General Description

The 8002 is an audio power amplifier primarily designed for demanding applications in low-power portable systems. It is capable of delivering 3 watts of continuous average power to an 3Ω BTL load with less than 10% distortion (THD) from a 5VDC power supply. the 8002 does not require output coupling capacitors or bootstrap capacitors, and therefore is ideally suited for mobile phone and other low voltage applications where minimal power consumption is a primary requirement.the 8002 features a low-power consumption shutdown mode.the 8002 contains advanced pop & click circuitry which eliminates noise which would otherwise occur during turn-on and turn-off transitions. The 8002 is unity-gain stable and can be configured by external gain-setting resistors

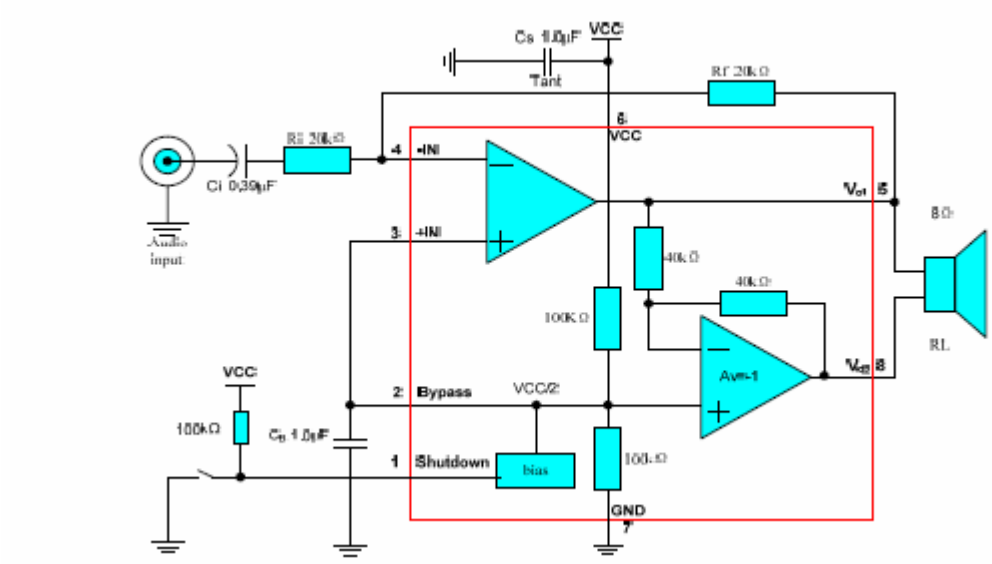
Features

Power Output at 5.0V, 10% THD+N, 3Ω 3W (typ)
Power Output at 5.0V,10% THD+N,4Ω 2.65W (typ)
Power Output at 5.0V,10% THD+N,8Ω 1.8W (typ)
Shutdown Current 0.6μA (typ)
Available in space-saving packages: SOP
Improved pop & click circuitry eliminates noise during turn-on and turn-off transitions
2.20- 5.5V operation
No output coupling capacitors, snubber networks or bootstrap capacitors required
Unity-gain stable
External gain configuration capability

Applications

Portable computers
Desktop computers
Low voltage audio systems

Typical Application Circuit



ypical Audio Amplifier Application Circuit

Absolute Maximum Ratings

Chip Limit Parameter Table

Name	Parameter
Supply Voltage	6.0V
Storage Temperature	−65°C to +150°C
Input Voltage	−0.3V to VDD +0.3V
ESD Susceptibility	2000V
Junction Temperature	150°C
Thermal Resistance	
θJA	210°C/W
θJC	56°C/W

WARNING: In addition to limits or any other conditions, the chip may be damaged.

Electrical Characteristics

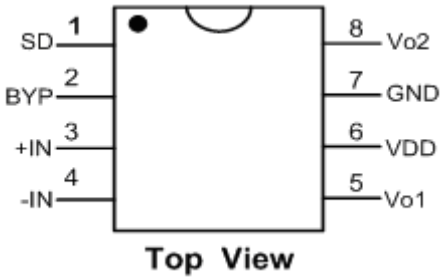
The following specifications apply for V_{DD}=5V and R_L=8Ω, unless otherwise specified. Limits apply for TA = 25°C.

Electrical Characteristics

Symbol	Parameter	Conditions	8002		Units (Limits)
			Typical	Max	
IDD	Quiescent Power Supply Current	V_{IN}=0V,I_O=0A, No load	6．5	10	mA
		V_{IN}=0V,I_O=0A, 8load	7．0	10	mA
IOFF	Shutdown Current		0．8	2	uA
VOS	Outpt Offset Voltage		5．7	30	mV
RO	Resistor Output		8．5	10	KΩ
PO	Output Power,3Ω Load	THD≤1%,f=1KHz	2．3		W
	Output Power,4Ω Load	THD≤1%,f=1KHz	2		
	Output Power,8Ω Load	THD≤1%,f=1KHz	1.3		
	Output Power,3Ω Load	THD+N≤10%,f=1KHz	3		W
	Output Power,4Ω Load	THD+N≤10%,f=1KHz	2．56		
	Output Power,8Ω Load	THD+N≤10%,f=1KHz	1．8		
TD	Wake-up time		100		mS
THD+N	TotalHarmonic Distortion+Noise	20Hz ≤ f ≤ 20kHz, A_{VD} = 2 R_L = 8Ω, P_O= 1W	0.2		%
PSRR	Power Supply Rejection Ratio	V_{ripple}=200mV sine P-P Input terminated With 10Ω	63(f=217Hz)67(f=1KHz)	60 (min)	dB

Pin Configuration

Pin Layout



SOP Package Pin Distribution

Pin Discription

Tabl3. Pin Disnription

Pin NO.	**Pin Name**	**Description**
1	SD	The device enters in shutdown mode when a high level is applied on this pin
2	BYP	Bypass capacitor pin which provides the common mode voltage
3	+IN	Positive input of the first amplifier, receives the common mode voltage
4	-IN	Negative input of the first amplifier, receives the audio input signal
5	Vo1	Negative output
6	VDD	Analog VDD input supply.
7	GND	Ground connection for circuitry.
8	Vo2	Positive output