



HI-FI VALVE AMPLIFIER

Symmetry type SN346

October 2009

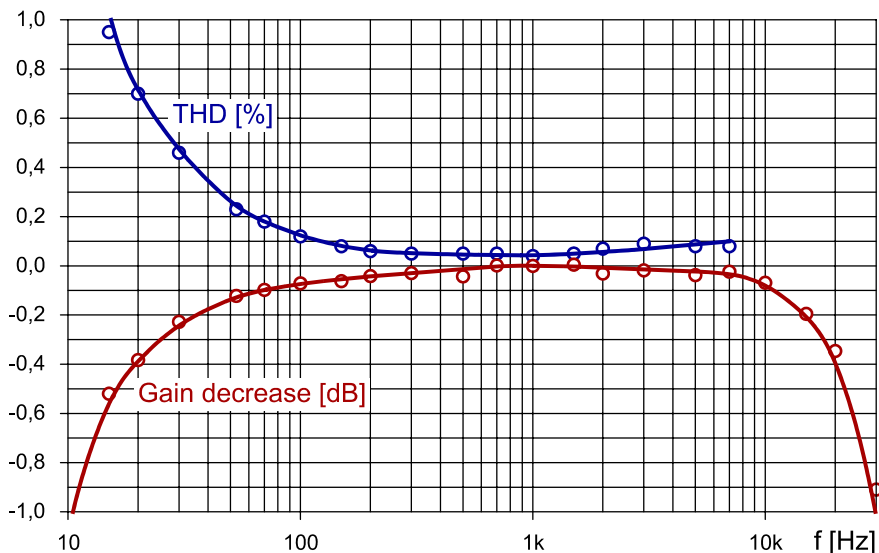


Features

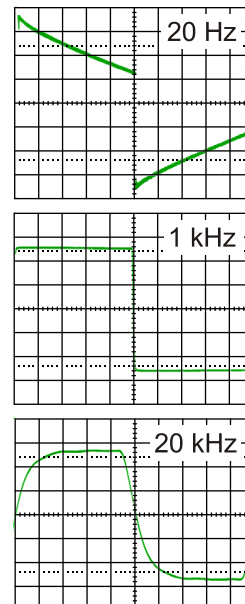
- *Output power:*
2 x 25 W.
- *Bandwidth (+0.0 dB to -0.5 dB):*
20 Hz to 20 kHz.
- *Intermodulation distortion and total harmonic distortion:*
typical 0.05 %, below 0.1 %.
- *Completely symmetric configuration in class A.*

Use

- *Hi-fi music reproduction.*
- *Hi-fi reference amplifier.*
- *Measurement.*



Typical measured channel performance: total harmonic distortion at 1 W and frequency response.



Amplifier output voltage with square wave input at 20 Hz, 1 kHz and 10 kHz. This shows the excellent phase and frequency response of the amplifier.

All amplifier stages are completely symmetrical and operate in class A. This significantly reduces distortion.

The output stage is a "parallel push-pull" with load between cathodes. Aided by paralleled high transconductance pentodes, such a configuration provides high load damping factor. The parallel valve connection acts to improve the symmetry by parameter value averaging.

The design ensures that perturbances, such as valve ageing or changing, have a minimum effect on the accuracy of operation.

Amplifier channels are completely isolated from each other, from the chassis and from the ground. Loudspeaker output connections come from output transformers, and each output is completely isolated from the rest of the circuitry.

Above solutions result in amplifier with insignificant sound degradation. Intermodulation and harmonic distortion are very low and the frequency response is excellent. Signal degradation is much lower than in the rest of the sound chain: microphones, loudspeakers and our rooms.

Specifications

Parameter	Conditions	Value
Output power	IMD and THD to 1 %, 150 Hz to 5 kHz	2 x 25 W
Bandwidth	+0.0 dB to -0.5 dB	20 Hz to 20 kHz
Intermodulation distortion	1 W, 150 Hz to 5 kHz	typical 0.05 %, less than 0.1 %
Total harmonic distortion		
Damping factor	20 Hz to 20 kHz, using new valves	above 7.0
Dynamic range		76 dB
Input sensitivity	25 W, sinusoid	about 0.7 V RMS
Input impedance		ca 50 kΩ ca 200 pF
Impedance between the input shield and the chassis		4,7 MΩ 100 nF
Crosstalk between channels	1 kHz	less than -60 dB
	up to 20 kHz	less than -36 dB
Crosstalk between inputs	1 kHz	less than -103 dB
	up to 20 kHz	less than -96 dB

- Loudspeaker impedance: 4 Ω or 8 Ω (switch selectable).
- Controls: on-off switch, input selector (3 inputs), sound level, balance (± 3 dB), loudspeaker impedance.
- "THD" indicator lights at the power above ca 18 W, which corresponds to the distortion exceeding 0.5 %.
- All stages are completely symmetrical and in class A.
- Without "global" feedback which improve transient reproduction.

- Power supply: nominal 230 V, recommended 220 V to 240 V, 50 Hz, about 350 W, about 1,5 A, fuse 2 A T.
- Operating ambient temperature: -40 to +40 °C.
- The warmest spot on the housing surface: up to 110 °C.
- Dimensions: 255 (W) x 220 (H) x 450 (D) mm.
- Weight: 18.4 kg.
- Maintenance: switch off and cool down, then wipe with dry cloth.

GK 090818, 090821, 091011