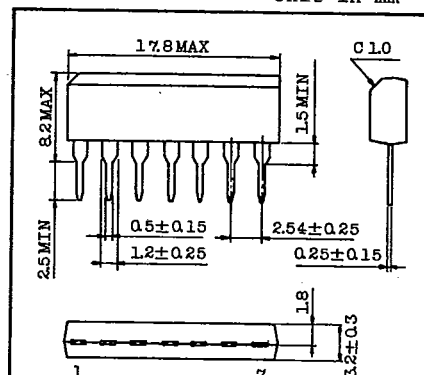


TA7140P**VOLTAGE AMPLIFIER****LOW OUTPUT POWER AMPLIFIER**

- Especially Suitable for Line Output Amplifier Recording Head Driver and Headphone Driver of Tape Recorder Deck.
- Low Noise : $V_{NI}=1\mu V_{rms}$
- Wide Operating Supply Voltage Range
: $V_{CC}=3.5\sim 25V$
- 150mW Audio Output Power at $V_{CC}=20V$, $R_L=150\Omega$

Unit in mm



Lead pitch is 2.54 and tolerance is ± 0.25 against theoretical center of each lead that is obtained on the basis of No.1 lead.

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S7A-P

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

CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	V_{CC}	25	V
Power Dissipation (Note)	P_D	400	mW
Operating Temperature	T_{opr}	$-25\sim 75$	$^\circ C$
Storage Temperature	T_{stg}	$-55\sim 125$	$^\circ C$

Note: Derated above $T_a=25^\circ C$ in the proportion of $4mW/^\circ C$.

ELECTRICAL CHARACTERISTICS (Unless otherwise specified

$V_{CC}=20V$, $T_a=25^\circ C$, $R_L=150\Omega$, $R_f=100\Omega$, $R_g=600\Omega$, $f=1kHz$)

CHARACTERISTIC	SYMBOL	TEST CIR-CUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Supply Voltage Range	V_{CCopr}	-	-	3.5	20	25	V
Supply Current	I_{CC}	-	$f=1kHz$, $V_{OUT}=0$	-	4.0	6.0	mA
			$V_{OUT}=4.5V_{rms}$	-	16.5	-	
Voltage Gain (Open Loop)	G_{VO}	-	$R_f=0\Omega$	-	63	-	dB
Voltage Gain (Closed Loop) (Note)	G_V	-	-	36.5	40	43.5	dB
Total Harmonic Distortion	THD	-	$V_{OUT}=4.5V_{rms}$	-	0.5	1	%
			$V_{CC}=6.5V$, $V_{OUT}=1.0V_{rms}$	-	1	-	
Maximum Output Voltage	V_{OM}	-	THD=10%	-	6	-	V_{rms}
Input Resistance	R_{IN}	-	-	-	30	-	$k\Omega$
Output Noise Voltage	V_{NO}	-	BW=20Hz ~ 20kHz, $R_g=1k\Omega$	-	100	200	μV_{rms}

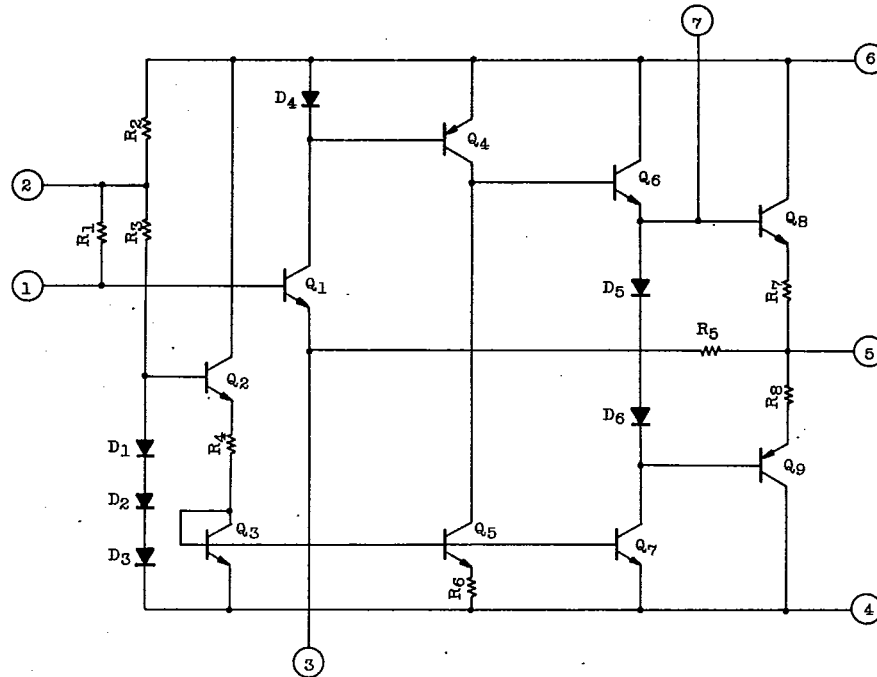
Note: In regard to the value of voltage gain (closed loop), it is possible to be classified.

TOSHIBA

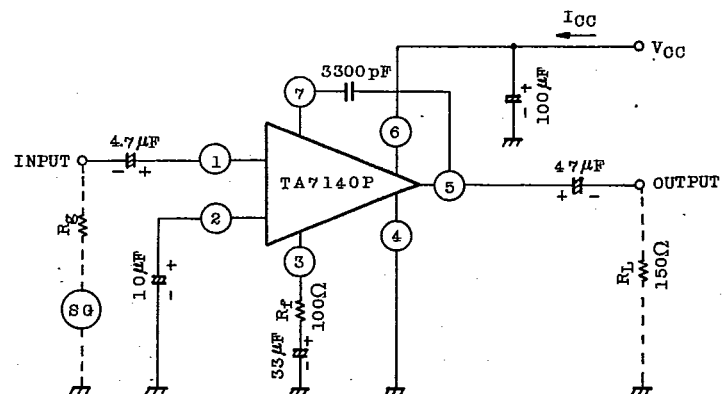
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EQUIVALENT CIRCUIT



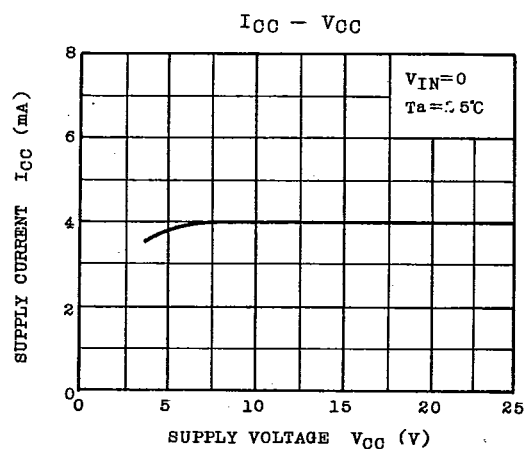
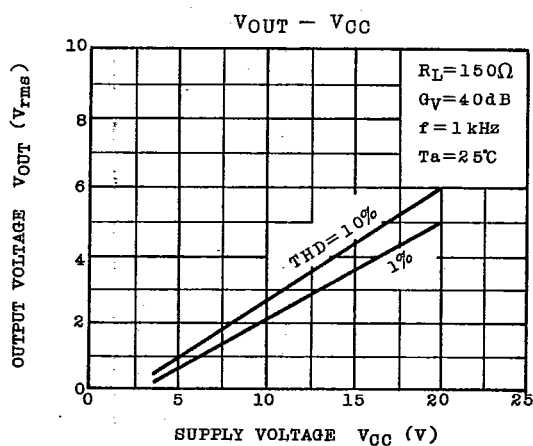
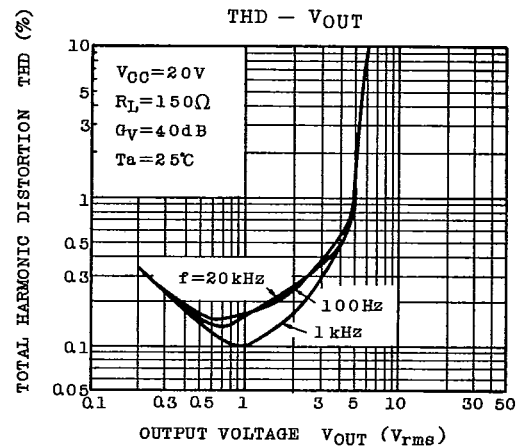
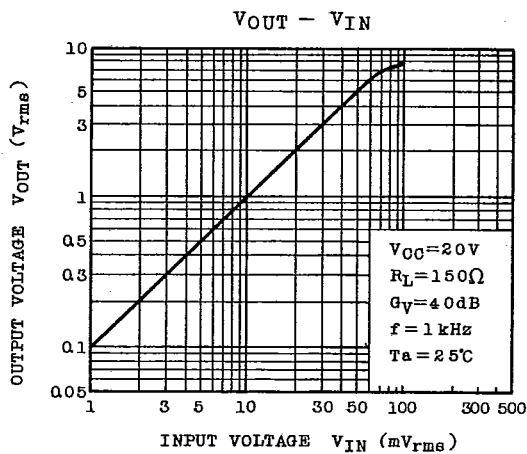
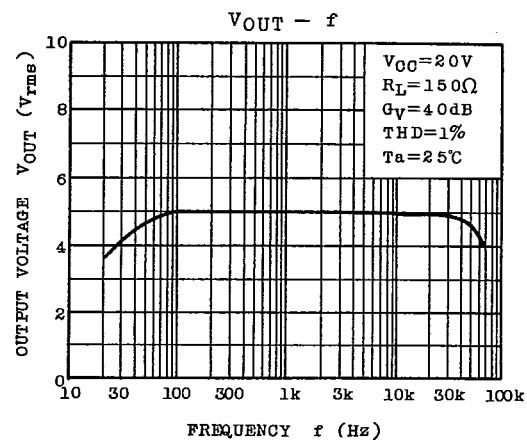
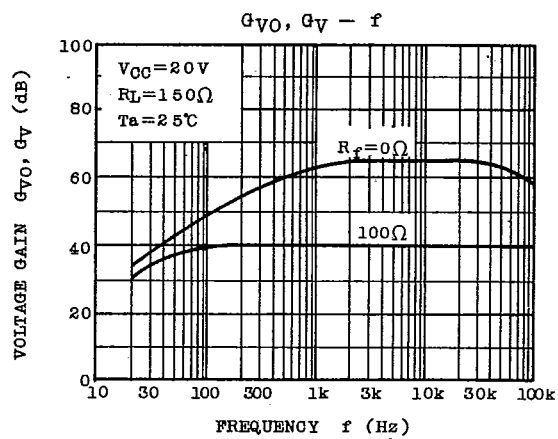
TEST CIRCUIT



AUDIO LINEAR IC

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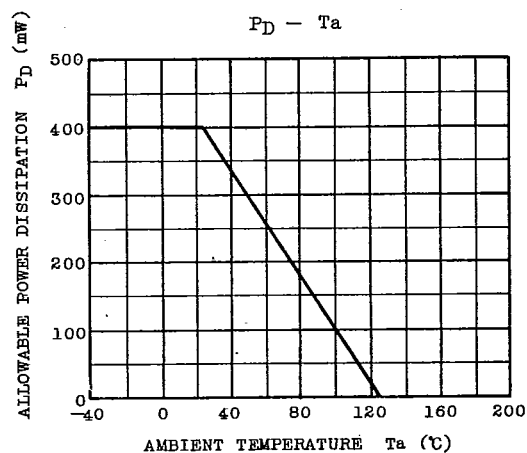
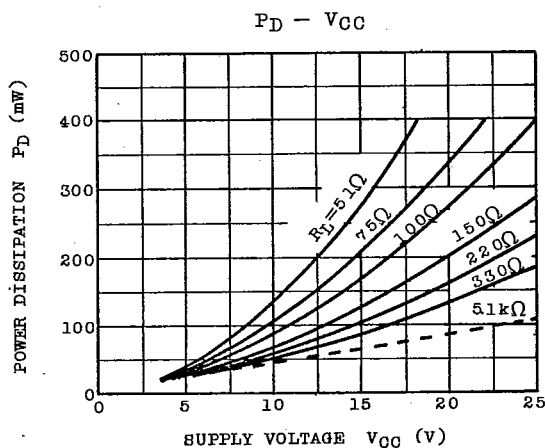
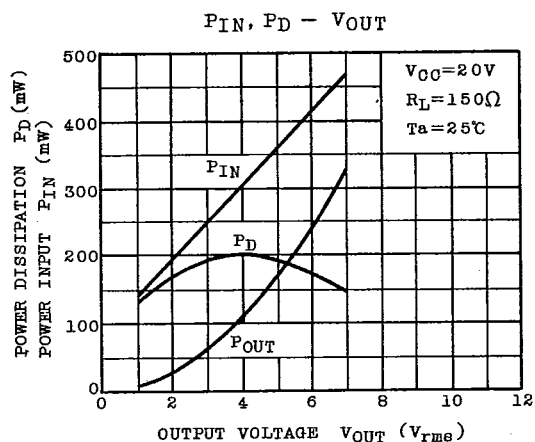
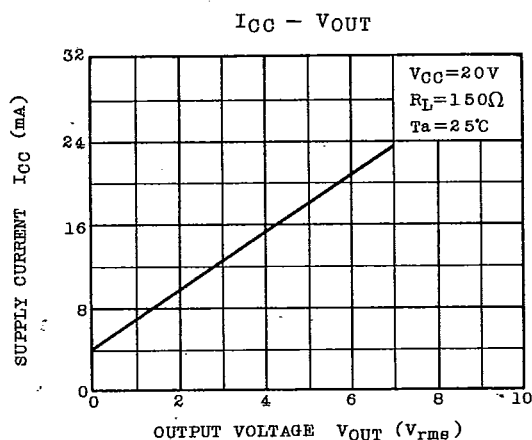
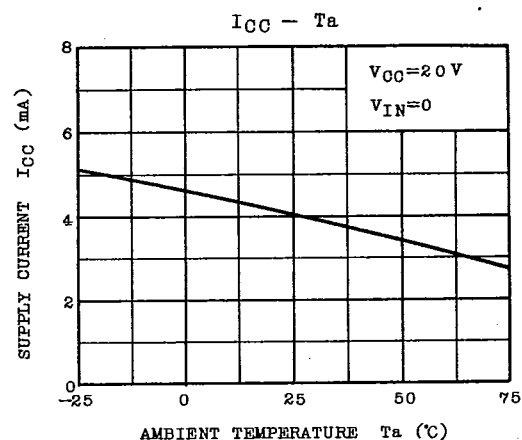
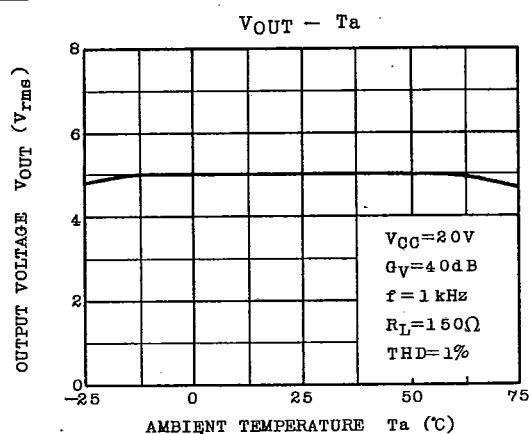
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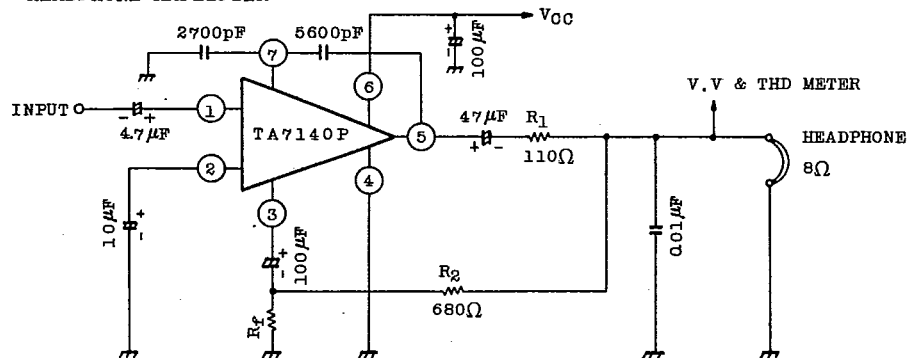
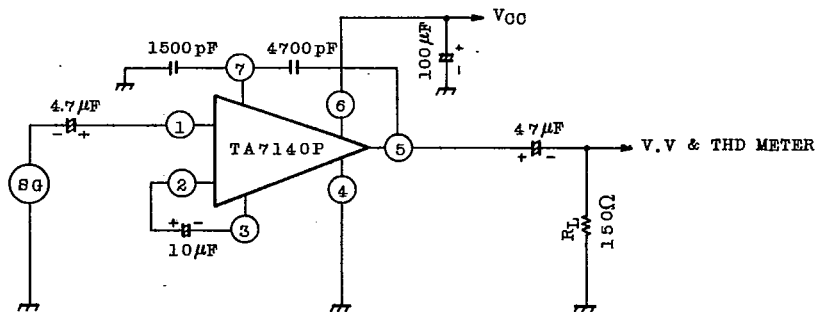
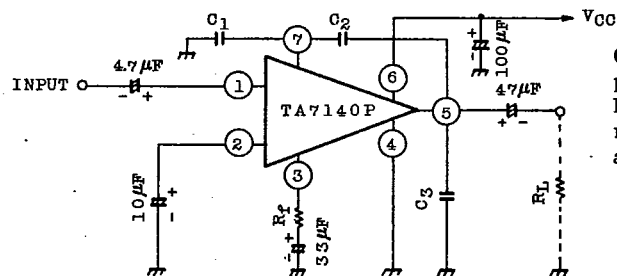
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APPLICATION CIRCUIT**1. HEADPHONE AMPLIFIER****2. BUFFER AMPLIFIER ($G_v=9\text{dB}$)****3. FLAT AMPLIFIER**

C_1, C_2 and C_3 are for preventing parasitic oscillation. For various closed loop gain, recommended compensation values are shown in the following table.

VOLTAGE GAIN

G_v	40dB	30dB	20dB	10dB	0dB
R_f [Ω]	100	330	1.1k	4.7k	∞ (open)
C_1 [pF]	0	1500	1500	1500	1500
C_2 [pF]	3300	4700	4700	4700	4700
C_3 [pF]	0	0	0	0	2200

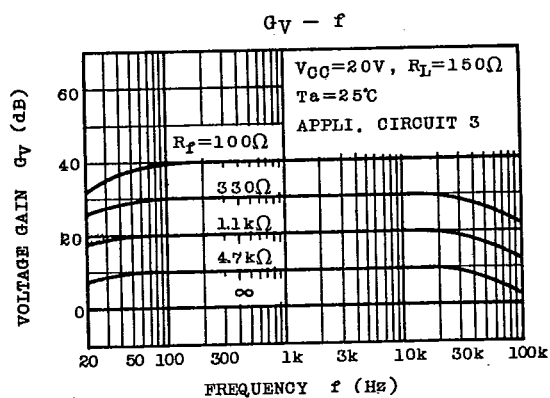
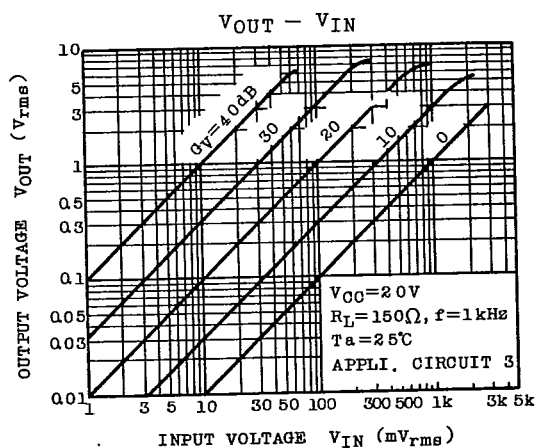
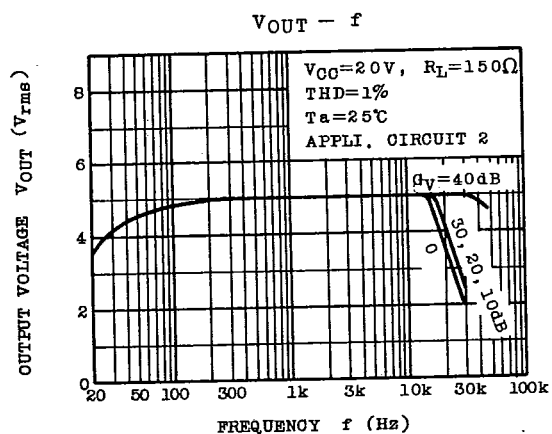
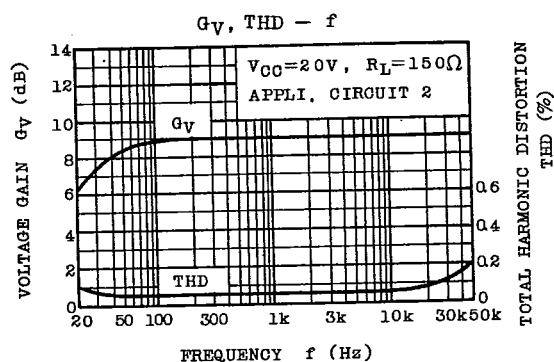
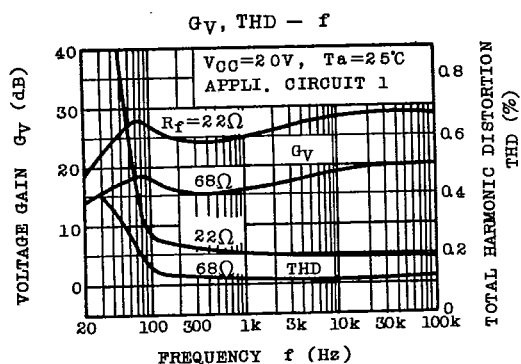
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