

TA8211AH

DUAL AUDIO POWER AMPLIFIER

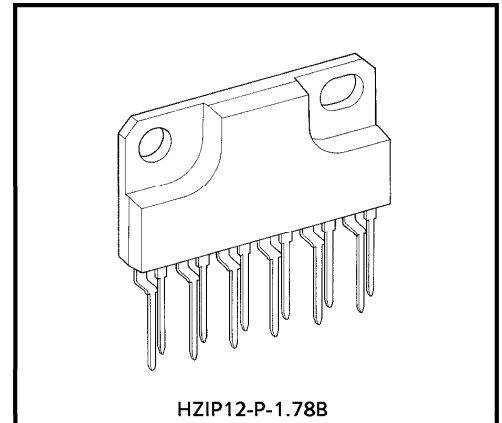
The TA8211AH is dual audio power amplifier for consumer applications.

This IC provides an output power of 6 watts per channel (at $V_{CC} = 20\text{ V}$, $f = 1\text{ kHz}$, $\text{THD} = 10\%$, $R_L = 8\ \Omega$).

It is suitable for power amplifier of TV and home stereo.

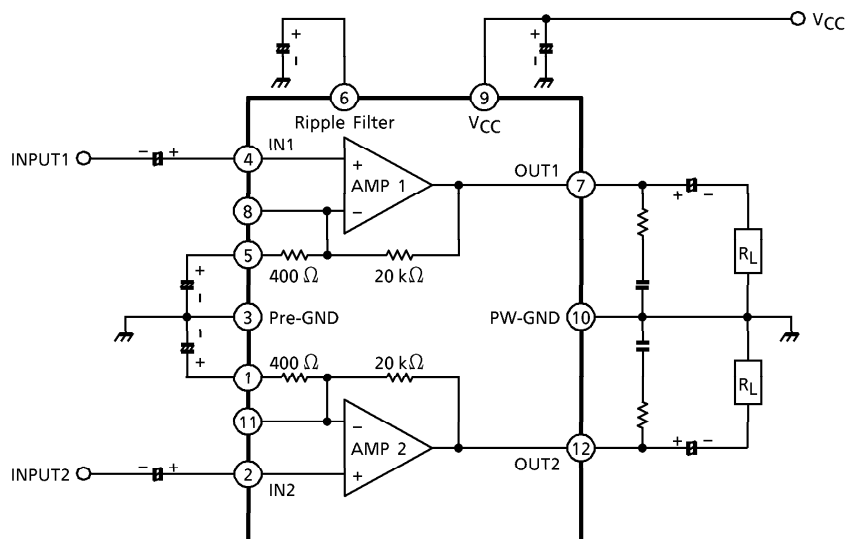
FEATURES

- High Output Power : $P_{out} = 6\text{ W/channel (Typ.)}$
($V_{CC} = 20\text{ V}$, $R_L = 8\ \Omega$, $f = 1\text{ kHz}$, $\text{THD} = 10\%$)
- Low Noise : $V_{NO} = 0.14\text{ mV}_{rms}$ (Typ.)
($V_{CC} = 28\text{ V}$, $R_L = 8\ \Omega$, $G_V = 34\text{ dB}$, $R_g = 10\text{ k}\Omega$, $\text{BW} = 20\text{ Hz}\sim 20\text{ kHz}$)
- Very Few External Parts
- Built In Thermal Shut Down Protector Circuit
- Operating Supply Voltage Range : $V_{CC}(\text{opr}) = 10\sim 30\text{ V}$ ($T_a = 25^\circ\text{C}$)



Weight : 4.04 g (Typ.)

BLOCK DIAGRAM



980910EBA2

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APPLICATION INFORMATION

(1) Voltage gain

The closed loop voltage gain is determined by R_1, R_2 .

$$G_V = 20 \log \frac{R_1 + R_2}{R_2} \text{ (dB)}$$

$$= 20 \log \frac{20 \text{ k}\Omega + 400 \Omega}{400 \Omega}$$

$$\cong 34 \text{ (dB)}$$

(a) Amplifier with gain > 34 dB

$$G_V = 20 \log \frac{R_1 + R_2 // R_3}{R_2 // R_3} \text{ (dB)}$$

When $R_3 = 400 \Omega$

$G_V \cong 40$ (dB)
is given.

(b) Amplifier with gain < 34 dB

$$G_V = 20 \log \frac{R_1 + R_2 + R_4}{R_2 + R_4} \text{ (dB)}$$

When $R_4 = 220 \Omega$

$G_V \cong 30$ (dB)
is given.

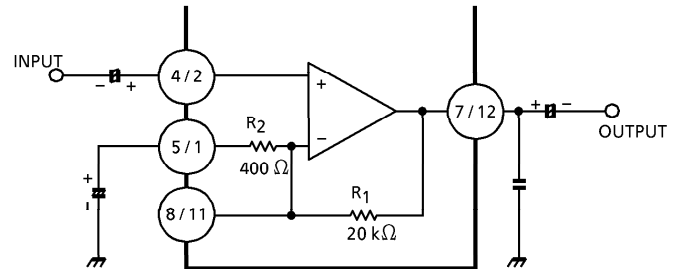


Fig.1

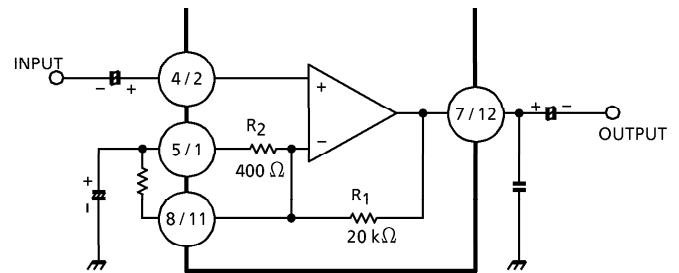


Fig.2

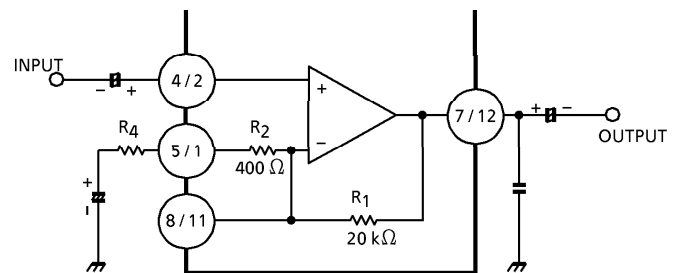
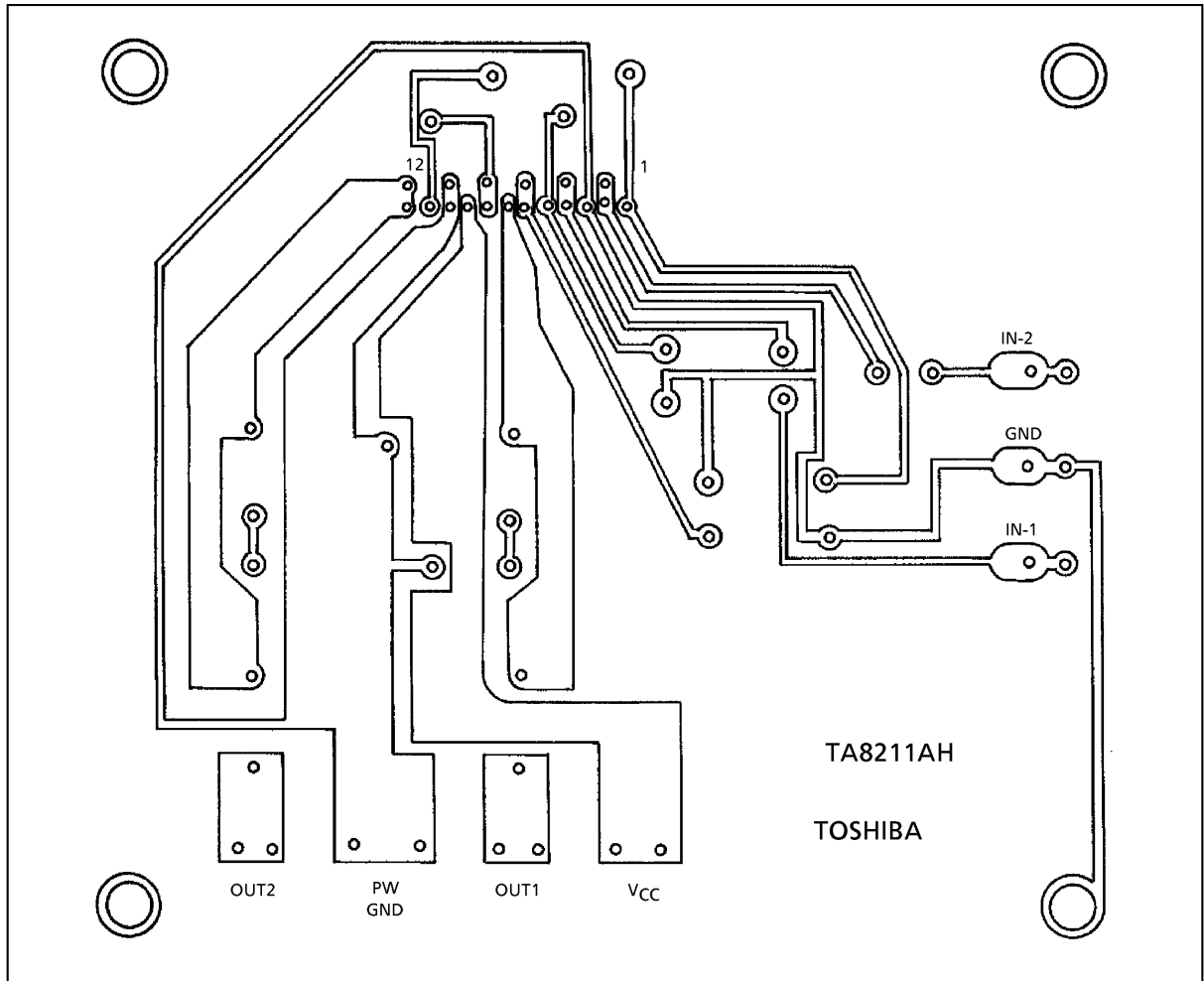


Fig.3

980910EBA2'

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STANDARD P.C.B



(BOTTOM VIEW)

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

CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	V_{CC}	30	V
Output Current (Peak / Ch)	$I_{O(\text{peak})}$	2	A
Power Dissipation	P_D (Note)	25	W
Operating Temperature	T_{opr}	-20~75	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55~150	$^\circ\text{C}$

(Note) : Derated above $T_a = 25^\circ\text{C}$ in the proportion of 200 mW/ $^\circ\text{C}$.

ELECTRICAL CHARACTERISTICS

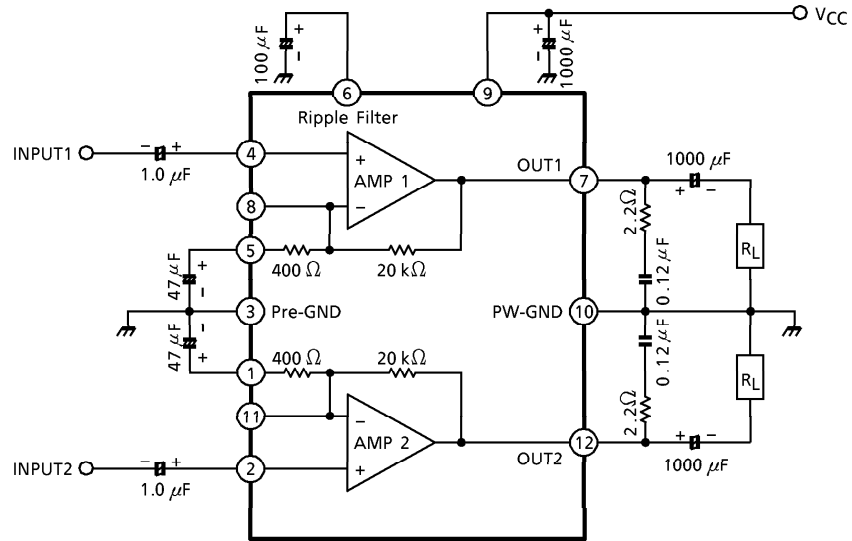
(Unless otherwise specified, $V_{CC} = 20\text{ V}$, $R_L = 8\ \Omega$, $R_g = 600\ \Omega$, $f = 1\text{ kHz}$, $T_a = 25^\circ\text{C}$)

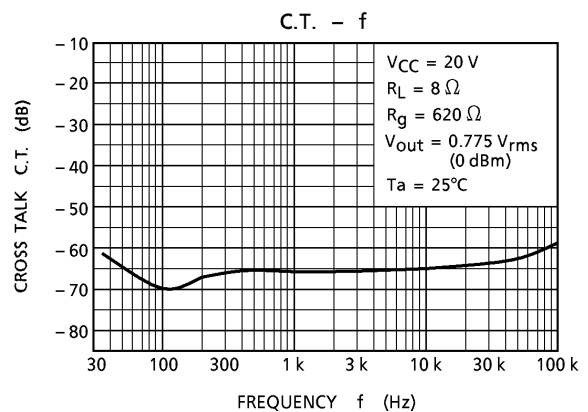
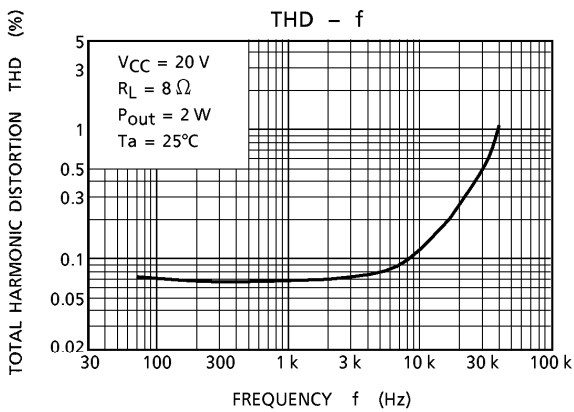
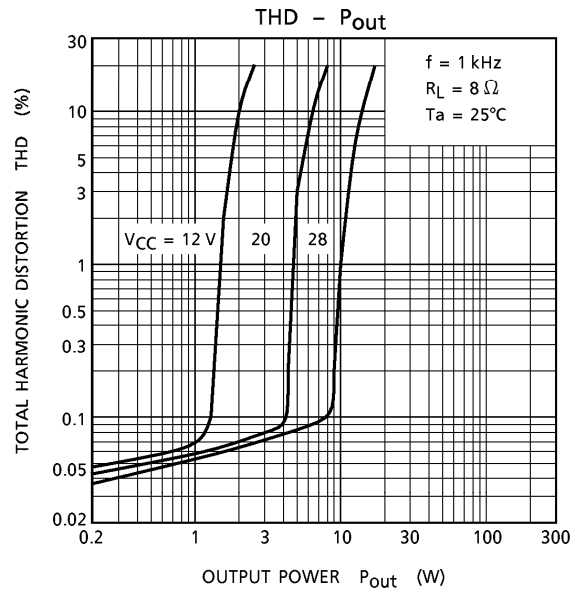
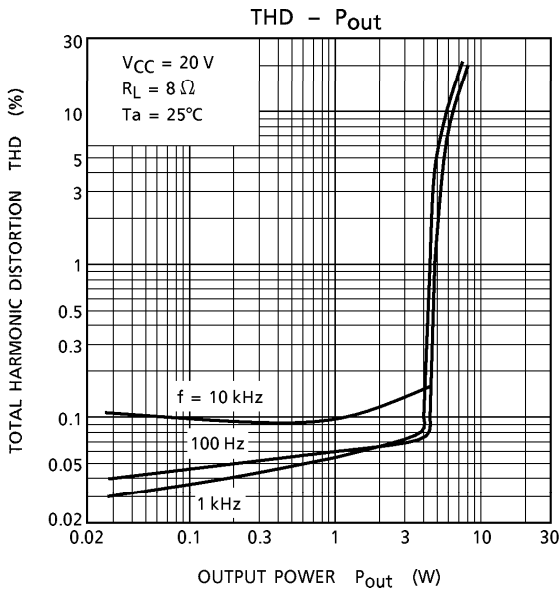
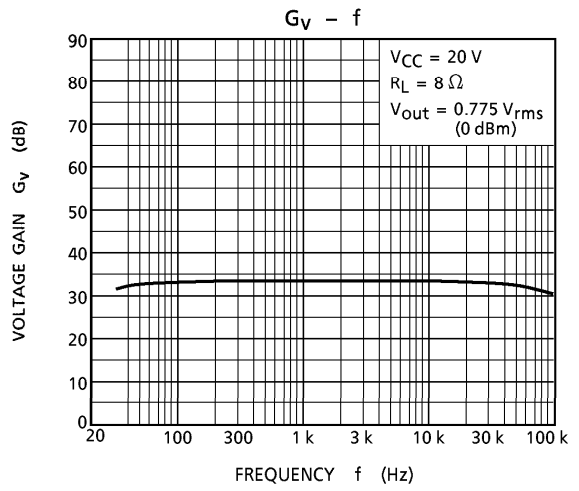
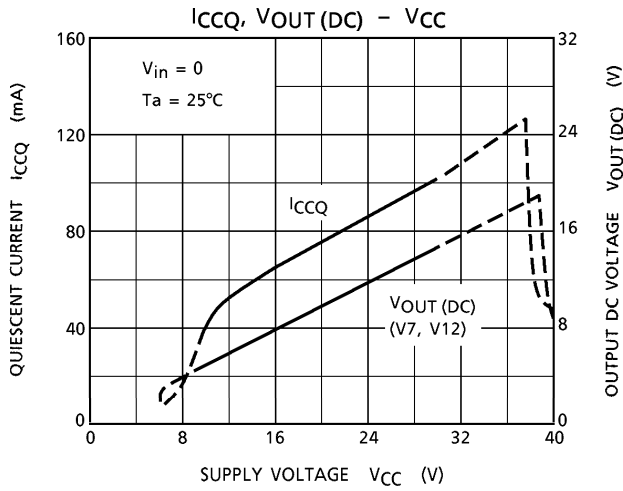
CHARACTERISTIC	SYMBOL	TEST CIRCUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Quiescent Current	I_{CCQ}	—	$V_{in} = 0$	—	75	130	mA
Output Power	$P_{out(1)}$	—	THD = 10%	5.0	6.0	—	W
	$P_{out(2)}$	—	THD = 1%	—	4.5	—	
Total Harmonic Distortion	THD	—	$P_{out} = 2\text{ W}$	—	0.1	0.6	%
Closed Loop Voltage Gain	G_v	—	$V_{out} = 0.775 V_{rms}$ (0 dBm)	32.5	34.0	35.5	dB
Open Loop Voltage Gain	G_{vo}	—		—	60	—	dB
Input Resistance	R_{IN}	—		—	30	—	$k\Omega$
Ripple Rejection Ratio	R.R.	—	$R_g = 0$, $f_{ripple} = 100\text{ Hz}$ $V_{ripple} = 0.775 V_{rms}$ (0 dBm)	-45	-57	—	dB
Output Noise Voltage	V_{no}	—	$R_g = 10\ k\Omega$, BW = 20 Hz~20 kHz	—	0.14	0.3	mV_{rms}

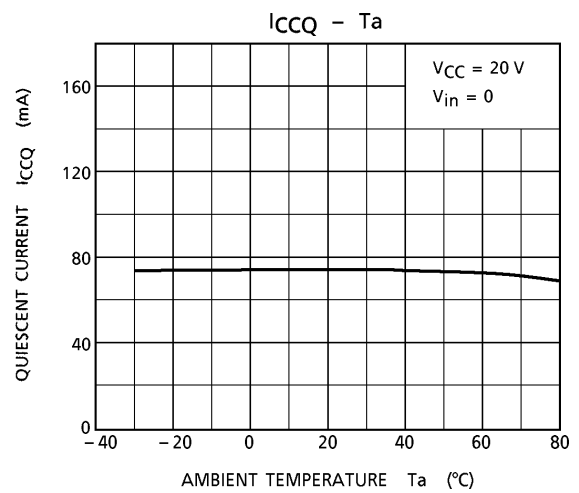
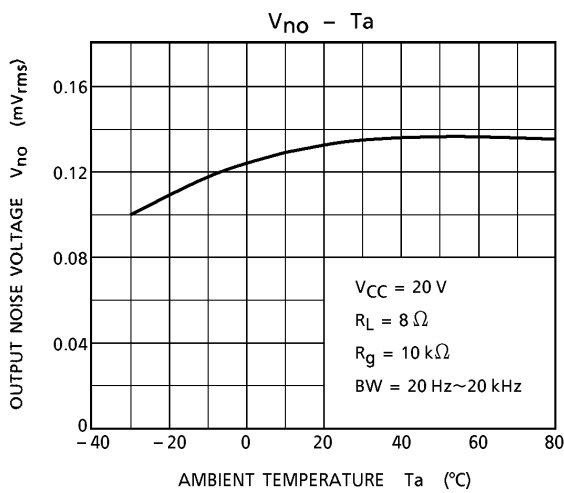
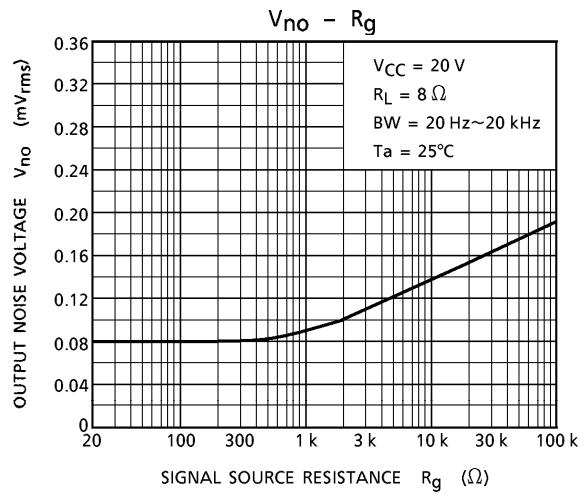
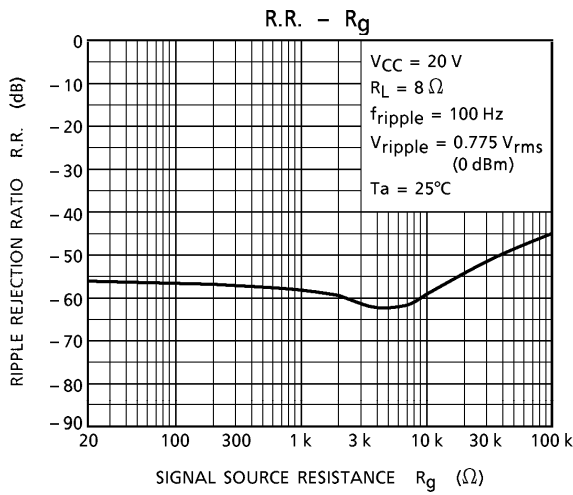
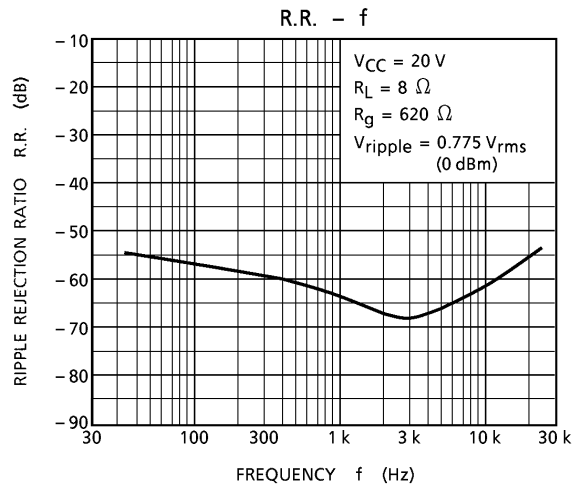
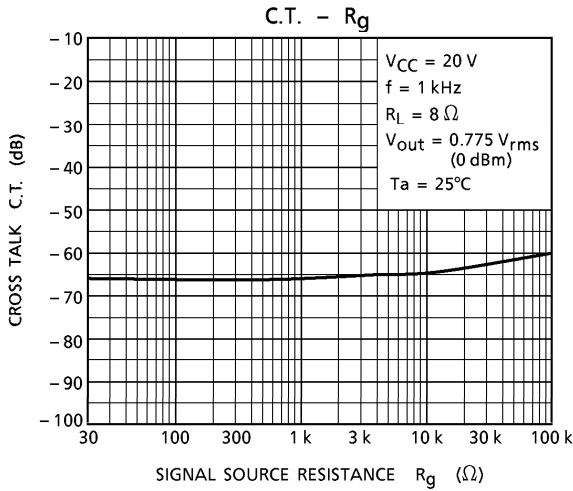
TYP. DC VOLTAGE OF EACH TERMINAL ($V_{CC} = 20\text{ V}$, $T_a = 25^\circ\text{C}$)

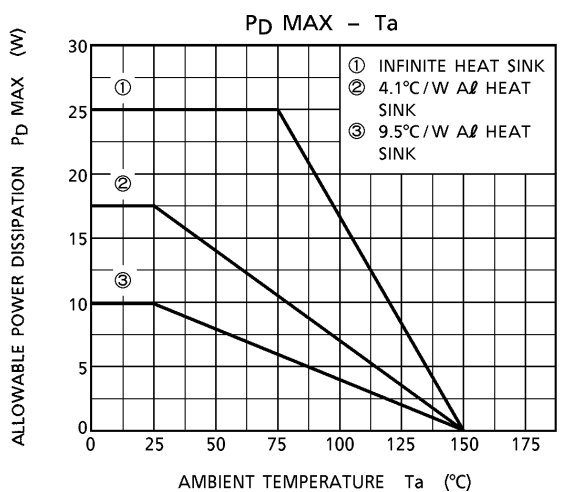
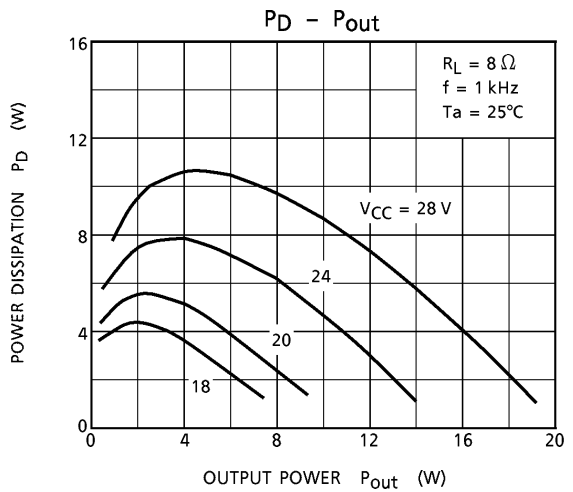
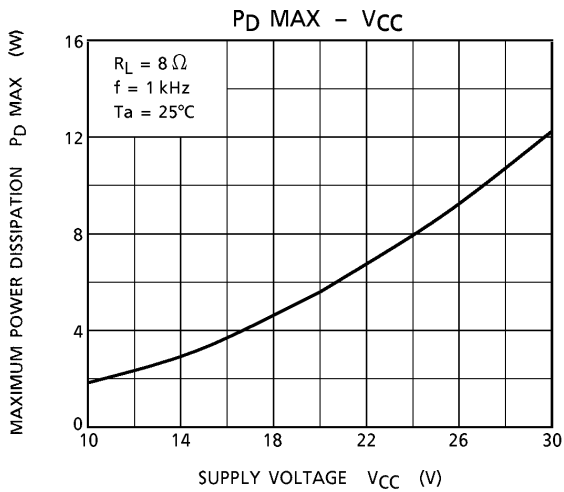
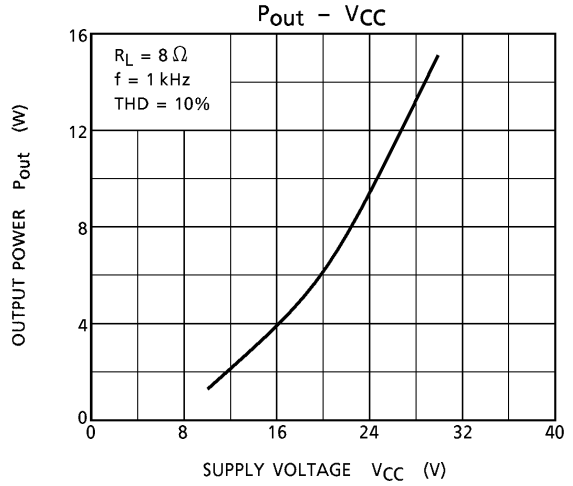
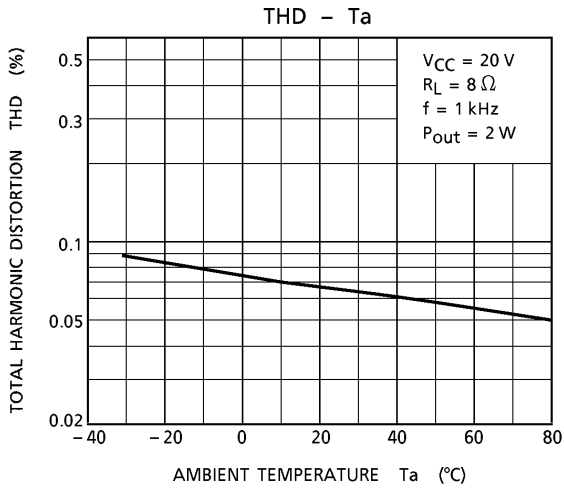
TERMINAL No.	1	2	3	4	5	6	7	8	9	10	11	12
DC Voltage (V)	2.1	2.25	GND	2.25	2.1	6.8	9.8	2.25	V_{CC}	GND	2.25	9.8

TEST CIRCUIT



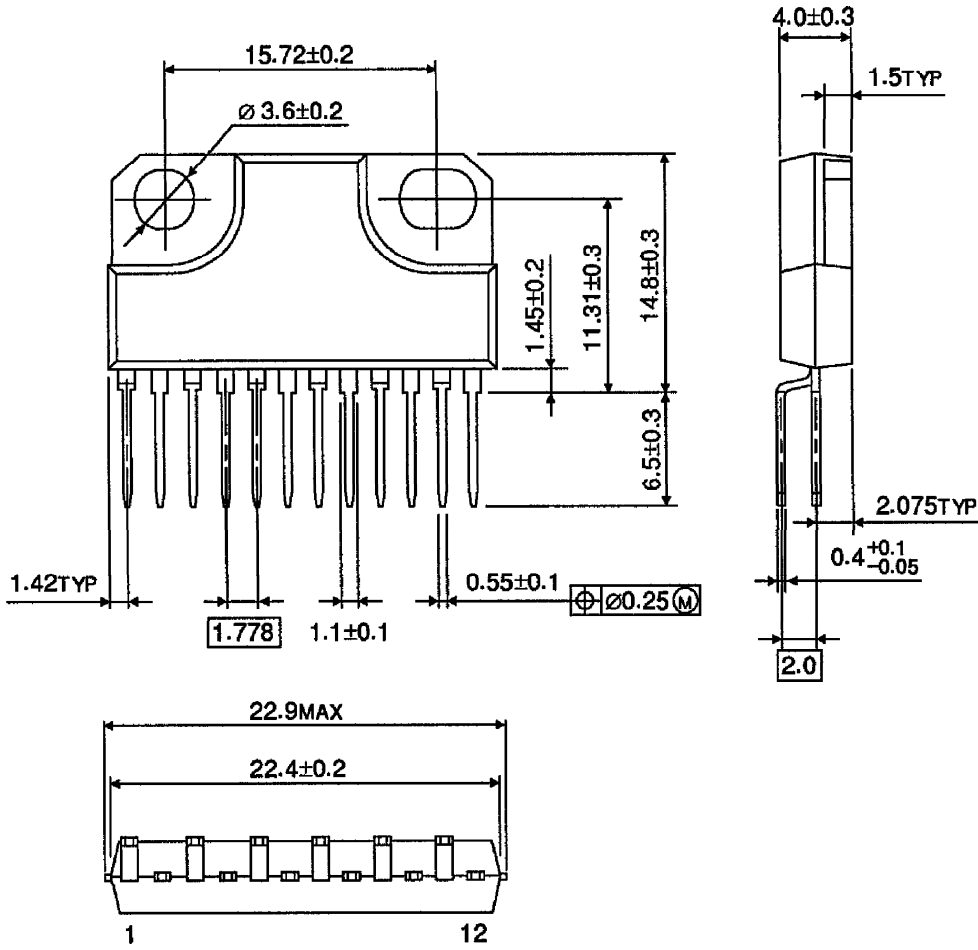






PACKAGE DIMENSIONS
HZIP12-P-1.78B

Unit : mm



Weight : 4.04 g (Typ.)