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## Dual 105mW Headphone Amplifier

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### Features

- SOP surface mount packaging
- Switch on/off click suppression
- Excellent power supply ripple rejection
- Unity-gain stable
- Minimum external components

### Applications

- Headphone Amplifier
- Personal Computers
- Portable electronic devices

### Description

The CO4808 is a dual audio power amplifier capable of delivering 105mW per channel of continuous average power into a 16 $\Omega$  load with 0.1% (THD+N) from a 5V power supply.

Boomer audio power amplifiers were designed specifically to provide high quality output power with a minimal amount of external components using surface mount packaging. Since the CO4808 does not require bootstrap capacitors or snubber networks, it is optimally suited for low-power portable systems.

The unity-gain stable CO4808 can be configured by external gain-setting resistors.

### Key Specifications

- THD+N at 1kHz at 105mW continuous average output power into 16 $\Omega$  0.1% (typ)
- THD+N at 1kHz at 70mW continuous average output power into 32 $\Omega$  0.1% (typ)
- Output power at 0.1% THD+N at 1kHz into 32 $\Omega$  70mW (typ)

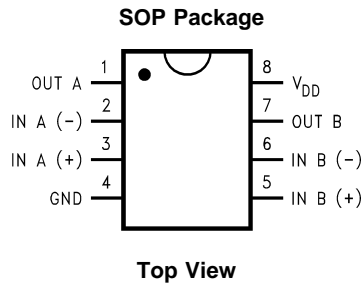
### Ordering Information

CO4808 X  
└── Blank: Sop-8 & Tube  
    A: Sop-8 & Taping

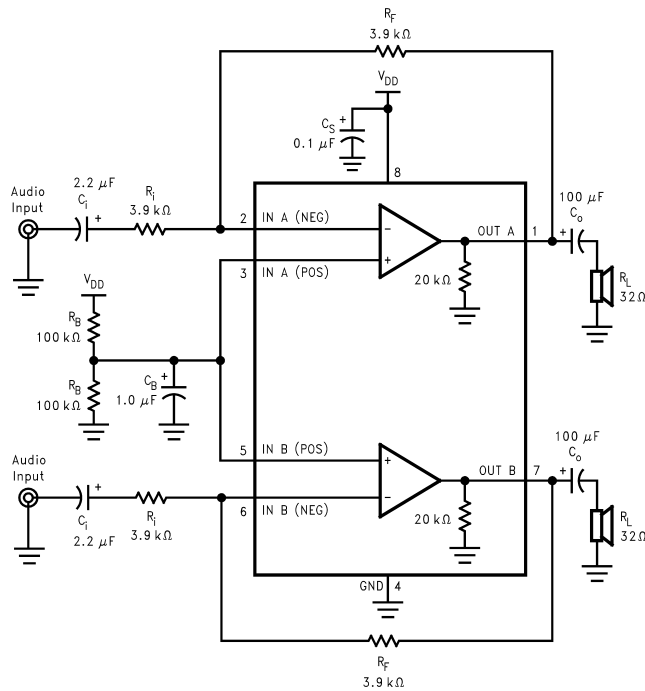
\* All specs and applications shown above subject to change without prior notice.

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### Connection Diagrams



### Typical Application



**FIGURE 1. Typical Audio Amplifier Application Circuit**

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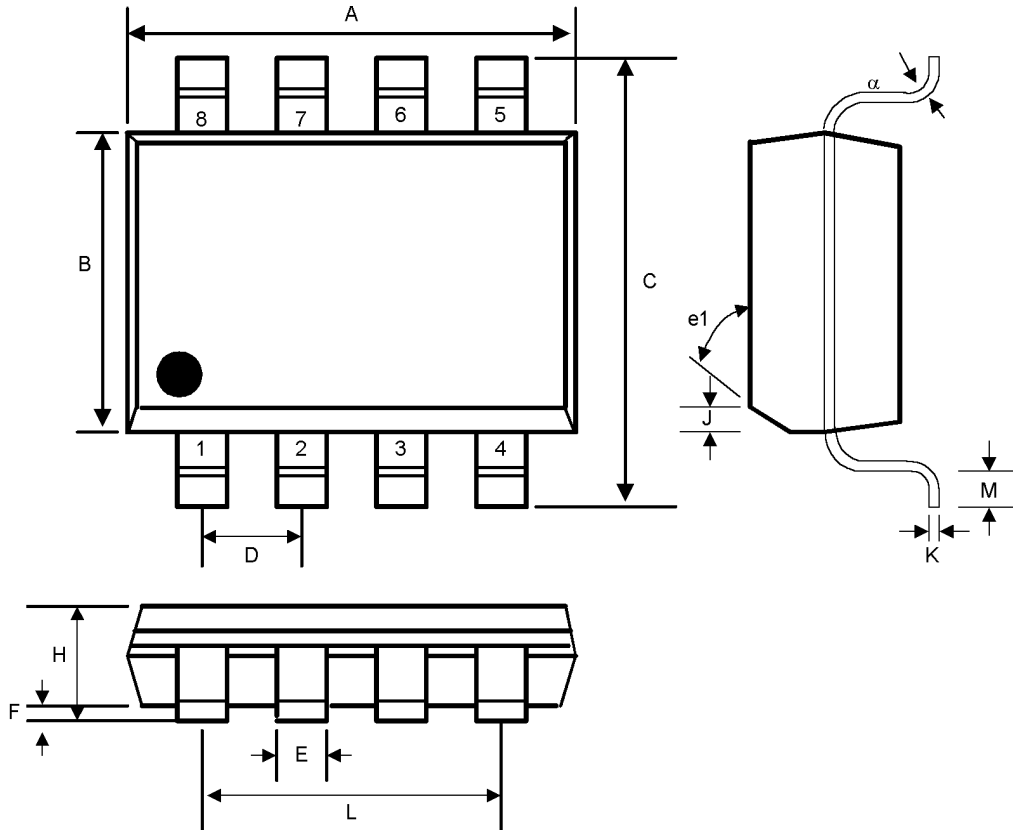
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### Electrical Character

V<sub>DD</sub>=5V, Temp=25 °C, f<sub>in</sub>=1KHz, R<sub>L</sub>=32 Ω, V<sub>in</sub>=1.4V

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
V <sub>DD</sub>	Supply Voltage		2.0		5.5	V
I <sub>DD</sub>	Supply Current	V <sub>IN</sub> =0V, I <sub>O</sub> =0A		1.2	3.0	mA
P <sub>tot</sub>	Total Power Dissipation	V <sub>IN</sub> =0V, I <sub>O</sub> =0A		6	16.5	mW
V <sub>OS</sub>	Input Offset Voltage	V <sub>IN</sub> =0V		10	50	mV
I <sub>bias</sub>	Input Bias Current			10		pA
V <sub>CM</sub>	Common Mode Voltage			0		V
				4.3		
G <sub>V</sub>	Open-Loop Voltage Gain	R <sub>L</sub> =5K		67		dB
I <sub>O</sub>	Max Output Current	THD+N<0.1%		70		mA
R <sub>O</sub>	Output Resistance			0.1		
V <sub>O</sub>	Output Swing	R <sub>L</sub> =32 Ω, 0.1% THD+N, Min		3		V
		R <sub>L</sub> =32 Ω, 0.1% THD+N, Max		4.7		
PSRR	Power Supply Rejection Ratio	C <sub>b</sub> =1.0 μF, V <sub>ripple</sub> =100mV <sub>pp</sub> , f=100Hz		89		dB
Crosstalk	Channel Separation	R <sub>L</sub> =32 Ω		75		dB
THD+N	Total Harmonic Distortion + Noise	f=1kHz				
		R <sub>L</sub> =16 Ω V <sub>O</sub> =3.5V <sub>pp</sub> (at 0dB)		0.05		%
				66		dB
		R <sub>L</sub> =32 Ω V <sub>O</sub> =3.5V <sub>pp</sub> (at 0dB)		0.05		%
				66		dB
SNR	Signal-to-Noise Ratio	V <sub>O</sub> =3.5V <sub>pp</sub> (at 0dB)		105		dB
f <sub>G</sub>	Unity Gain Frequency	Open Loop, R <sub>L</sub> =5k		5.5		MHz
P <sub>O</sub>	Output Power	THD+N=0.1%, f=1kHz				
		R <sub>L</sub> =16 Ω		105		mW
		R <sub>L</sub> =32 Ω		70	60	mW
		THD+N=10%, f=1kHz				
		R <sub>L</sub> =16 Ω		150		mW
		R <sub>L</sub> =32 Ω		90		mW
C <sub>I</sub>	Input Capacitance			3		pF
C <sub>L</sub>	Load Capacitance				200	pF
SR	Slew Rate	Unity Gain Inverting		3		V/μs

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**Dual 105mW Headphone Amplifier**
**Small Outline SOP-8**


SYMBOL	INCHES		MILLIMETERS		NOTES
	MIN	MAX	MIN	MAX	
A	0.188	0.197	4.80	5.00	-
B	0.149	0.158	3.80	4.00	-
C	0.228	0.244	5.80	6.20	-
D	0.050 BSC		1.27 BSC		-
E	0.013	0.020	0.33	0.51	-
F	0.004	0.010	0.10	0.25	-
H	0.053	0.069	1.35	1.75	-
J	0.011	0.019	0.28	0.48	-
K	0.007	0.010	0.19	0.25	-
M	0.016	0.050	0.40	1.27	-
L	0.150 REF		3.81 REF		-
e1	45°		45°		-
	0°	8°	0°	8°	-

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