TOSHIBA Bipolar Linear Integrated Circuit Silicon Monolithic

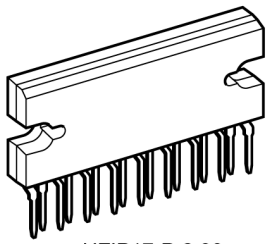
TA8218AH

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 V, f = 1kHz, THD = 10%, R_L = 8 Ω).

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



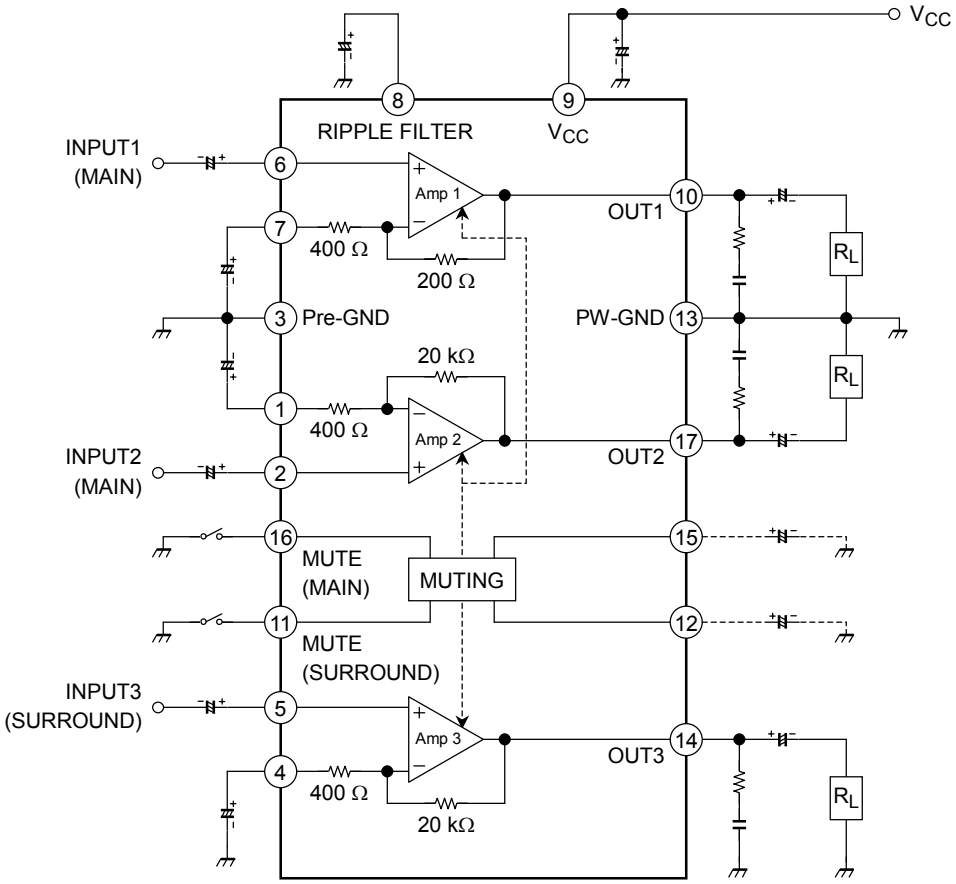
HZIP17-P-2.00

Weight: 9.8 g (typ.)

Features

- Built-in 3ch amplifier
- High output power: P_{out} = 6 W/ch (Typ.)
  (V_{CC} = 20 V, R_L = 8 Ω, f = 1 kHz, THD = 10%)
- Low noise: V_{no} = 0.14 mVrms (Typ.)
  (V_{CC} = 20 V, R_L = 8 Ω, G_V = 34dB, R_g = 10 kΩ, BW = 20 Hz~20 kHz)
- Built in audio muting circuit (Active → Low)
  : Main amp/surround amp independent control.
- Built in various protection circuits
  Protection circuit: Thermal shut down, over voltage, Out → GND short.
- Operation supply voltage range: $V_{CC\ (opr)}$ = 10~30 V (Ta = 25°C)

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)

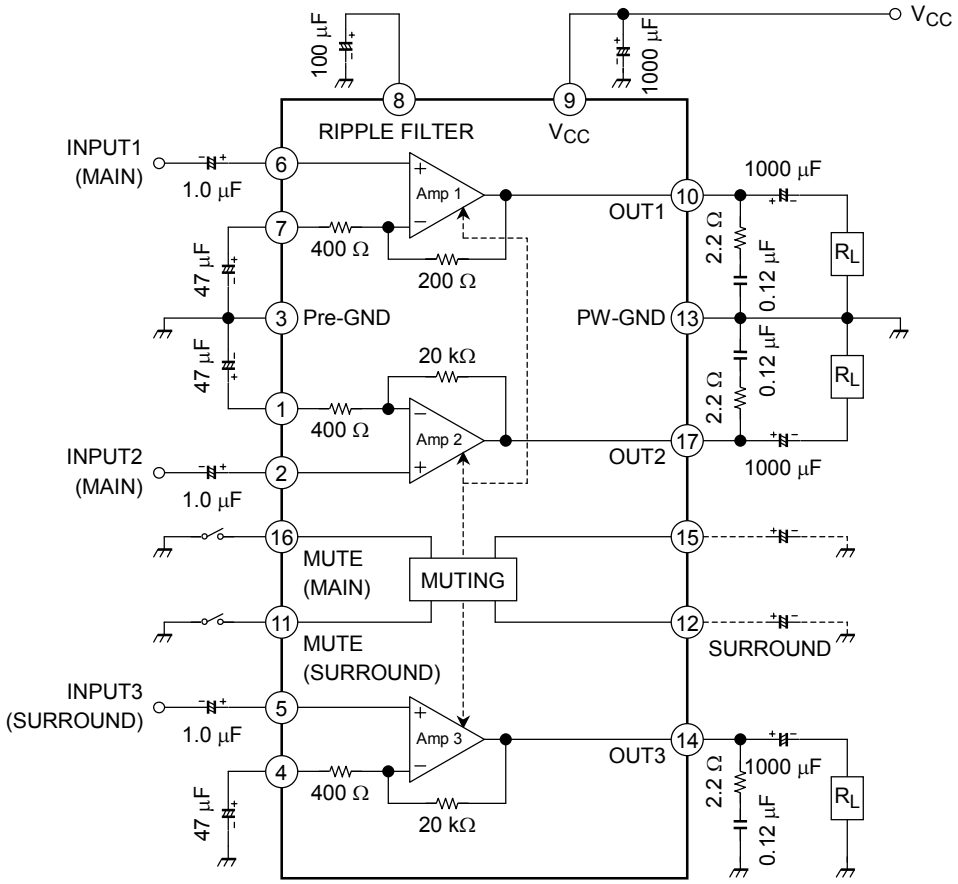
Characteristics	Symbol	Rating	Unit
Supply voltage	V_{CC}	30	V
Output current (Peak/ch)	P_D (Note)	50	W
Operation temperature	T_{opr}	−20~75	°C
Storage temperature	T_{stg}	−55~150	°C

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

Electrical Characteristics
(unless otherwise specified V_{CC} = 20 V, R_L = 8 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	40	90	160	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	%
Voltage gain	G_v	—	V_{out} = 0.775 Vrms	32.5	34.0	35.5	dB
Input resistance	R_{IN}	—	—	—	30	—	kΩ
Ripple rejection ratio	R.R.	—	Rg = 0, f_{ripple} = 100 Hz, V_{ripple} = 0.775 Vrms	−50	−60	—	dB
Output noise voltage	V_{no}	—	Rg = 10 kΩ, BW = 20 Hz~20 kHz	—	0.14	0.3	mVrms
Cross talk	C.T.	—	Rg = 0, V_{out} = 0.775 Vrms Two channels input	—	−60	—	dB
Muting threshold voltage	$V_{th\ (OFF)}$	—	Mute OFF 11/16 pin	—	3.7	4.0	V
	$V_{th\ (ON)}$	—	Mute ON 11/16 pin	2.5	2.8	—	
Muting attenuation	ATT	—	V_{out} = 0.775 Vrms → Mute Three channels input	−52	−60	—	dB

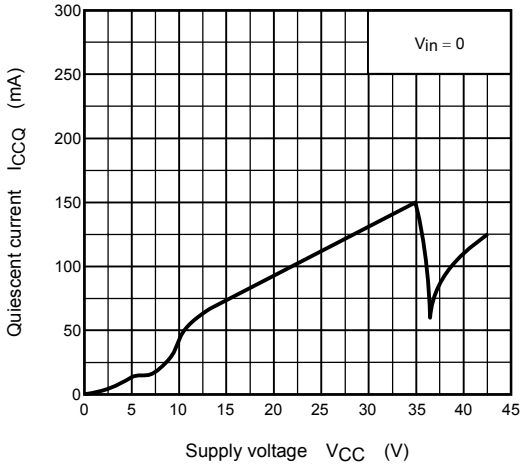
Test Circuit



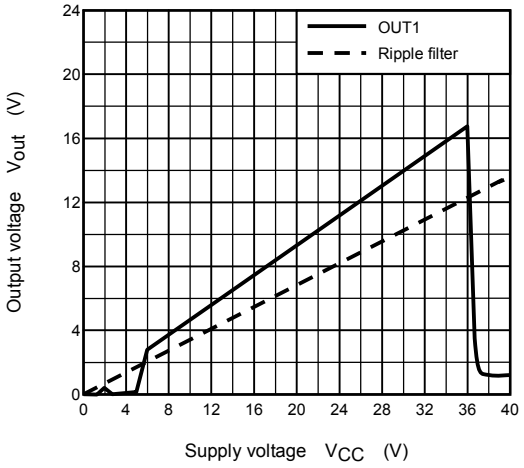
*1 16/11 pin LOW: mute ON
Mute ON : V_{th} 16/11 = 2.8 V (Typ.) (V_{CC} = 20 V, Ta = 25°C)
Mute OFF: V_{th} 16/11 = 3.7 V (Typ.) (V_{CC} = 20 V, Ta = 25°C)

*2 The capacitor for reducing POP noise at mute ON

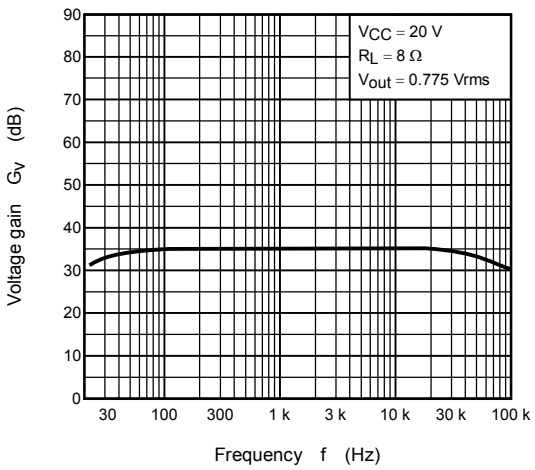
$I_{CCQ} - V_{CC}$



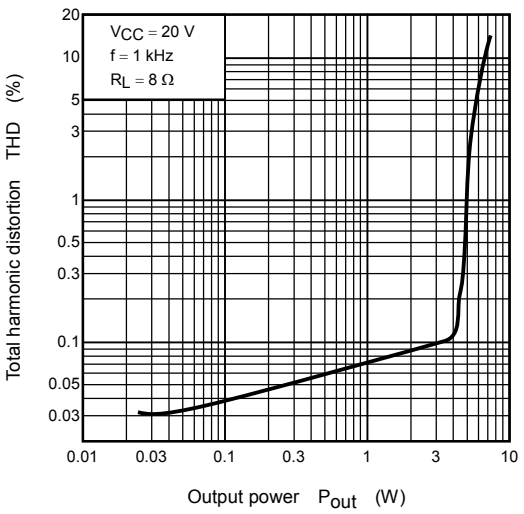
$V_{out} - V_{CC}$



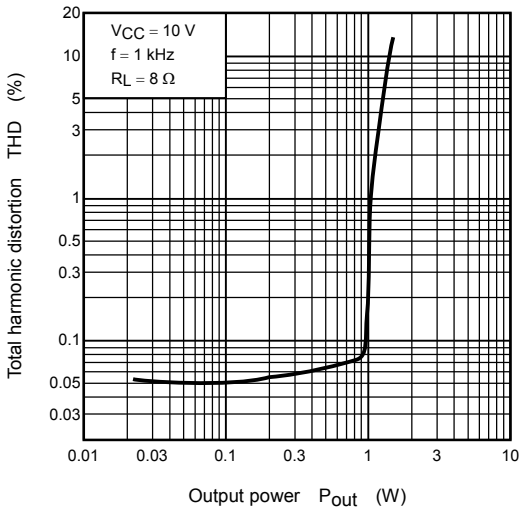
$G_v - f$



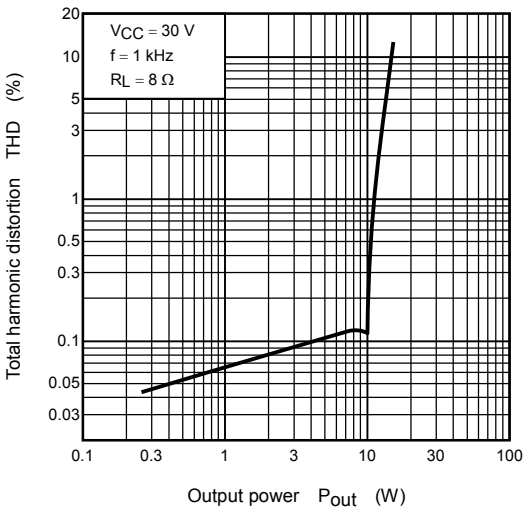
$THD - P_{out}$



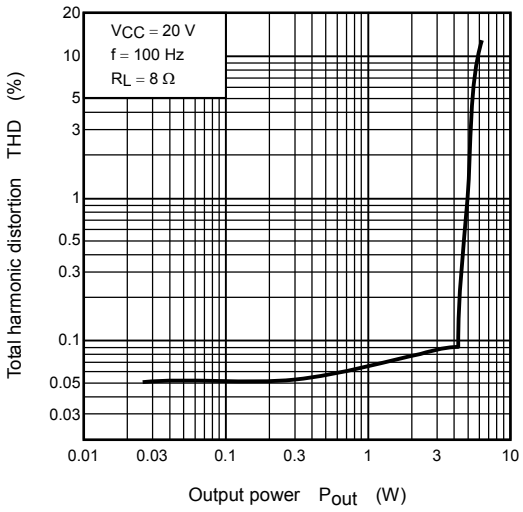
$THD - P_{out}$



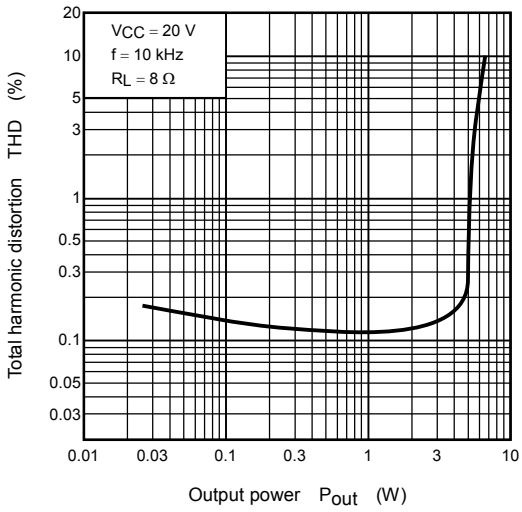
$THD - P_{out}$



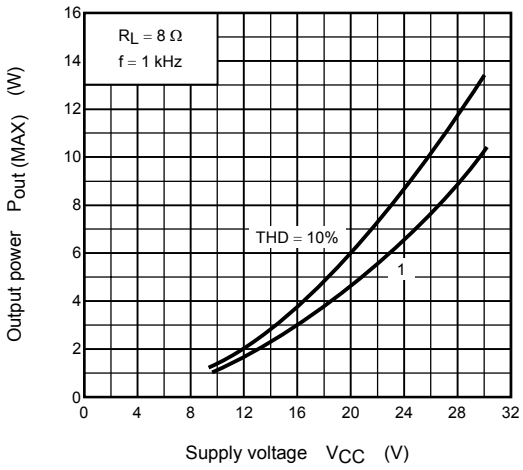
THD – P_{out}



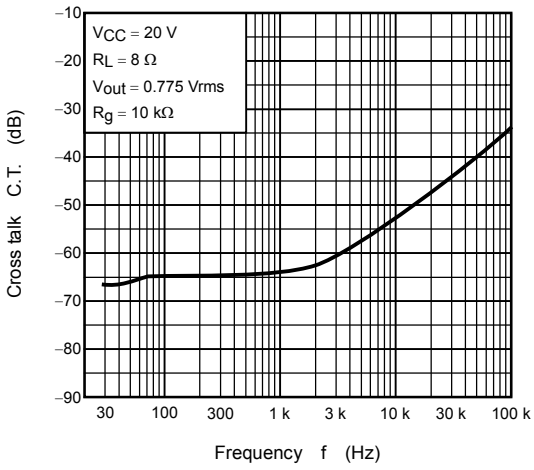
THD – P_{out}



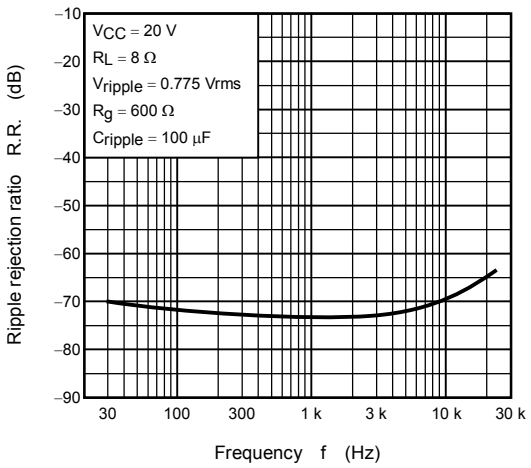
$P_{out\ (MAX)}$ – V_{CC}



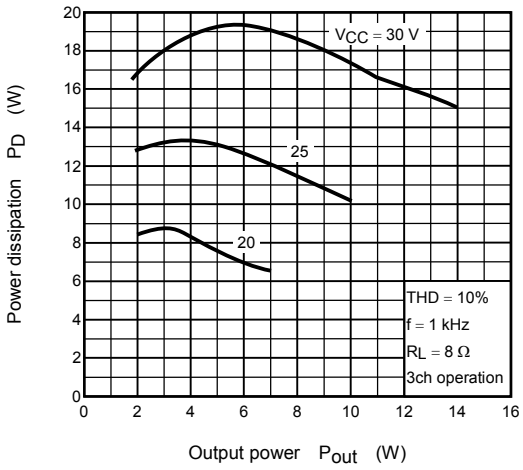
C.T. – f



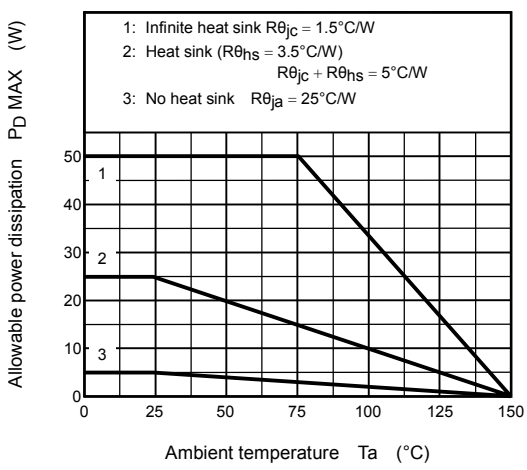
R.R. – f



$P_D - P_{out}$

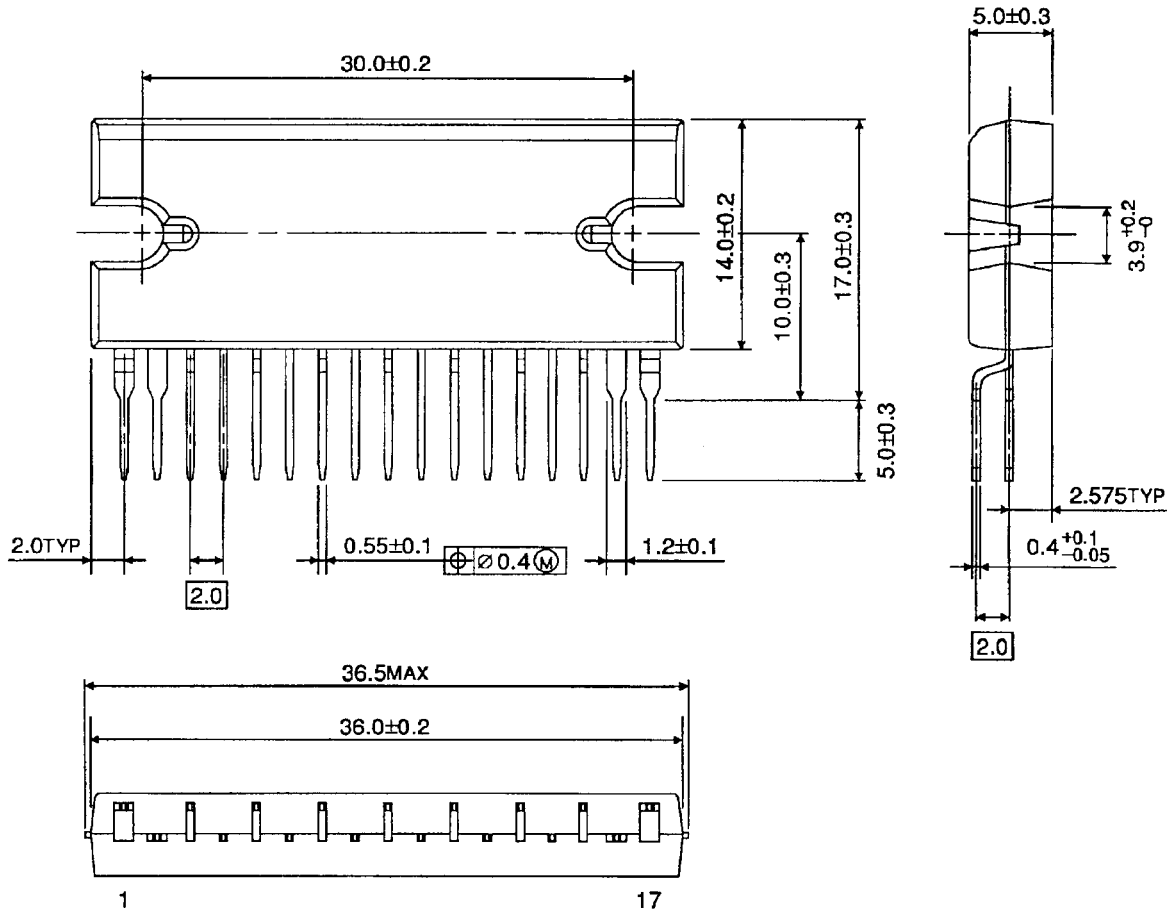


P_D MAX – Ta



Package Dimensions

HZIP17-P-2.00 Unit : mm



Weight: 9.8 g (typ.)

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