



PA2308

LINEAR INTEGRATED CIRCUIT

CLASS AB STEREO HEADPHONE DRIVER

DESCRIPTION

As operating on a single 5V supply, the UTC **PA2308** is capable of delivering 280mW of max. Output power to an 8Ω load or 110mW to a 32Ω load with less than 10% (THD+N).

The device is very suitable for portable digital audio application.

FEATURES

* Output power less than 10% THD+N, $V_{DD}=5V(TYP)$

--280mW/CH (typical) into a 8Ω load

--110mW/CH (typical) into a 32Ω load

*Very High signal-to-noise ratio

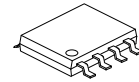
*Large output voltage swing

*Good power supply ripple rejection

*Low power consumption and Low distortion

*Fix wide temperature range

*Without switch ON/OFF clicks



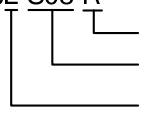
SOP-8

Lead-free: PA2308L

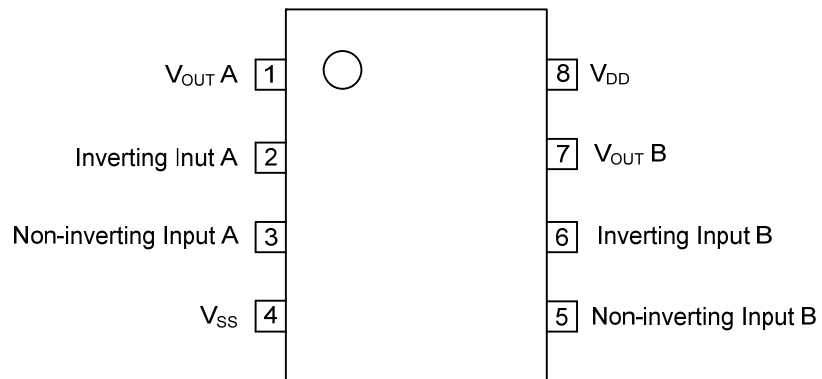
Halogen-free: PA2308G

ORDERING INFORMATION

Ordering Number			Package	Packing
Normal	Lead Free Plating	Halogen Free		
PA2308-S08-R	PA2308L-S08-R	PA2308G-S08-R	SOP-8	Tape Reel
PA2308-S08-T	PA2308L-S08-T	PA2308G-S08-T	SOP-8	Tube

PA2308L-S08-R  (1)Packing Type (2)Package Type (3)Lead Plating	(1) R: Tape Reel, T: Tube (2) S08: SOP-8 (3) G: Halogen Free, L: Lead Free, Blank: Pb/Sn
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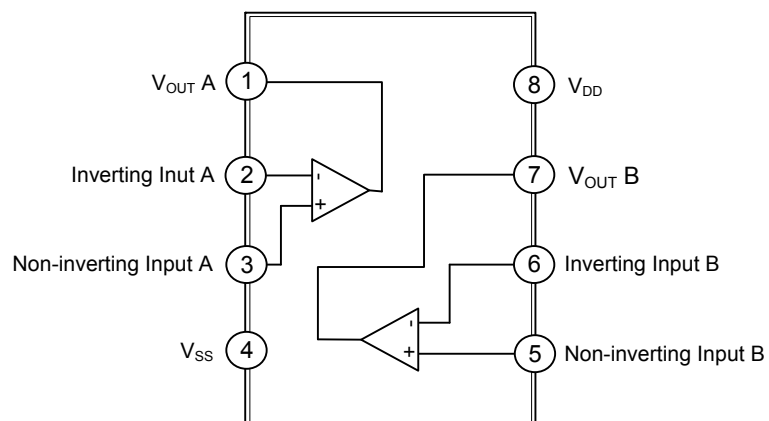
■ PIN CONFIGURATION



■ PIN DESCRIPTION

PIN NO.	PIN NAME	I/O	PIN DESCRIPTION
1	V _{OUT A}	O	Channel A output pin
2	Inverting Input A	I	Inverting input for channel A
3	Non- Inverting Input A	I	Non-inverting input for channel A
4	V _{SS}		Ground
5	Non- Inverting Input B	I	Non-inverting input for channel B
6	Inverting Input B	I	Inverting input for channel B
7	V _{OUT B}	O	Channel B output pin
8	V _{DD}	I	Supply voltage input pin

■ BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATINGS ($T_a=25^{\circ}\text{C}$)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V_{DD}	7	V
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Operating Temperature	T_{OPR}	-40 to 85	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-65 to +150	$^{\circ}\text{C}$

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged.

Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ THERMAL DATA

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
Junction to Ambient	θ_{JA}		210		K/W

■ ELECTRICAL CHARACTERISTICS ($T_a=25^{\circ}\text{C}$; unless otherwise specified)

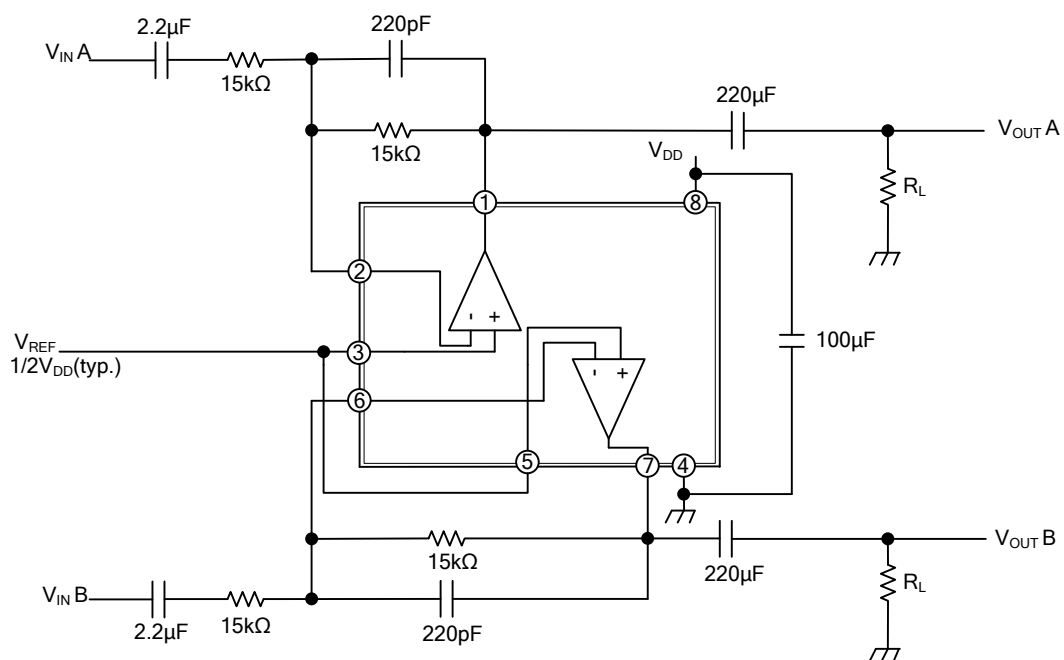
$V_{DD}=5\text{V}$, $V_{SS}=0\text{V}$, $f=1\text{kHz}$, $R_L=32\Omega$

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT
SUPPLY						
Supply Voltage	Single	V_{DD}	3.0	5.0	6.0	V
	Dual		± 1.5	± 2.5	± 3.0	
Negative Supply Voltage		V_{SS}	-1.5	-2.5	-3.0	V
Supply Current		I_{DD}	No Load	2.5	5	mA
Total Power Dissipation		P_D	No Load	12.5	25	mW
DC CHARACTERISTICS						
Input Offset Voltage		$V_{IN(OFF)}$		5		mV
Input Bias Current		I_{BIAS}		10		pA
Common Mode Voltage		V_{CM}	0		3.5	V
Closed Loop Voltage Gain		G_V	$R_L=5\text{k}\Omega$	75		dB
Max. Output Current		I_{OUT}	(THD+N)/S<0.1%	140		mA
Output Resistance		R_o		0.25		Ω
AC CHARACTERISTICS						
Output Voltage Swing	V_{OUT}	$R_L=32\Omega$ (Note 1)	0.25		4.75	V
		$R_L=16\Omega$ (Note 1)	0.5		4.5	
Power Supply Rejection Ratio		$PSRR$	$f_{IN}=100\text{Hz}$, $V_{RIPPLE(P-P)}=100\text{mV}$	65		dB
Channel Separation		α_{CS}	$R_L=32\Omega$	95		dB
Load Capacitance		C_L			200	pF
Total Harmonic Distortion Plus Noise to Signal Ratio	(THD+N)/S	$R_L=32\Omega$ (Note 2)		-65	-60	dB
				0.05	0.1	%
Signal to Noise Ratio		S/N	90	100		dB
Unity Gain Frequency		FG	$R_L=5\text{k}\Omega$	5		MHz
Max. Output Power		P_{OUT}	(THD+N)/S<0.1%	84		mW
Input Capacitance		C_I		3		PF
Power Bandwidth		B	Unity Gain Inverting	20		kHz

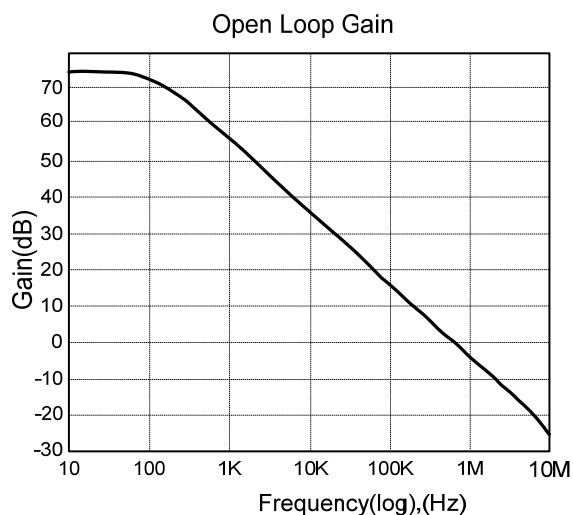
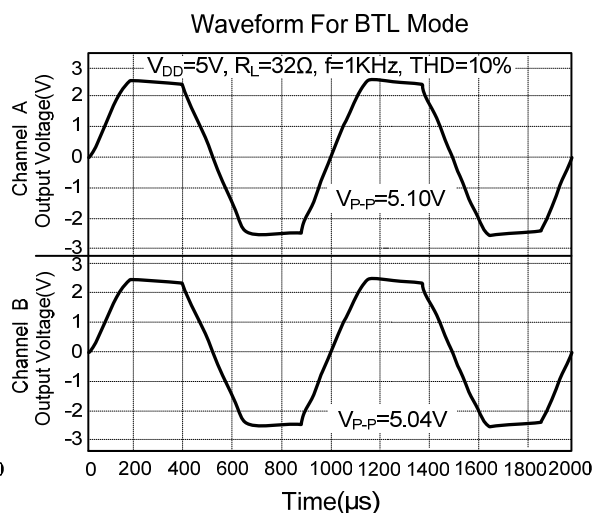
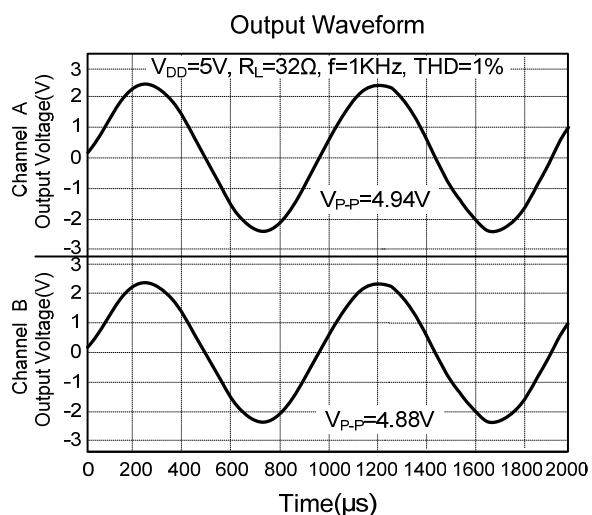
Note: 1. Values are proportional to V_{DD} ; (THD+N)/S<0.1%

2. $V_{DD}=5\text{V}$; $V_{OUT(P-P)}=3.5\text{V}$ (at 0dB)

■ TYPICAL APPLICATION



■ TYPICAL CHARACTERISTICS



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