



### FEATURES

- operates over a supply range of 1.0 V to 3.0 V
- selectable class B or vari-bias class A operation
- feedback stabilized gain  $\leq 80$  dB
- high power output  $> 140$  dB SPL
- independent preamplifier and output modules
- minimum external parts count

### STANDARD PACKAGING

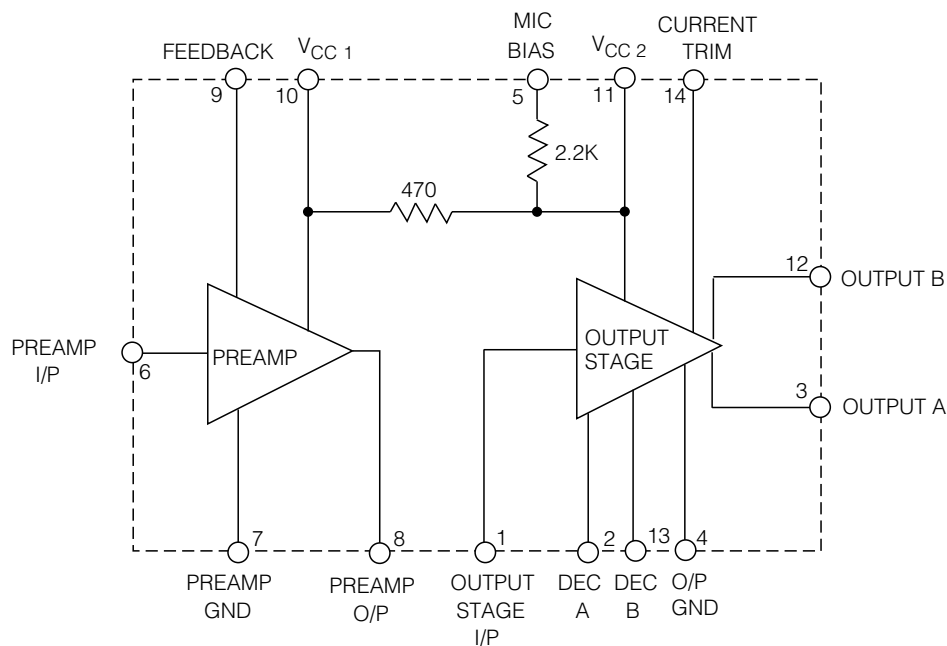
- 14 pin DIP
- 14 pin SOIC
- Chip (50 x 52 mils)

### DESCRIPTION

The LC552 is a versatile low voltage, high gain, high power output amplifier.

It features a preamplifier module with adjustable gain and a unique power amplifier module that can be operated either as a high power, high efficiency class B amplifier, with very low quiescent current consumption, or as a medium power "vari-bias" class A amplifier.

While designed specifically for use in body type hearing aids, the LC552 can be used in other applications where linear audio frequency amplification and frequency shaping is required.



All resistors in ohms, all capacitors in farads unless otherwise stated.

### BLOCK DIAGRAM

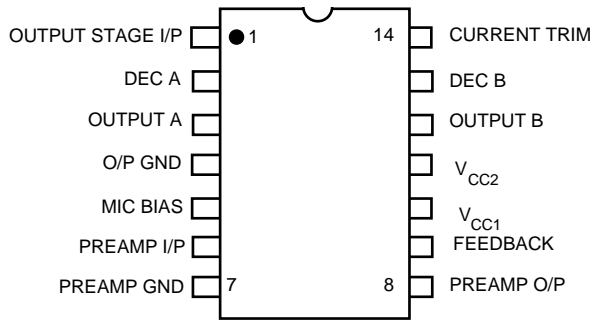
## ABSOLUTE MAXIMUM RATINGS

PARAMETER	VALUE / UNITS
Supply Voltage	3 V
Power Dissipation	200 mW
Operating Temperature	-10 to + 60 °C
Storage Temperature	-20 to + 70 °C

**CAUTION**  
CLASS 1 ESD SENSITIVITY



## PIN CONNECTION

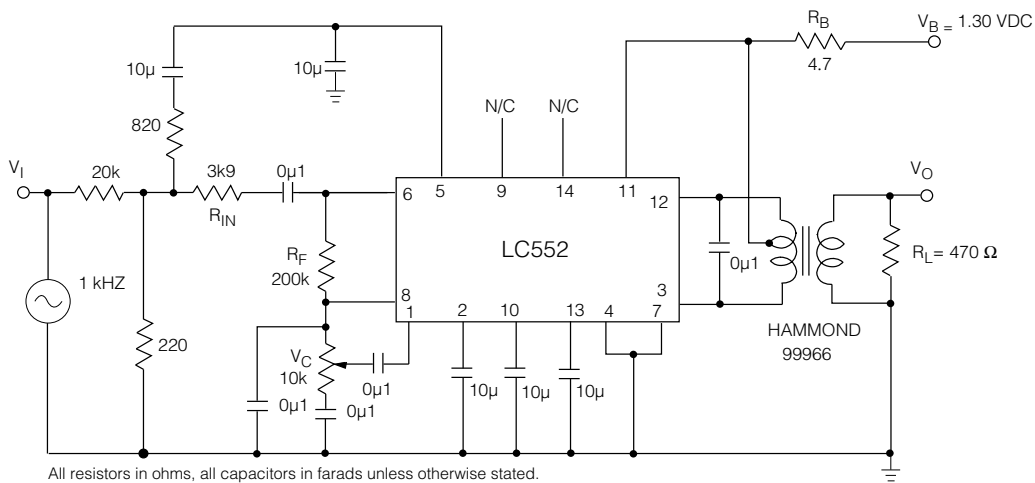


## ELECTRICAL CHARACTERISTICS

All parameters tested in Test Circuit Fig. 1.

Conditions: Supply voltage  $V_B = 1.3$  V DC, Temperature ambient = 25°C, Frequency = 1 kHz, Noise Filter Bandwidth at 12 dB/oct (0.2 to 10kHz)

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNITS
Gain	$A_V$	Output = 0.707 VRMS	72	75	78	dB
Total Current	$I_{TOT}$		-	0.77	1.2	mA
Total Harmonic Distortion & Noise	THD	Output = 0.707 VRMS	-	1.5	3.0	%
Input Referred Noise			-	0.9	2.5	$\mu$ V
Stable with Battery Resistance to			-	-	22	$\Omega$
Input Impedance of Output Amplifier			18	27	36	k $\Omega$
Frequency Response (-3 dB at 1 kHz)	Low		-	250	-	Hz
	High		-	12	-	kHz
Gain Dependence on $R_B$			-	0.02	-	dB / $\Omega$



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**NOTES:** 1. Test Circuit Amplifier Gain =  $20 \log_{10} (V_O / V_I) + 40$  dB

2. Preamp Gain =  $\frac{R_F}{R_{IN}}$  set at 35 dB

Fig. 1 Test Circuit

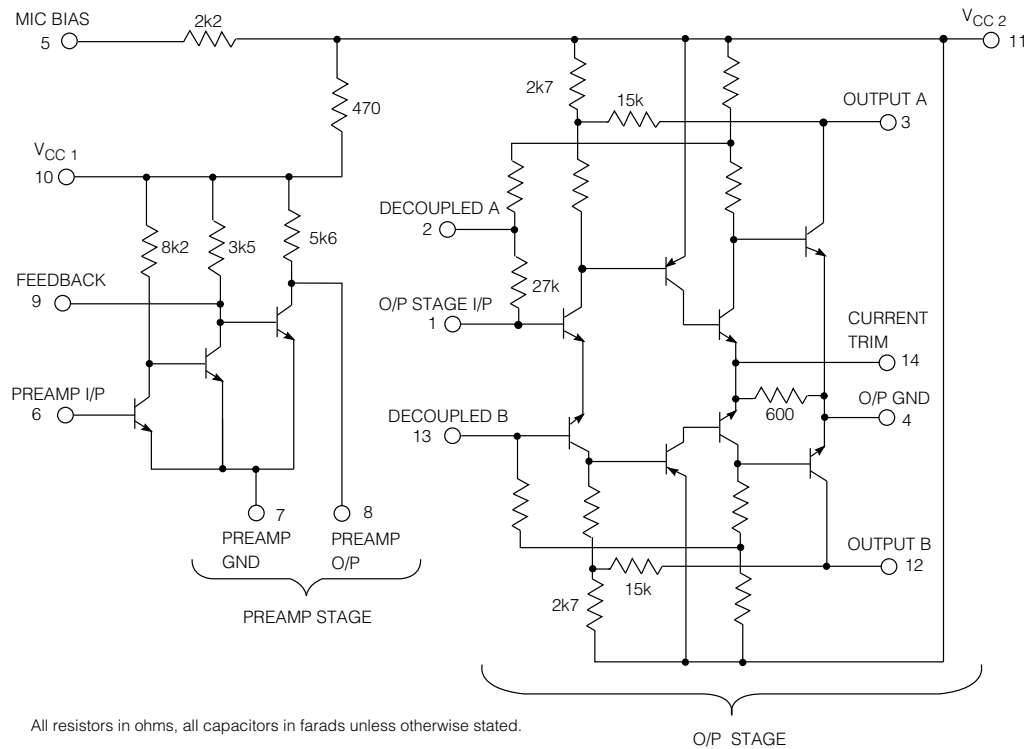


Fig. 2 Functional Schematic Diagram

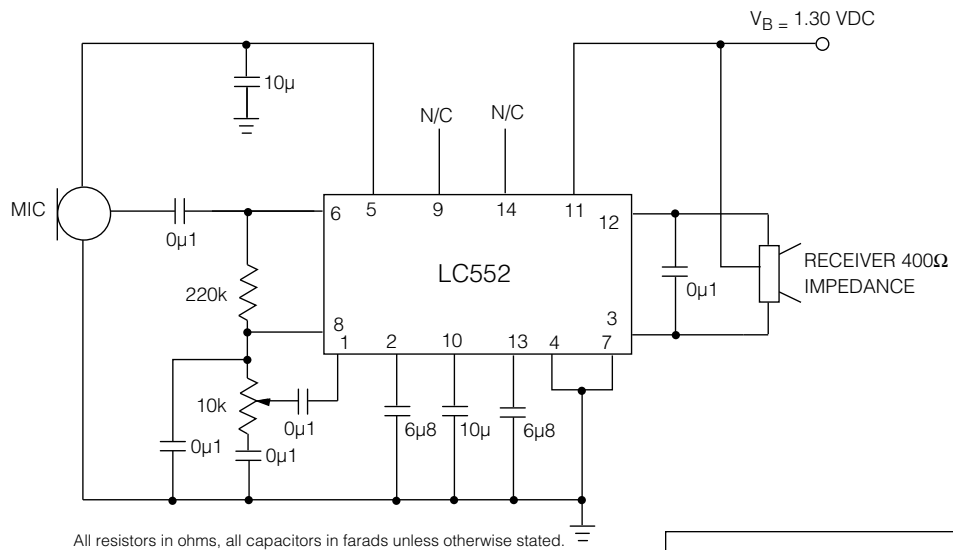


Fig. 3 Typical Hearing Aid Circuit

**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**

This product is in 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:** SOIC package added.