



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 ≤ 80 dB
- high power output > 140 dB SPL
- independent preamplifier and output modules
- minimum external parts count

STANDARD PACKAGING

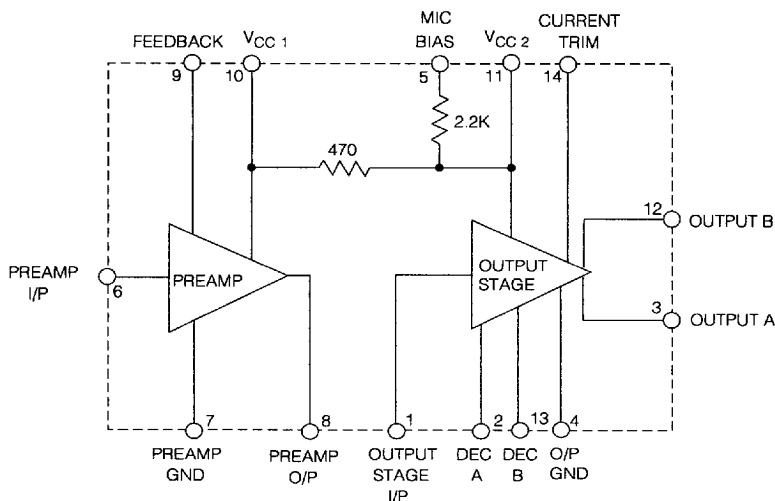
- 14 pin DIP
- 14 pin SOIC
- Chip (50 x 52 mils)

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.



BLOCK DIAGRAM

ABSOLUTE MAXIMUM RATINGS

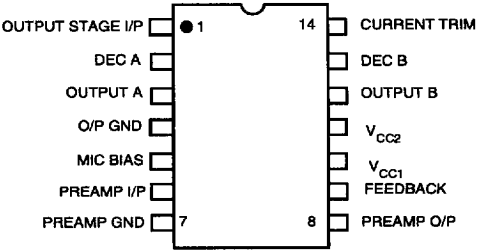
PARAMETER	VALUE / UNITS
Supply Voltage	3 V
Power Dissipation	200 mW
Operating Temperature	-10 to +60 °C
Storage Temperature	-20 to +70 °C

CAUTION

CLASS 1 ESD SENSITIVITY



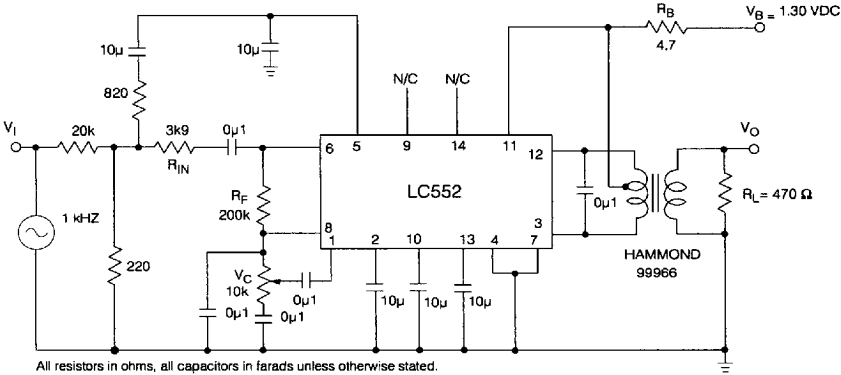
PIN CONNECTION



ELECTRICAL CHARACTERISTICS

All parameters tested in Test Circuit Fig. 1.
Conditions: Supply voltage $V_B = 1.3\text{ V DC}$, 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	μV
Stable with Battery Resistance to			-	-	22	Ω
Input Impedance of Output Amplifier			18	27	36	k Ω
Frequency Response (-3 dB at 1 kHz)		Low	-	250	-	Hz
		High	-	12	-	kHz
Gain Dependence on R_B			-	0.02	-	dB / Ω



- All resistors in ohms, all capacitors in farads unless otherwise stated.
- NOTES: 1. Test Circuit Amplifier Gain = $20 \text{ Log}_{10} (V_O / V_i) + 40 \text{ dB}$
2. Preamp Gain = $\frac{R_F}{R_{IN}}$ set at 35 dB

Fig. 1 Test Circuit

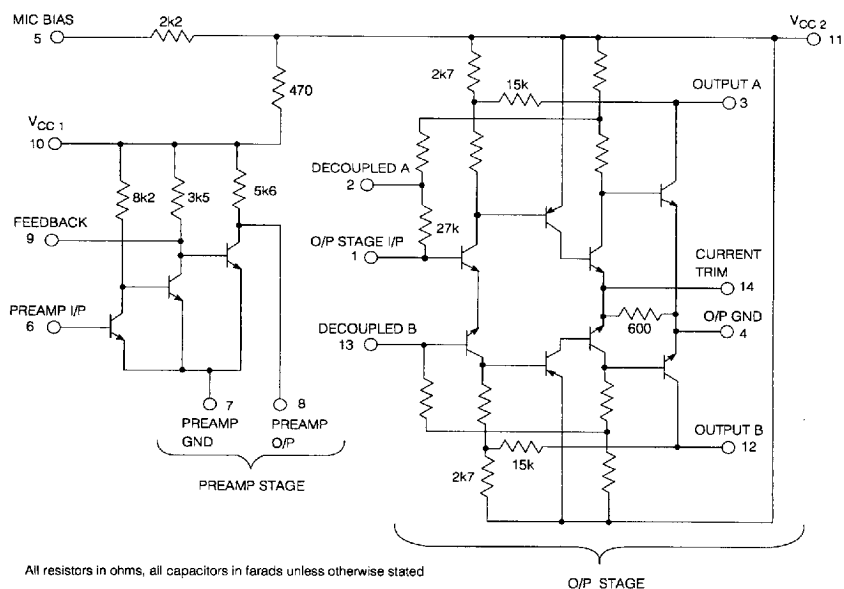


Fig. 2 Functional Schematic Diagram

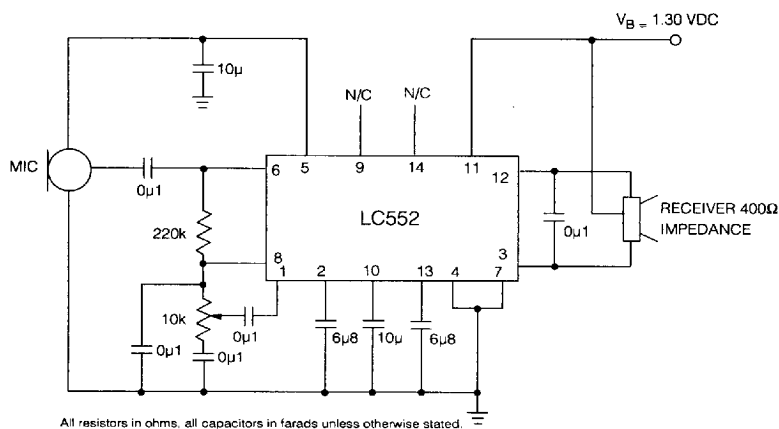


Fig. 3 Typical Hearing Aid Circuit

REVISION NOTES: SOIC package added.

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