

9097247 TOSHIBA, ELECTRONIC

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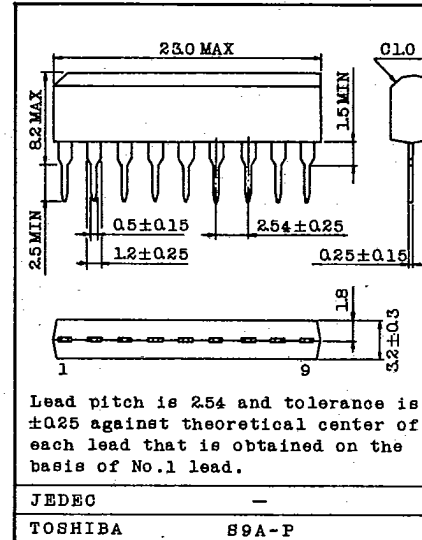
TA7325P

T-74-05-01

DUAL PRE AMPLIFIER

- Dual Pre Amplifier for Car or Home Stereo Use.
- High Voltage Gain :
GVO=100dB (Typ.) at f=1kHz
- Excellent Channel Separation and High Ripple Rejection : CH. Sep.=70dB (Typ.)
R.R.=50dB (Typ.)
- Low Noise : $V_{NI}=1.0\mu V_{rms}$ (Typ.)
at $R_g=2.2k\Omega$, BW=15Hz ~ 30kHz
- Build in Muting Circuit : $2V \geq V_9 \geq 0.9V$
- Wide Operating Supply Voltage Range : $V_{CC}=7 \sim 18V$.

Unit in mm

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

CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	V_{CC}	18	V
Power Dissipation (Note)	P_D	700	mW
Operating Temperature	T_{opr}	$-25 \sim 75$	$^\circ C$
Storage Temperature	T_{stg}	$-55 \sim 150$	$^\circ C$

Note : Derated above $T_a=25^\circ C$ in the proportion of $5.6mW/^\circ C$.

ELECTRICAL CHARACTERISTICS

(Unless otherwise specified, $V_{CC}=10V$, $f=1kHz$, $R_g=600\Omega$, $R_L=10k\Omega$, $T_a=25^\circ C$)

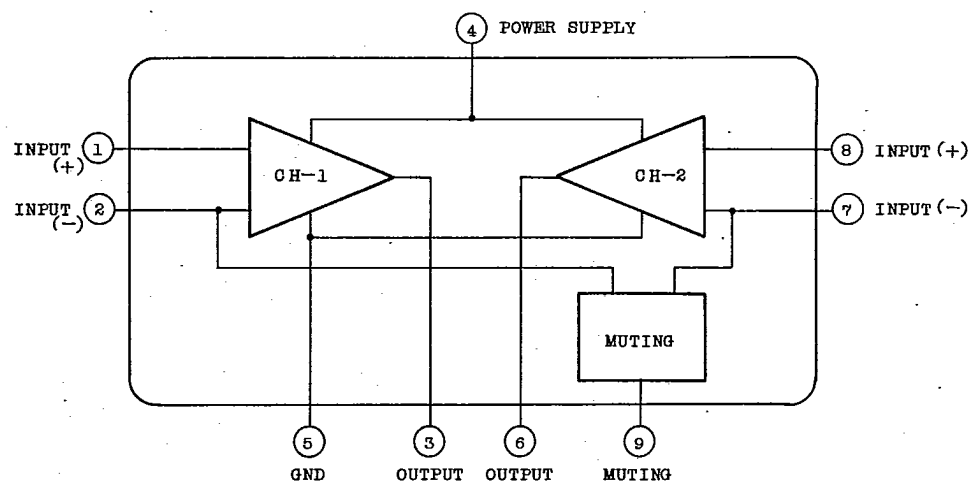
CHARACTERISTIC	SYMBOL	TEST CIR-CUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Supply Current	I_{CC}	1	$V_{IN}=0$	—	5.5	8.5	mA
Voltage Gain	GVO	1	$C_f=100\mu F$, $R_f=0$	—	100	—	dB
Maximum Output Voltage	V_{OM}	2	THD=0.5%, NAB EQ	2.0	2.8	—	V_{rms}
Equivalent Input Noise Voltage	V_{NI}	2	$R_g=2.2k\Omega$, BPF=15Hz ~ 30kHz	—	1.0	2.5	μV_{rms}
Input Resistance	R_{IN}	2	$V_O=1V_{rms}$	—	100	—	$k\Omega$
Channel Separation	CHsep	2	$f=10kHz$, $R_g=2.2k\Omega$ $V_O=1V_{rms}$	—	70	—	dB
Ripple Rejection	R.R	2	$f=100Hz$, $V_{IN}=1V_{rms}$ CB=NO connection	—	50	—	dB
Muting Ratio	M.R	2	$V_9=1V$, 0dB=1V $_{rms}$	—	80	—	dB

AUDIO LINEAR IC

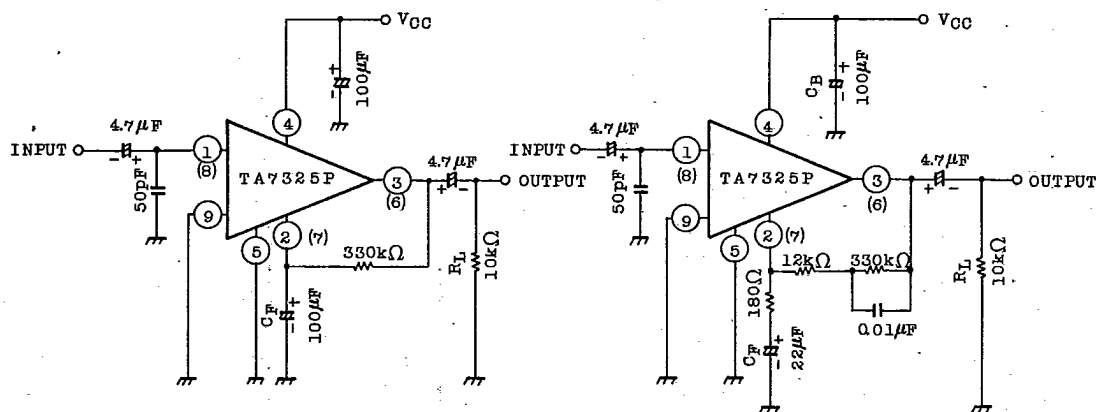
TA7325P

T-74-05-01

EQUIVALENT BLOCK DIAGRAM



TEST CIRCUIT

1. G_{VO} , I_{CC} 2. V_{OM} , V_{NI} , R_{IN} , $R.R.$ **TOSHIBA**

TA7325P

T-74-05-01

APPLICATION

(1) DECIDE OF FEEDBACK RESISTANCE

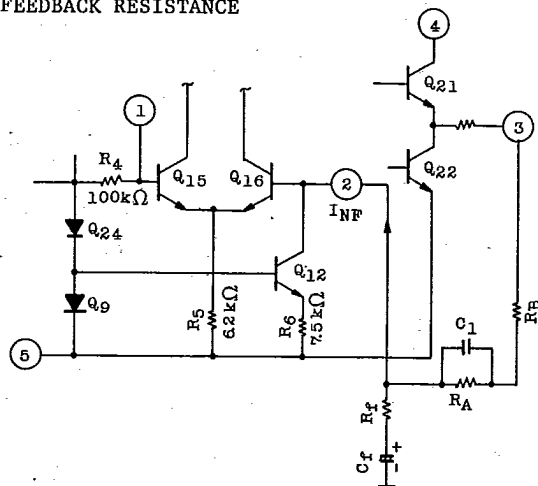


Fig. 1

Fig.1 shows the internal circuit.

The optimum D.C output voltage is decided by following equation.

$$V_3 = \frac{1}{2}V_{CC} = V_2 + I_{NF}(R_A + R_B)$$

$$I_{NF} = 10\mu A$$

$$V_3 = \frac{1}{2}V_{CC}$$

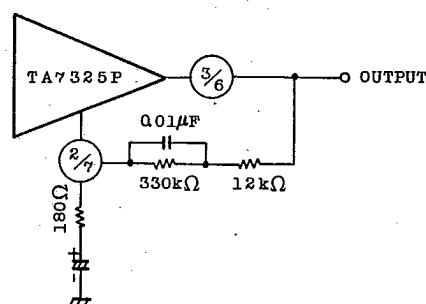
$$= V_2 + I_{NF}(R_A + R_B) \quad (V)$$

$$V_2 = V_{BE}(Q_9) + V_{BE}(Q_{24}) = 2V_{BE} \cong V_1$$

$$V_3 = \frac{1}{2}V_{CC} = 5 = 2V_{BE} + I_{NF}(R_A + R_B)$$

$$= 1.4 + 10 \times 10^{-6}(R_A + R_B)$$

$$\begin{aligned} R_A + R_B &= \frac{5 - 1.4}{10 \times 10^{-6}} \\ &= 3.6 \times 10^5 \\ &= 360 \text{ (k}\Omega\text{)} \end{aligned}$$



AUDIO LINEAR IC

TA7325P

T-74-05-01

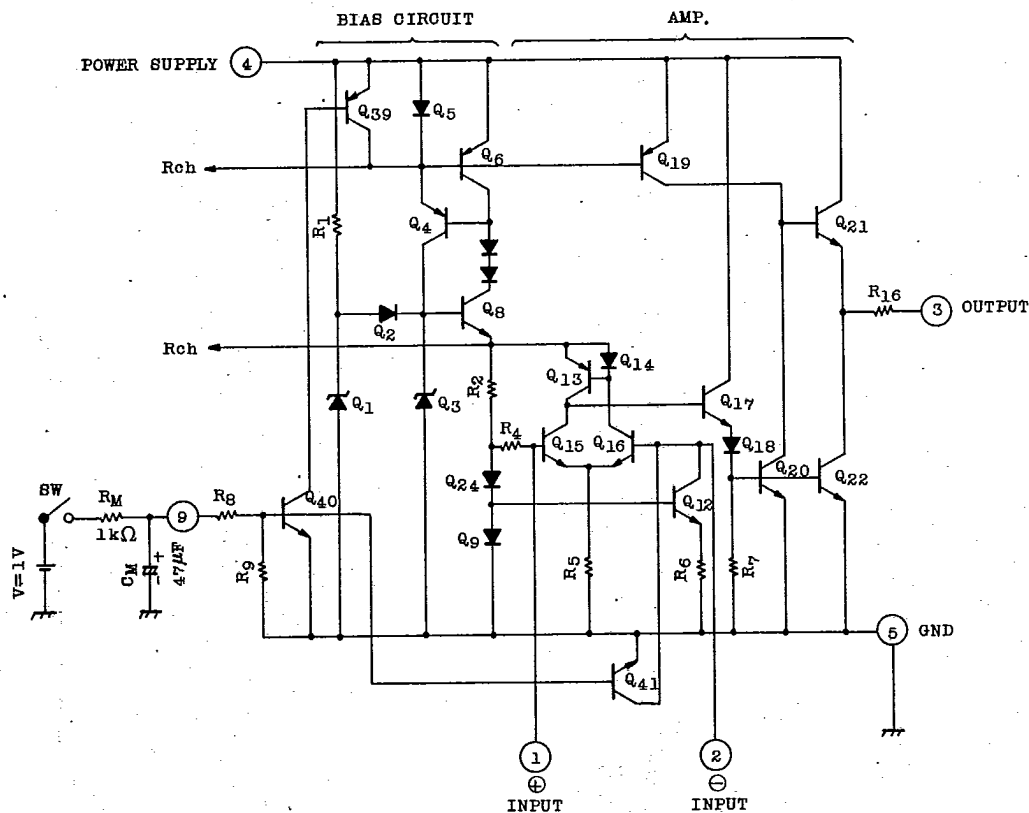
(2) MUTING CIRCUIT APPLICATION

Fig.2

Fig.2 shows the equivalent circuit of (L ch) TA7325P.

The Q40 is turned ON when the voltage above 0.9V feed into PIN 9, Q41 and Q39 'turned ON' consequently and the muting operation obtained.

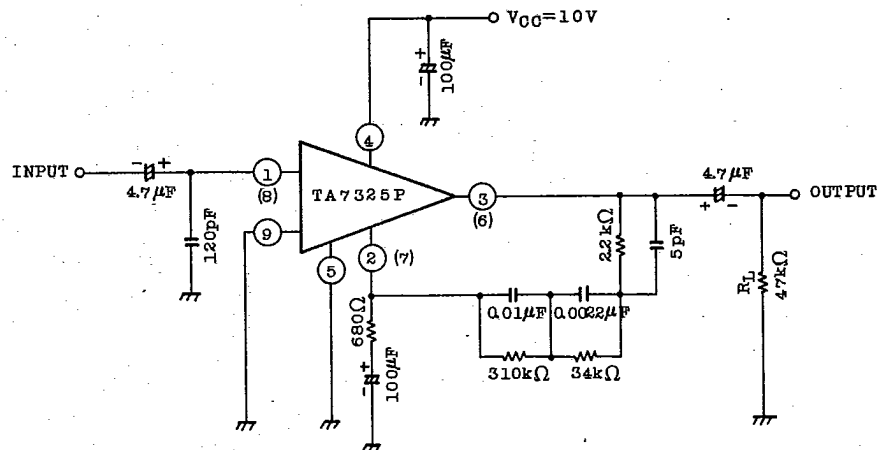
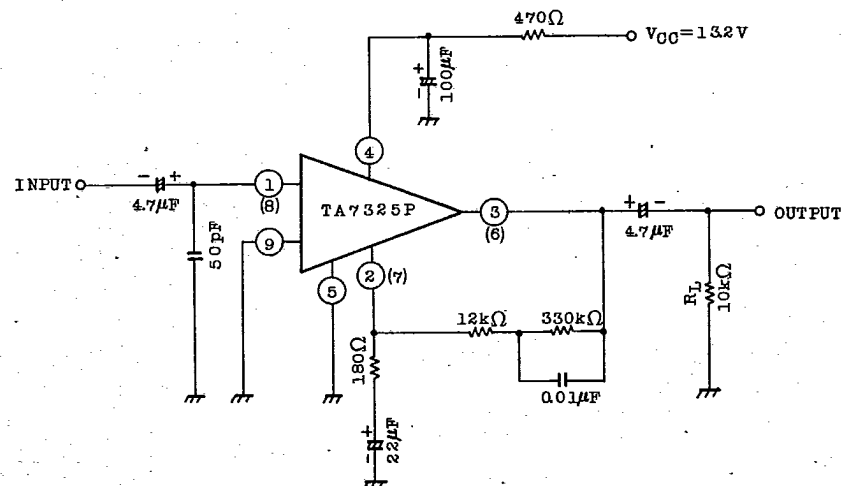
(3) NOTE

- Care should be taken not to decrease a closed loop gain less 20dB cause parasitic oscillation.
- The maximum allowable input voltage is 300 mVrms not to increase the input voltage above this value for stable operation.

TOSHIBA

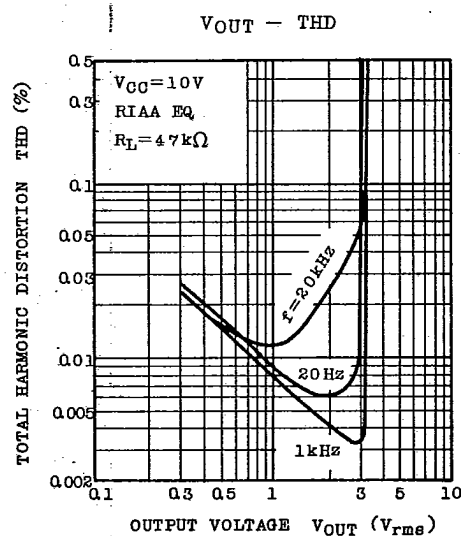
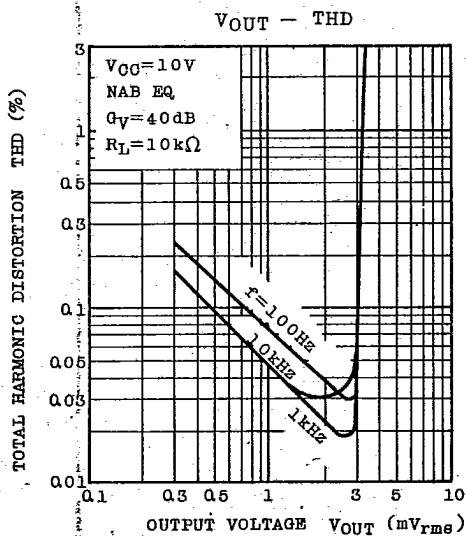
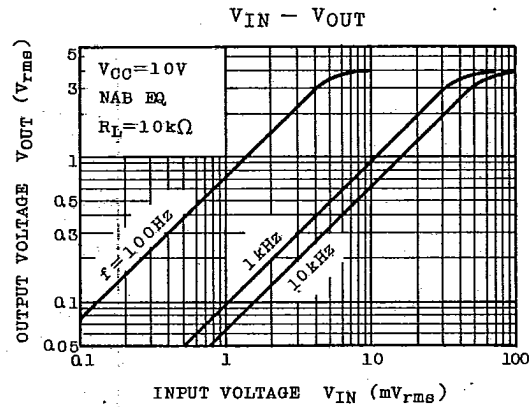
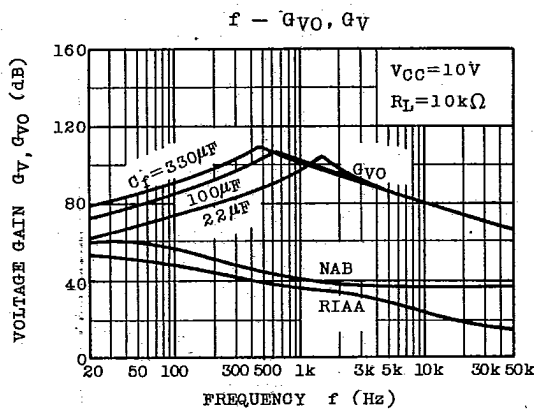
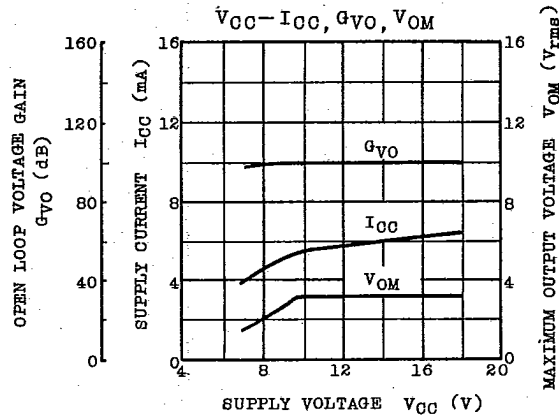
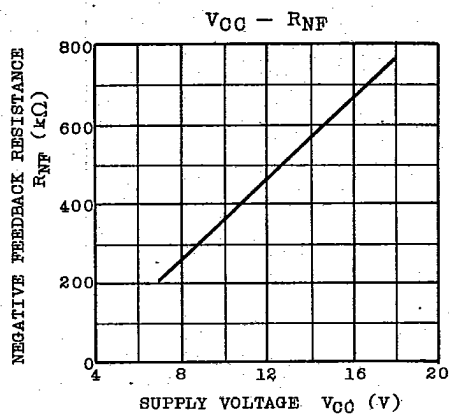
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T-74-05-01

APPLICATION**1. RIAA EQ****2. NAB EQ****AUDIO LINEAR IC**

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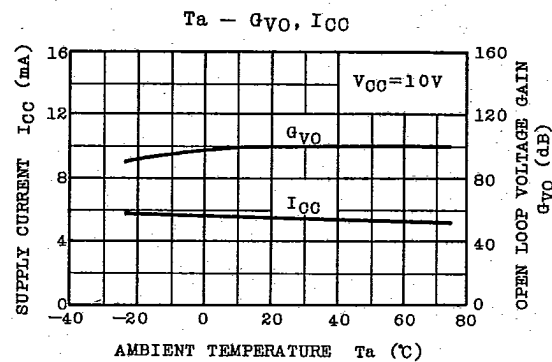
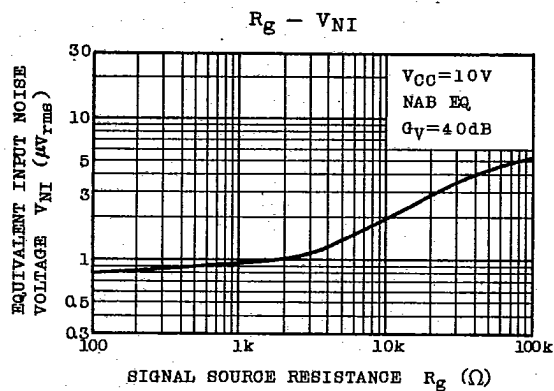
T-74-05-01



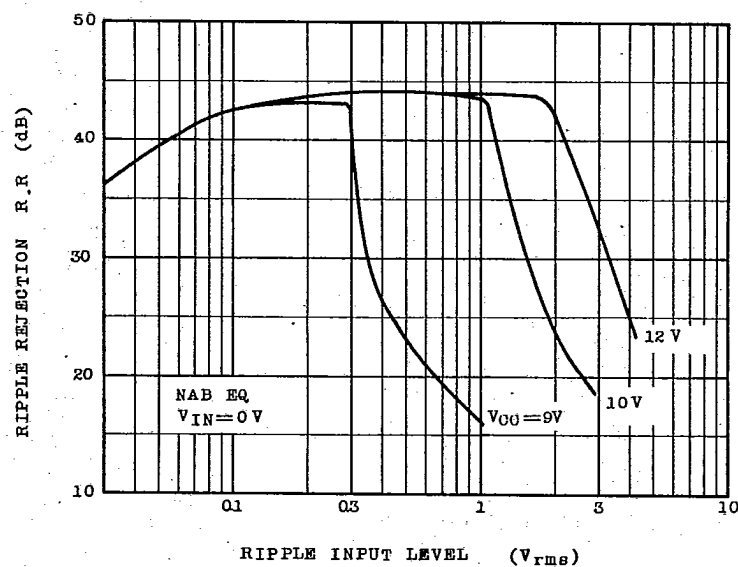
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T-74-05-01



R.R. - RIPPLE LEVEL



AUDIO LINEAR IC