

9097247 TOSHIBA. ELECTRONIC

02E 16935 D

TA7233P

T-74-05-01

ELECTRICAL CHARACTERISTICS

(Unless otherwise specified, $V_{CC}=12V$, $R_L=4\Omega$, $R_g=600\Omega$, $f=1kHz$, $T_a=25^\circ C$)

| CHARACTERISTIC | SYMBOL | TEST CIR-CUIT | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|---------------------------|--------------|---------------|---|------|------|------|------------|
| Quiescent Current | I_{CCQ} | | $V_{in}=0$ | - | 35 | 60 | mA |
| Output Power | $P_{OUT(1)}$ | | THD=10% | 3.8 | 4.5 | - | W |
| | $P_{OUT(2)}$ | | THD=10%, $V_{CC}=9V$ | 2.0 | 2.5 | - | |
| Total Harmonic Distortion | THD | | $P_{OUT}=1W/CH.$ | - | 0.1 | 0.8 | % |
| Voltage Gain | $G_V(1)$ | | $R_f=150\Omega$ $V_{OUT}=0.775V_{rms}$ | 43 | 45 | 47 | dB |
| | $G_V(2)$ | | $R_f=0$, $V_{OUT}=0.775V_{rms}$ | - | 57 | - | |
| Input Resistance | R_{IN} | | - | - | 30 | - | $k\Omega$ |
| Output Noise Voltage | V_{NO} | | $R_g=10k\Omega$ $BW=20Hz \sim 20kHz$ | - | 0.4 | 0.7 | mV_{rms} |
| Ripple Rejection Ratio | R.R. | | $R_g=600\Omega$ $f_{ripple}=100Hz$ | - | 45 | - | dB |
| Cross Talk | CT | | $R_g=10k\Omega$, $Ampl \leftrightarrow 2$ $V_{OUT}=0dBm$, $f=1kHz$ | - | 60 | - | dB |
| Input Offset Voltage | V_5, V_7 | | - | - | 35 | 60 | mV |

TYPICAL DC VOLTAGE OF EACH TERMINAL

 $(V_{CC}=12V, T_a=25^\circ C)$

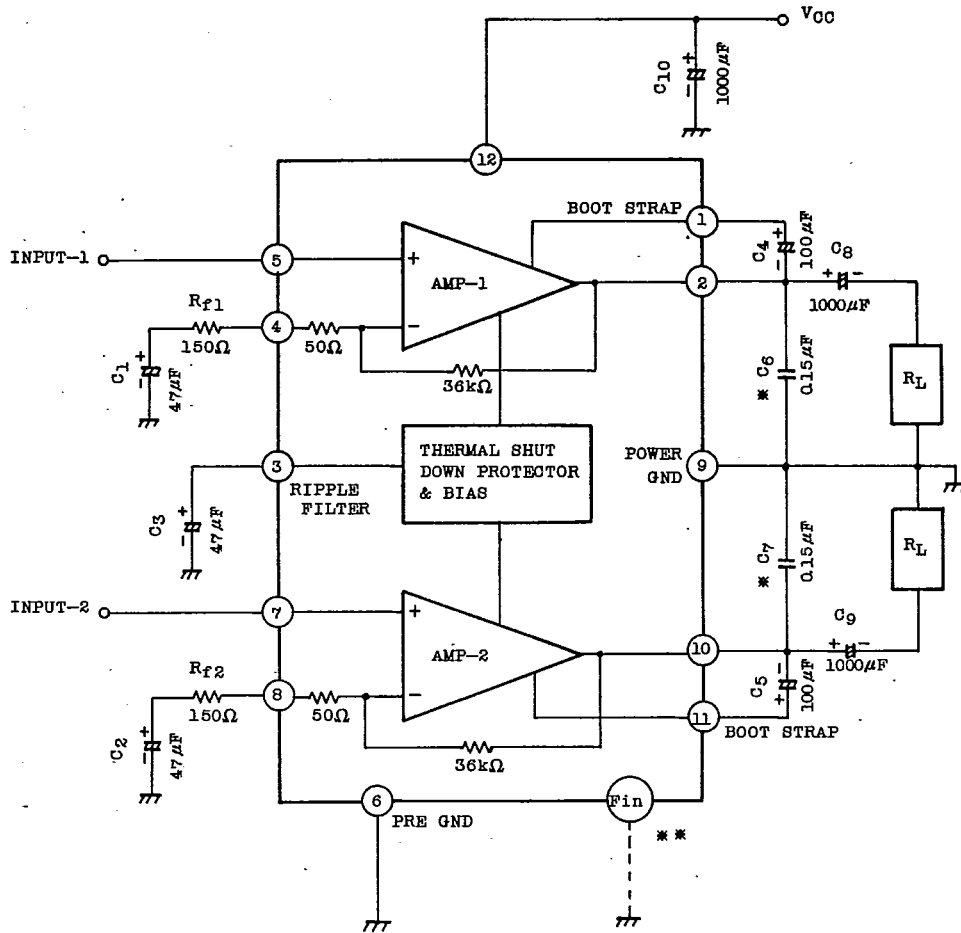
| TERMINAL No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|----------------|------|---|-----|-----|-------|-----|-------|-----|-----|----|------|----------|
| DC Voltage (V) | 11.5 | 6 | 6.7 | 0.7 | 0.035 | GND | 0.035 | 0.7 | GND | 6 | 11.5 | V_{CC} |

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BLOCK DIAGRAM, TEST CIRCUIT



- * C₆, C₇ : Polystiroll capacitor
- ** Heat Sink (Fin) : Connect to GND or open

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APPLICATION INFORMATION

1. VOLTAGE GAIN ADJUSTMENT

The voltage gain : G_v is determined by R_1 , R_2 and R_f .

$$G_v = 20 \log \frac{R_f + R_1 + R_2}{R_f + R_1}$$

When $R_f = 0$

$$G_v = 57 \text{dB (Typ.)}$$

When $R_f = 150 \Omega$

$$G_v = 45 \text{dB (Typ.) is given.}$$

The recommended voltage gain is more than 40dB.

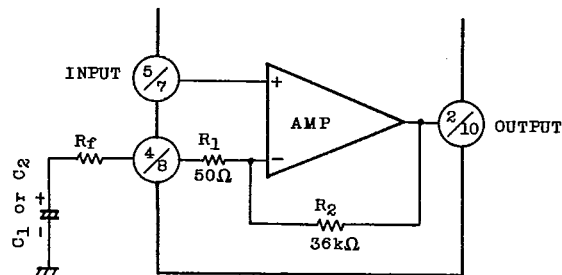


Fig. 1

2. AUDIO MUTING

Audio muting can be accomplished by connecting 3 pin (ripple filter) to GND as shown in Fig.2.

Then, the bias circuit are cut off. Amount of muting attenuation is about 60dB.

The ripple filter : C_3 is in dead states at muting on. Therefore, the ripple rejection ratio should be checked at muting on/off in applications.

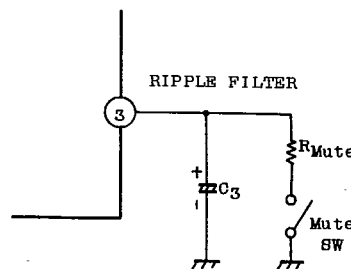


Fig. 2

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3. INPUT AMPLIFIER

The first stage is a PNP transistor, the input terminal voltage (Q_1 base) is 60mV and less, and the volume : V_R can be directly coupled without a coupling capacitor.

But volume slide noise should be checked at volume up/down in applications.

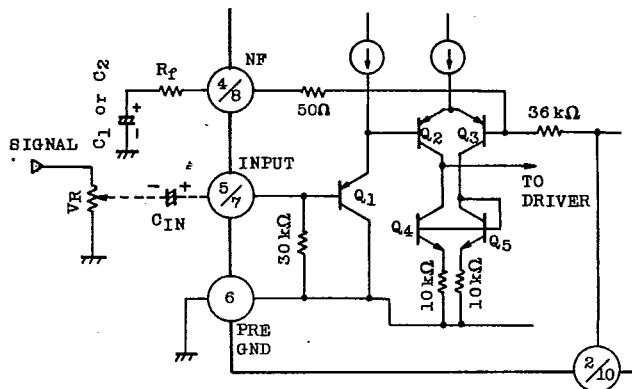


Fig. 3

4. THERMAL SHUT DOWN CIRCUIT

This IC built in thermal shut down protector.

The operating temperature of thermal shut down circuit is 160°C (Typ.)

5. CAPACITOR C_6 , C_7

The purpose of capacitor C_6 , C_7 are to prevent oscillation.

These capacitors need to be small temperature coefficient.

So celamic capacitor is unsuitable.

The voltage gain less than 40dB results occasionally in a parastic oscillation.

The following capacitor layout is recommended to refer the standard print board.

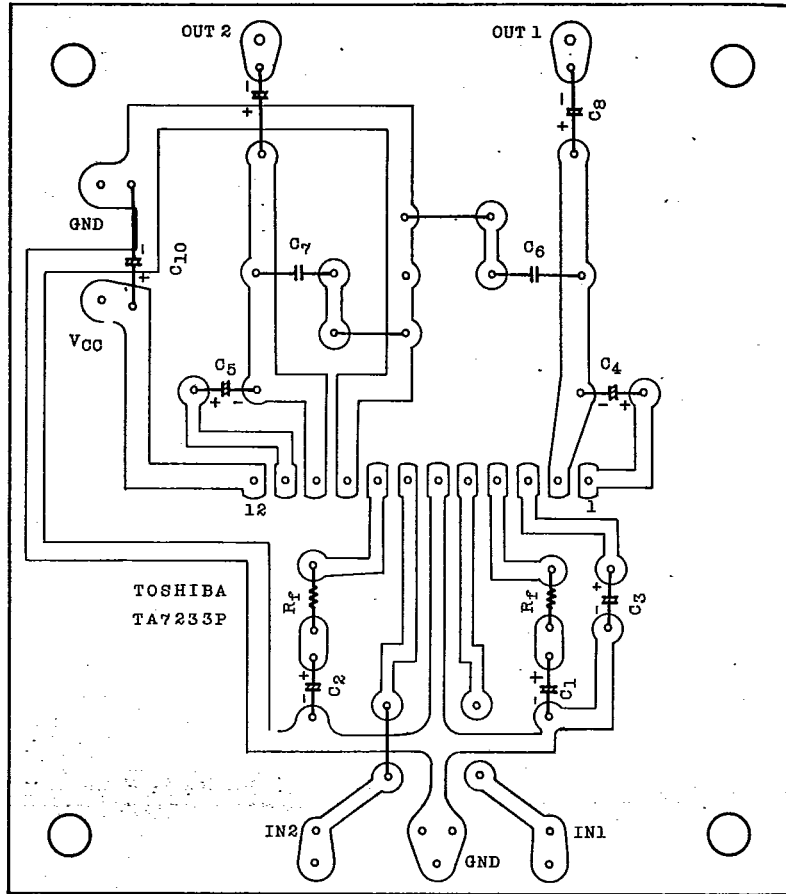
6. INPUT VOLTAGE

The maximum input voltage is 300mV_{rms}(typ.). (at $V_{CC}=12V$, $R_L=4\Omega$, $f=1kHz$)

When input voltage is more 300mV_{rms}, the output wave is turn up.

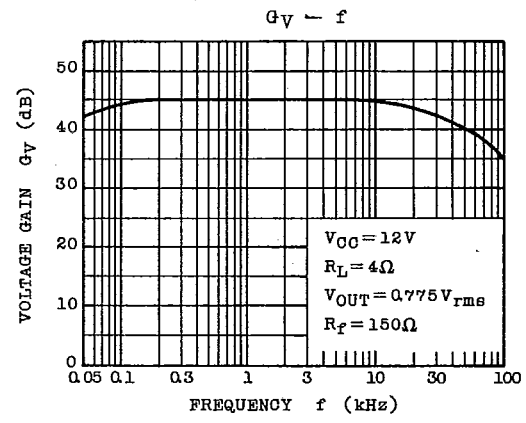
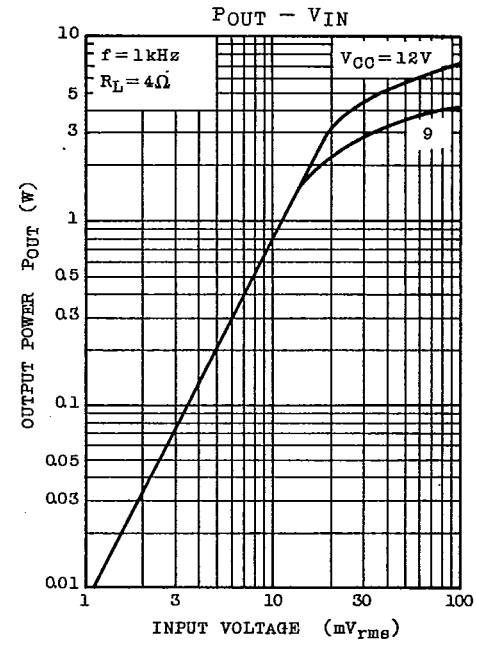
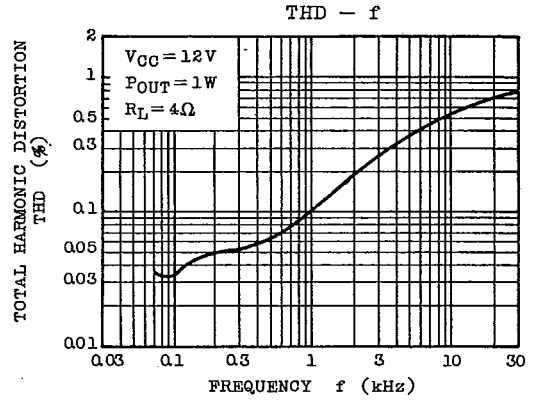
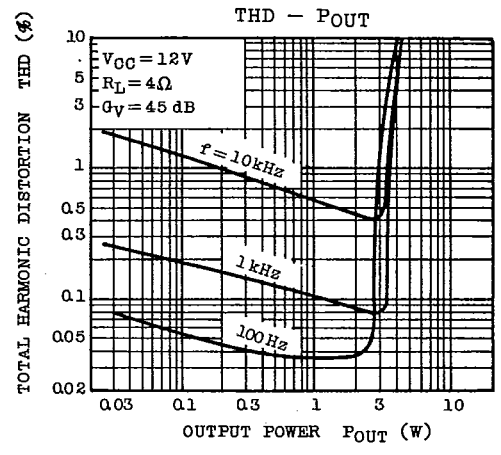
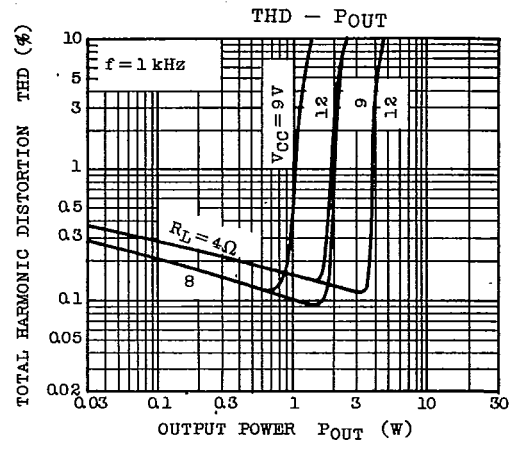
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STANDARD PRINT PATTERN



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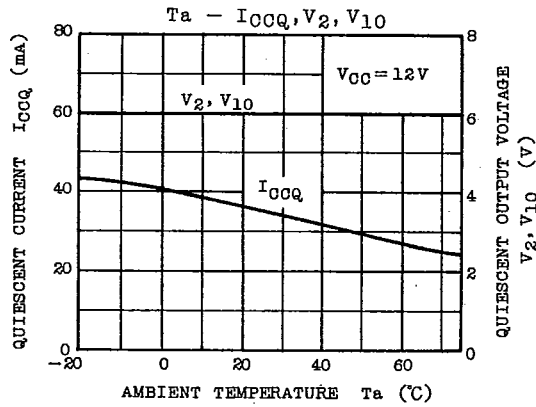
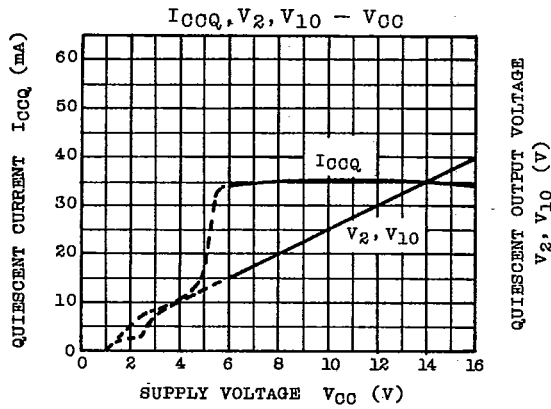
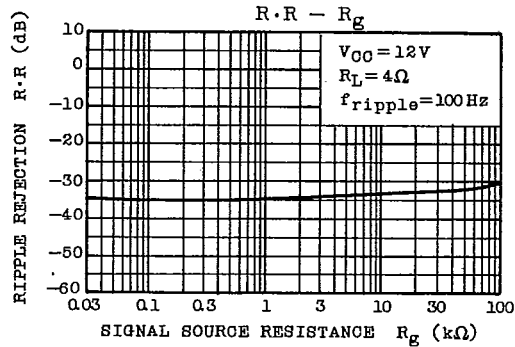
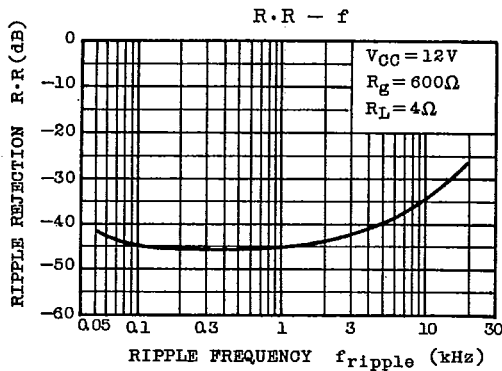
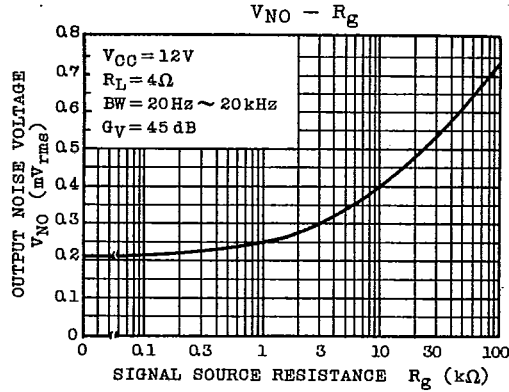
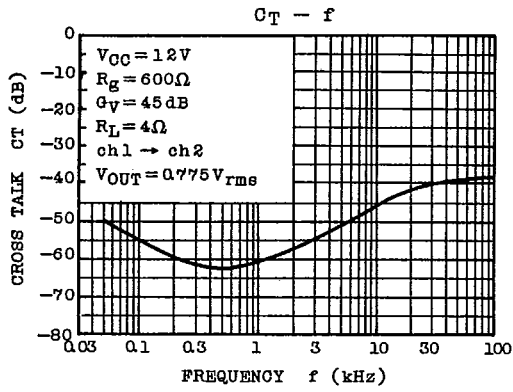
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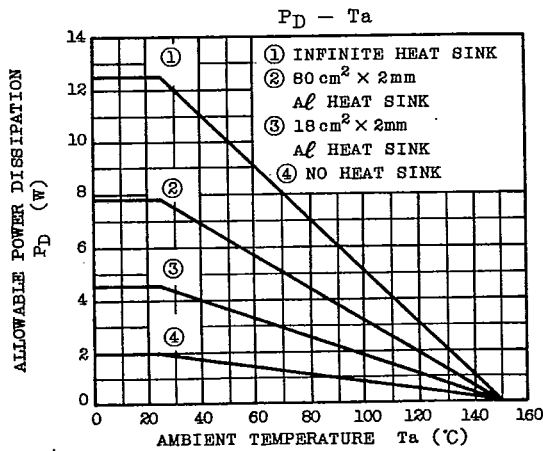
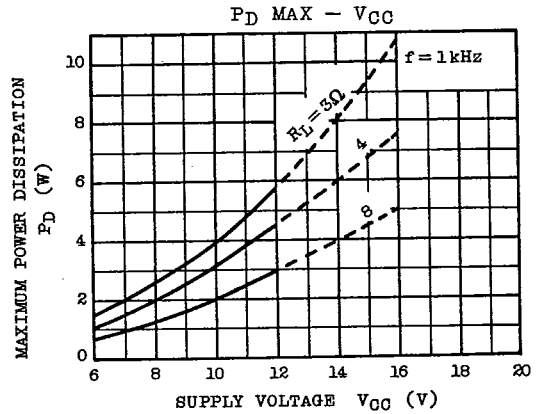
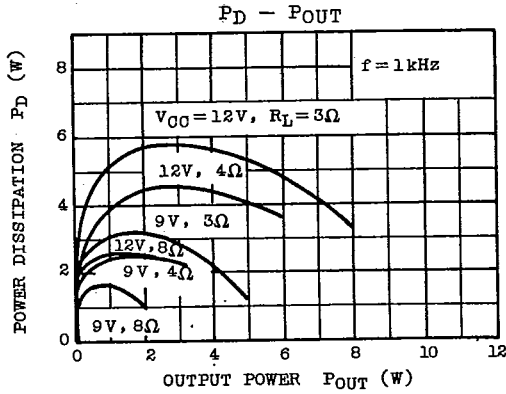
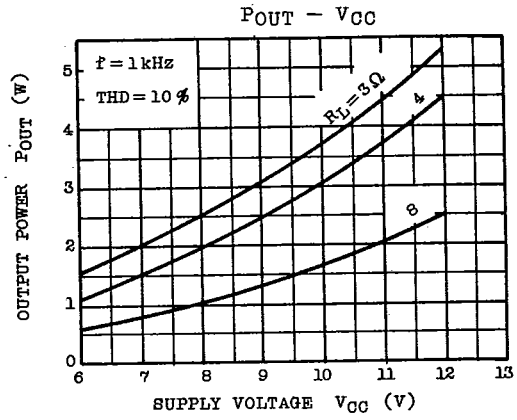
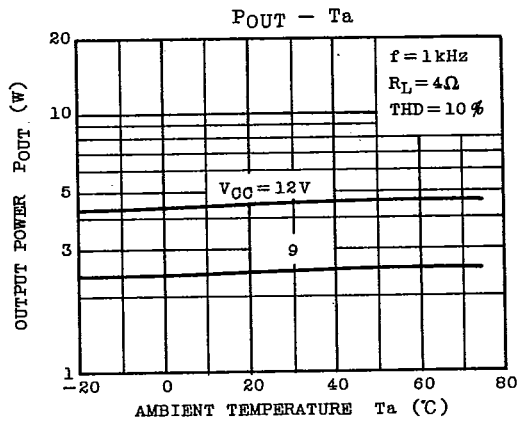
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