

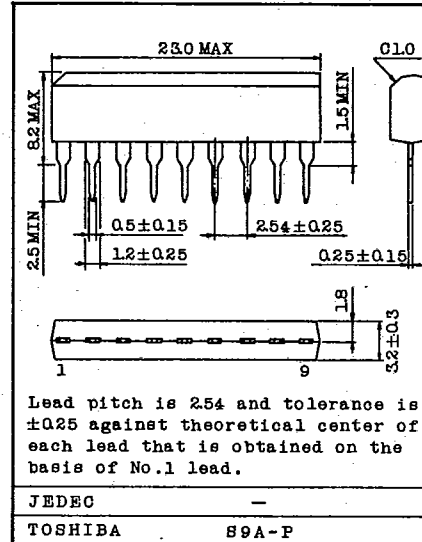
TA7325P

T-74-05-01

## DUAL PRE AMPLIFIER

- Dual Pre Amplifier for Car or Home Stereo Use.
- High Voltage Gain :  
G<sub>VO</sub>=100dB (Typ.) at f=1kHz
- Excellent Channel Separation and High Ripple Rejection : CH. Sep.=70dB (Typ.)  
R.R.=50dB (Typ.)
- Low Noise : V<sub>N1</sub>=1.0μV<sub>rms</sub> (Typ.)  
at R<sub>g</sub>=2.2kΩ, BW=15Hz~30kHz
- Build in Muting Circuit : 2V ≥ V<sub>9</sub> ≥ 0.9V
- Wide Operating Supply Voltage Range : V<sub>CC</sub>=7~18V.

Unit in mm



## MAXIMUM RATINGS (Ta=25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	V <sub>CC</sub>	18	V
Power Dissipation (Note)	P <sub>D</sub>	700	mW
Operating Temperature	T <sub>opr</sub>	-25 ~ 75	°C
Storage Temperature	T <sub>stg</sub>	-55 ~ 150	°C

Note : Derated above Ta=25°C in the proportion of 5.6mW/°C.

## ELECTRICAL CHARACTERISTICS

(Unless otherwise specified, V<sub>CC</sub>=10V, f=1kHz, R<sub>g</sub>=600Ω, R<sub>L</sub>=10kΩ, Ta=25°C)

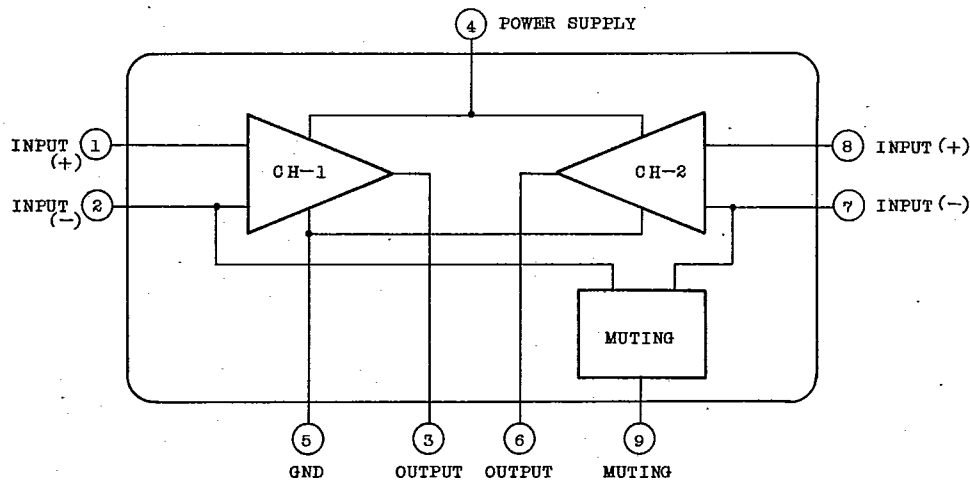
CHARACTERISTIC	SYMBOL	TEST CIRCUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Supply Current	I <sub>CC</sub>	1	V <sub>IN</sub> =0	-	5.5	8.5	mA
Voltage Gain	G <sub>VO</sub>	1	C <sub>f</sub> =100μF, R <sub>f</sub> =0	-	100	-	dB
Maximum Output Voltage	V <sub>OM</sub>	2	THD=0.5%, NAB EQ	2.0	2.8	-	V <sub>rms</sub>
Equivalent Input Noise Voltage	V <sub>N1</sub>	2	R <sub>g</sub> =2.2kΩ, BPF=15Hz~30kHz	-	1.0	2.5	μV <sub>rms</sub>
Input Resistance	R <sub>IN</sub>	2	V <sub>O</sub> =1V <sub>rms</sub>	-	100	-	kΩ
Channel Separation	CHsep	2	f=10kHz, R <sub>g</sub> =2.2kΩ, V <sub>O</sub> =1V <sub>rms</sub>	-	70	-	dB
Ripple Rejection	R.R.	2	f=100Hz, V <sub>IN</sub> =1V <sub>rms</sub> , CB=NO connection	-	50	-	dB
Muting Ratio	M.R.	2	V <sub>9</sub> =1V, OdB=1V <sub>rms</sub>	-	80	-	dB

AUDIO LINEAR IC

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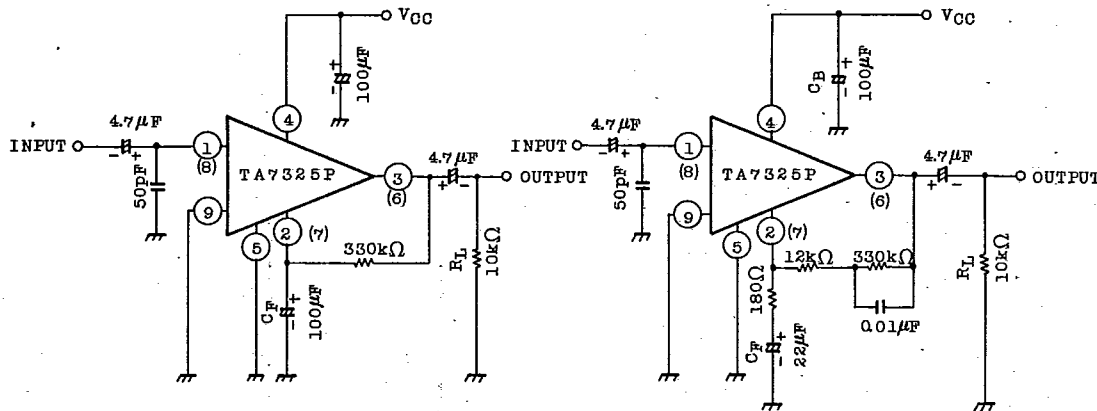
## EQUIVALENT BLOCK DIAGRAM



## 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

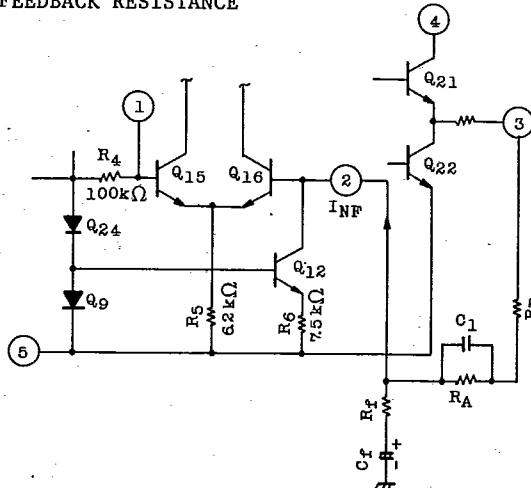


Fig.1

Fig.1 shows the internal circuit.

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

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

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

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

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

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

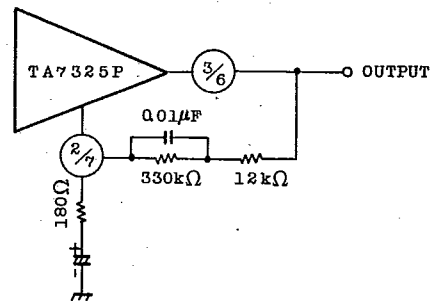
$$V_3 = \frac{1}{2}V_{CC} = 5 = 2V_{BE} + I_{NF}(R_A + R_B)$$

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

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

$$= 3.6 \times 10^5$$

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



AUDIO LINEAR IC

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## (2) MUTING CIRCUIT APPLICATION

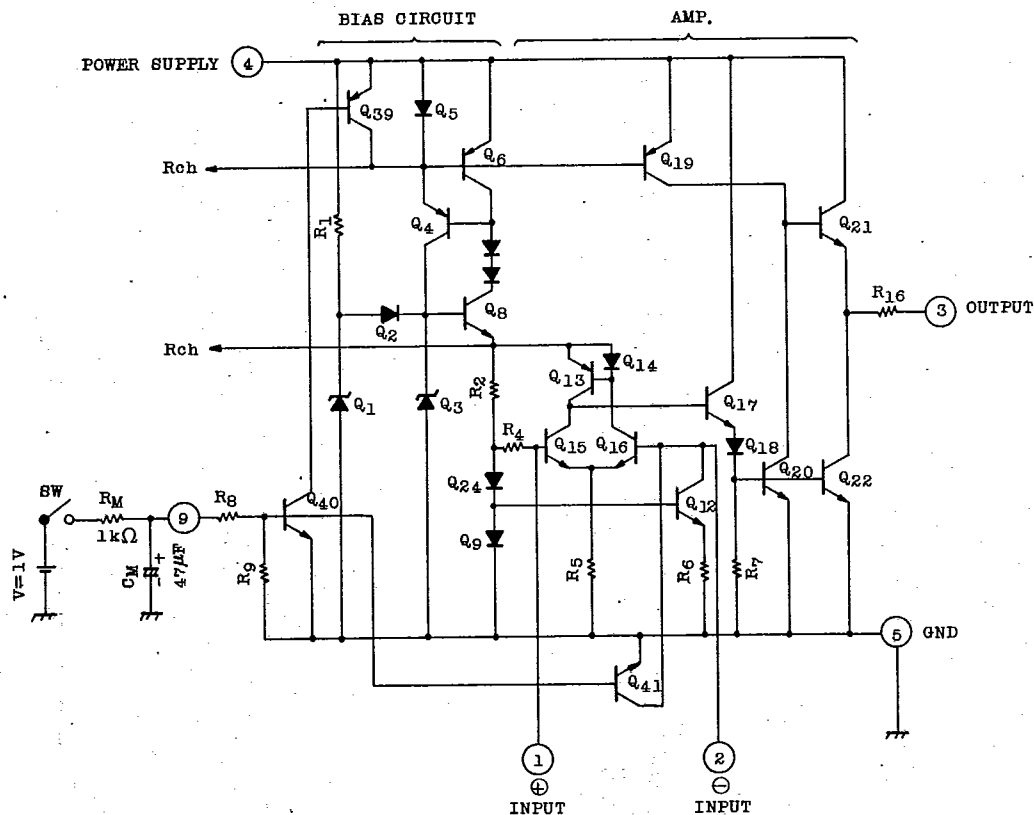


Fig.2

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

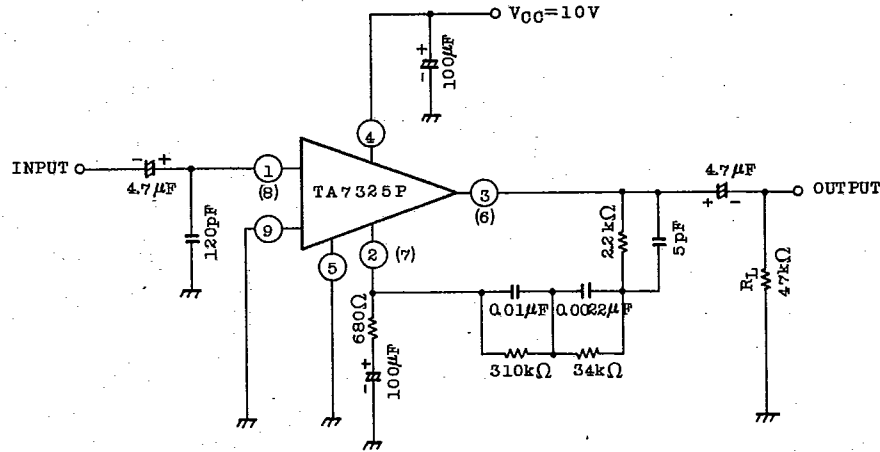
- Care should be taken not to decrease a closed loop gain less 20dB cause parasitic oscillation.
- The maximum allowable input voltage is 300 mVrms not to increase the input voltage above this value for stable operation.

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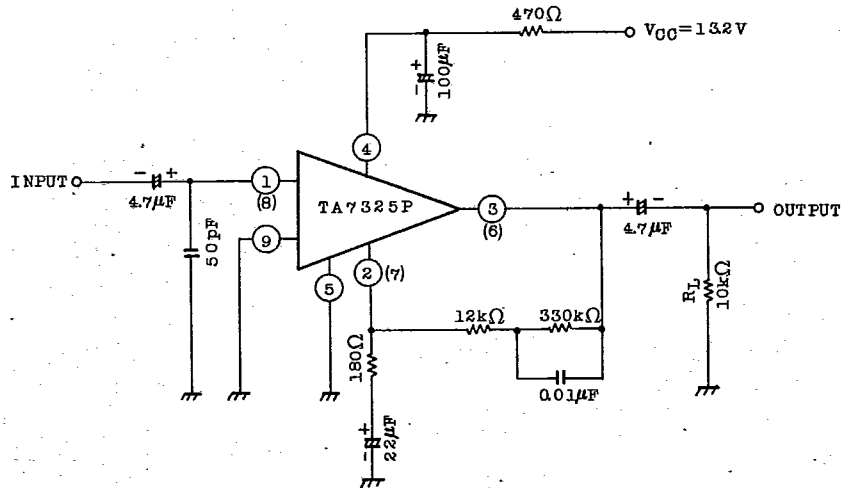
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## APPLICATION

### 1. RIAA EQ



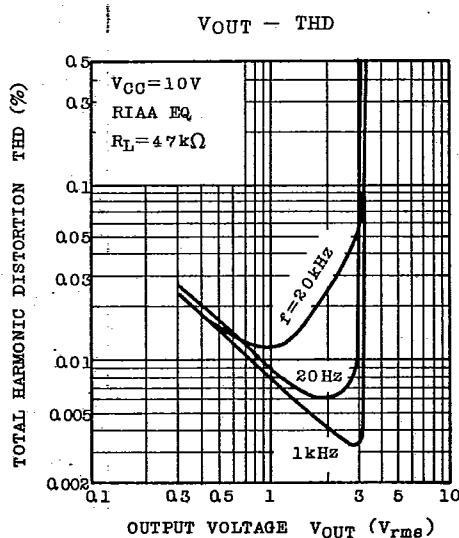
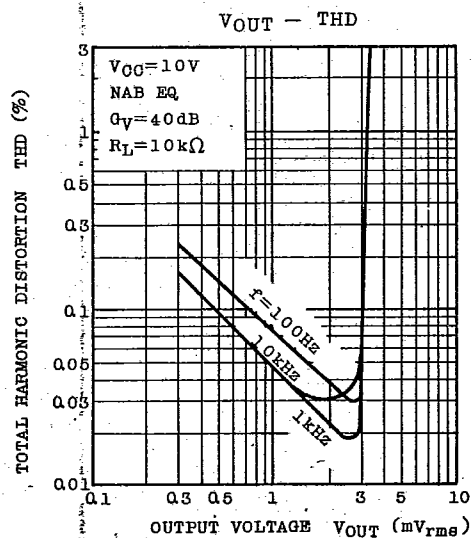
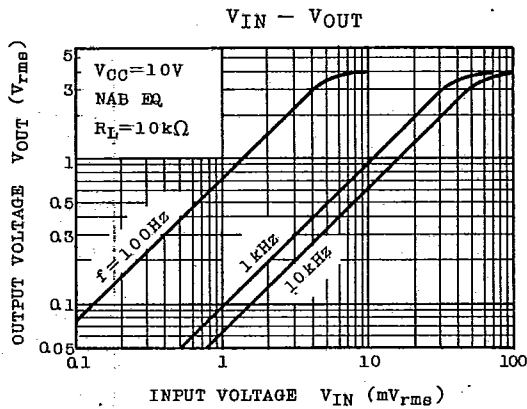
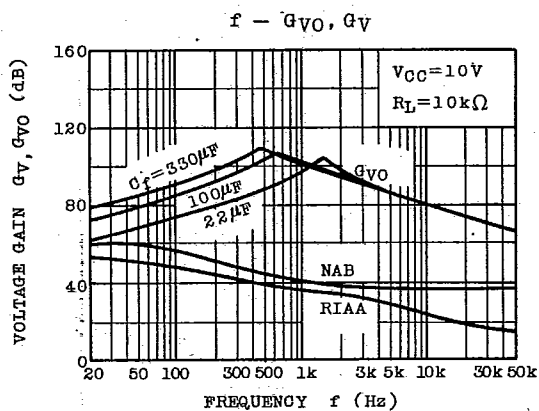
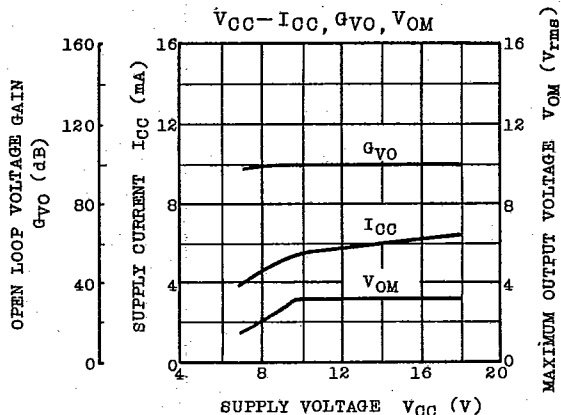
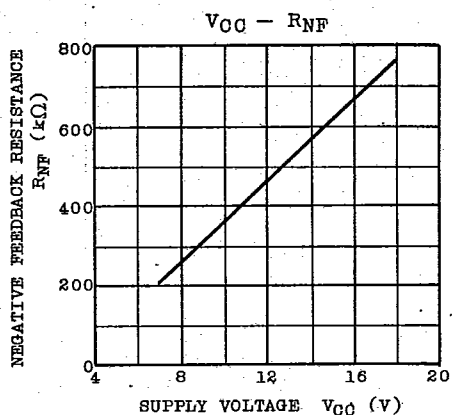
### 2. NAB EQ



AUDIO LINEAR IC

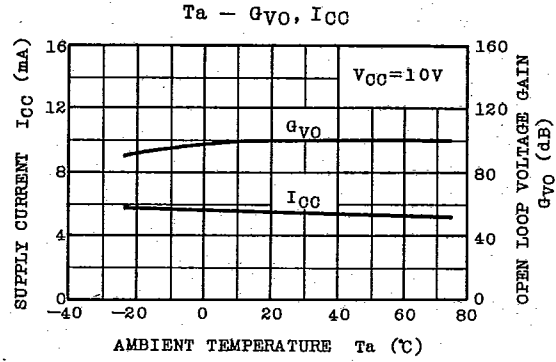
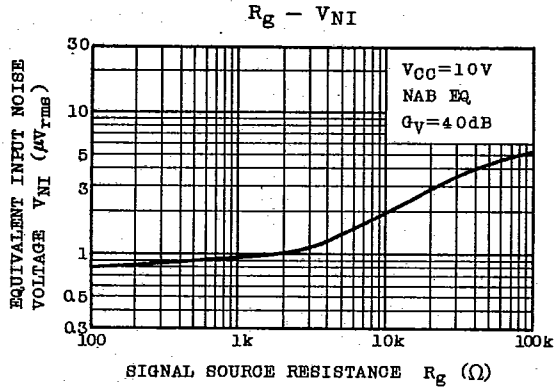
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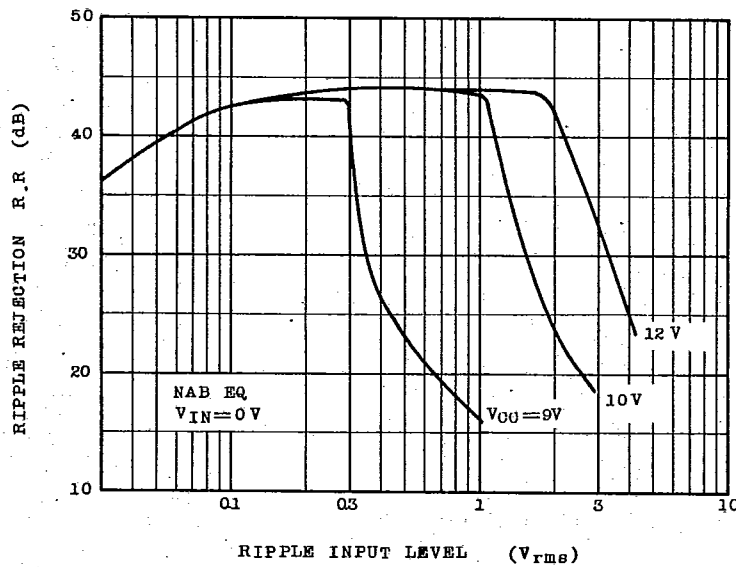


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**R.R. - RIPPLE LEVEL**



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