

TOSHIBA Bipolar Linear Integrated Circuit Silicon Monolithic

# TA8218AH

## Audio Power Amplifier

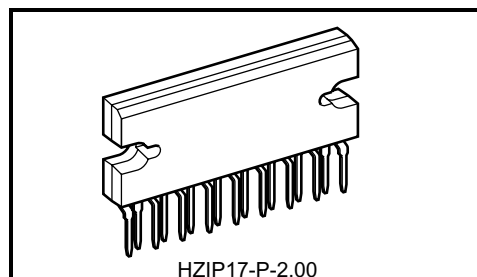
The TA8218AH is 3 channel audio amplifier for consumer applications.

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

- Built-in 3ch amplifier
- High output power:  $P_{out} = 6\text{ W/ch}$  (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.)  
( $V_{CC} = 20\text{ V}$ ,  $R_L = 8\ \Omega$ ,  $G_V = 34\text{ dB}$ ,  $R_g = 10\text{ k}\Omega$ ,  $BW = 20\text{ Hz} \sim 20\text{ kHz}$ )
- Built in audio muting circuit (Active  $\rightarrow$  Low)  
: Main amp/surround amp independent control.
- Built in various protection circuits  
Protection circuit: Thermal shut down, over voltage, Out  $\rightarrow$  GND short.
- Operation supply voltage range:  $V_{CC(opr)} = 10 \sim 30\text{ V}$  ( $T_a = 25^\circ\text{C}$ )

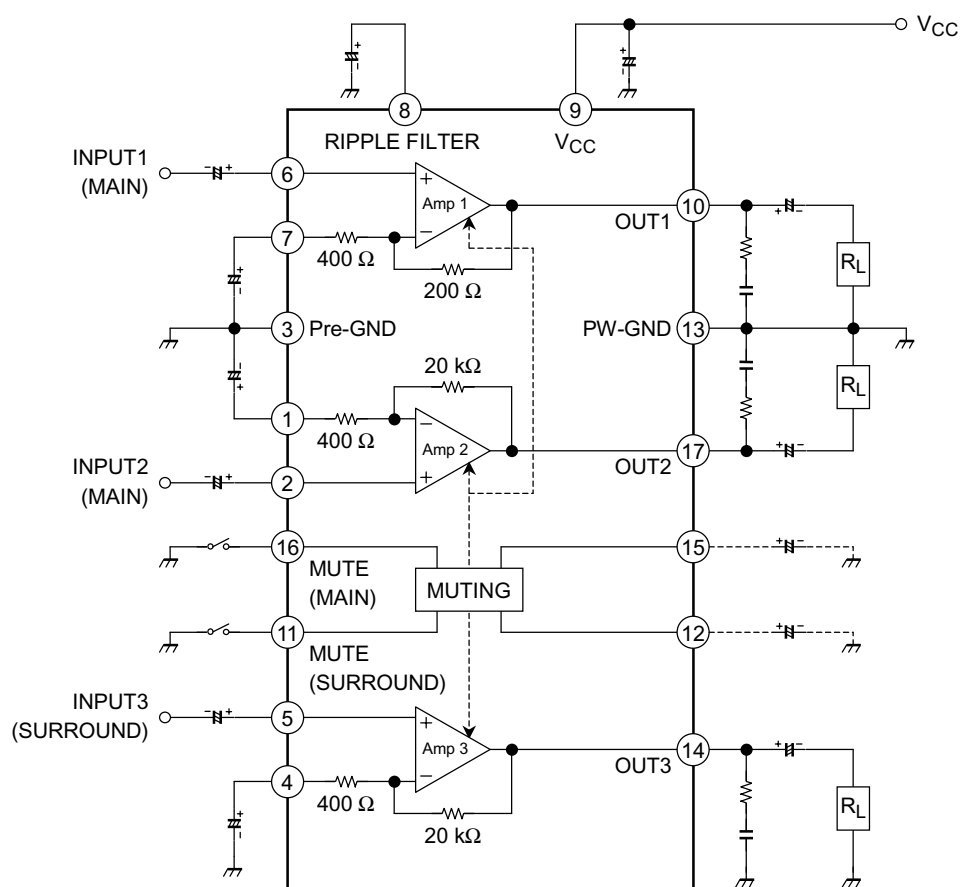


Weight : 9.8 g (Typ.)

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## Block Diagram



## 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)

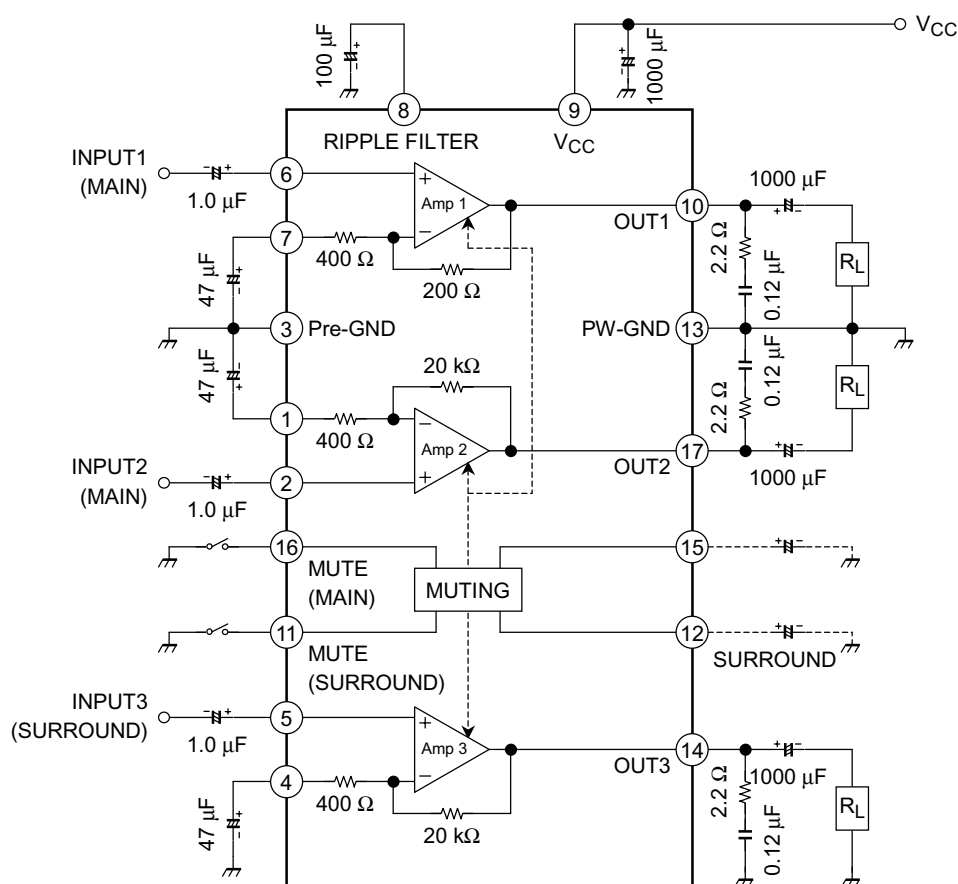
Characteristics	Symbol	Rating	Unit
Supply voltage	V <sub>CC</sub>	30	V
Output current (Peak/ch)	P <sub>D</sub> (Note)	50	W
Operation temperature	T <sub>opr</sub>	-20~75	°C
Storage temperature	T <sub>stg</sub>	-55~150	°C

Note: Derated above Ta = 25°C in the proportion of 400 mW/°C.

## Electrical Characteristics (unless otherwise specified V<sub>CC</sub> = 20 V, R<sub>L</sub> = 8 Ω, R<sub>g</sub> = 600 Ω, f = 1 kHz, Ta = 25°C)

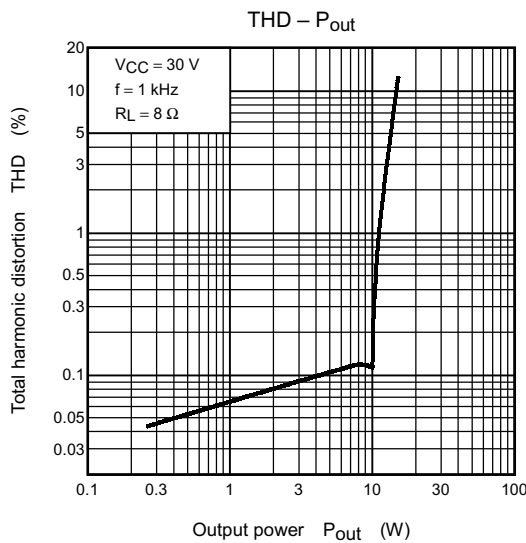
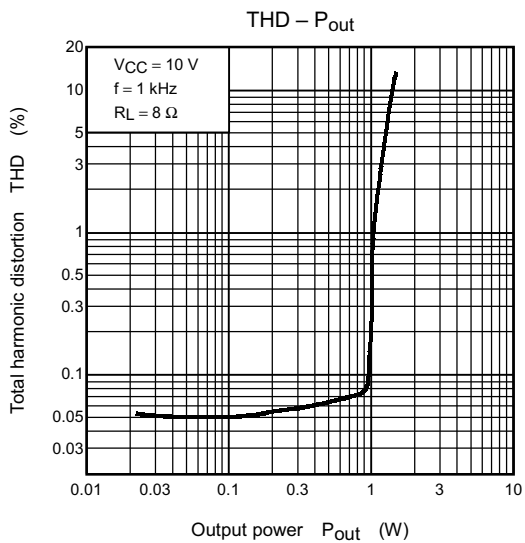
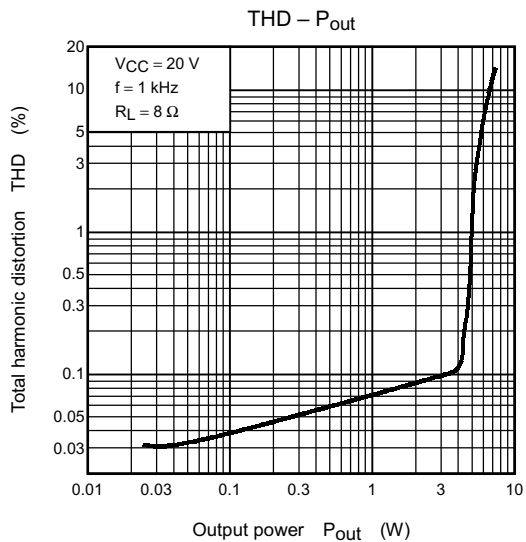
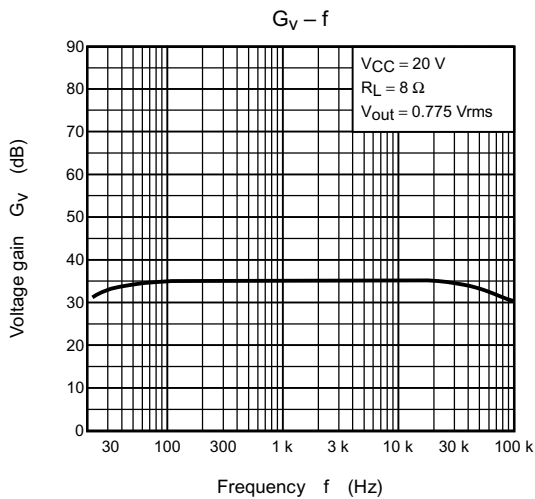
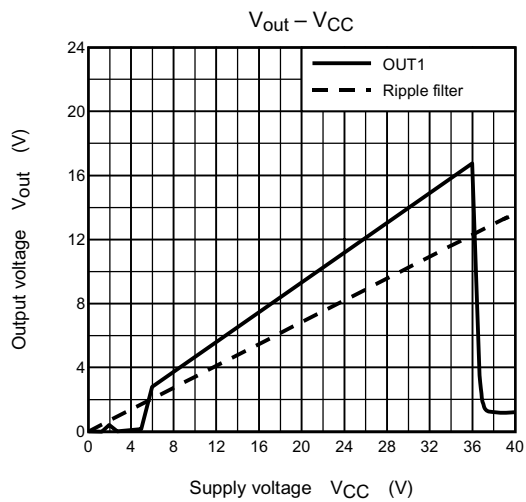
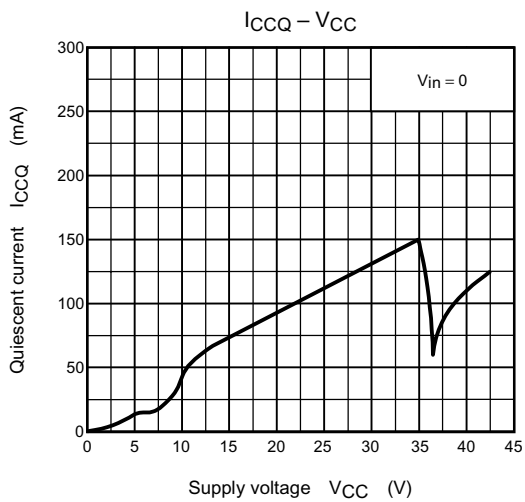
Characteristics	Symbol	Test Circuit	Test Condition	Min	Typ.	Max	Unit
Quiescent current	I <sub>CCQ</sub>	—	V <sub>in</sub> = 0	40	90	160	mA
Output power	P <sub>out</sub> (1)	—	THD = 10%	5.0	6.0	—	W
	P <sub>out</sub> (2)	—	THD = 1%	—	4.5	—	
Total harmonic distortion	THD	—	P <sub>out</sub> = 2 W	—	0.1	0.6	%
Voltage gain	G <sub>v</sub>	—	V <sub>out</sub> = 0.775 Vrms	32.5	34.0	35.5	dB
Input resistance	R <sub>IN</sub>	—	—	—	30	—	kΩ
Ripple rejection ratio	R.R.	—	R <sub>g</sub> = 0, f <sub>ripple</sub> = 100 Hz, V <sub>ripple</sub> = 0.775 Vrms	-50	-60	—	dB
Output noise voltage	V <sub>no</sub>	—	R <sub>g</sub> = 10 kΩ, BW = 20 Hz~20 kHz	—	0.14	0.3	mVrms
Cross talk	C.T.	—	R <sub>g</sub> = 0, V <sub>out</sub> = 0.775 Vrms Two channels input	—	-60	—	dB
Muting threshold voltage	V <sub>th</sub> (OFF)	—	Mute OFF 11/16 pin	—	3.7	4.0	V
	V <sub>th</sub> (ON)	—	Mute ON 11/16 pin	2.5	2.8	—	
Muting attenuation	ATT	—	V <sub>out</sub> = 0.775 Vrms → Mute Three channels input	-52	-60	—	dB

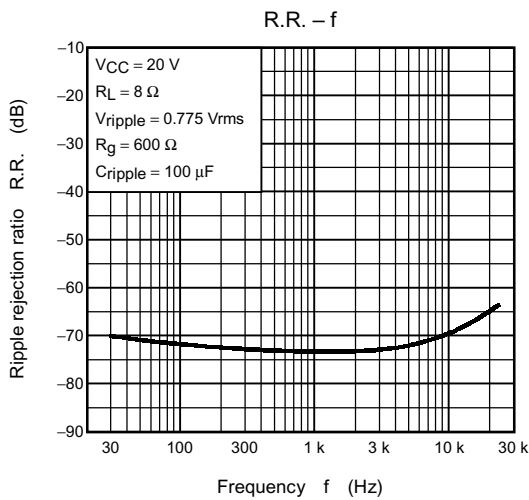
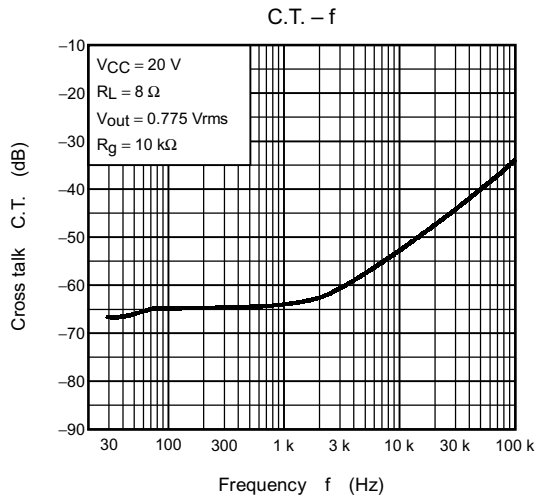
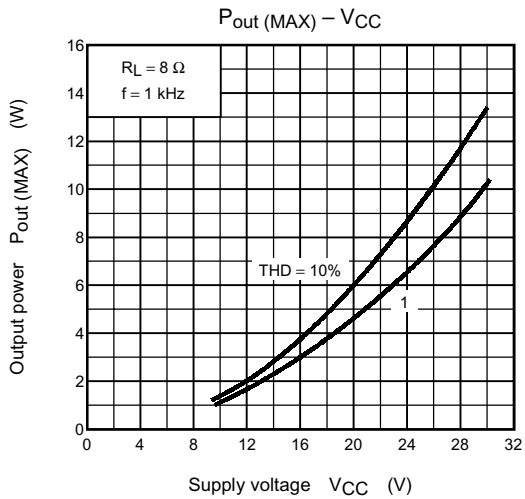
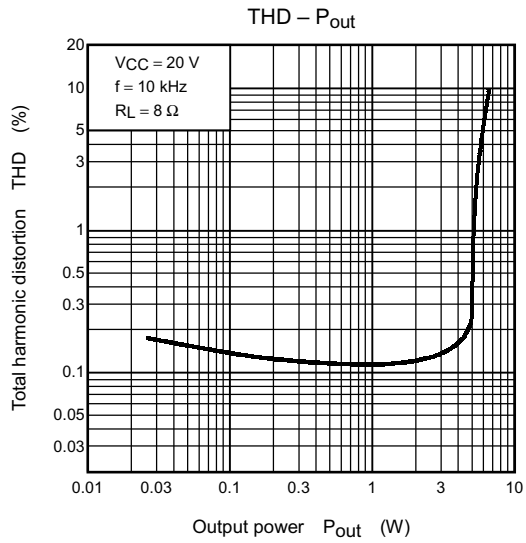
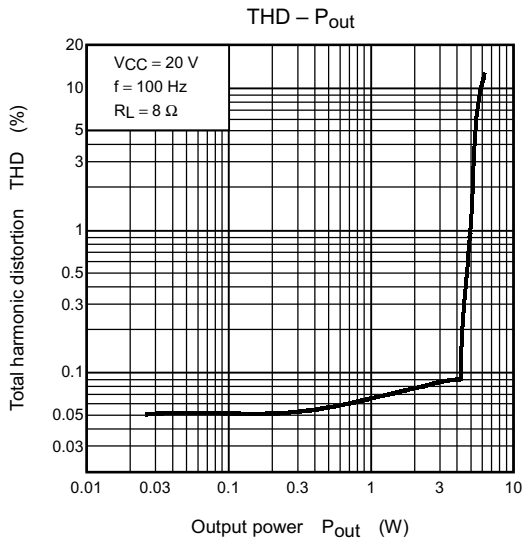
## Test Circuit

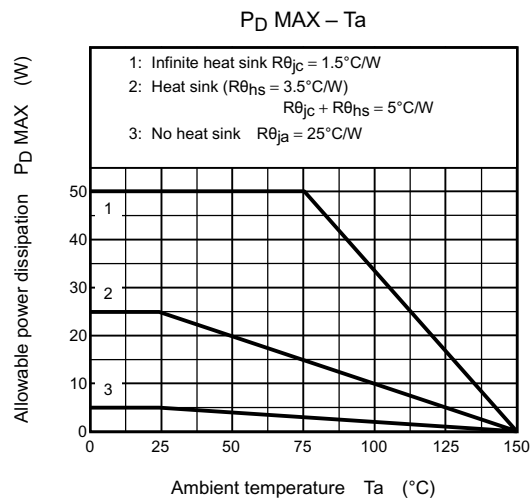
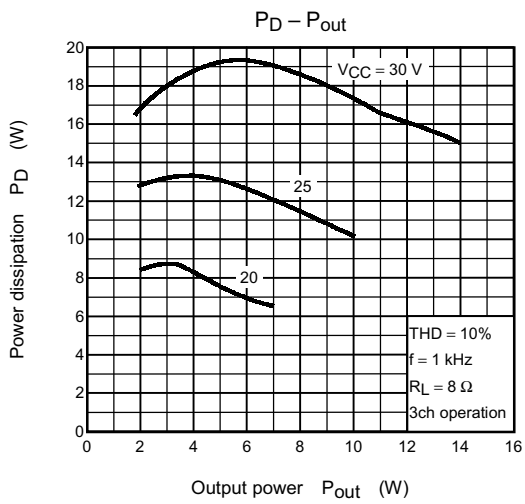


- \*1 16/11 pin LOW: mute ON  
 Mute ON :  $V_{th} 16/11 = 2.8 \text{ V (Typ.)}$  ( $V_{CC} = 20 \text{ V}$ ,  $T_a = 25^\circ\text{C}$ )  
 Mute OFF:  $V_{th} 16/11 = 3.7 \text{ V (Typ.)}$  ( $V_{CC} = 20 \text{ V}$ ,  $T_a = 25^\circ\text{C}$ )

- \*2 The capacitor for reducing POP noise at mute ON



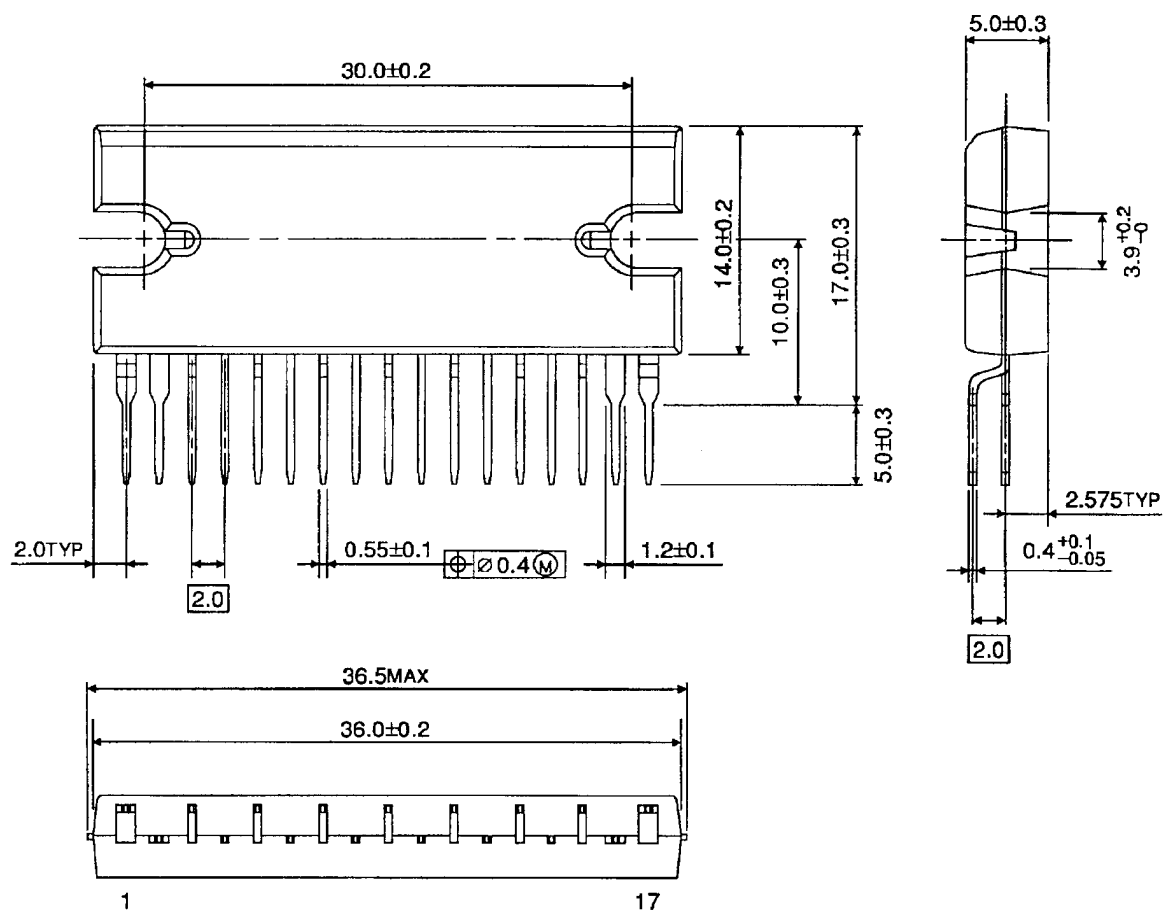




## Package Dimensions

HZIP17-P-2.00

Unit : mm



Weight : 9.8 g (Typ.)