

# Foglia

*solid state audio line preamplifier and headphone amplifier module with supply regulators onboard*

FOGLIA is an high performances audio line amplifier module. The presence of local negative feedback and very high current polarization in each stage, reduces its global negative feedback and increase its open bandwidth doing a low T.I.M. (Transient Intermodulation Distorsion). FOGLIA module uses discrete bjt devices, runs on generous class A operation and has a minimalist fully symmetrical topology in order to obtain a neutral but kindly sound. Moreover FOGLIA has only 3 bjts on its signal path. Reducing the number of the devices in its circuit design, the FOGLIA signal path is very short giving a very good sound at low price.

FOGLIA's has been designed in order to prevent the bandwidth reduction that the connection of a potentiometer gives on preamplification circuits. FOGLIA's bandwidth is reduced until about 200Khz minimum (from 5.4 Hz to 210 khz, +/- 3dB) with a 10 kohm potentiometer.

Generally, in an audio preamplifier its bandwith changes with the spin of its potenziometer axis and often this bandwith is very reduced for some angles, FOGLIA is designed for having an high minimum Bandwith that varies in the range 200Khz-800Khz, that's, in any way, a very good value for an audio preamplifier.

The power supply regulator inside FOGLIA line amplifier module uses discrete bjt devices and has minimalyst topology. Moreover, inside this regulator there is a soft start circuit to reduce to zero supply on-transients so it's possible to avoid relay at preamp section output, reducing the signal path and eliminate ectromechanical parts.

Combining two FOGLIA with a very good dual 10k logarithmic potentiometer, a signal level rotative switch and the suggested or dedicated power supply, it's possible to realize, with a simple schematic, a complete high performances hi-fi line stereo preamplifier.

Regarding **FOGLIA kitset**, is facilitated its construction work for the low number of its devices and for no calibration required (any trimmer is absent in the circuit)

Moreover, FOGLIA module and its dedicated power supply module fits the **ezchassis** of

design **build listen ltd** (NZ) <http://www.designbuildlisten.com/> to facilitate assembly and for having a very nice aesthetical result. There are detailed mounting instructions into the FOGLIA user construction manual for a quikly work.

## application

- hi-fi audio consumer line preamplifier.
- DIY audio preamplifier.

## features

### **amplifier section**

- all discrete devices .
- fully class A design.
- fully symmetrical topology.
- Medium-low global negative feedback design: 52dB.
- global negative feedback re-settable by two fixed resistor from 32dB until 65dB
- only three active devices in the signal path.
- low cost.
- very low noise.
- high slew rate.
- very high bandwidth.
- high current output for driving low load (75 ohm).
- ground star topology.
- drive high capacitive load (<1uF).
- high quality active and passive devices (no electrolytic capacitor in the signal path)
- servo integrator for running with zero DC output voltage without output capacitor.
- without capacitors in the feedback network for a clear sound.
- easy connections.
- no trimmers, no calibrations required.

### **supply regulators section**

- soft start circuit to eliminate the supply on-transients at output.
- local negative feedback design, zero overall negative feedback.
- low cost.
- low noise (less than a typical IC regulator).
- very high peak current.
- high current output.

- ground star topology.
- no electronic protections (they aren't required for preamp section).
- easy connections.
- no trimmers and no calibrations.

## specification

### amplifier section

THD+noise:	0,007 % (1khz, 2kohm load, 1Vp-p out)
noise (A):	105 dB
slew rate:	25 V/uS
signal bandwidth:	from 5.4 Hz to 800 khz, +/- 3dB (with 50 ohm source)
input impedance:	about 47 kohm, 47pF
gain voltage:	14.8 dB
output impedance:	less than 14 ohm
power voltage:	bi-polar voltage, from +/- 10V min to +/- 15V max
max output voltage:	6Vp-p with +/- 10V power voltage ,11Vp-p at +/- 15V power volt.
max input voltage:	0,55V p-p with +/- 10V power voltage
power quiescent current:	+/- 51mA at rated power voltages range

### voltage regulators section

input power voltage:	DC unregulated bi-polar voltage, from +/- 18 to +/- 25V
dropout voltage:	3.3 VDC
output noise voltage:	80uV
output power voltage:	bipolar 14,7V , 5% at rated input voltages
nominal peak out current:	0.5A at the nominal input power voltage
max nominal out current:	200 mA at the nominal input power voltage (with heat sinks)
output impedance:	less than 0,28 ohm, 100mA out, 20V input
ripple rejection :	87 dB typical, 100Hz input voltage
electrical connections:	wire soldering holes
suggest power transformer:	12+12 VAC 4% secondary, 5VA power

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