

TA7273P

DUAL AUDIO POWER AMPLIFIER

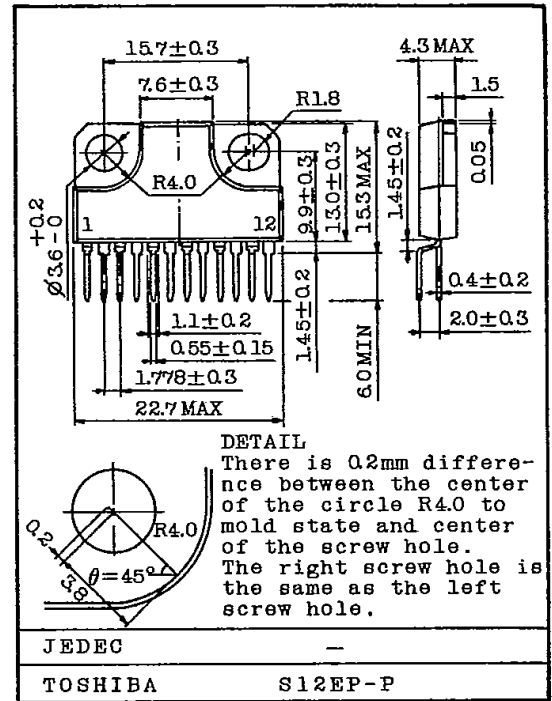
The TA7273P is dual audio power amplifier for consumer applications.

This IC provides an output power of 13 watts per channel (at $V_{CC}=28V$, $f=1kHz$, $THD=10\%$, $R_L=8\Omega$).

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

- High Output Power : $P_{OUT}=13W$ (Typ.)
($V_{CC}=28V$, $R_L=8\Omega$, $f=1kHz$, $THD=10\%$)
- Very Few External Parts
- Built In Thermal Shut Down Protector Circuit
- Operating Supply Voltage Range : $V_{CC(opr)}=18 \sim 37V$

Unit in mm



Weight : 4.04g (TYP.)

MAXIMUM RATINGS ($T_a=25^\circ C$)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	V_{CC}	37	V
Output Current (Peak/Ch)	$I_{O(peak)}$	2.5	A
Power Dissipation	P_D	25	W
Operating Temperature	T_{opr}	-20 ~ 75	$^\circ C$
Storage Temperature	T_{stg}	-55 ~ 150	$^\circ C$

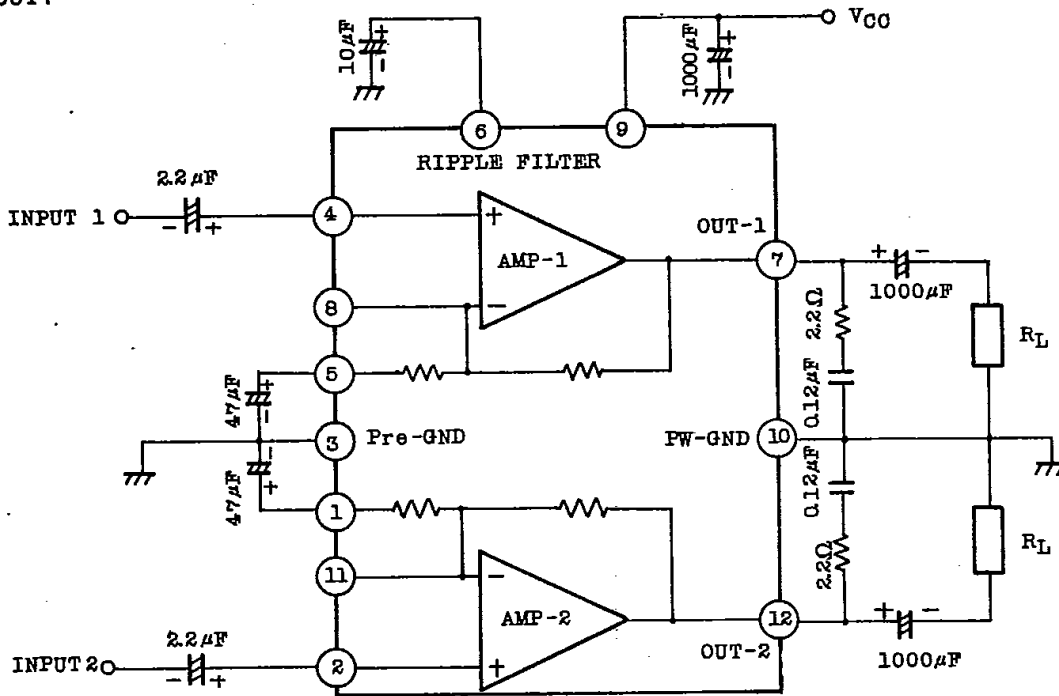
TOSHIBA

ELECTRICAL CHARACTERISTICS

(Unless otherwise specified, $V_{CC}=28V$, $R_L=8\Omega$, $R_g=600\Omega$, $f=1kHz$, $T_a=25^\circ C$)

CHARACTERISTIC	SYMBOL	TEST CIRCUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Quiescent Current	I_{CCQ}	-	$V_{IN}=0$	-	35	100	mA
Output Power	$P_{OUT}(1)$	-	THD=10%	10	13	-	W
	$P_{OUT}(2)$	-	THD=1%	-	10	-	
Total Harmonic Distortion	THD	-	$P_{OUT}=2W$	-	0.04	0.2	%
Voltage Gain	$G_v(1)$	-	Closed Loop	32.5	34.0	35.5	dB
	$G_v(2)$	-	Open Loop	-	60	-	
Input Resistance	R_{IN}	-	-	-	30	-	k Ω
Ripple Rejection Ratio	R.R.	-	$R_g=0$, $f_{ripple}=100Hz$ $V_{ripple}=0dBm$	40	47	-	dB
Output Noise Voltage	V_{NO}	-	$R_g=10k\Omega$ $BW=20Hz \sim 20kHz$	-	0.14	0.30	mV _{rms}

TEST CIRCUIT



TYPICAL DC VOLTAGE OF EACH TERMINAL ($V_{CC}=28V$, $T_a=25^\circ C$)

TERMINAL No.	1	2	3	4	5	6	7	8	9	10	11	12
DC Voltage (V)	1.6	6m	GND	6m	1.6	9.4	14	1.8	V_{CC}	GND	1.8	14

APPLICATION INFORMATION

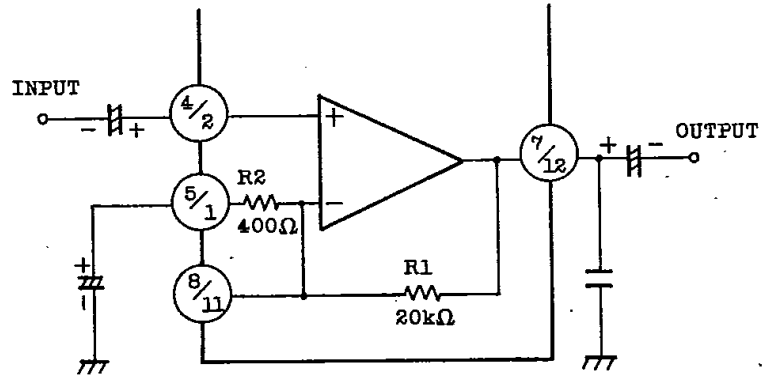
(1) VOLTAGE GAIN

The closed loop voltage gain is determined by R1, R2.

$$G_v = 20 \log \frac{R1 + R2}{R2} \quad (\text{dB})$$

$$= 20 \log \frac{20 \times 10^3 + 400}{400}$$

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

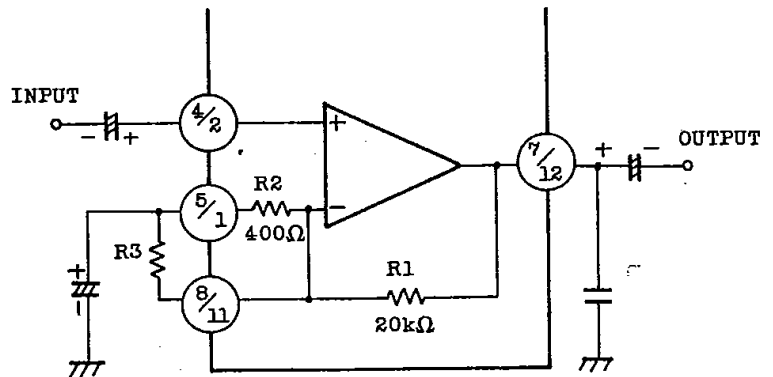


(2) AMPLIFIER WITH GAIN > 34dB

$$G_v = 20 \log \frac{R1 + R2 + R3}{R2 + R3} \quad (\text{dB})$$

When $R3 = 400 \Omega$

$G_v \approx 40 \text{ dB}$ is given.

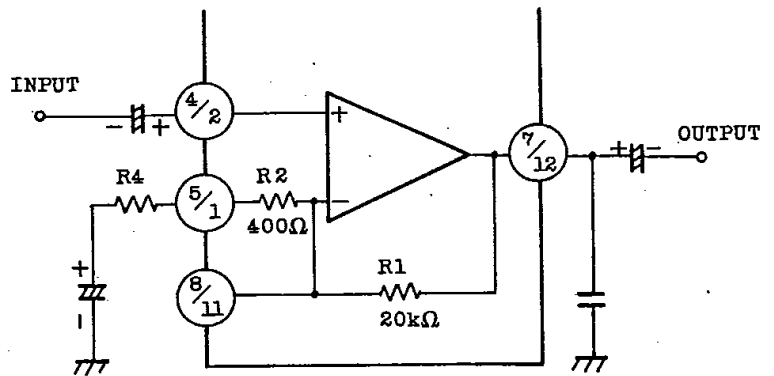


(3) AMPLIFIER WITH GAIN < 34dB

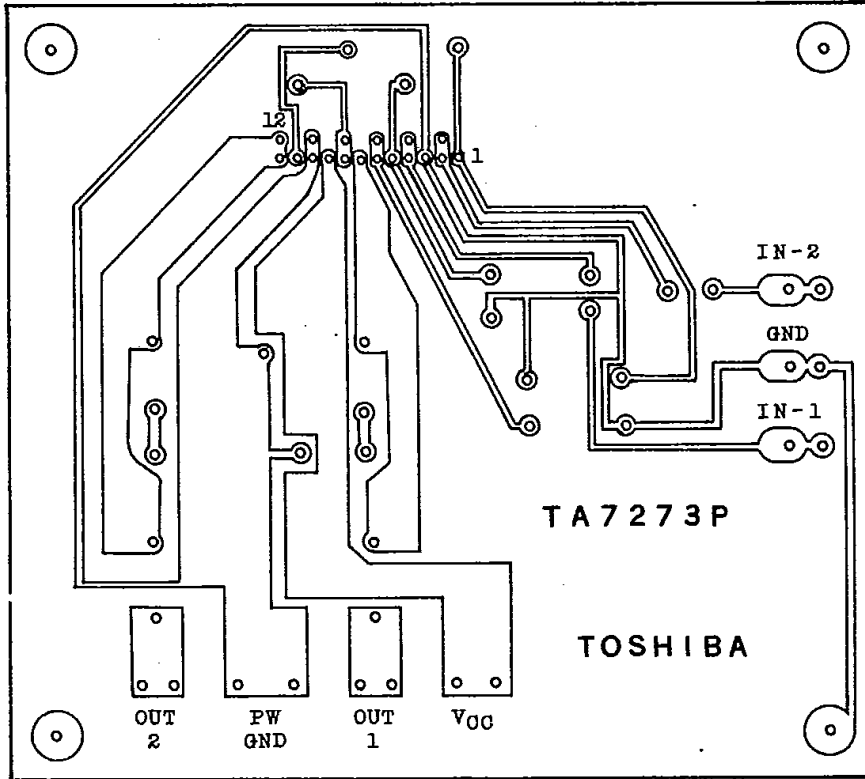
$$G_v = 20 \log \frac{R1 + R2 + R4}{R2 + R4} \quad (\text{dB})$$

When $R4 = 220 \Omega$

$G_v \approx 30 \text{ dB}$ is given.

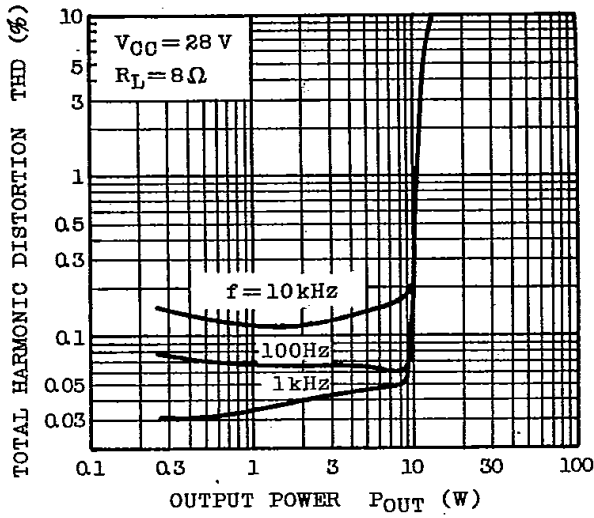


STANDERD P.C.B.

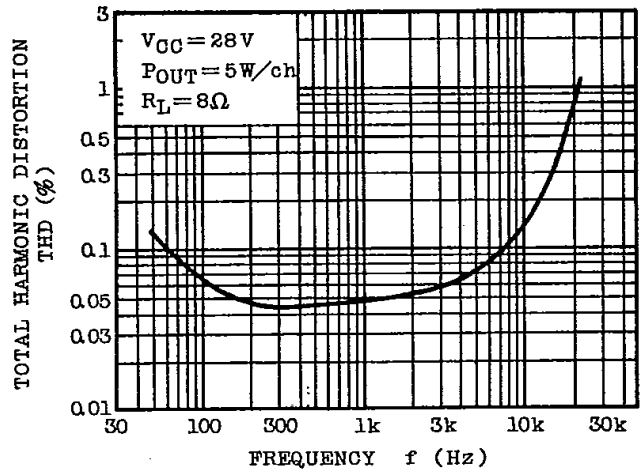


BOTTOM VIEW

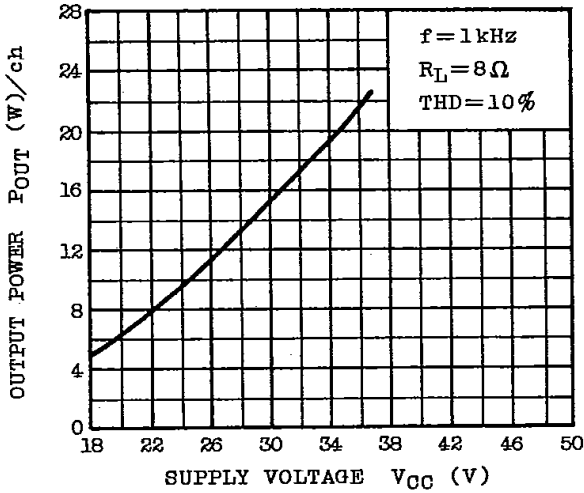
THD - P_{OUT}



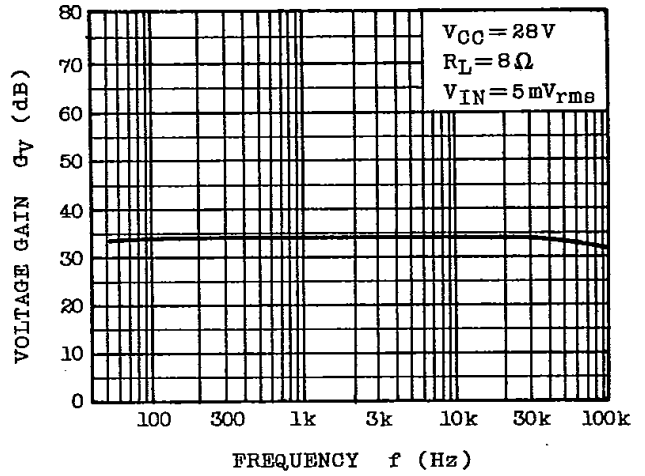
THD - f



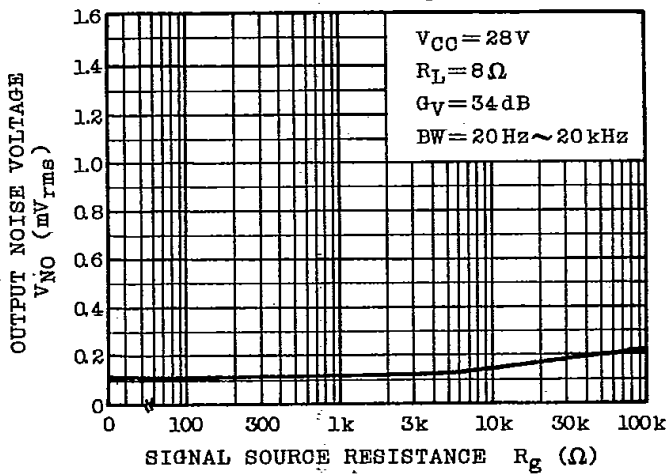
P_{OUT} - V_{CC}



G_v - f



V_{NO} - R_g



R.R - f

