

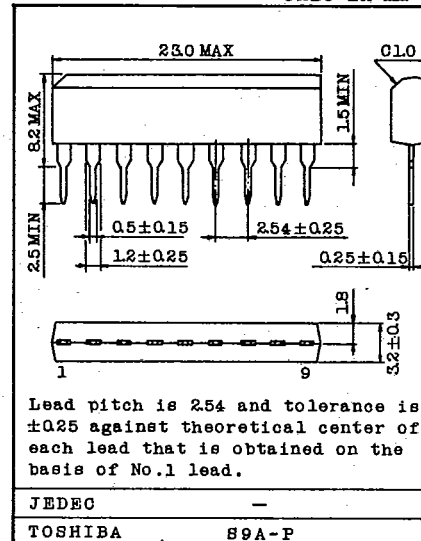
9097247 TOSHIBA. ELECTRONIC

02E 17112 D

TA7325P**T-74-05-01****DUAL PRE AMPLIFIER**

- Dual Pre Amplifier for Car or Home Stereo Use.
- High Voltage Gain :
 $G_{VO}=100\text{dB}$ (Typ.) at $f=1\text{kHz}$
- Excellent Channel Separation and High Ripple Rejection : CH. Sep.=70dB (Typ.)
 $R.R.=50\text{dB}$ (Typ.)
- Low Noise : $V_{NI}=1.0\mu\text{V}_{\text{rms}}$ (Typ.)
at $R_g=2.2\text{k}\Omega$, $BW=15\text{Hz} \sim 30\text{kHz}$
- 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** ($T_a=25^\circ\text{C}$)

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

Note : Derated above $T_a=25^\circ\text{C}$ in the proportion of $5.6\text{mW}/^\circ\text{C}$.**ELECTRICAL CHARACTERISTICS**(Unless otherwise specified, $V_{CC}=10V$, $f=1\text{kHz}$, $R_g=600\Omega$, $R_L=10\text{k}\Omega$, $T_a=25^\circ\text{C}$)

CHARACTERISTIC	SYMBOL	TEST CIRCUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Supply Current	I_{CC}	1	$V_{IN}=0$	-	5.5	8.5	mA
Voltage Gain	G_{VO}	1	$C_f=100\mu\text{F}$, $R_f=0$	-	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	$R_g=2.2\text{k}\Omega$, $BPF=15\text{Hz} \sim 30\text{kHz}$	-	1.0	2.5	μV_{rms}
Input Resistance	R_{IN}	2	$V_O=1V_{\text{rms}}$	-	100	-	$\text{k}\Omega$
Channel Separation	CHsep	2	$f=10\text{kHz}$, $R_g=2.2\text{k}\Omega$, $V_O=1V_{\text{rms}}$	-	70	-	dB
Ripple Rejection	R.R	2	$f=100\text{Hz}$, $V_{IN}=1V_{\text{rms}}$, CB=NO connection	-	50	-	dB
Muting Ratio	M.R	2	$V_9=1V$, $0\text{dB}=1V_{\text{rms}}$	-	80	-	dB

AUDIO LINEAR IC

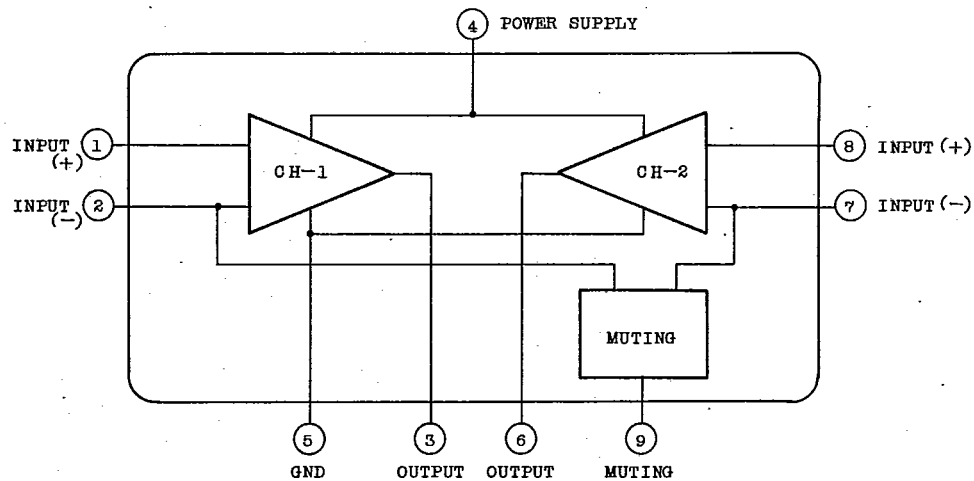
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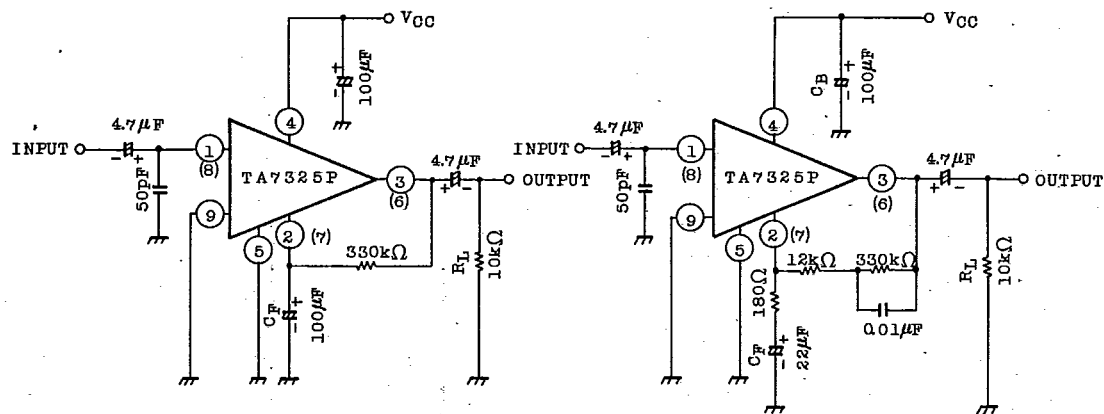
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EQUIVALENT BLOCK DIAGRAM



TEST CIRCUIT

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

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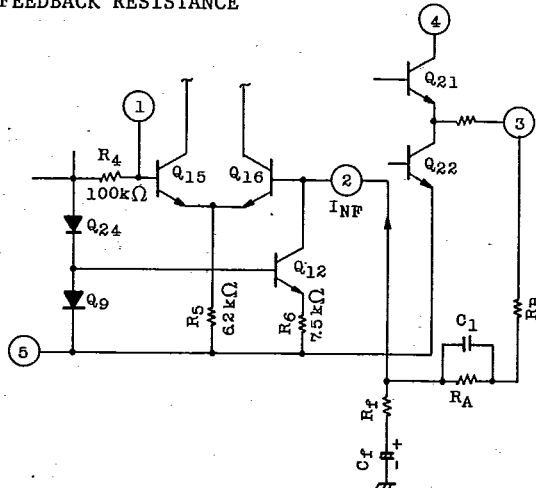
APPLICATION**(1) DECIDE OF FEEDBACK RESISTANCE**

Fig.1

Fig.1 shows the internal circuit.

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

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

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

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

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

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

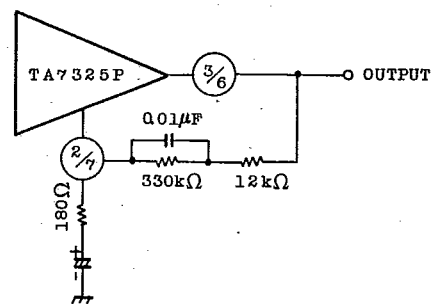
$$V_3 = \frac{1}{2}V_{CC} = 5 = 2V_{BE} + I_{NF}(R_A + R_B)$$

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

$$R_A + R_B = \frac{5 - 1.4}{10 \times 10^{-6}}$$

$$= 3.6 \times 10^5$$

$$= 360 \text{ (k}\Omega\text{)}$$

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(2) MUTING CIRCUIT APPLICATION

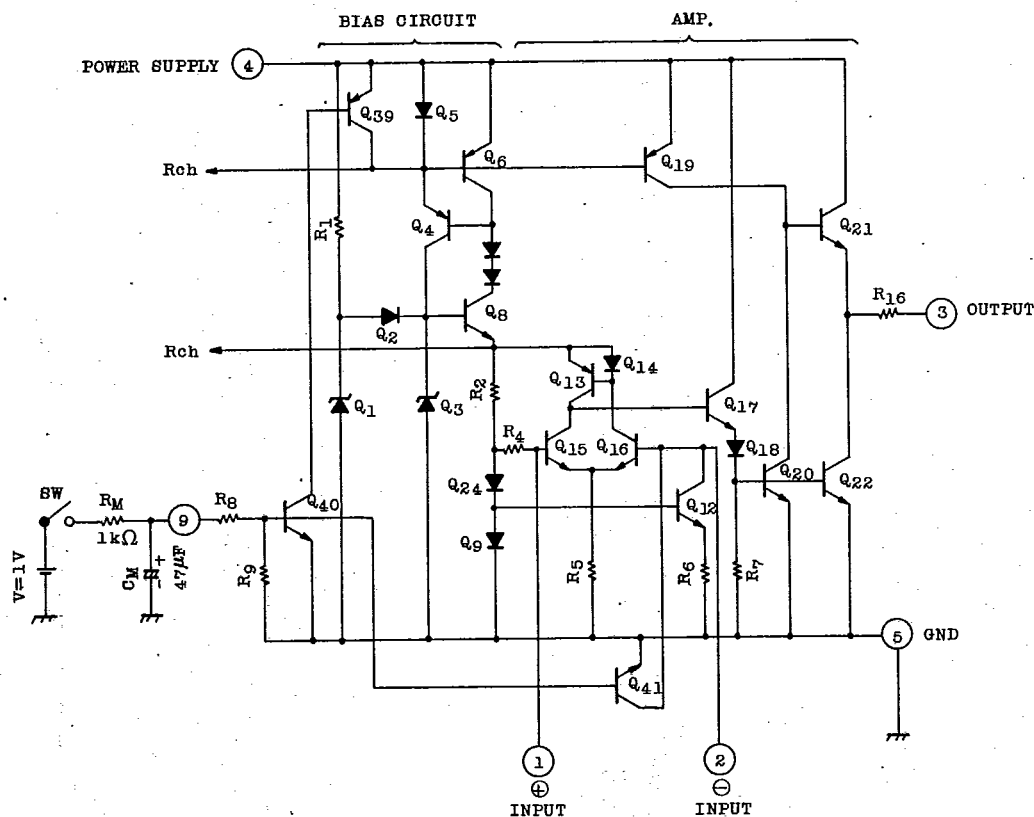


Fig.2

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

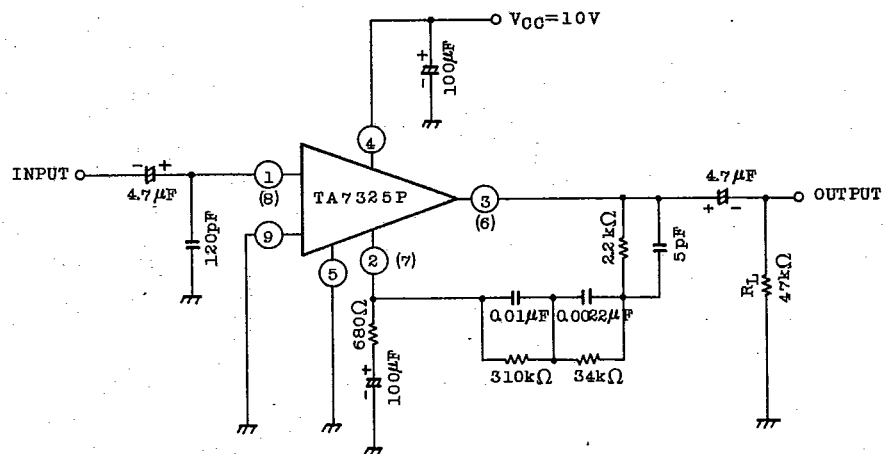
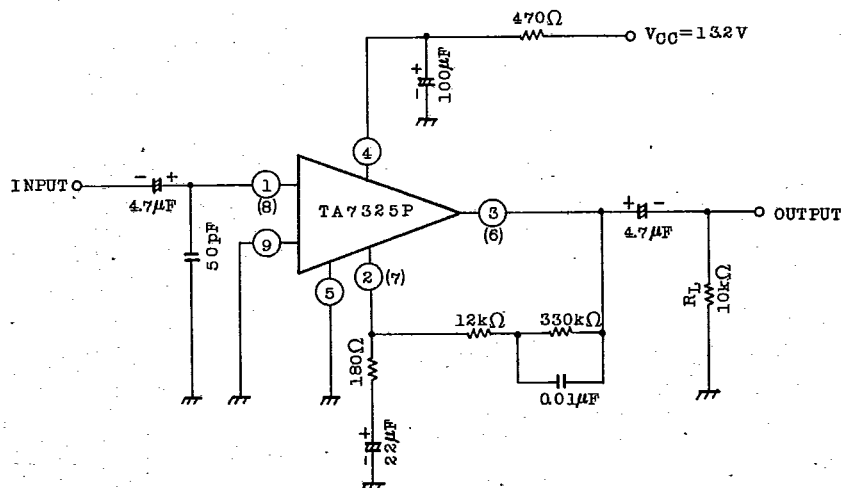
The Q40 is turned ON when the voltage above 0.9V feed into PIN 9, Q41 and Q39 'turned ON' consequently and the muting operation obtained.

(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.

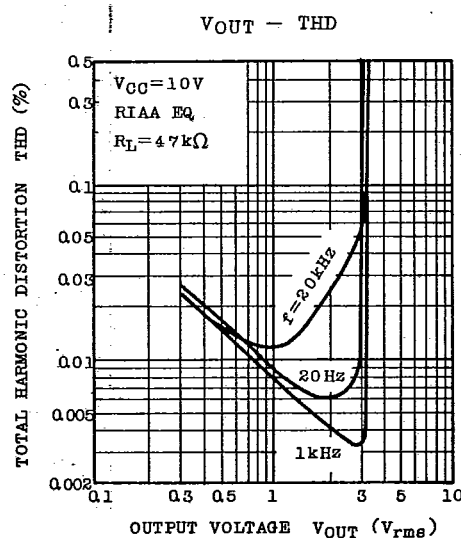
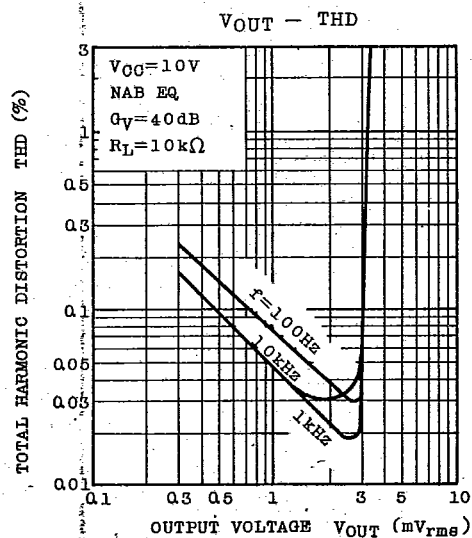
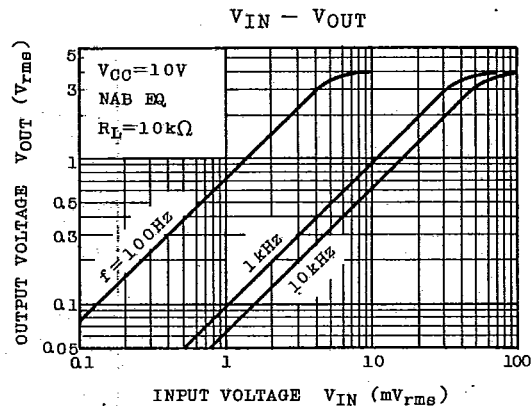
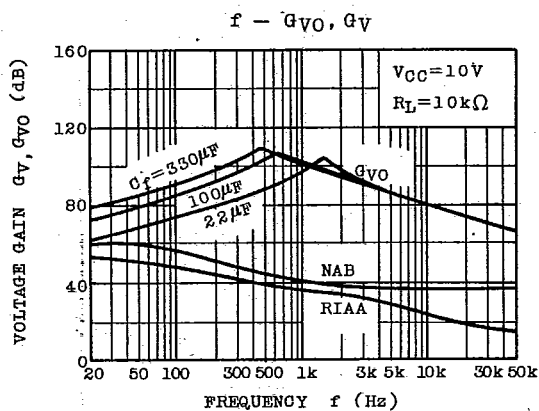
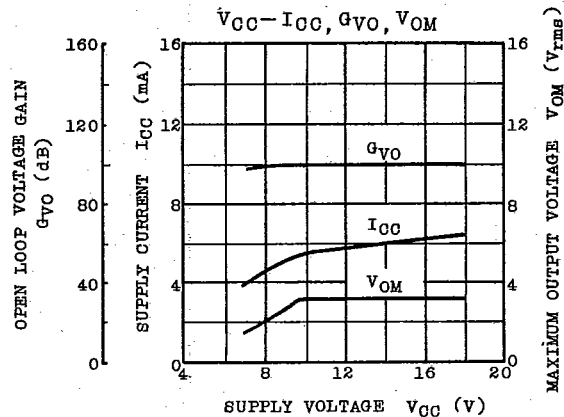
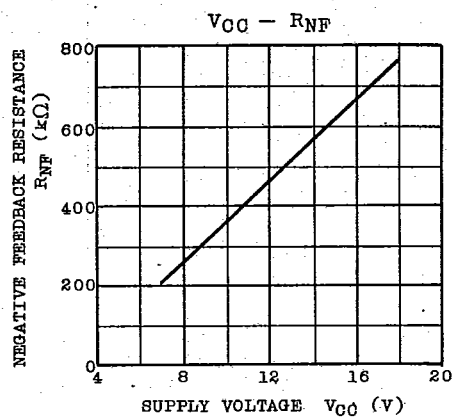
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APPLICATION**1. RIAA EQ****2. NAB EQ****AUDIO LINEAR IC**

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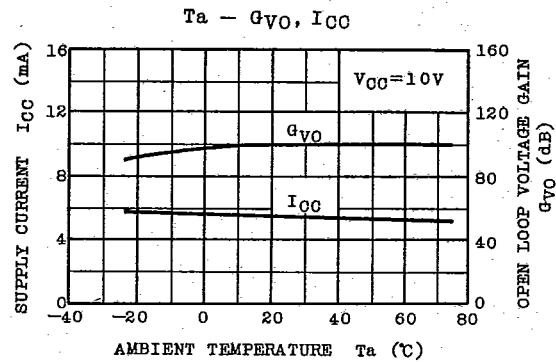
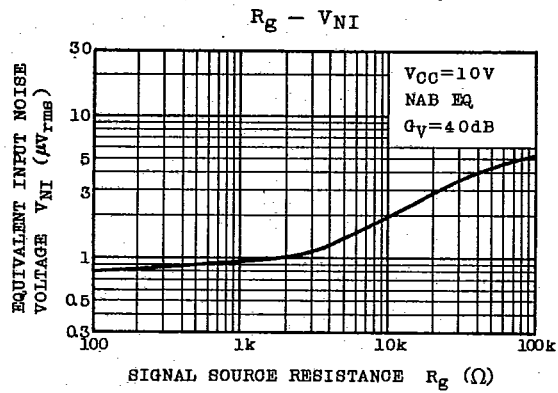
TOSHIBA

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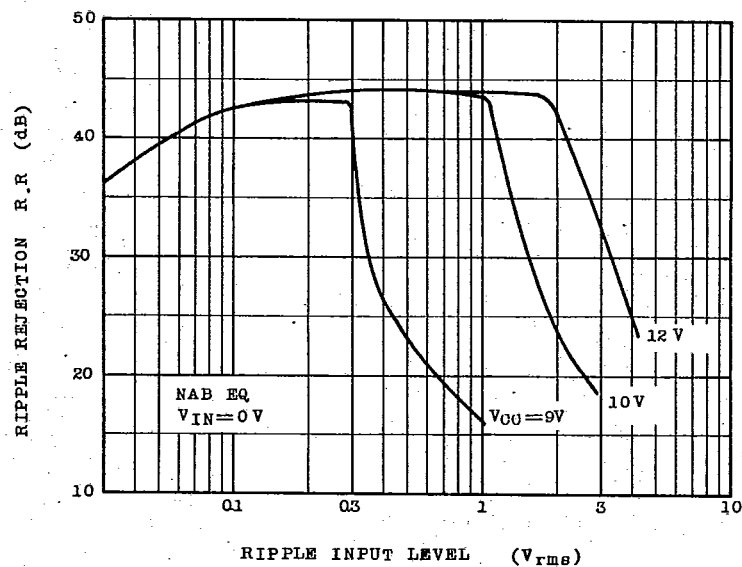
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R.R. - RIPPLE LEVEL



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