

TA8211AH

Dual Audio Power Amplifier

The TA8211AH is dual audio power amplifier for consumer applications.

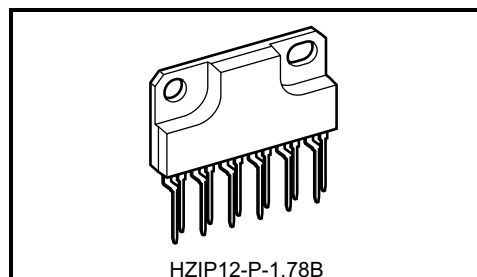
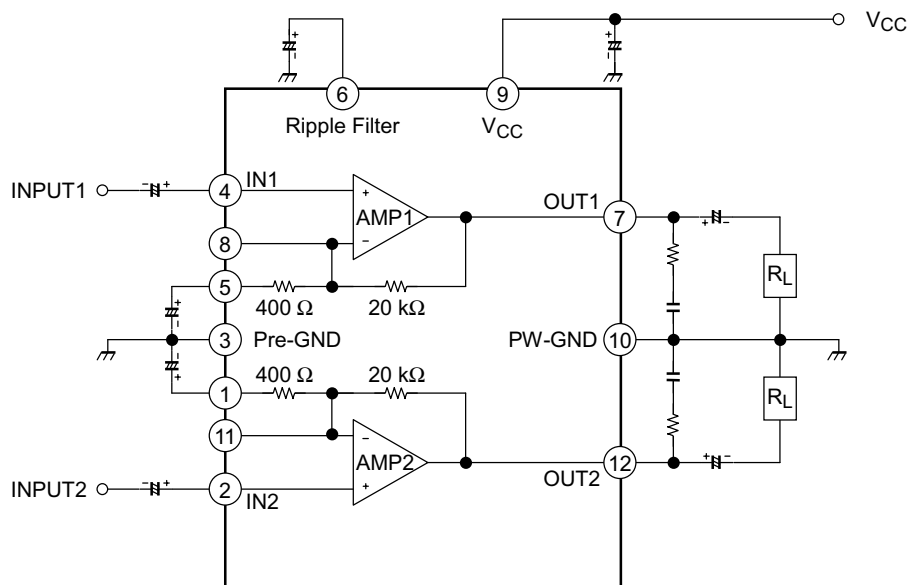
This IC provides an output power of 6 watts per channel (at $V_{CC} = 20\text{ V}$, $f = 1\text{ kHz}$, $THD = 10\%$, $R_L = 8\ \Omega$).

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

Features

- High output power: $P_{out} = 6\text{ W/channel (Typ.)}$
($V_{CC} = 20\text{ V}$, $R_L = 8\ \Omega$, $f = 1\text{ kHz}$, $THD = 10\%$)
- Low noise: $V_{no} = 0.14\text{ mV}_{rms}$ (Typ.)
($V_{CC} = 28\text{ V}$, $R_L = 8\ \Omega$, $G_V = 34\text{ dB}$, $R_g = 10\text{ k}\Omega$, $BW = 20\text{ Hz} \sim 20\text{ kHz}$)
- Very few external parts
- Built in thermal shut down protector circuit
- Operating supply voltage range: $V_{CC} (opr) = 10 \sim 30\text{ V}$ ($T_a = 25^\circ\text{C}$)

Block Diagram



HZIP12-P-1.78B

Weight: 4.04 g (Typ.)

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Application Information

Voltage gain

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

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

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

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

- (a) Amplifier with gain $> 34\text{dB}$

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

When $R_3 = 400 \Omega$

$G_V \approx 40 \text{ (dB)}$
is given.

- (b) Amplifier with gain $< 34\text{dB}$

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

When $R_4 = 220 \Omega$

$G_V \approx 30 \text{ (dB)}$
is given.

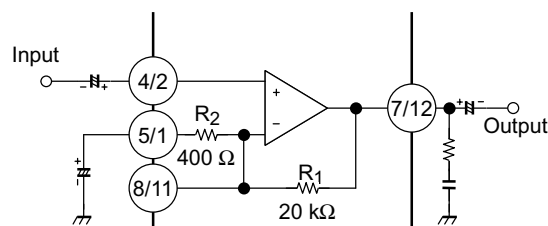


Figure 1

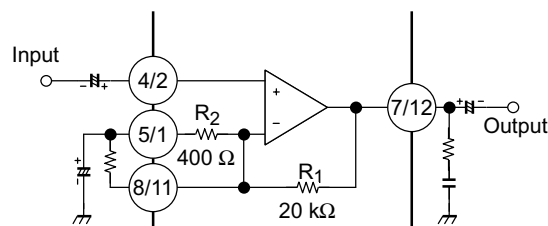


Figure 2

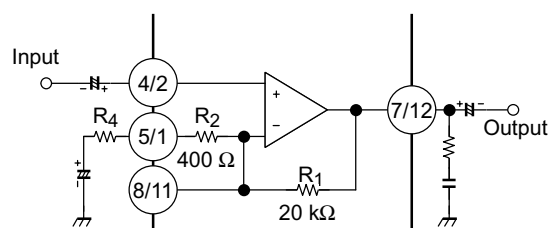


Figure 3

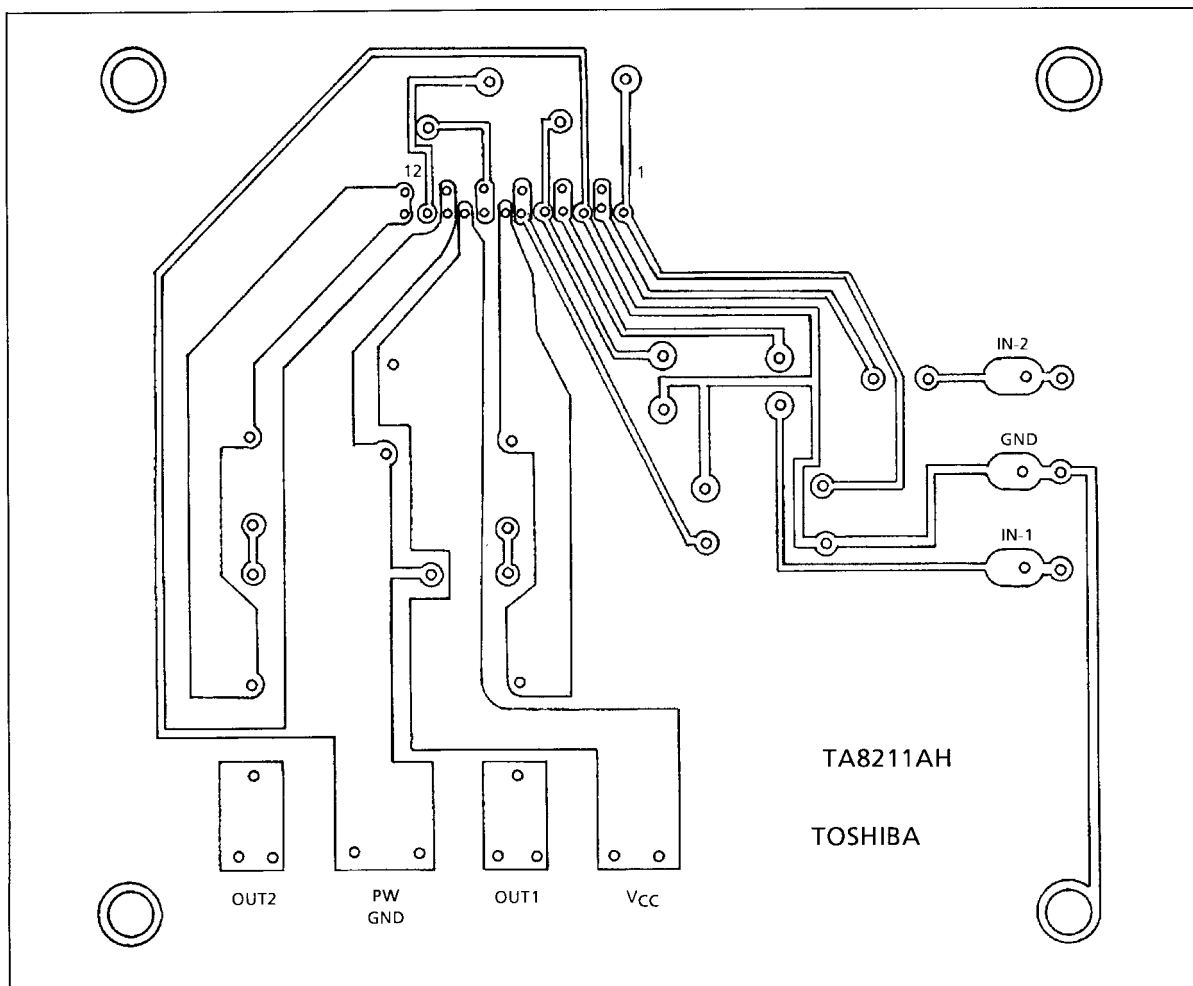
Cautions

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.

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- This product generates heat during normal operation. However, substandard performance or malfunction may cause the product and its peripherals to reach abnormally high temperatures. 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.
- The products described in this document are subject to the foreign exchange and foreign trade laws.
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- The information contained herein is subject to change without notice.

Standard PCB



(Bottom view)

Maximum Ratings (Ta = 25°C)

Characteristics	Symbol	Rating	Unit
Supply voltage	V _{CC}	30	V
Output current (Peak/ch)	I _O (peak)	2	A
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°C in the proportion of 200 mW/°C.

Electrical Characteristics

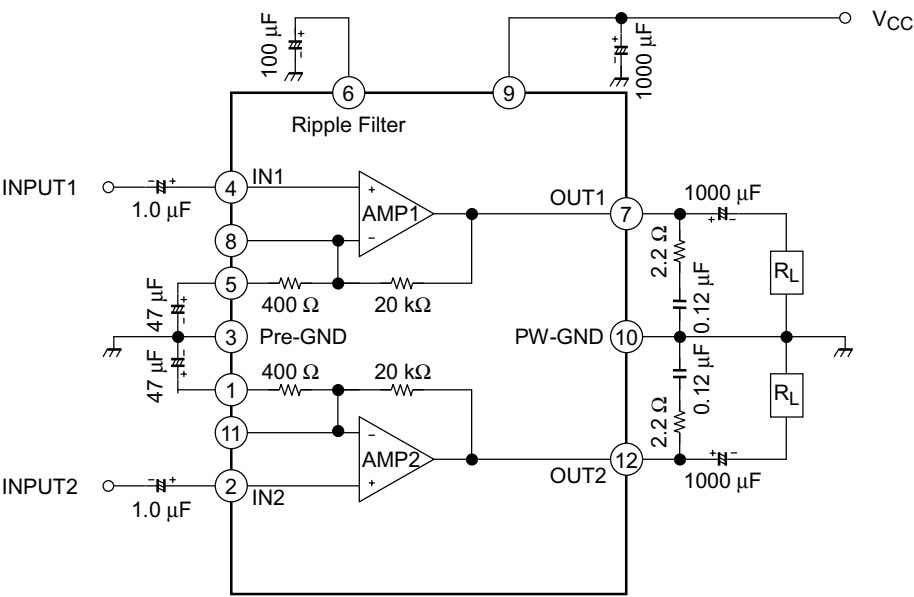
(unless otherwise specified, V_{CC} = 20 V, R_L = 600 Ω, R_g = 600 Ω, f = 1 kHz, Ta = 25°C)

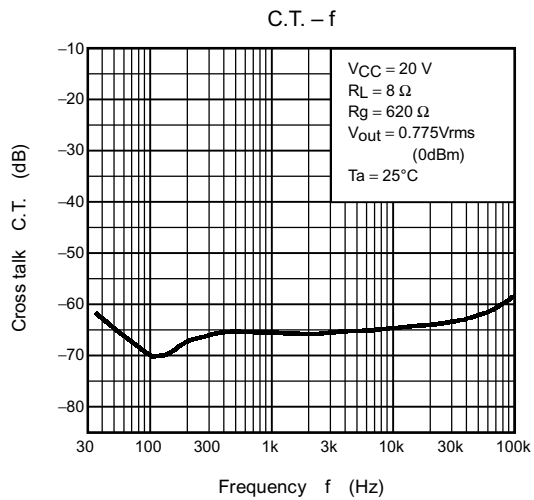
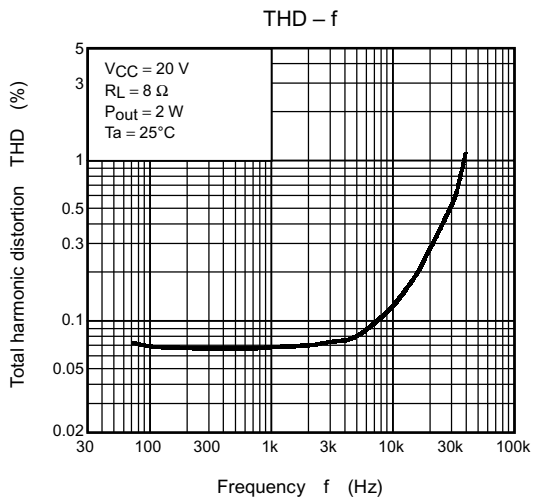
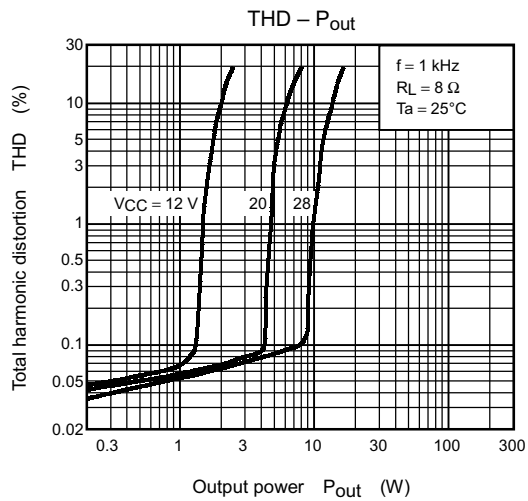
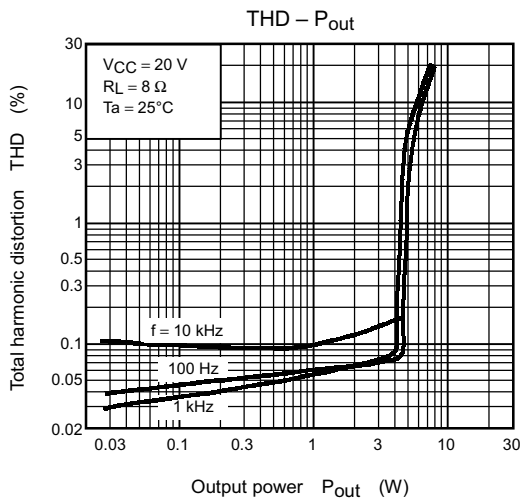
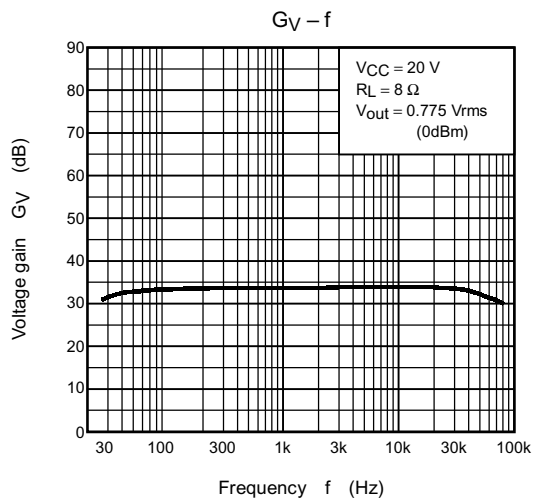
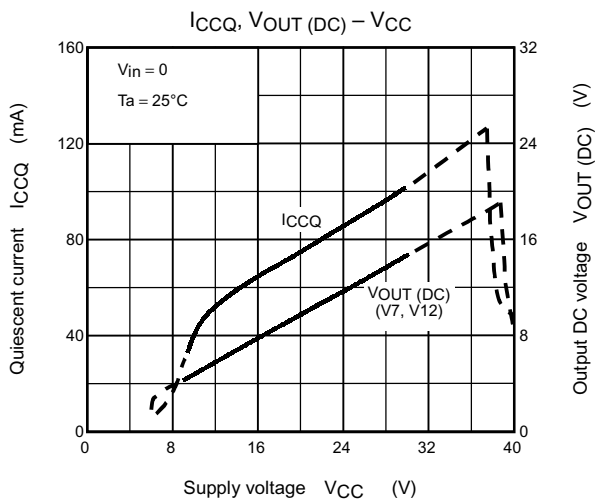
Characteristics	Symbol	Test Circuit	Test Condition	Min	Typ.	Max	Unit
Quiescent current	I _{CCQ}	—	V _{in} = 0	—	75	130	mA
Output power	P _{out} (1)	—	THD = 10%	5.0	6.0	—	W
	P _{out} (2)	—	THD = 1%	—	4.5	—	
Total harmonic distortion	THD	—	P _{out} = 2 W	—	0.1	0.6	%
Closed loop voltage gain	G _V	—	V _{out} = 0.775 Vrms (0dBm)	32.5	34.0	35.5	dB
Open loop voltage gain	G _{VO}	—	—	—	60	—	dB
Input resistance	R _{IN}	—	—	—	30	—	kΩ
Ripple rejection ratio	R.R.	—	R _g = 0, f _{ripple} = 100 Hz V _{ripple} = 0.775 Vrms (0dBm)	-45	-57	—	dB
Output noise voltage	V _{no}	—	R _g = 10 kΩ, BW = 20 Hz~20 kHz	—	0.14	0.3	mVrms

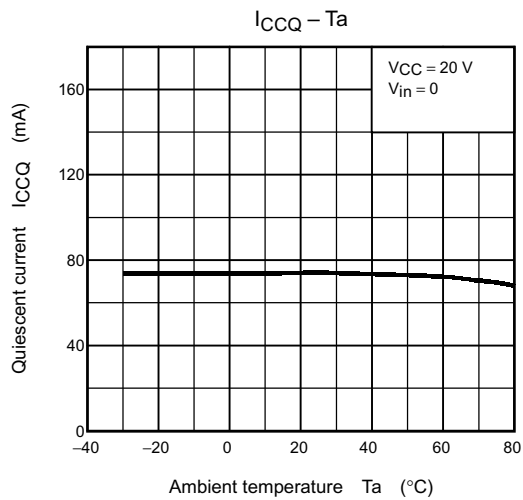
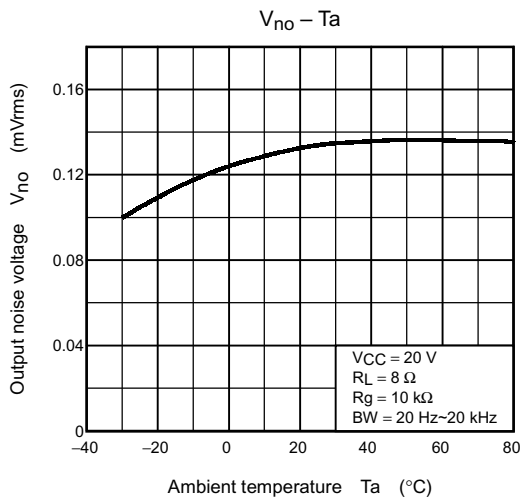
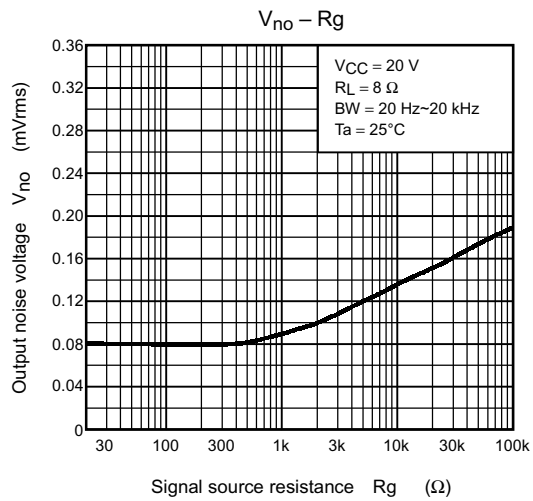
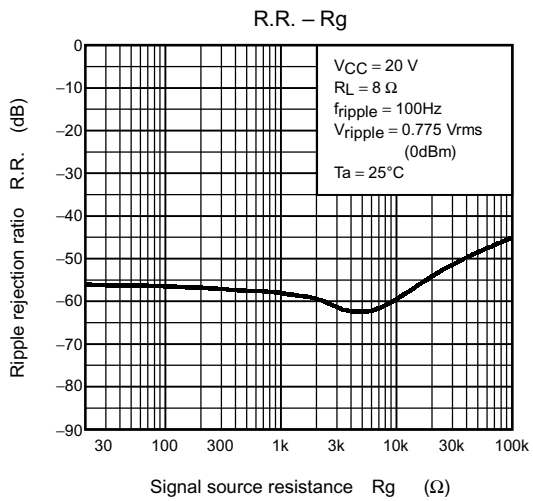
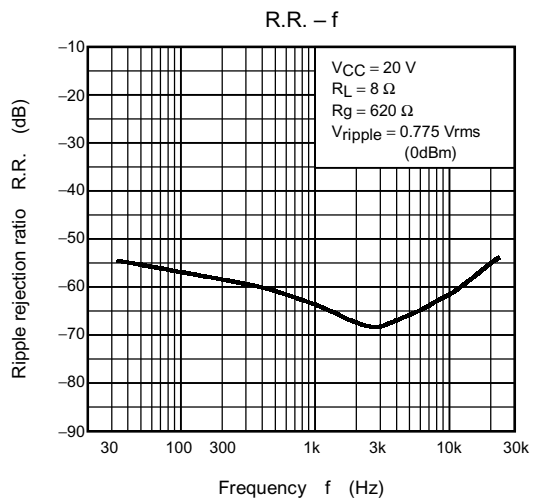
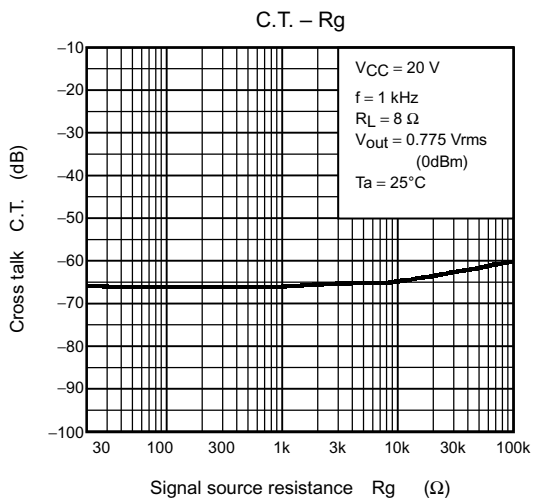
Typ. DC Voltage of Each Terminal (V_{CC} = 20 V, Ta = 25°C)

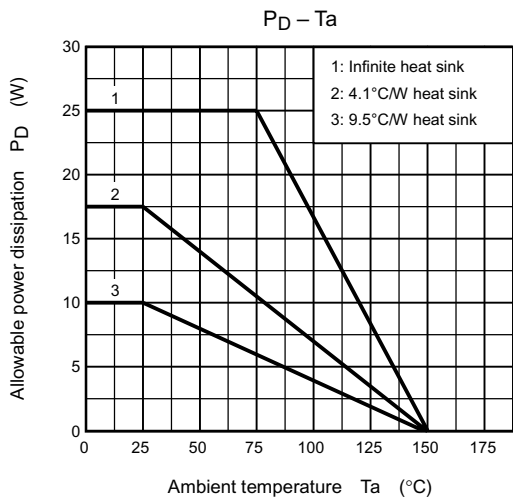
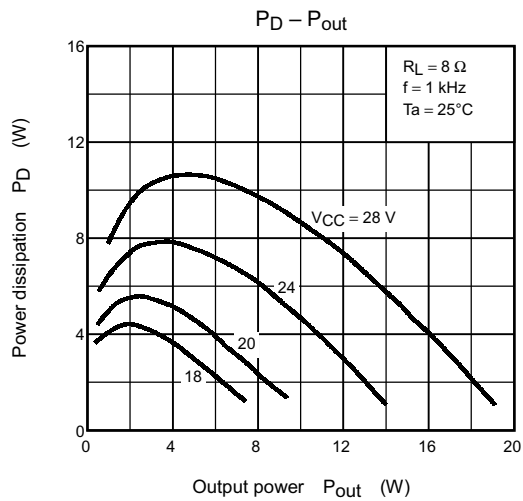
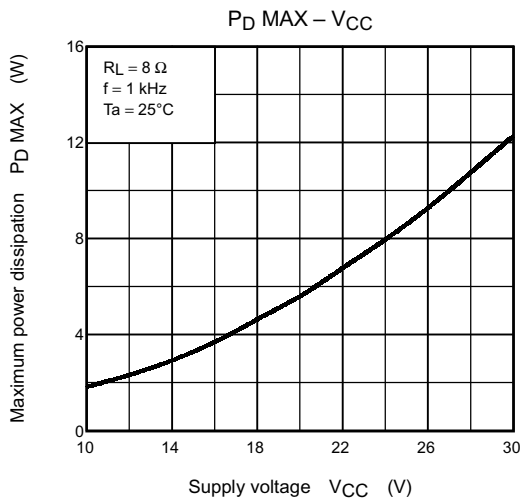
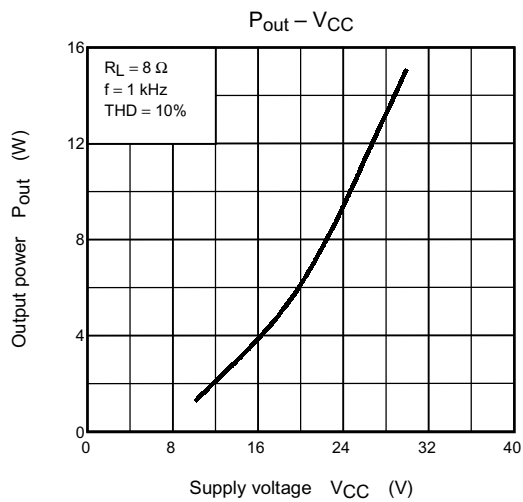
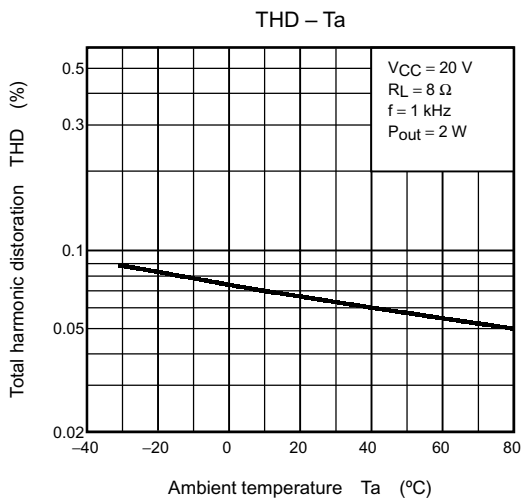
Terminal No.	1	2	3	4	5	6	7	8	9	10	11	12
DC voltage (V)	2.1	2.25	GND	2.25	2.1	6.8	9.8	2.25	V _{CC}	GND	2.25	9.8

Test Circuit





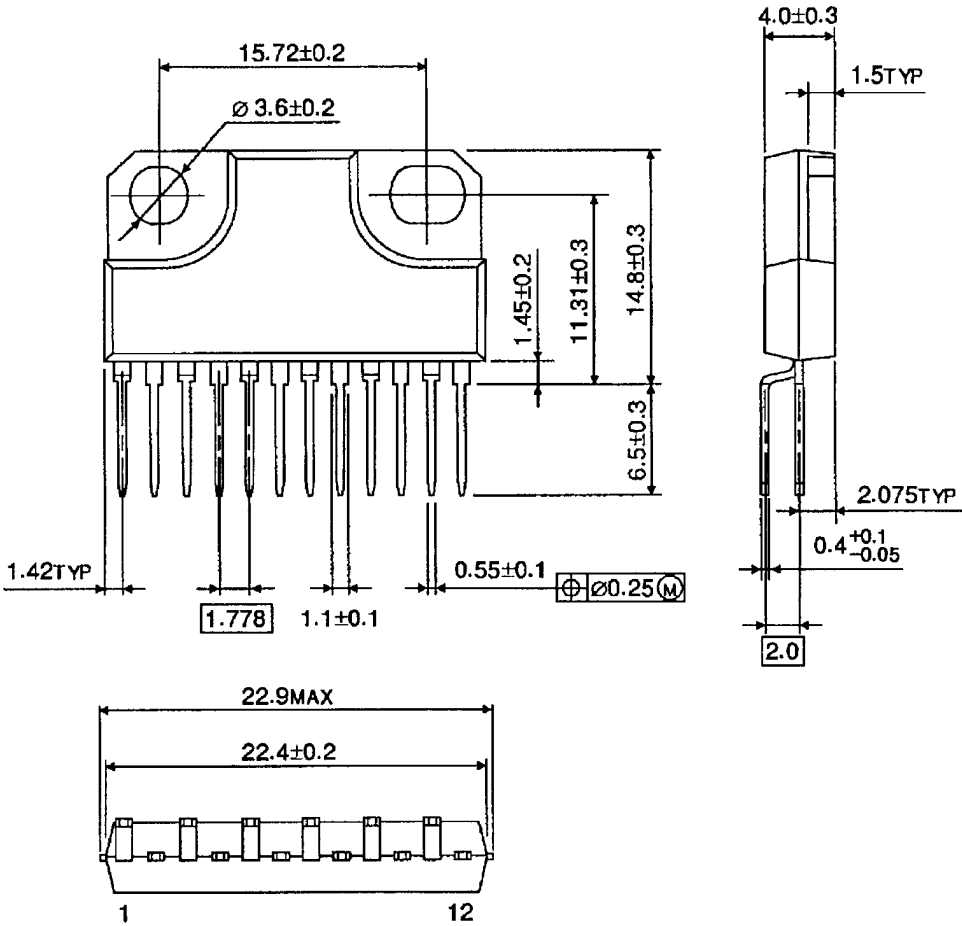




Package Dimensions

HZIP12-P-1.78B

Unit : mm



Weight: 4.04 g (Typ.)