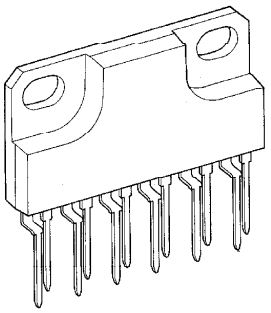
TOSHIBA BIPOLAR LINEAR INTEGRATED CIRCUIT SILICON MONOLITHIC

TA8246H

DUAL AUDIO POWER AMPLIFIER 6W×2CH

The TA8246H is dual power amplifier for Consumer applications.
This IC provides an output power of 6 watts per channel (at V_{CC} = 20V, f = 1kHz, THD = 10%, R_L = 8Ω)
It is suitable for power amplifier of TV and home Stereo.



HZIP12-P-1.78B

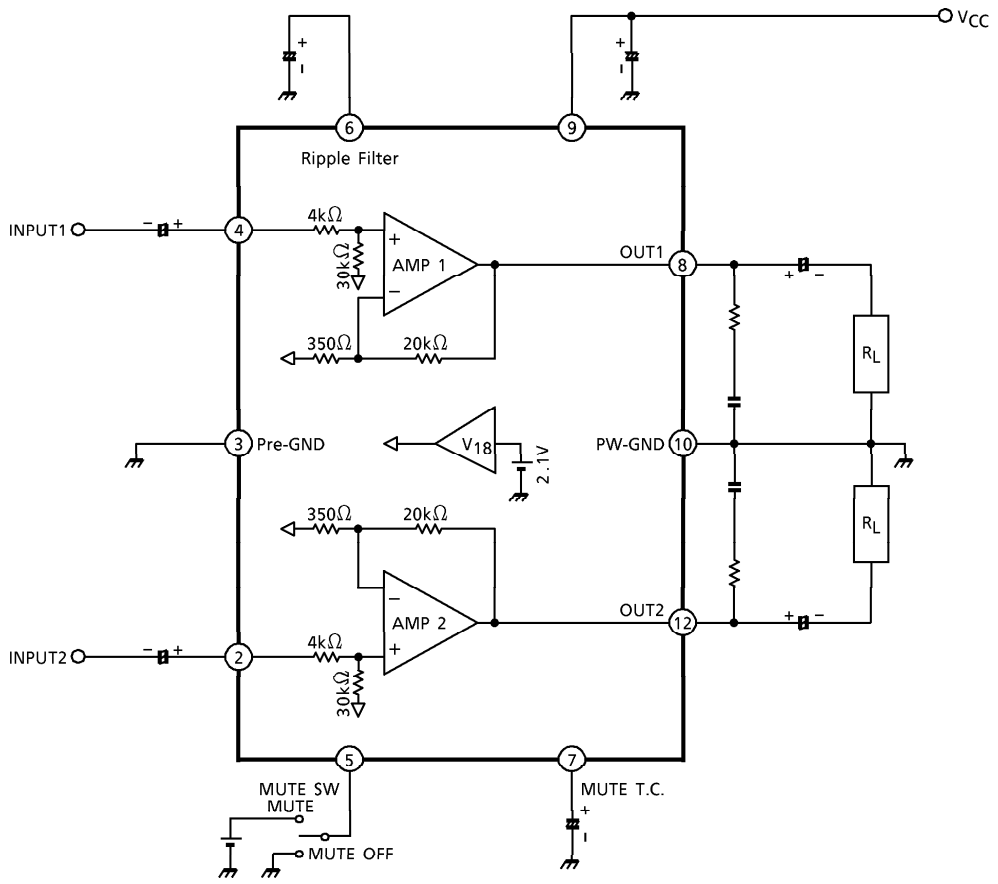
Weight : 4.04g (Typ.)

FEATURES

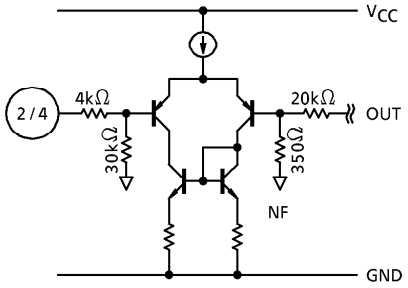
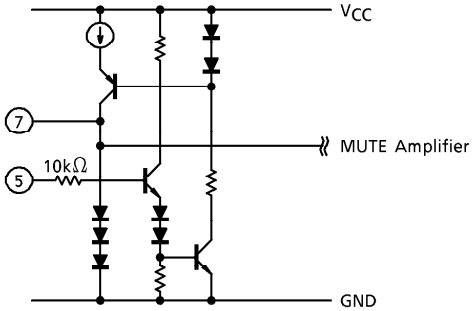
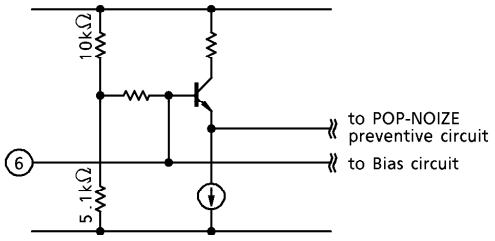
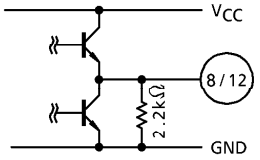
- High Output Power
  : Pout = 6W (Typ.)
  (V_{CC} = 20V, R_L = 8Ω, f = 1kHz, THD = 10%)
- Built-in Audio Muting Circuit.
- NF Terminal Capacitor Less
  : Fixed Gain (Gv = 34dB), Needless External capacitor.
- Protectors

  Thermal shut down Protection circuit, Over Voltage Protection circuit
- Low Poping Noise
- High THD Ratio
- High input dynamic range
- Available for using same PCB layout with 3 channel IC : TA8256H.
- Operating Supply Voltage Range
  : $V_{CC\,(opr)}$ = 10~30V (Ta = 25°C)

BLOCK DIAGRAM



TERMINAL EXPLANATION

TERMINAL No.	SYMBOL	FUNCTION	EQUIVALENT CIRCUIT
2	IN1	Input	
4	IN2		
3	Pre-GND	GND terminal	—
5	MUTE SW	MUTE control terminal	
7	MUTE T.C.		
6	R.F.	Ripple filter	
8	OUT1	Output	
12	OUT2		
9	V_{CC}	Supply voltage terminal	—
10	PW-GND	GND terminal	—

①, ⑪ : N.C

MAXIMUM RATINGS (Ta = 25°C)

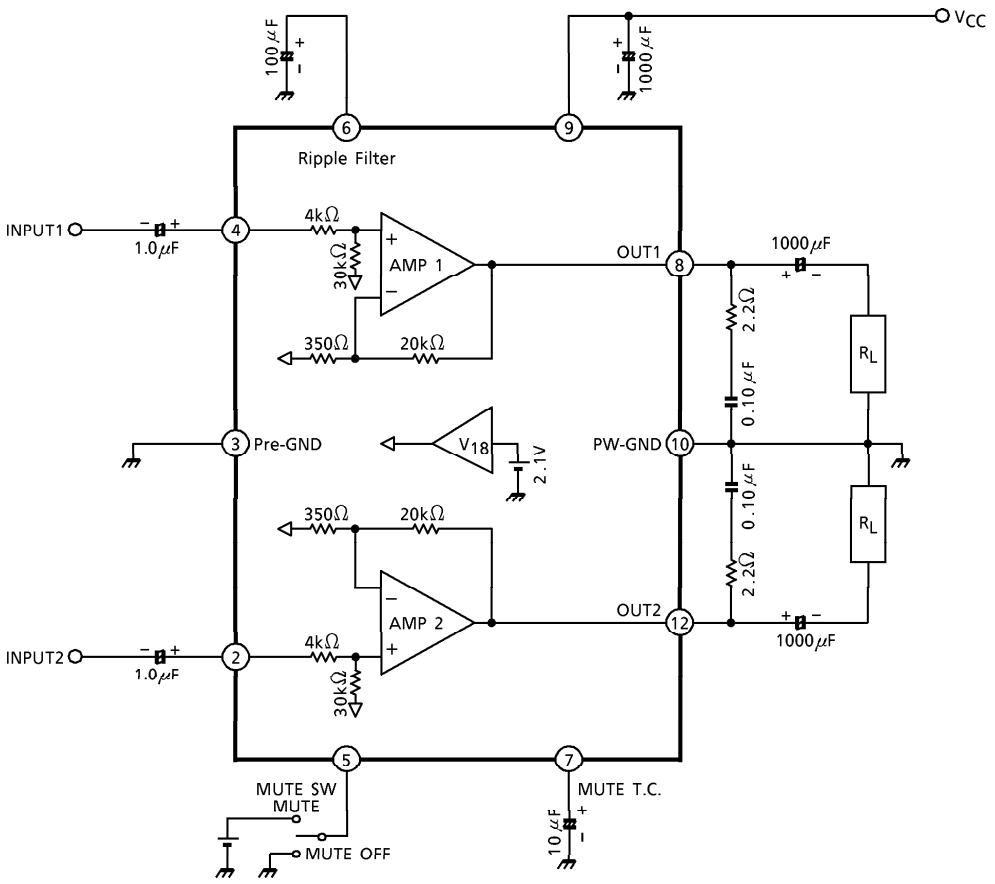
CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	V_{CC}	30	V
Output Current (Peak / Ch)	$I_{O\ (peak)}$	2	A
Power Dissipation	P_D (Note)	25	W
Operating Temperature	T_{opr}	− 20~75	°C
Storage Temperature	T_{stg}	− 55~150	°C

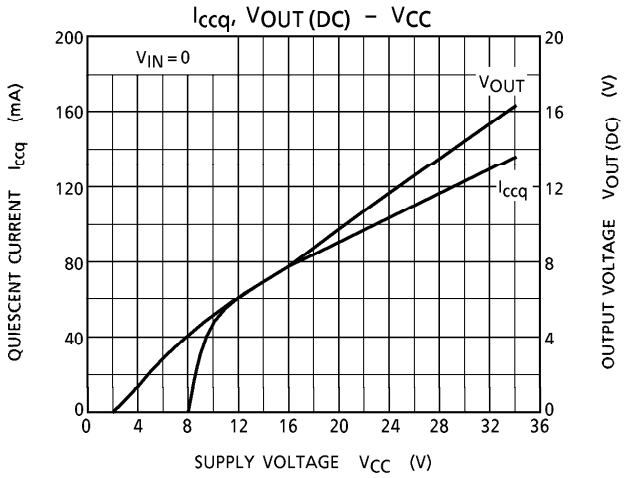
(Note) Derated above Ta = 25°C in the proportion of 200mW / °C.

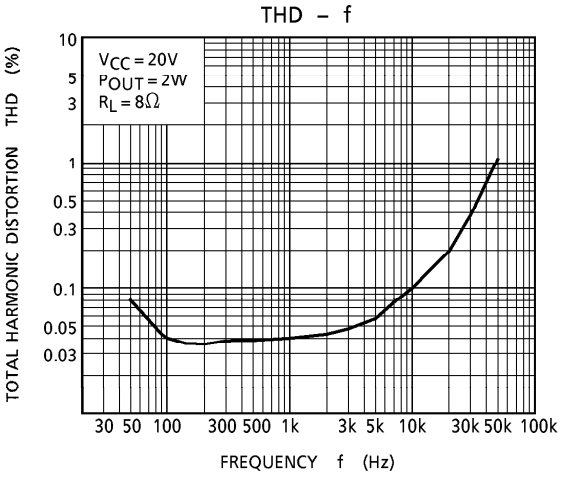
ELECTRICAL CHARACTERISTICS
(Unless otherwise specified, V_{CC} = 20V, R_L = 8Ω, Rg = 620Ω, f = 1kHz, Ta = 25°C)

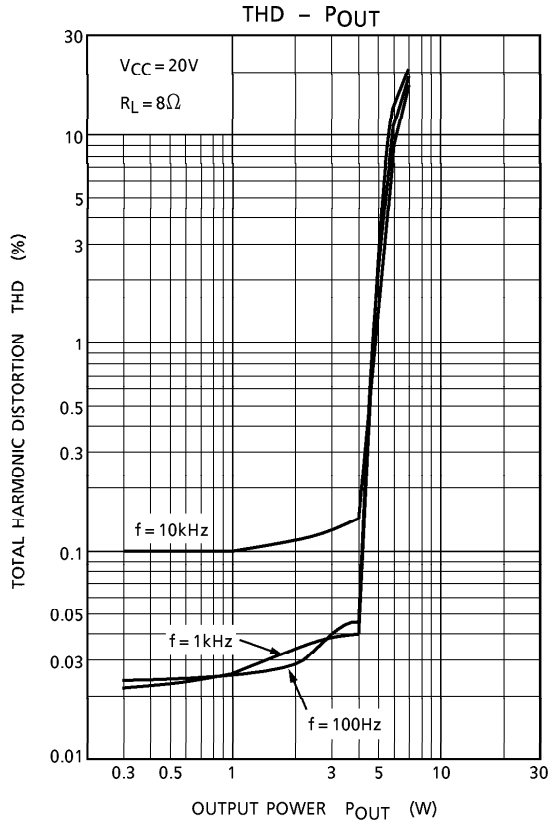
CHARACTERISTIC	SYMBOL	TEST CIR-CUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Quiescent Current	ICCQ	—	Vin = 0	50	85	130	mA
Output Power	Pout (1)	—	THD = 10%	5.0	6.0	—	W
	Pout (2)	—	THD = 1%	—	4.5	—	
Total Harmonic Distortion	THD (1)	—	Pout = 2W	—	0.04	0.2	%
	THD (2)	—	Pout = 2W, f = 10kHz	—	0.1	0.6	
Voltage Gain	Gv	—	Vout = 0.775V_{rms}	32.5	34.0	35.5	dB
Input Resistance	Rin	—		—	34	—	kΩ
Ripple Rejection Ratio	R.R.	—	f = 100Hz	− 40	− 47	—	dB
Output Noise Voltage	Vno	—	Rg = 10kΩ, BW = 20Hz~20kHz	—	0.14	0.3	mV_{rms}
Cross Talk	C.T.	—	Rg = 10kΩ, Vout = 0.775V_{rms}	—	− 60	—	dB
Mute Control Voltage	Vth (ON)	—	MUTE ON	3.1	—	V_{CC}	V
	Vth (OFF)	—	MUTE OFF	0	—	2.5	
Mute Attenuation Level	ATT	—	Vout = 0.775V_{rms}→MUTE	− 52	− 60	—	dB

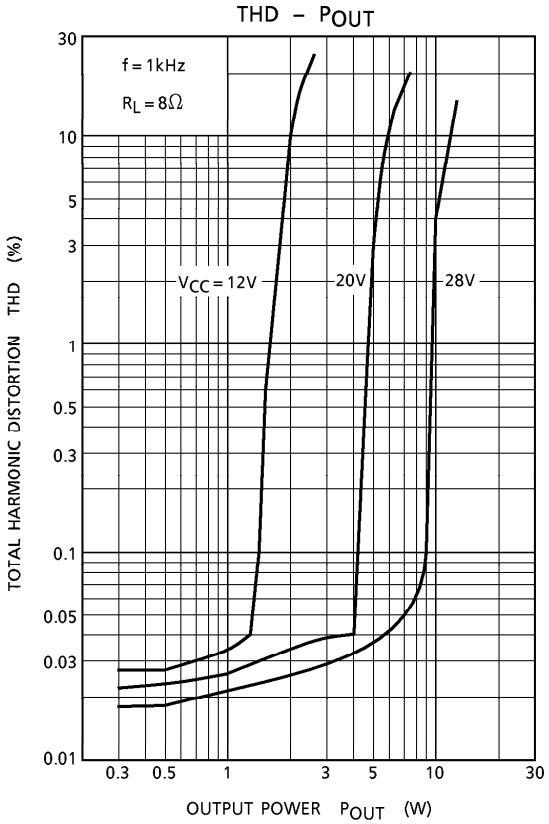
TEST CIRCUIT



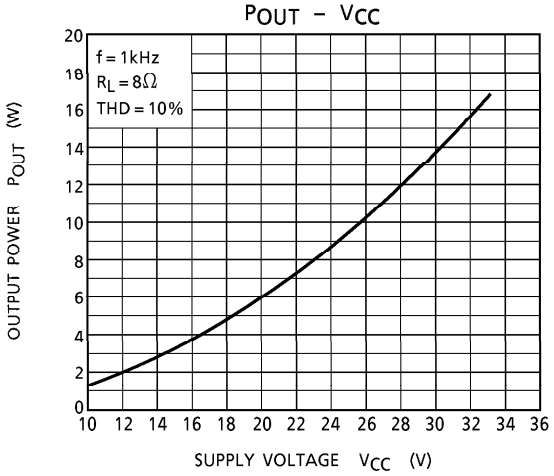

I_{ccq}, $V_{OUT\,(DC)}$ – V_{CC}
V_{IN} = 0
V_{OUT}
I_{ccq}
QUIESCENT CURRENT I_{ccq} (mA)
OUTPUT VOLTAGE $V_{OUT\,(DC)}$ (V)
SUPPLY VOLTAGE V_{CC} (V)
0 4 8 12 16 20 24 28 32 36
0 40 80 120 160 200
0 4 8 12 16 20


THD – f
V_{CC} = 20V
P_{OUT} = 2W
R_L = 8Ω
TOTAL HARMONIC DISTORTION THD (%)
FREQUENCY f (Hz)
10 5 3 1 0.5 0.3 0.1 0.05 0.03
30 50 100 300 500 1k 3k 5k 10k 30k 50k 100k

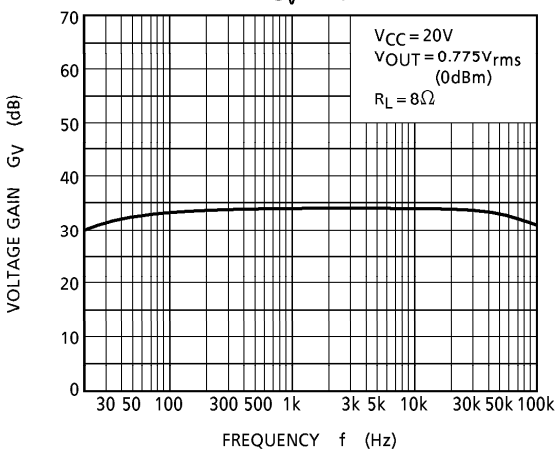

THD – P_{OUT}
V_{CC} = 20V
R_L = 8Ω
f = 10kHz
f = 1kHz
f = 100Hz
TOTAL HARMONIC DISTORTION THD (%)
OUTPUT POWER P_{OUT} (W)
30 10 5 3 1 0.5 0.3 0.1 0.05 0.03 0.01
0.3 0.5 1 3 5 10 30


THD – P_{OUT}
f = 1kHz
R_L = 8Ω
V_{CC} = 12V
20V
28V
TOTAL HARMONIC DISTORTION THD (%)
OUTPUT POWER P_{OUT} (W)
30 10 5 3 1 0.5 0.3 0.1 0.05 0.03 0.01
0.3 0.5 1 3 5 10 30

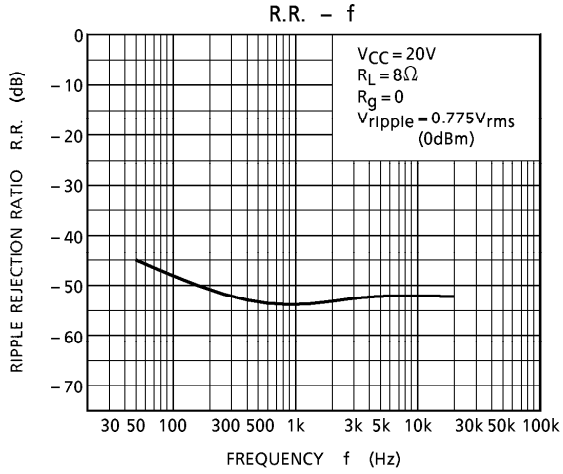
P_{OUT} – V_{CC}



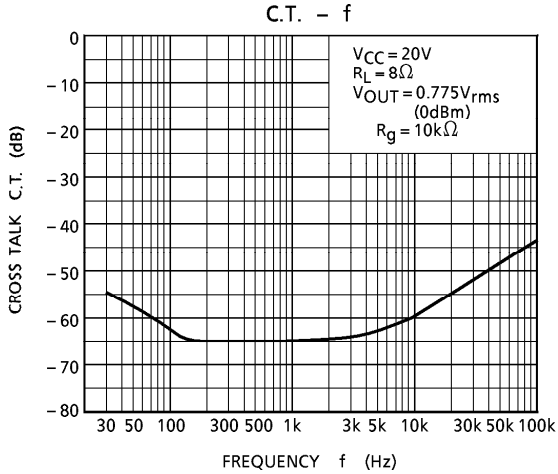
G_V – f



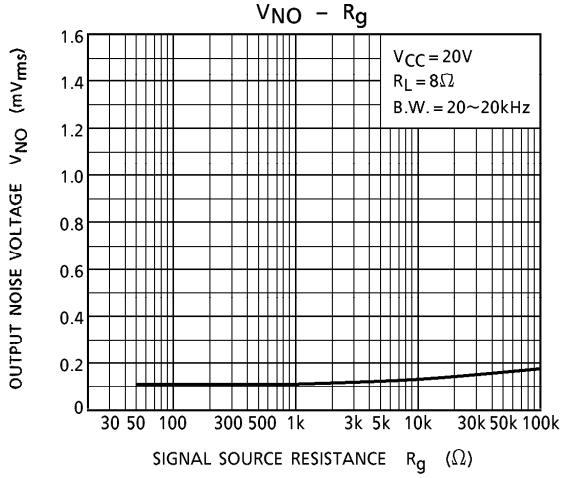
R.R. – f



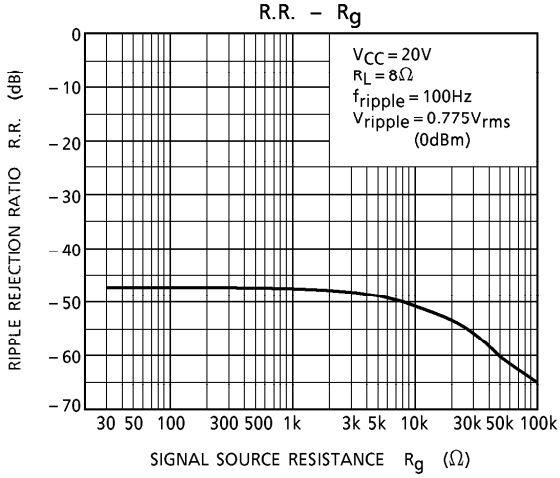
C.T. – f



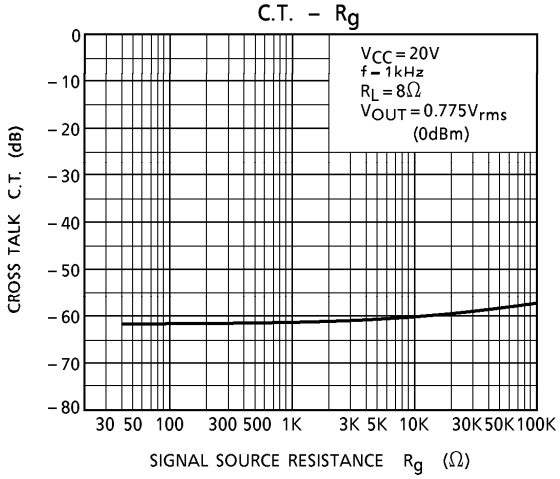
V_{NO} – R_g



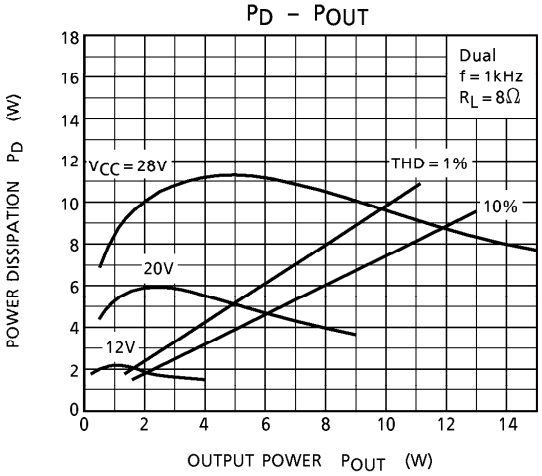
R.R. – R_g



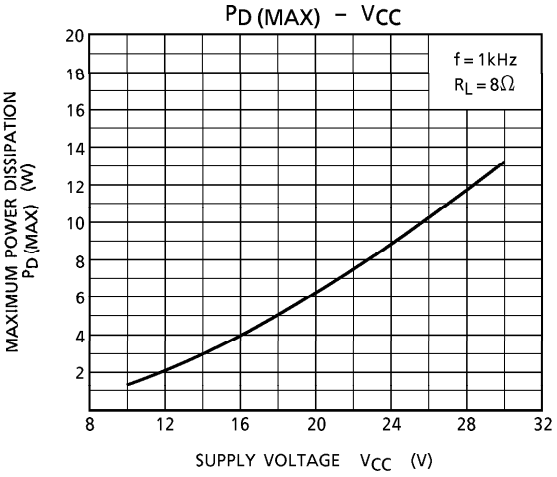
C.T. – R_g



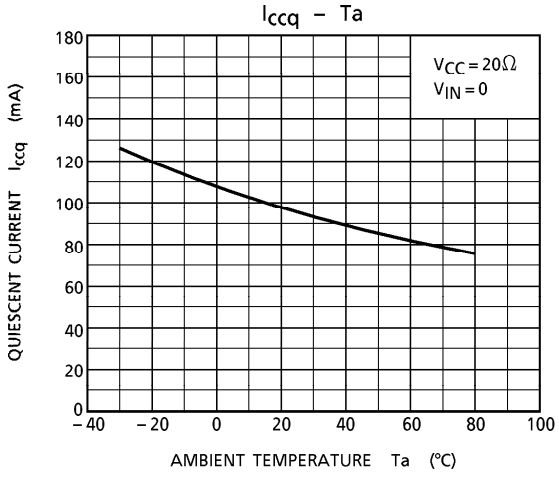
P_D – P_{OUT}



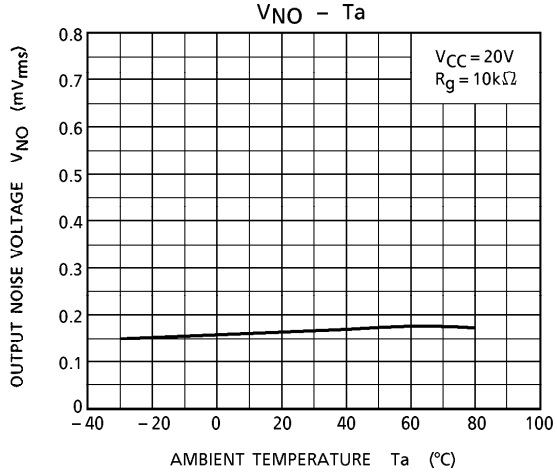
$P_{D\,(MAX)}$ – V_{CC}



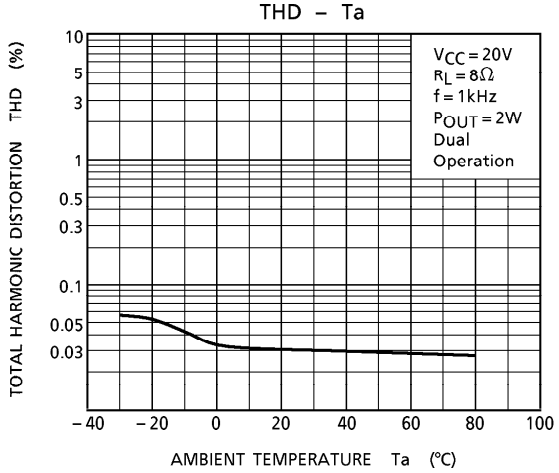
I_{ccq} – Ta

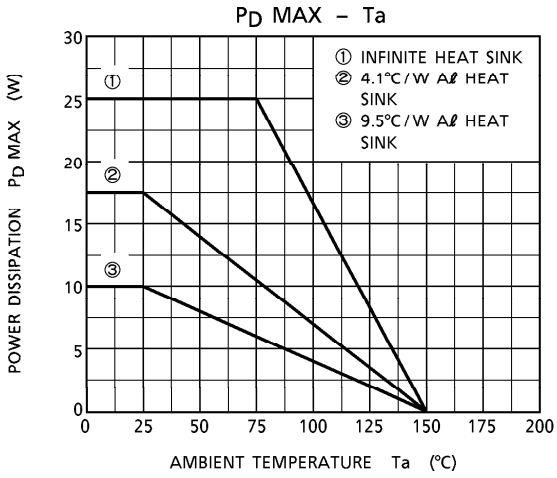


V_{NO} – Ta



THD – Ta

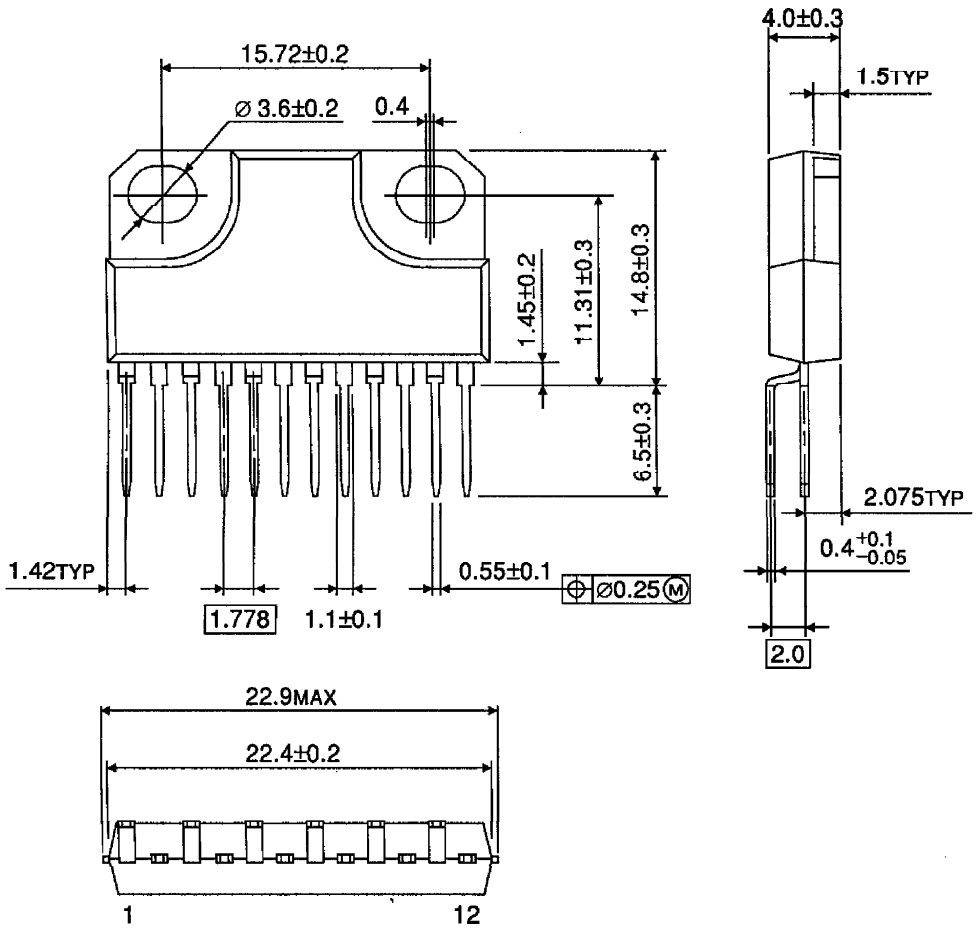



P_D MAX – Ta
① INFINITE HEAT SINK
② 4.1°C/W Aℓ HEAT SINK
③ 9.5°C/W Aℓ HEAT SINK
POWER DISSIPATION P_D MAX (W)
AMBIENT TEMPERATURE Ta (°C)
0
5
10
15
20
25
30
0
25
50
75
100
125
150
175
200

OUTLINE DRAWING

HZIP12-P-1.78B

Unit : mm



Weight : 4.04g (Typ.)