

6427525 N E C ELECTRONICS INC 05E 22829 D
BIPOLAR ANALOG INTEGRATED CIRCUIT
 μ PC1270H

T-74-05-01

30-50 W POWER AMPLIFIER DRIVER

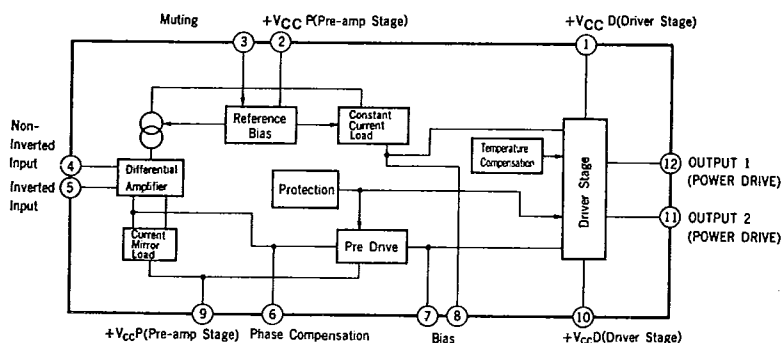
DESCRIPTION

μ PC1270H is designed for use with a Hi-Fi power amplifier driver. It is composed of a differential amplifier, a predriver, a driver and protection circuit. It is in a 12 pin small power SIP. (Single In Line)

FEATURES

- Excellent Low Distortion.
 0.002 % TYP. ($V_{CC} = \pm 36$ V, $f = 1$ kHz, $A_v = 30$ dB, $P_O = 30$ W, $R_L = 8$ Ohms)
 0.006 % TYP. ($V_{CC} = \pm 36$ V, $f = 20$ kHz, $A_v = 30$ dB, $P_O = 30$ W, $R_L = 8$ Ohms)
- Wide Frequency Band.
 900 kHz TYP. (-3 dB)
- Wide Power Band Width.
 90 kHz TYP. ($P_O = 25$ W, T.H.D. = 0.1 %)
- Excellent Low POP ON/OFF Noise.

BLOCK DIAGRAM



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NOTE: The protection circuit is for this IC and cannot protect external Power Transistors. Thus, design a P_O Tr protection circuit besides.

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ABSOLUTE MAXIMUM RATINGS ($T_a = 25^\circ\text{C}$)

Supply Voltage (Quiescent)	V_{CC1}	± 50	V
Supply Voltage (Operational)	V_{CC2}	± 45	V
Quiescent Circuit Current	I_{CC} (peak)	200	mA
Allowable Package Dissipation	P_D	4.1	W
Operational Temperature	T_{opt}	-20 to +75	$^\circ\text{C}$
Storage Temperature	T_{stg}	-40 to +150	$^\circ\text{C}$

RECOMMENDED OPERATING CONDITION

Supply Voltage (Operational)	$V_{CC} = \pm 18$ to ± 36 V at MAX. Power Output
Input Bias Resistance	$R_{IN} = 1$ to 50 to 100 kohms
Power Transistor h_{FE}	$h_{FE} = 50$ at MAX. Power Output
Closed Loop Voltage Gain	$A_v = 26$ to 30 dB

ELECTRICAL CHARACTERISTICS ($V_{CC} = \pm 36$ V, $A_v = 30$ dB, Use Standard Test Circuit, $T_a = 25^\circ\text{C}$)

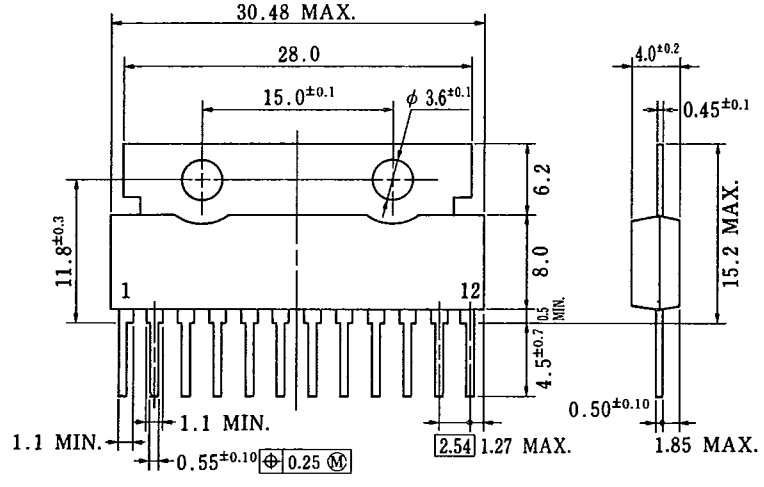
CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITION
Output Offset Voltage	V_{OFF}		± 5	± 100	mV	SEE TEST CIRCUIT 1
Quiescent Circuit Current	I_{CC}		20	40	mA	$V_{IN} = 0$
Maximum Output Voltage	V_{OM}	20	23		V	T.H.D. = 0.05 % $f = 20$ to 20 kHz
Open Loop Voltage Gain	A_{vO}	80	95		dB	$V_O = 1.5$ V, $f = 1$ kHz
Output Noise Voltage	V_{NO}		0.07	0.14	mV	$R_G = 10$ kohms
Power Band Width	P.B.W.		900		kHz	$V_O = 1.5$ V, -3dB
Supply Voltage Rejection Ratio	S.V.R.	55	70		dB	$R_G = 2$ kohms, $f = 100$ Hz
Output Offset Voltage (Mute)	V_{OFF} (Mute)			± 50	mV	$V_{CC} = \pm 50$ V, TEST CIRCUIT 7

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12 PIN SIP (Unit : mm)

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P12HP-254B1

PIN CONNECTION DIAGRAM

PIN NO.	PIN CONNECTION
1	+V _{CCD} (for Driver)
2	+V _{CCP} (for Preamp)
3	MUTING
4	INPUT
5	NFB
6	PHASE COMP
7	BIAS
8	BIAS
9	-V _{CCP} (for Preamp)
10	-V _{CCD} (for Driver)
11	LOWER OUTPUT
12	UPPER OUTPUT

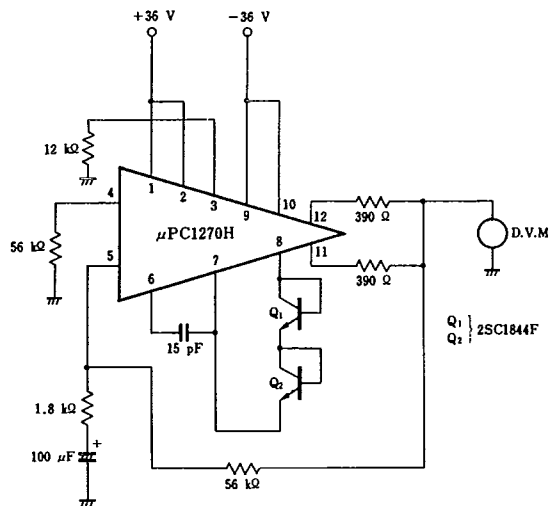
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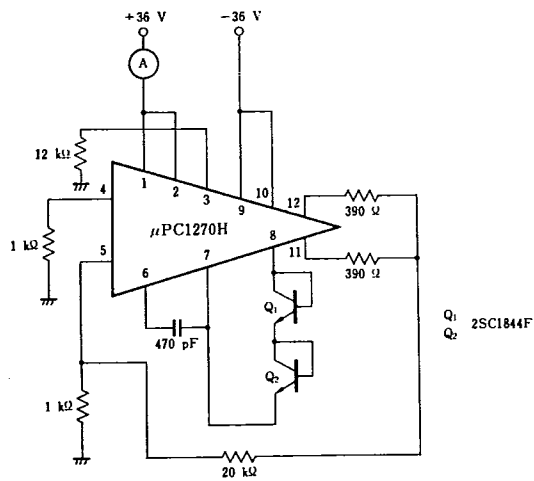
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TEST CIRCUIT 1 (V_{OFF})



TEST CIRCUIT 2 (I_{CC})

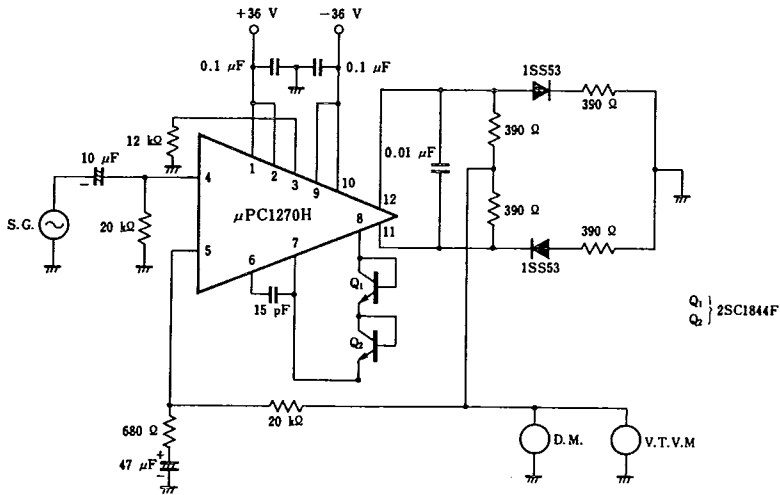


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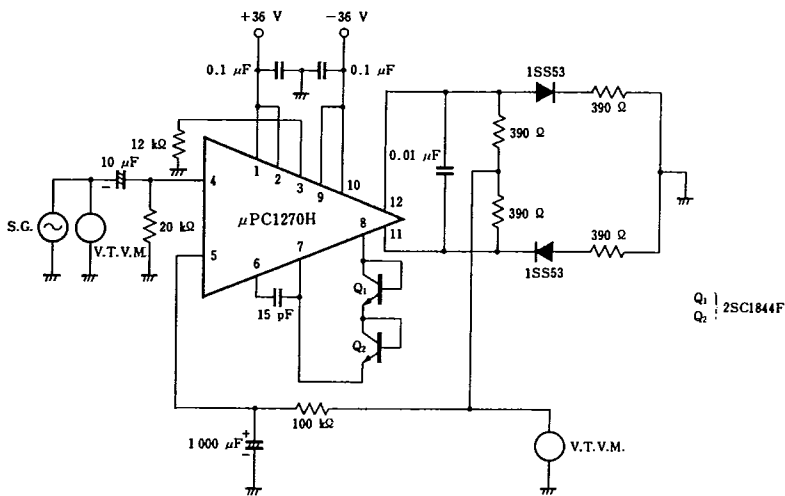
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TEST CIRCUIT 3 (V_{OM})

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TEST CIRCUIT 4 (A_{VO})



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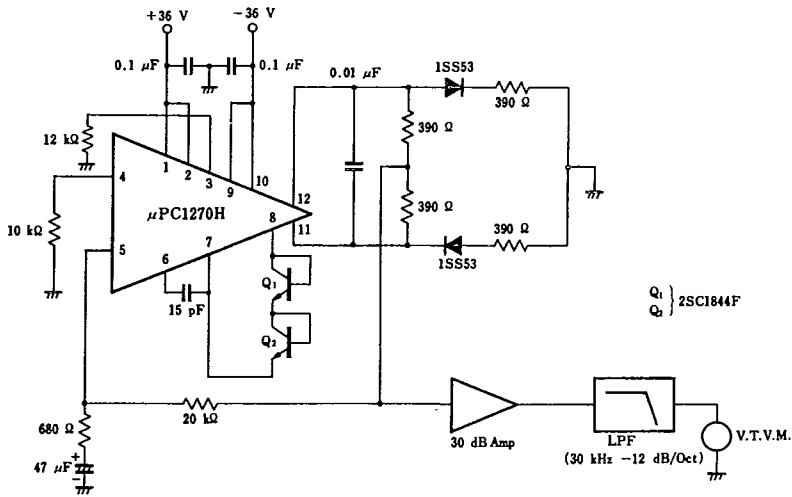
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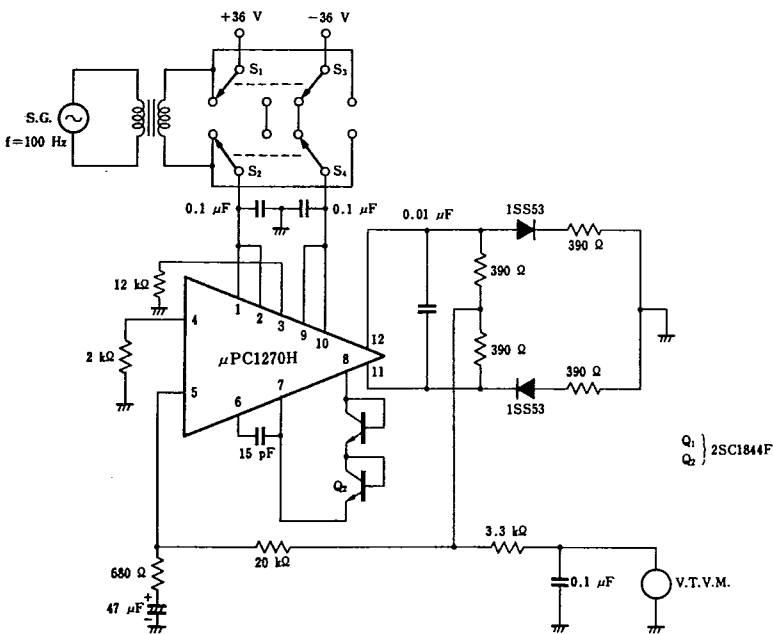
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TEST CIRCUIT 5 (V_{No})

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TEST CIRCUIT 6 (S.V.R.)

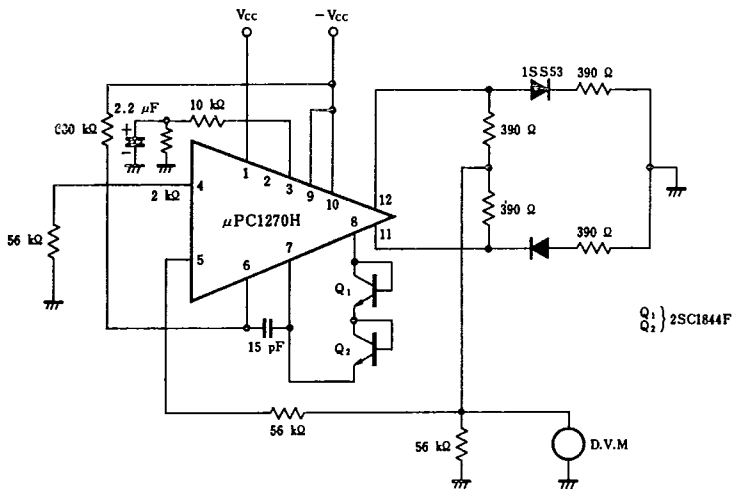


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TEST CIRCUIT 7 (V_{OFF(MUTE)})

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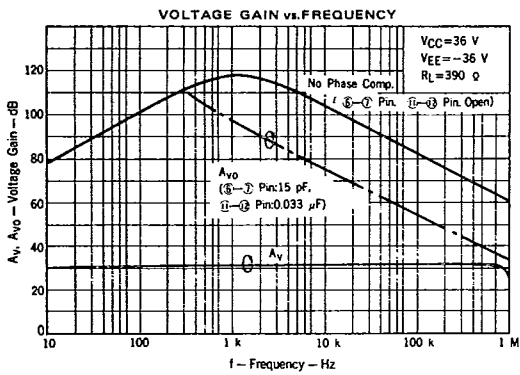
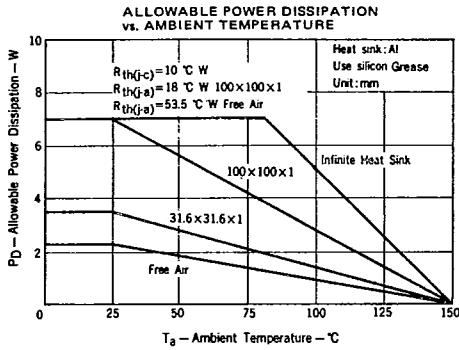
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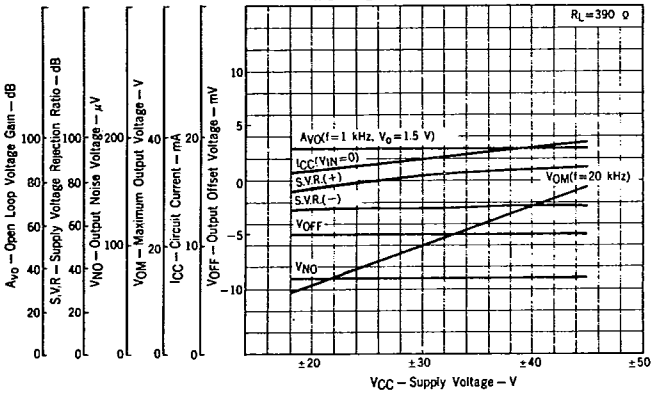
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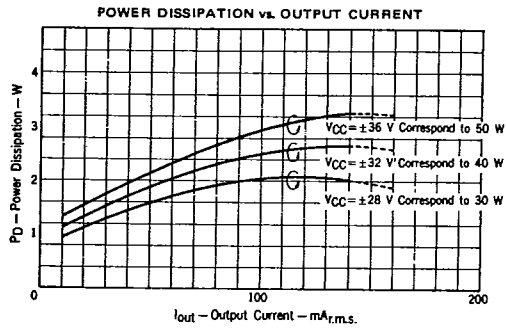
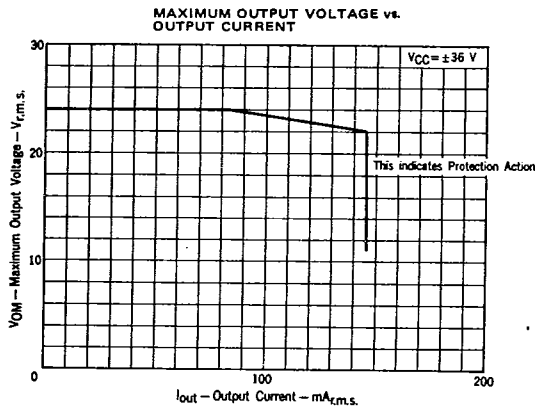
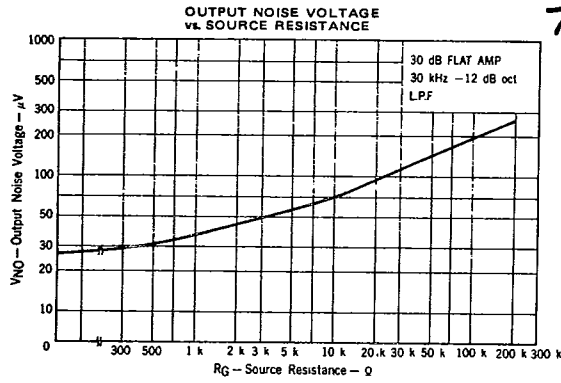
TYPICAL CHARACTERISTICS (T_a = 25°C)



OPEN LOOP VOLTAGE GAIN
 SUPPLY VOLTAGE REJECTION RATIO
 OUTPUT NOISE VOLTAGE
 CIRCUIT CURRENT
 OUTPUT OFFSET VOLTAGE
 vs. SUPPLY VOLTAGE



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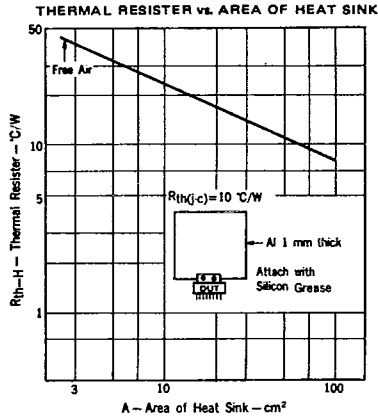
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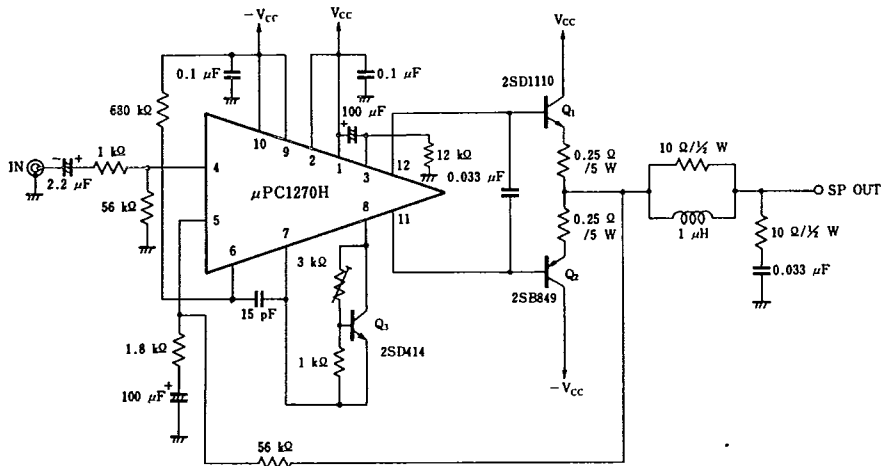
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APPLICATION CIRCUIT-1

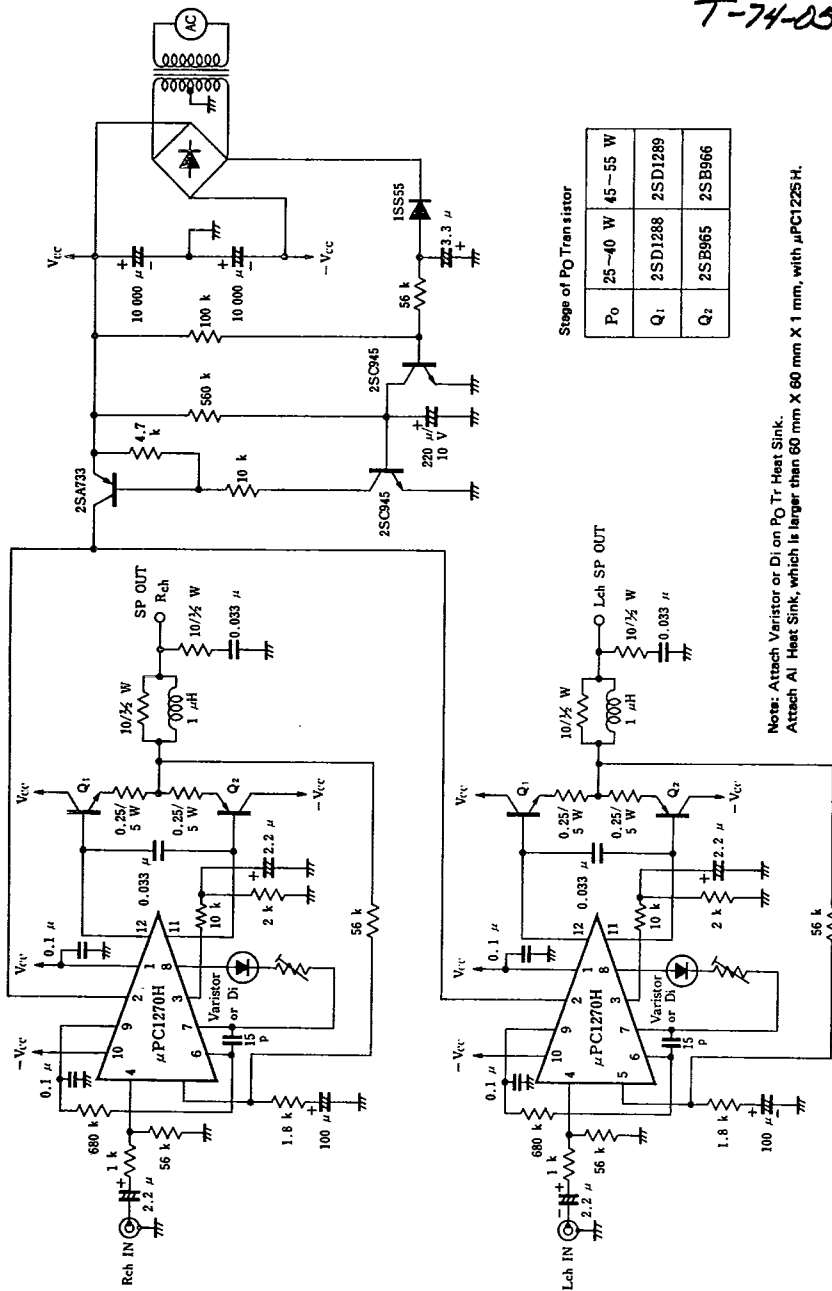


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μ PC1270H APPLICATION CIRCUIT-2 (no Relay)

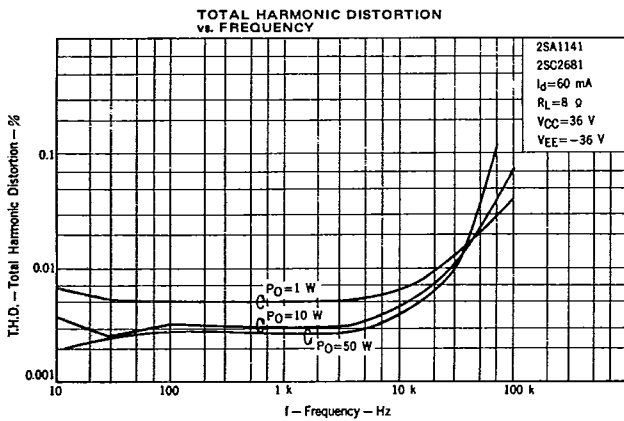
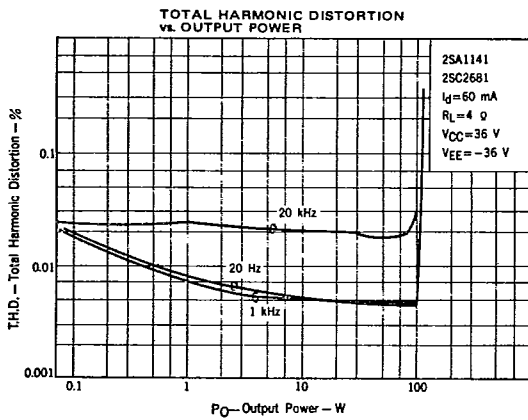
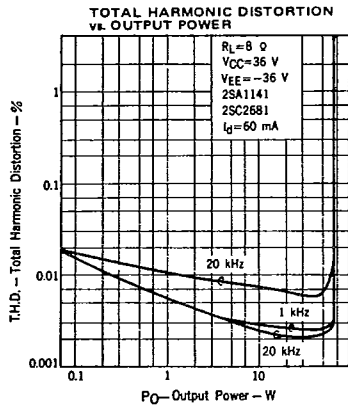


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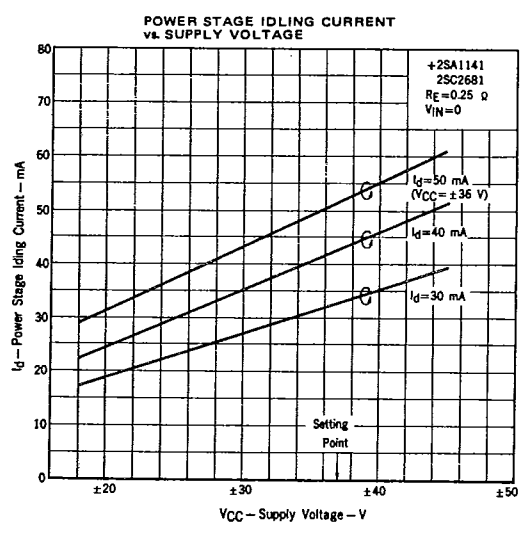
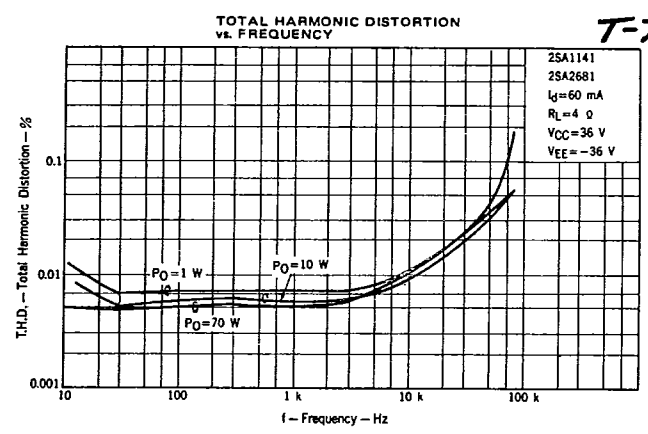
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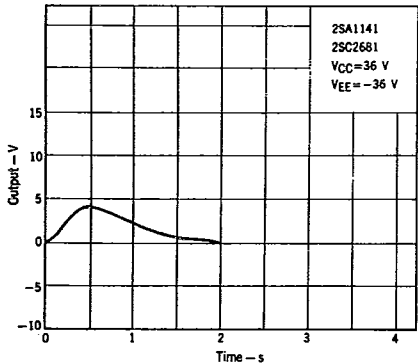
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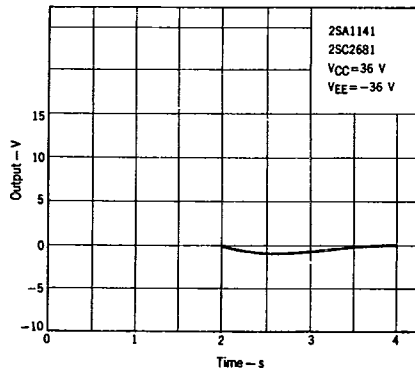
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POP NOISE (Sw on)



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