

**FEATURES**

- amplifier current typically 53  $\mu$ A
- transducer current typically 210  $\mu$ A
- Schottky diodes provide peak limiting
- low parts count
- gain 74dB typically with 1.3 V supply

**STANDARD PACKAGING**

- 8 Pin PLID<sup>®</sup>
- chip ( 56 x 55 mils)

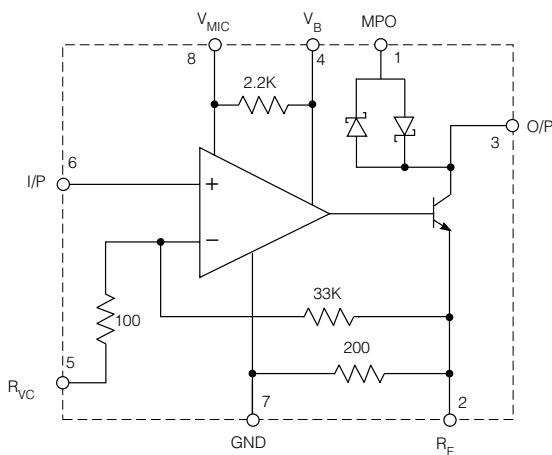
**DESCRIPTION**

The LT505 is a low current, low voltage monolithic integrated circuit amplifier. It is comprised of an operational amplifier driving a single transistor class A output stage with open collector. Also included is a pair of complementary Schottky diodes which, when shunted across the load, provide the capability for symmetrical peak clipping.

The input stage is biased by an external 200 k $\Omega$  resistor. It is important that this resistor be  $\pm$ 1% tolerance for optimum performance. An internal negative feedback loop ensures a stable operating point for the output stage over the designed operating voltage. Because of the lowered idle current, trimming the output current with the use of a single external resistor is not recommended for the LT505.

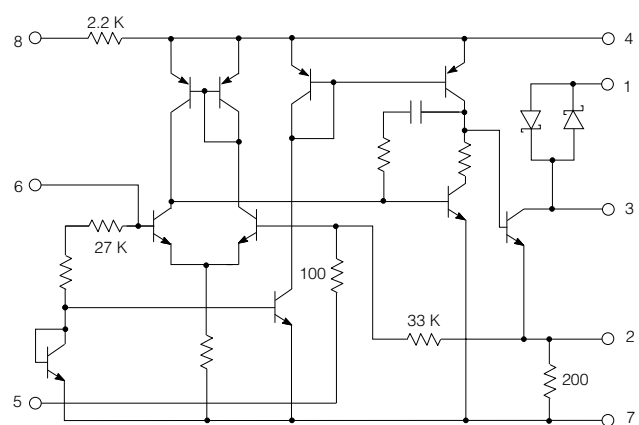
The typical gain for this IC is 74dB. Due to low power consumption this part is the perfect choice for the output stage of class A hearing instruments.

**BLOCK DIAGRAM**



All resistors in ohms, all capacitors in  $\mu$ F unless otherwise stated

**EQUIVALENT CIRCUIT**



U.S. Patent No. 4,034,306

Patented in other countries

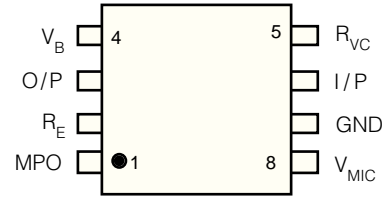
## ABSOLUTE MAXIMUM RATINGS

PARAMETER	VALUE/UNITS
Supply Voltage	3 V DC
Power Dissipation	25 mW
Operating Temperature Range	-10°C to 40° C

**CAUTION**  
CLASS 1 ESD SENSITIVITY



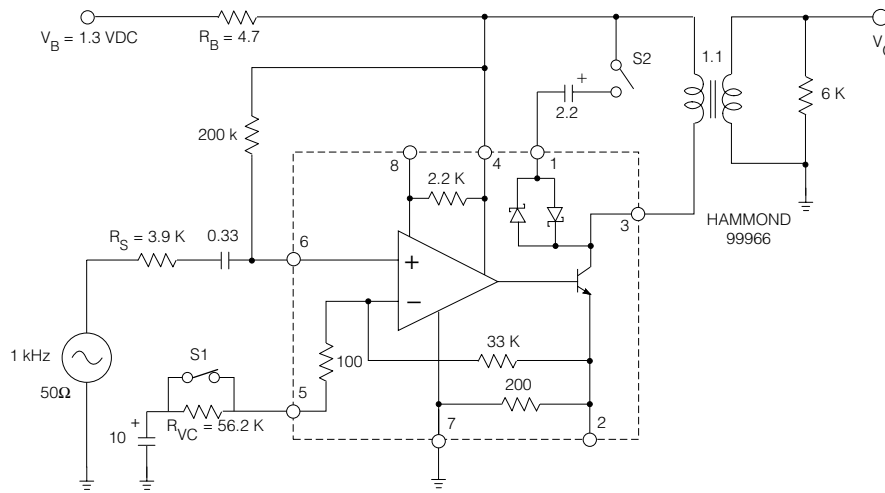
## PIN CONNECTION



## ELECTRICAL CHARACTERISTICS

All switches remain as shown in test circuit unless stated in conditions column. Conditions :  $V_{CC} = 1.30$  VDC , temperature 25° C

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNITS
Gain		$V_{OUT} = 200$ mV <sub>RMS</sub>	70	74	78	dB
Total Harmonic Dist.		$V_{OUT} = 200$ mV <sub>RMS</sub>	-	2.0	5.0	%
Amplifier Current	$I_A$		44	53	62	μA
Transducer Current	$I_L$		130	210	260	μA
Total Current	$I_A + I_L$		174	263	322	μA
Input Referred Noise			-	1.4	2.2	μV <sub>RMS</sub>
Volume Control Range		$R_{VC} = 0$ to 56.2 kΩ (S1 -ON/OFF)	36	47	-	dB
Battery Resist.Stability		$R_B = 22$ Ω	22	-	-	Ω
Input Impedance (Pin 6)			-	15	-	kΩ
Maximum Output		$V_{IN} = 0.5$ mV <sub>RMS</sub> (S2 - closed)	0.165	0.240	0.310	V <sub>RMS</sub>



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

Fig. 1 Test Circuit

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### DOCUMENT IDENTIFICATION: 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:

Changes to standard packaging information.