

2.4W Audio Amplifier Stereo

General Description: CM8602B is an audio amplifier of class AB, when connected to a 5V supply, THD+N less than 10%, will deliver 2.4W to a 4 Ω load or 1.5W to a 8 Ω load . The CM8602B is unity-gain stable and can be configured by external gain-setting resistors, It features a low-power consumption shutdown mode with very low shutdown current, and thermal shutdown protection. It also utilizes circuitry to reduce “clicks and pops” during device turn-on and turn-off. It can also be applied in headphone function mode.

Features:

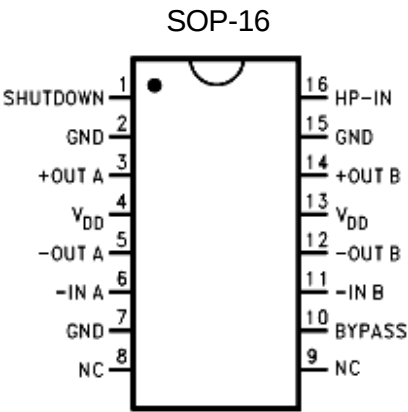
1. Power output at 5V supply, 4 Ω load, THD+N<10%, is 2.4W.
2. Power output at 5V supply, 8 Ω load, THD+N<10%, is 1.5W.
3. Operating supply voltage: VDD =2.2V~5.5V。
4. Typical shutdown current: 0.2uA。
5. Improved pop & click circuitry eliminates noise during turn-on and turn-off transitions
6. SOP-16 packages.

Electrical Characteristics:

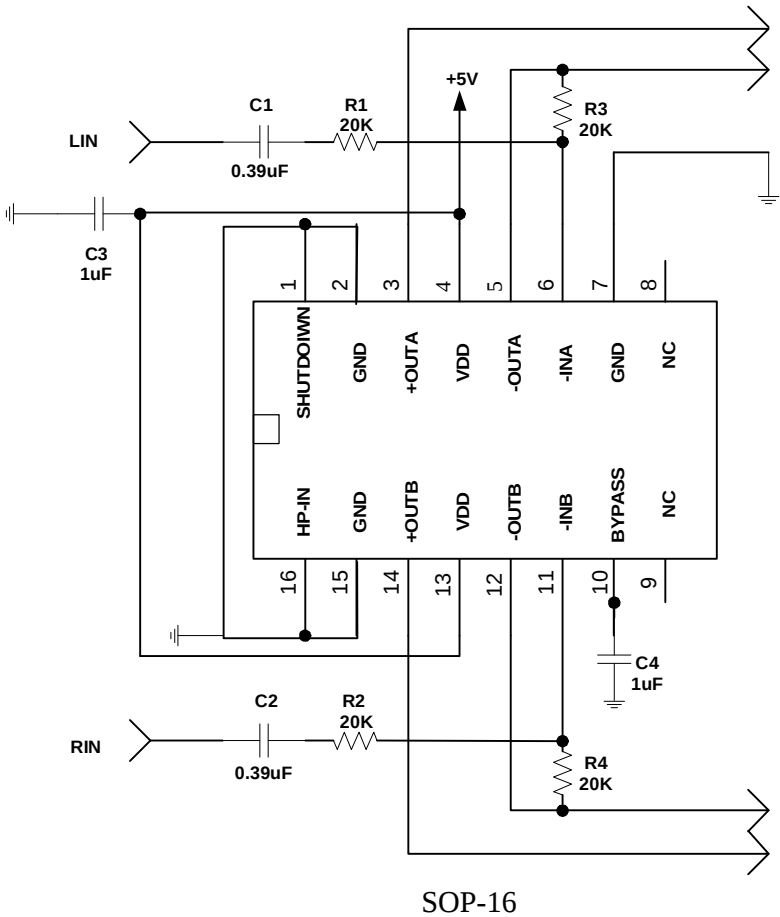
Symbol	Parameter	Conditions	Typical	Limit	Units
I _{DD}	Quiescent power supply current	V _{IN} =0V, I _O =0A, No Load	6.5	14	mA
I _{SD}	Shutdown current	V _{SD} = V _{DD}	0.2	4.0	μ A
V _{SDIH}	Shutdown voltage input high	V _{DD} =5V	1.5		V
V _{SDIL}	Shutdown voltage input low	V _{DD} =5V	1.3		V
V _{OS}	Output offset voltage	V _{IN} =0V, No Load	9	50	mV
P _O	Output power (8 Ω load)	THD+N=10%(max); f=1kHz	1.5	1.8	W
	Output power (4 Ω load)		2.4	2.7	
T _{WU}	Wake-up time		100		ms
THD+N	Total harmonic distortion + noise	P _O =0.5Wrms;f=1kHz	0.3	0.6	%

PSRR	Power supply rejection ratio	$V_{\text{ripple}}=200\text{mV}$	-63 (217Hz) -77 (1kHz)	-55	dB
X _{TALK}	Channel separation	f=1kHz, C _B =1.0uF	-65	-55	dB

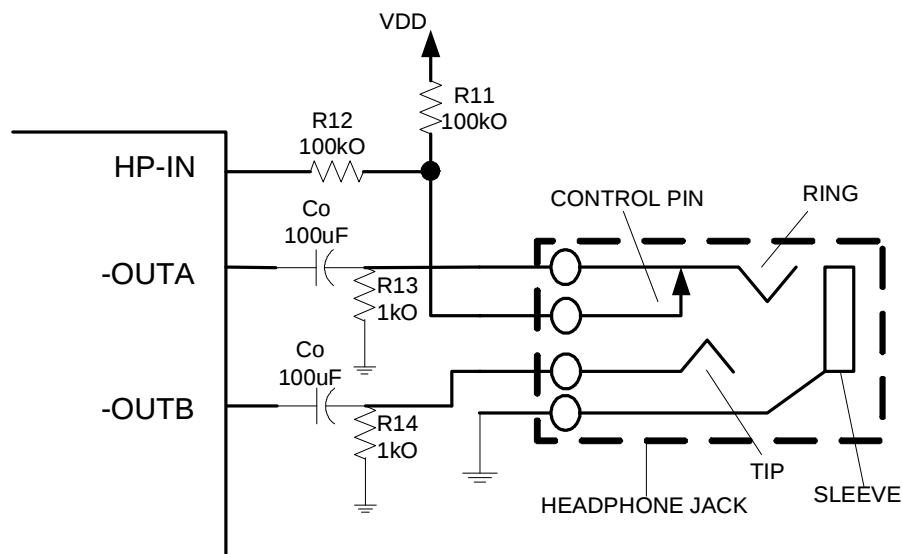
Packaging information:



Typical application:



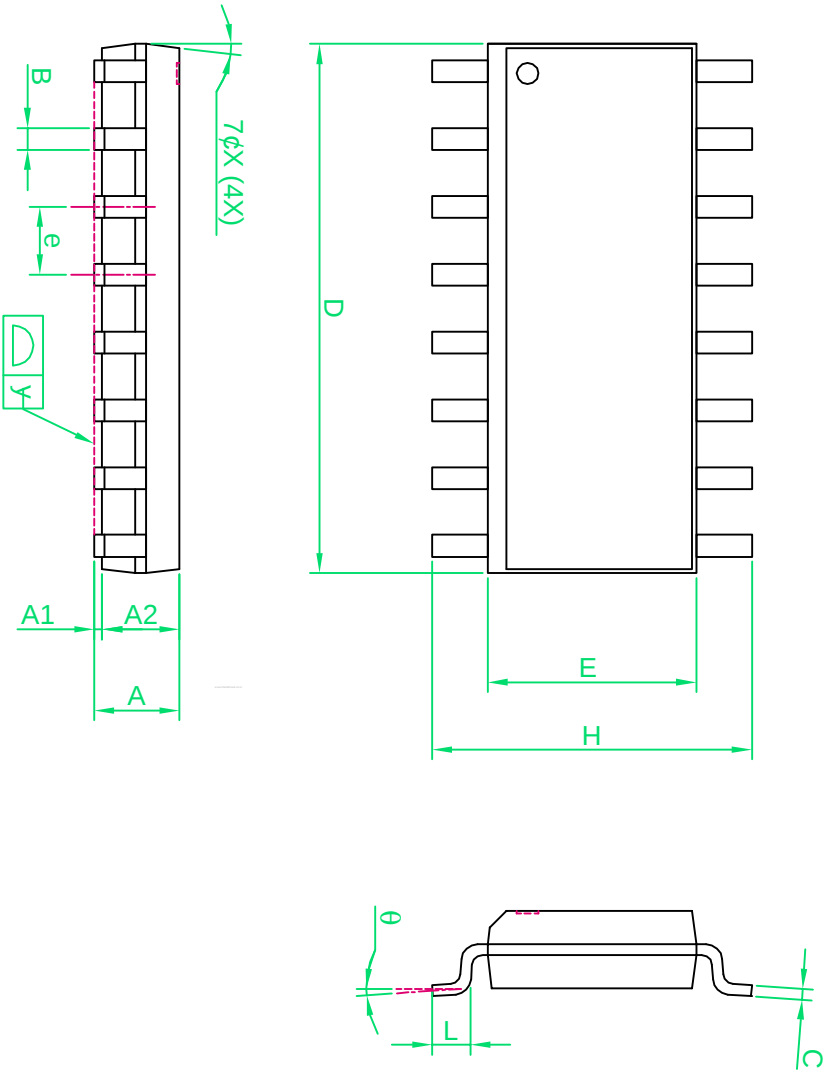
The schematic diagram illustrates the SOP-16 audio amplifier circuit. The central component is the SOP-16 chip, which is configured with various pins connected to power, ground, and signal lines. The input stage features a LIN input connected to the HP-IN pin (pin 16) through a 100K resistor and a 0.39uF capacitor (C1). The RIN input (pin 11) is connected to the -INB pin (pin 10) through a 20K resistor (R2) and a 0.39uF capacitor (C2). The output stage consists of two speakers connected to the +OUTA (pin 4) and -OUTA (pin 5) pins. The circuit also includes a control pin on the headphone jack connected to the HP-IN pin. Power supply connections are shown for VDD and ground, with decoupling capacitors (C3, C4) and resistors (R1, R3, R4) used for stability and noise reduction. The output filter capacitor (C0) is connected to the output of the amplifier and the common ground of the headphone jack.



If with no headphones connected to the headphone jack, there is a low voltage applied to HP-IN pin, this voltage placing the amplifier in bridged mode operation to drive the speakers. If connecting headphones to the headphone jack, the voltage applied to HP-IN pin is pulled up to VDD by resistor R11, this enables the headphone function, and mutes the bridged speakers.

Package Information

SOP-16



- NOTE
1. PACKAGE BODY SIZES EXCLUDE MOLD FLASH AND GATE BURRS
 2. DIMENSION L IS MEASURED IN GAGE PLANE
 3. TOLERANCE 0.10 mm UNLESS OTHERWISE SPECIFIED
 4. CONTROLLING DIMENSION IS MILLIMETER. CONVERTED INCH DIMENSIONS ARE NOT NECESSARILY EXACT.
 5. FOLLOWED FROM JEDEC MS-012

SYMBOLS	DIMENSIONS IN MILLIMETERS			DIMENSIONS IN INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	1.35	1.60	1.75	0.053	0.063	0.069
A1	0.10	—	0.25	0.004	—	0.010
A2	—	1.45	—	—	0.057	—
B	0.33	—	0.51	0.013	—	0.020
C	0.19	—	0.25	0.007	—	0.010
D	9.80	—	10.00	0.386	—	0.394
E	3.80	—	4.00	0.150	—	0.157
ε	—	1.27	—	—	0.050	—
H	5.80	—	6.20	0.228	—	0.244
L	0.40	—	1.27	0.016	—	0.050
y	—	—	0.10	—	—	0.004
θ	0°	—	8°	0°	—	8°