB, A-wtd , 400 Hz.

1i. **$I_q = 1,22 \text{ A}$.****Max output Voltage=10,6 V RMS, beginning of clip on Oscilloscope. (14,0W).****Frequency respons (2,83V, 1W):**

frekv. Hz Volt dB

10
20
400
1 000
20 000
50 000
80 000
90 000
100 000
120 000**THD + Noise : 10 Hz - 300 kHz :**

frekv. Hz	2,83V out THD + N	1,00V out THD + N	8,00V out THD + N	10,00V out THD + N
20	0,0321%	0,0139%	0,1030%	0,1550%
40	0,0297%	0,0149%	0,1040%	0,1610%
63	0,0298%	0,0150%	0,1030%	0,1630%
125	0,0305%	0,0149%	0,1040%	0,1640%
400	0,0317%	0,0148%	0,1050%	0,1650%
1 000	0,0317%	0,0148%	0,1070%	0,1680%
5 000	0,0331%	0,0151%	0,1120%	0,1790%
10 000	0,0340%	0,0154%	0,1190%	0,2010%
20 000	0,0359%	0,0158%	0,1340%	0,2530%

2. Transistors : Q1 and Q2 shifted.

Q1= MJ15003 (nr3). $h_{FE}=64$ at 140mA.

Q2=Mj15003 (nr1). $h_{FE}=56$ at 140mA.

Q3=BD139c

Q8=BD140

Q4, Q5, Q6, Q7 = BC560.

R load = 8 Ohm.

2a. $I_q = 1$ A.

Max output Voltage=10,05 V RMS, beginning of clip on Oscilloscope. (12,6W).

Frequency respons (2,83V, 1W):

frekv. Hz	Volt	dB
10		-0,99
20		-0,27
400		0
1 000		0
20 000		-0,12
50 000		-0,77
80 000		-1,81
90 000		-2,29
100 000		-2,68
120 000		-3,48

THD + Noise : 10 Hz - 300 kHz :

frekv. Hz	2,83V out THD + N	1,00V out THD + N	8,00V out THD + N
20	0,0316%	0,0155%	0,1280%
40	0,0339%	0,0155%	0,1330%
63	0,0347%	0,0158%	0,1370%
125	0,0358%	0,0151%	0,1390%
400	0,0366%	0,0161%	0,1400%
1 000	0,0359%	0,0167%	0,1420%
5 000	0,0363%	0,0167%	0,1490%
10 000	0,0365%	0,0165%	0,1580%
20 000	0,0366%	0,0165%	0,1800%

2b.

max output. "clip". Positive side.

