High Gain Class A Amplifier

LC507 DATA SHEET

FEATURES

- **76 dB typical gain (open loop)**
- **1.0 to 3 VDC operating range**
- **frequency response 20 kHz (min)**
- **Total harmonic distortion 2%**

STANDARD PACKAGING

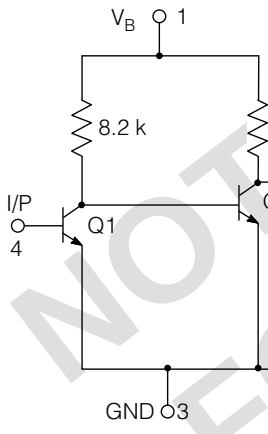
- 4 pin MICROpac
- 8 pin PLID

DESCRIPTION

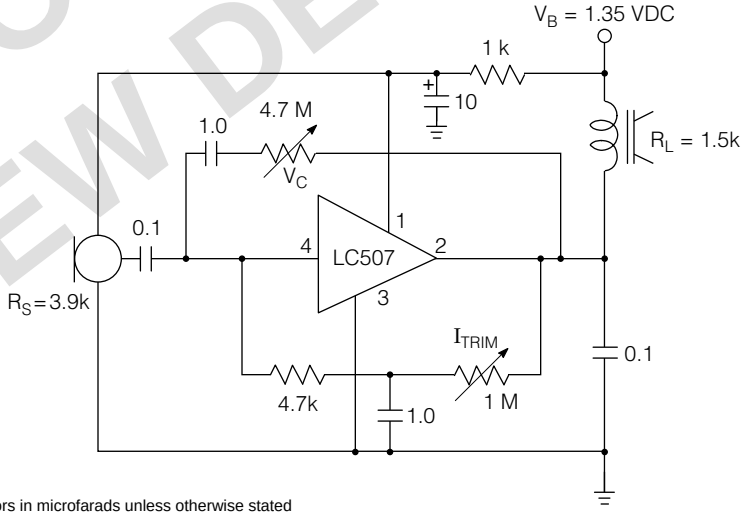
The LC507 is a low voltage, 3 stage, linear class A amplifier, available in a Gennum single-in-line 4 pin MICROpac. The LC507 features high gain, low current and a wide frequency response.

The simplicity of the design allows the LC507 to be used with a minimal amount of external components to produce low voltage miniature electronic devices.

The electrical and packaging specifications make the LC507 suitable as a pin for pin replacement for three transitor amplifiers such as the Philips OM 200 and Siemens TAA 141 .



FUNCTIONAL SCHEMATIC



All resistors in ohms, all capacitors in microfarads unless otherwise stated

TYPICAL HEARING AID CIRCUIT

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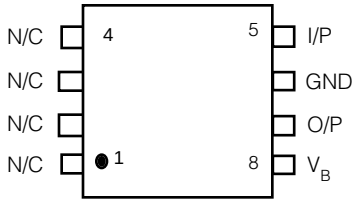
ABSOLUTE MAXIMUM RATINGS

PARAMETER	VALUE / UNITS
Supply Voltage	5 VDC
Power Dissipation	25 mW
Storage Temperature	-20 to + 80˚C
Operating Temperature	-20 to + 80˚C

CAUTION
CLASS 1 ESD SENSITIVITY

PIN CONNECTION

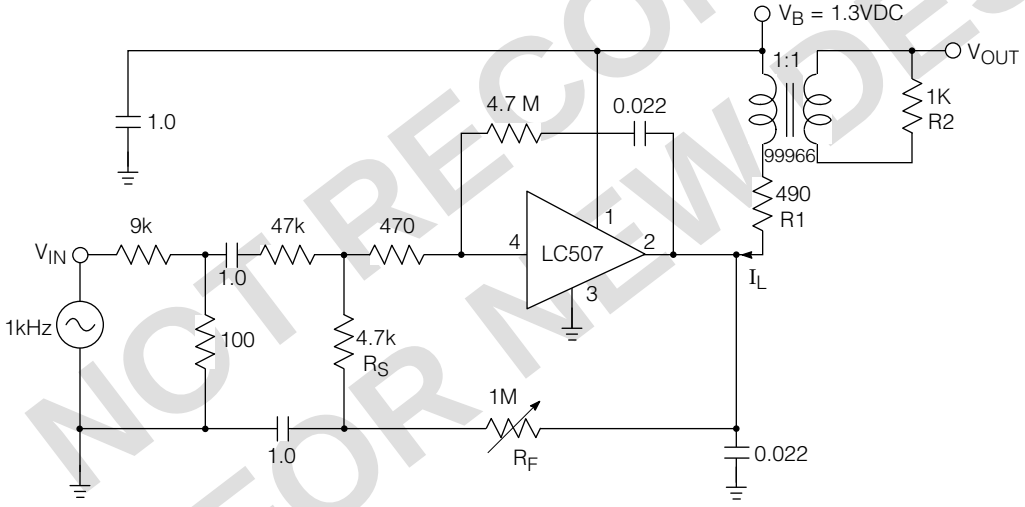


(In MICROpac pins 1 to 4 do not exist)

ELECTRICAL CHARACTERISTICS

Conditions: Supply Voltage 1.3 VDC, Transducer current I_L = 0.7 mA, Ambient temperature 25˚C

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNITS
Voltage Gain (closed loop)	A_{CL}	Output Level= 0.2 mW	56	58	60	dB
Total Harmonic Distortion	THD	Output Level= 0.2 mW	-	2.0	3.5	%
Total Current	I_{TOTAL}		-	1.0	1.2	mA
Frequency Response at -3 dB		High	-	20	-	kHz
	Low		-	0.2	-	kHz
Potentiometer Resistance		I_L = 0.7 mA	40	500	1000	kΩ



All external resistors in ohms, all capacitors in microfarads unless otherwise stated

Fig. 1 Test Circuit

DOCUMENT IDENTIFICATION

PRODUCT PROPOSAL
This data has been compiled for market investigation purposes only, and does not constitute an offer for sale.

ADVANCE INFORMATION NOTE
The product is in a development phase and specifications are subject to change without notice. Gennum reserves the right to remove the product at any time. Listing the product does not constitute an offer for sale.

PRELIMINARY DATA SHEET
The product is in a preproduction phase and specifications are subject to change without notice.

DATA SHEET
The product is in production. Gennum reserves the right to make changes at any time to improve reliability, function or design, in order to provide the best product possible.

REVISION NOTES
Packaging information correction