

KRIGER

NEMESIS

UNIFIED
FOR V1 AND V2

DATASHEET

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PRODUCT DESCRIPTION

Nemesis is a full-analogic, linear and solid-state, high precision, high speed, high damping, high feedback and high efficiency class AB audio power amplifier, designed and produced in Italy.

Born from the research of the KRIEG Audio Department to create an amplifier without compromises and with an excellent, perfectly symmetrical, structure: the best electronic and audio performance, in a little board.

Its structure, perfectly symmetrical, is made up of 34 transistors, which grants:

- High precision and low fundamental, intermodulation and thermal (memory) distortion.
- High slew rate and precision on high frequencies.
- High damping factor and precision on low frequencies.
- Very low noise and high signal-to-noise ratio.
- Very low DC output offset.
- High bandwidth.
- High power supply rejection ratio.
- High common mode rejection ratio.
- Total invariability of performance as the load varies.
- Total thermal stability.
- Total high frequencies stability.
- Total stability on capacitive loads.
- Total invariability of bandwidth.
- High open loop gain.
- High efficiency.
- No need for quiescent current (bias) regulation.

All this thanks to its strictly corrective structure: without selecting any component, resulting in very low distortions, total immunity to thermal and voltage variations, total stability without output networks and same identical performance module by module.

NEMESIS IDEOLOGY

An audio amplifier is, ideally, a constant voltage generator. As such, it should have certain characteristics: amplify an input signal without modifying it, have zero output impedance and be constant under any conditions or load. The Nemesis offers all these properties, coming very close to an ideal voltage generator.

In the world of audio, high fidelity is not something subjective, but objective. High fidelity lies in being able to reproduce a song with the utmost precision, as it was recorded. The Nemesis, is a totally neutral amplifier, created for the purpose.

Nemesis is not only the Greek goddess of vengeance but, first of all, of compensation and balance.

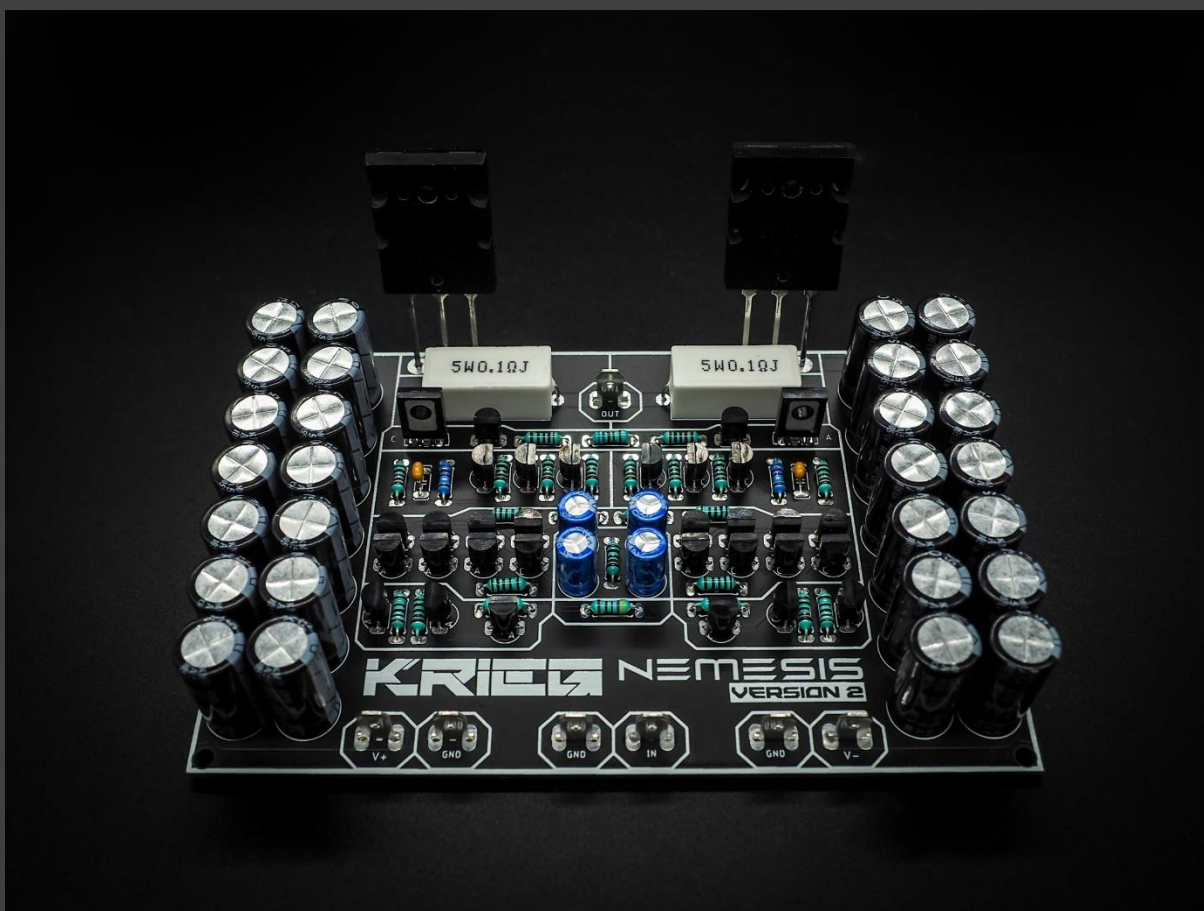
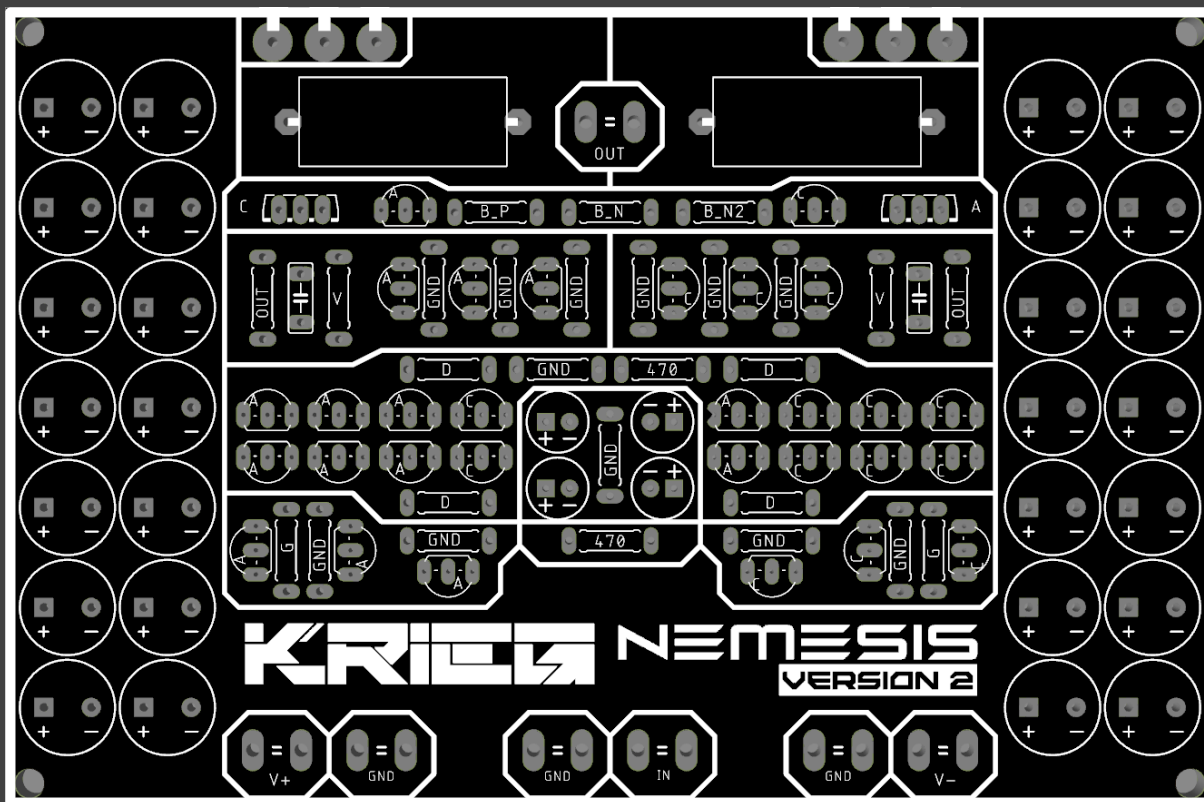
The basic idea is that every discrete component is imperfect, however well it can be done or its tolerances are low. If the discrete components were perfect, only one transistor would be enough to produce a totally precise power amplifier. Hence the Nemesis is born, a high precision, high speed and high efficiency class AB analog audio amplifier.

The final concept is easy: if you have to select components to reach a result, then with the slightest variation in temperature, voltage or other variables, the result itself will vary. In audio it is not so much achieving a low amount of distortion that is the problem, but also keeping it while running music, with variations of all genres. And this, an amplifier with few transistors simply cannot guarantee it.

WHAT'S NEW IN VERSION 2

The Nemesis VERSION 2 introduce a new method of controlling the current through the voltage amplifier stage: reducing that necessary and making it more constant. In addition, the capacitors for its own power supply are mounted directly on the board: thus eliminating the need for capacitors at the output of the power supply and reducing the overall size of the case and costs.

MODULE PRESENTATION



PERFORMANCE TABLES

GENERAL INFO

Name	Value
Amplifier Class	AB
Operation method	Single Ended*
Output medium power**	100 W
Output maximum power**	200 W
Minimum output load impedance	0.5 Ohm
Amplifier gain	+ 27 dB
Maximum efficiency	94 %
Standby power	3 W

*Single ended means that the load is connected between the output and the ground.

**Output power is calculated on amplifier SOA and with AES standard, the value is valid on all load impedances indifferently.

SUPPLY INFO

Name	Value
Power supply required	Dual voltage*
Minimum supply voltage	+ - 5 Vdc
Recommended supply voltage	+ - 30 Vdc
Maximum supply voltage	+ - 50 Vdc
Minimum recommended supply current	5 A

*Dual voltage means that the module needs positive voltage supply (V+ or VCC) and negative voltage supply (V- or VEE) with ground reference (0 or GND).

OUTPUT CURRENT SAFE OPERATING AREA

Name	Value
Nominal current for + - 10 Vdc	15 A
Nominal current for + - 30 Vdc	7 A
Nominal current for + - 50 Vdc	4 A

GENERAL PERFORMANCE

Name	Value
THD + N @ 1 kHz 8 Ohm 100 W	0.005 %
IMD THD 8 Ohm 100 W	0.007 %
Slew rate	60 V/uS
Damping factor @ 8 Ohm 60 Hz	4000
Input impedance	10 kOhm
Output impedance @ 8 Ohm 60 Hz	2 mOhm
Bandwidth (- 3 dB)	DC – 1 MHz
Bandwidth 20 Hz – 20 kHz max deviation	+– 0.01 dB
SNR (non A-weighted)	98 dB
SNR (A-weighted)	108 dB
CMRR @ 1 kHz	116 dB
PSRR @ 1 kHz	115 dB
Open loop gain	95 dB