TOSHIBA Bipolar Linear Integrated Circuit Silicon Monolithic

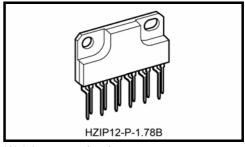
TA8246AHQ

Dual Audio Power Amplifier 6 W x 2 Ch

TA8246AHQ is dual power amplifier for Consumer applications. This IC provides an output power of 6 watts per channel (at $V_{CC}=20~V,~f=1~kHz,~THD=10\%,~R_L=8~\Omega$). It is suitable for power amplifier of TV and home Stereo.

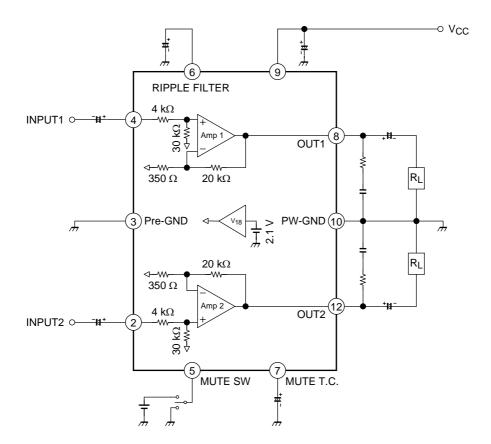
Features

- : High output power: $P_{out} = 6 \text{ W (Typ.)}$ ($V_{CC} = 20 \text{ V}, R_L = 8 \Omega, f = 1 \text{ kHz}, THD = 10\%$)
- Built-in audio muting circuit.
- NF terminal capacitor less
 - : Fixed gain (G_{V} = 34dB), needless external capacitor.
- Protectors
 - : Thermal shut down protection circuit, over voltage protection circuit
- · Low poping noise
- High THD ratio
- High input dynamic range
- Available for using same PCB layout with 3 channel IC: TA8256BHQ
- Operating supply voltage range
 - : $V_{CC \text{ (opr)}} = 10 \sim 30 \text{ V (Ta} = 25 \text{°C)}$



Weight: 4.04 g (typ.)

Block Diagram



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Terminal Explanation

Terminal No.	Symbol	Function	Equivalent Circuit			
2	IN2	Input	V_{CC} $\begin{array}{c} & & & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & \\ & \\ & & \\ & \\ & & \\ & \\ & & \\ & \\ & & \\ & \\ & \\ & \\ & \\ & \\ & \\ & \\ & \\ & \\ $			
4	IN1		GND GND			
3	Pre-GND	GND terminal	—			
5	MUTE SW	MUTE control terminal	7 Vcc			
7	MUTE T.C.		5 10 kΩ Amplifier Amplifier GND			
6	R/F	Ripple filter	6 Sylvania (Charles) to POP-NOIZE preventive circuit (Charles) to Bias circuit			
8	OUT1	- Output	Vcc			
12	OUT2	Output	S 2 2 3 3 3 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3			
9	Vcc	Supply voltage terminal				
10	PW-GND	GND terminal				

1, 11: NC

Cautions

This IC is not proof enough against a strong E-M field by CRT which may cause malfunction such as leak. Please set the IC keeping the distance from CRT.

Maximum Ratings (Ta = 25°C)

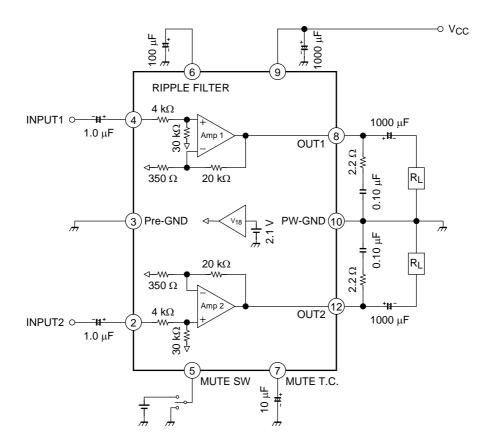
Characteristic	Symbol	Rating	Unit
Supply voltage	V _{CC}	30	٧
Output current (peak/ch)	I _{O (peak)}	2	Α
Power dissipation	P _D (Note)	25	W
Operating temperature	T _{opr}	-20~75	°C
Storage temperature	T _{stg}	-55~150	°C

Note: Derated above $Ta = 25^{\circ}C$ in the proportion of 200 mW/°C.

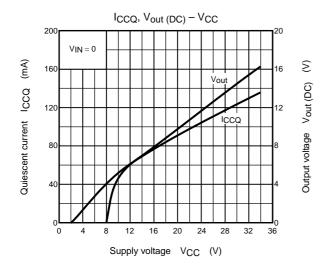
Electrical Characteristics (Unless otherwise specified, V_{CC} = 20 V, R_L = 8 Ω , R_g = 620 Ω , f = 1 kHz, Ta = 25°C)

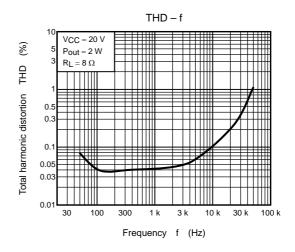
Characteristic	Symbol	Test Circuit	Test Condition	Min.	Тур.	Max	Unit
Quiescent current	Iccq	_	$V_{in} = 0$	50	85	130	mA
Output power	P _{out} (1)	_	THD = 10%	5	6	_	- W
Output power	P _{out} (2)	_	THD = 1%	_	4.5	_	
Total harmonic distortion	THD (1)	_	P _{out} = 2 W	_	0.04	0.2	- %
Total Halmonic distortion	THD (2)		$P_{out} = 2 W$, $f = 10 kHz$,	_	0.1	0.6	
Voltage gain	G _v	_	V _{out} = 0.775 Vrms	32.5	34	35.5	dB
Input resistance	R _{IN}	_	_	_	34	_	kΩ
Ripple rejection ratio	R.R.	_	f = 100 Hz	-40	-47	_	dB
Output noise voltage	V _{no}	_	$Rg = 10 \text{ k}\Omega$, $BW = 20 \text{ Hz} \sim 20 \text{ kHz}$	_	0.14	0.3	mVrms
Cross talk	C.T.	_	$\label{eq:region} \begin{split} Rg &= 10 \text{ k}\Omega,\\ V_{out} &= 0.775 \text{ Vrms} \end{split}$	_	-60	_	dB
Muta control voltago	V _{th (ON)}		MUTE ON	3.1	_	Vcc	V
Mute control voltage	V _{th} (OFF)	_	MUTE OFF	0		2.5	
Mute attenuation level	ATT	_	$V_{out} = 0.775 \text{ Vrms} \rightarrow \text{Mute}$	-52	-60	_	dB

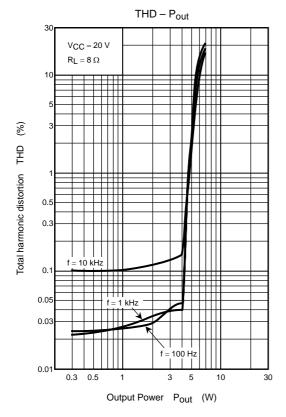
Test Circuit

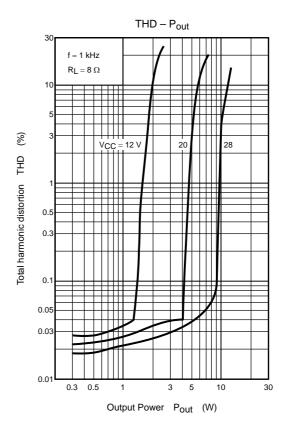


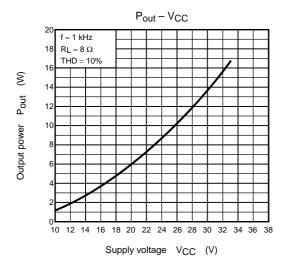
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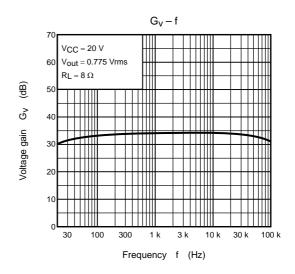


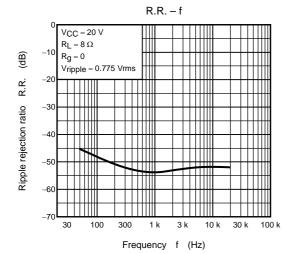


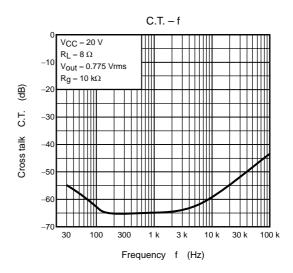


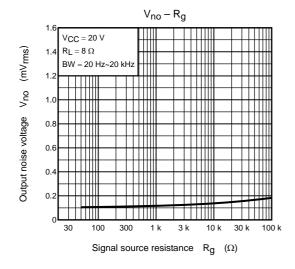


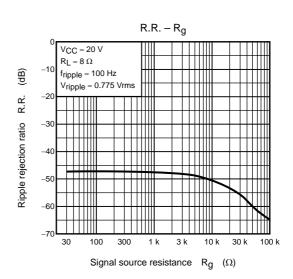


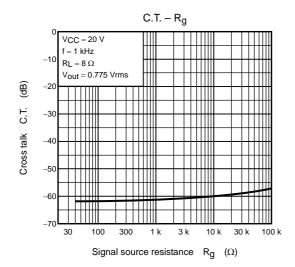


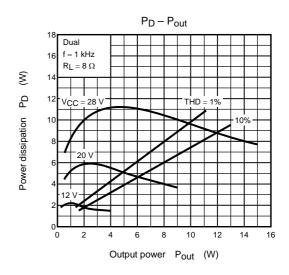


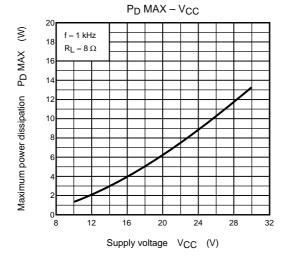


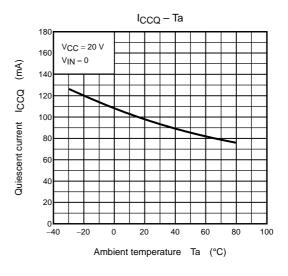


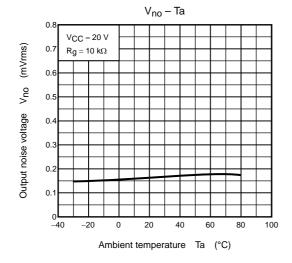


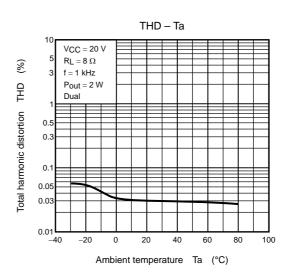




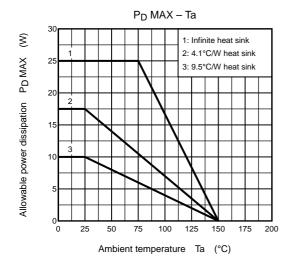








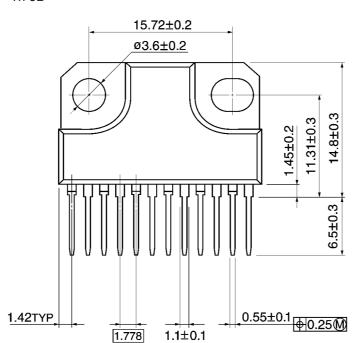
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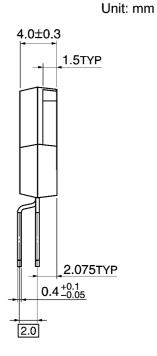


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Package Dimensions

HZIP12-P-1.78B







Weight: 4.04 g (typ.)

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About solderability, following conditions were confirmed

- Solderability
 - (1) Use of Sn-63Pb solder Bath
 - solder bath temperature = 230°C
 - · dipping time = 5 seconds
 - · the number of times = once
 - · use of R-type flux
 - (2) Use of Sn-3.0Ag-0.5Cu solder Bath
 - solder bath temperature = 245°C
 - · dipping time = 5 seconds
 - · the number of times = once
 - · use of R-type flux

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 - The product is often the final stage (the external output stage) of a circuit. Substandard performance or malfunction of the destination device to which the circuit supplies output may cause damage to the circuit or to the product.