



INTEGRATED CIRCUIT

TECHNICAL DATA

TA7136AP

TOSHIBA BIPOLAR LINEAR INTEGRATED CIRCUIT
SILICON MONOLITHIC

PRE-AMPLIFIER FOR DUAL POWER SUPPLY

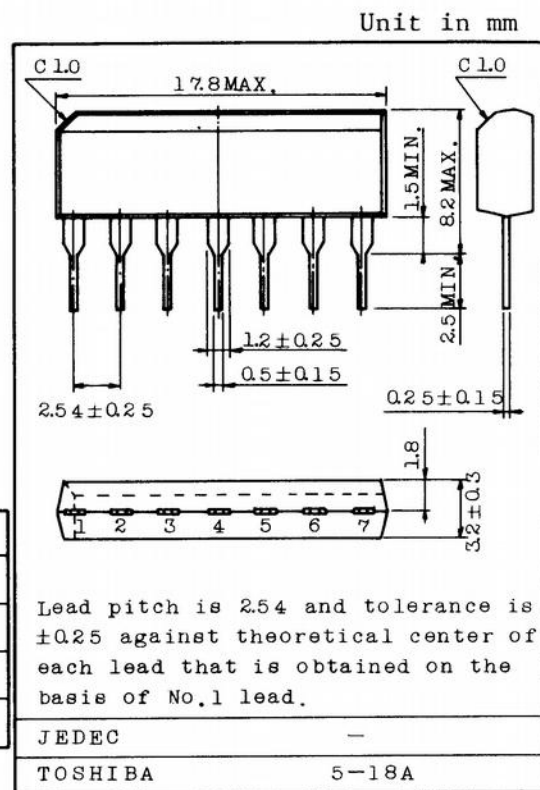
VARIOUS HIGH QUALITY PRE-AMPLIFIER

- Low Noise : $V_{NI}=0.8\mu V_{rms}(Typ.)$
- High Open Loop Voltage Gain : $G_{VO}=92dB(Typ.)$
- Low Distortion : $THD=0.1\%(Max.)$
(RIAA. EQ. 40dB(1kHz), $V_{OUT}=7V_{rms}$)
- Wide Operating Supply Voltage Range : $V_{CC}=\pm 3\sim\pm 20V$

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

CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	V_7-V_4	40	V
Power Dissipation (Note)	P_D	400	mW
Operating Temperature	T_{opr}	$-25\sim 75$	$^\circ C$
Storage Temperature	T_{stg}	$-55\sim 125$	$^\circ C$

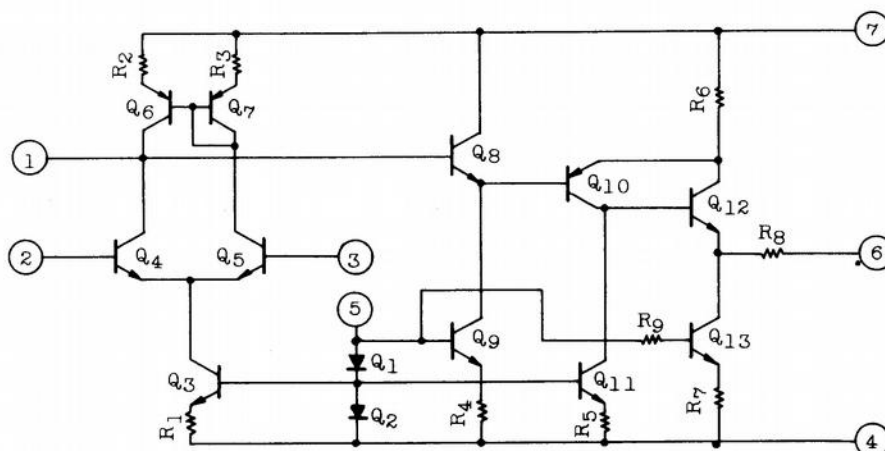
Note : Derated above $T_a=25^\circ C$ in the proportion of
4 mW/ $^\circ C$.



ELECTRICAL CHARACTERISTICS ($V_{CC}=15V$, $V_{EE}=-15V$, $T_a=25^\circ C$)

CHARACTERISTIC	SYMBOL	TEST CIR- CUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Supply Current	I_{CC}	1	$V_{IN}=0$	—	3.1	4.2	mA
Voltage Gain (Open Loop)	G_{VO}	1	$f=1kHz$, $V_{IN}=-85dBm$	87	92	—	dB
Maximum Output Voltage	V_{OM}	2	RIAA EQ, $f=1kHz$, $THD=0.1\%$	7.0	—	—	V_{rms}
Equivalent Input Noise Voltage	V_{NI}	3	RIAA equalizer $R_g=2.2k\Omega$, $f=1kHz$	—	0.8	1.5	μV_{rms}

EQUIVALENT CIRCUIT





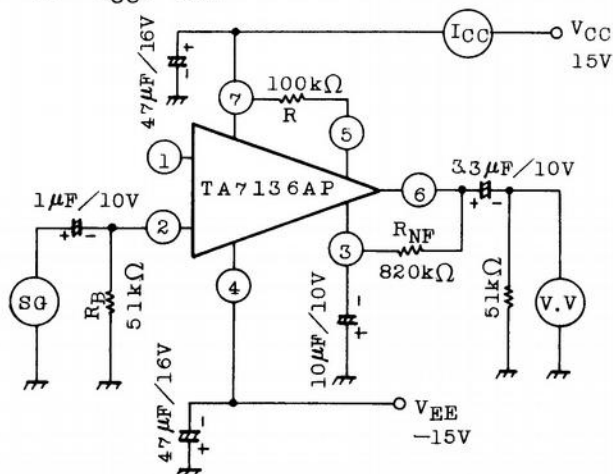
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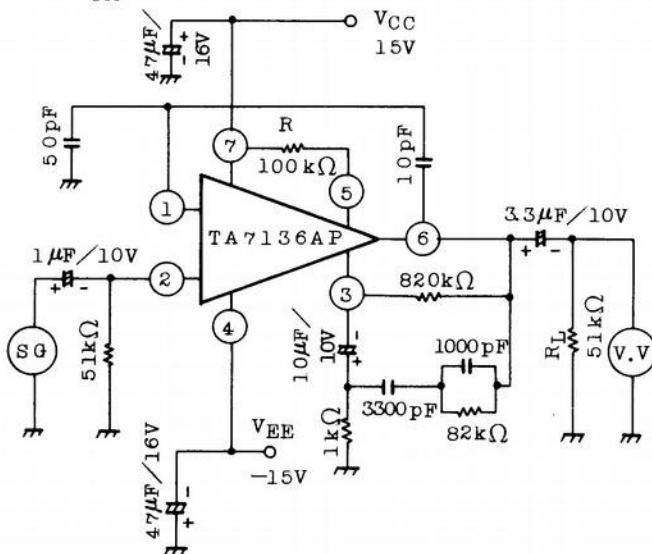
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TEST CIRCUIT

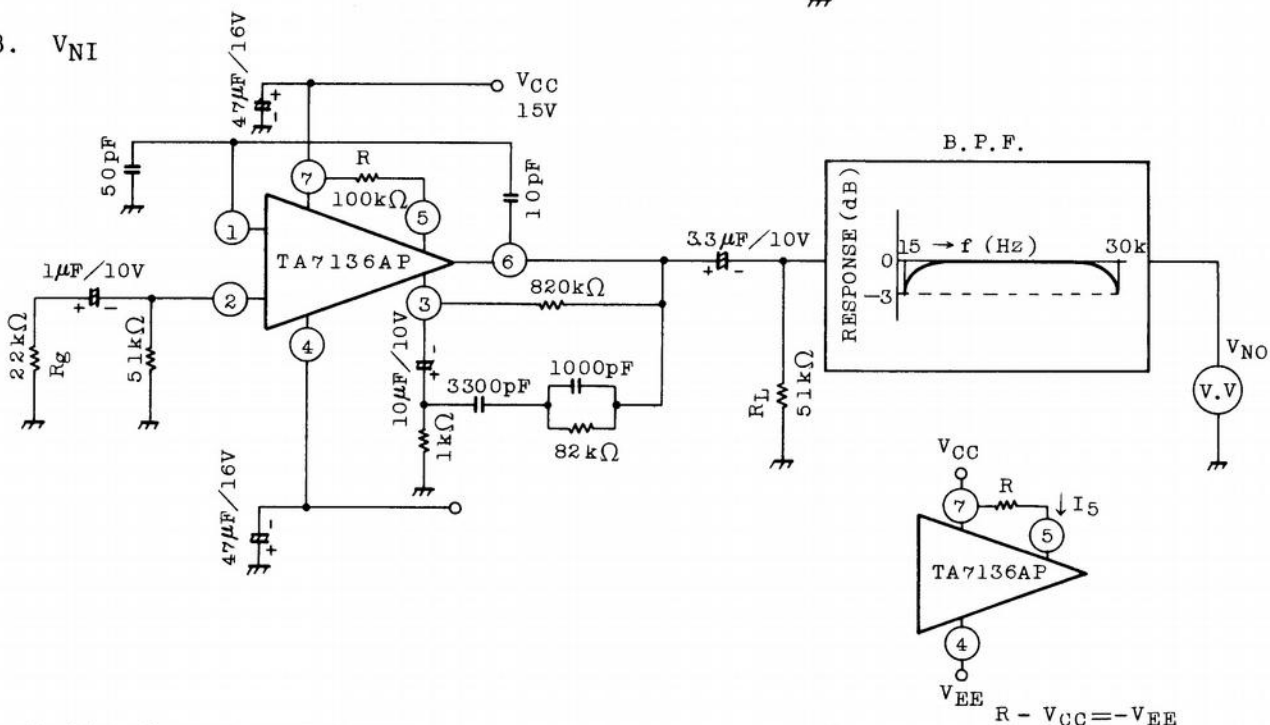
1. I_{CC} , GVO



2. V_{OM}



3. V_{NI}



DECISION OF BIAS RESISTANCE R

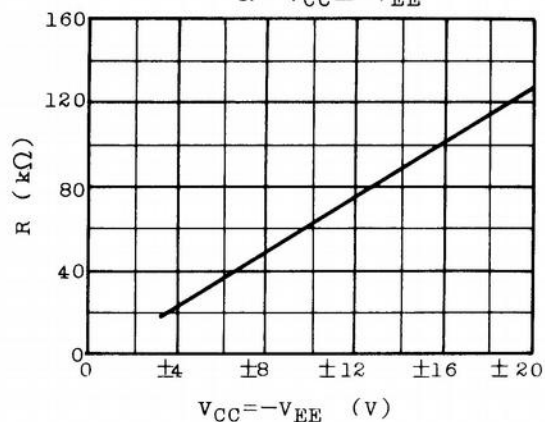
The TA7136AP is designed to operate under the bias condition $I_5 = 300\mu A \pm 20\%$.

Please decide the R by the following equation.

$$I_5 = (V_{CC} - V_{EE} - 2V_F) / R$$

$$R = (V_{CC} - V_{EE} - 1.4) / 0.3 (\text{k}\Omega)$$

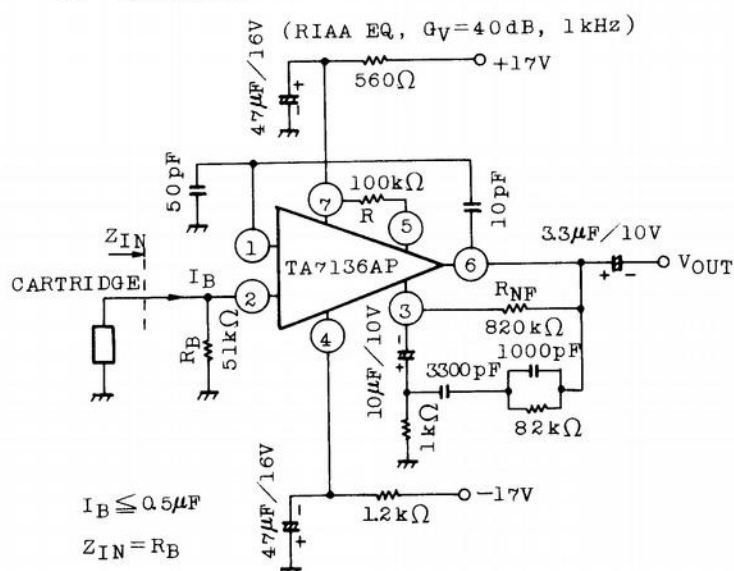
The following figure shows the calculated value of R.



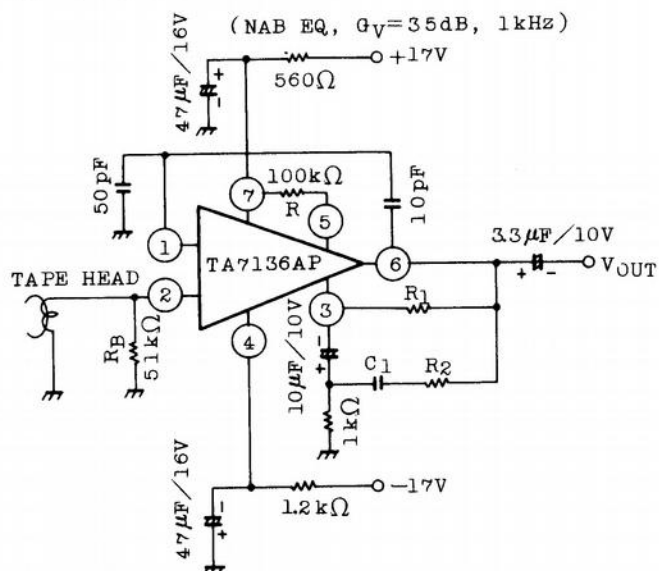


APPLICATION CIRCUIT

1. MAGNETIC PHONO PRE-AMPLIFIER

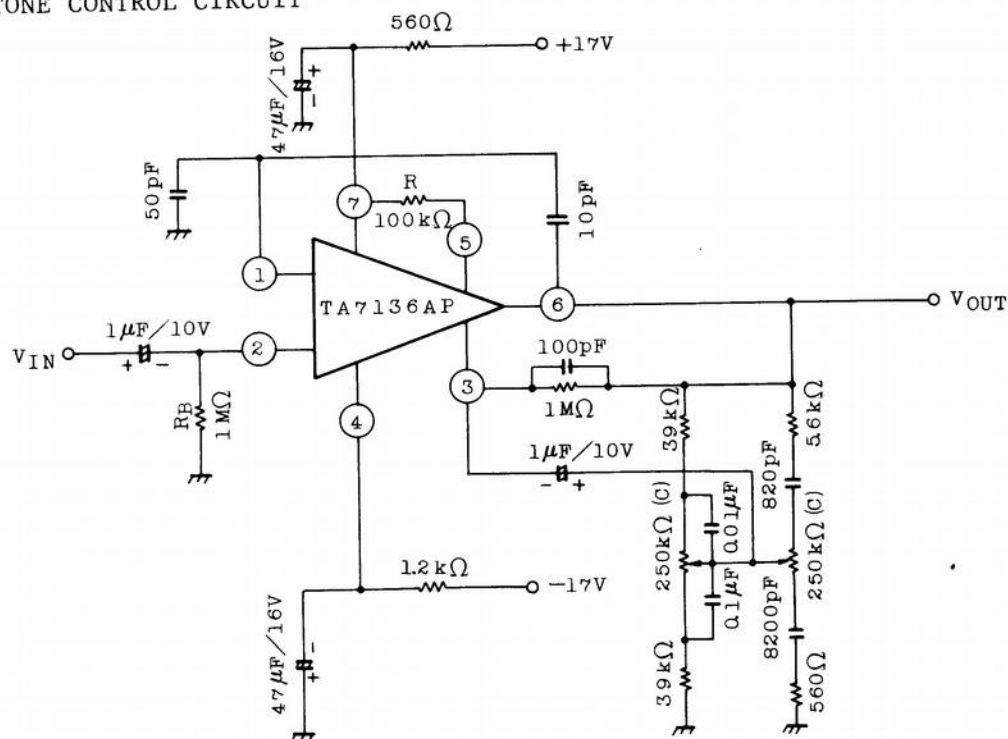


2. TAPEREORDER PRI-AMPLIFIER



	9.5cm/sec	19cm/sec	CASSETTE
R ₁	910kΩ	1MΩ	510kΩ
R ₂	27kΩ	18kΩ	47kΩ
C ₁	3300pF	2800pF	3300pF

3. TONE CONTROL CIRCUIT

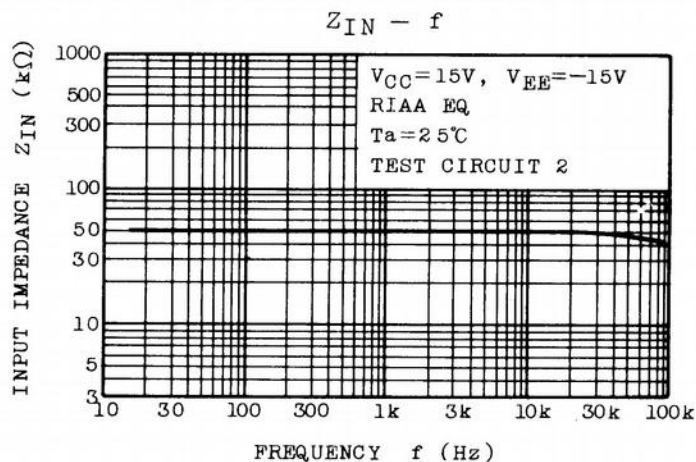
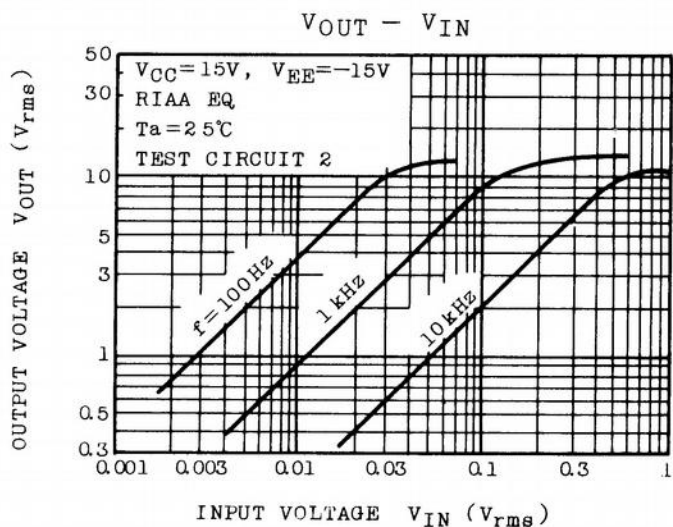
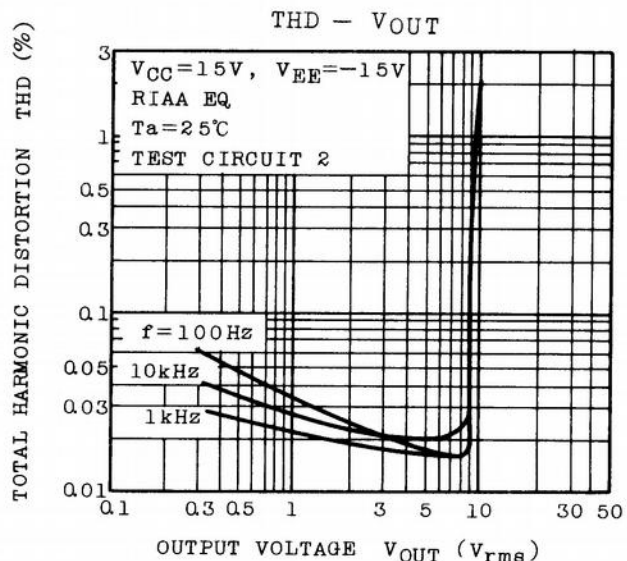
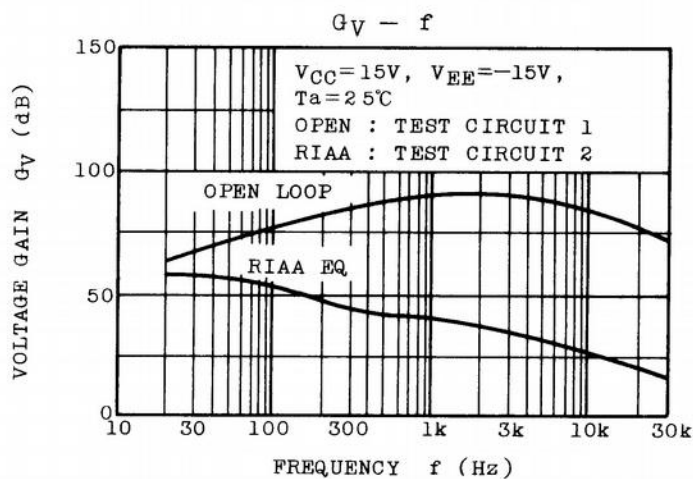
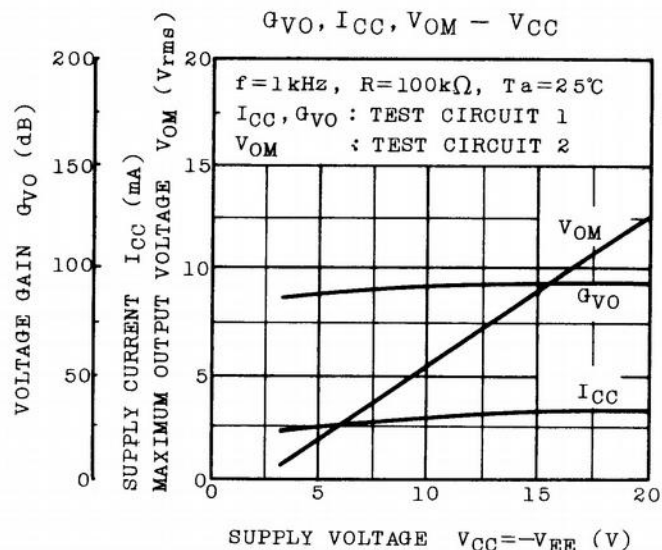
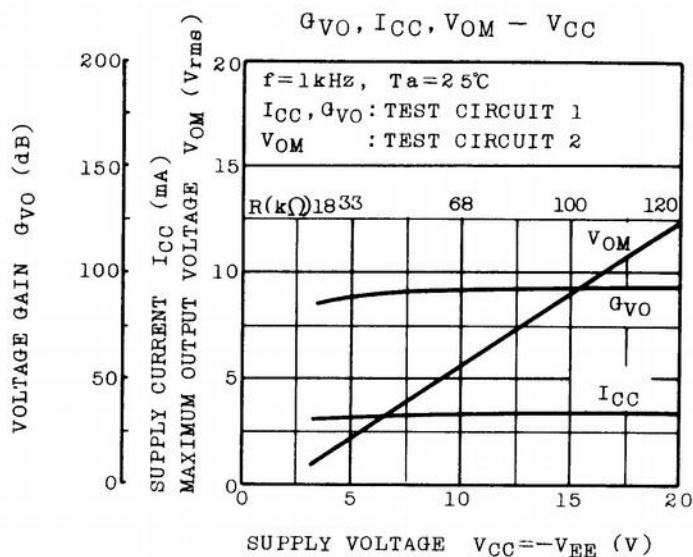




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