

PERSONAL KEYBOARD

FS800

SUPERBOARD™

Service Manual

KAWAI

Kawai Musical Instruments
Manufacturing Co., Ltd.

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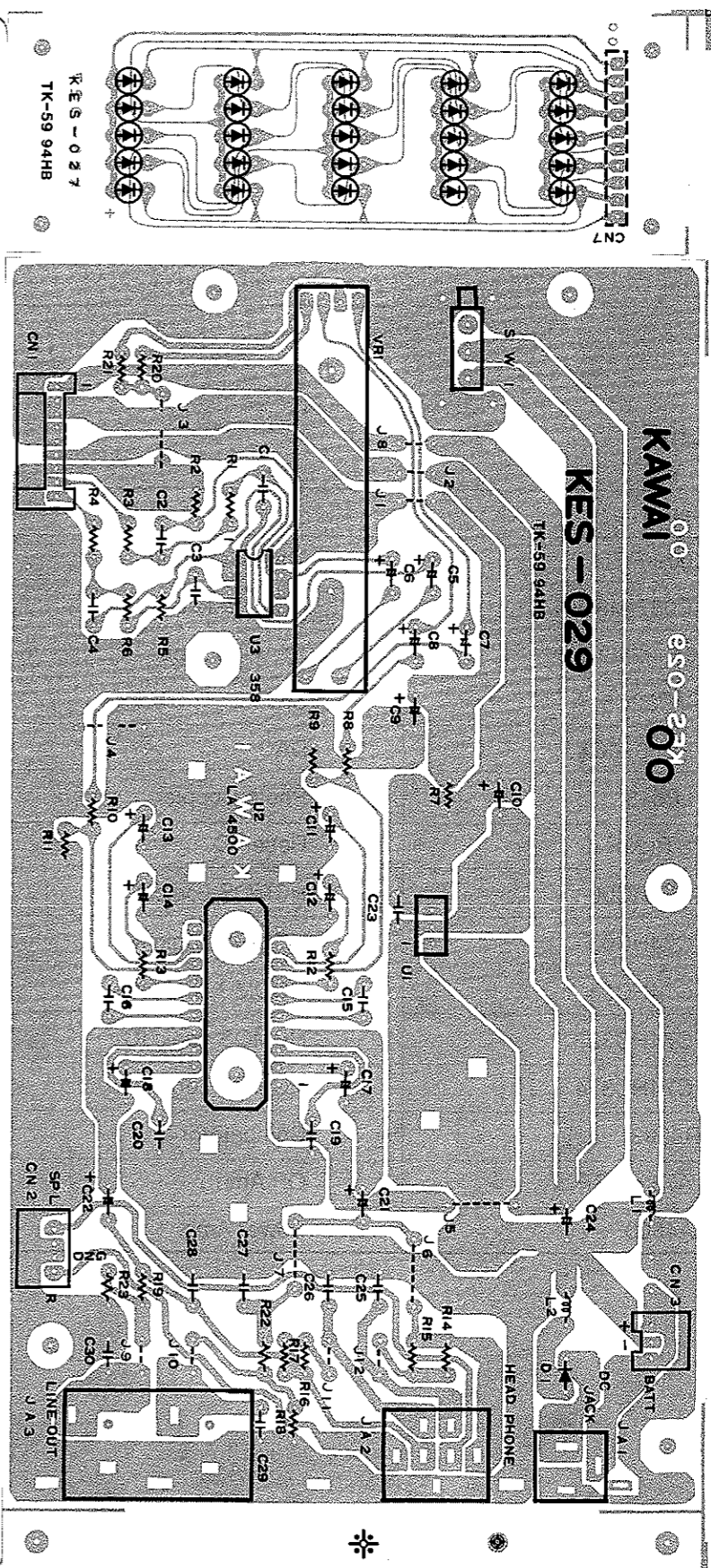
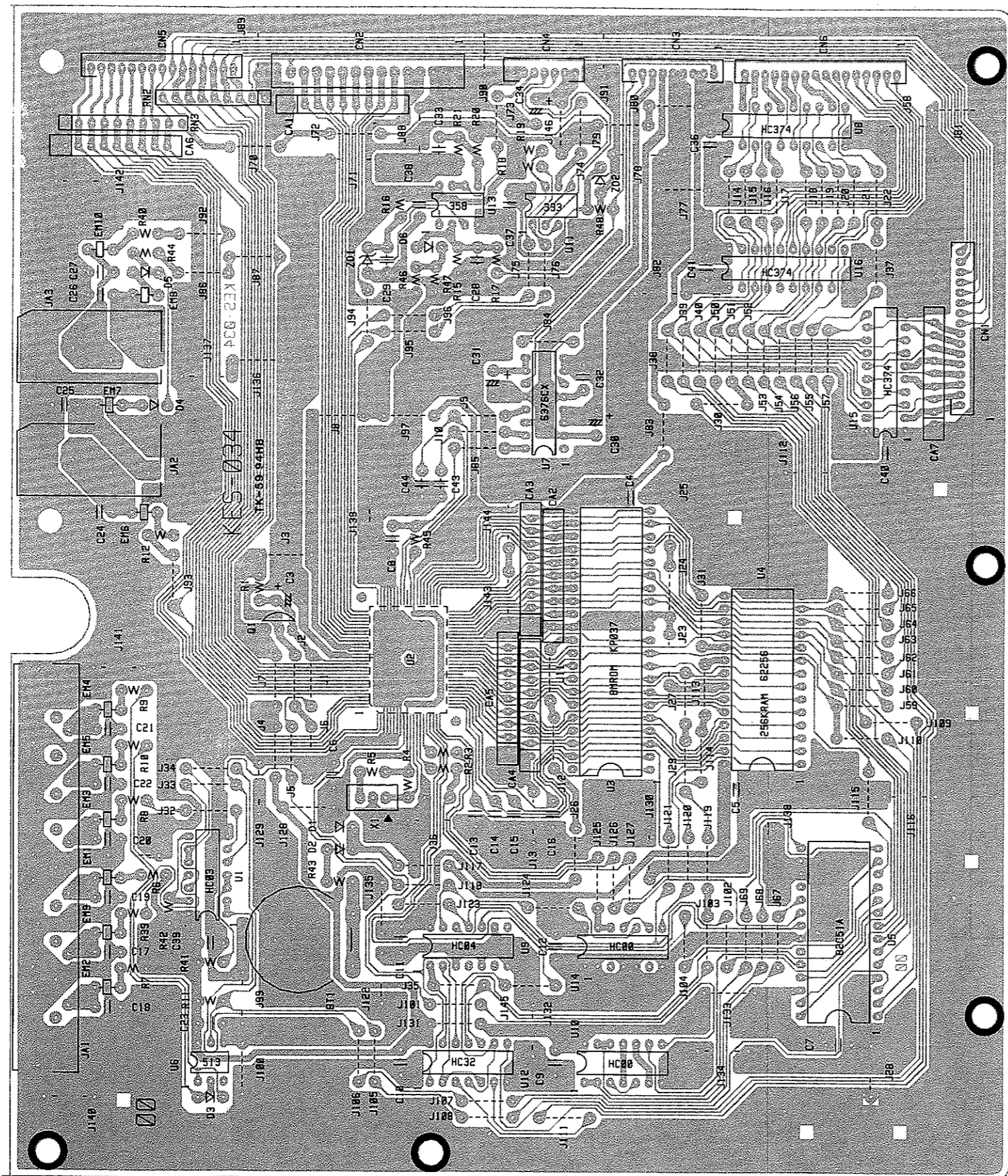
1. P.W.B INFORMATION

P.W.B No.	Description
KES-034	CPU, Tone Generator, DAC, RAM, ROM
KES-030	Panel Switch Matrix, LED
KES-031	Panel Switch Matrix
KES-029	Amp., Low-Pass Filter, Power Supply, DC In, Power Switch, Headphone Jack Line Out, Volume Slider
KES-027	LED

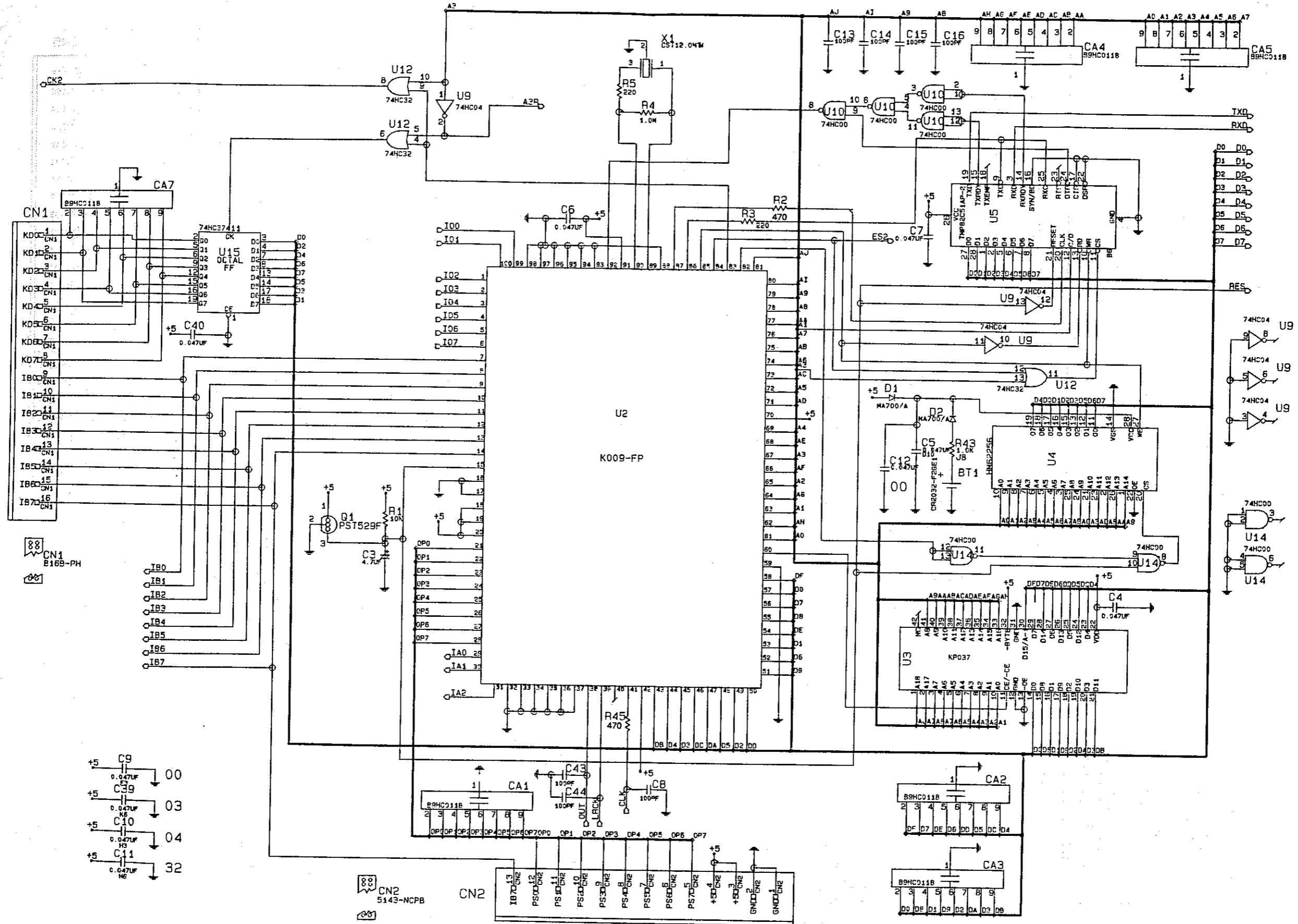
2. SEMICONDUCTORS LIST

	Name	Description
IC	K009-FP	Tone Generator
	KP037-M9DP	ROM, 8Mbits
	HM62256LP-12	RAM, 256Kbits
	TMP82C51A	SIO
	μ PD6376CX	DAC
	TLP513	Photo Coupler
	PST529F	Reset IC
	TC74HC00	HCMOS Logic IC
	TC74HC03	HCMOS Logic IC
	TC74HC04	HCOMS Logic IC
	TC74HC32	HCMOS Logic IC
	TC74HC374	HCMOS Logic IC
	IR9393	Comparator
	TA75358CP	OP Amp
	LA4500	Power Amp

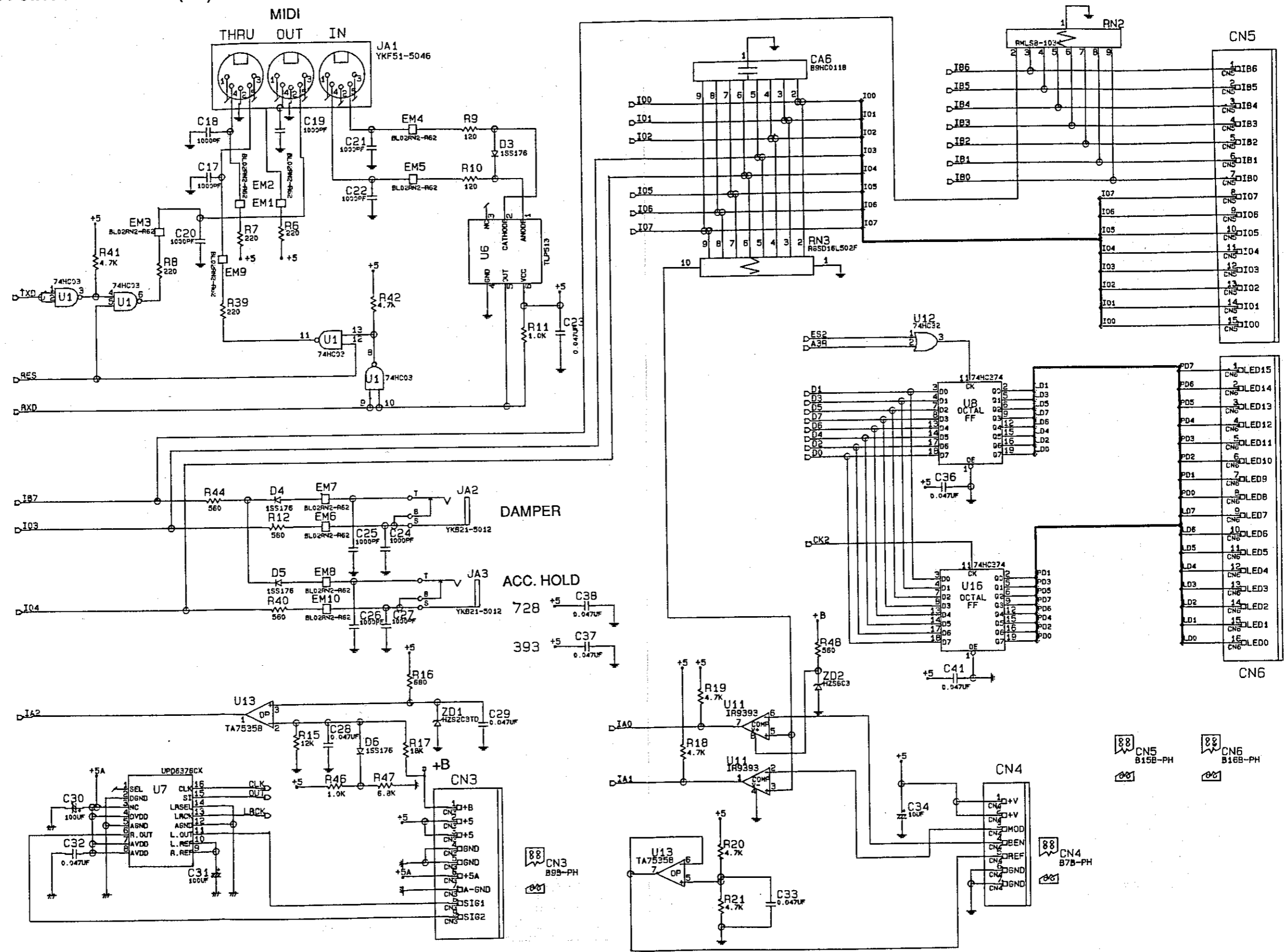
3. KES-029/034 PRINTED WIRING BOARD



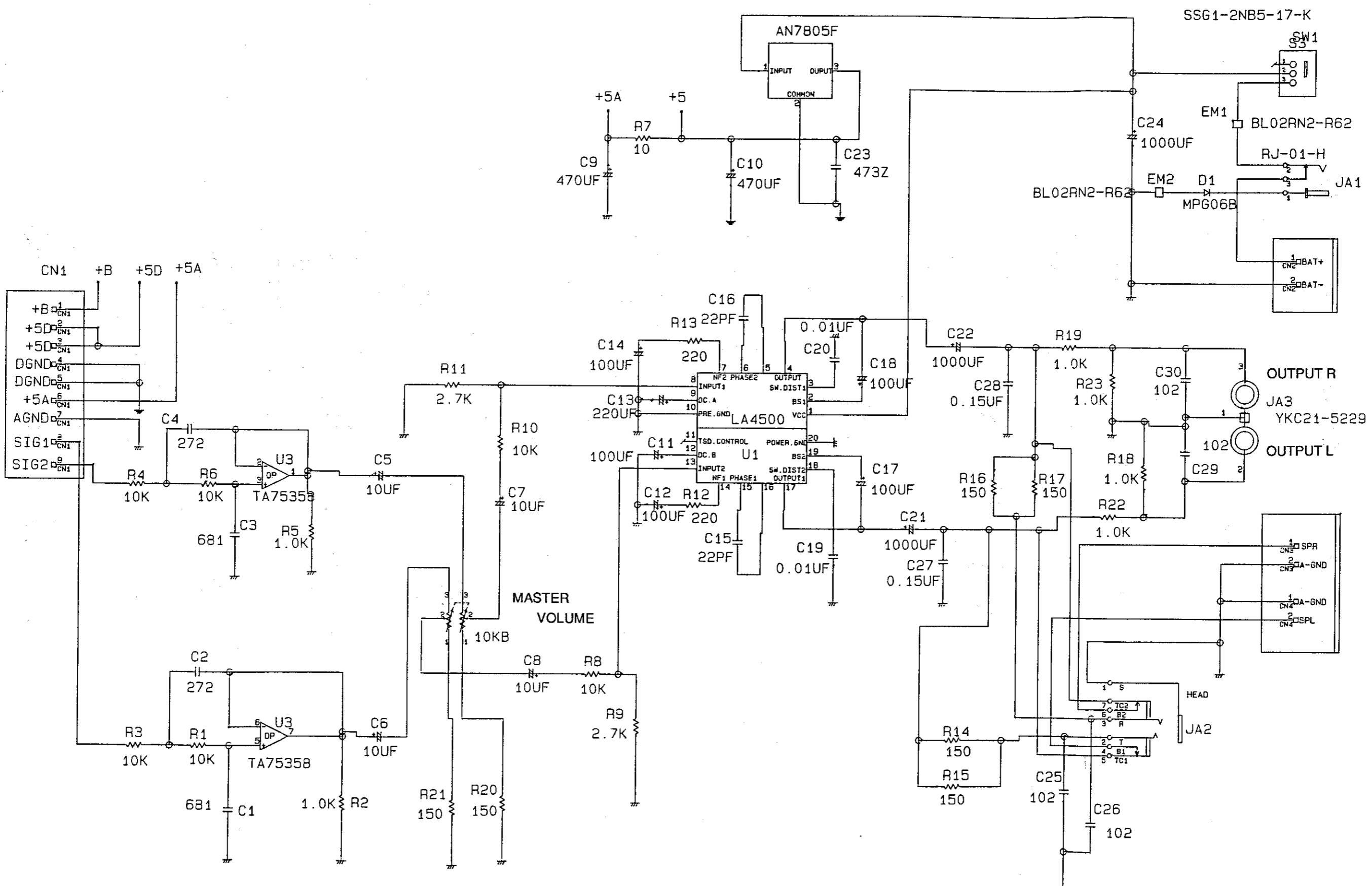
4. KES-034 CIRCUIT DIAGRAM (1/2)



KES-034 CIRCUIT DIAGRAM (2/2)



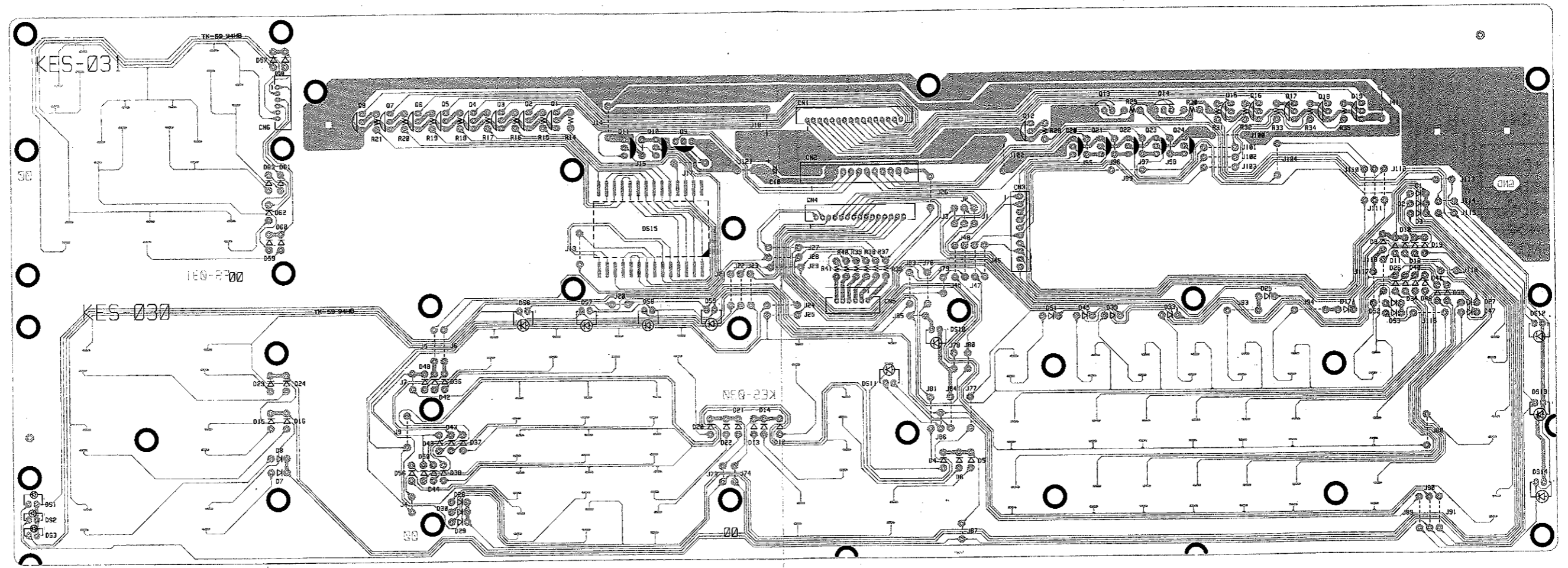
5. KES-029 CIRCUIT DIAGRAM



A B C D E F G H I

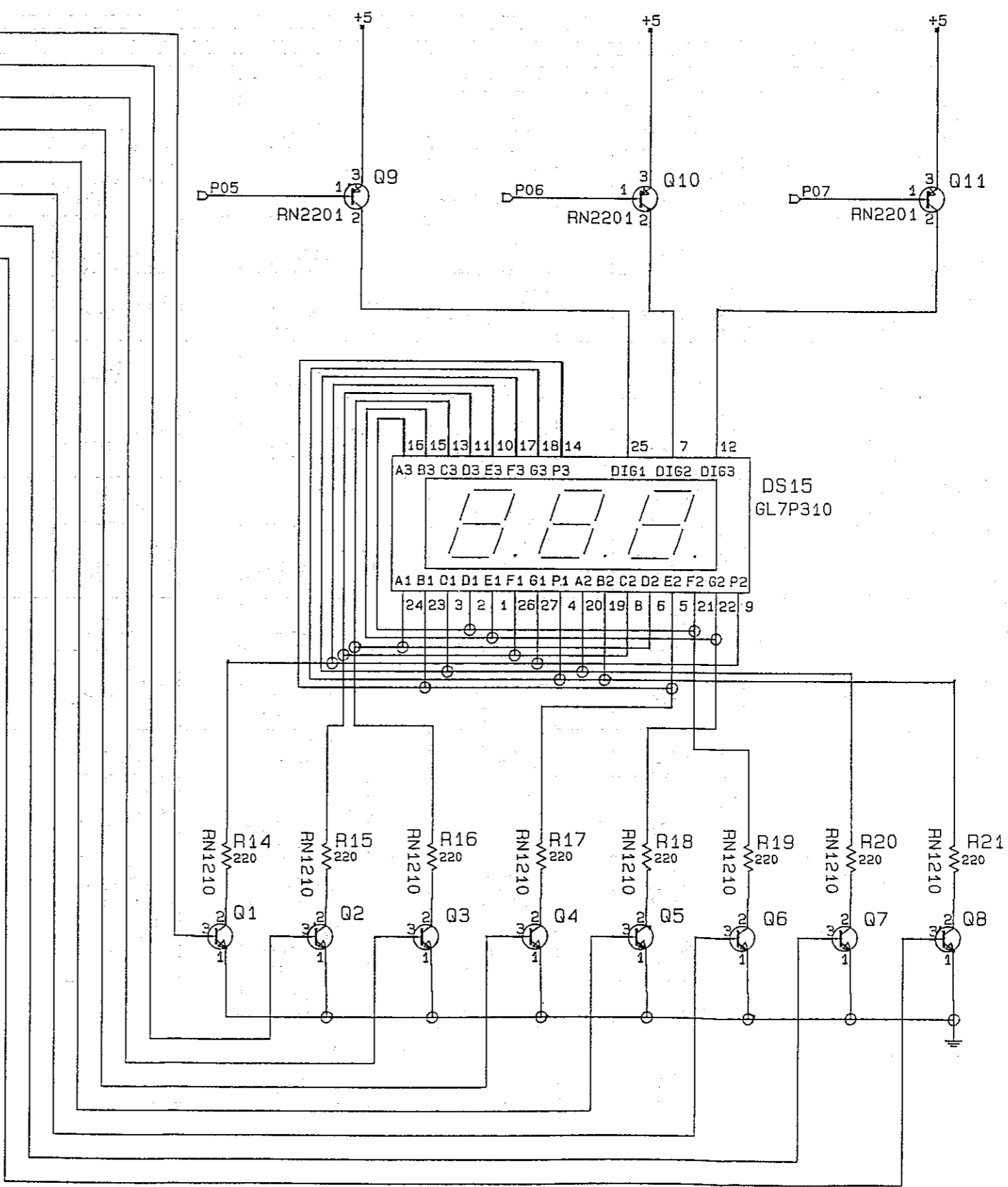
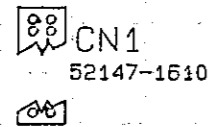
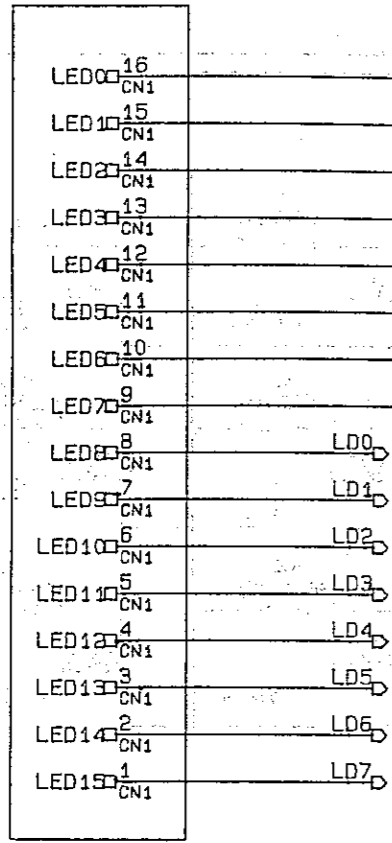
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6. KES-030/031 PRINTED WIRING BOARD



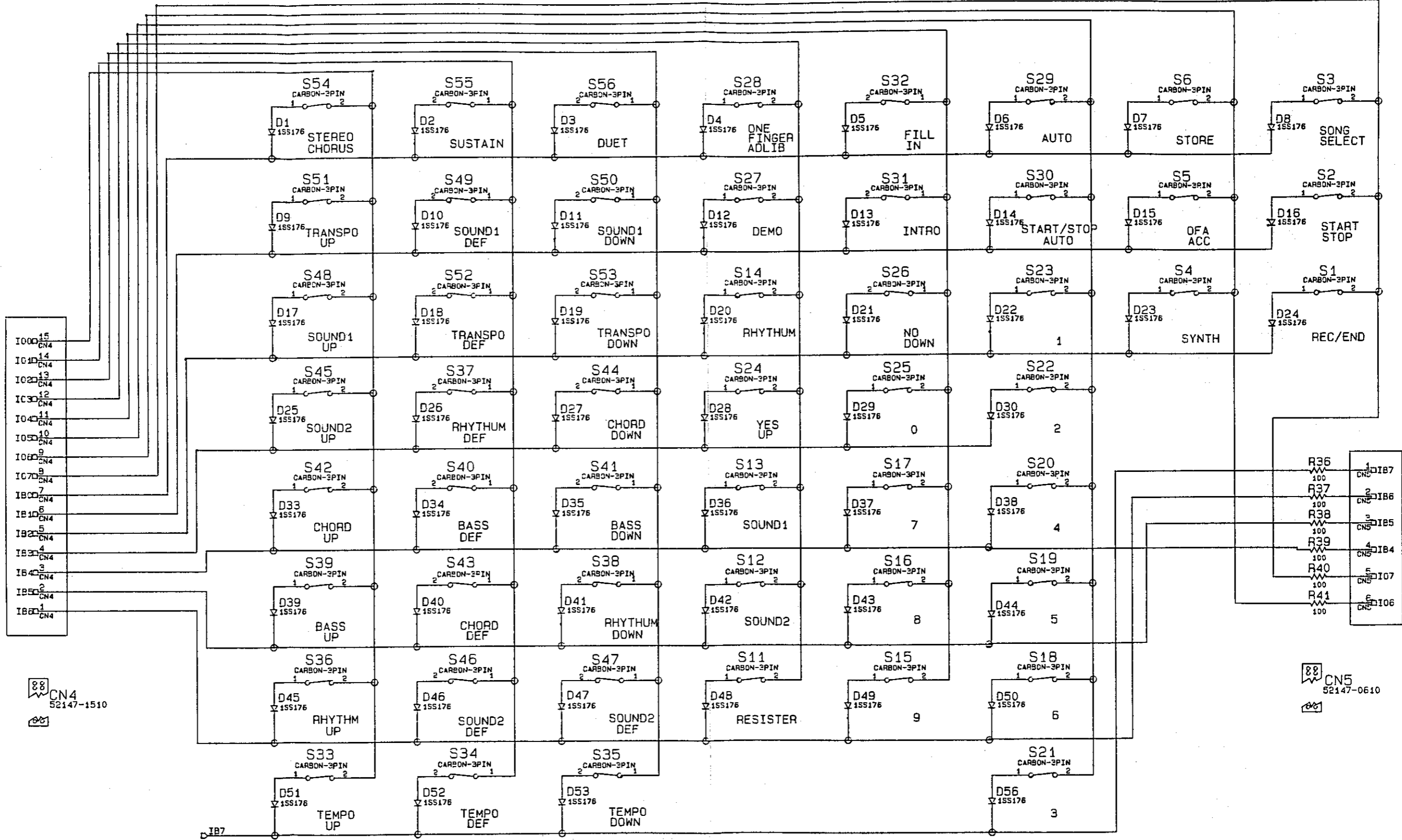
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7. KES-030 CIRCUIT DIAGRAM (1/3)



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1 KES-030 CIRCUIT DIAGRAM (2/3) 1



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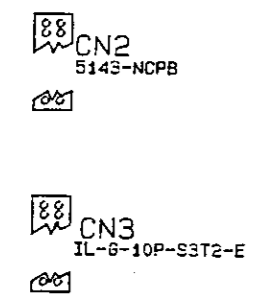
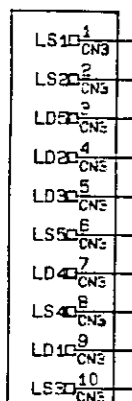
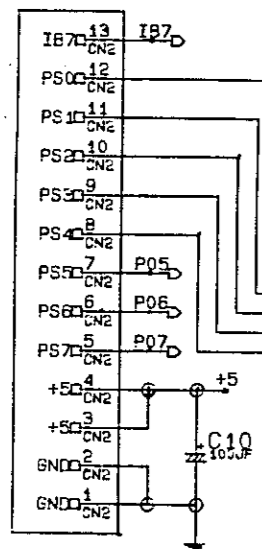
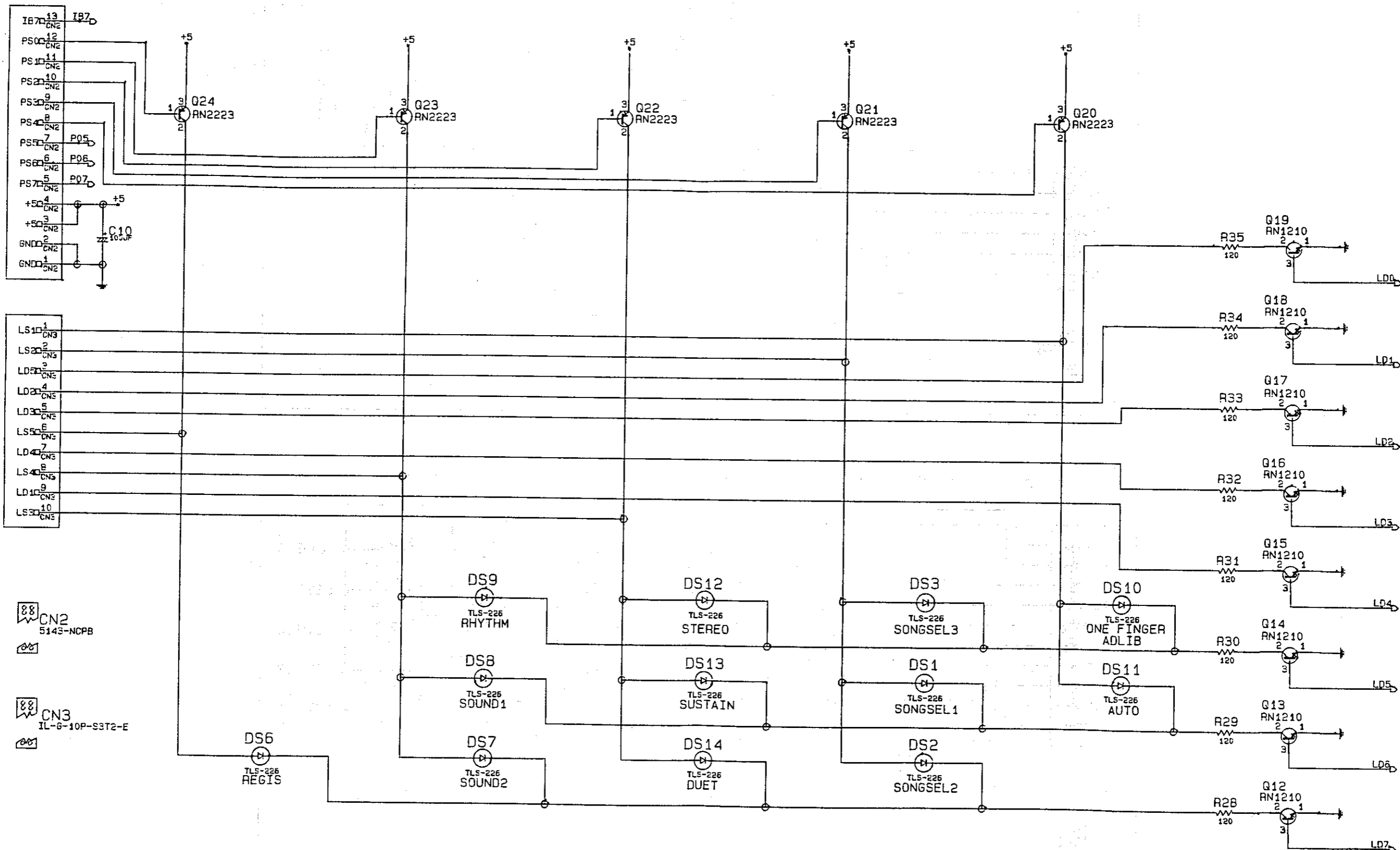
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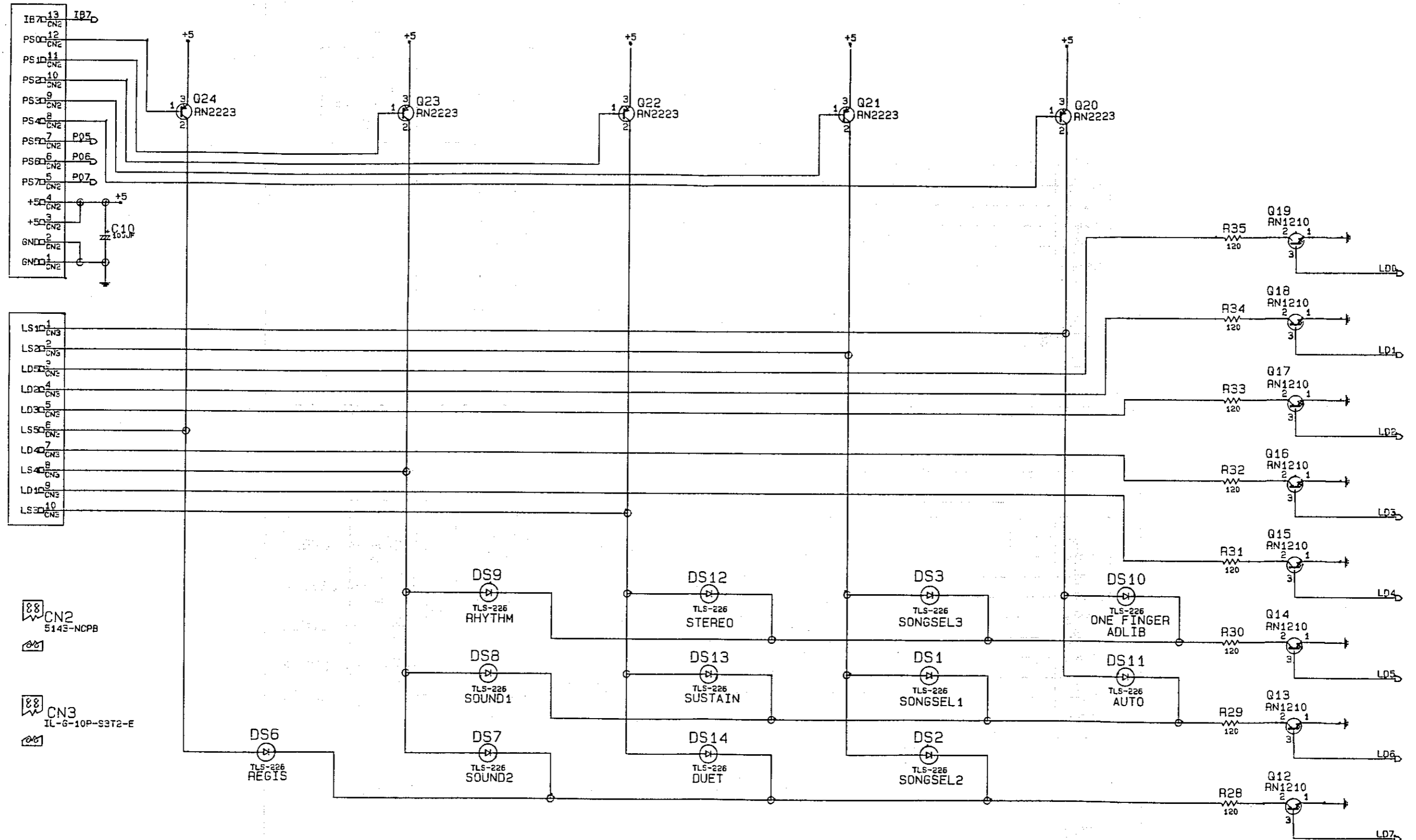
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KES-030 CIRCUIT DIAGRAM (3/3)

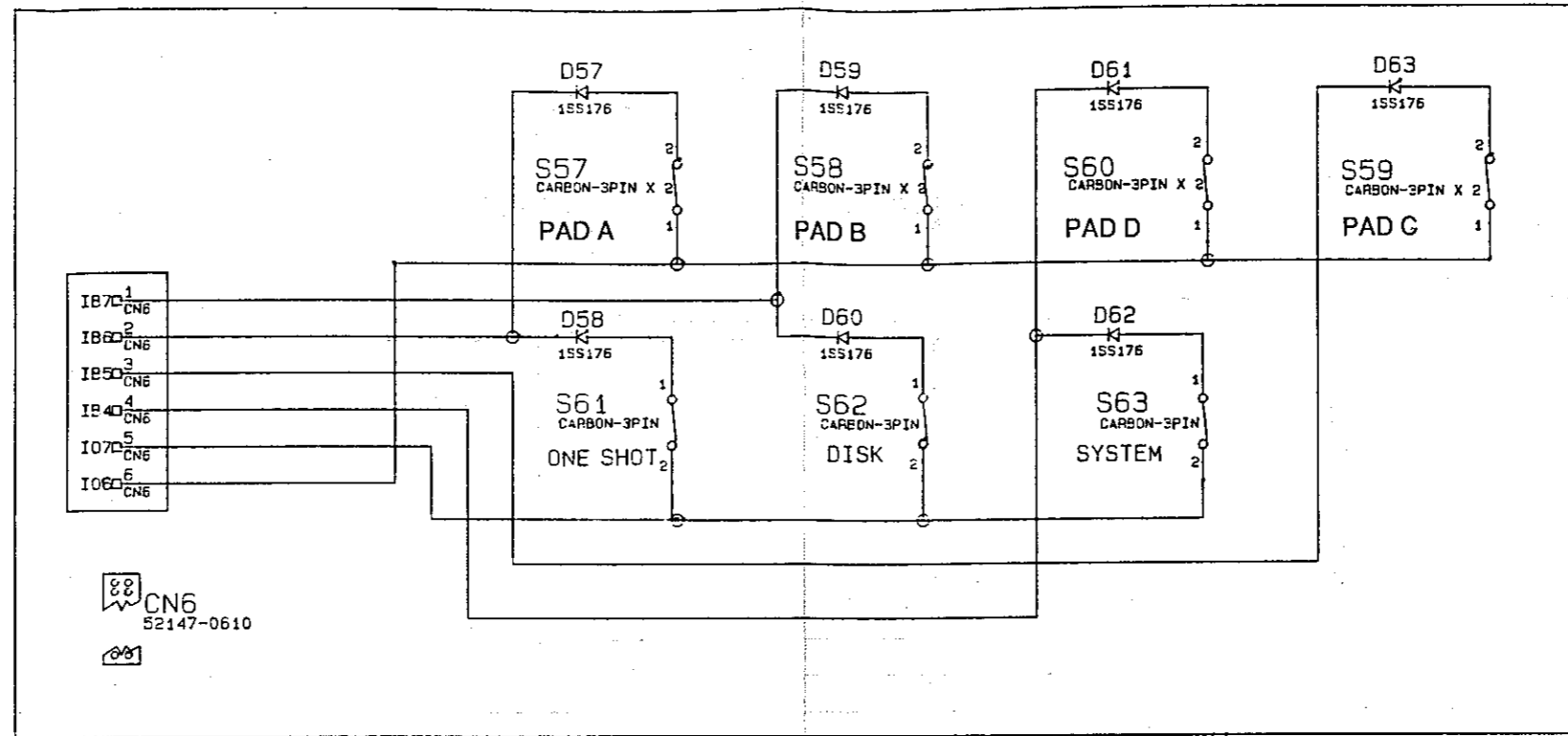


KES-030 CIRCUIT DIAGRAM (3/3)

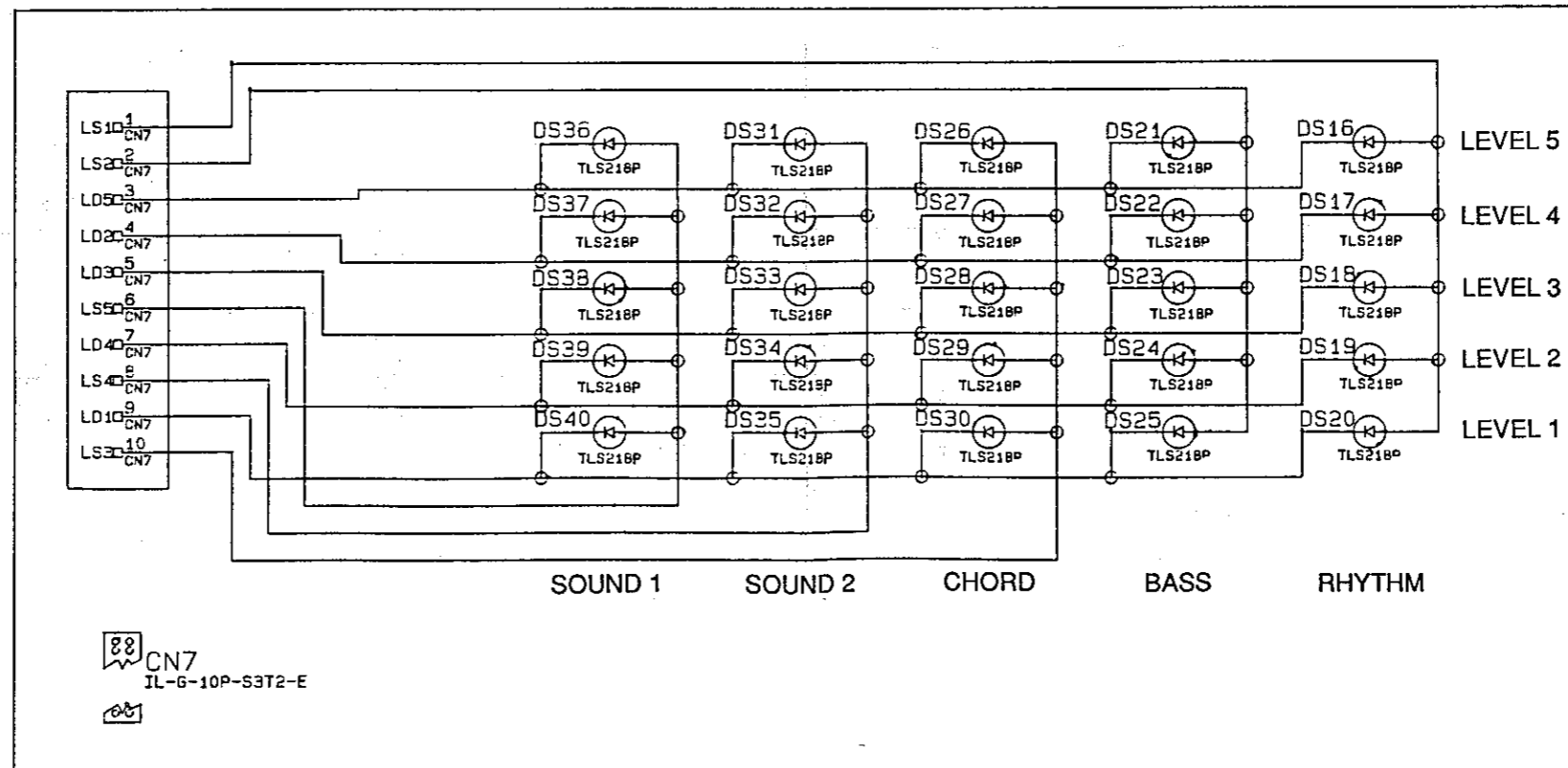


8. KES-027/031 CIRCUIT DIAGRAM

KES-031



KES-027



9. TROUBLESHOOTING

TROUBLE	CHECK	CAUSE	REPAIR
No sound	<ul style="list-style-type: none"> • AC adaptor or batteries (KES-029) • Foils around the DC jack (KES-029) • Open-circuited foil • Voltage Regulator(AN7805F on KES-029) pin 3 (should be 5V) • Oscillator X1(KES-034) • Connections between the P.W.B's 	<ul style="list-style-type: none"> • Exhausted batteries or defective AC adaptor • Repair the broken foil • Faulty AN7805F • Open or Short-circuited foil • Faulty Oscillator (X1) • Loose connector • Open-circuited wire 	<ul style="list-style-type: none"> • Replace the battery or AC adaptor • Replace AN7805F • Repair the foil • Replace X1 • Insert connector firmly • Repair the connection
If all the aboves are OK, a digital device may be faulty. In such a case, replace the P.W.B. (KES-034)			
Abnormal sound	<ul style="list-style-type: none"> • Power amplifier (LA4500: KES-029) inputs (pins 8, 13) and outputs (pins 4, 17) • DAC (μPD6376CX : KES-034) pin 13 ; 125KHz clock pulse pin 16 ; 3MHz clock pulse pin 15 ; 3MHz clock pulse (Observed only when the keyboard produces sounds) pins 6 & 11 ; sound signal • Speakers • Headphone Jack 	<ul style="list-style-type: none"> • Faulty Power amplifier • Faulty DAC • Faulty speaker • Faulty headphone jack 	<ul style="list-style-type: none"> • Replace LA4500 • Replace μPD6376CX • Replace speaker • Replace headphone jack
LED or switch does not work	<ul style="list-style-type: none"> • P.W.B (KES-030,031, 027) foils • Rubber contact (KES-030,031) • Diode (KES-030,031,027) • Harness between KES-034 and KES-030 	<ul style="list-style-type: none"> • Open-circuited foil • Dirt or dust on the contact • Deteriorated rubber • Faulty diode • Open-circuited wire • Poor contacted harness 	<ul style="list-style-type: none"> • Repair the foil • Clean the contact • Replace the rubber • Replace the diode • Repair the wire • Repair the harness
No MIDI function	<ul style="list-style-type: none"> • Photo coupler (TLP513: KES-034) • DIN connectors • SIO (TMP82C51: KES-034) or NAND gate (74HC00:KES-034) 	<ul style="list-style-type: none"> • Faulty photo coupler • Faulty DIN connector • Faulty IC 	<ul style="list-style-type: none"> • Replace TLP513 • Replace DIN connector • Replace TMP82C51 or TC74HC00
Defect in Keyboard	<ul style="list-style-type: none"> • Rubber contact • P.W.B foils • Wiring 	<ul style="list-style-type: none"> • Dirt or dust on the contact • Deteriorated rubber • Open-circuited foil • Open-circuited wire 	<ul style="list-style-type: none"> • Clean the contact • Replace the rubber • Repair the foil • Repair the wiring
Defect in Jack	<ul style="list-style-type: none"> • P.W.B foil • Jack 	<ul style="list-style-type: none"> • Open-circuited foil • Faulty jack 	<ul style="list-style-type: none"> • Repair the foil • Replace the jack

