

TA8211AH

Dual Audio Power Amplifier

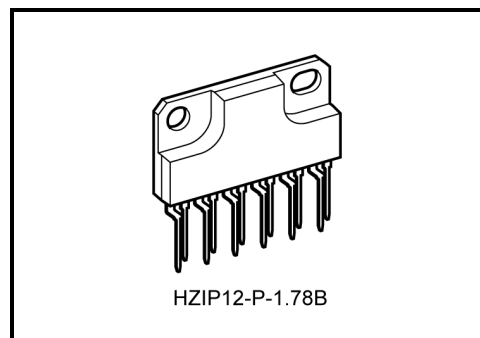
The TA8211AH is dual audio power amplifier for consumer applications.

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.

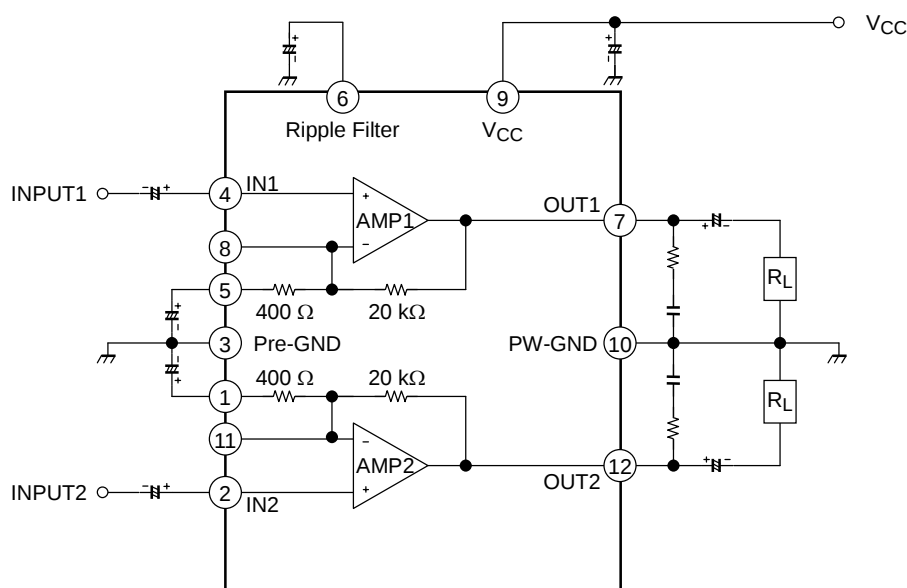
Features

- High output power: $P_{\text{out}} = 6\text{ W/channel}$ (Typ.)
($V_{CC} = 20\text{ V}$, $R_L = 8\ \Omega$, $f = 1\text{ kHz}$, $\text{THD} = 10\%$)
- Low noise: $V_{\text{no}} = 0.14\text{ mVrms}$ (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



Application Information

Voltage gain

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

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

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

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

- (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 $R_3 = 400 \text{ }\Omega$

$$G_V \approx 40 \text{ (dB)}$$

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 $R_4 = 220 \text{ }\Omega$

$$G_V \approx 30 \text{ (dB)}$$

is given.

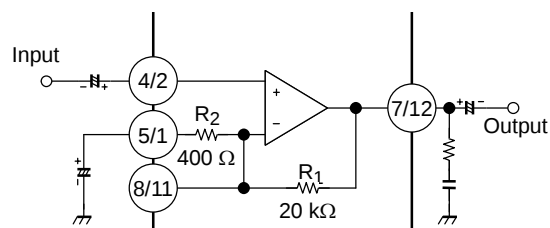


Figure 1

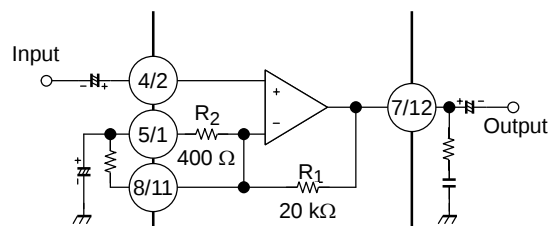


Figure 2

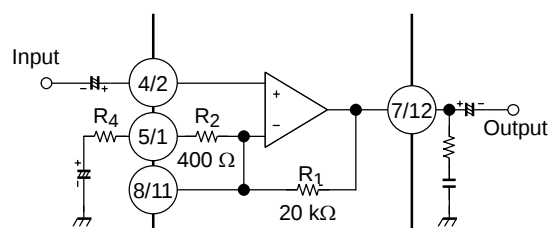
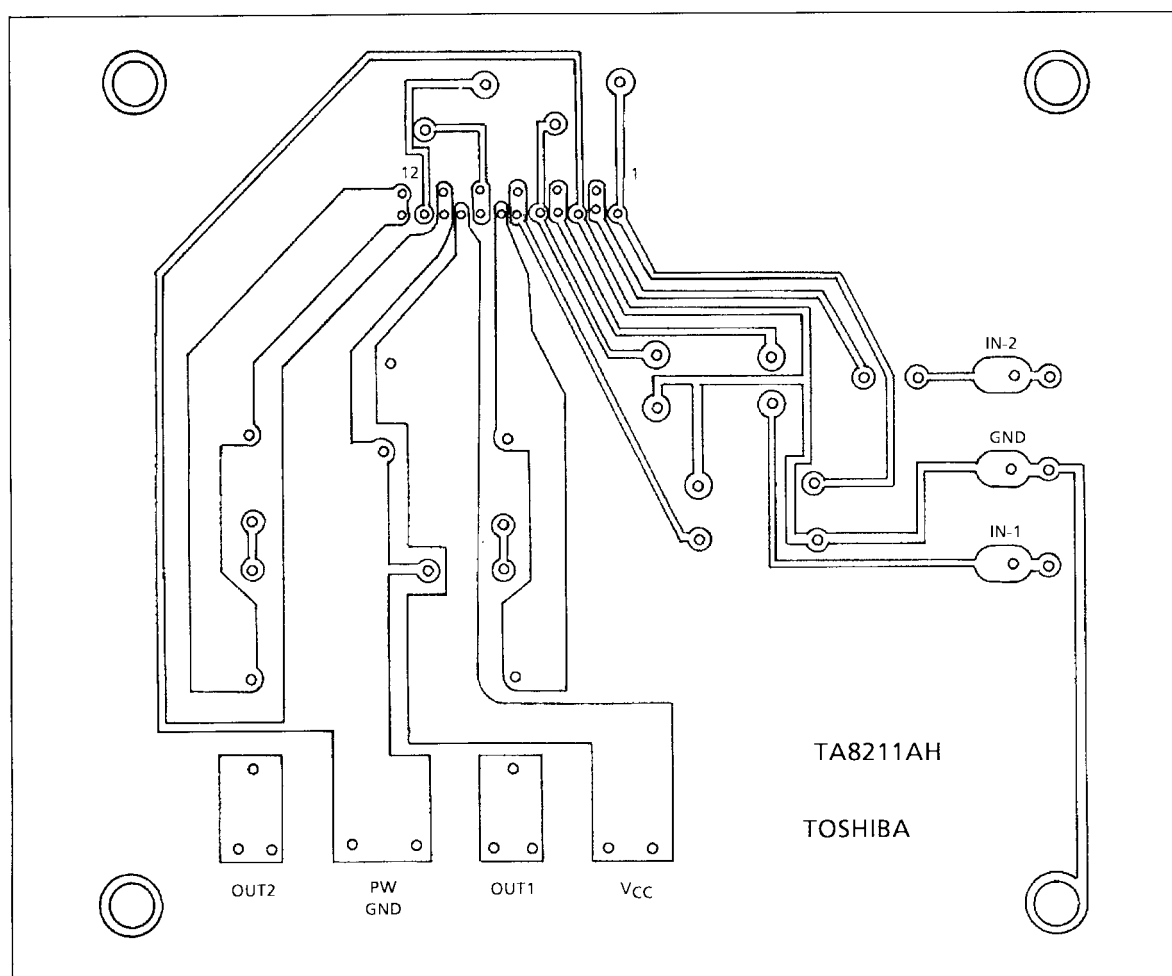


Figure 3

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.

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

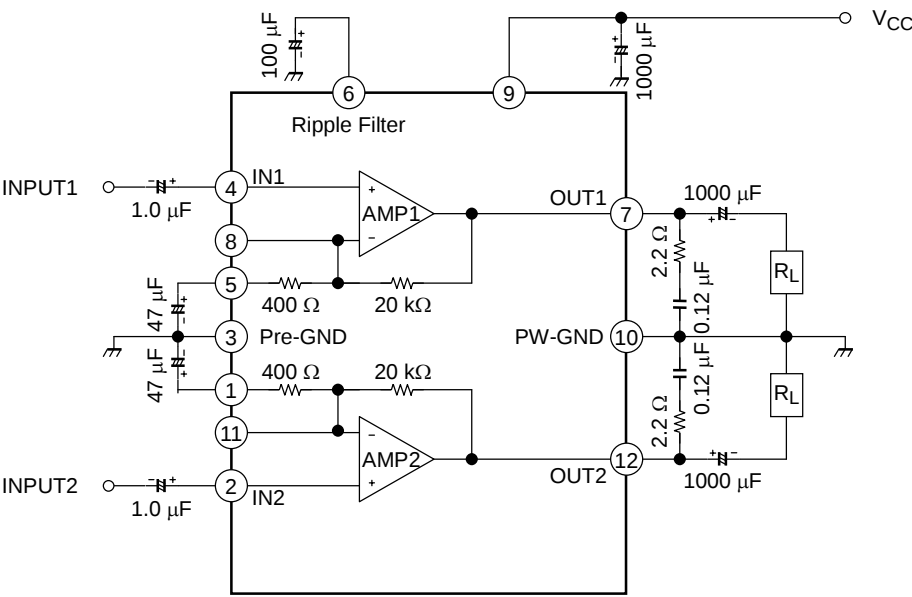
(unless otherwise specified, V_{CC} = 20 V, R_L = 600 Ω, R_g = 600 Ω, f = 1 kHz, Ta = 25°C)

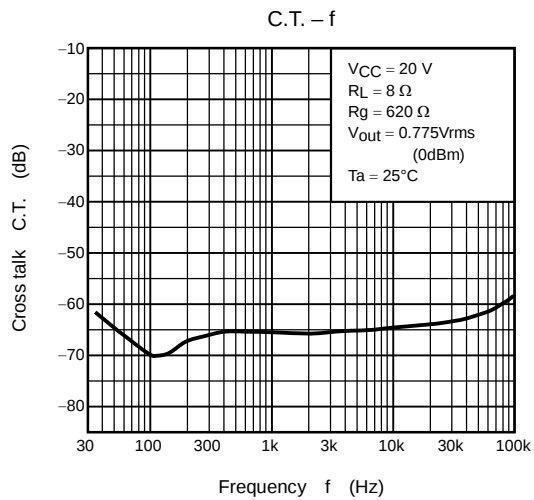
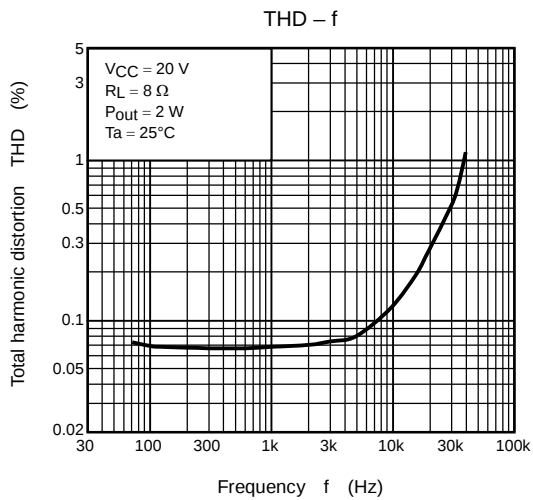
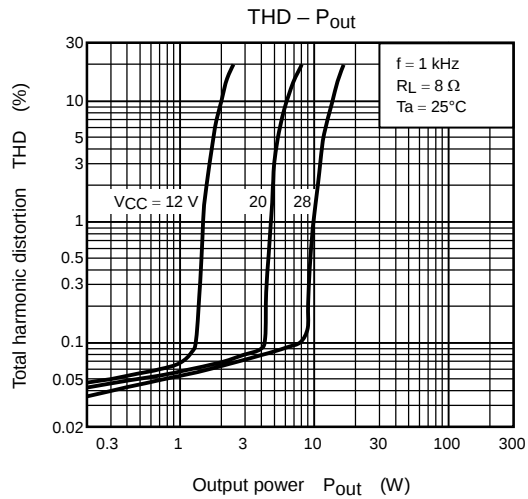
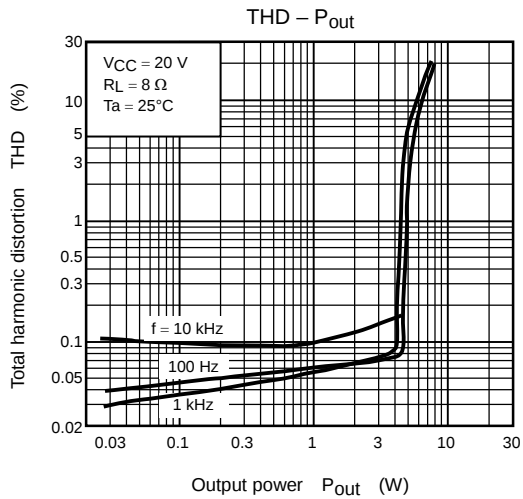
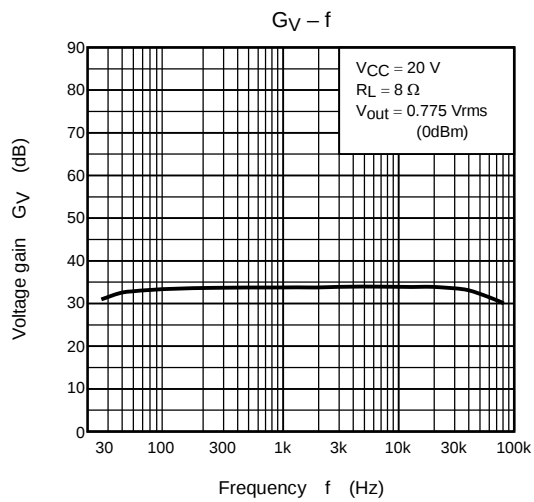
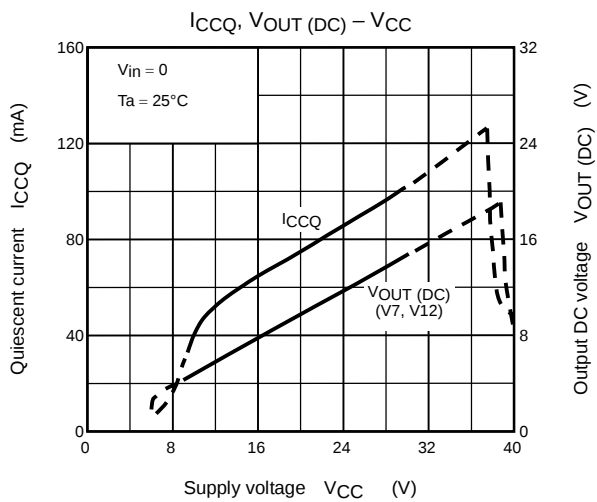
Characteristics	Symbol	Test Circuit	Test Condition	Min	Typ.	Max	Unit
Quiescent current	I _{CCQ}	—	V _{in} = 0	—	75	130	mA
Output power	P _{out} (1)	—	THD = 10%	5.0	6.0	—	W
	P _{out} (2)	—	THD = 1%	—	4.5	—	
Total harmonic distortion	THD	—	P _{out} = 2 W	—	0.1	0.6	%
Closed loop voltage gain	G _V	—	V _{out} = 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

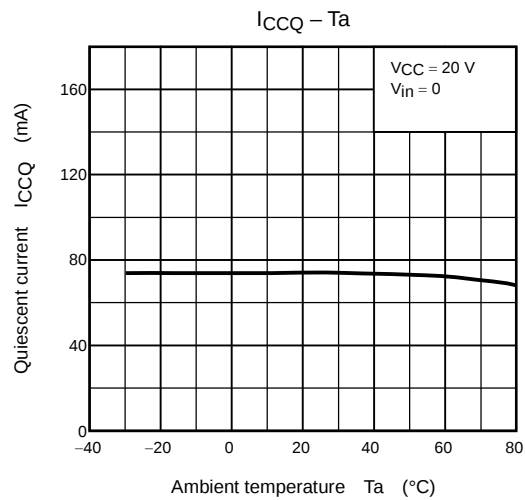
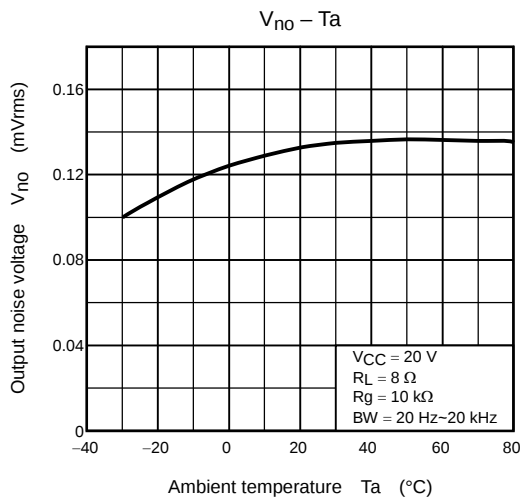
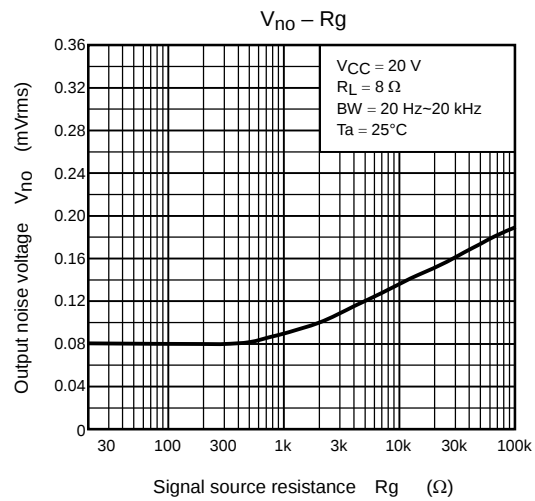
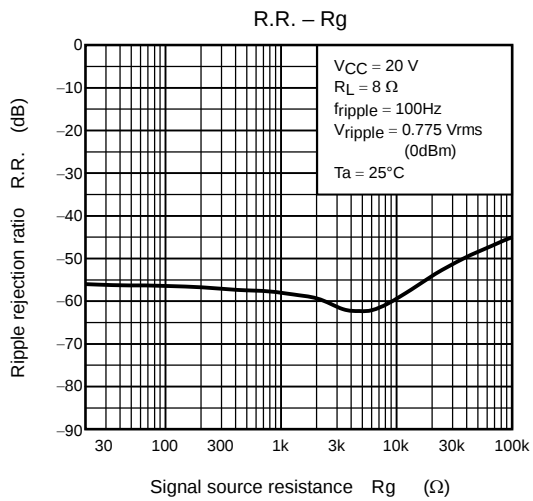
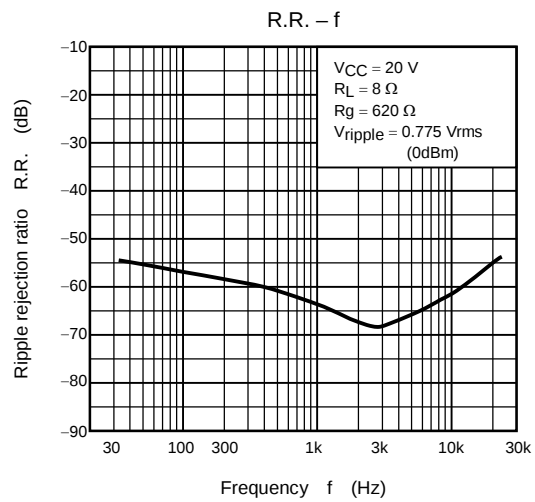
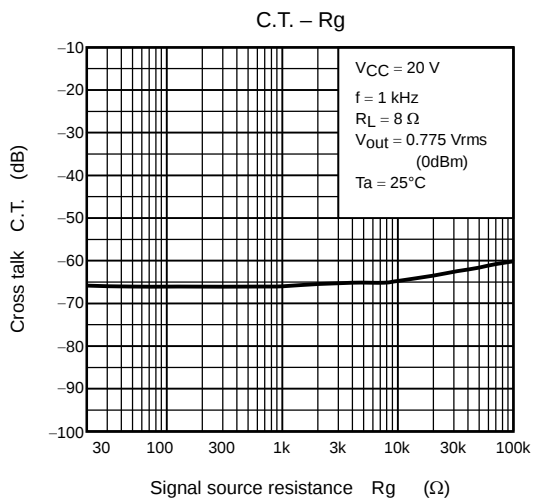
Typ. DC Voltage of Each Terminal (V_{CC} = 20 V, Ta = 25°C)

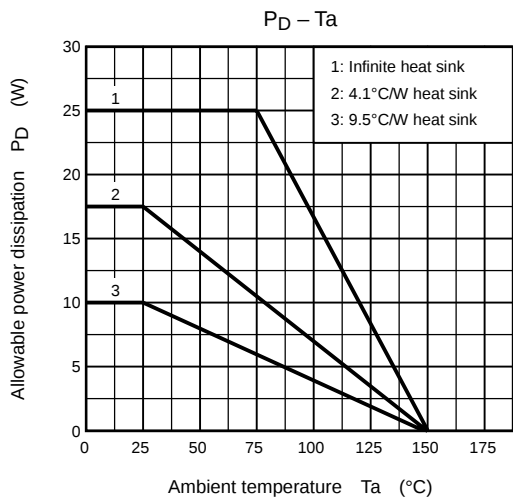
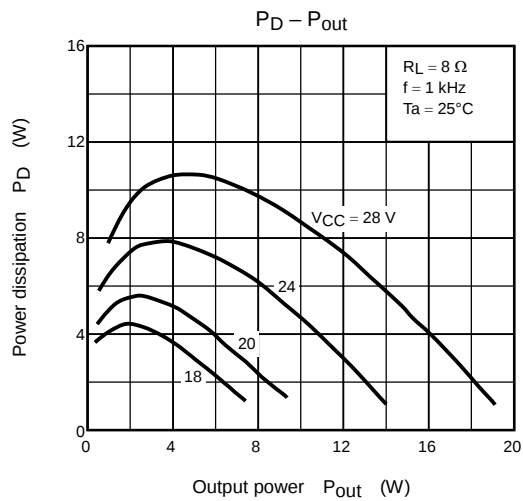
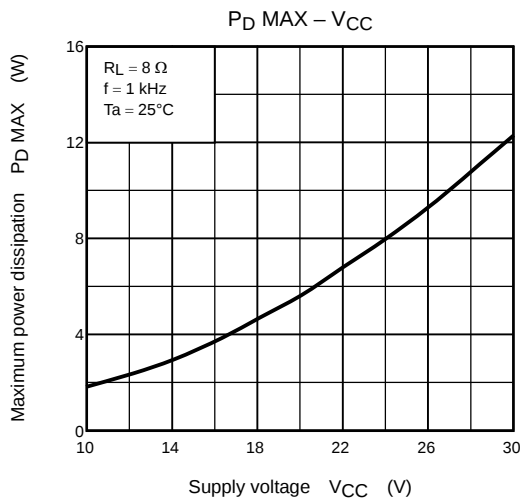
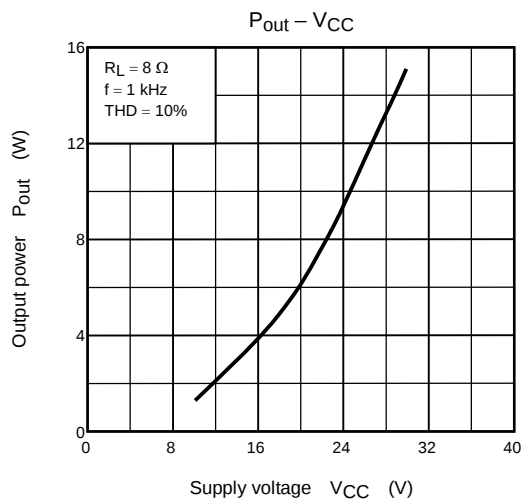
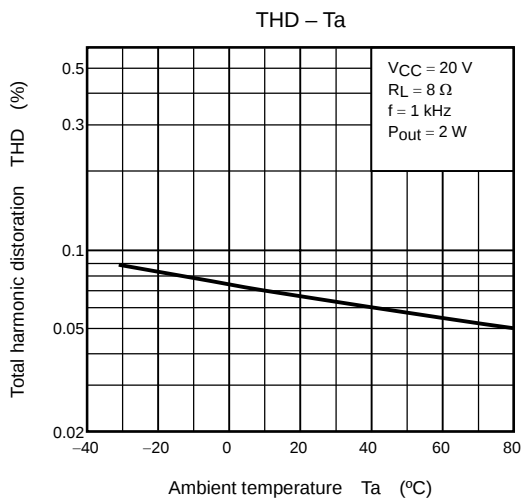
Terminal No.	1	2	3	4	5	6	7	8	9	10	11	12
DC voltage (V)	2.1	2.25	GND	2.25	2.1	6.8	9.8	2.25	V _{CC}	GND	2.25	9.8

Test Circuit



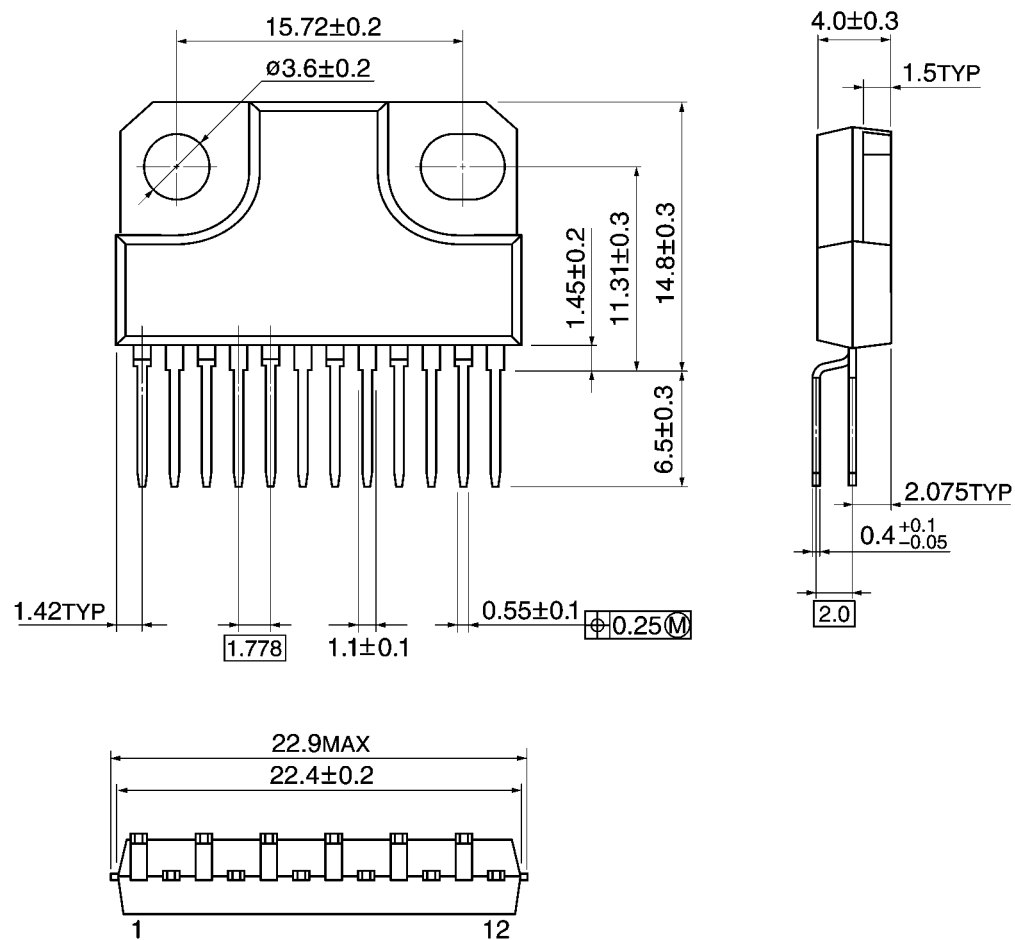






HZIP12-P-1.78B

Unit: mm



Weight: 4.04 g (typ.)

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