



Stereo Headphone Power Amplifier

Features

- Class AB amplifier
- High performance
- High signal-to-noise ratio
- Low distortion
- Low power consumption
- Large output voltage swing
- Excellent power supply ripple rejection
- 4.0V to 6.0V supply voltage range
- Surface-Mount package-SOP 8

Applications

- CD-ROM
- DVD-ROM
- CD-R/W
- MP3
- Portable Stereo

General Description

The G1301 is a stereo audio power amplifier housed in a 8-pin SOP package capable of delivering 60mW of continuous power per channel into 32Ω loads.

Amplifier gain is externally configured by means of two resistors per input channel.

The G1301 is a dual channel, low voltage, low power, high performance OP amps that can be designed into a wide range of headphone driving applications, at an economical price.

Ordering Information

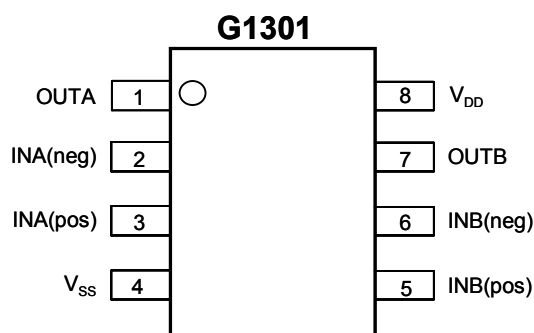
ORDER NUMBER	MARKING	TEMP. RANGE	PACKAGE
G1301P1X	G1301	0°C to +70°C	SOP- 8L

Note: X Specify the packing type

U: Tape & Reel

T: Tube

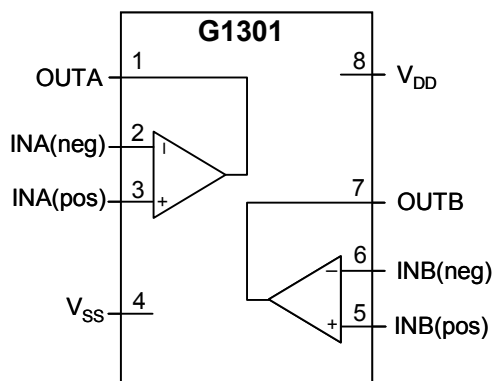
Pin Configuration



Pinning

SYMBOL	PIN	DESCRIPTION
OUTA	1	output A
INA(neg)	2	inverting input A
INA(pos)	3	non-inverting input A
V _{SS}	4	negative supply
INB(pos)	5	non-inverting input B
INB(neg)	6	inverting input B
OUTB	7	output B
V _{DD}	8	positive supply

Block Diagram



Absolute Maximum Ratings (Note1)

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_{DD}	Supply voltage		0	7.0	V
T_{stg}	Storage temperature		-65	+150	°C
T_{amb}	Operating ambient temperature		0	+70	°C
ESD	ESD voltage	HBM	-	2	KV

Notes:

1. Absolute Maximum Ratings are limits beyond which damage to the device may occur.

Thermal Characteristics

SYMBOL	PARAMETER	VALUE	UNIT
$R_{th\ j-a}$	Thermal resistance from junction to ambient in free air SOP-8L	210	°C/W

Test and Application Information

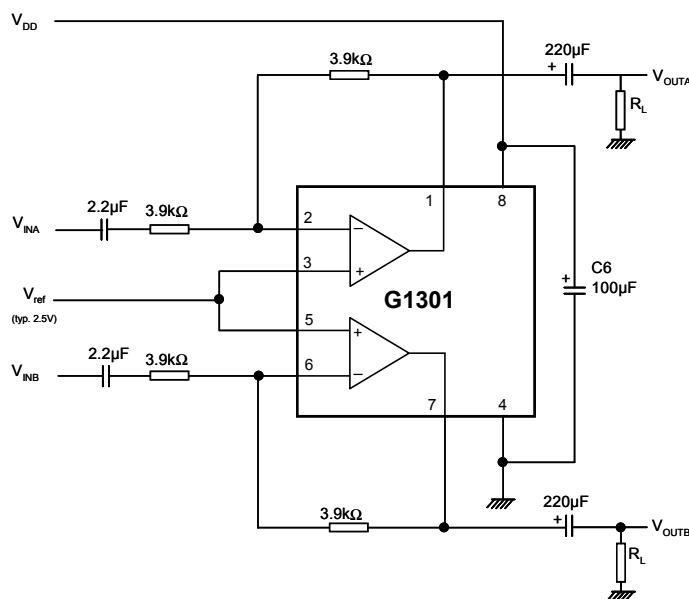
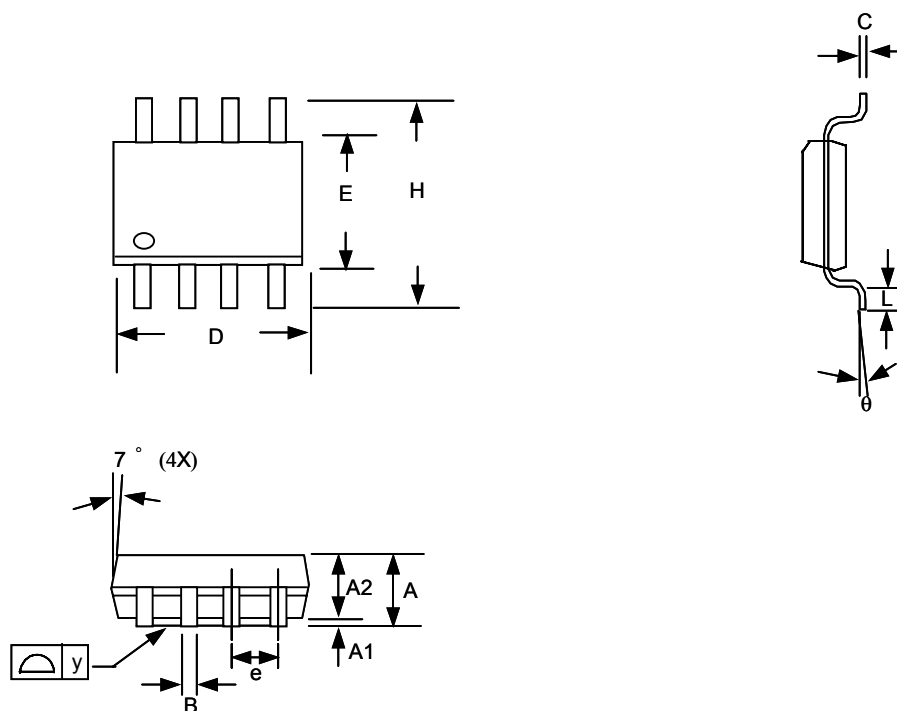


Fig.1 Measurement circuit for inverting application

**Electrical Characteristics** $V_{DD} = 5V$; $V_{SS} = 0V$; $T_{amb} = 25^{\circ}C$; $f_i = 1kHz$; $R_L = 32\Omega$; unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
Supplies						
V_{DD}	Single supply voltage, $V_{SS}=GND$		4.0	5.0	6.0	V
	Dual supply voltage		2.0	2.5	3.0	V
V_{SS}	Negative supply voltage		-2.0	-2.5	-3.0	V
I_{DD}	Supply current	no load	-	4.0	8.0	mA
P_{tot}	Total power dissipation	no load	-	20	40	mW
DC Characteristics						
$V_{I(OS)}$	Input offset voltage		-15	-	15	mV
V_{CM}	Common mode voltage		0	-	3.5	V
CMRR	Common-Mode Rejection Ratio	$V_{CM} = 0V$ to $5V$	-	40		dB
G_V	Open-loop voltage gain	$R_L = 5k\Omega$	50	65	-	dB
V_O	Output voltage swing	$R_L = 32\Omega$	1.0	-	4.0	V
		$R_L = 5k\Omega$	0.1	-	4.9	V
PSRR	Power supply rejection ratio	$f_i = 1kHz$; $V_{ripple(peak)} = 1V$	-	50	-	dB
α_{cs}	Channel separation		-	70	-	dB
AC Characteristics						
THD	Total harmonic distortion	$P_o=60mW$	-	< 0.3	-	%
GBP	Gain bandwidth Product	open-loop; $R_L = 5k\Omega$	-	1.0	-	MHz
P_O	Maximum output power	THD< 0.3%	-	60	-	mW
B	Power bandwidth	unity gain inverting	-	30	-	kHz

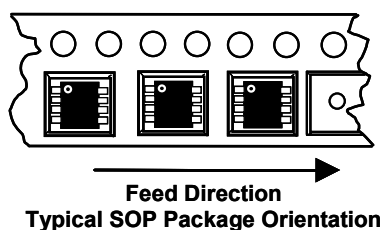
Package Information



1. Package body sizes exclude mold flash and gate burrs
2. Dimension L is measured in gage plane
3. Tolerance 0.10mm unless otherwise specified
4. Controlling dimension is millimeter converted inch dimensions are not necessarily exact.

SYMBOL	DIMENSION IN MM			DIMENSION IN INCH		
	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	4.80	----	5.00	0.189	----	0.197
E	3.80	----	4.00	0.150	----	0.157
e	----	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°

Taping Specification



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