

YAMAHA

Electone ORGAN

D-80



SERVICE MANUAL

089

77.8 2.0K H.K.  Printed in Japan

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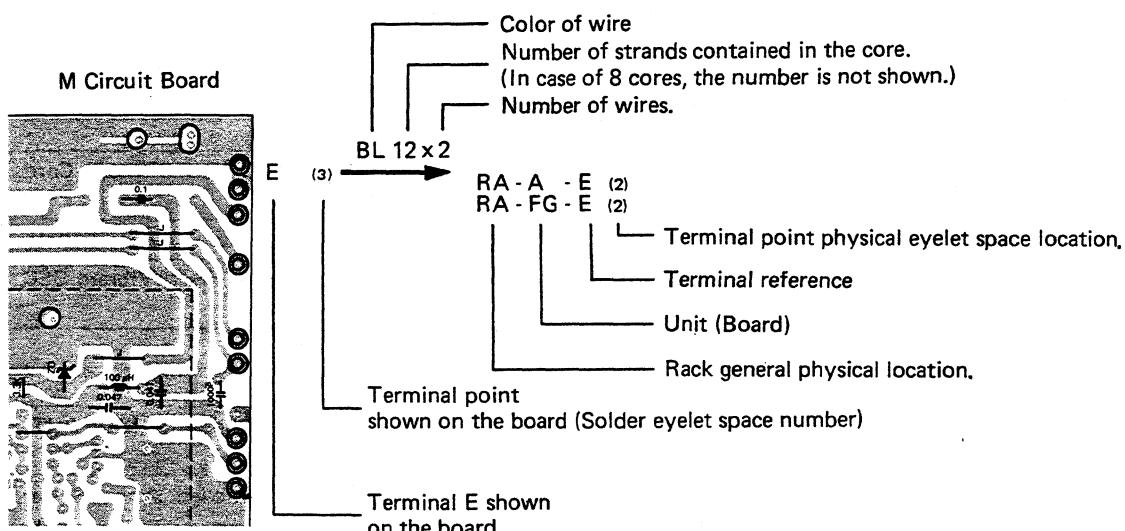
FUNCTIONS OF C. BOARDS

| C. BOARD | FUNCTION |
|----------|--|
| DF | Key Coder, Auto Bass Chord Main, 14 Rhythm, Rhythm Tempo OSC, Tempo Lamp Drive, Rhythm Control, Master Clock OSC, Clock Driver, Buffer, Pattern Generator, Initial Clear |
| DC | Channel Processor, Timing Clock Divider, Attack Clock OSC, PK Attack Clock OSC, DAMP Clock OSC, PK Decay Clock, LK Decay Clock, UK Decay Clock, Wave Generator, Auto Arpeggio II, Arpeggio Beat Lamp Drive |
| DHM | Envelope Generator III, DC Buffer Card 1, DC Buffer Card 2, Wave Memory Card, Distributor |
| PU | Envelope Generator, +5 Regulator, -5V Regulator, -10V Regulator, Integra, Inverter |
| VR | Repeat OSC, Trigger Generator, Inverter, Banjo Repeat Synchronize, Reset, Vibrato OSC, Glide Modulator, Envelope, Buffer, Delay |
| CR 1 | Clock Rejector |
| CR 2 | Clock Rejector |
| SM | Solo Key Voltage Generator, Voltage Follower I (OCT), Voltage Follower II (OUT-PUT), Clock OSC, Voltage Controlled OSC III |
| OSC | Delay OSC, Key Volt Buffer, Auto WAH P.M. OSC, Touch Controlled Amp., Buffer, W.S.C |
| AEG | Voltage Controlled Amp., Envelope Generator (VCA), Preset Tone Voltage Setting |
| FEG | Voltage Controlled Amp., Envelope Generator (VCF), Preset Tone Voltage Setting |
| FA | Low-Pass Filter, High-Pass Filter, Input Signal Level Selector, Voltage Controlled Amp., Buffer |
| RS | Bass Drum, Snare Drum, Low Conga, High Conga, High Bongo, Claves, Pre-Amp., Buffer Amp., Noise Generator, Cymbal 1, Cymbal 2, Maracas |
| PS | Pre-Amp., Attack WAH Modulator, Attack Envelope Generator, Buffer |
| PF | VCA Envelope Generator, Voltage Controlled Amp., Bass Guitar Filter, String Bass Guitar Filter, TUBA Filter |
| GA | Inverter, Drive, Click Prevention, Vibraphone Modulator, Vibraphone, Pre-Amp., Buffer, Gate |
| SF | Tone Filter (Piano), Tone Filter (Harpsi-Chord), Tone Filter (Hawaiian Guitar), Buffer Amp. |
| VCF | Buffer (KV), Buffer (Bright), Voltage Controlled Filter, Voltage Controlled Amp., Envelope Driver, Orchestra Setting, UK Orchestra Filter |
| F | BASSOON 16', BRASS 8', OBOE 8', STRING 8', STRING 4', DIAPASON 8', HORN 8', CELLO 8', CELLO 4', Flute Tone Mixing |
| RA | Complex Gate, Flute Gate, Attack Gate, Attack Cancel, Repeat Modulation, Pre-Amp., Buffer |
| UG | Flute Rotary Gate, Rotary Gate, Non-Rotary Gate, Buffer, Pre-Amp. |
| LG | Voltage Controlled Amp., Precedence, Chord Gate, Delay, Flute Gate Non-Rotary, Flute Gate Rotary, Complex Gate Non-Rotary, Complex Gate Rotary, Pre-Amp. |
| RVA | Non-Rotary Pre-Amp., Mixing Amp., Reverb Pick-up Amp., Rotary Pre-Amp., Reverb Drive Amp. |
| A | Mixing Pre-Amp., Tremolo Pre-Amp., General & AUX-OUT Pre-Amp., Buffer (EXP-IN), Buffer |

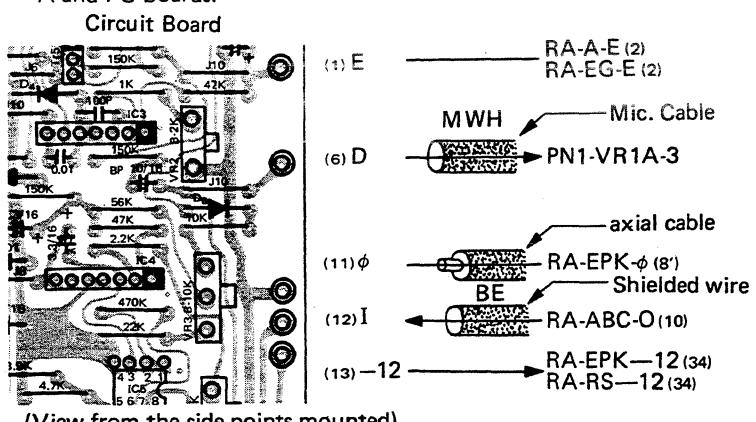
CORDING GUIDE

1 CIRCUIT BOARD AND WIRING

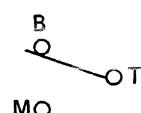
The coding system is as follows



Two (2) black wires are connected to "E" on M circuit board. One goes to each "E" terminal of A and FG boards.

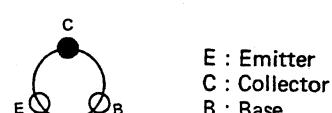
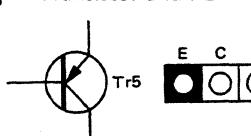


2 SWITCH

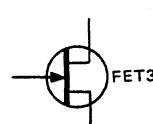


B : Break
T : Transfer
M : Make

3 Transistor and FET



E : Emitter
C : Collector
B : Base



S : Source
G : Gate
D : Drain

4 ABBREVIATIONS OF WIRE COLOR IN ELECTONE

| | | | | | | | |
|----------|--------|----------|-------------|----------|-----------------|----------|----------|
| BL | BLACK | BR | BROWN | RE | RED | OR | ORANGE |
| YE | YELLOW | GR | GREEN | BE | BLUE | VI | VIOLET |
| GY | GRAY | WH | WHITE | GG | GRASS GREEN | SB | SKY BLUE |
| PK | PINK | TR | TRANSPARENT | TP | TIN PLATED WIRE | | |

5 WIRE COLOR – Musical Note indication

| | | | | | | | | | | | |
|----|----|----|----|----|----|----|----|----|----|----|----|
| C | C# | D | D# | E | F | F# | G | G# | A | A# | B |
| BR | RE | OR | YE | GR | BE | VI | GY | WH | GG | SB | PK |

6 Logic Mark

| FUNCTION | LOGIC MARK | |
|----------------|------------|--------|
| | MIL | YAMAHA |
| NOT (INVERTER) | | |
| NOR | | |
| NAND | | |

CORDING GUIDE

SPECIFICATIONS

KEYBOARDS

Upper : 49 Keys C₂ ~ C₆ (4 Octaves)
 Lower : 49 Keys C₁ ~ C₅ (4 Octaves)
 Pedals : 13 Keys C₀ ~ C₁ (1 Octave)
 Solo : 37 Keys C₃ ~ C₆ (3 Octaves)

TONE LEVERS

| | | |
|----------|---------------------------|-------------|
| Upper : | Flute 16' | Bassoon 16' |
| | Flute 8' | Brass 8' |
| | Flute 5-1/3' Oboe 8' | |
| | Flute 4' String 8' | |
| | Flute 2-2/3' String 4' | |
| | Flute 2' | |
| Lower : | Flute 8' | |
| | Flute 4' | |
| | Flute 2-2/3' | |
| | Flute 2' | |
| | Diapason 8' (or Piano I) | |
| | Horn 8' (or Piano II) | |
| | Cello 8' (or Guitar) | |
| | Cello 4' (or Harpsichord) | |
| Pedals : | Bass 16' | |
| | Bass 8' | |
| | Tuba 16' | |
| | String Bass | |
| | Bass Guitar | |

UPPER ORCHESTRA SECTION

| | |
|-----------|-----------------|
| Trombone | Funny |
| Trumpet | Organ Orchestra |
| Saxophone | Ensemble |
| Clarinet | Cancel |
| Guitar | Volume |
| Banjo | Bright |
| Accordion | |

UPPER PRESET LEVERS

Combination 1, 2
 Piano
 Harpsichord
 Hawaiian Guitar
 Vibraphone
 Full Ensemble

EFFECT LEVERS

Brilliance
 Vibrato Speed
 Vibrato Depth
 Vibrato Delay (Upper)
 Attack 4' (Upper)
 Attack 2-2/3' (Upper)
 Attack Length
 Attach Wah-Wah (Upper)
 Repeat Speed (Upper)

EFFECT CONTROLS

Upper Sustain
 Lower Sustain
 Pedal Sustain
 Reverb
 Manual Balance

EFFECT SELECTORS

Upper Sustain
 Lower Sustain
 Upper Percussive Decay
 Response (Upper & Lower)
 Glide (Foot Switch)
 Damper (Foot Switch)

TREMOLO SELECTORS

U & L Flute (Main/Rotary)
 Upper Voice(Main/Rotary)
 Lower Voice(Main/Rotary)
 Tremolo
 Chorus

SOLO KEYBOARD SECTION

Preset Tone Selectors
 Flute Harpsichord
 Trombone Jazz Guitar
 Trumpet Rock Guitar
 Saxophone Solo Funny
 Oboe Double Reed
 Violin Trumute

EFFECT SELECTORS/CONTROLS

| | |
|---------------|---------------|
| Touch Vibrato | Wah-Wah |
| Delay | Depth |
| Vibrato | Wah-Wah |
| | Depth |
| | Speed |
| Other | Controls |
| | Transposition |
| | Tune |
| | Portamento |
| | Bright |
| | Volume |

ABC FUN BLOCKS

| | |
|--------------------------|--|
| ABC Selectors | |
| Normal | |
| Single Finger Chord | |
| Fingered Chord | |
| Custome ABC | |
| Constant | |
| Memory | |
| Bass Variation Selectors | |
| Normal, 1, 2 | |

AUTO RHYTHM SECTION

| | |
|---------------------------|-------------|
| Rhythm Selectors | |
| March | Waltz |
| Swing | Ballad |
| Slow Rock | Jazz Rock I |
| Jazz Rock II | Bolero |
| Tango | Beguine |
| Rhumba | Mambo |
| Bossanova | Samba |
| Variation | |
| Rhythm Controls | |
| Rhythm Start | |
| Rhythm Synchro-Start | |
| Rhythm Stop (Foot Switch) | |
| Tempo | |
| Volume | |
| Tone Balance | |
| Tempo Lamp | |

AUTO ARPEGGIO SECTION (Lower)

Octve Selector
 Beat Selector
 Start
 Up/Turn
 Foot Switch Stop
 Beat Lamp

OTHER CONTROLS

Master Volume
 Expression Pedal
 Foot Effect Switch
 Tremolo Speed Control
 Power Switch with Pilot Light

OTHER FITTINGS

Headphone Jack
 Expression IN Jack
 AUX IN Jack
 AUX OUT Jack
 Tone Cabinet Sockets
 Roll-top Fallboard
 with Auto Power Switch and Lock
 Music Rest
 Matching Bench with Music Storage Space

SPEAKERS

Main (3) : 30cm (12") x 1
 20cm (8") x 1
 5cm (2") x 1
 Tremolo (1) : 20cm (8") x 1

CIRCUITRY

Solid State (incl. LSIs and ICs)
 Output Power : Main 60 Watts (RMS)
 Rotary 60 Watts (RMS)
 Power Consumption : 195 Watts
 Power Source : 50/60Hz AC

DIMENSIONS

Width : 119cm (46-3/4")
 Depth : 76cm (29-3/4")
 Height : 104cm (41")

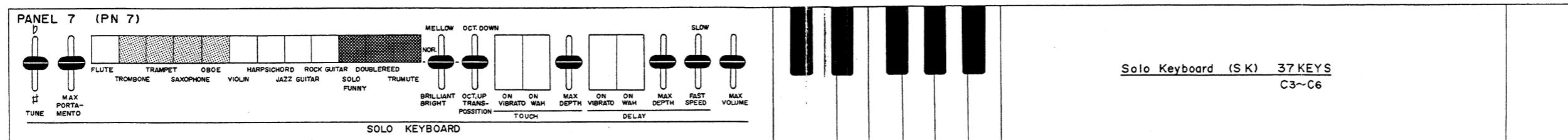
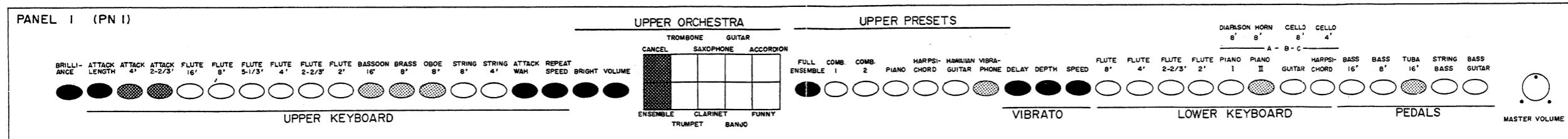
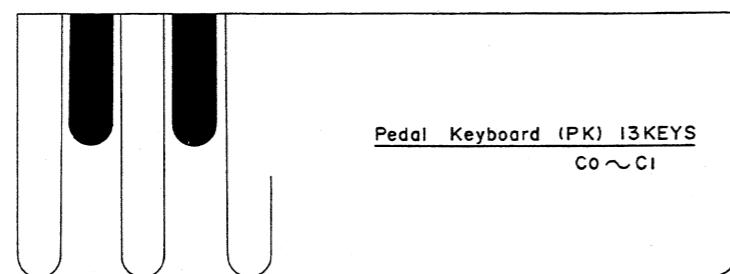
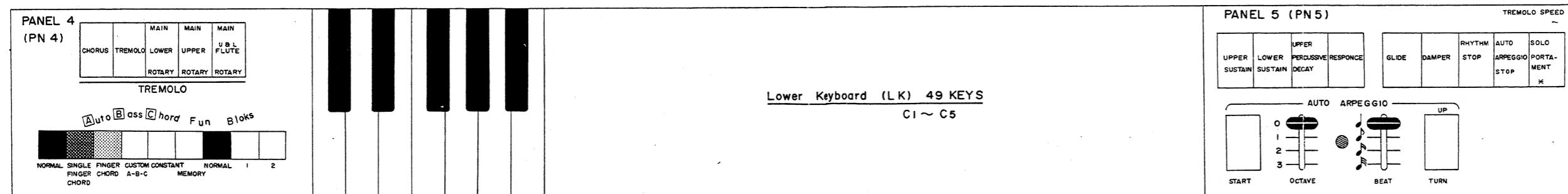
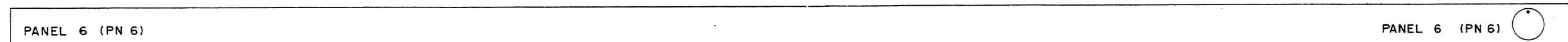
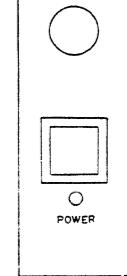
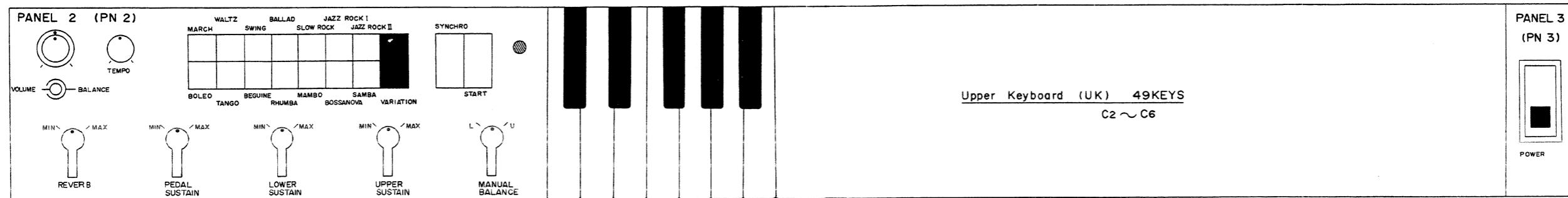
WEIGHT

: 116kg (255 lbs.)

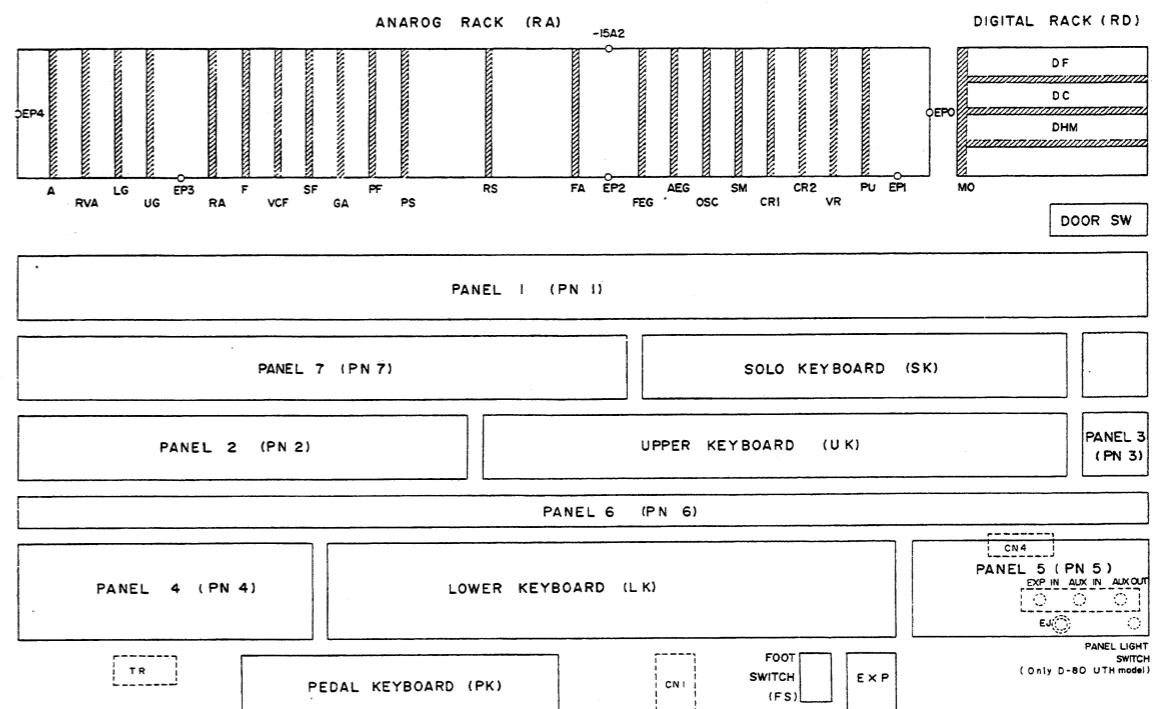
FINISH

: American Walnut

PANEL LAYOUT (Top View)

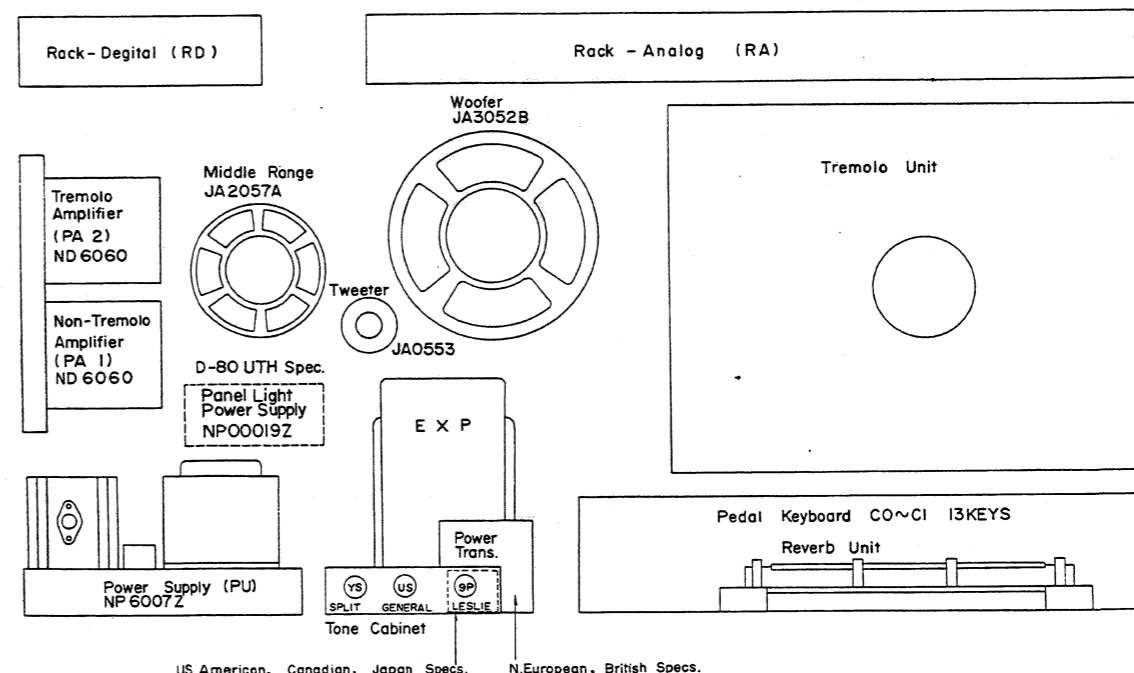
European
N European
British Models

UNIT ASSEMBLY LAYOUT



KEC-4863-67 △ ½

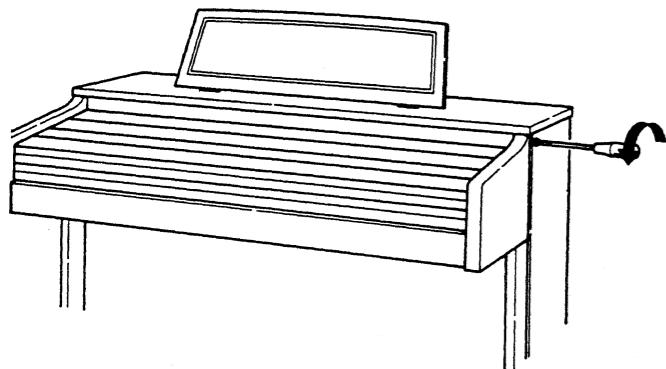
UNIT ASSEMBLY LAYOUT (Back View)



ANALYSIS PROGRAM

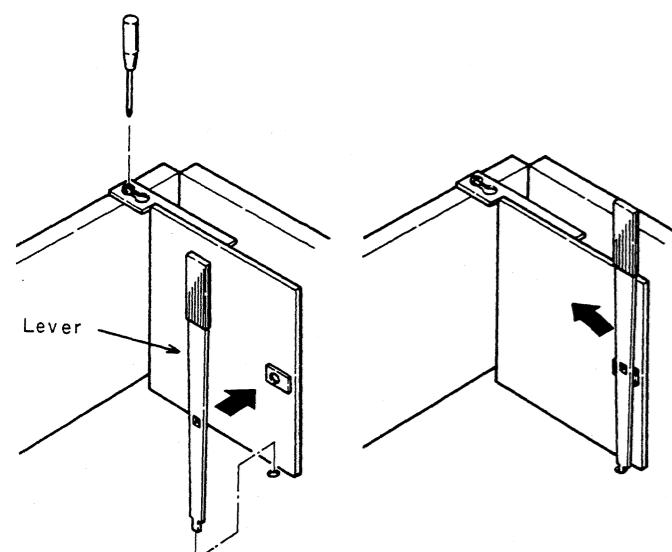
DISASSEMBLY PROCEDURE

I Removal of Top Board



Remove the screws on the upper position of the both side boards by making use of a screwdriver.
Since the top board is made of heavy material, give special care to the removal so as not to impair the metal hinges etc.

II Removal of Digital Circuit Boards

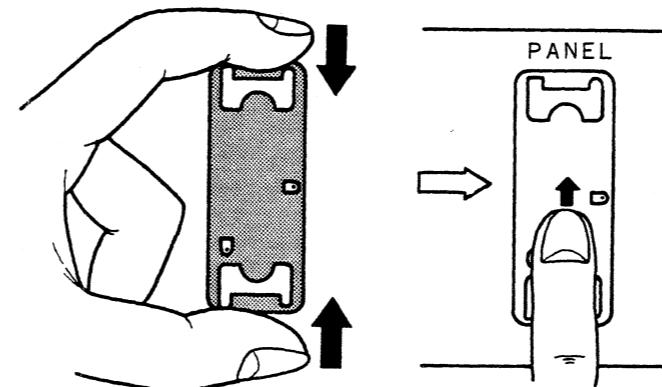


*Carry out removal or furnishing of the digital circuit boards after making certain of being turned off the power switch.

1. Loosen the screws on the rack cover and take away the cover.
2. Loosen the fastening screws on circuit board.
3. Set the lever as shown in the figure and pull out the digital circuit board from the connector of master circuit board.

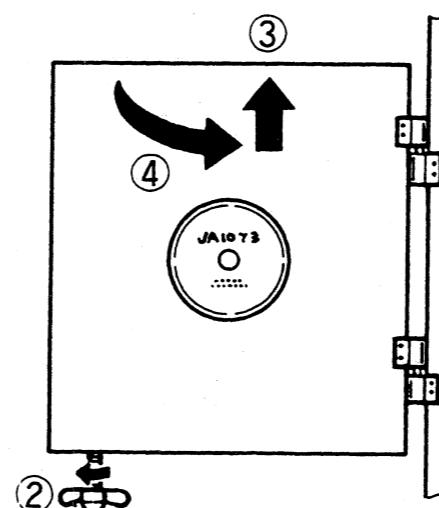
*Be carefull not to do damage to the pattern on digital circuit board.

III. Removal of Slide Volumes and Switches



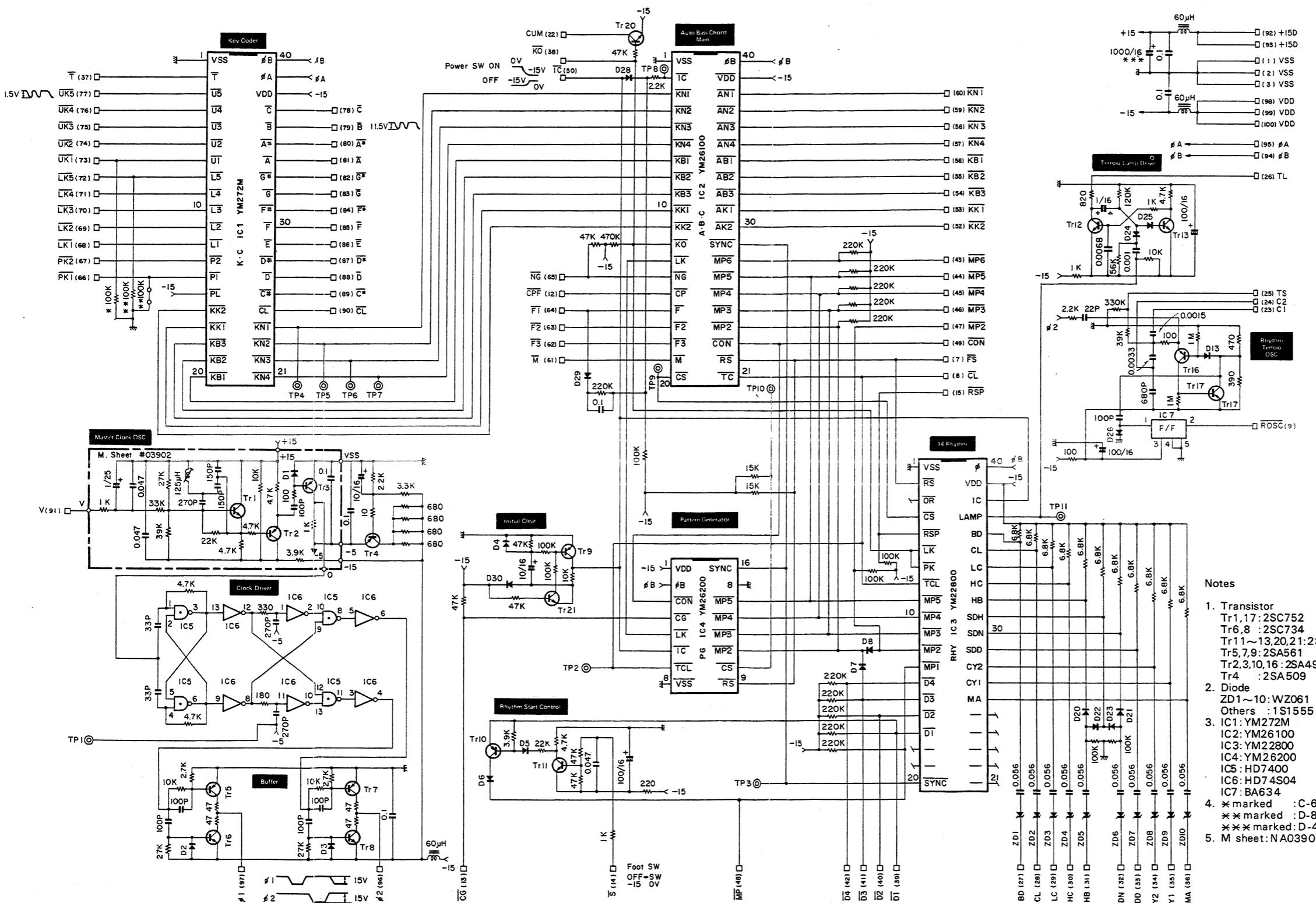
Bend two hooking metals inward and push out the slide volume carefully by fingers.
*Give special attention to the connection wires.
Do not push out powerfully, otherwise wires can be snapped off.

IV. Dismounting of Tremolo Unit



1. Take away the back board.
2. Remove a wing bolt on the lower left hand of the tremolo unit.
3. Lift the unit and pull out from the right hand of detachable hinges.
4. Draw out the unit while lifting it.

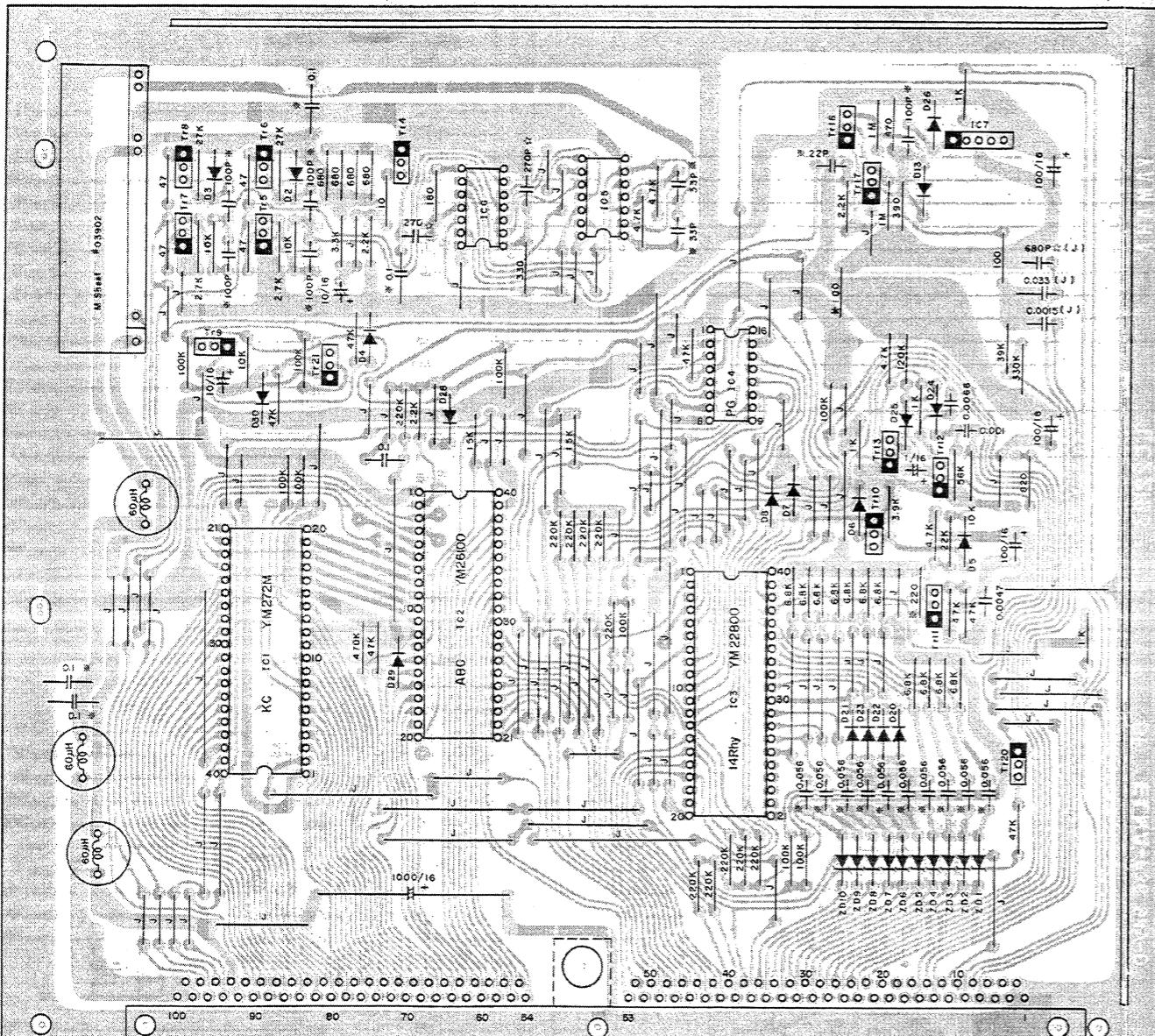
DF Circuit Diagram



Notes

1. Transistor
Tr1,17:2SC752
Tr6,8 :2SC734
Tr11~13,20,21:2SC458
Tr5,7,9:2SA561
Tr2,3,10,16:2SA495
Tr4 :2SA509
2. Diode
ZD1~10:WZ061
Others :1S1555
3. IC1:YM272M
IC2:YM26100
IC3:YM22800
IC4:YM26200
IC5:HD7400
IC6:HD74S04
IC7:BA634
4. * marked :C-60,D-90 models
** marked :D-80,C-60,D-90,D-60,D-40 models
*** marked:D-40,D-60,D-80,D-90 models
5. M sheet:NA03902

DF Circuit Board & Wiring



(1) VSS BL12x2 UK-VSS
 (2) VSS BL12 LK-VSS
 (3) VSS RA-DC-VSS (1)

(7) RS (16) TC
 (8) ROSC (18) TCL

(13) CG (12) CPF
 (15) RSP (14) S
 RA-LG-CG (19) PN5-CN4-1D
 PN2-TS7-T

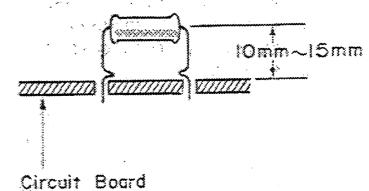
| | | | | | |
|-----------|------|-----------------|----------|------|------------------|
| (23) C1 | BR12 | PN2-PS2-C1 | (22) CUM | WH12 | PN4-QS-CUM(11) |
| (26) TS | VI12 | PN2-VR2-3 | (24) C2 | RE12 | PN2-PS1-C2 |
| (27) BD | GG | RA-RS-BD (48) | (26) TL | GR12 | PN2-LA-L2 |
| (29) LC | WH | RA-RS-LC (49) | (28) CL | GR | RA-RS-CL (63) |
| (31) HB | GY | RA-RS-HB (58) | (30) HC | YE | RA-RS-HC (54) |
| (33) SDD | VI | RA-RS-SDD (11) | (32) SDN | OR | RA-RS-SDM (16) |
| (36) CY1 | BE | RA-RS-CY1 (29) | (34) CY2 | RE | RA-RS-CY2 (27) |
| (37) - | - | - | (36) MA | BR | RA-RS-MA (22) |
| (39) D1 | VI | PN2-PBS-D1(12) | (38) KO | SBX2 | PN5-CN4-13 |
| (41) D3 | WH | PN2-PSA-D3(9) | (40) D2 | GY | PN4-QS-KO(4) |
| (43) MP6 | BE | PN2-PBS-MP6(13) | (42) D4 | GG | PN2-PSA-D4(3) |
| (45) MP4 | YE | PN2-PSA-MP4(2) | (44) MP5 | GR | PN2-PSA-MP5 (8) |
| (47) MP2 | RE | PN2-PBS-MP2(10) | (46) MP3 | OR | PN2-PSA-MP3 (13) |
| (48) CON | GR | PN4-Q6-COM (15) | (48) MP1 | BR | PN2-PSA-MP1 (16) |
| (50) IC | - | - | (50) IC | - | - |
| (53) KK1 | - | - | (52) KK2 | - | - |
| (54) KB3 | - | - | (55) KB2 | - | - |
| (56) KB1 | - | - | (57) KN4 | - | - |
| (58) KN3 | - | - | (59) KN2 | - | - |
| (60) KN1 | OR | PN4-QS-F3(2) | (61) M | BE12 | PN4-QS-M (17) |
| (62) F3 | BRx2 | PK-KC | (63) F2 | RE | PN4-QS-F2 (5) |
| (64) F1 | SB | PN4-QS-F1(3) | (65) NG | GR | RA-LG-NG (20) |
| (66) PK1 | PK | PK-PK1 | (67) PK2 | V1 | LK-M2 |
| (68) LK1 | BE | LK-M1 | (69) LK2 | WH | LK-M2 |
| (70) LK3 | GY | LK-M3 | (71) LK4 | BR | LK-M4 |
| (72) LK5 | - | - | (73) UK1 | OR | UK-M1 |
| (74) UK2 | RE | UK-M2 | (75) UK3 | GR | UK-M3 |
| (76) UK4 | YE | UK-M4 | (77) UK5 | PK | UK-M5 |
| (78) C | BR | UK-C6 | (79) B | GG | UK-B5 |
| (80) A# | SB | UK-A5# | (81) A | GR | UK-A5 |
| (82) G | WH | UK-G5# | (83) G | BE | UK-G5 |
| (84) F | VI | UK-F5# | (85) F | YE | UK-F5 |
| (86) E | GP | UK-E5 | (87) D# | OR | UK-D5# |
| (88) D | OR | UK-D5 | (89) C# | RE | UK-C5# |
| (90) CL | BRx2 | PK-C0 | (91) V | WH12 | RA-VR-VIB (66) |
| (92) +5 | - | - | (93) +15 | - | - |
| (94) +8 | - | - | (95) φA | - | - |
| (96) φ2 | - | - | (97) φ1 | - | - |
| (98) VDD | - | - | (99) VDD | - | - |
| (100) VDD | - | - | - | - | - |

| | | | | | | | | | | | | | | | | | | | | | | | | |
|----------|----------|----------|----------|----------|---------|----------|----------|----------|----------|----------|----------|----------|--------|---------|--------|---------|---------|--------|----------|---------|---------|----------|----------|-----------|
| (53) KK1 | (54) KB3 | (56) KB1 | (58) KN3 | (60) KN1 | (62) F3 | (64) F1 | (66) PK1 | (68) LK1 | (70) LK3 | (72) LK5 | (74) UK2 | (76) UK4 | (78) C | (80) A# | (82) G | (84) F | (86) E | (88) D | (90) CL | (92) +5 | (94) +8 | (96) φ2 | (98) VDD | (100) VDD |
| (55) KB2 | (57) KN4 | (59) KN2 | (61) M | (63) F2 | (65) NG | (67) PK2 | (69) LK2 | (71) LK4 | (73) UK1 | (75) UK3 | (77) UK5 | (79) B | (81) A | (83) G | (85) F | (87) D# | (89) C# | (91) V | (93) +15 | (95) φA | (97) φ1 | (99) VDD | - | |

Notes) 1. LC22123
 2. Transistor
 Tr4 :2SA509
 Tr5,7,9 :2SA561
 Tr6,8 :2SC734
 Tr10,16 :2SA495
 Tr11~13,20,21 :2SC458
 Tr17 :2SC752

3. Diode
 ZD1~10 :WZ061
 Others :1S1555
 4. IC1 :YM272M
 IC2 :YM26100
 IC3 :YM22800
 IC4 :YM26200
 IC5 :HD7400
 IC6 :HD74S04
 IC7 :BA634
 5. L :60μH

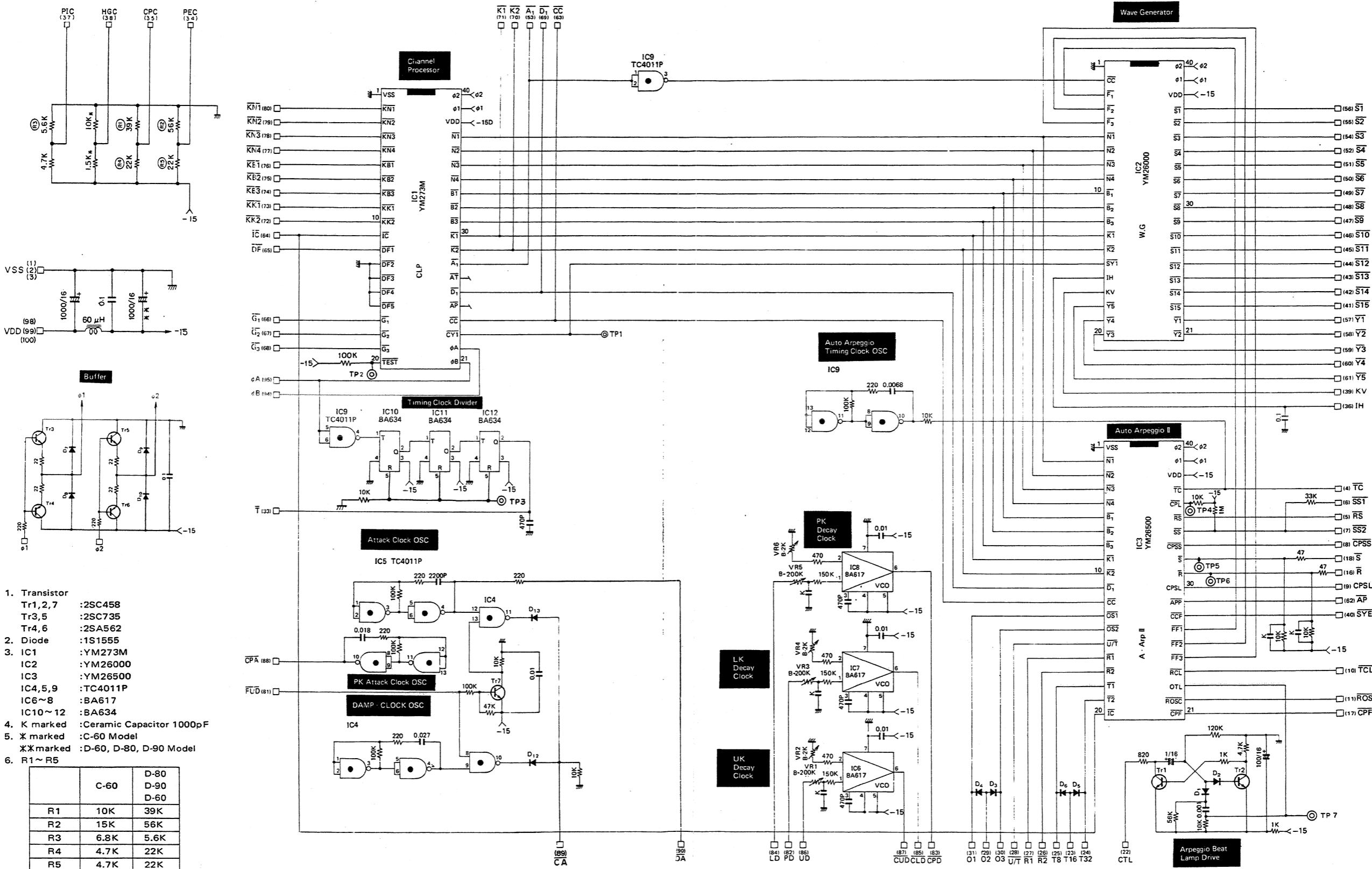
6. Capacitor
 △ marked :Tantalum, Capacitor
 * marked :Ceramic Capacitor
 ▲ marked :Plystyrene Capacitor
 No marked :Mylar, Film Capacitor
 7. M Sheet :NA03902
 8. X marked Resistor



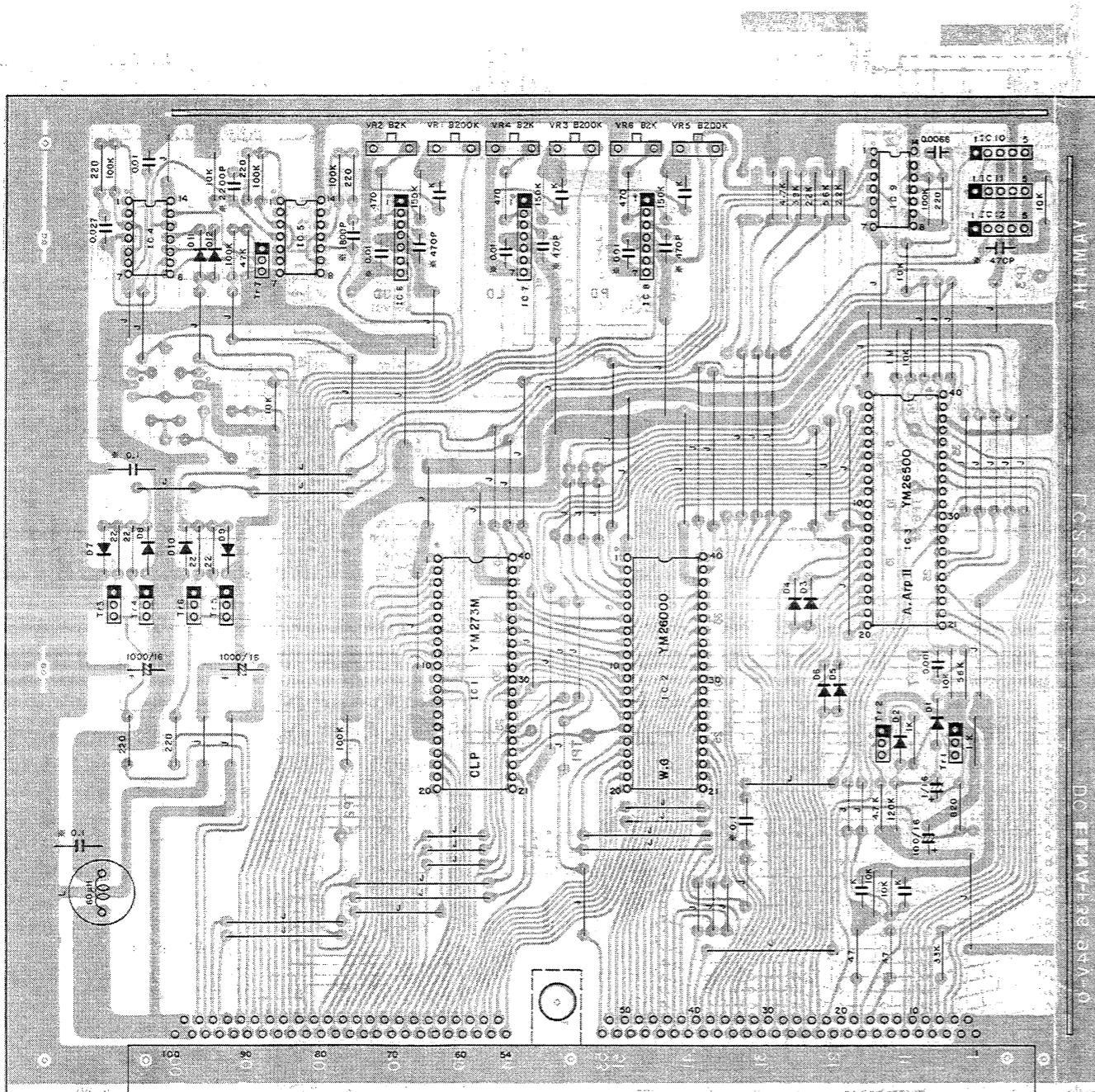
Terminals not indicated the connection are connected to printed pattern on motherboard.

行先表示がない端子はマザーボードのパターンにより接続されています。

DC Circuit Diagram



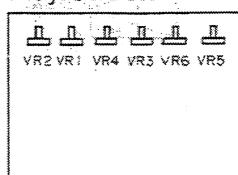
DC Circuit Board & Wiring



| | | | |
|-----------|----------------|--------------------|---------------|
| (1) VSS | | (2) VSS | |
| (3) VSS | | (4) TO | |
| (5) RS | | (6) SS1 | YE PN2-TS2-B4 |
| (7) SS2 | GY | (8) CPSS | WH PN5-TS8-M |
| (8) CPSL | OR | (9) CN4-17 | |
| (10) POSC | | (11) TCL | |
| (12) CTF | | (13) EXP-FS-CN1(1) | |
| (14) CTF | | (15) EXP-FS-CN1(3) | |
| (16) R | VI | (17) PN5-TS5-M1 | |
| (17) CTF | GYx2 | (18) S | |
| (19) CTF | | (20) OR12 | PN5-LA-L2 |
| (21) T16 | RE | (22) CTL | OR |
| (22) T8 | BR | (23) T32 | PN5-CN4-2 |
| (23) R1 | GY | (24) T32 | WH |
| (24) O2 | GR | (25) R2 | PN2-PSB-R1(3) |
| (25) O1 | YE | (26) U/T | VI |
| (26) T | | (27) O3 | PN5-CN4-1 |
| (27) CPC | GY | (28) PEC | BE |
| (28) PIC | WH | (29) PN5-CN4-5 | |
| (29) KV | PN1-PS9-M3(14) | (30) PEC | PN5-TS3-M1 |
| (31) S15 | RE | (31) HHC | |
| (32) S13 | | (32) SYE | |
| (33) S14 | | (33) S14 | |
| (34) S12 | | (34) S12 | |
| (35) S7 | | (35) S10 | |
| (36) S5 | | (36) S8 | |
| (37) A1 | | (37) S5 | |
| (38) S3 | | (38) S6 | |
| (39) S1 | | (39) S4 | |
| (40) Y2 | | (40) S2 | |
| (41) Y4 | | (41) S1 | |
| (42) AP | | (42) S1 | |
| (43) IC | | (43) S1 | |
| (44) G1 | | (44) S1 | |
| (45) G3 | | (45) S1 | |
| (46) K2 | | (46) S1 | |
| (47) KK1 | | (47) S1 | |
| (48) KB2 | | (48) S1 | |
| (49) KB3 | | (49) S1 | |
| (50) KB1 | | (50) S1 | |
| (51) KN3 | | (51) S1 | |
| (52) KN1 | | (52) S1 | |
| (53) PD | GY | (53) FUD | |
| (54) LD | VI | (54) CPD | |
| (55) UD | BR | (55) CLD | |
| (56) CPA | | (56) CUD | |
| (57) DA | | (57) CA | |
| (58) eA | | (58) eA | |
| (59) eB | | (59) eB | |
| (60) e2 | | (60) e2 | |
| (61) VDD | | (61) VDD | |
| (62) VDD | | (62) VDD | |
| (63) VDD | | (63) VDD | |
| (64) VDD | | (64) VDD | |
| (65) VDD | | (65) VDD | |
| (66) VDD | | (66) VDD | |
| (67) VDD | | (67) VDD | |
| (68) VDD | | (68) VDD | |
| (69) VDD | | (69) VDD | |
| (70) VDD | | (70) VDD | |
| (71) VDD | | (71) VDD | |
| (72) VDD | | (72) VDD | |
| (73) VDD | | (73) VDD | |
| (74) VDD | | (74) VDD | |
| (75) VDD | | (75) VDD | |
| (76) VDD | | (76) VDD | |
| (77) VDD | | (77) VDD | |
| (78) VDD | | (78) VDD | |
| (79) VDD | | (79) VDD | |
| (80) VDD | | (80) VDD | |
| (81) VDD | | (81) VDD | |
| (82) VDD | | (82) VDD | |
| (83) VDD | | (83) VDD | |
| (84) VDD | | (84) VDD | |
| (85) VDD | | (85) VDD | |
| (86) VDD | | (86) VDD | |
| (87) VDD | | (87) VDD | |
| (88) VDD | | (88) VDD | |
| (89) VDD | | (89) VDD | |
| (90) VDD | | (90) VDD | |
| (91) VDD | | (91) VDD | |
| (92) VDD | | (92) VDD | |
| (93) VDD | | (93) VDD | |
| (94) VDD | | (94) VDD | |
| (95) VDD | | (95) VDD | |
| (96) VDD | | (96) VDD | |
| (97) VDD | | (97) VDD | |
| (98) VDD | | (98) VDD | |
| (99) VDD | | (99) VDD | |
| (100) VDD | | (100) VDD | |

Notes)
1. LC22133
2. Transistor
Tr1,2,7 :2SC458
Tr3,5 :2SC735
Tr4,6 :2SA562
3. Diode
:AI1 1S1555
4. IC1
IC2 :YM273M
IC3 :YM26000
IC4,5,9 :YM26500
IC6,7,8 :TC4011P
IC10,11,12 :BA617
:BA634
5. Capacitor
No marked :Myay Film Capacitor
※ marked :Ceramic Capacitor
△ marked :Tantalum Capacitor
K marked :Ceramic Capacitor 1000pF
6. L :60μH

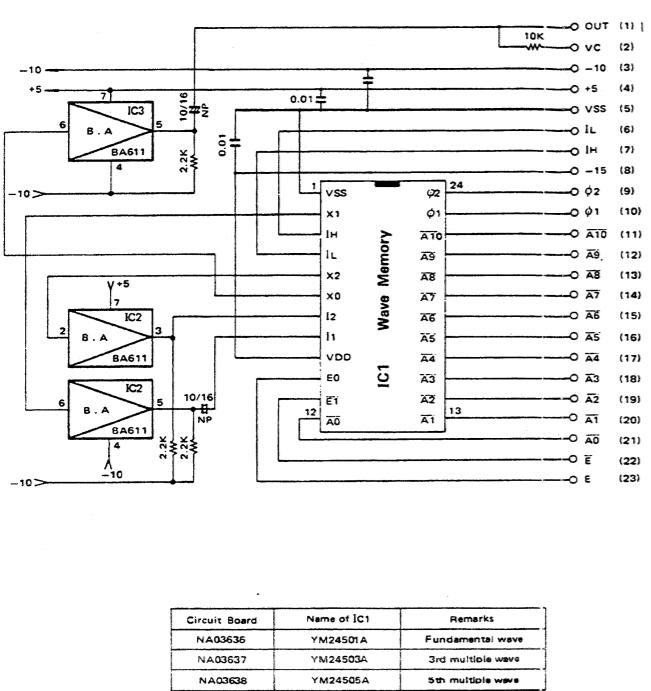
Adjustment



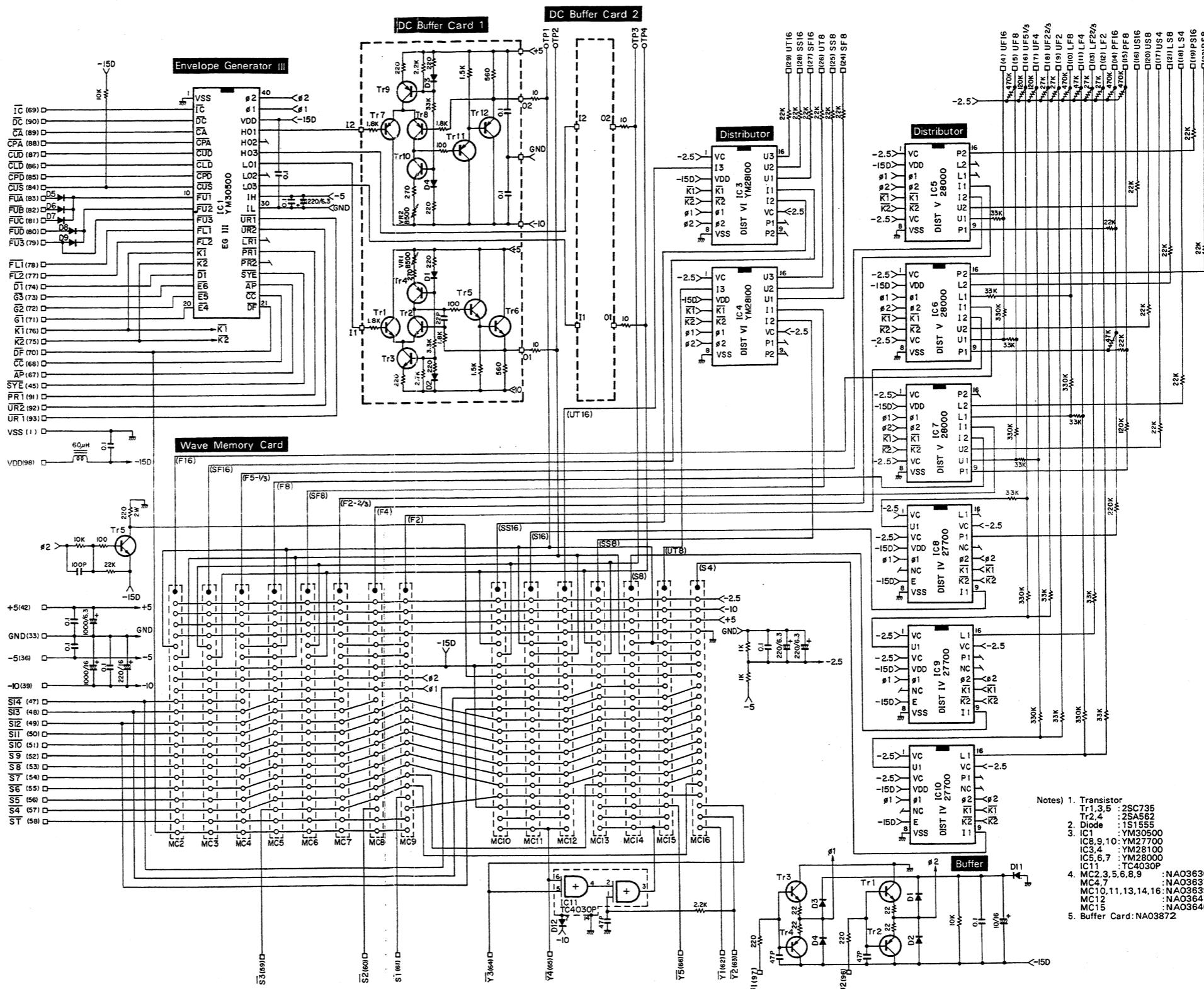
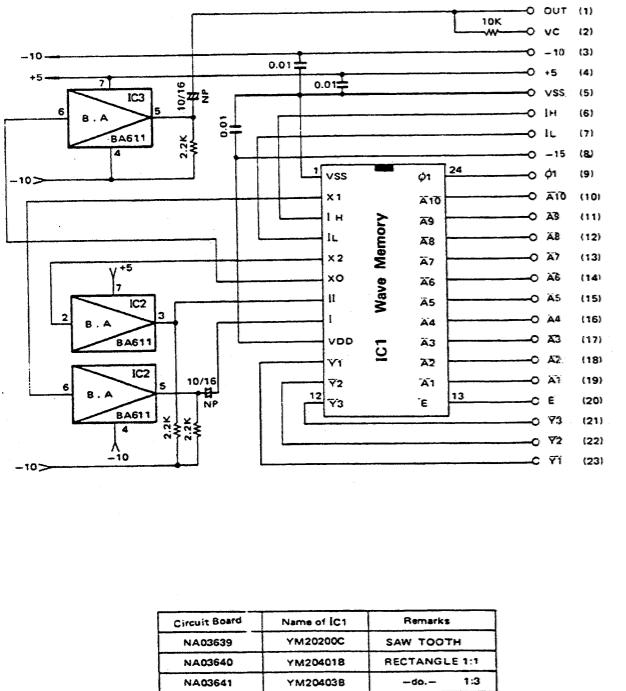
VR1: UK Decay Clock OSC.
VR2: -do-
VR3: LK Decay Clock OSC.
VR4: -do-
VR5: PK Decay Clock OSC.
VR6: -do-

DHM Circuit Diagram

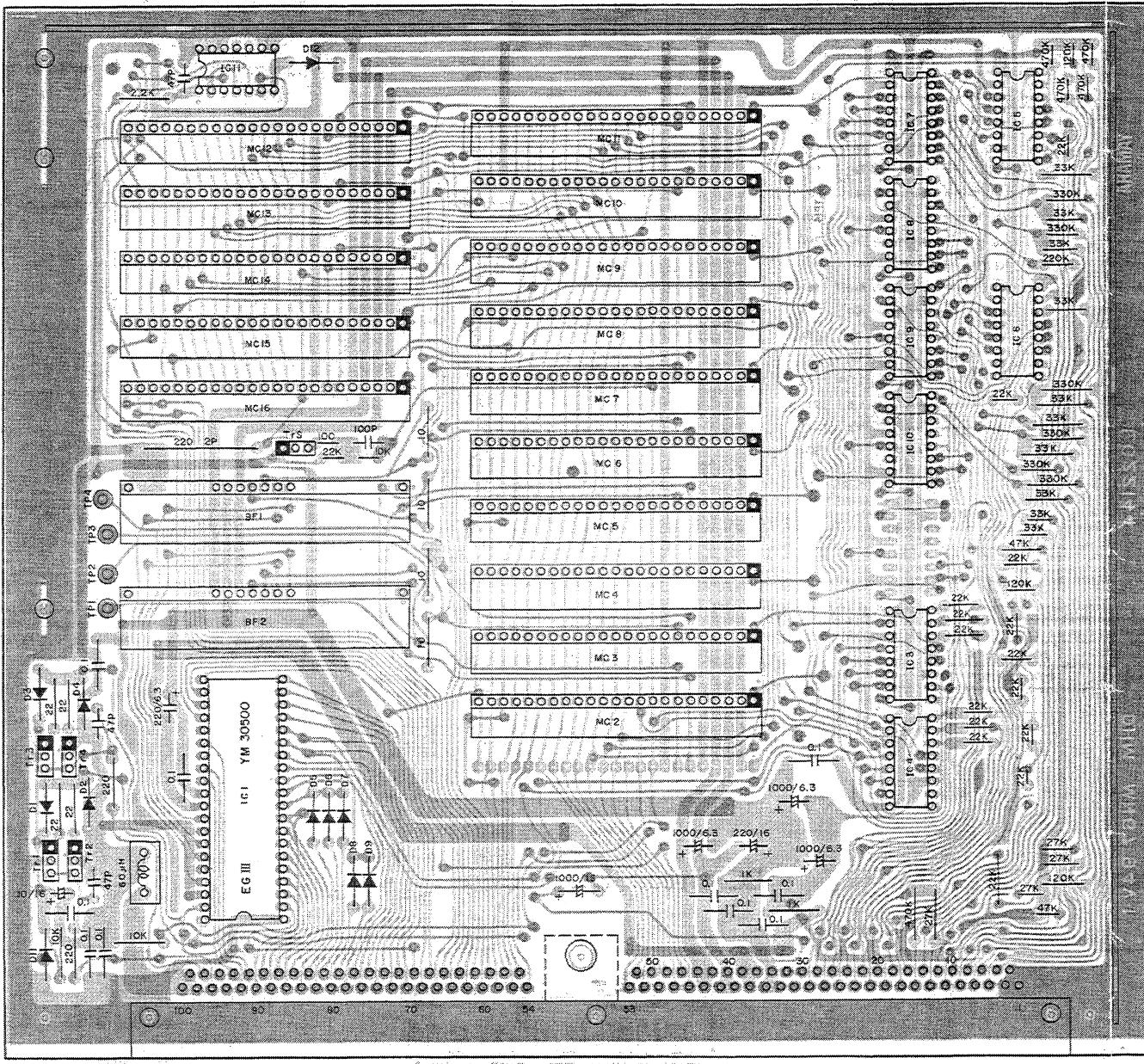
MC (Flute) Circuit Diagram



MC (Complex) Circuit Diagram



DHM Circuit Board & Wiring



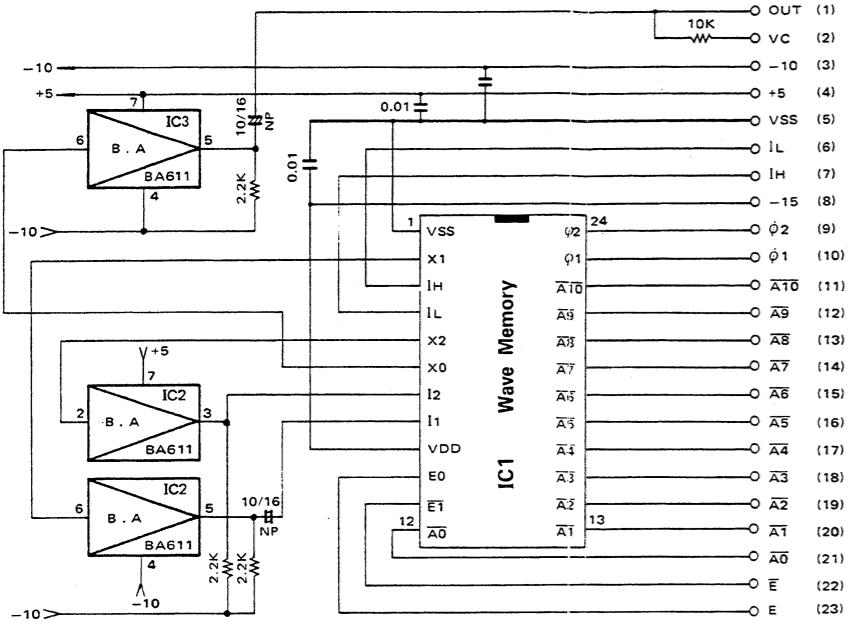
| | | |
|--------------|------|-----------------|
| (1) VSS | BL12 | RD-DC-VSS (1) |
| (3) VSS | | (2) VSS |
| (5) UF8 | RE | RA-CR1-I2 (5) |
| (7) UF4 | YE | RA-CR1-I4 (8) |
| (8) UF2 | BE | RA-CR1-I6 (11) |
| (11) LF4 | RE | RA-CR1-I11 (20) |
| (13) LF2-2:3 | OR | RA-CR1-I12 (21) |
| (15) PF8 | RE | RA-CR1-I17 (31) |
| (17) US4 | GG | RA-CR1-I19 (17) |
| (19) PS16 | OR | RA-CR2-I1 (4) |
| (21) LS8 | GR | RA-CR1-I14 (26) |
| (23) UF6-2:5 | BE | RA-CR2-I8 (15) |
| (25) SS8 | OR | RA-CR2-I5 (10) |
| (27) SF16 | OR | RA-CR2-I6 (11) |
| (29) UT16 | BR | RA-CR2-I3 (7) |
| | | (2) VSS |
| | | (4) UF18 |
| | | RA-CR1-I1 (4) |
| | | (6) UF5-1:3 |
| | | RA-CR1-I3 (7) |
| | | (8) UF2-2:3 |
| | | RA-CR1-I5 (10) |
| | | (10) LF8 |
| | | RA-CR1-I10 (18) |
| | | (12) LF2 |
| | | RA-CR1-I13 (25) |
| | | (14) PF16 |
| | | RA-CR1-I16 (29) |
| | | (16) US16 |
| | | RA-CR1-I7 (14) |
| | | (18) LS4 |
| | | RA-CR1-I15 (28) |
| | | (20) US8 |
| | | RA-CR1-I8 (15) |
| | | (22) PS8 |
| | | RA-CR2-I2 (5) |
| | | (24) SF8 |
| | | RA-CR2-I6 (11) |
| | | (26) UT8 |
| | | RA-CR2-I4 (8) |
| | | (28) SS16 |
| | | RA-CR2-I7 (14) |
| | | (30) FUE |
| | | (32) GND |
| | | (34) GND |
| | | (36) -5 |
| | | (38) -5 |
| | | (39) -10 |
| | | (40) -10 |
| | | (41) -10 |
| | | (42) +5 |
| | | (44) +5 |
| | | (46) SYE |
| | | (47) S14 |
| | | (49) S12 |
| | | (51) S10 |
| | | (53) S8 |
| | | (54) S7 |
| | | (56) S5 |
| | | (58) A1 |
| | | (60) S2 |
| | | (62) Y1 |
| | | (64) Y3 |
| | | (66) Y5 |
| | | (68) CC |
| | | (70) DF |
| | | (72) G2 |
| | | (75) K2 |
| | | (76) D1 |
| | GR | PN5-TS4-B1 |
| | GY | PN1-CPS4-M4 |
| | GY | PN5-TS6-T1 |
| | RE | PN5-TS4-B2 |
| | SB | PN1-CPS4-M4 |
| | | (81) FUC |
| | | PN1-PS7-M1 (4) |
| | | (83) FUA |
| | | PN5-TS1-T4 |
| | | (85) CPS |
| | | (87) CUD |
| | | (89) CA |
| | | (91) PR1 |
| | BE | RA-PF-TR (5) |
| | | (93) UR1 |
| | | RA-VR-UR1 (49) |
| | | (96) φ2 |
| | | (97) φ1 |
| | | (99) VDD |
| | | (100) VDD |

- Notes:
1. LC22144
 2. Transistor
Tr1,3,5 :2SC735
Tr2,4 :2SA562
 3. Diode :1S1555
 4. IC1 :YM30500
IC2,8~10 :YM27700
IC3,4 :YM28100
IC5~7 :YM28000
IC11 :TC4030P
 5. MC
MC2,3,5,6,8,9 :NA03636
MC4,7 :NA03637
MC10,11,13,14,16 :NA03639
MC12 :NA03641
MC15 :NA03640
MC16 :NA03672
6. BF1,2 :Metal Oxide Resistor
7. 220Ω 2W

Terminals not indicated the connection are connected to printed pattern on motherboard.

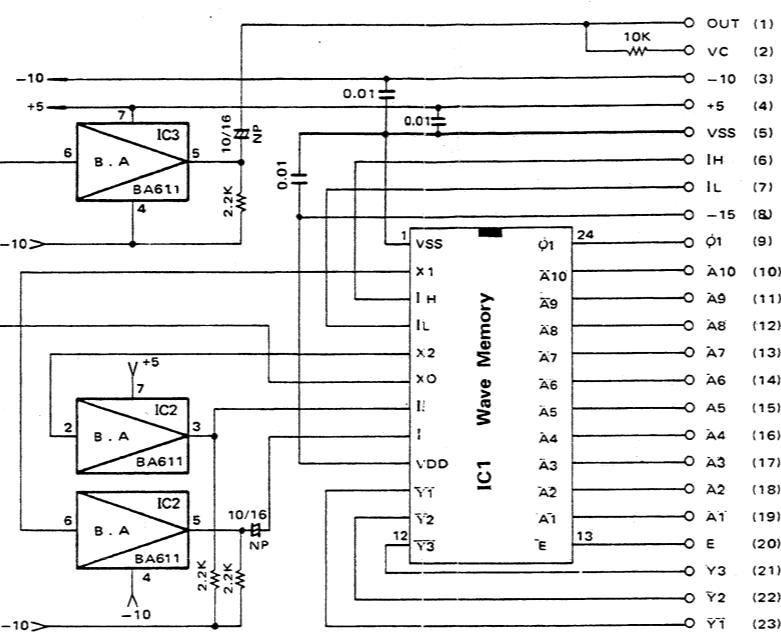
行先表示がない端子はマザーボードのパターンにより接続されています。

MC (Flute) Circuit Diagram



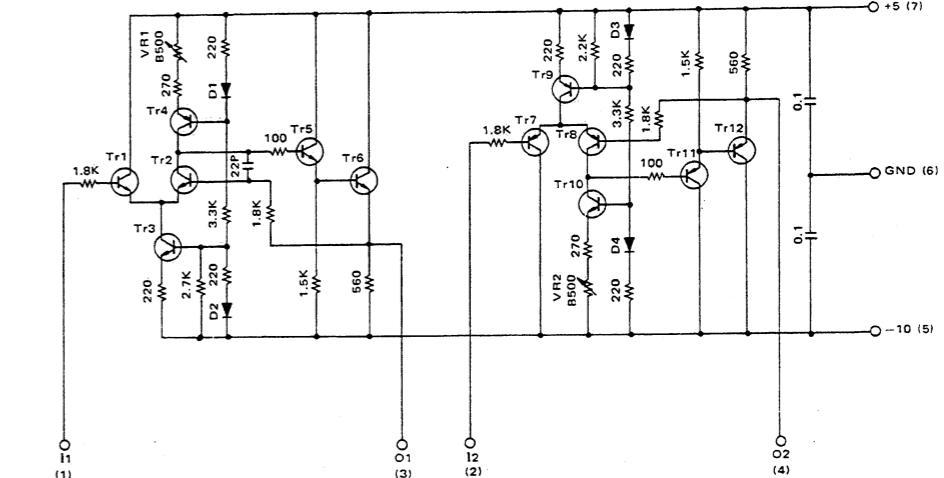
| Circuit Board | Name of IC1 | Remarks |
|---------------|-------------|-------------------|
| NA03636 | YM24501A | Fundamental wave |
| NA03637 | YM24503A | 3rd multiple wave |
| NA03638 | YM24505A | 5th multiple wave |

MC (Complex) Circuit Diagram

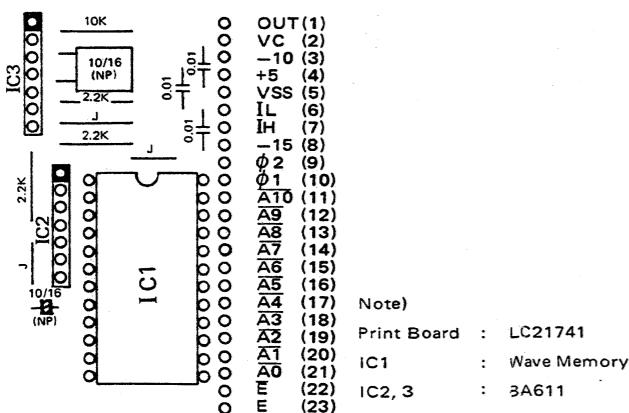


| Circuit Board | Name of IC1 | Remarks |
|---------------|-------------|---------------|
| NA03639 | YM2020CC | SAW TOOTH |
| NA03640 | YM20401B | RECTANGLE 1:1 |
| NA03641 | YM20403B | -do-- 1:3 |

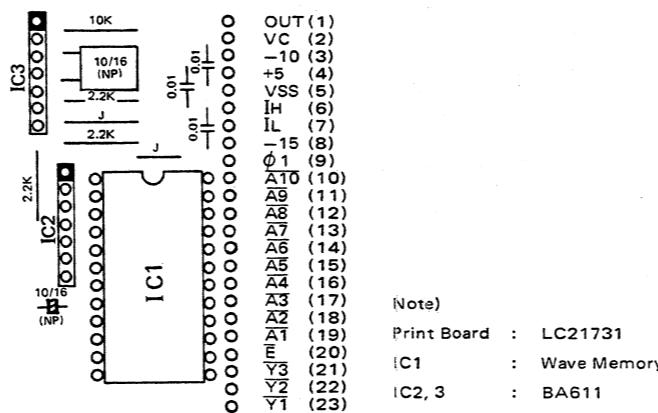
BC Circuit Diagram



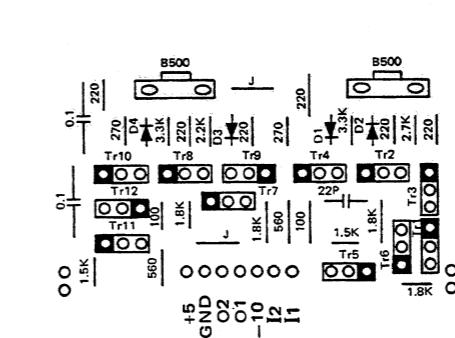
MC (Flute) Circuit Board



MC (Complex) Circuit Board

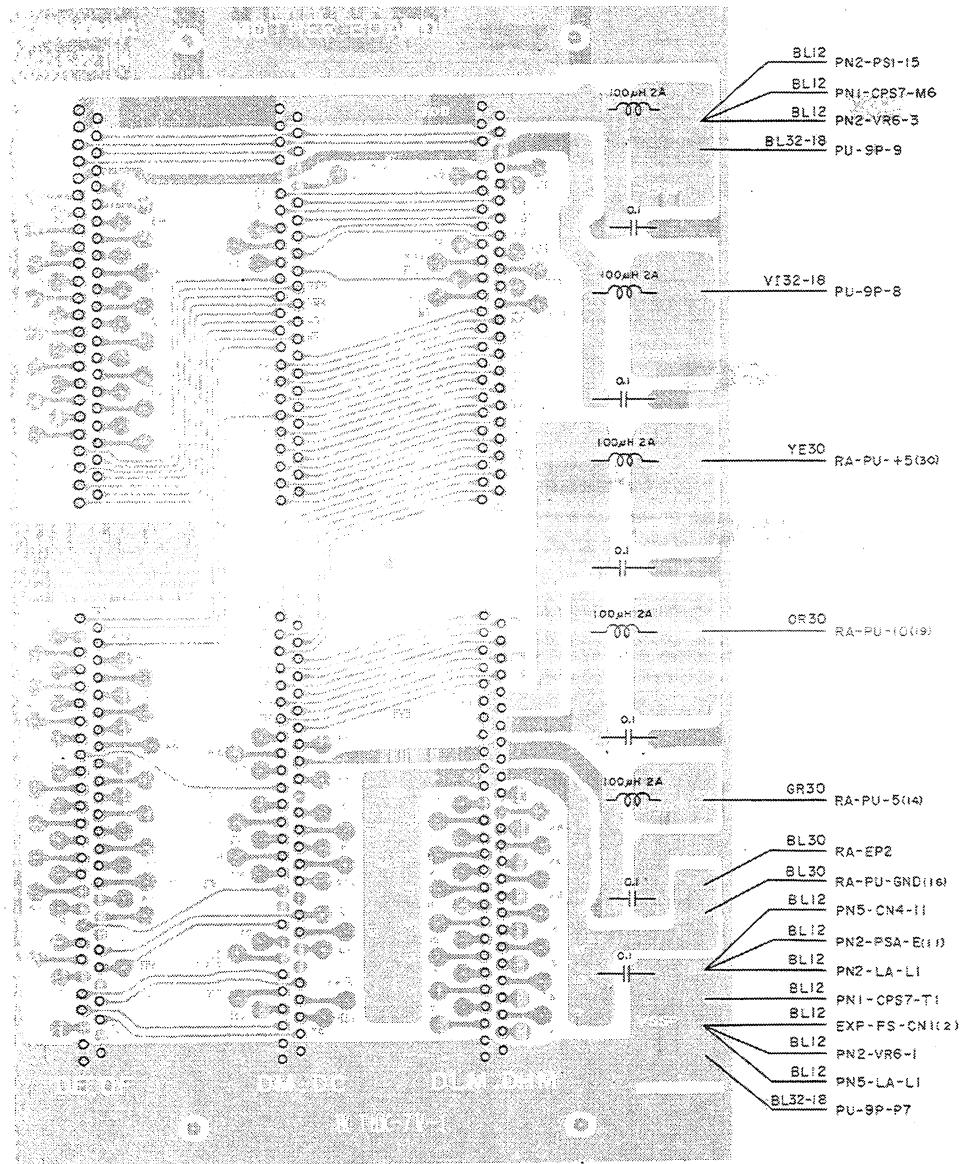


BC Circuit Board



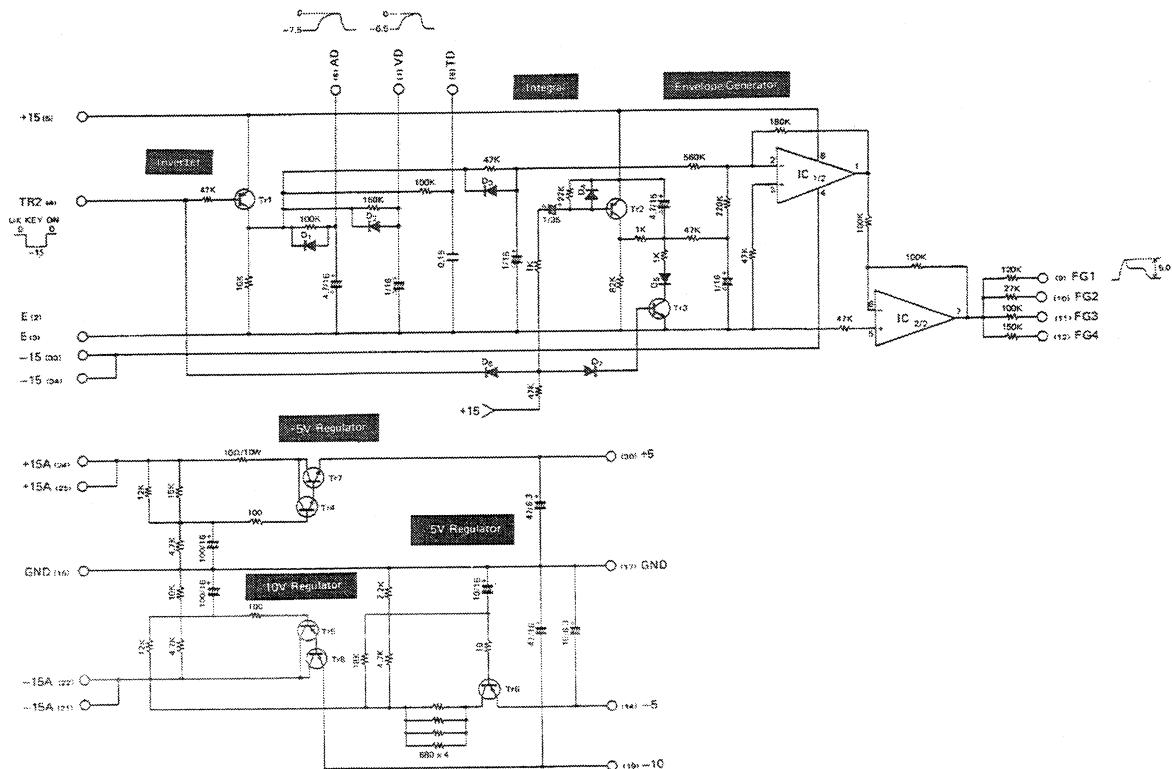
Note)
Print Board : LC21721
Transistor
Tr1, Tr2, Tr3, Tr10 : 2SC458(B)(C)
Tr4, Tr7, Tr8, Tr9 : 2SA495(Y)
Tr5, Tr6 : 2SC735(O)(Y)
Tr11, Tr12 : 2SA562(O)(Y)
Diode
D1 ~ D4 : IS2473(VE)
Dot line indicates the division

MOTHER BOARD Circuit Board & Wiring



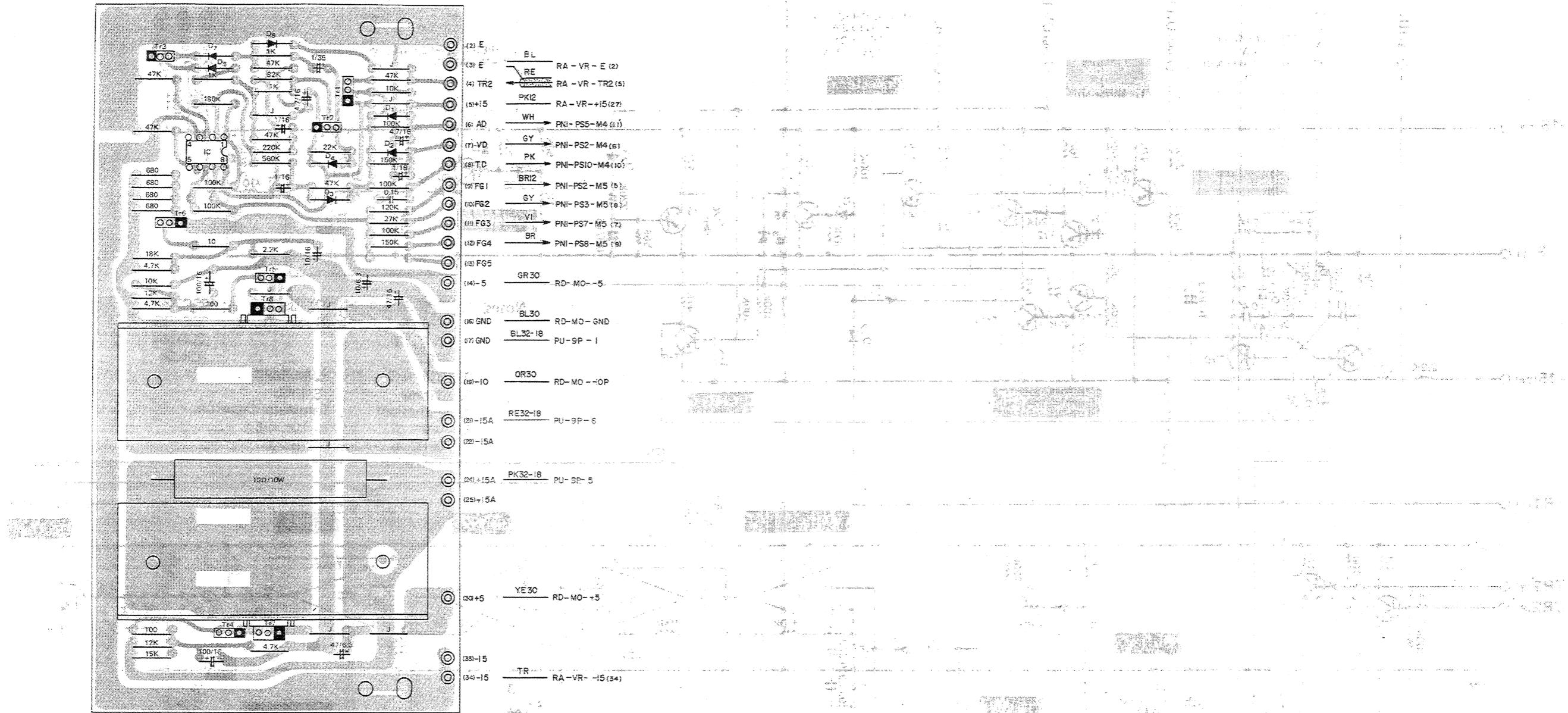
Note) 1. LC22114

PU Circuit Diagram



- Notes)
1. Transistor
 Tr1, 2, 5 : 2SA561
 Tr3 : 2SC458
 Tr4 : 2SC734
 Tr7 : 2SD235
 Tr8 : 2SA490
 Tr6 : 2SA509
 2. IC : NJM4558D
 3. Δ marked : Tantalum Capacitor
 4. Diode : 1S1555

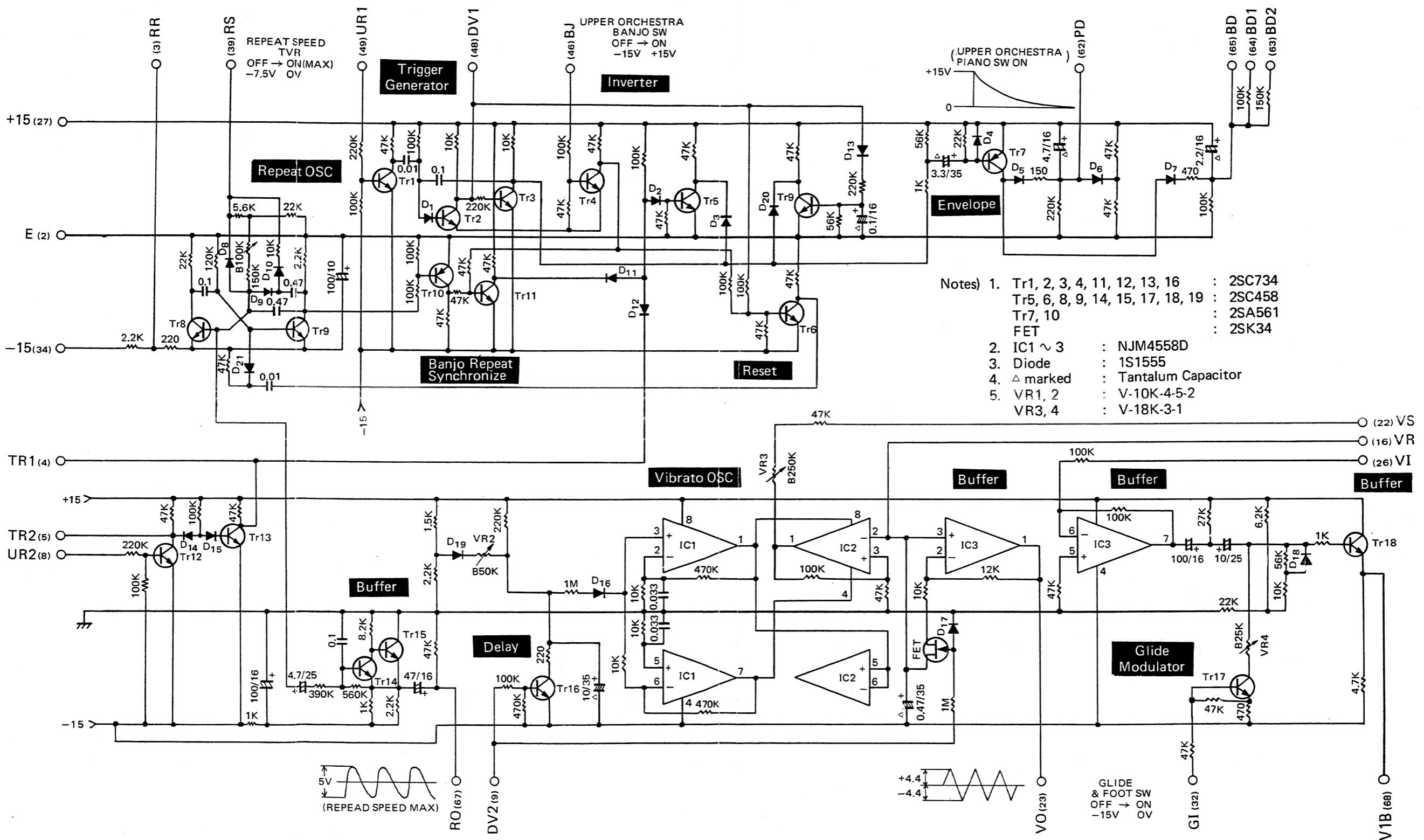
PU Circuit Board & Wiring



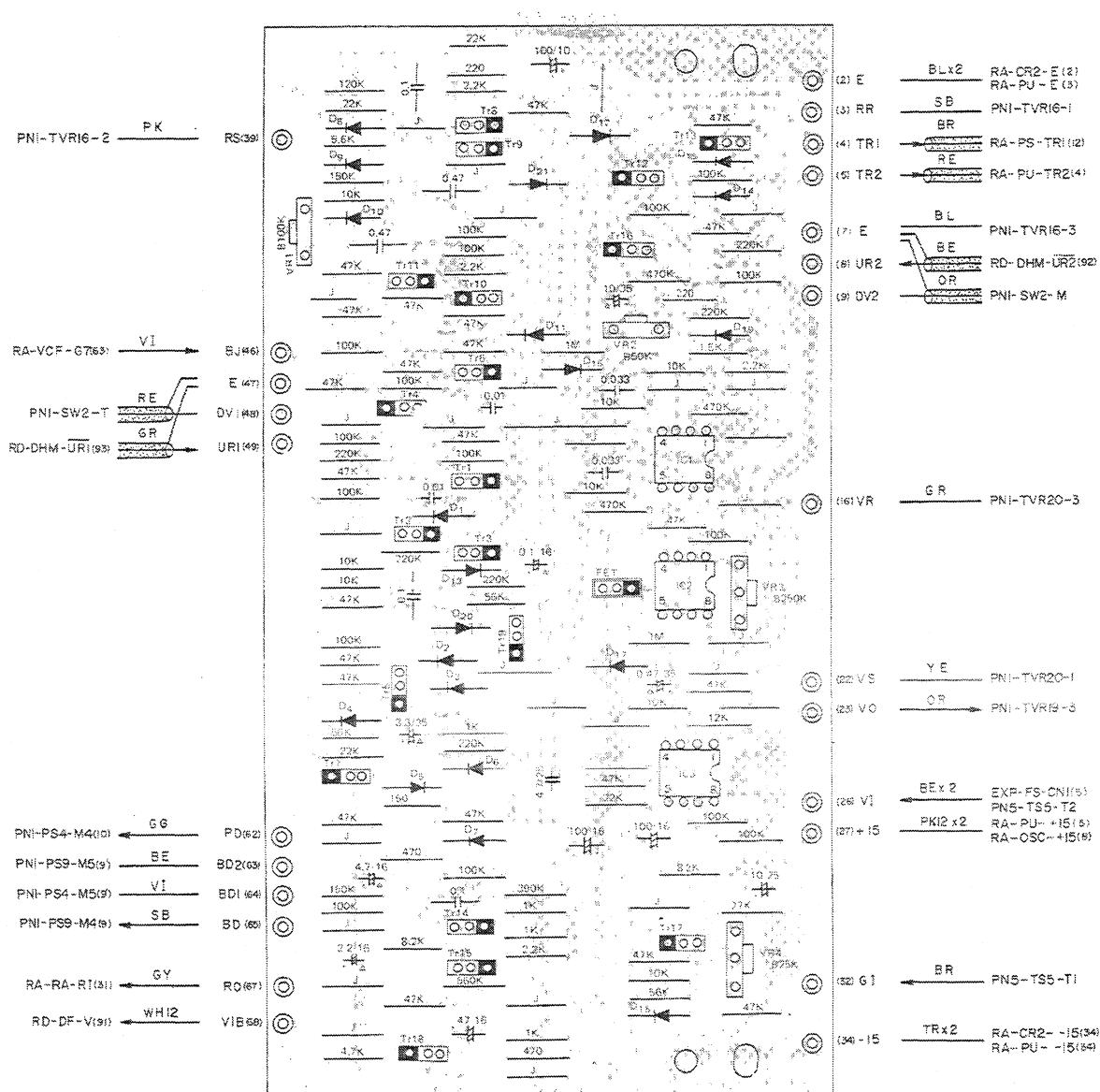
- Notes)
1. LC21912
 2. Transistor
Tr1, 2, 5 : 2SA561
Tr3 : 2SC458
Tr4 : 2SC734
Tr6 : 2SA509
Tr7 : 2SD235
Tr8 : 2SA490
 - 3.
 4. IC : NJM4558D
 5. Diode : 1S1555
 6. Δ marked : Tantalum Aluminum Capacitor

7. Tr7, 8
 - Circuit Board
Self Tapping Screw (3 x 6)
 - Heat Sink # 01163
 - Silicon Grease
 - Transistor
Spring Washer (36)
 - Self Tapping Screw (3 x 6)

VR Circuit Diagram

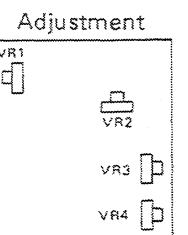


VR Circuit Board & Wiring



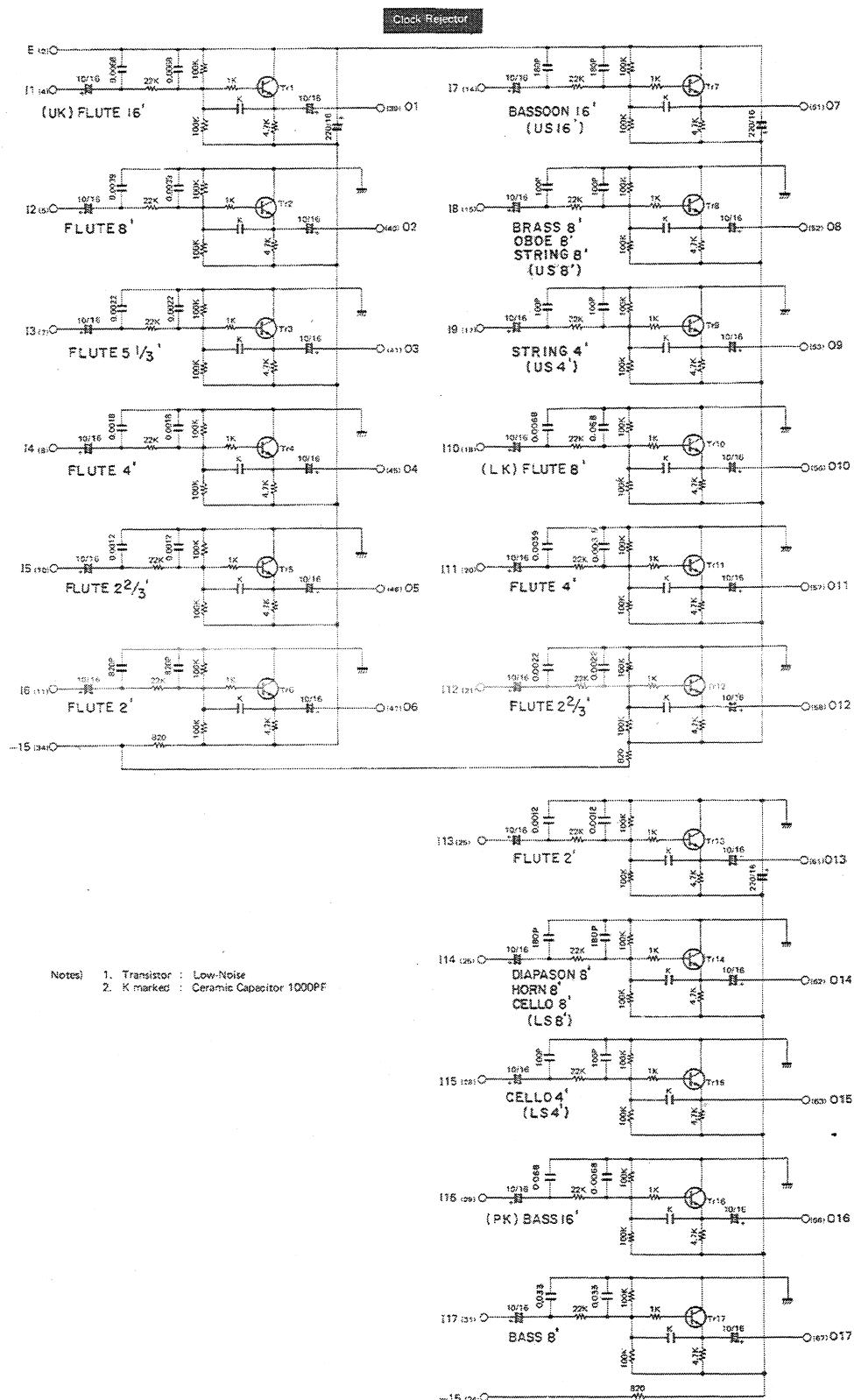
Notes)

1. LC21922
2. Transistor
Tr1,2,3,4,11,12,13,16 :2SC734
Tr5,6,8,9,14,15,17,18,19 :2SC458
Tr7,10 :2SA561
FET :2SK34
3. IC1~3 :NJM4558D
4. Diode :1S1555
5. Δ marked :Tantalum Capacitor
6. VR1,2 :V-10K-4-5-2
7. VR3,4 :V-18K-3-1

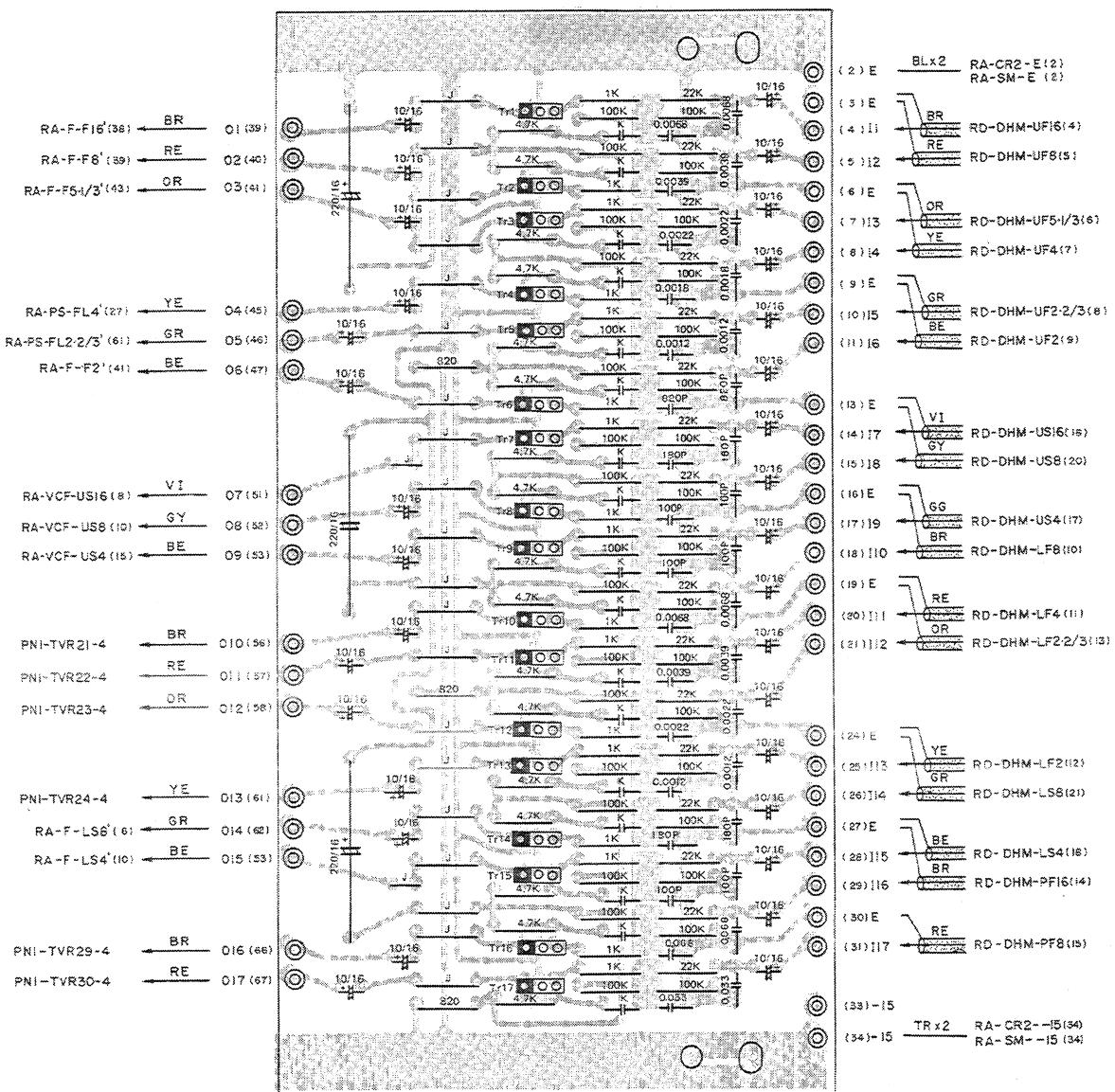


VR1 : Repeat OSC Level
VR2 : Delay Vibrato OSC Level
VR3 - do -
VR4 : Glide Modulation Level

CR1 Circuit Diagram



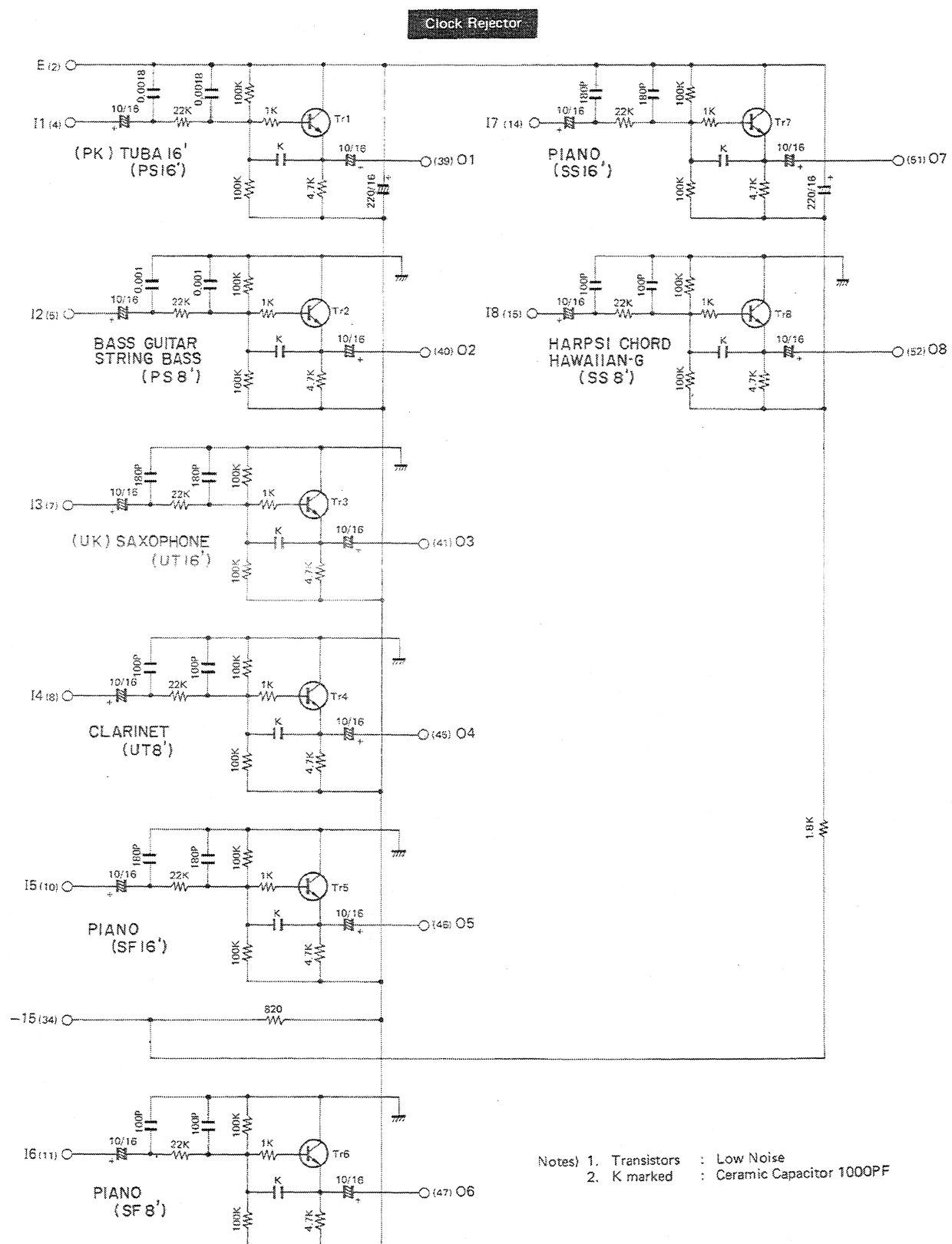
CR1 Circuit Board & Wiring



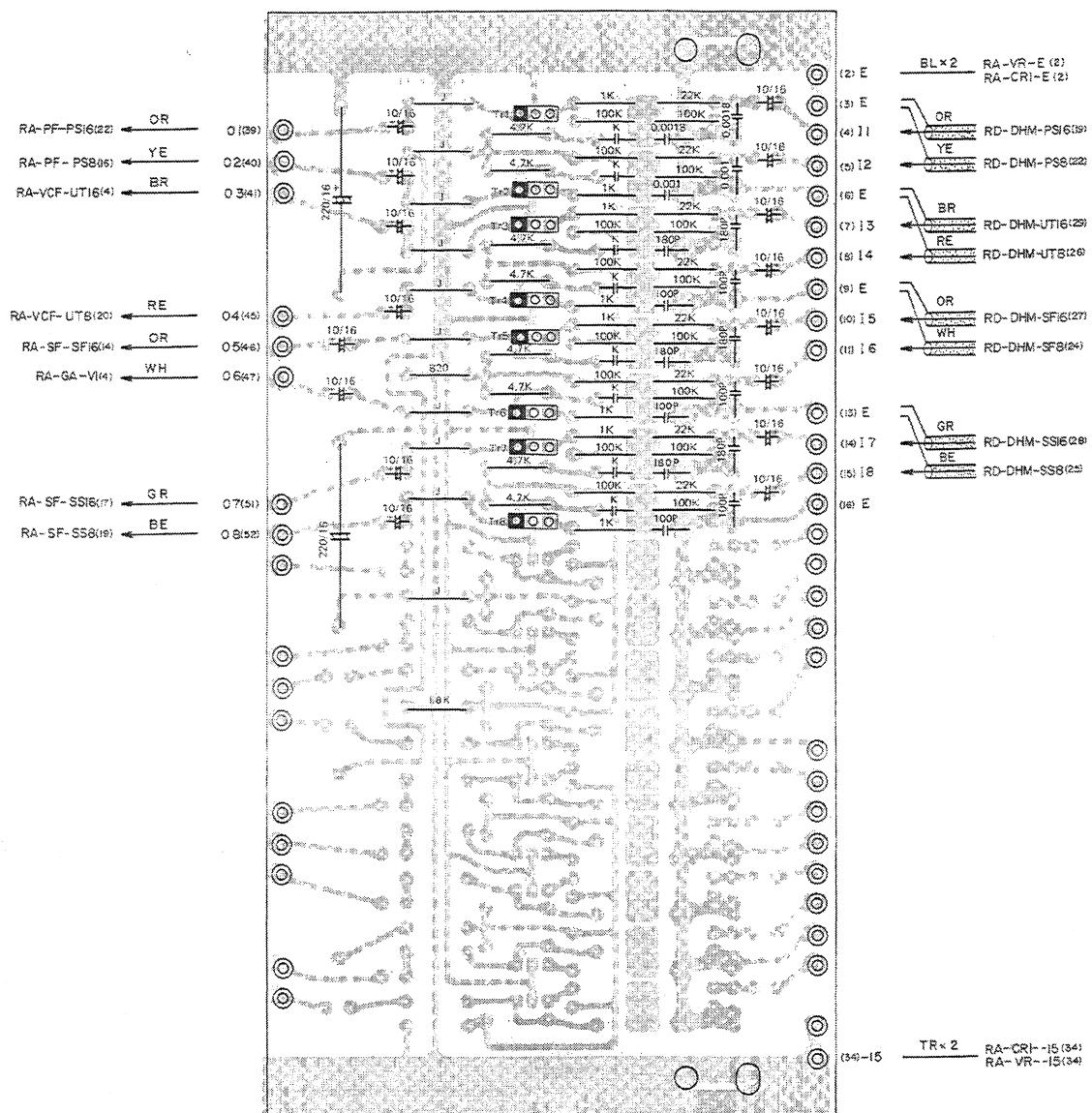
Notes:

1. LC21930
2. Transistor : All Low Noise
3. K marked : Ceramic Capacitor 1000PF

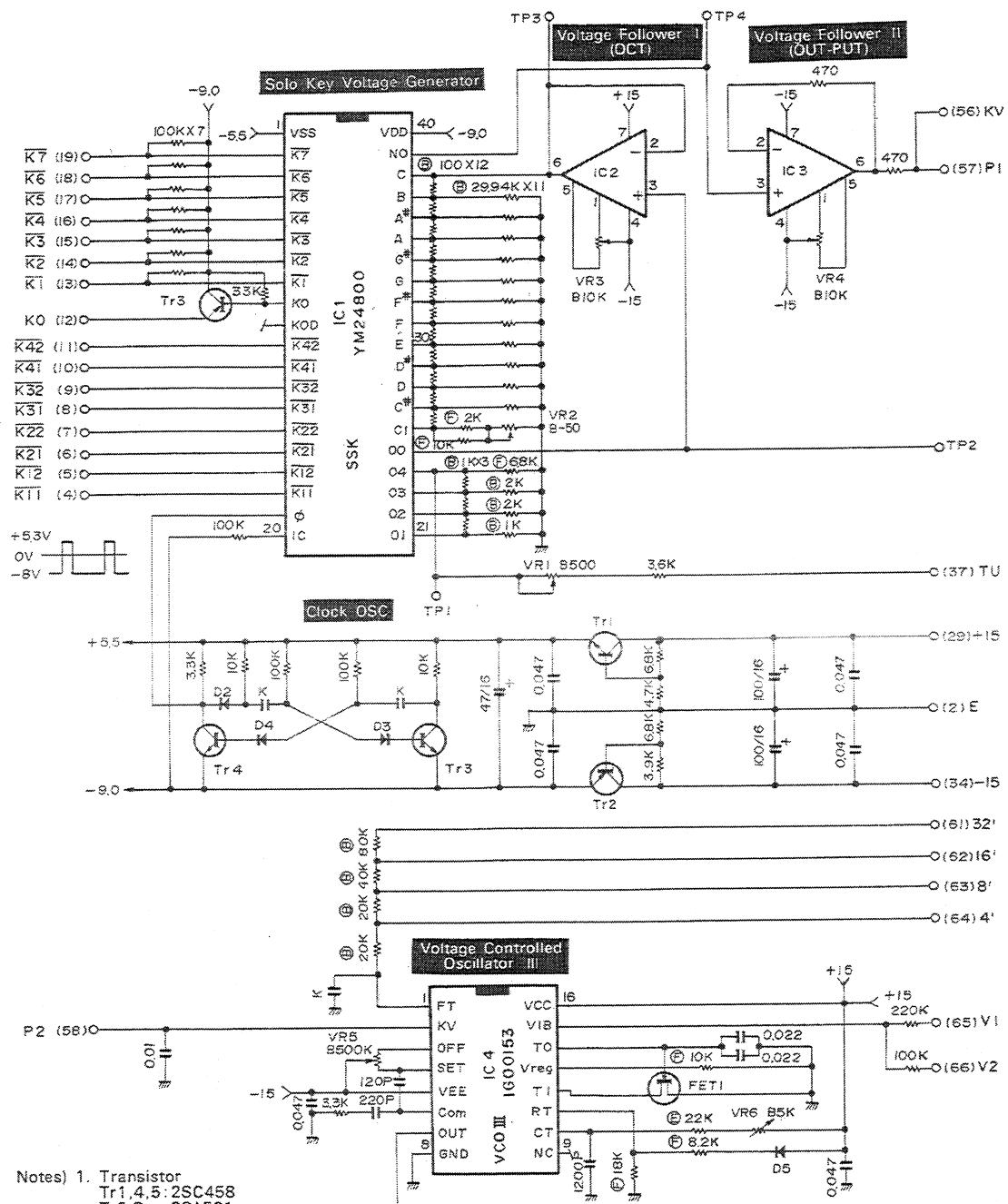
CR2 Circuit Diagram



CR2 Circuit Board & Wiring

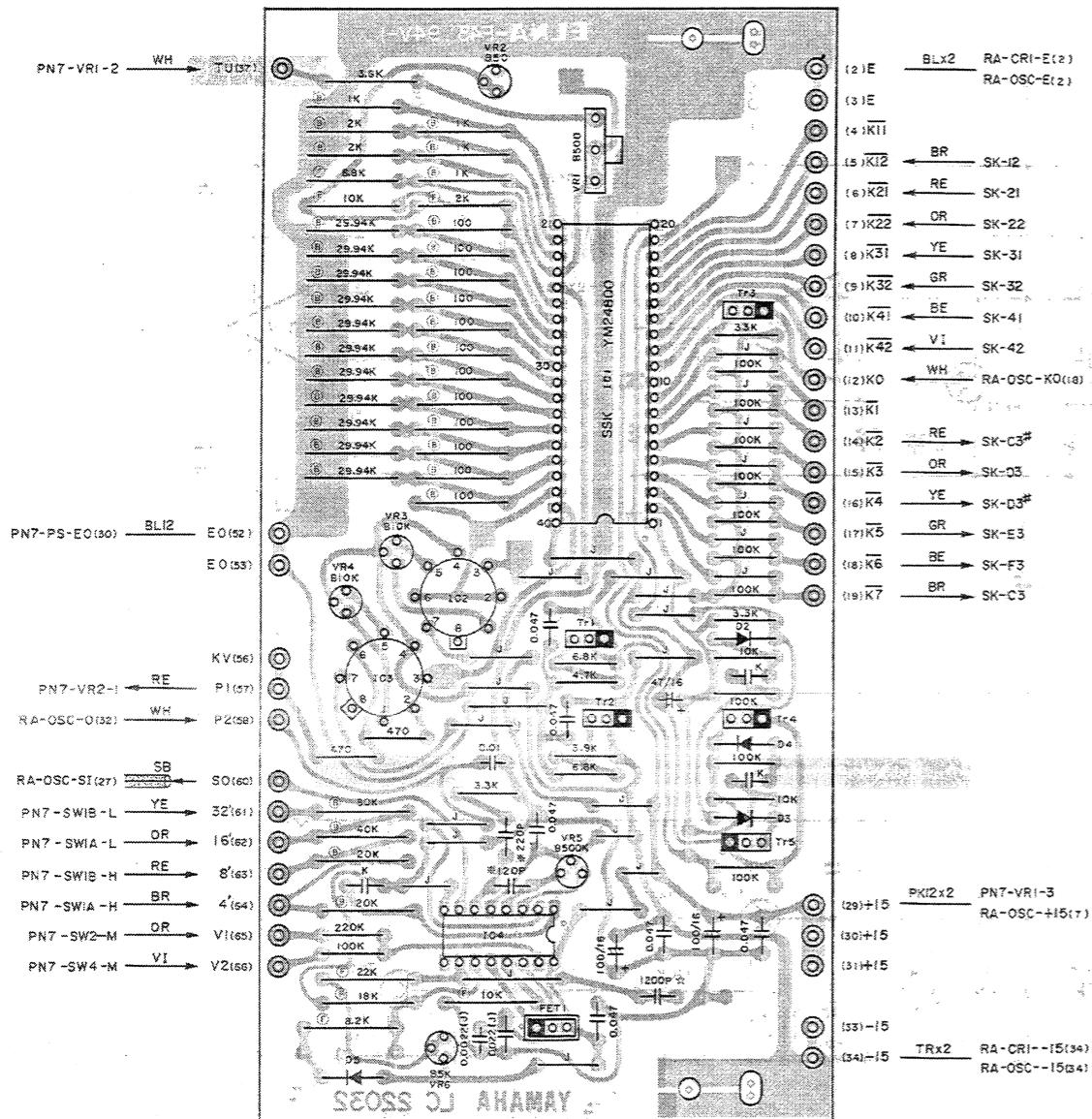


Notes:
 1. LC21930
 2. Transistor : All Low Noise
 3. K marked : Ceramic Capacitor 1000PF

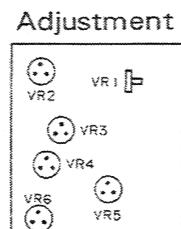
SM Circuit Diagram

- Notes)
1. Transistor
Tr1,4,5 : 2SC458
Tr2,3 : 2SA561
FET1 : 2SK30
 2. IC1 : YM24800
IC2,3 : TA7504M
IC4 : IG00153
 3. VR1 : 18K-3-1
VR2~6 : 3321H
 4. Metal Film Resistor
(B marked: 0.1%
(F marked: 1%
 5. K marked: Ceramic Capacitor 1000pF

SM Circuit Board & Wiring



Notes) 1. LC22032
2. Transistor
Tr1,4,5 :2SC458
Tr2,3 :2SA561
FET1 :2SK30
3. IC1 :YM24800
IC2,3 :TA7504M
IC4 :IG00153
4. VR1 :18K-31
VR2~6 :3321H
5. (B), (D), (F) :Metallized Film Resistor
6. K marked :Ceramic Capacitor 1000pF



VR1: Octave ladder Voltage
VR2: Note ladder Voltage Gradient
VR3: Buffer Amp. Zero adj
VR4: Output Buffer Amp. Zero adj
VR5: Output Frequency (C5 key)
VR6: - do - (C6 key)

VCO III IC (IG00153)

This IC is used for voltage controlled oscillator. Many different frequencies are produced by the voltage supplied.

1. FT Resistor for determination of the feet. The electric current is provided to the pin from transposition changing circuit so that the octave can be determined.

2. KV Input of the key voltage. The input of the voltage is provided to the pin in corporation with the keys held down.

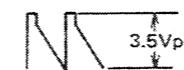
High voltage High frequency
Low voltage Low frequency

| Input Voltage | Output Frequency |
|---------------|------------------|
| 0.250V | 130.8Hz (C2) |
| 0.500V | 261.6Hz (C3) |
| 1.000V | 523.2Hz (C4) |
| 2.000V | 1046.0Hz (C5) |
| 4.000V | 2093.0Hz (C6) |

Transposition "normal"

3. OFF-SET Zero adjustment of input buffer circuit

4. Vee -15V input power source.
5. Com Phase compensation for input buffer amplifier. Normally, the output (KV + 1V) is supplied to the pin.
6. OUT Output



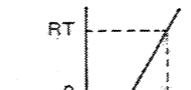
As to the frequency, refer to the Pin No.2 (KV).

8. GND Earth
9. Vref Input of the standard voltage.
10. CT Circuit for time constant.

The following wave shape is produced.



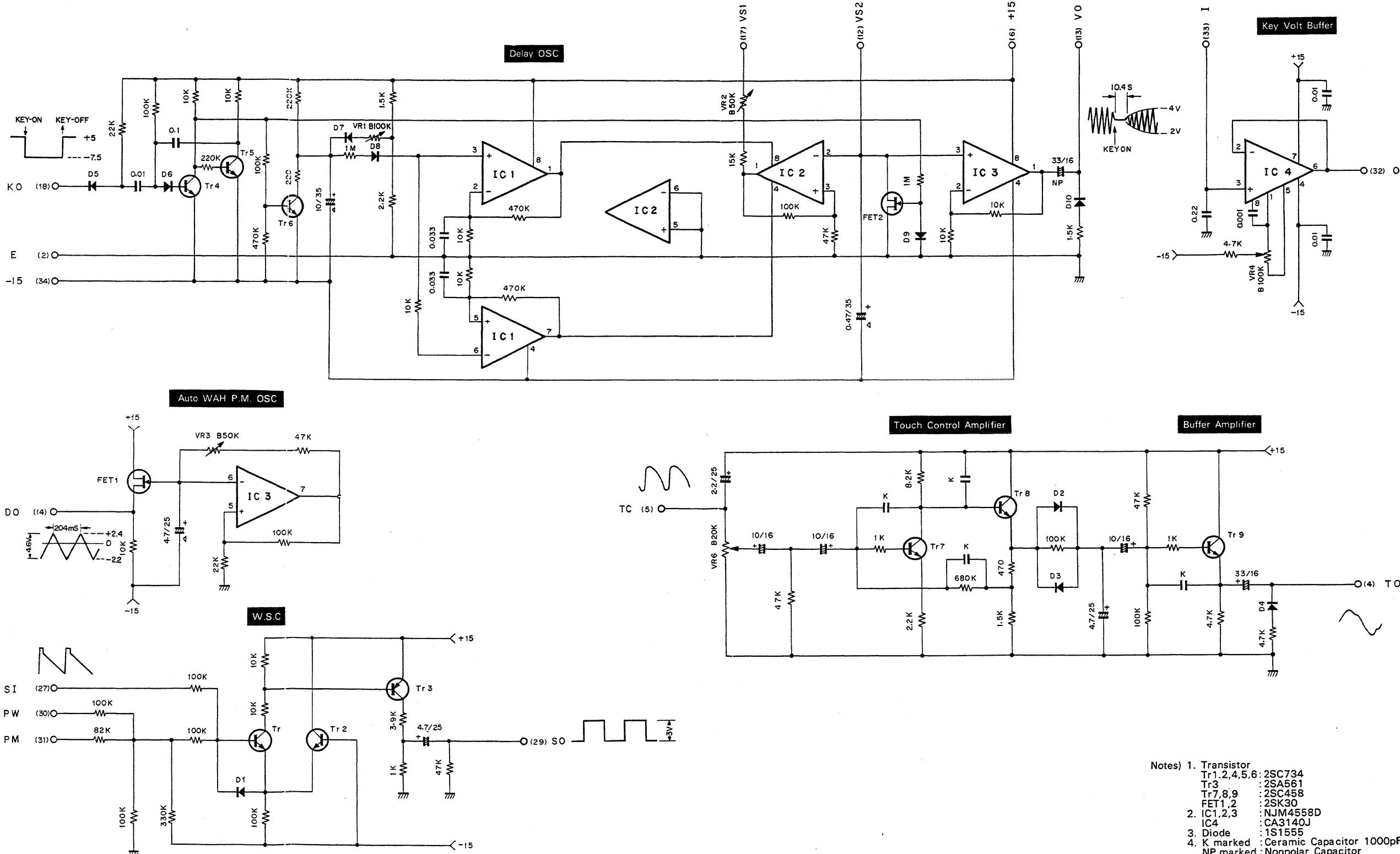
11. RT Circuit for time constant.



Determines the discharging voltage level.

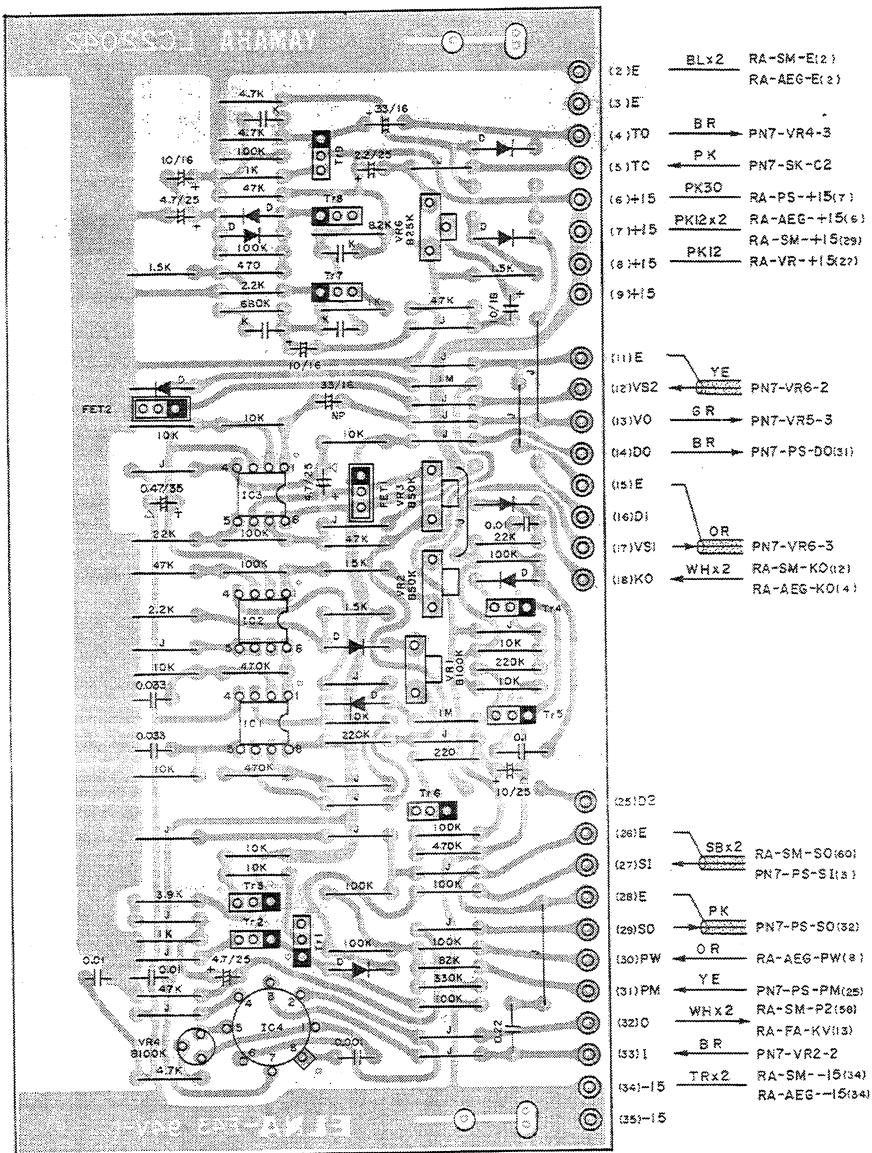
12. T1 Input for the comparator. Input of the wave shape (NN) is provided from the pin no. 14 (TO).
13. Iref Input of the standard electronic current
14. TO Output from time constant circuit. NN The following wave shape is produced.
15. VIB Input for vibrato control wave. Input of the control wave is provided by VCO lever of SUB-OSC.
16. Vcc +15V input power source.

OSC Circuit Diagram



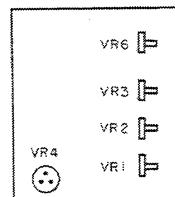
Notes) 1. Transistor
 Tr1,2,4,5,6 : 2SC734
 Tr3 : 2SA561
 Tr7,8,9 : 2SC458
 FET1,2 : 2SK30
 2. IC1,2,3 : NJM4558D
 IC4 : CA3140J
 3. Diode : 1S1555
 4. K marked : Ceramic Capacitor 1000pF
 NP marked : Nonpolar Capacitor

OSC Circuit Board & Wiring



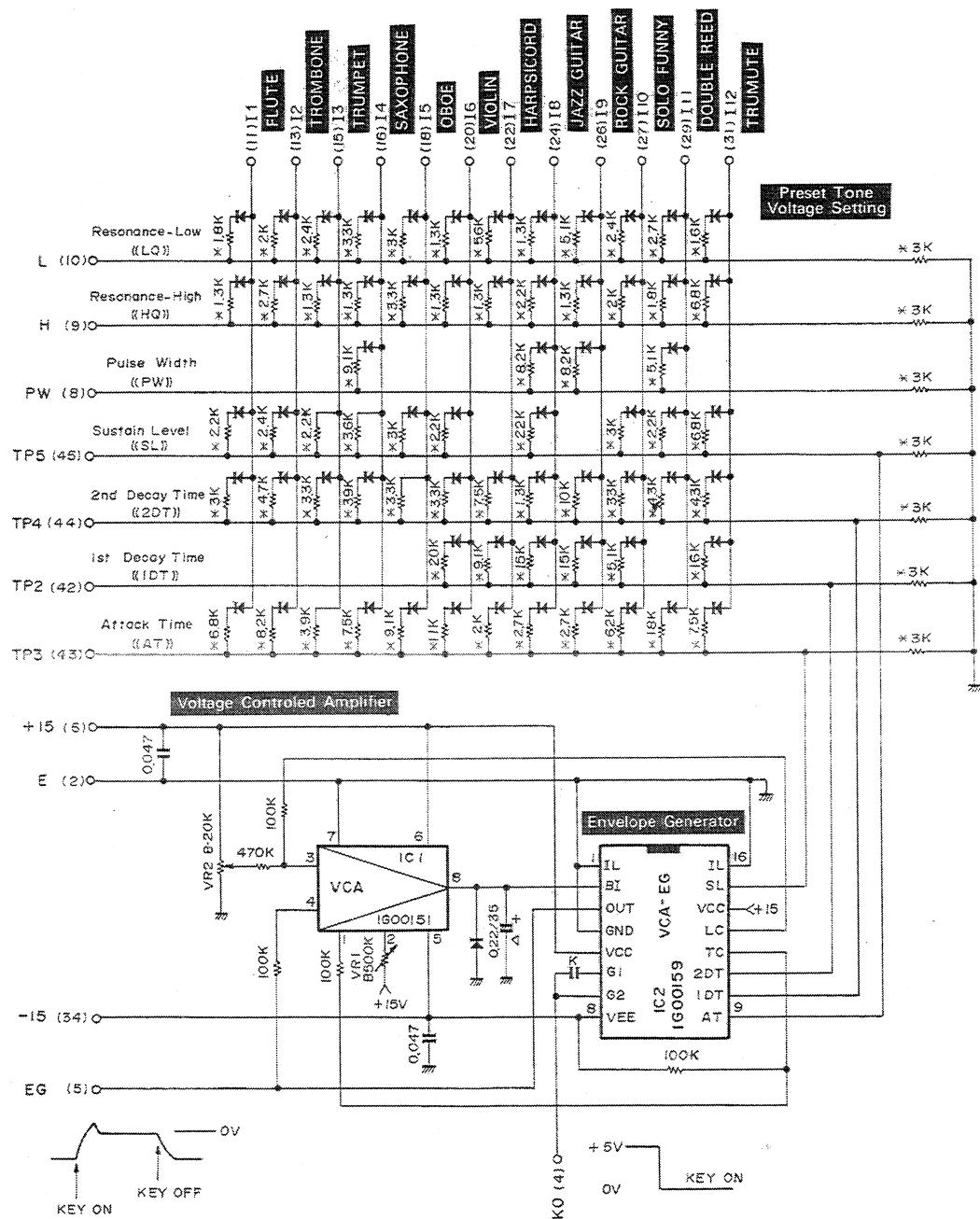
Notes)
 1. LC22042
 2. Transistor
 Tr1,2,4,5,6 :2SC734
 Tr3 :2SA561
 Tr7,8,9 :2SC458
 FET1,2 :2SK30
 3. IC1,2,3 :NJM4558D
 IC4 :CA3140T
 4. Diode :1S1555
 5. K marked :Ceramic Capacitor 1000pF

Adjustment



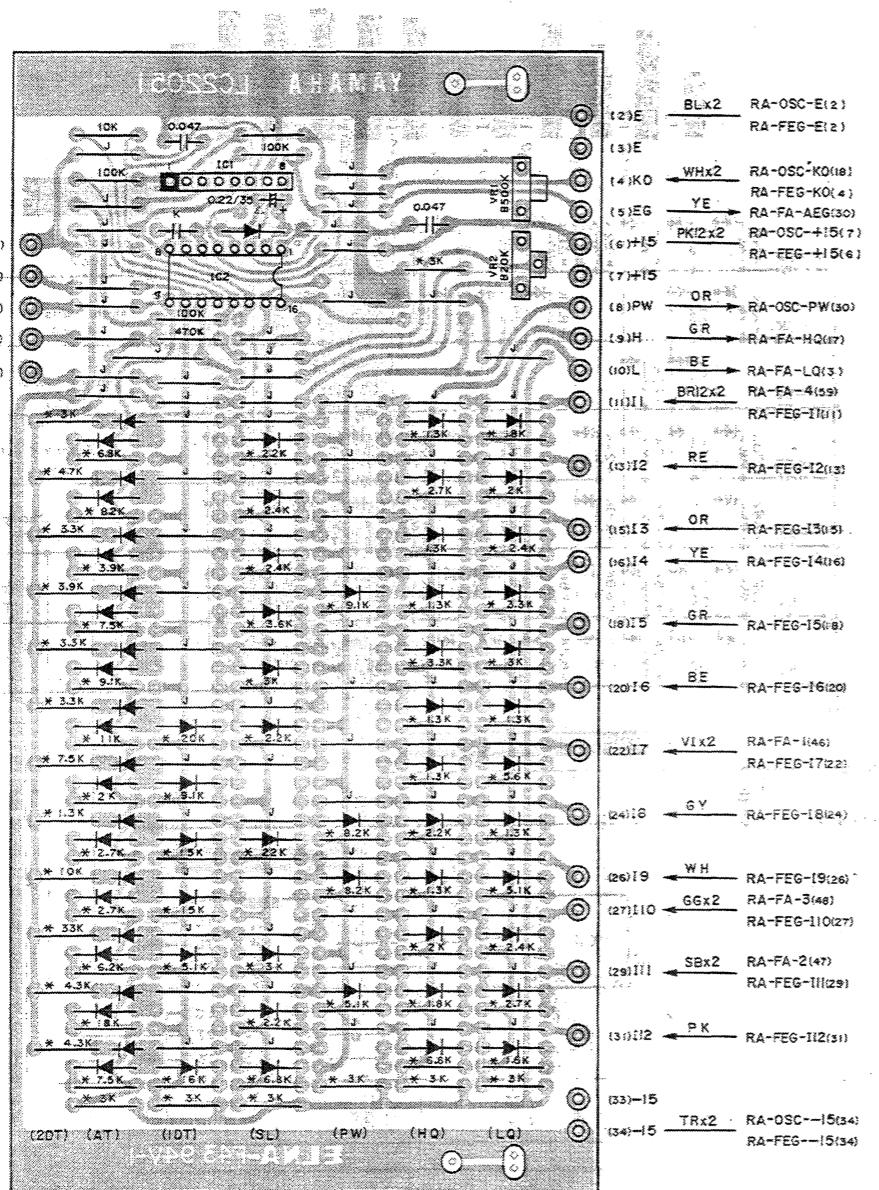
VR1 : Delay Vibrato OSC.
 VR2 : -do-.
 VR3 : Auto WAH P.M OSC.
 VR4 : KV Voltage Follower Zero adj
 VR6 : Touch Control Level

AEG Circuit Diagram



Notes) 1. IC1 : IGO0151
 2. Diode: 1S1555
 3. Resistor:
 X marked: $\pm 2.0\%$
 4. \triangle marked: Tantalum Capacitor
 K marked: Ceramic Capacitor 1000pF

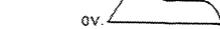
AEG Circuit Board & Wiring



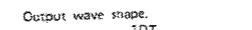
VCA-EG IC (IG00159)

This IC generates envelope wave shape which is supplied to VCA and control the tone volume.

1. IL Input of initial level.
Fixed to 0V

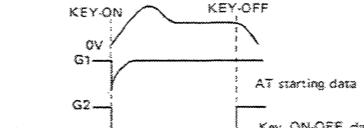


2. BI Input of buffer amplifier.
3. OUT The buffer amplifier is built in for the purpose of matching impedance.



4. GND Earth
5. Vcc +15V input power source.

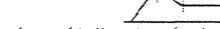
6. G1 Gate 1
7. G2 Gate 2



8. Vee -15V input power source.
9. AT Input of buffer voltage for determination of attack time.
Input of the voltage between zero V and 10V is provided so that the attack time is controlled from 1 mS until 1S.



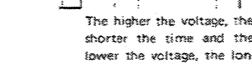
10. 1DT Input of buffer voltage for determination of decay time.
Input of the voltage between zero V and 10V is provided and the decay time is controlled from 10 mS until 10 second.



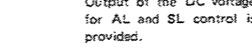
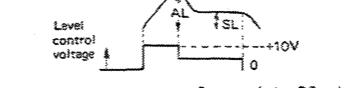
11. 2DT Input of buffer voltage for determination of release time.
Input of the voltage between zero V and 10V is provided and the time key-off until release is controlled from 10 mS until 10 S.



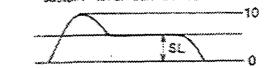
12. TC Output of time control.
Output of the DC voltage is produced so that the each time of Attack, 1st Decay and 2nd Decay are controlled.



13. LC Output of level control



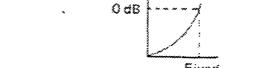
14. NC Not connected.
15. SL Input of buffer voltage for determination of the sustain level.
Input of the voltage between zero V and 10V is provided so that the sustain level can be controlled.



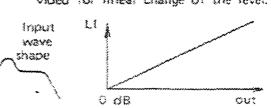
16. NC Not connected.

VCA IC (IG00151)

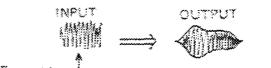
1. EI Input voltage for level control.
Input of the control voltage is provided for changing the level exponentially.



2. LI Input of level control voltage.
Input of the control voltage is provided for linear change of the level.



3. +IN Input
Input of the level modulated signal is provided.

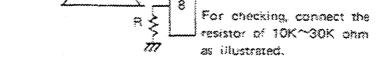


4. -IN Negative feed back.
Normally unused.

5. Vee -15V input power source.
6. Vcc +15V input power source.

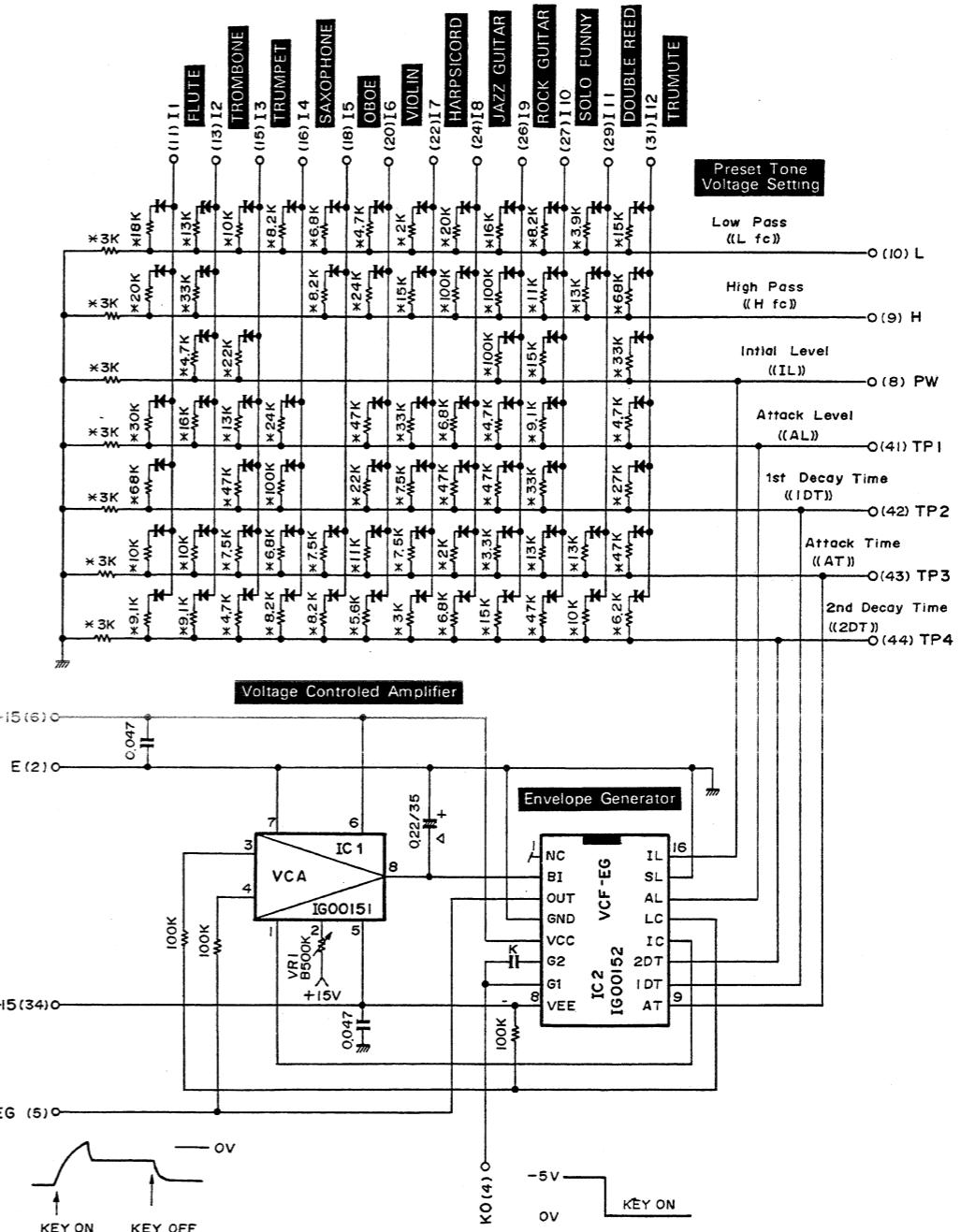
7. GND Earth
8. OUT Output

Output of the following wave shape is produced.



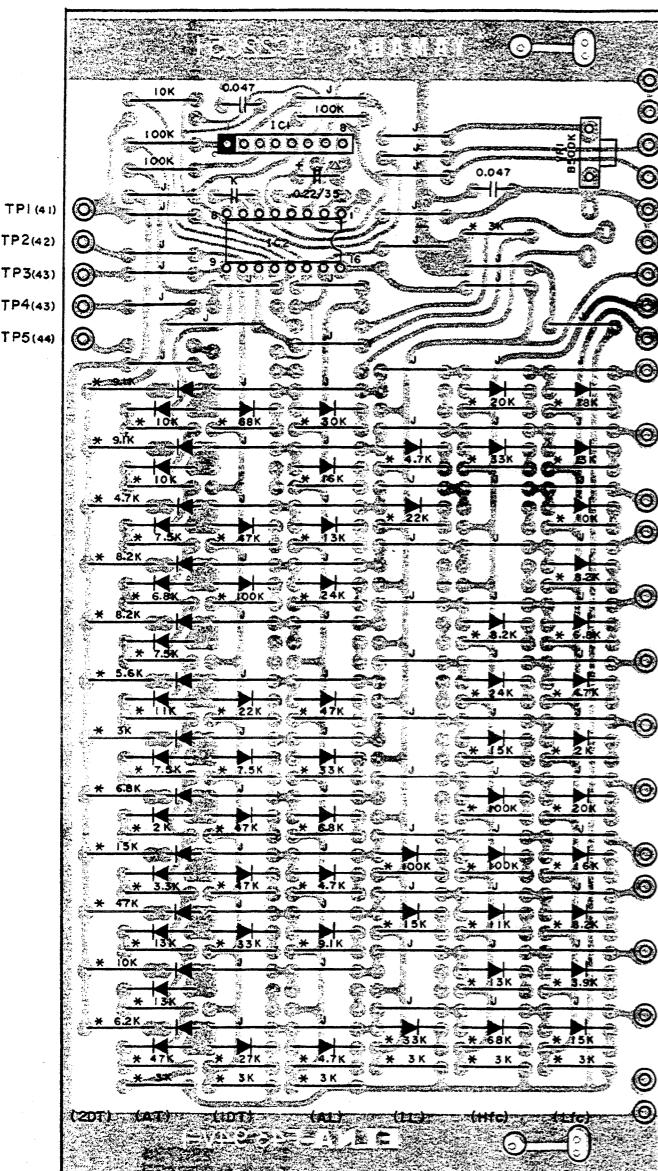
For checking, connect the resistor of 10K~30K ohm as illustrated.

FEG Circuit Diagram



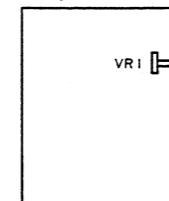
Notes) 1. IC1 : IG00151
 2. Diode: 1S1555
 3. Resistor
 × marked: ±2.0%
 4. △ marked: Tantalum Capacitor
 K marked: Ceramic Capacitor 1000pF

FEG Circuit Board & Wiring



Notes)
 1. LC22051
 2. IC1 :IG00151
 IC2 :IG00152
 3. Diode :1S1555
 4. * marked Resistor :All ±2%
 5. Δ marked :Tantalum Capacitor
 K marked :Ceramic Capacitor 1000pF

Adjustment



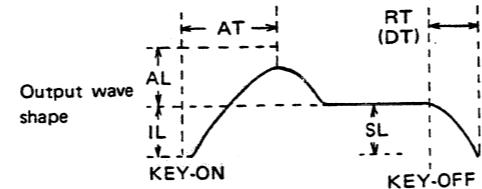
VR1 : Attack Time

VCF-EG IC (IG00152)

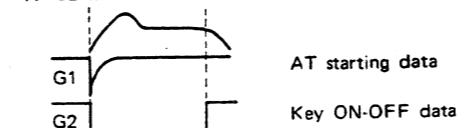
This IC generates envelope wave shape which is supplied to VCF and control the tone color.

1. NC Not connected
2. BI Input of buffer amplifier.
3. OUT Output of buffer amplifier.

The buffer amplifier is built in for the purpose of matching impedance.

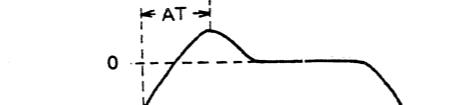


4. GND Earth
5. Vcc +15V input power source.
6. G1 Gate 1
7. G2 Gate 2

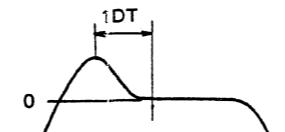


8. Vee -15V input power source.
9. AT Input of buffer voltage for determination of the attack time.

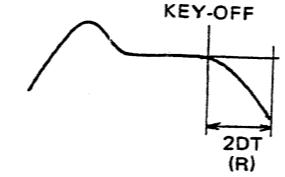
Input of the voltage between zero V and 10V is provided and the attack time is controlled from 1 mS until 1S.



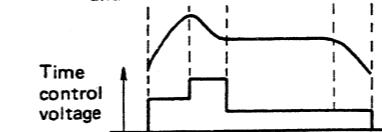
10. 1DT Input of buffer voltage for determination of the decay time.
- Input of the voltage between zero V and 10V is provided and the first decay time is controlled from 10ms until 10 S.



11. 2DT Input of buffer voltage for determination of the release time.
- Input of the voltage between zero V to 10V is provided and the time from KEY-ON until release is controlled from 10m second until 10 second.

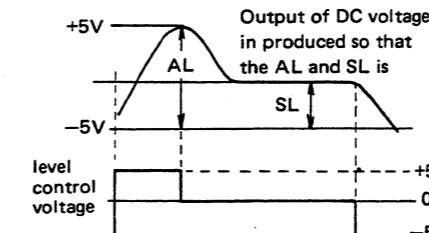


12. TC Output of the time control.
- Output of DC voltage is produced so that the each time of attack, 1DT and 2DT are controlled.



The higher the voltage, the shorter the time and the lower the voltage the longer the time.

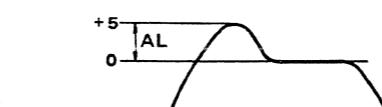
13. LC Output of level control.



The higher the voltage, the higher the level and the lower the voltage the lower the level.

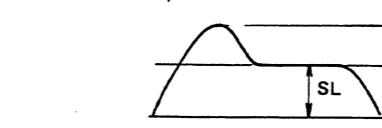
14. AL Input of buffer voltage for determination of attack level.

Input of the voltage between (0V~10V is provided and the attack level is controlled from 0V until +5V.



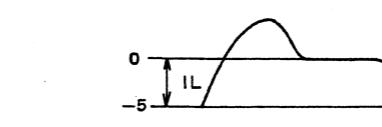
15. SL Input of buffer voltage for determination of the sustain level.

Normally fixed to zero(0) volt.



16. IL Input of buffer voltage for determination of the initial level.

Input of the voltage between zero 0V and ten 10V is provided and the initial level is controlled from zero to minus 5 volt.

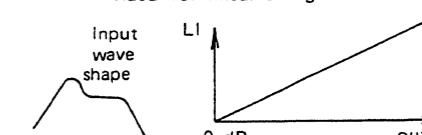


VCA IC (IG00151)

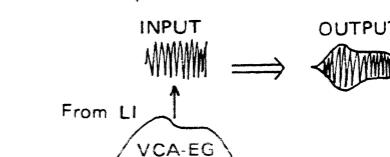
1. EI Input voltage for level control.
- Input of the control voltage is provided for changing the level exponentially.



2. LI Input of level control voltage.
- Input of the control voltage is provided for linear change of the level.



3. +IN Input
- Input of the level modulated signal is provided.

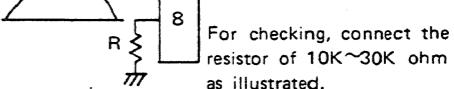


4. -IN Negative feed back.
- Normally unused.

5. Vee -15V input power source.
6. Vcc +15V input power source.

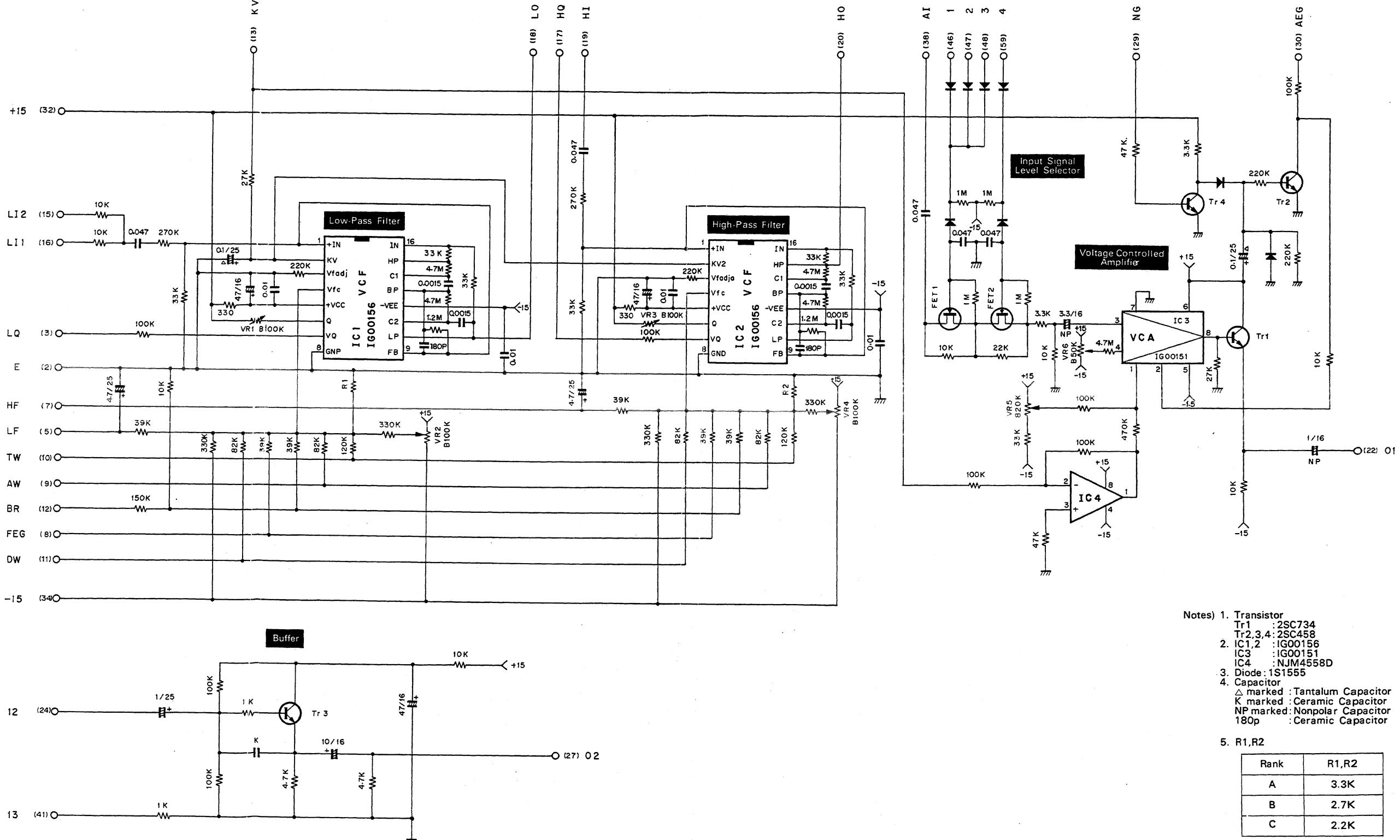
7. GND Earth

8. OUT Output
- Output of the following wave shape is produced.

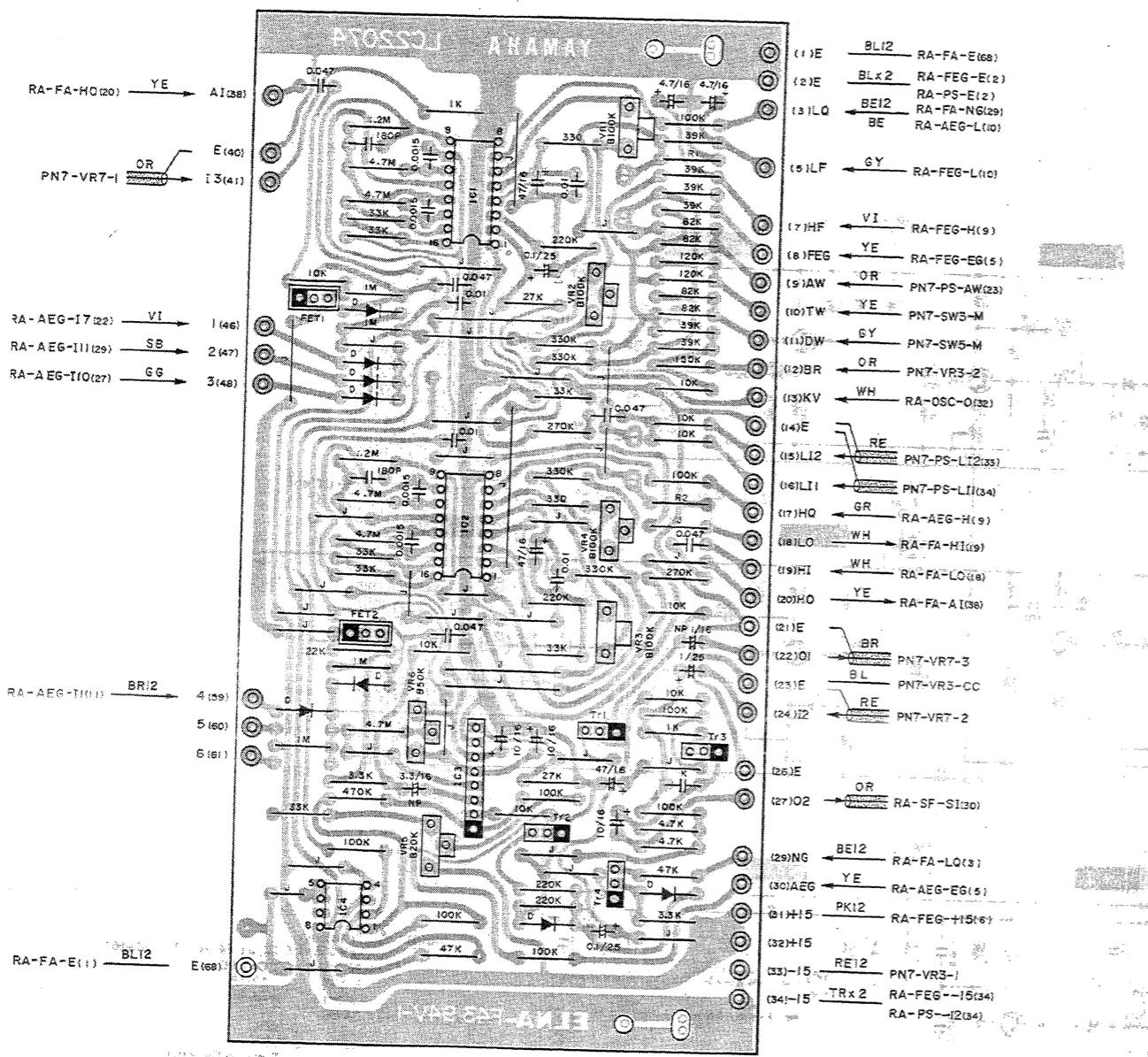


For checking, connect the resistor of 10K~30K ohm as illustrated.

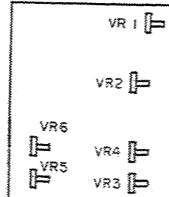
FA Circuit Diagram



FA Circuit Board & Wiring



Adjustment



VR1 : VCF-LP Level
VR2 : VCF-LP Q
VR3 : VCF-HP Level
VR4 : VCF-HP Q
VR5 : VCA-Gain
VR6 : Click Level

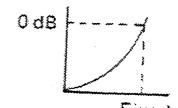
KEP-NA03781-6Z △

VCF IC (IG00156)

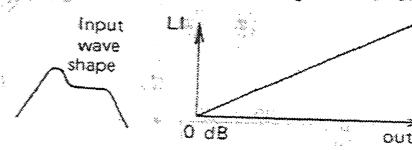
1. AI Signal Input
Input signals from VCO and WSC are provided to this pin.
2. KV Key voltage input
In order to change the tone color according to the tone range of keyboard, the designated voltage of the key will supplied to the pin. (0.25-4.0V)
3. fc Adjustment of the cut off frequency.
Set the control currency of the cut off frequency.
4. Vf Input of the cut off voltage.
Input voltage of cut off frequency is supplied to this pin so that the tone color can be changed. The center point of the cut off frequency can be also set.
When the VK is 0.25V and Vf is 5V, the cut off frequency is set to just 1KHz
5. Vcc +15V input power source
6. QO Q adjustment.
The Q control current sets the Q equal to 5, when VO is 0 volt.
7. VQ Input of the voltage for Q control.
Q is variable according to the control voltage supplied.
When the control voltage is 0V (Max.), Q=5
When the control voltage is 10V (Min.), Q=0.5
8. GND Earth
9. FB Q feed back
This is the feed back output pin for the Q control by which the Q is determined.
10. LP Low-pass output
-6dB/1V
The output of lower frequencies are produced.
11. C2 C pin for determination of the cut off frequency.
12. Vee -15V power source.
13. BP Band-pass output
+12dB/1V
The output of intermediate frequencies are produced.
14. C1 C pin for determination of the cut off frequency.
15. HP Hi-pass output
+6dB/1V
The output of higher frequencies are produced.
16. IN Input of feed back
The input signal for determination of cut off frequency.

VCA IC (IG00151)

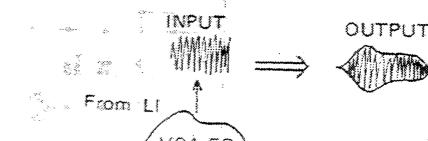
1. EI Input voltage for level control.
Input of the control voltage is provided for changing the level exponentially.



2. LI Input of level control voltage.
Input of the control voltage is provided for linear change of the level.

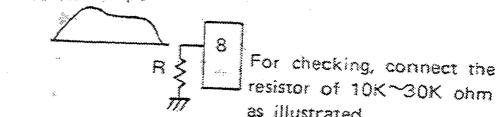


3. +IN Input
Input of the level modulated signal is provided.

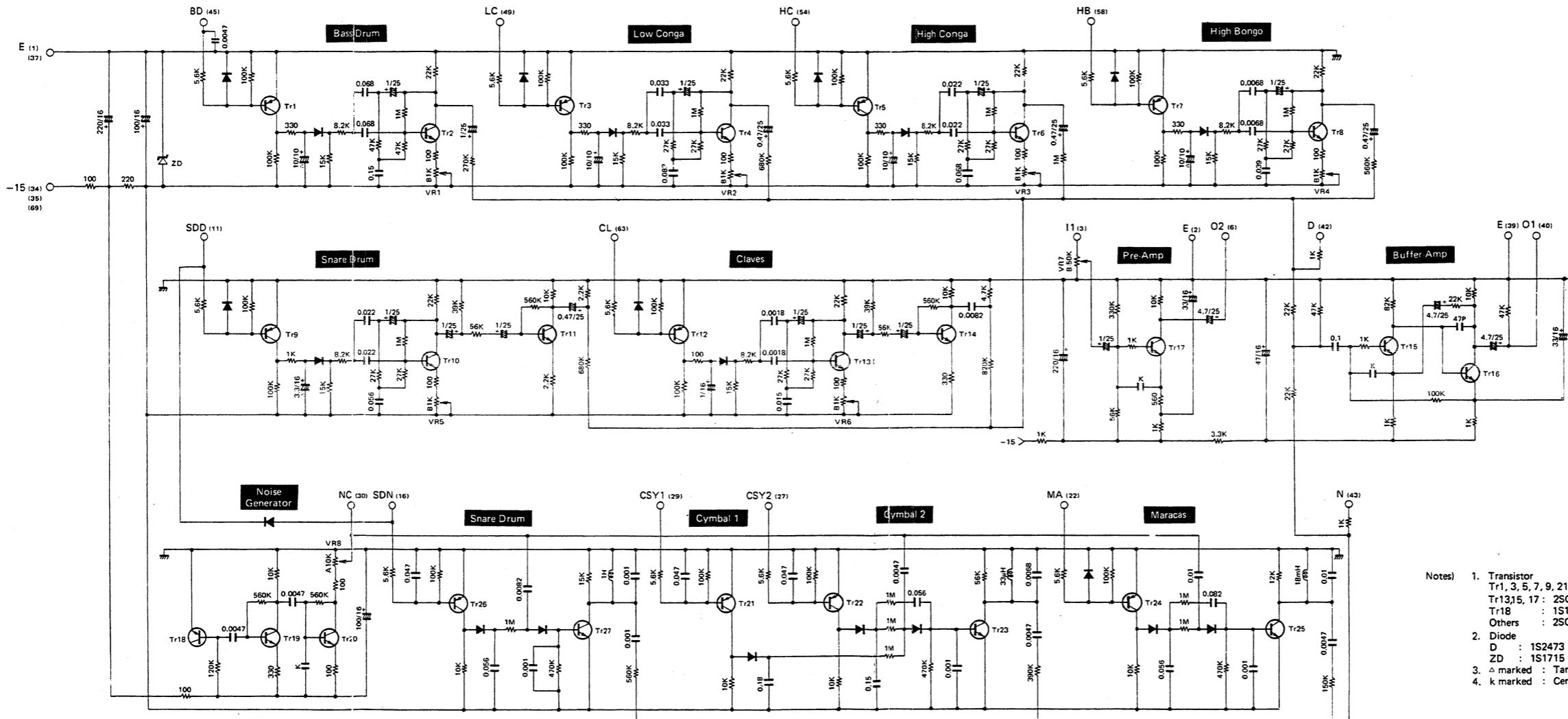


4. -IN Negative feed back.
Normally unused.
5. Vee -15V input power source.
6. Vcc +15V input power source.
7. GND Earth
8. OUT Output

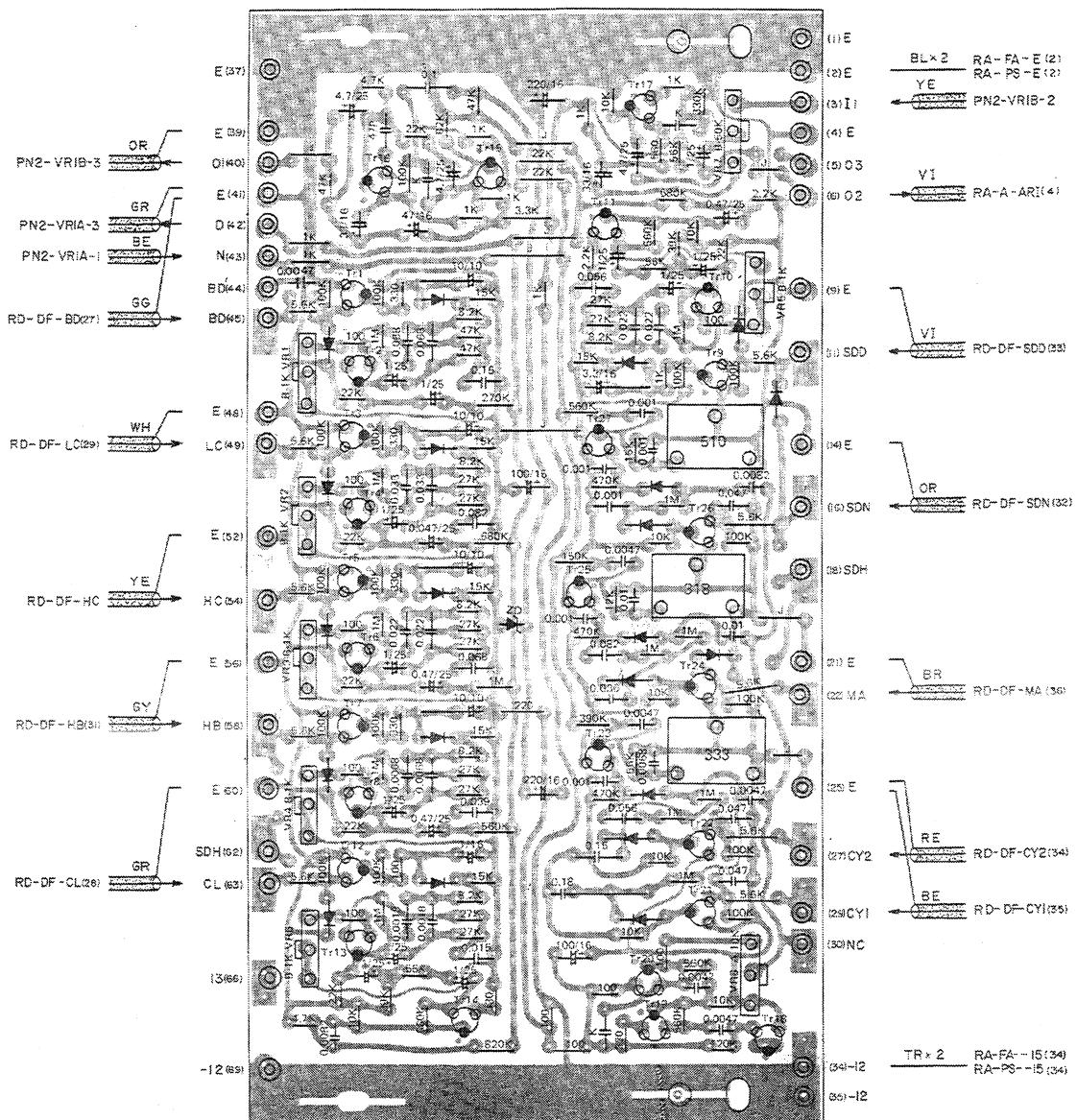
Output Wave Shape
For checking, connect the resistor of 10K~30K ohm as illustrated.



RS Circuit Diagram

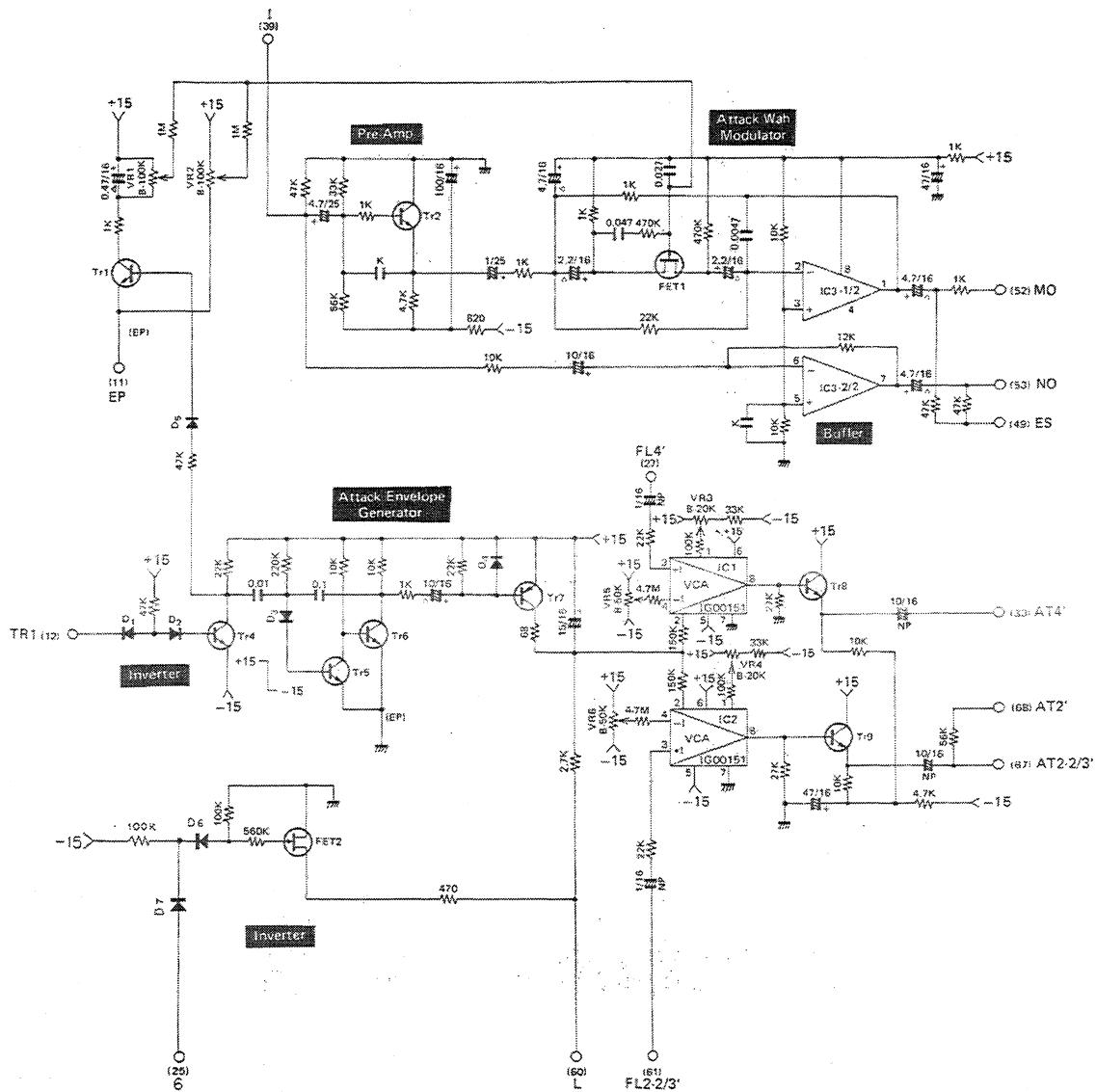


RS Circuit Board & Wiring

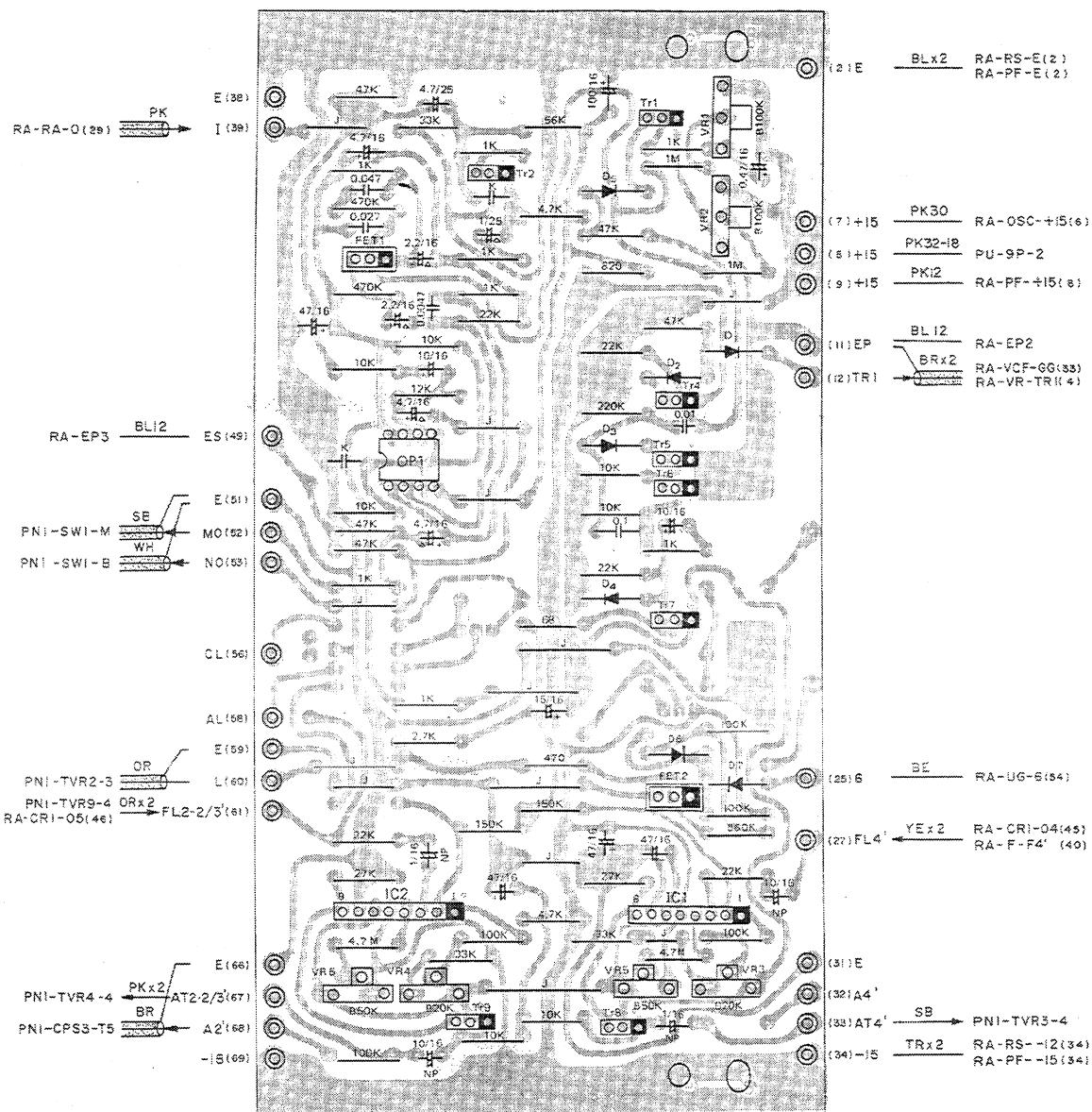


- Notes)
1. LC22581
 2. Transistor
T₁, 3, 5, 7, 9, 21, 22, 24, 26, 12 : 2SA561
T₁₃, 15, 17 : 2SC458LG
T₁₈ : 1S1715P
Others : 2SC458
 3. K : Ceramic Capacitor
 4. Diode : 1S2473
 5. .. marked : Tantalum Aluminum
 6. V_{R1} ~ 8 : 18K-3-1 4US (Short Shaft Type)

PS Circuit Diagram



PS Circuit Board & Wiring

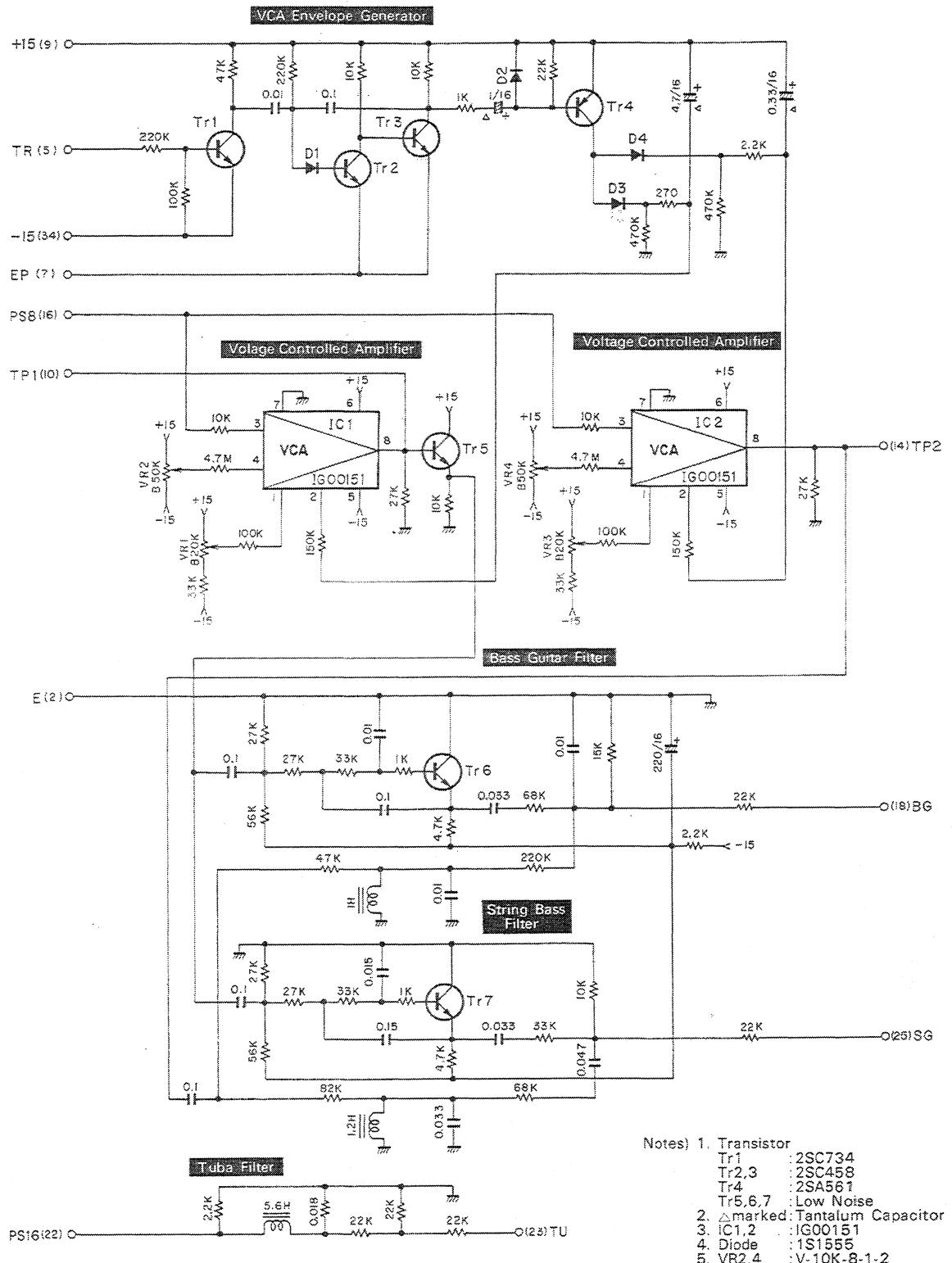


Notes)

1. LC2194Z
2. Transistor

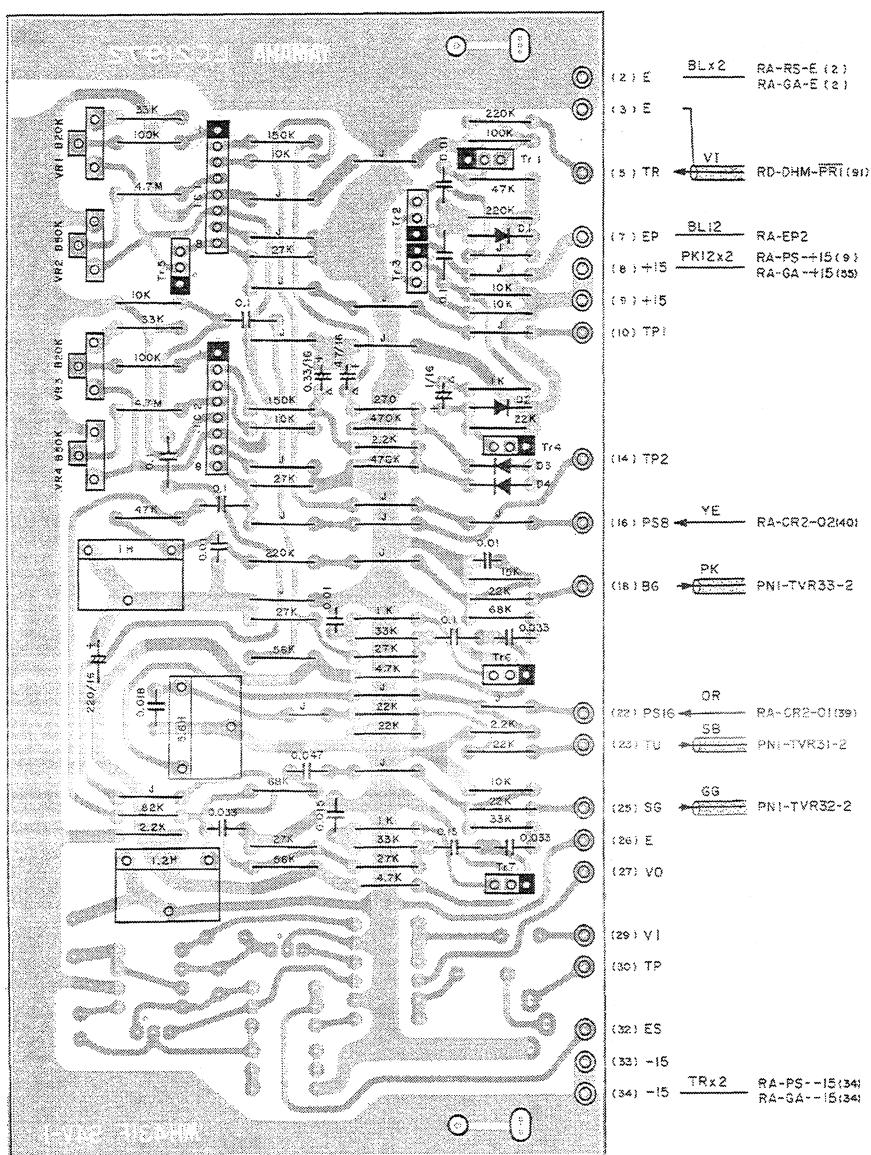
| | | |
|---------|---|-----------|
| Tr1,5,6 | : | 2SC458 |
| Tr2,8,9 | : | Low Noise |
| Tr4 | : | 2SC734 |
| Tr7 | : | 2SA561 |
| FET1,2 | : | 2SK34 |
3. IC1,2 :IG00151
4. OP 1 :NJM4558D
5. Diode :1S1555
6. Δ marked :Tantalum Capacitor
K marked :Ceramic Capacitor 1000pF
NP marked :Nonpolar Capacitor
7. VR1,2 :18K-3-1
VR3~6 :V-10K-S-1-2

PF Circuit Diagram



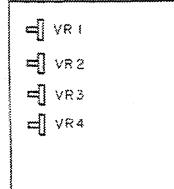
Notes) 1. Transistor
 Tr1 : 2SC734
 Tr2,3 : 2SC458
 Tr4 : 2SA561
 Tr5,6,7 : Low Noise
 2. ▲marked: Tantalum Capacitor
 3. IC1,2 : IGO0151
 4. Diode : 1S1555
 5. VR2,4 : V-10K-8-1-2

PF Circuit Board & Wiring



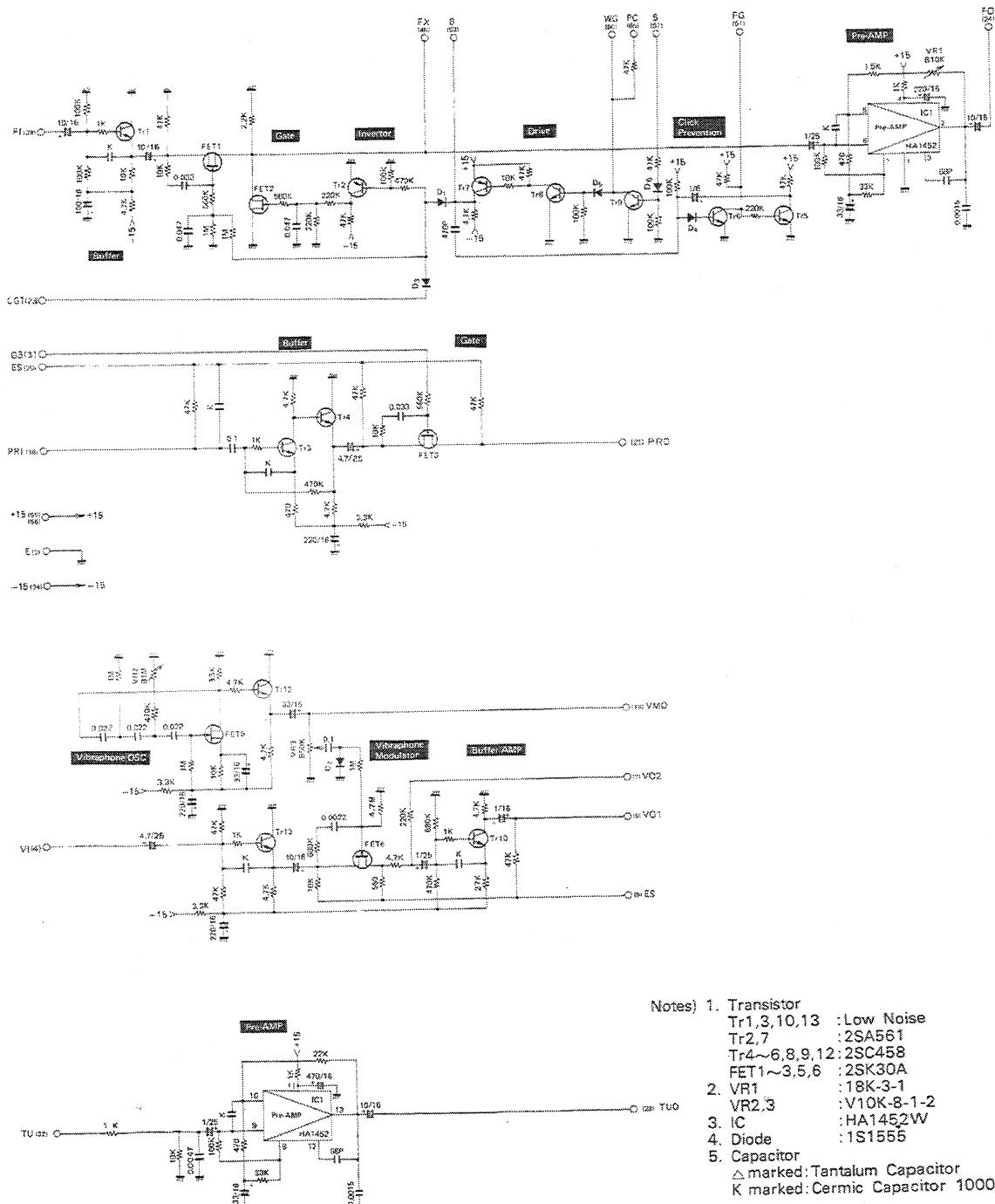
Notes)
 1. LC21972
 2. Transistor
 Tr1 :2SC734
 Tr2,3 :2SC458
 Tr4 :2SA561
 Tr5~7 :Low Noise
 FET1 :2SK34
 3. IC1,2 :IG00151
 4. Diode :1S1555
 5. VR1~4 :V-10K-8-1-2
 6. Δ marked :Tantalum Capacitor
 K marked :Ceramic Capacitor 1000pF

Adjustment



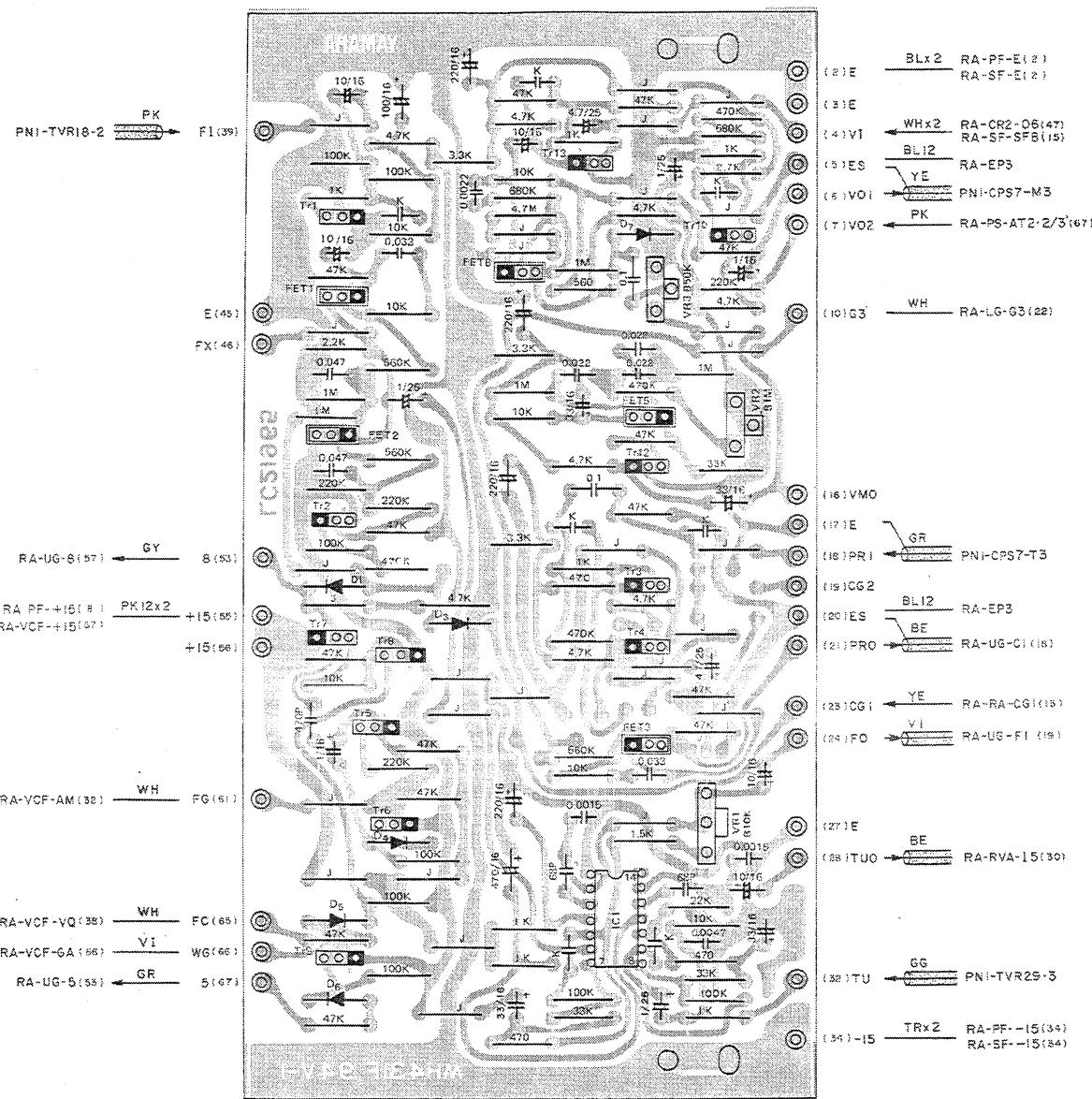
VR1 : B-G Release Output Level
 VR2 Click Level
 VR3 : B-G Output Level
 VR4 Click Level

GA Circuit Diagram

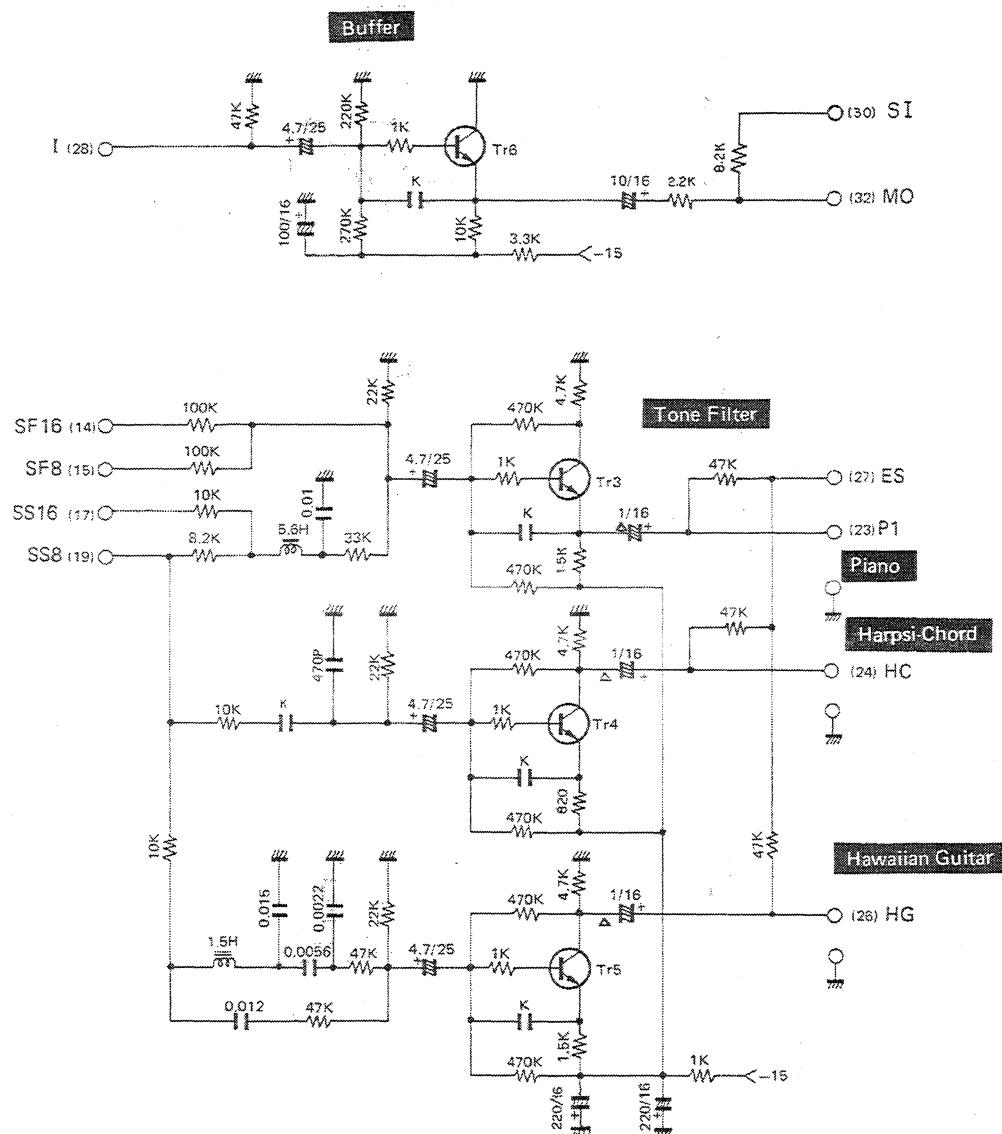


KEC-4612-6Z △

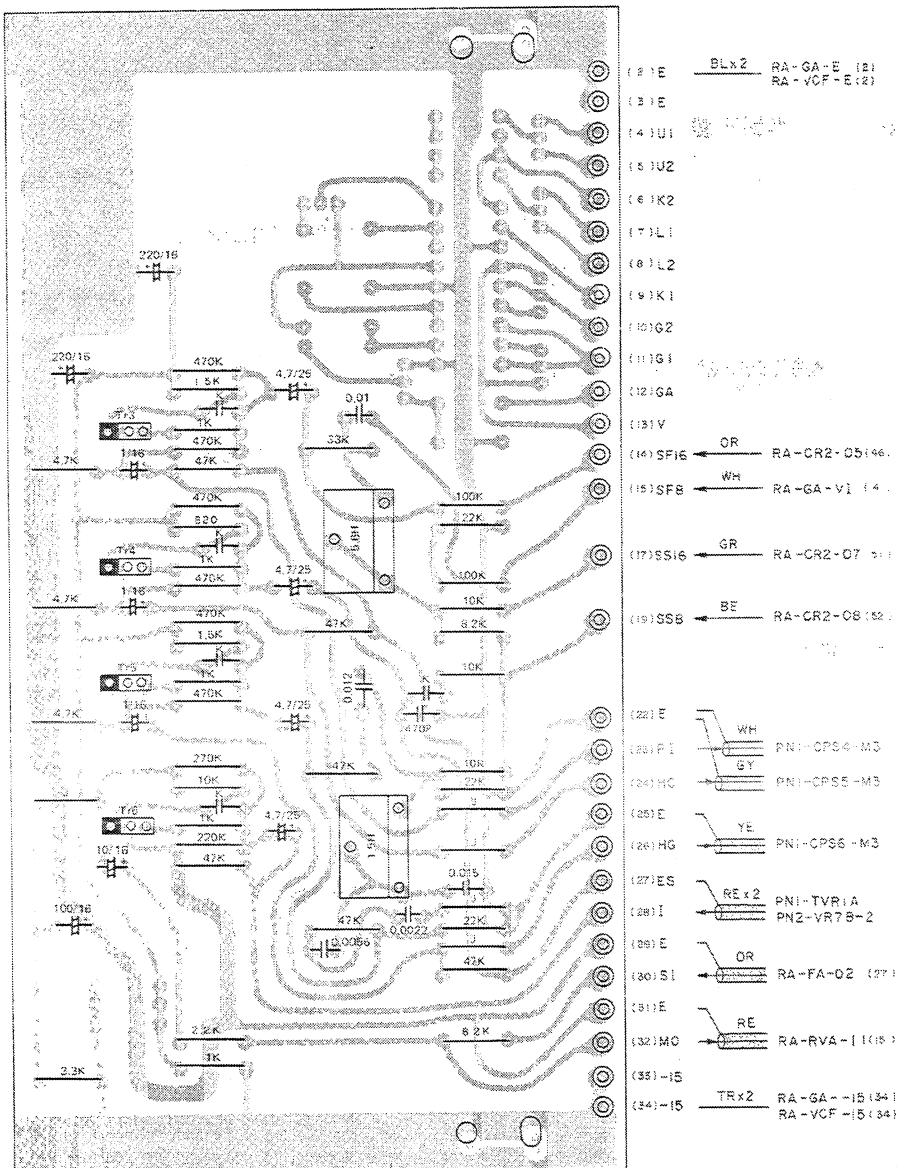
GA Circuit Board & Wiring



- Notes)
1. LC21965
 2. Transistor
Tr4~6,8,9,12 :2SC458
Tr2,7 :2SA561
Tr1,3,10,13 :Low Noise
FET1~3,5,6 :2SK30A
 3. Diode :1S1555
 4. VR1 :18K-3-1
VR2,3 :10K-8-1-2
 5. Δ marked :Tantalum Capacitor
K marked :Ceramic Capacitor 1000pF
 6. IC1 :HA1452W

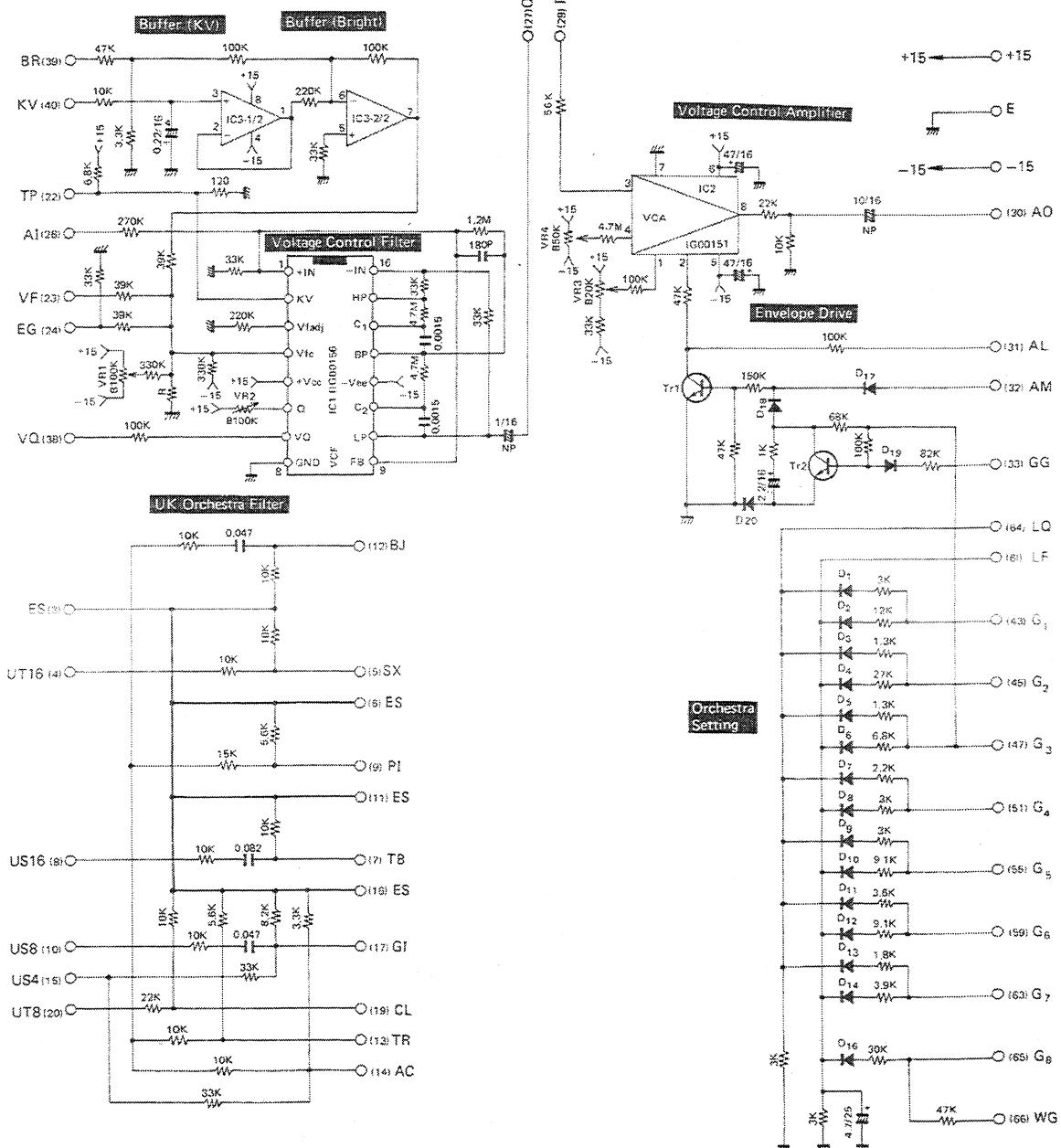
SF Circuit Diagram

SF Circuit Board & Wiring

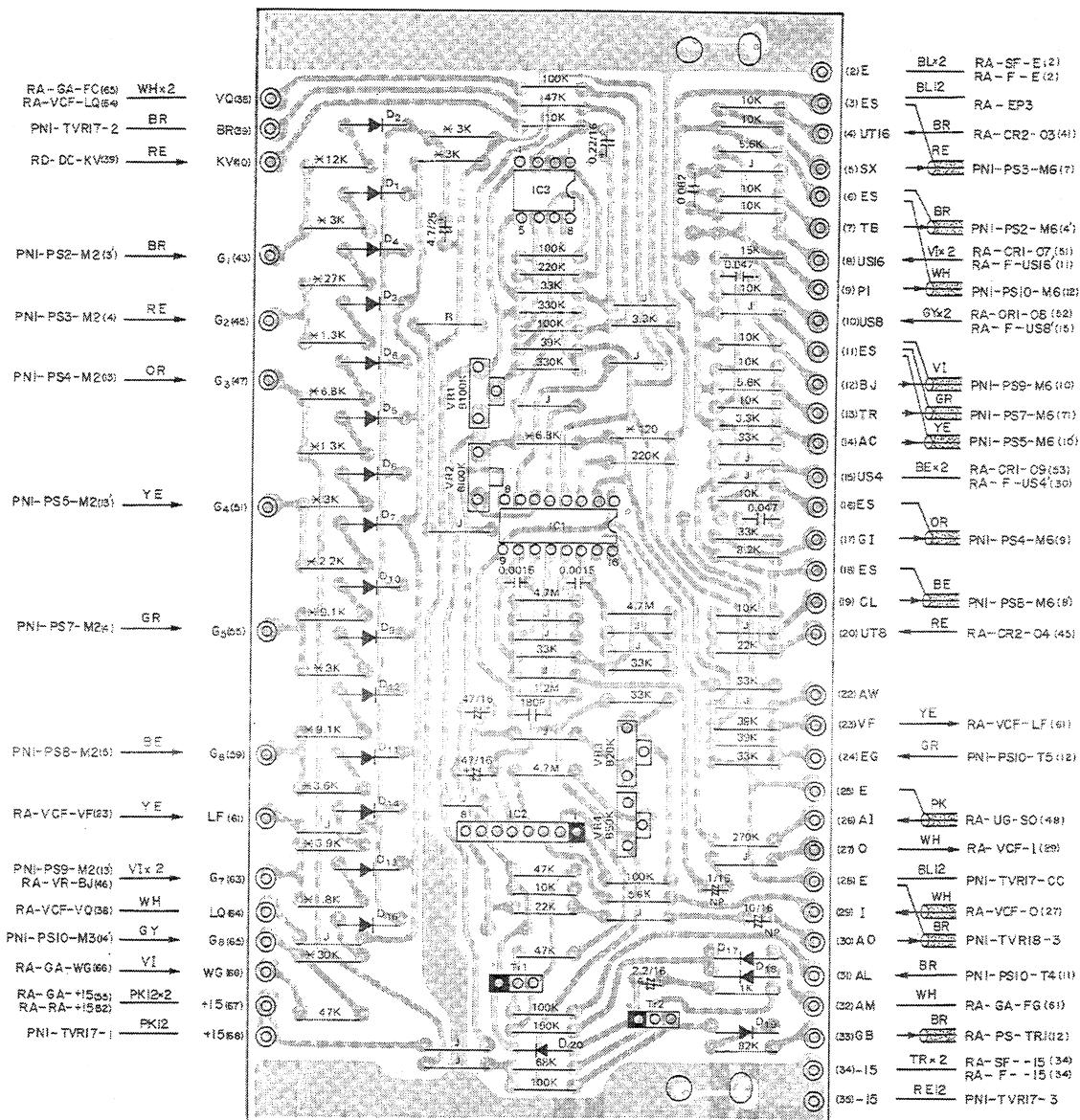


Notes) 1. LC21993
 2. Transistor : All Low Noise
 3. Diode : 1S1555
 4. Δ marked : Tantalum Capacitor
 K marked : Ceramic Capacitor 1000pF

VCF Circuit Diagram



VCF Circuit Board & Wiring

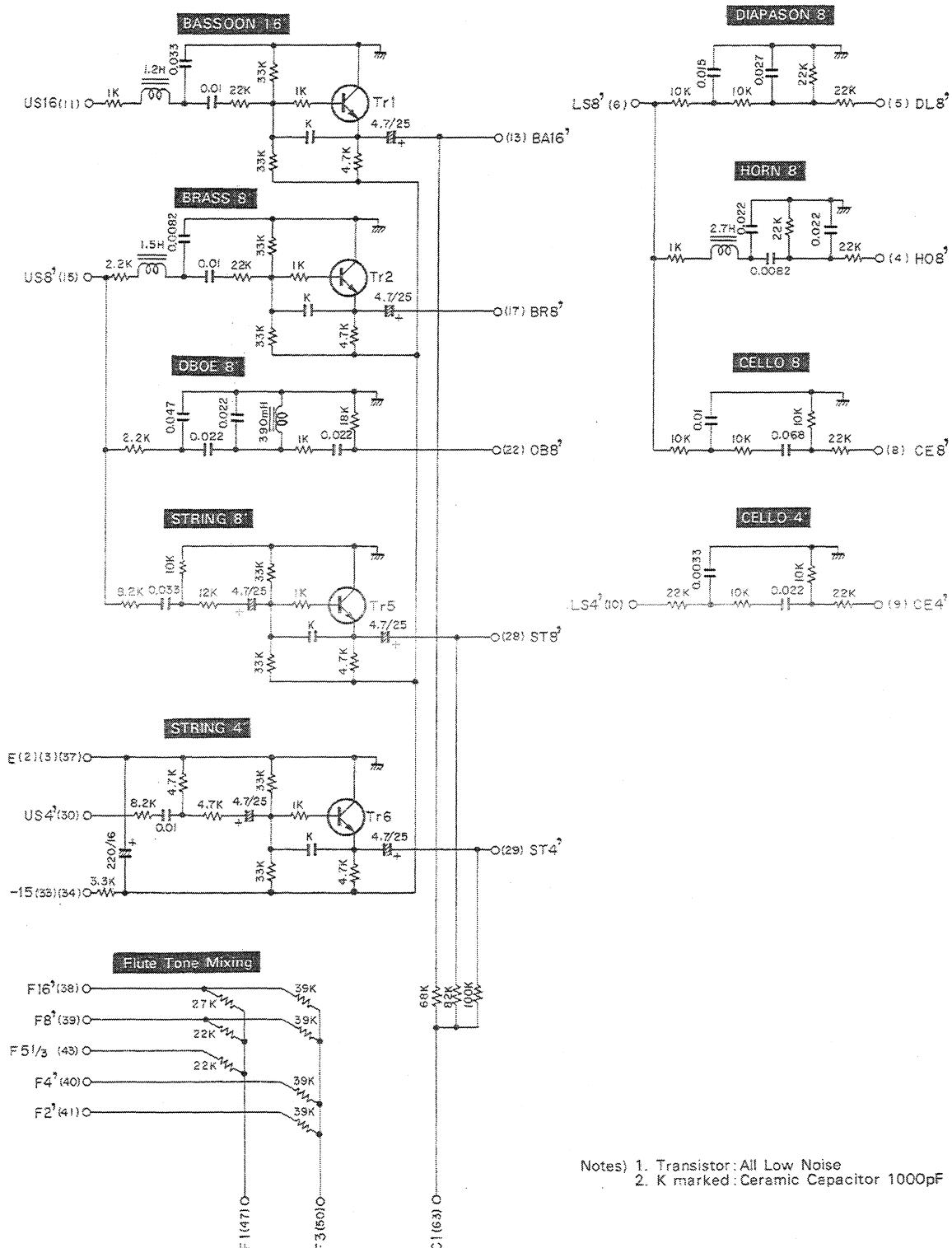


- Notes)
1. LC21983
 2. Transistor
Tr1, 2 : 2SC458
 3. IC1 : 1G00156
 - IC2 : 1G00151
 - IC3 : NJM4558D
 4. Diode : 1S1555
 5. VR2 : V10K4A-5-2
 - VR1, 3, 4 : V10K8-1-2
 6. Δ marked : Tantalum Capacitor
 - NP marked : Nonpolar Capacitor
 7. Xmarked Resistor : All ±2%
 8. R

| Rank of IC1 | Resistance |
|-------------|------------|
| A | 2.2K |
| B | 2.0K |
| C | 1.8K |

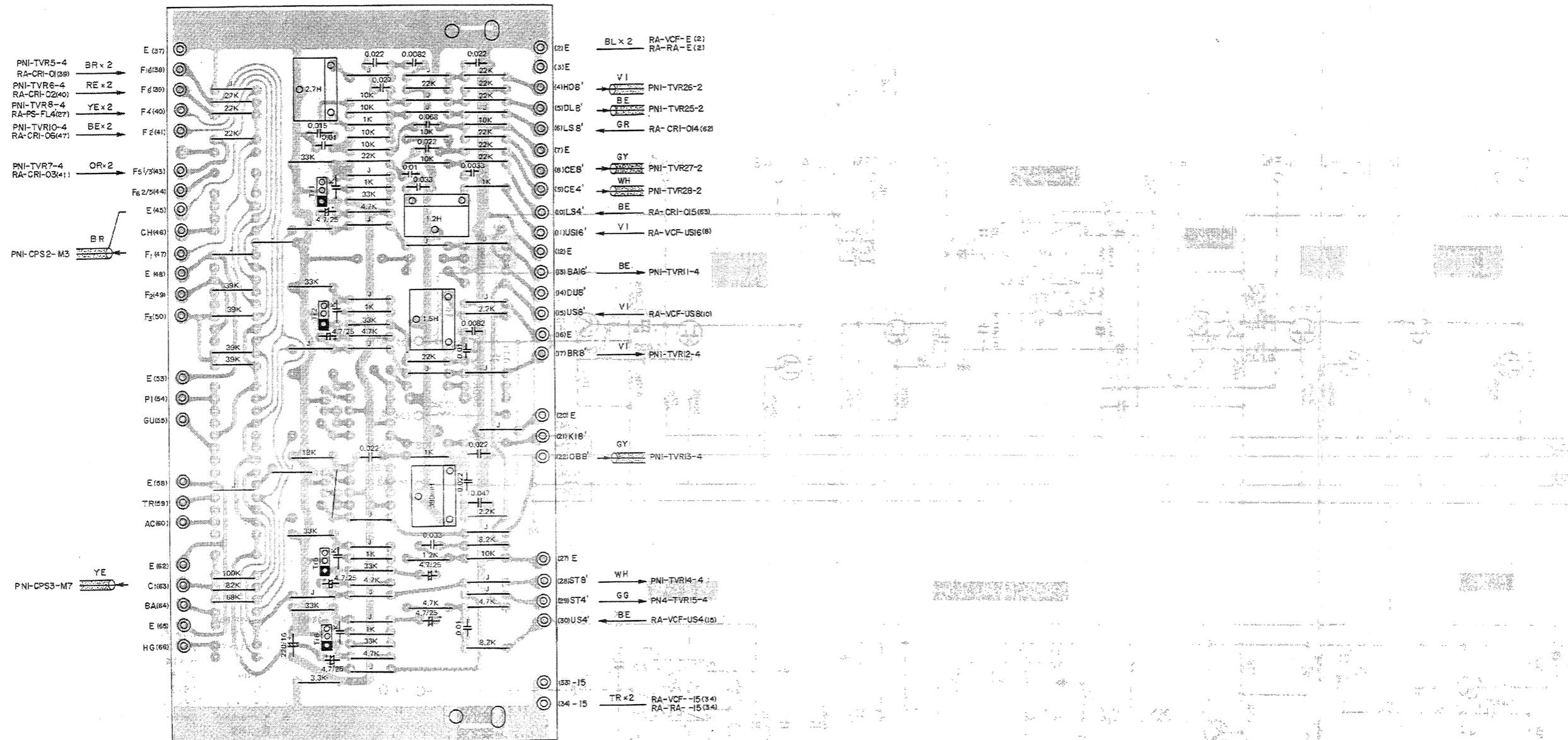
KEP-N403785-6Z ▲

F Circuit Diagram



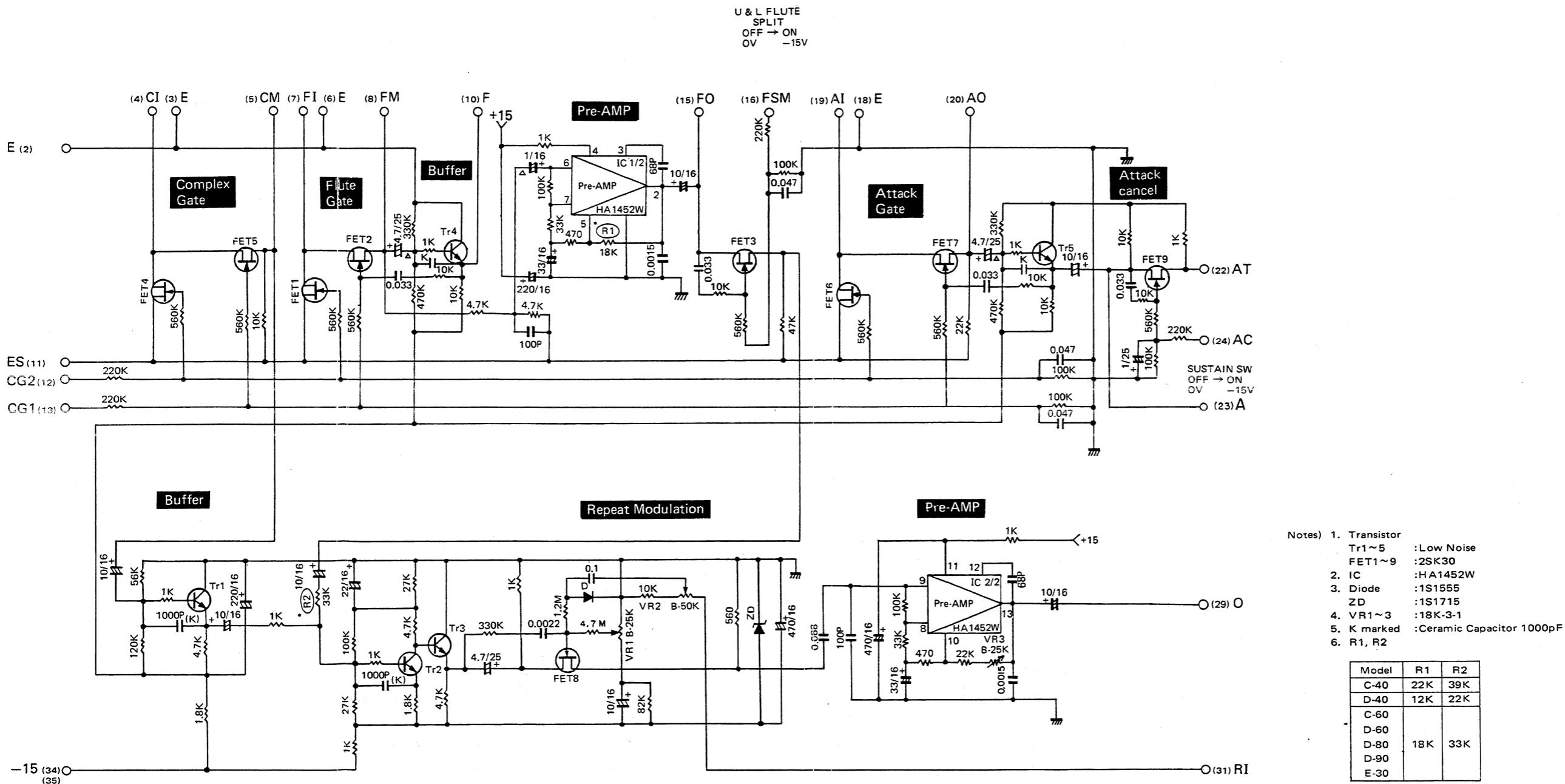
Notes) 1. Transistor: All Low Noise
 2. K marked: Ceramic Capacitor 1000pF

F Circuit Board & Wiring

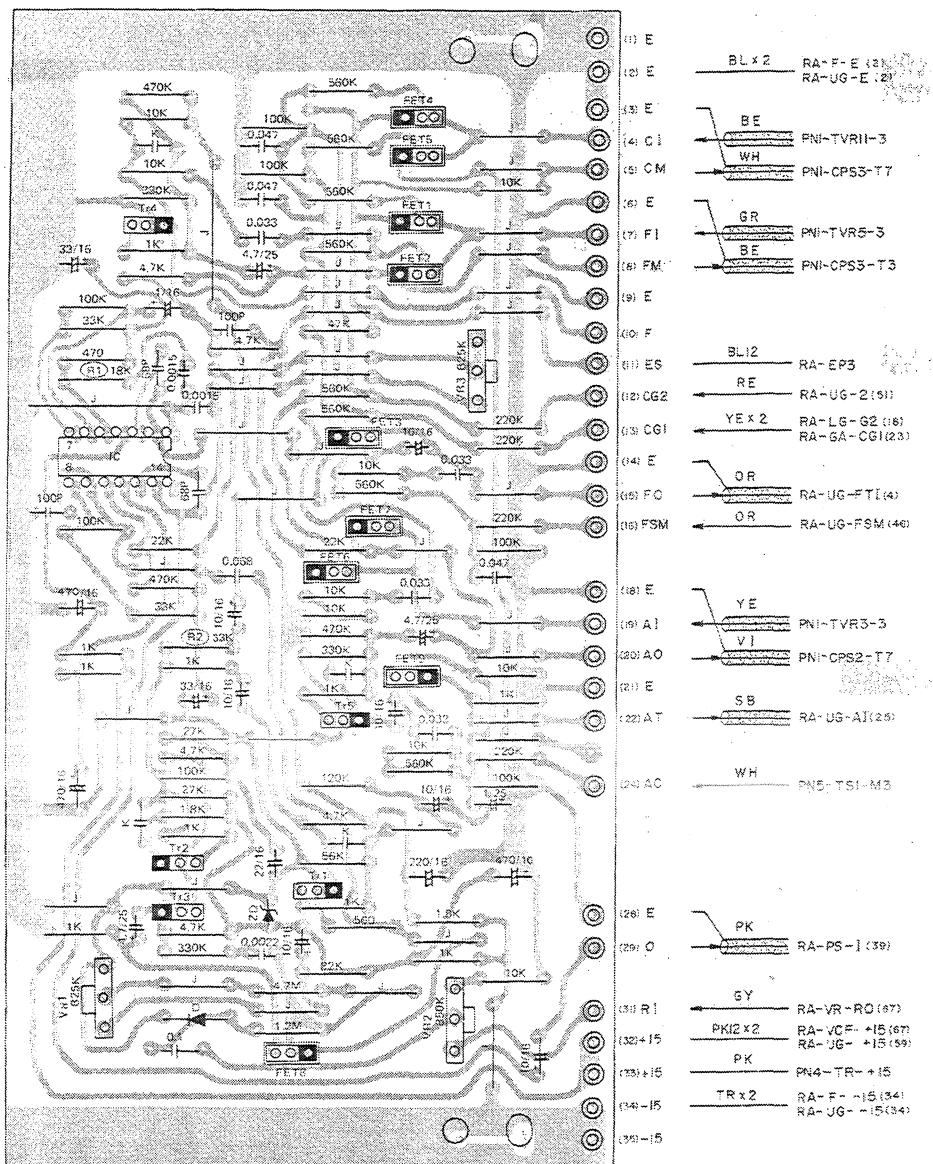


Notes) 1. Circuit Board No : LC21950
2. Transistor : Low Noise
3. K marked : Ceramic Capacitor 1000PF

RA Circuit Diagram



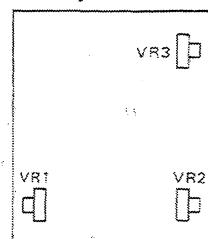
RA Circuit Board & Wiring



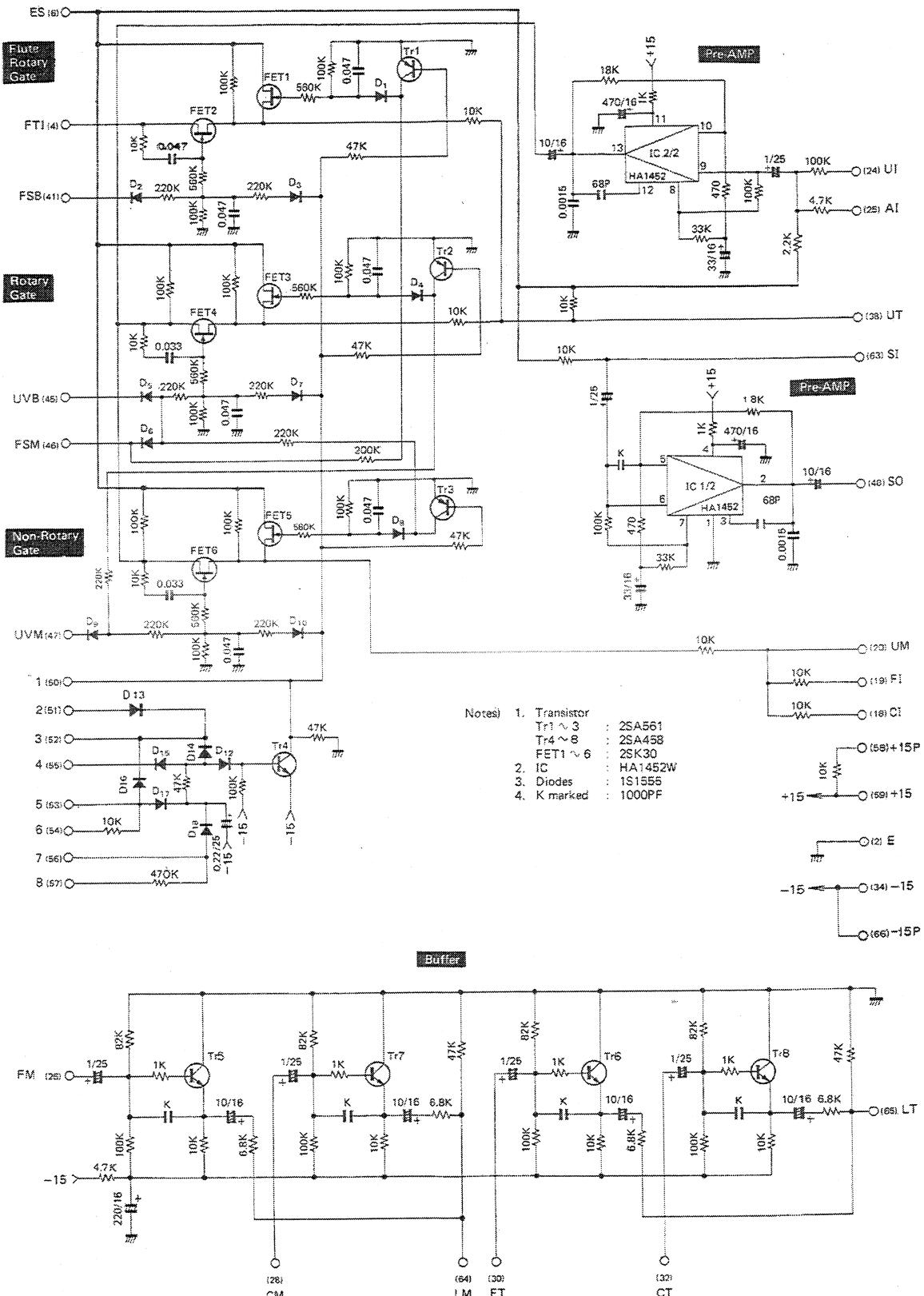
Notes:
 1. LC22002
 2. Transistor
 Tr1~5 :Low Noise
 FET1~9 :2SK30
 3. IC :HA1452W
 4. Diode :1S1555
 5. VR1~3 :18K-3-1
 6. ZD :1S1715
 7. K marked :Ceramic Capacitor 1000pF
 Δ marked :Tantalum Capacitor
 8. 68pF, 100pF :Ceramic Capacitor
 9. R1, R2

| Sheet No. | Model Name | R1 | R2 |
|-----------|------------|-----|-----|
| NA03816 | C-40 | 22K | 39K |
| NA03923 | D-40 | 12K | 22K |
| | C-60 | | |
| | D-80 | | |
| | E-30 | 18K | 33K |
| | D-90 | | |
| | D-60 | | |

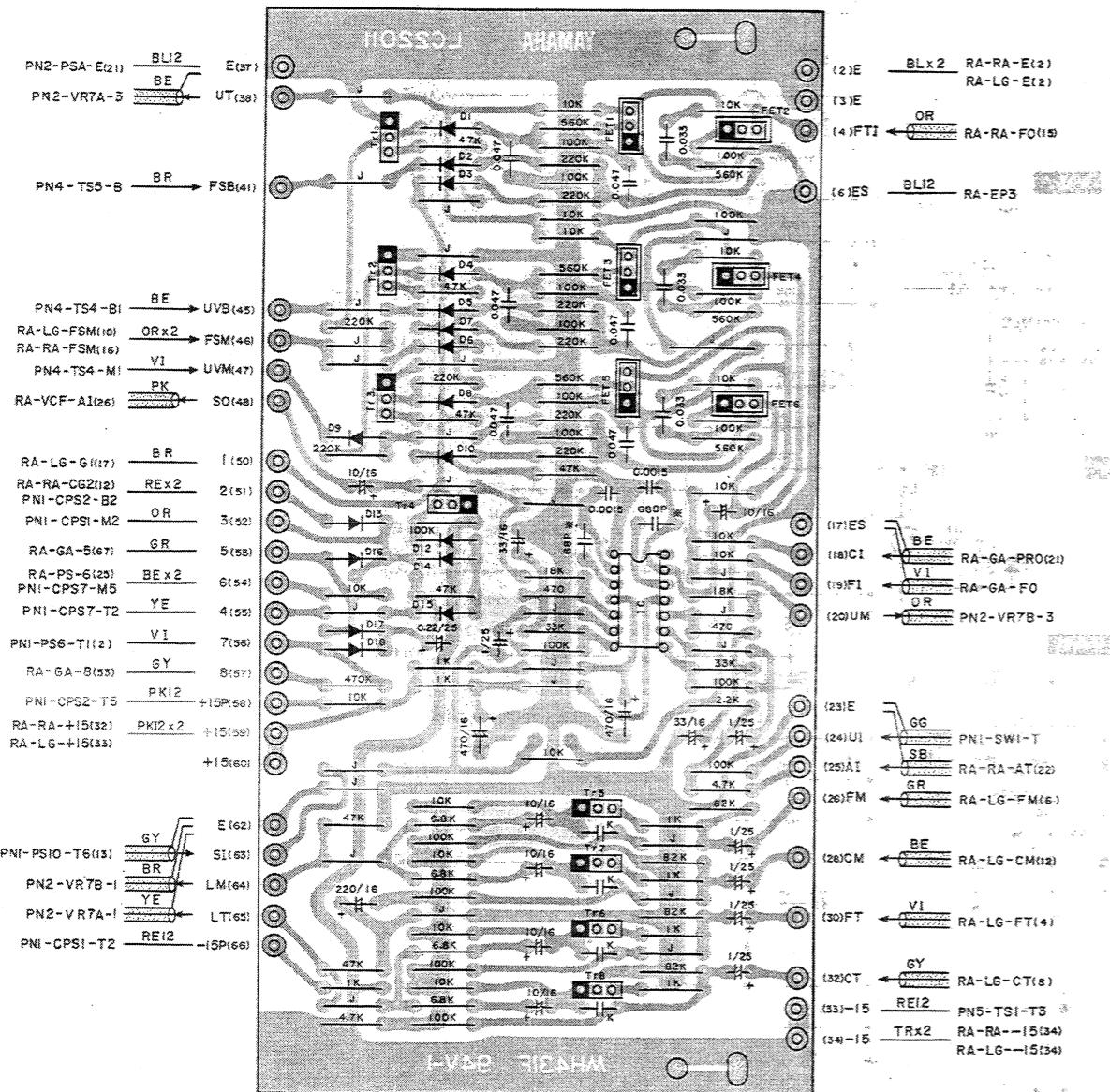
Adjustment



VR1 : Gain Adjustment
 VR2 : Modulation Adjustment
 VR3 : Gain Adjustment

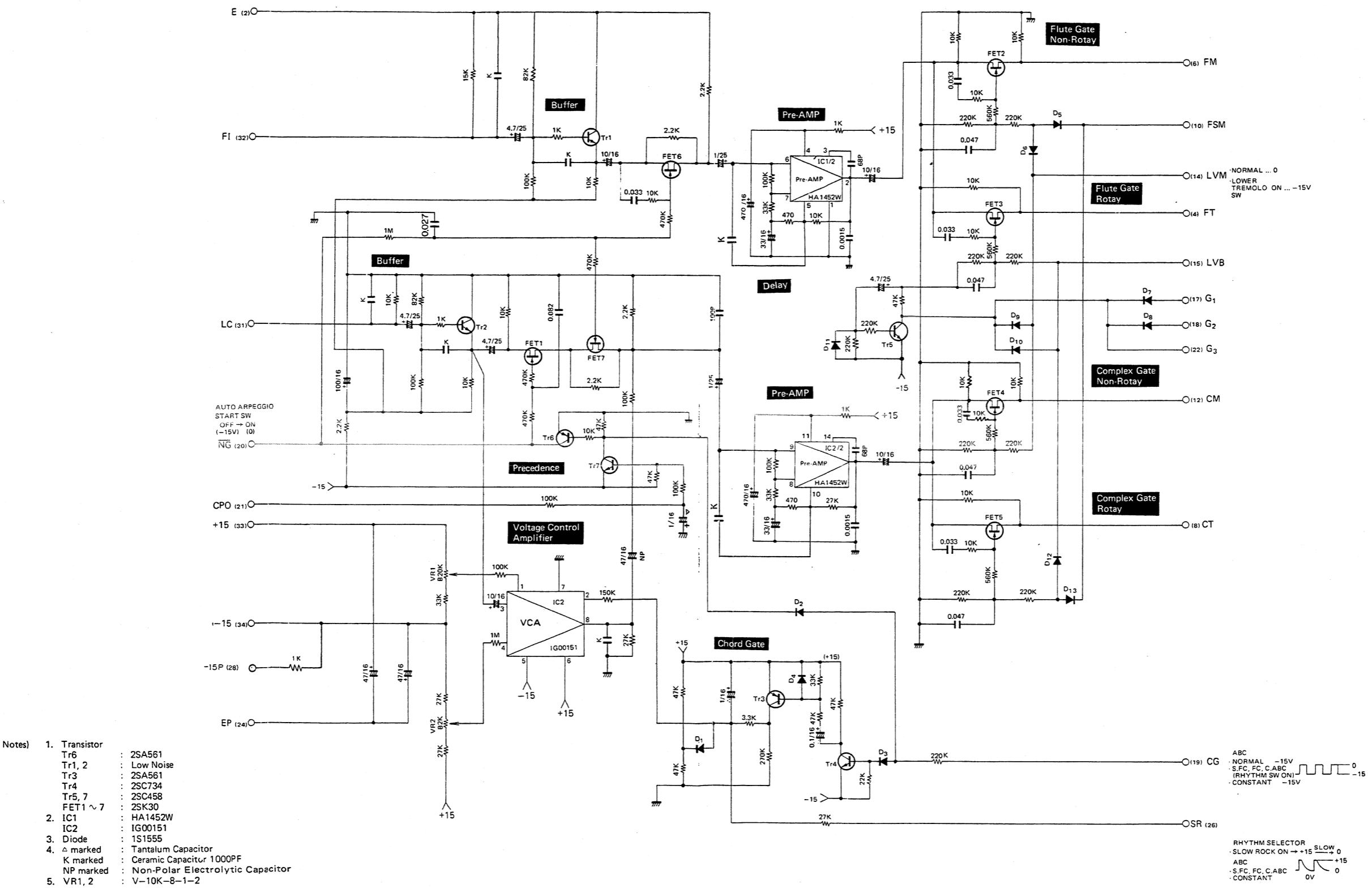
UG Circuit Diagram

UG Circuit Board & Wiring

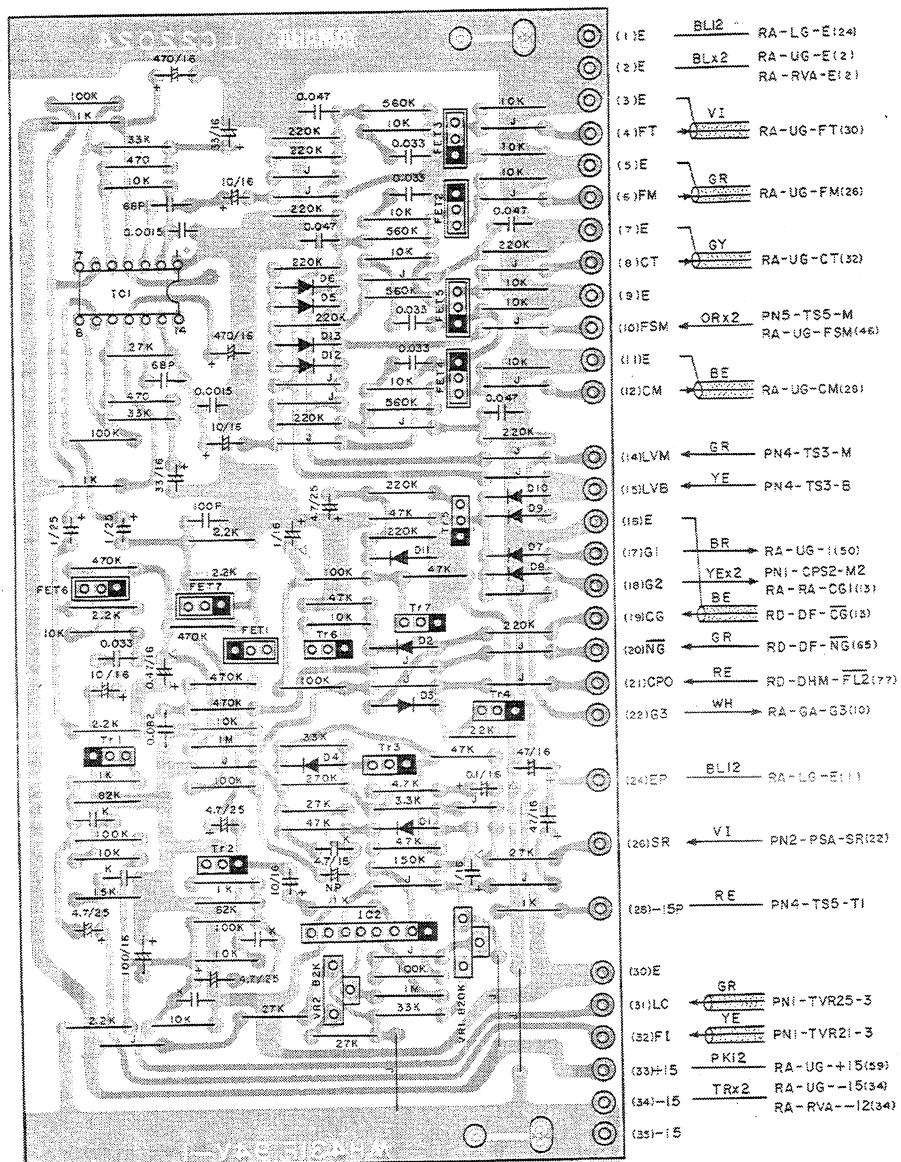


Notes) 1. LC22011
 2. Transistor
 Tr1~3 :2SA561
 Tr4~8 :2SC458
 FET1~6 :2SK30
 3. IC :HA1452
 4. Diode :1S1555
 5. K marked :Ceramic Capacitor 1000pF

LG Circuit Diagram



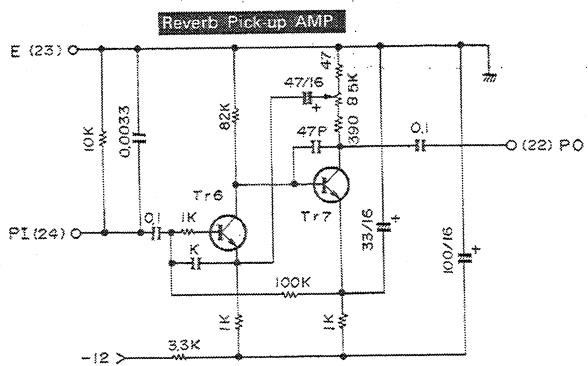
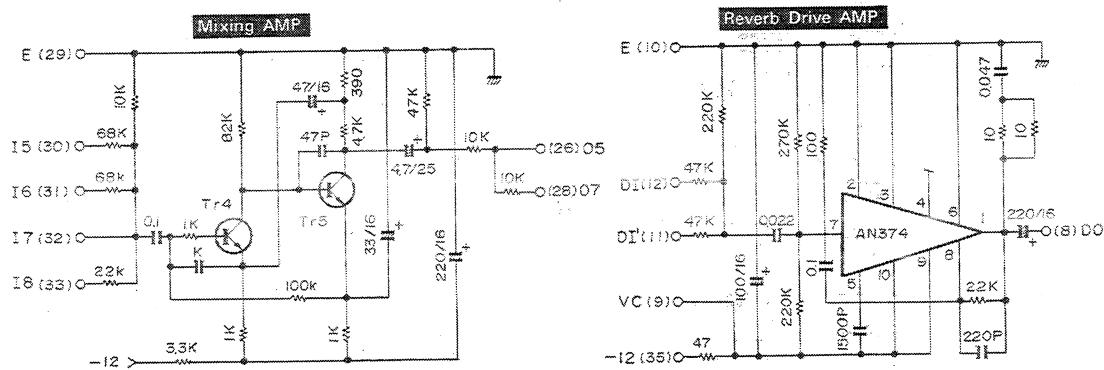
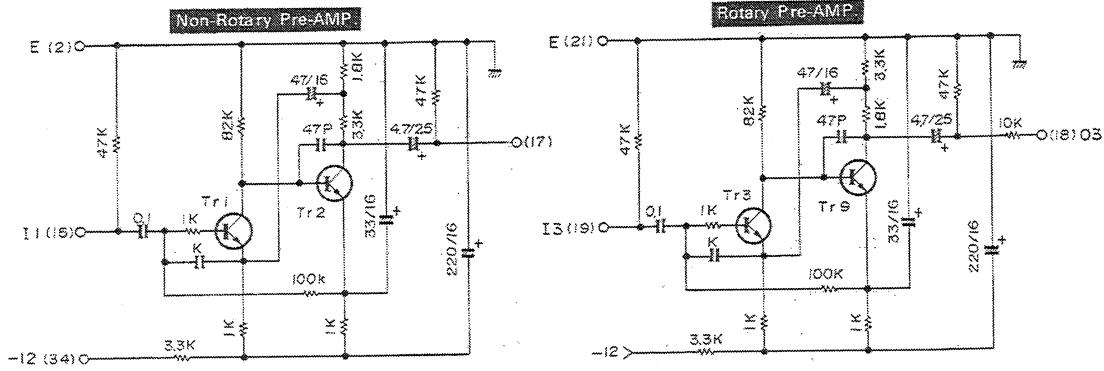
LG Circuit Board & Wiring



Notes)

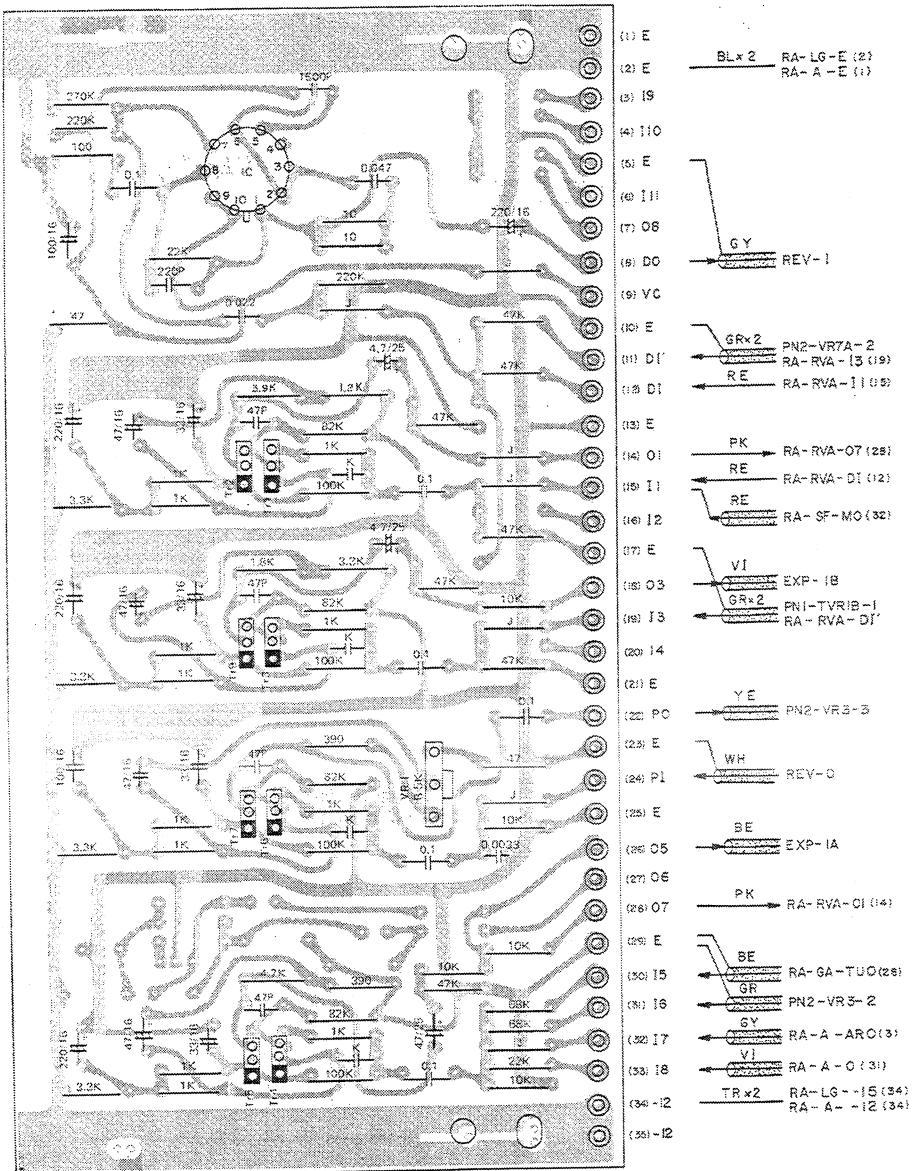
1. LC22024
2. Transistor
 - Tr1, 2 :Low Noise
 - Tr3, 6 :2SA561
 - Tr4 :2SC734
 - Tr5, 7 :2SC458
3. FET1~7 :2SK30
4. IC1 :HA1452W
- IC2 :IG00151
5. Diode :1S1555
6. VR1, 2 :V10K-8-1-2
7. Δ marked :Tantalum Capacitor
- K marked :Ceramic Capacitor 1000pF
- NP marked :Nonpolar Capacitor

RVA Circuit Diagram

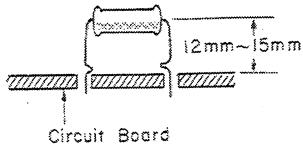


Notes) 1. Transistor
 Tr1,3,4,6: Low Noise
 Others : 2SC458
 2. IC : AN374
 3. K marked: Ceramic Capacitor 1000pF

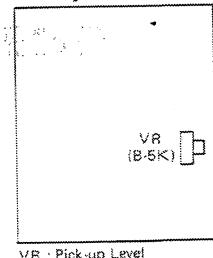
RVA Circuit Board & Wiring



Notes)
 1. #22570
 2. Transistor
 Tr1, 3, 4, 6 : Low Noise
 Others : 2SC458
 3. IC : AN374
 4. * marked :

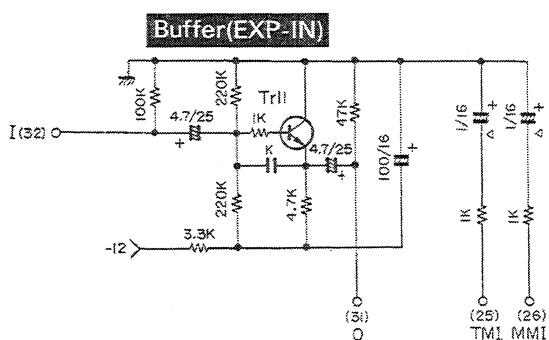
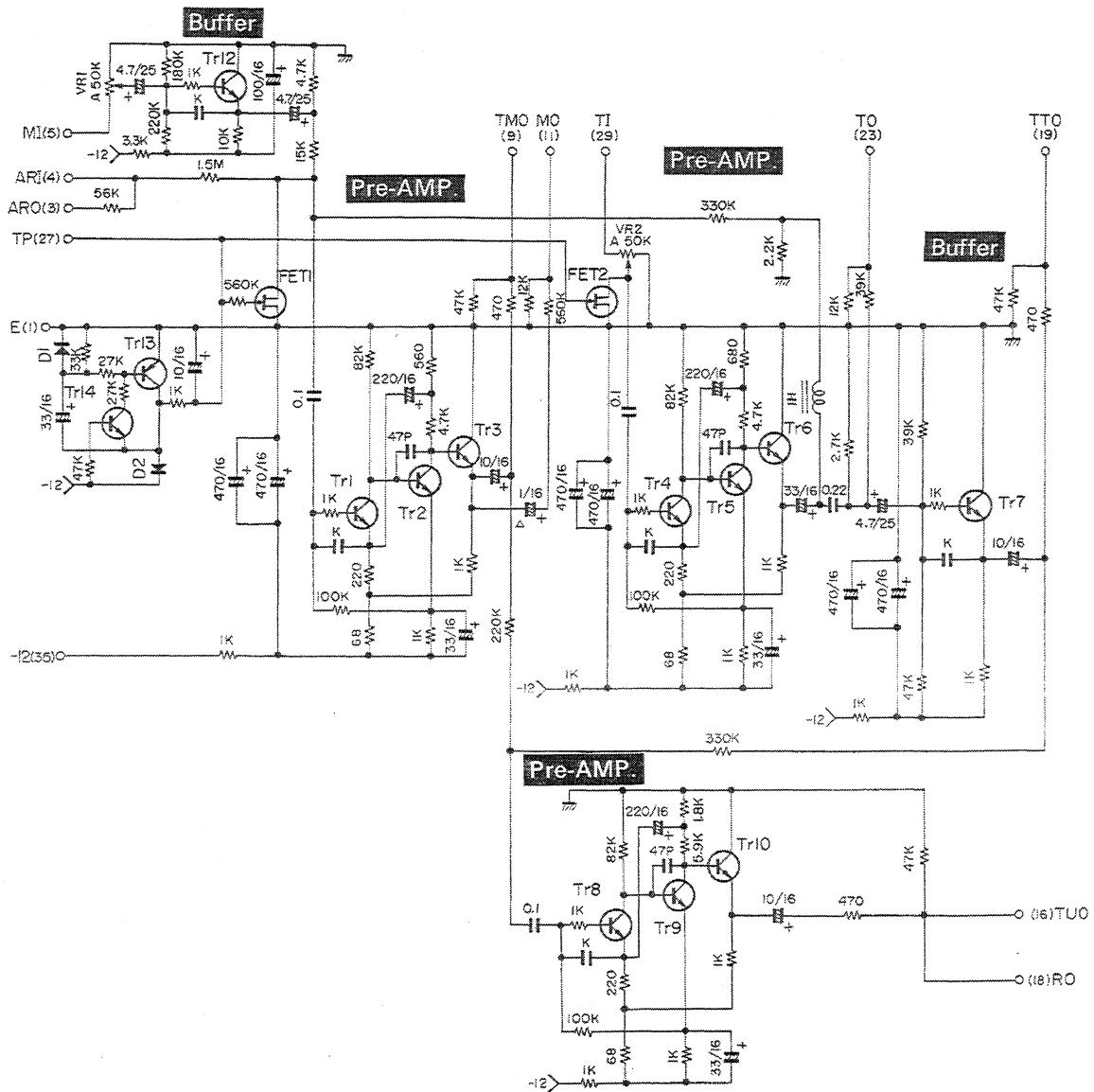


Adjustment



VR : Pick-up Level

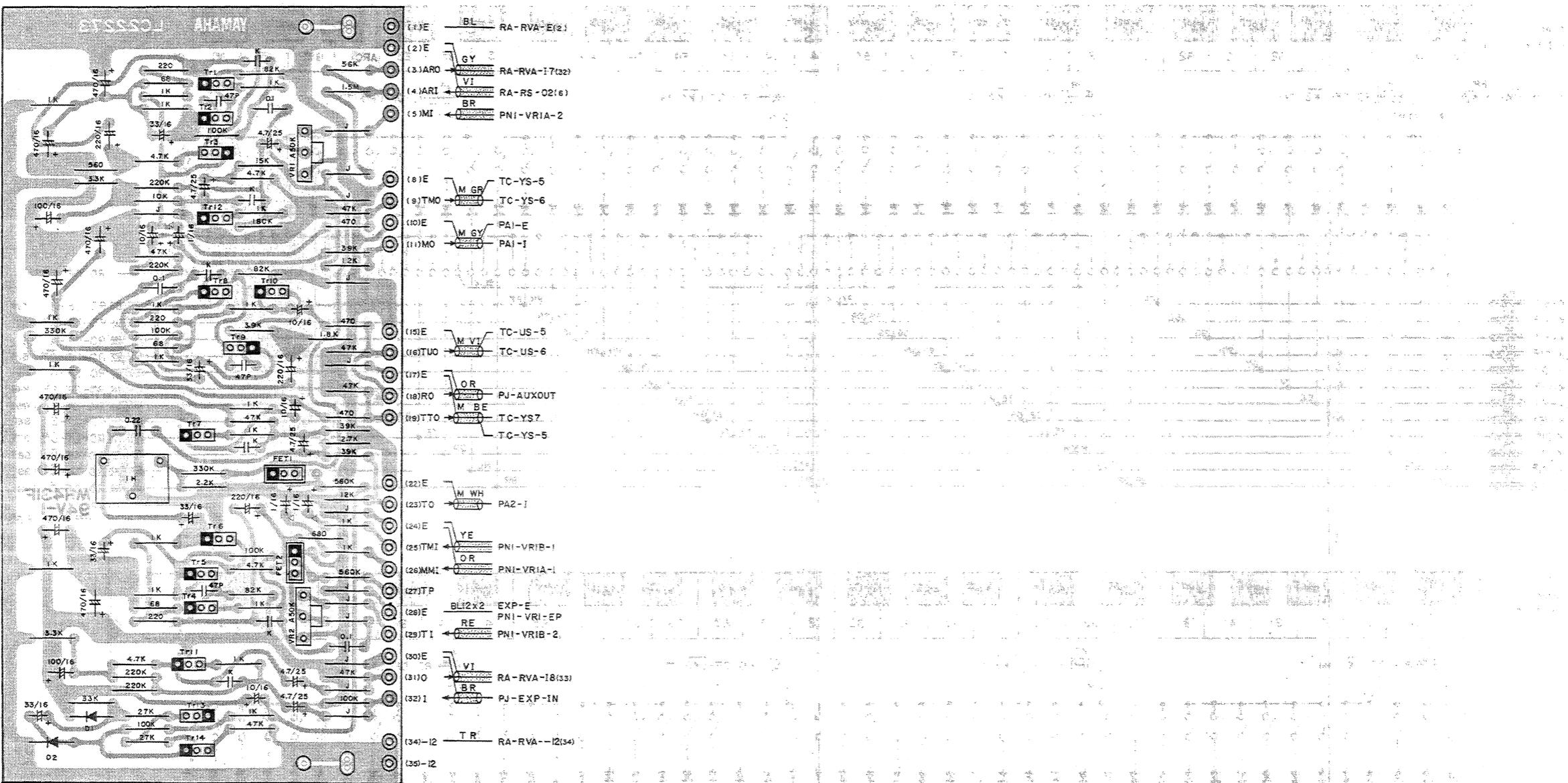
A Circuit Diagram



Notes)

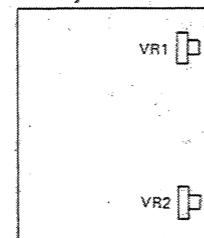
1. Transistor
Tr1, 3, 4, 6, 7, 8, 10, 11, 12: Low Noise
Tr2, 5, 9, 14: 2SC458
Tr13 : 2SA561
FET1, 2 : 2SK30
2. Diode : 1S1555
3. △ marked : Tantulum Capacitor

A Circuit Board & Wiring



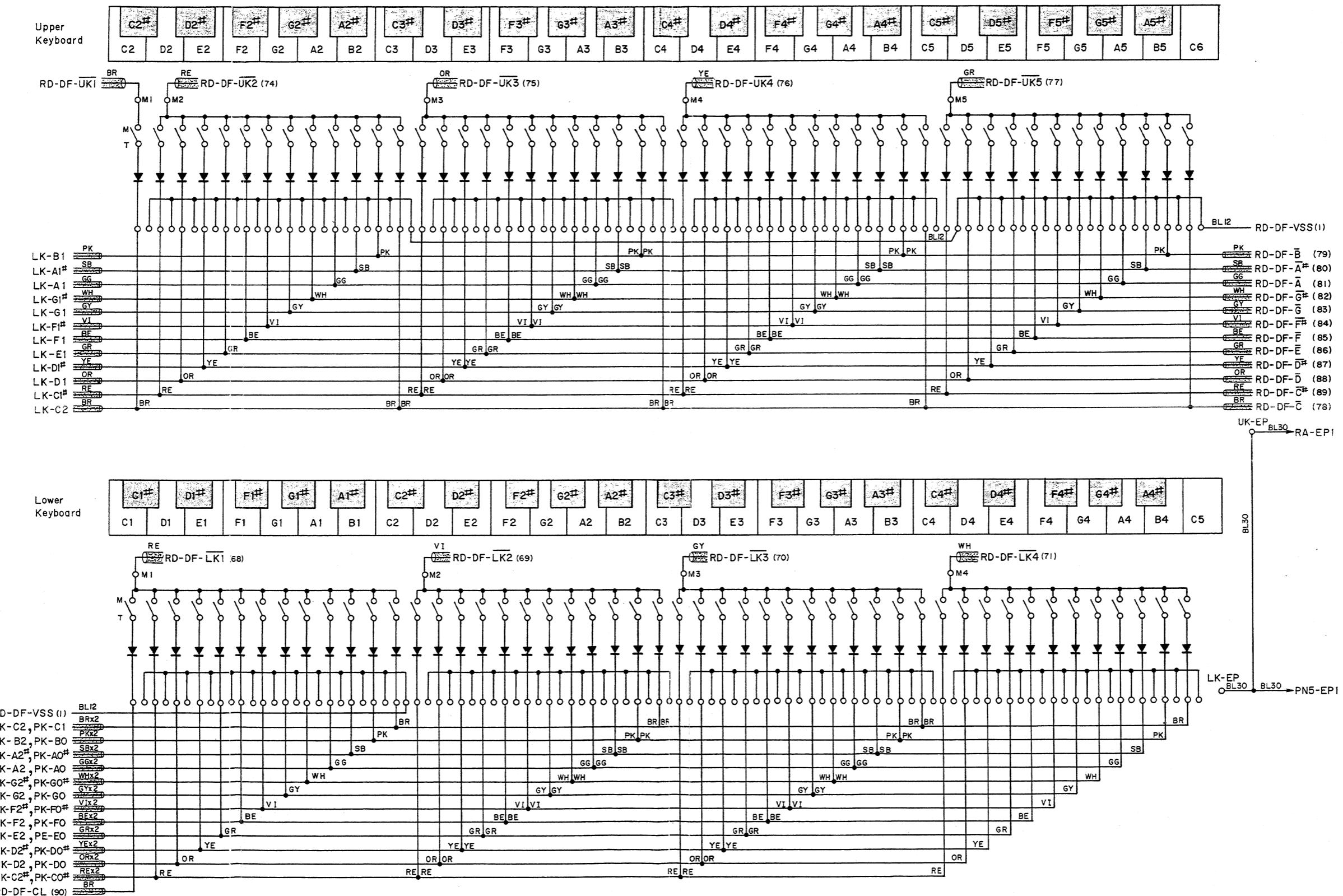
- Notes)
1. LC22073
 2. Transistor
Tr1,3,4,6,7,8,10,11 :Low Noise
Tr2,5,9 :2SC458
Tr12,13,14,15 :2SA561
 3. Δ marked :Tantalum Capacitor
 4. K marked :Ceramic Capacitor 1000pF
 5. Filter Coil :GB06 Type

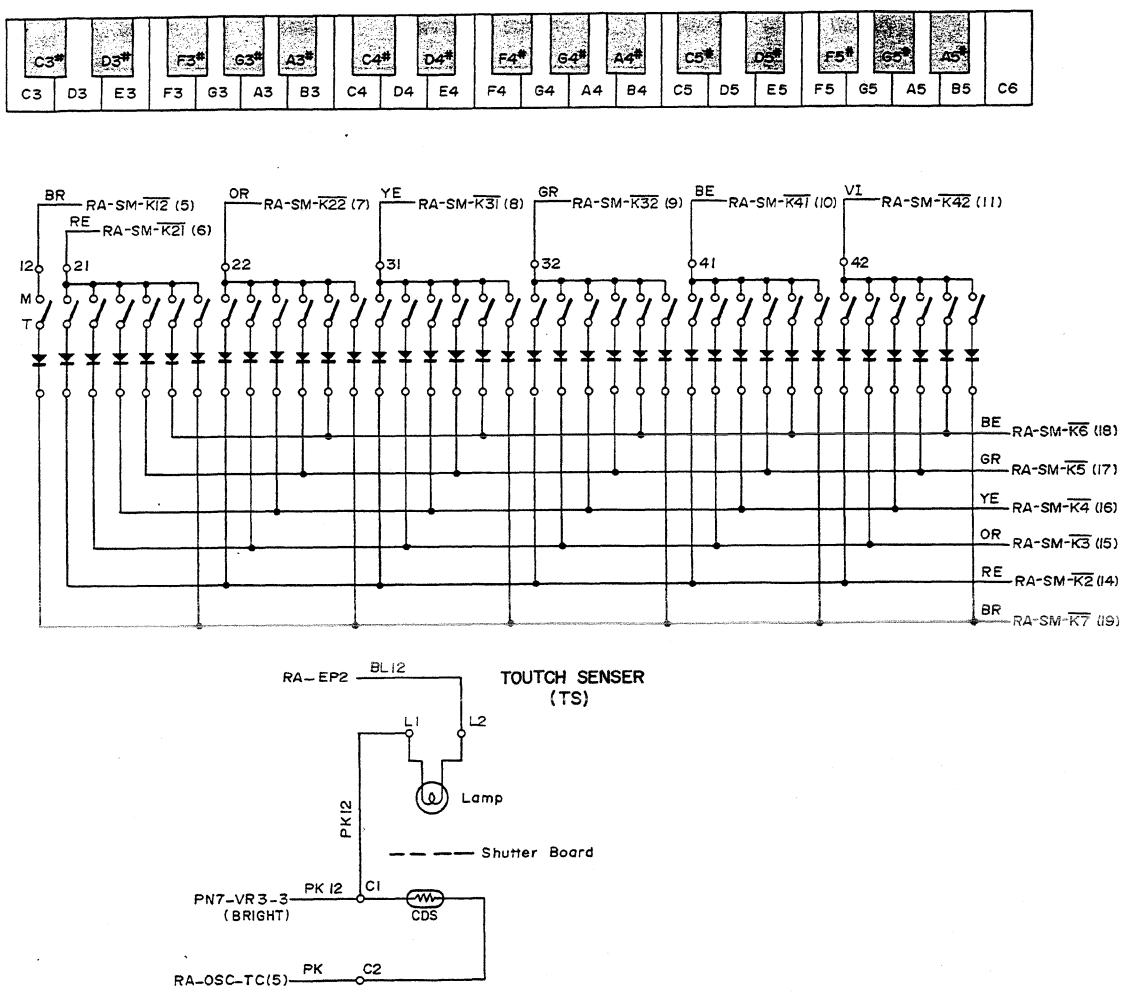
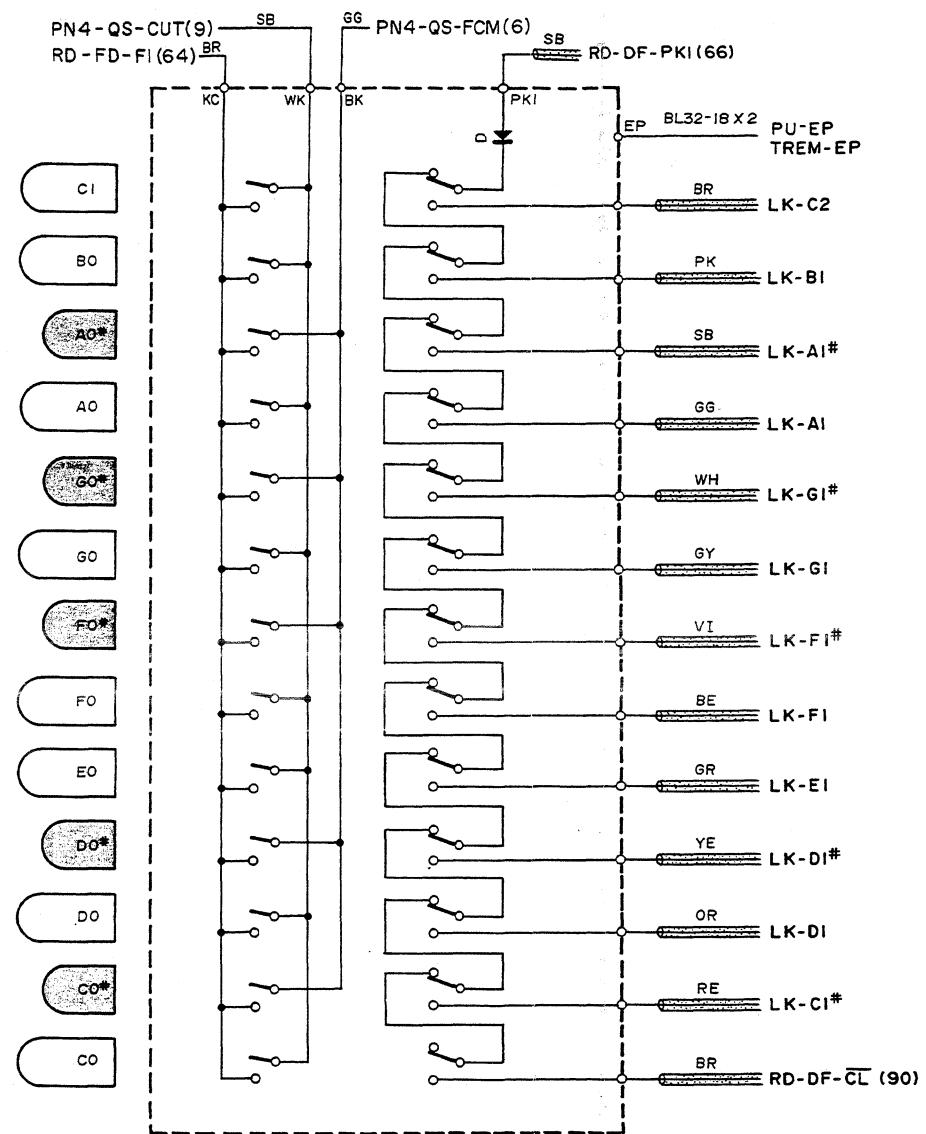
Adjustment



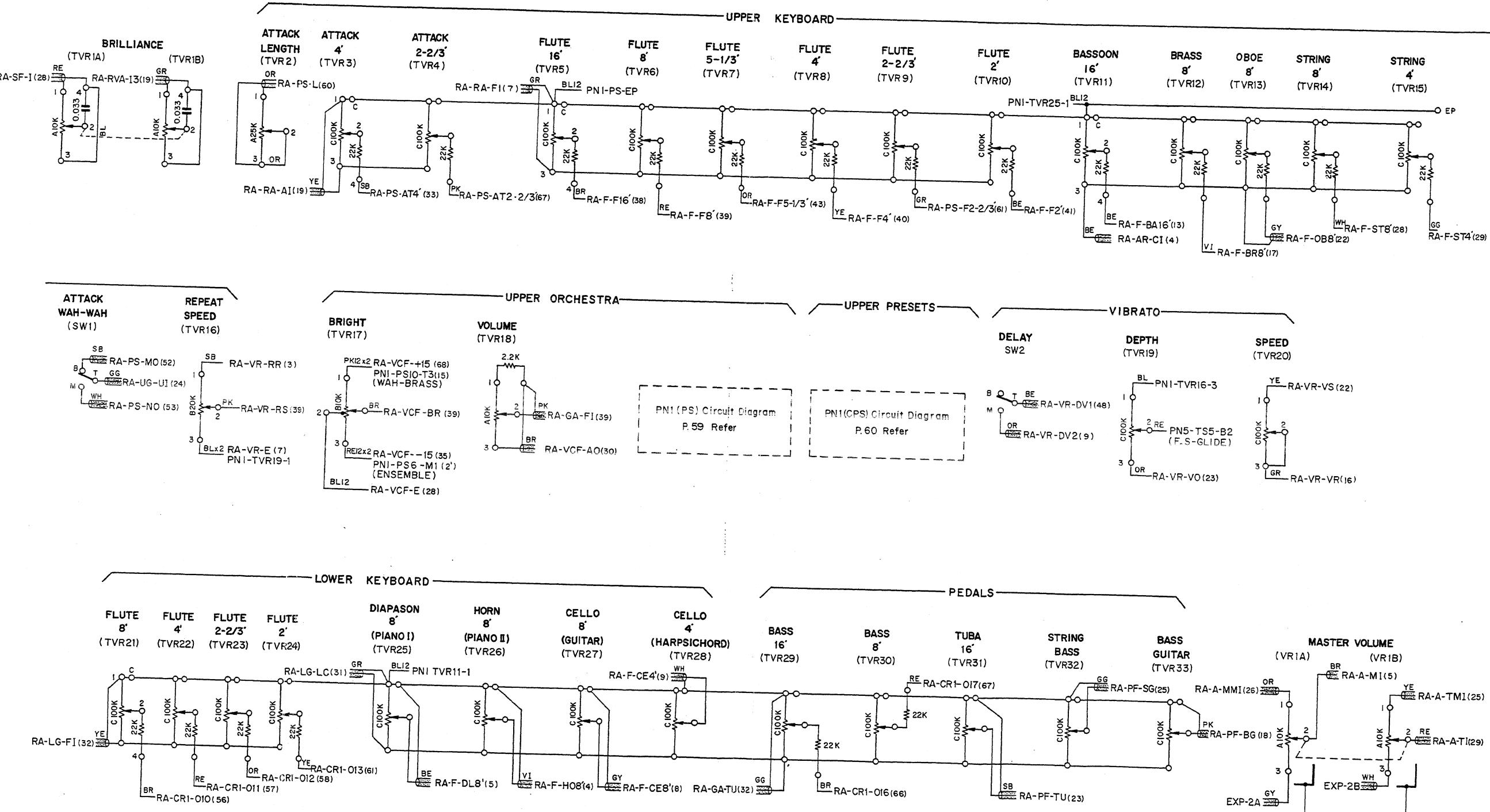
VR1 : Non-Tremolo Pre-Amplifier Level
VR2 : Tremolo — do. —

UK,LK Circuit Diagram

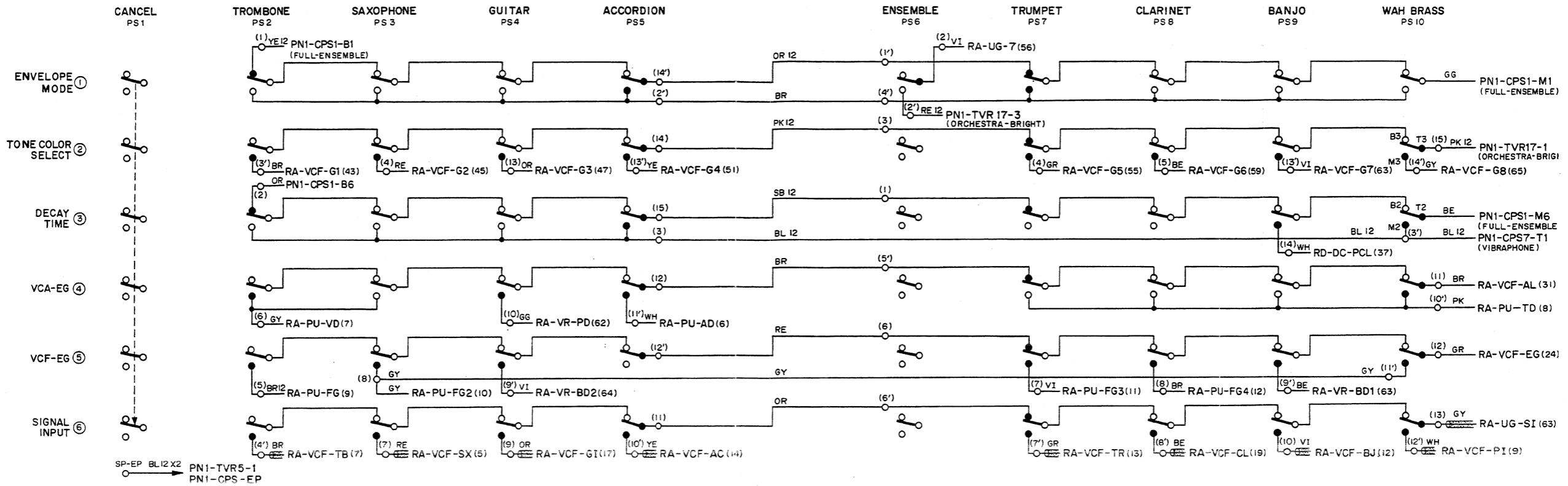


SK Circuit Diagram**PK** Circuit Diagram

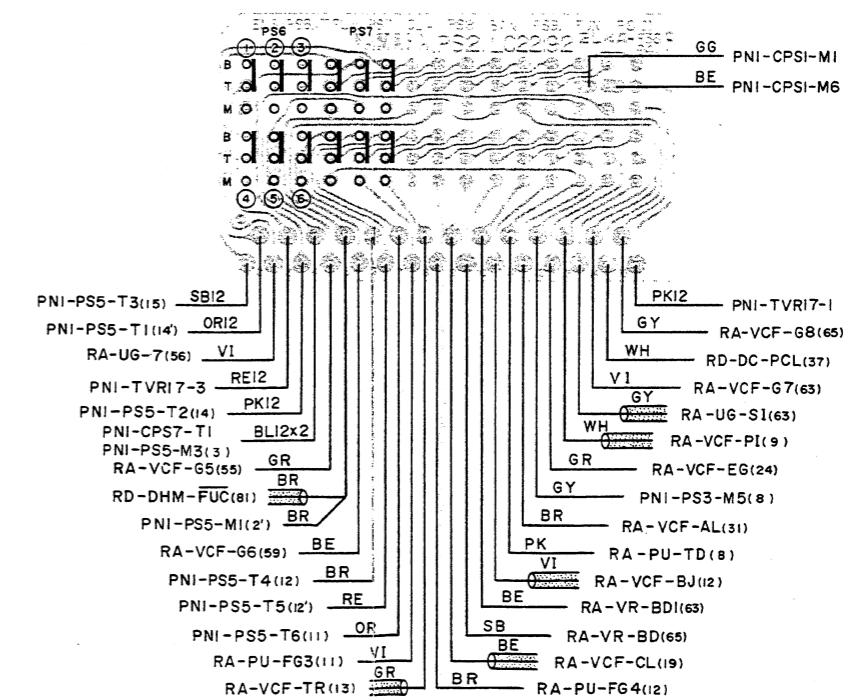
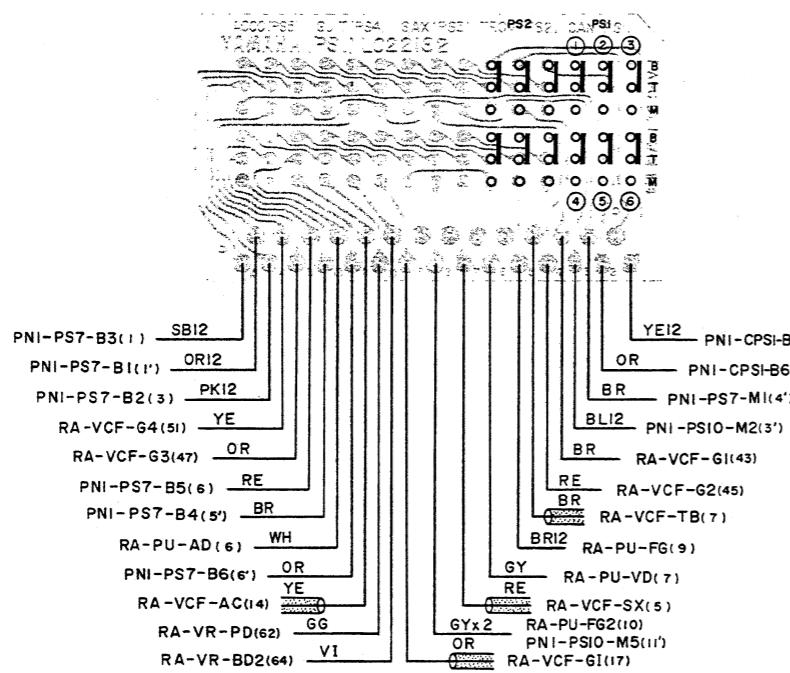
PN1(TVR) Circuit Diagram



PN1(PS) Circuit Diagram

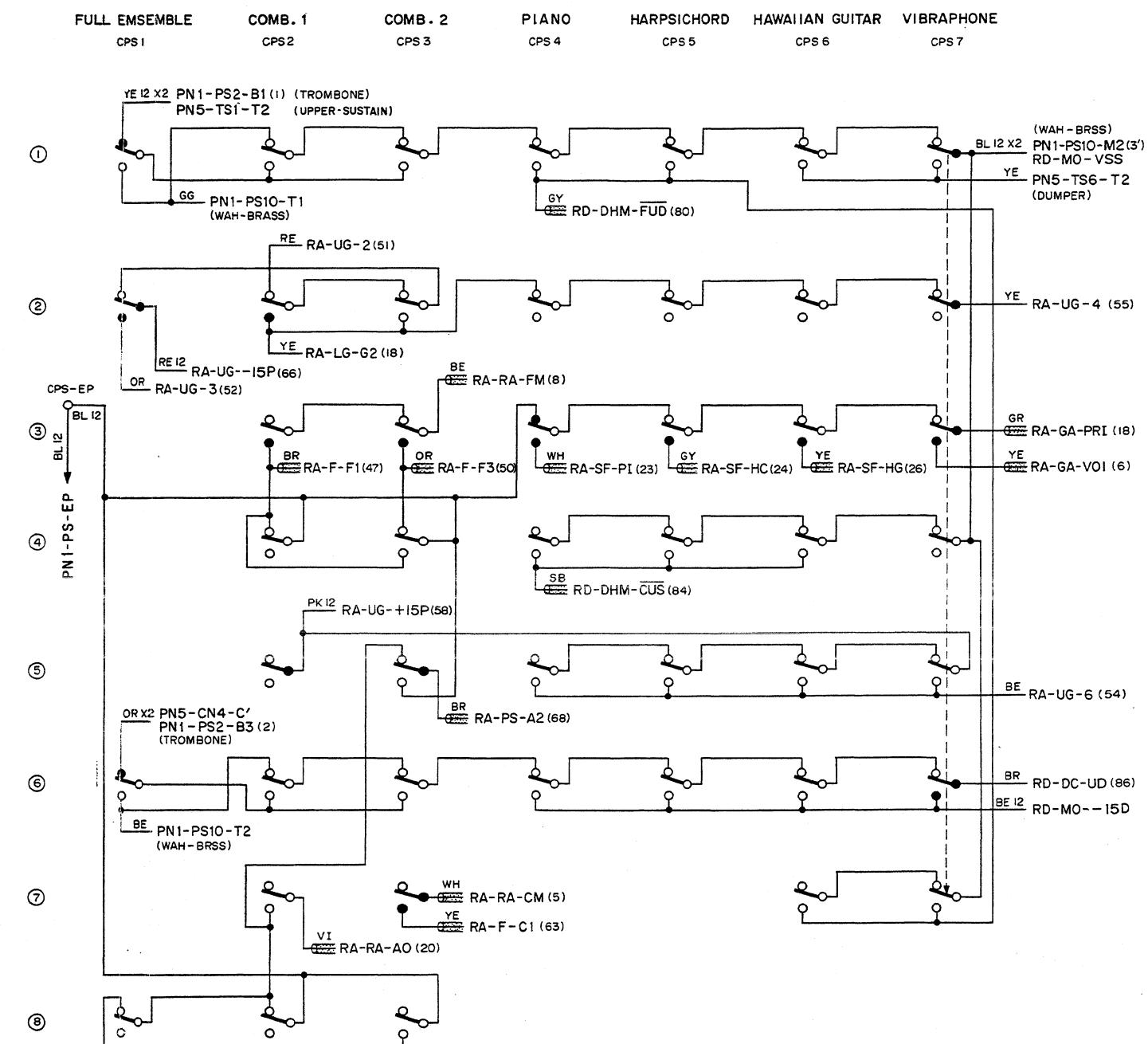
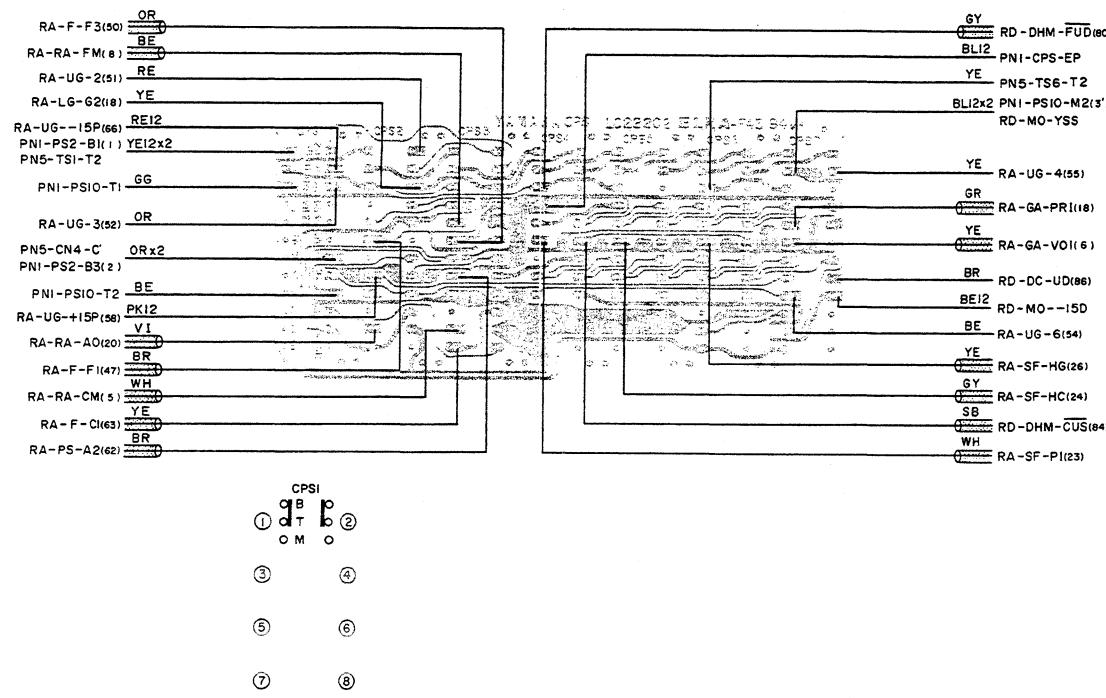


PS1 Circuit Board

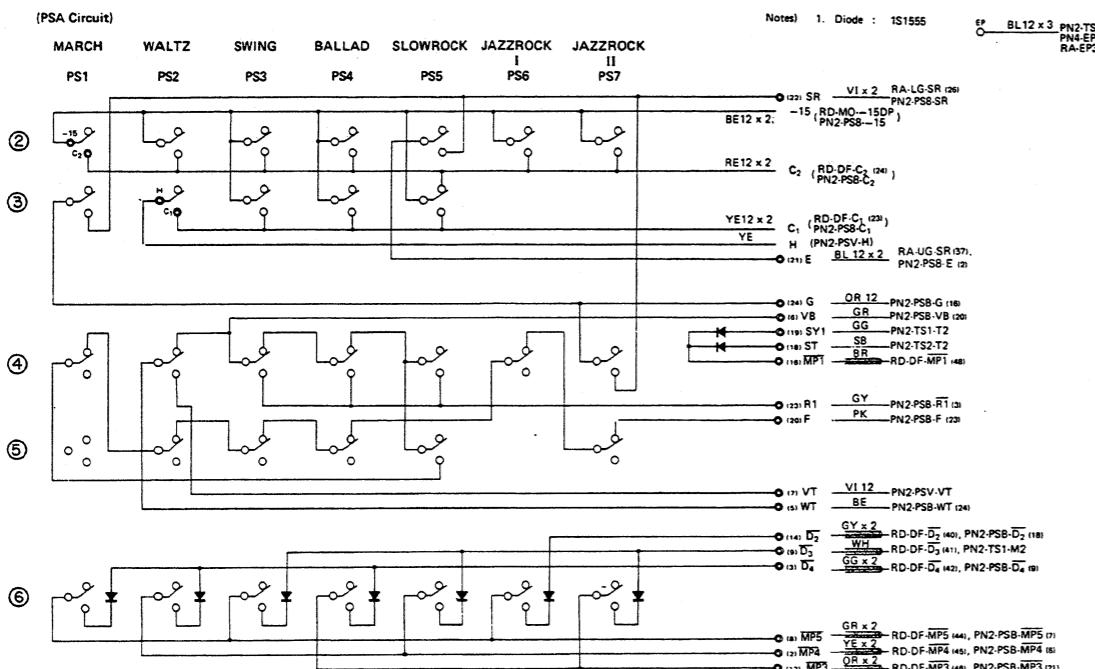


PN1(CPS) Circuit Diagram

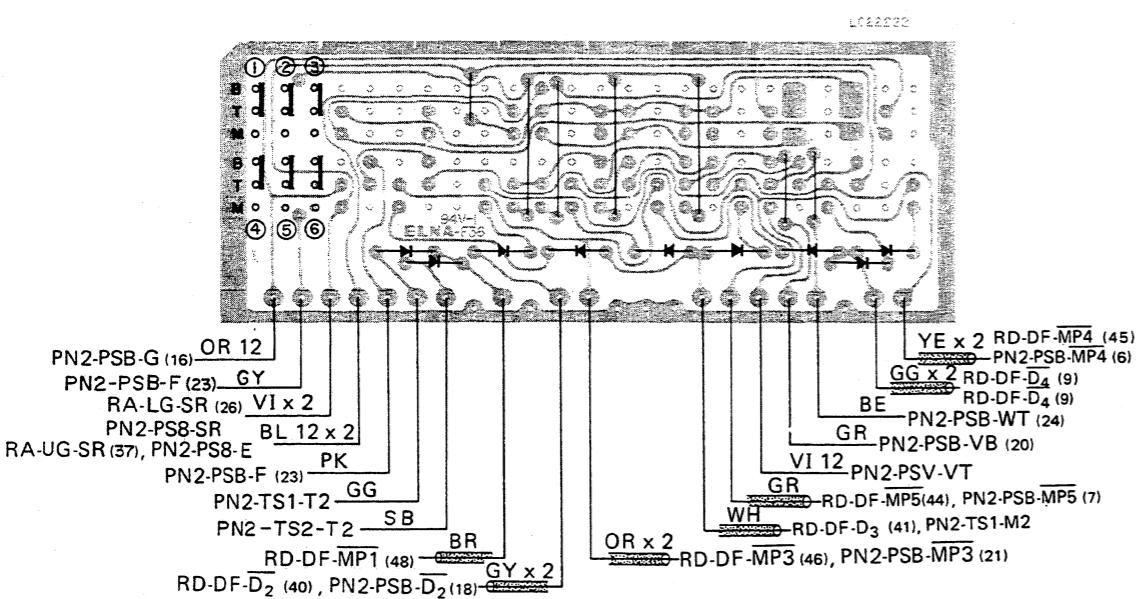
Circuit Board



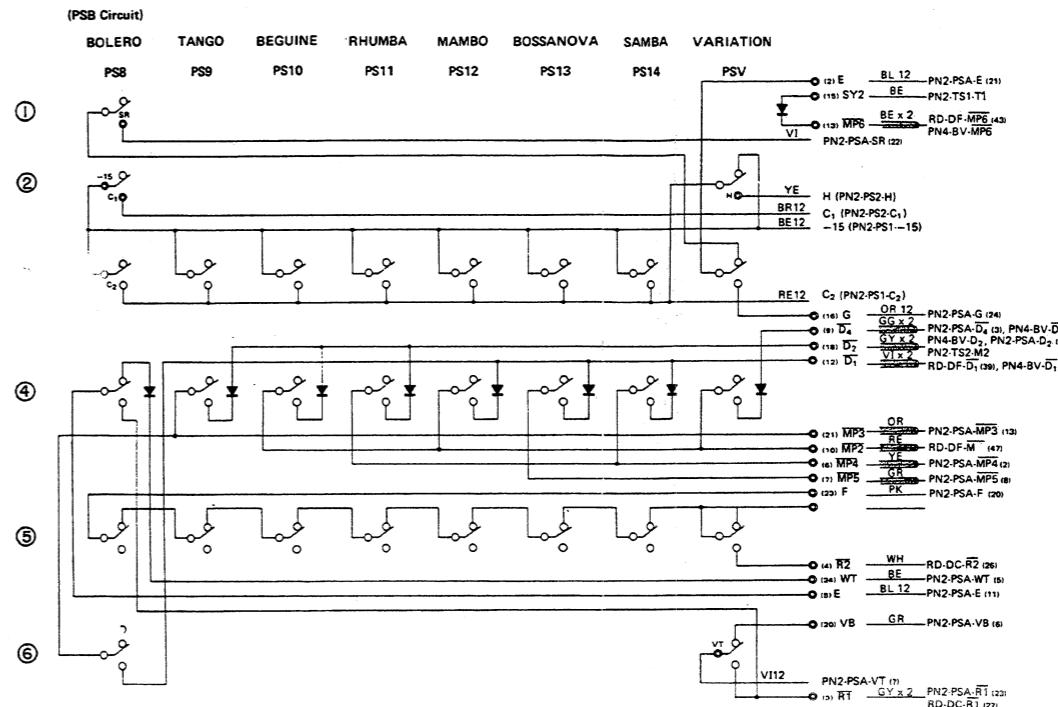
PN2(PSA) Circuit Diagram



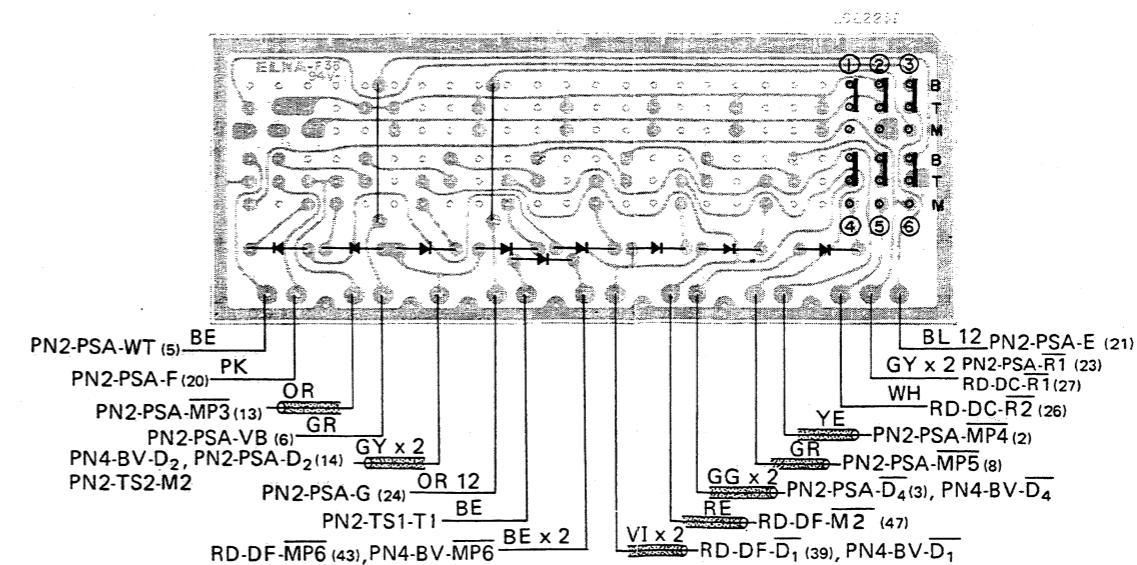
Circuit Board



PN2(PSB) Circuit Diagram

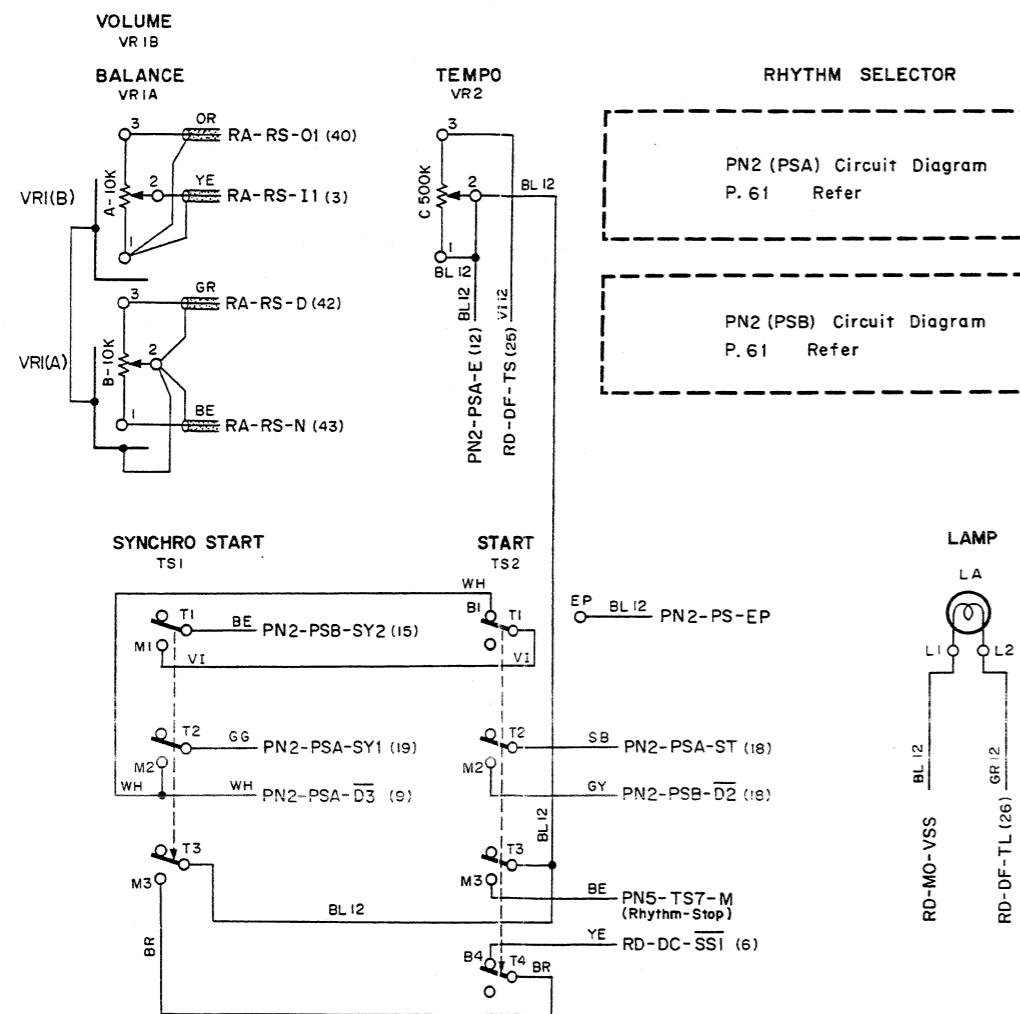


Circuit Board

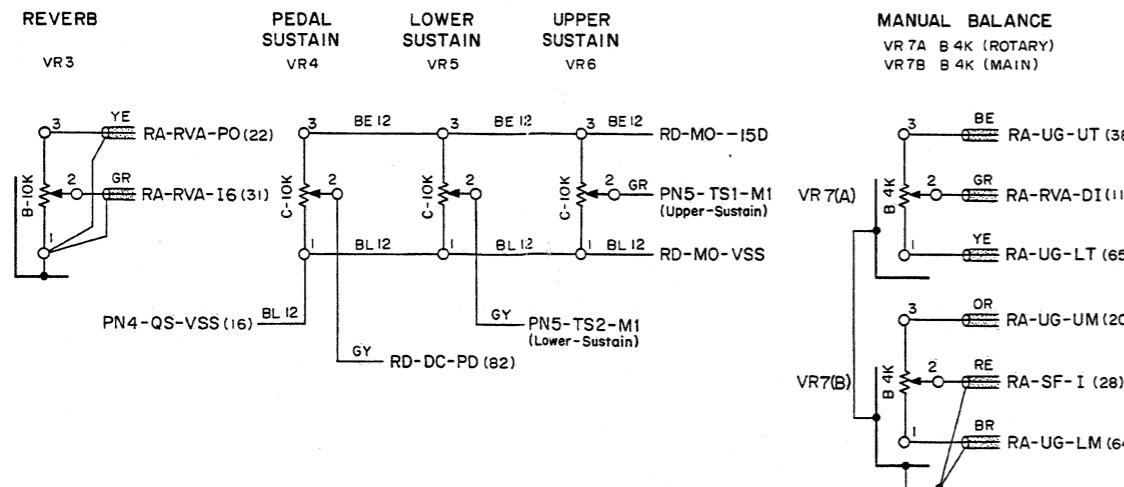


PN2(RHY,VR) Circuit Diagram

RHY

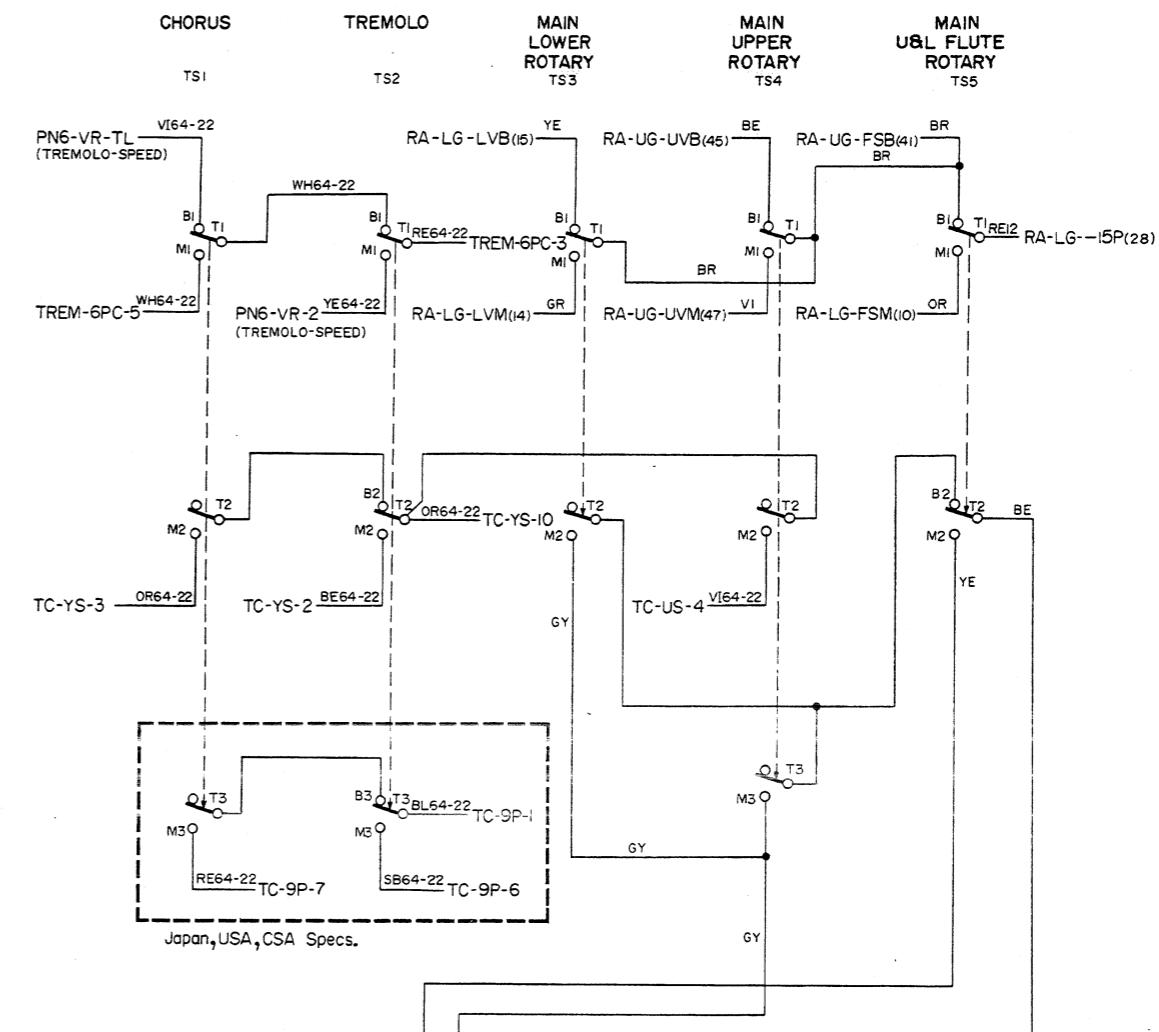


VR



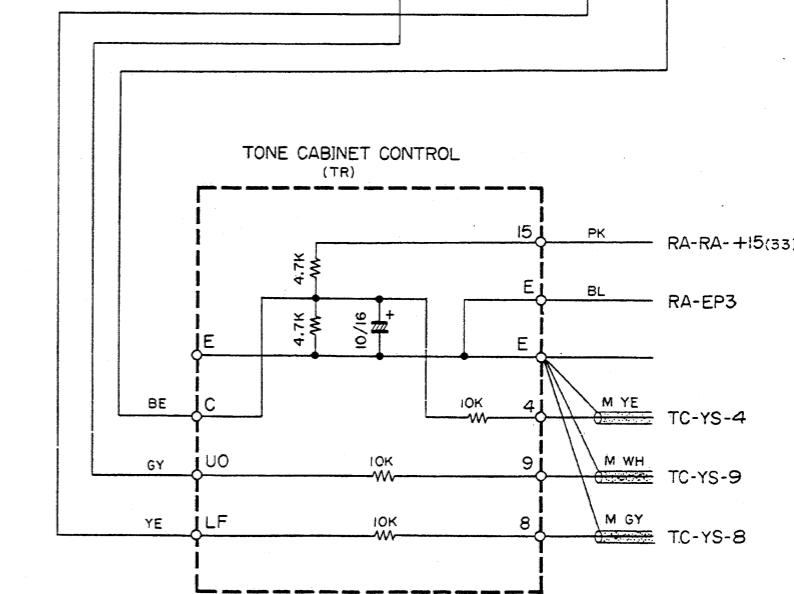
◀ PN2(RHY,VR
Circuit

PN4 TREMOLO Circuit Diagram



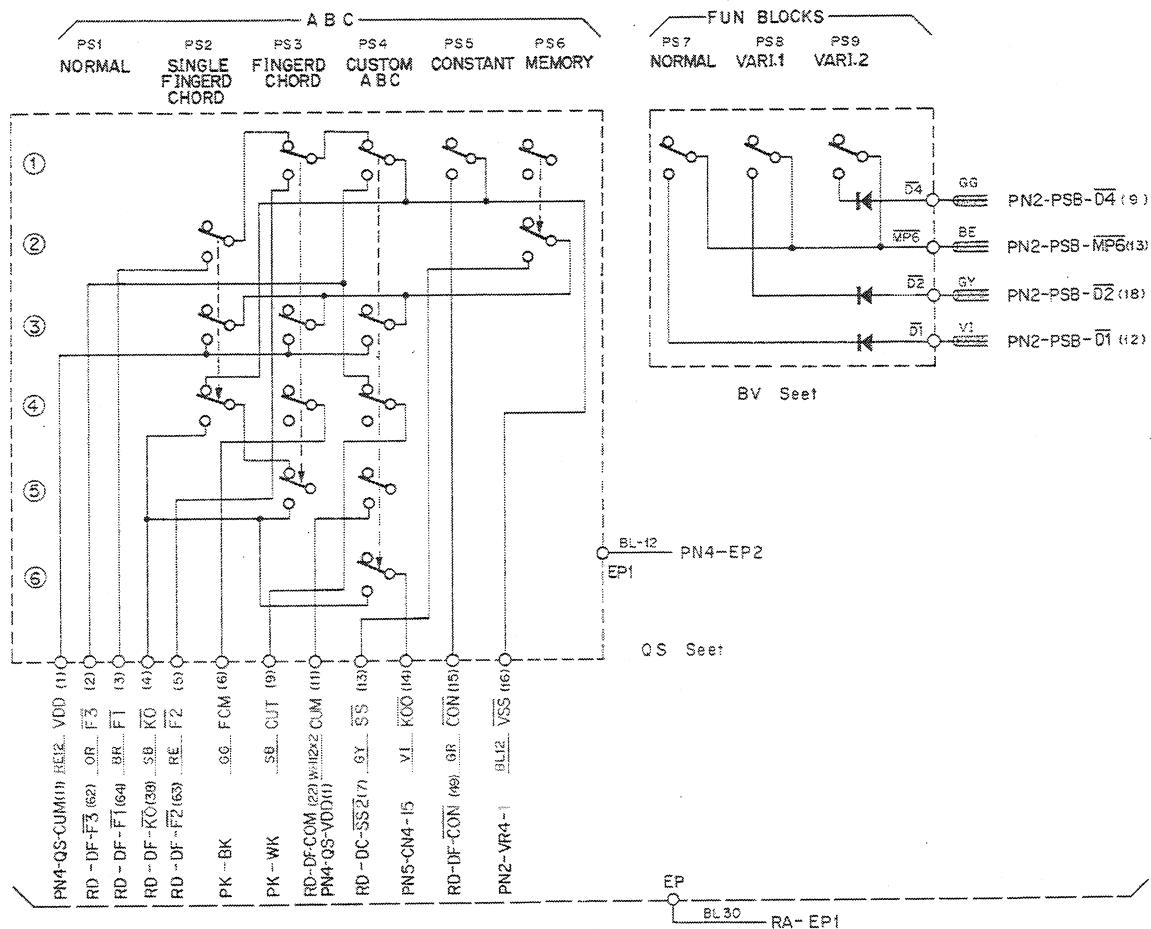
Japan, USA, CSA Sp

KEC-4882-67 △

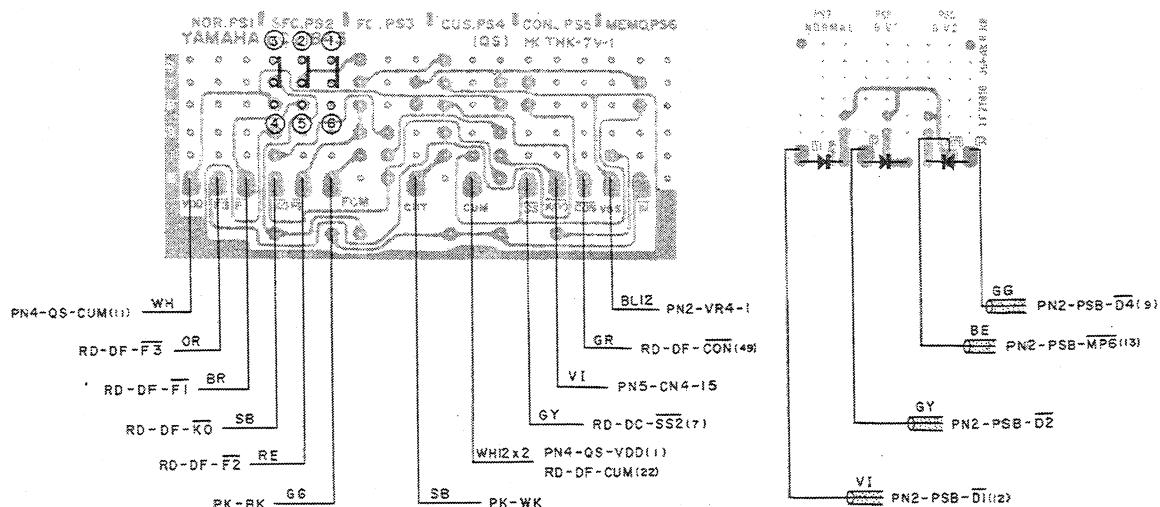


KEC-5146-73 2

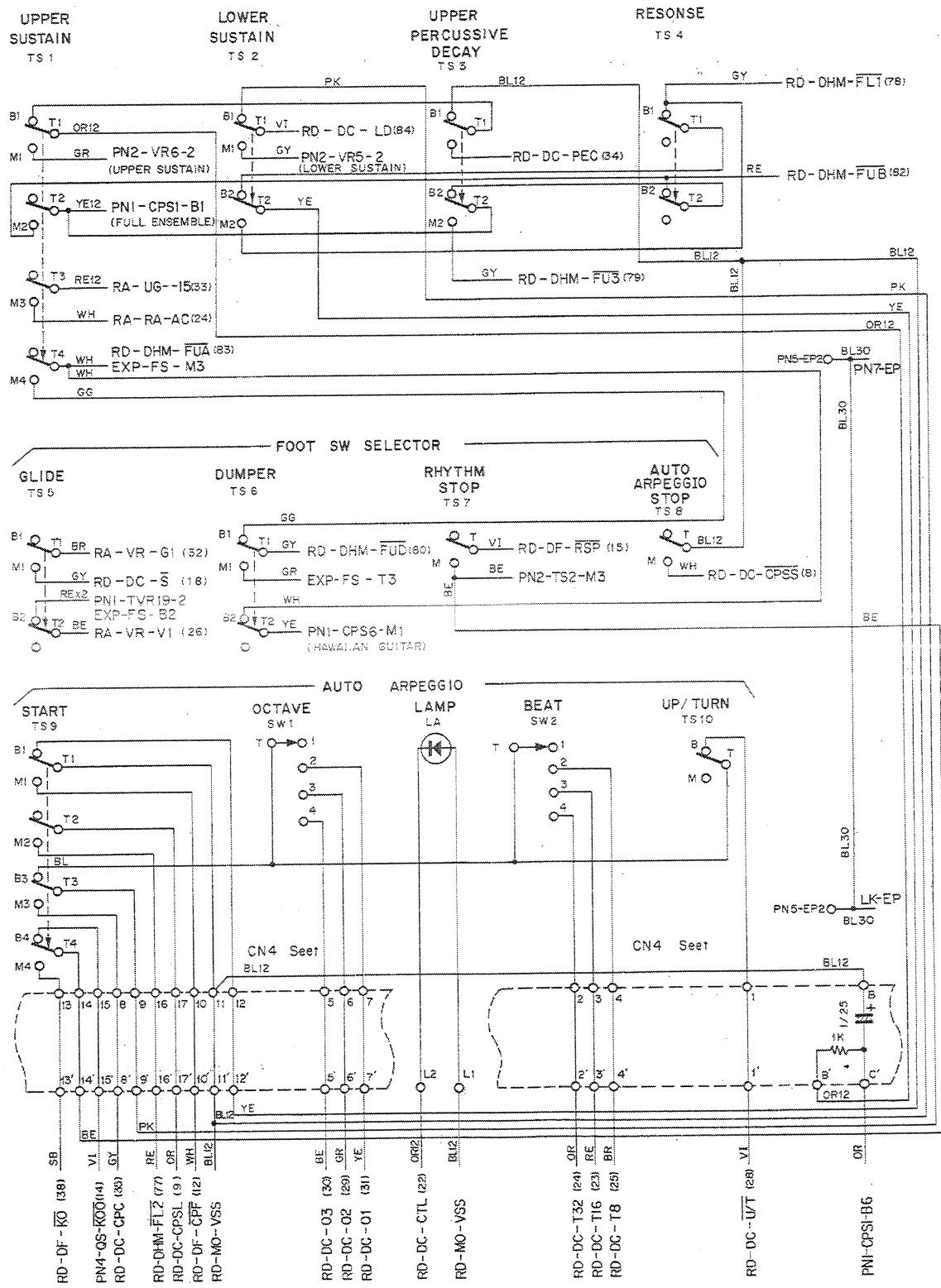
PN4(ABC) Circuit Diagram



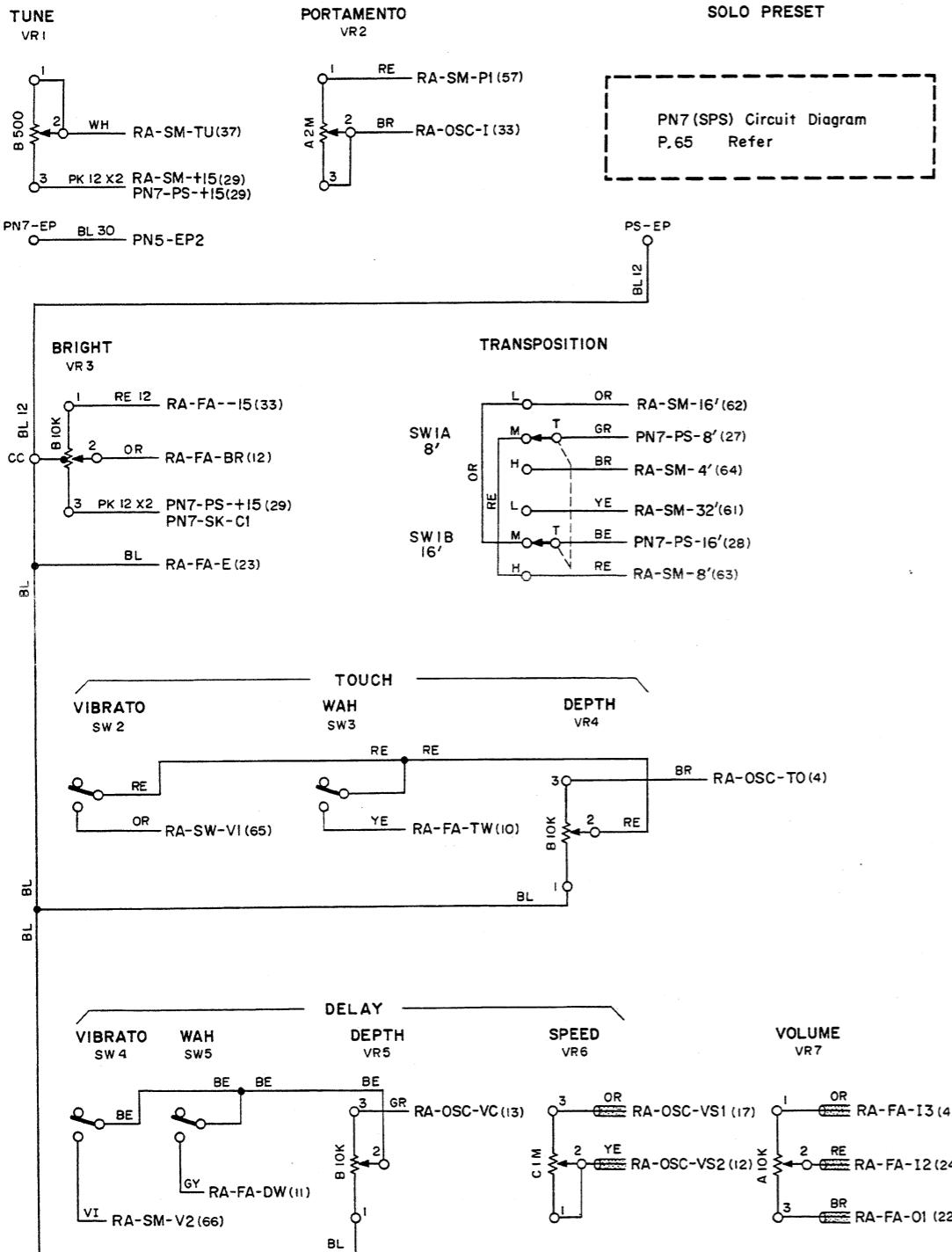
Circuit Board



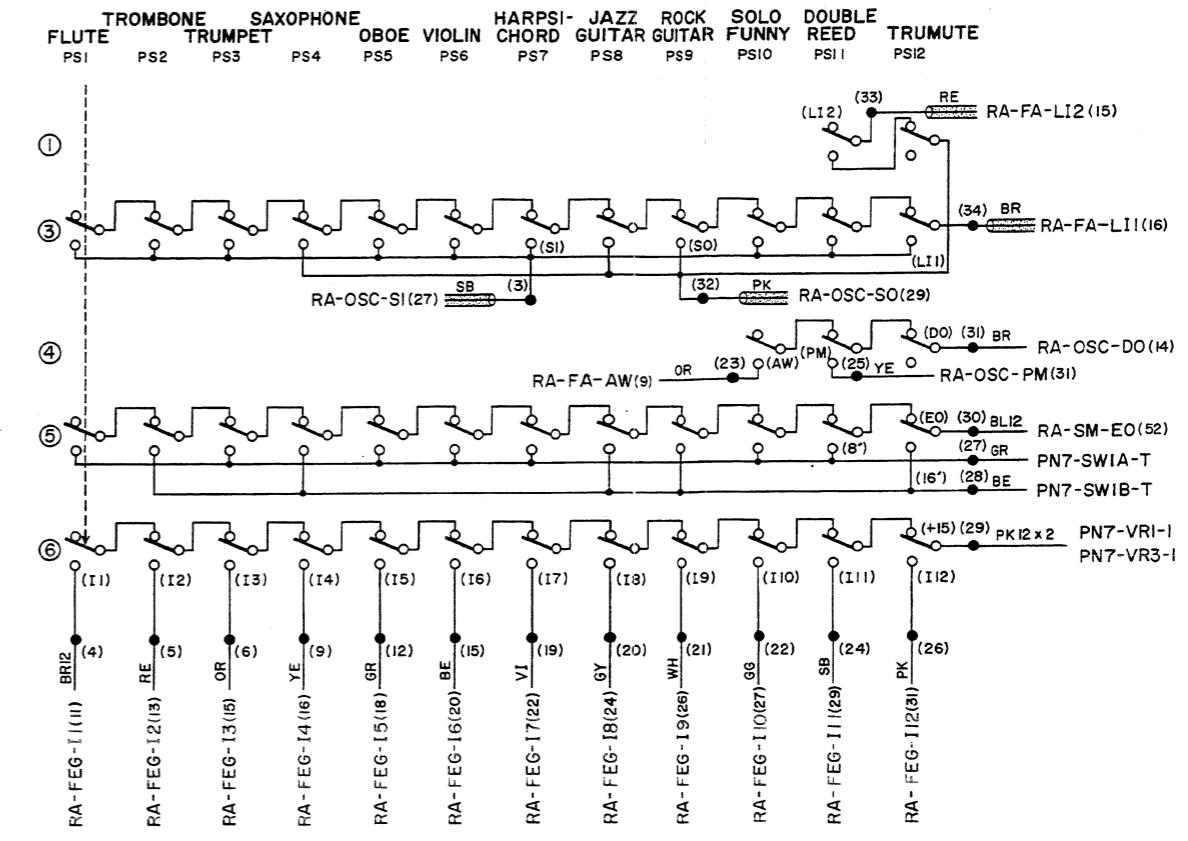
PN5(TS) Circuit Diagram



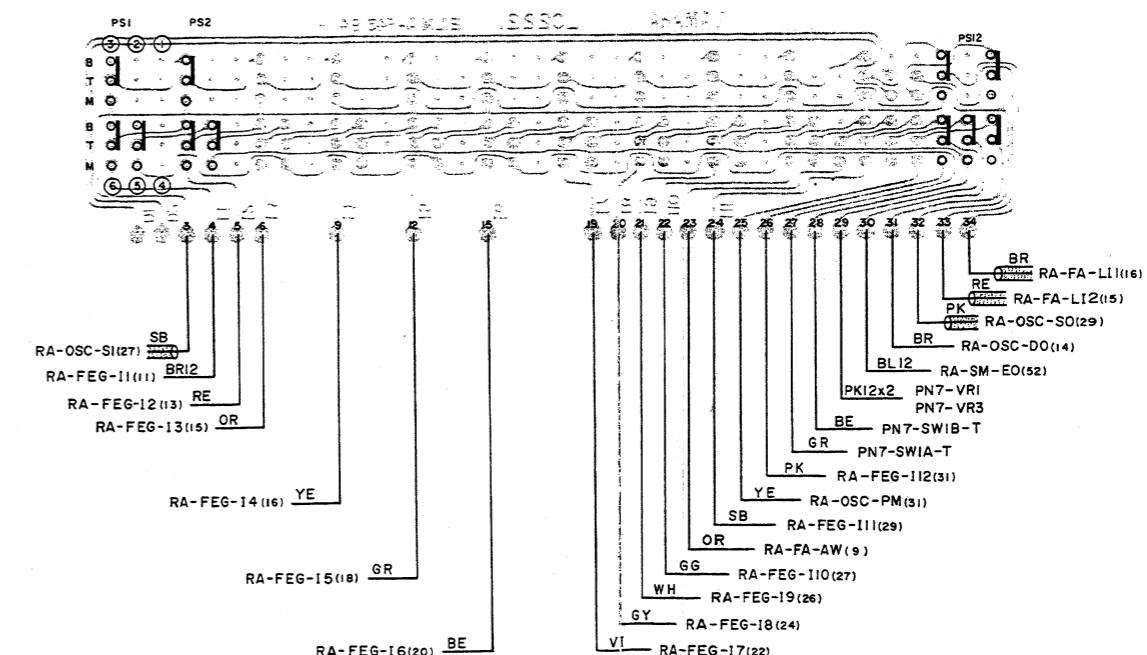
PN7 Circuit Diagram



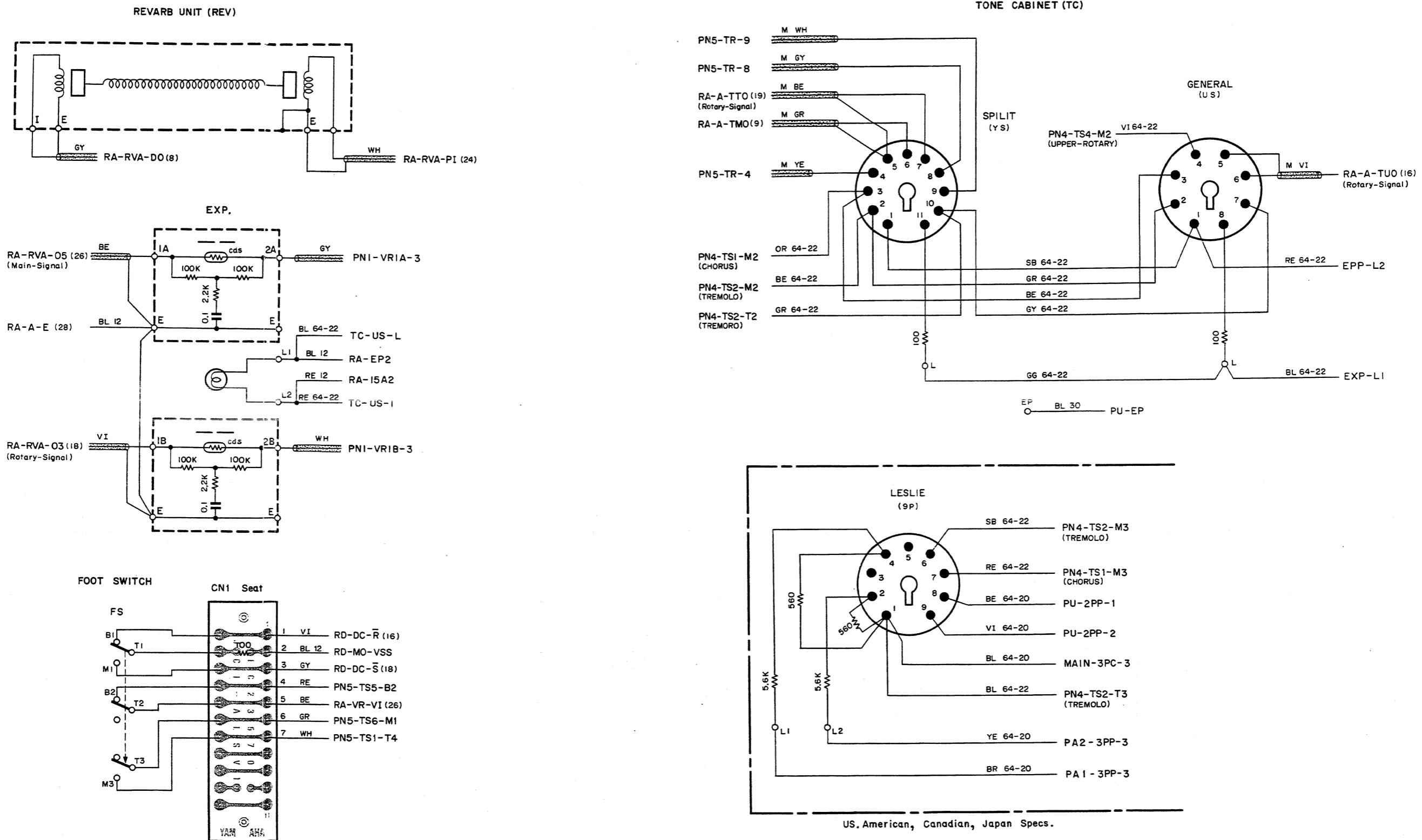
PN7(SPS) Circuit Diagram



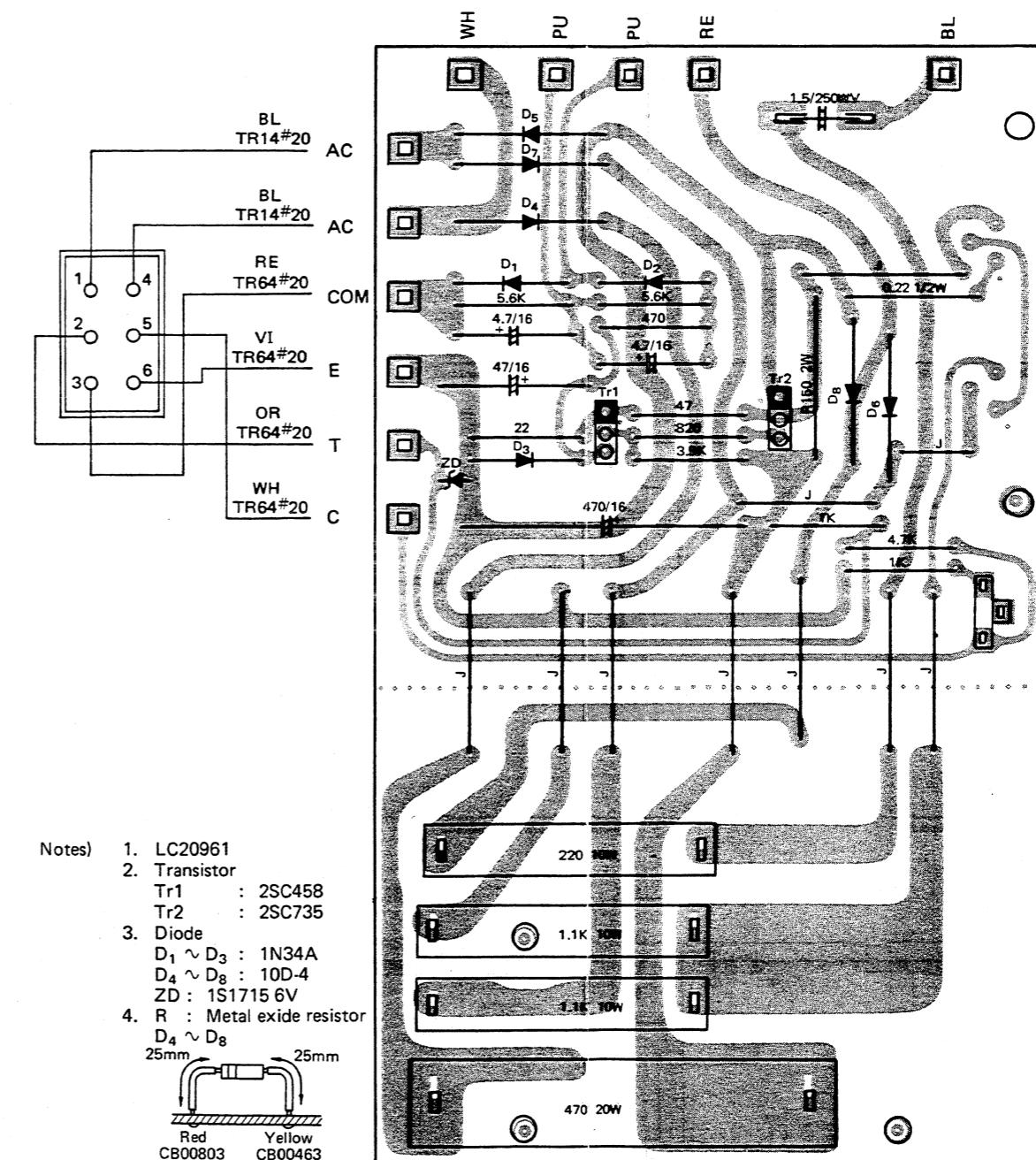
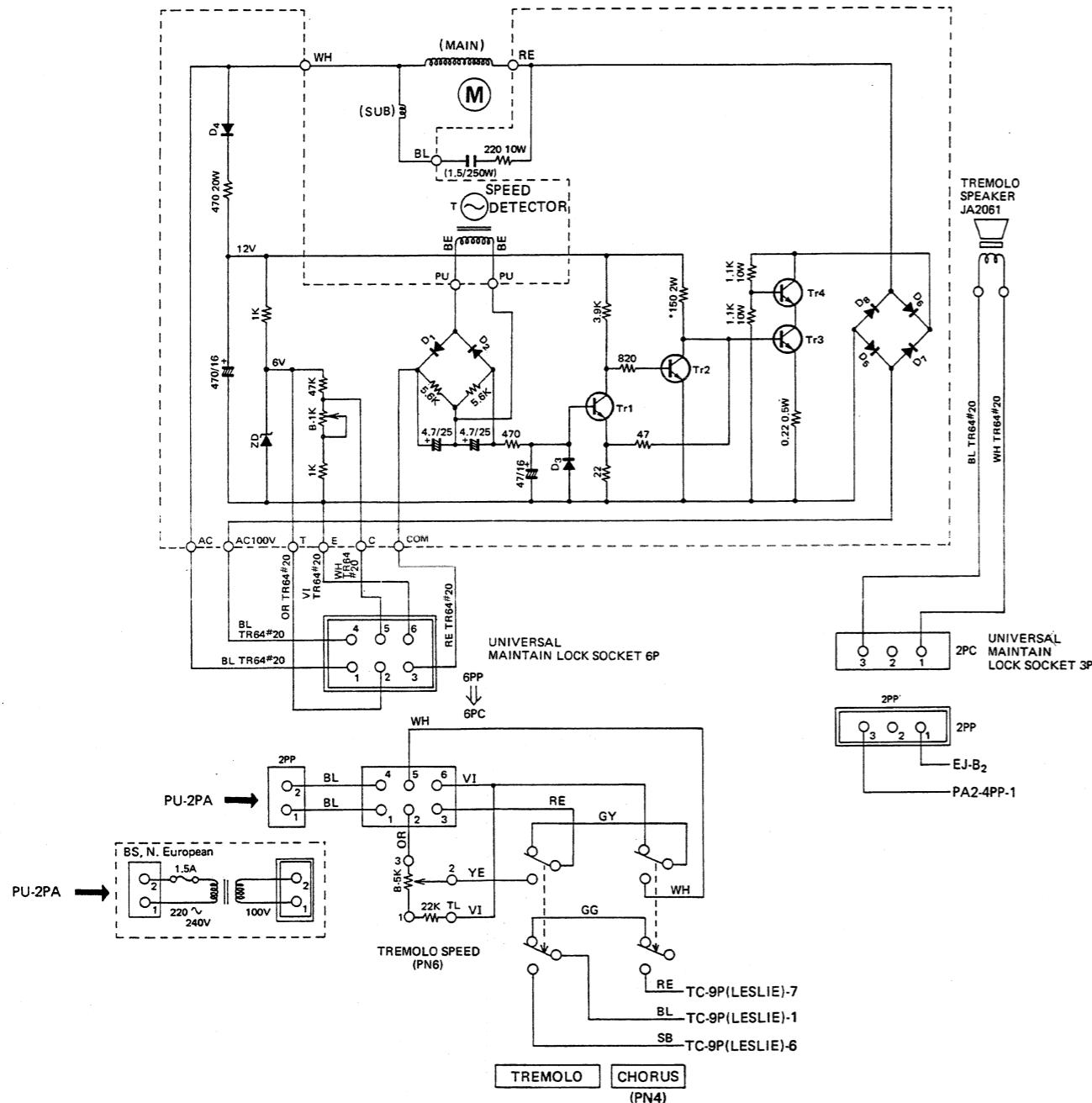
Circuit Board



REV,EXP,FS,TC Circuit Diagram



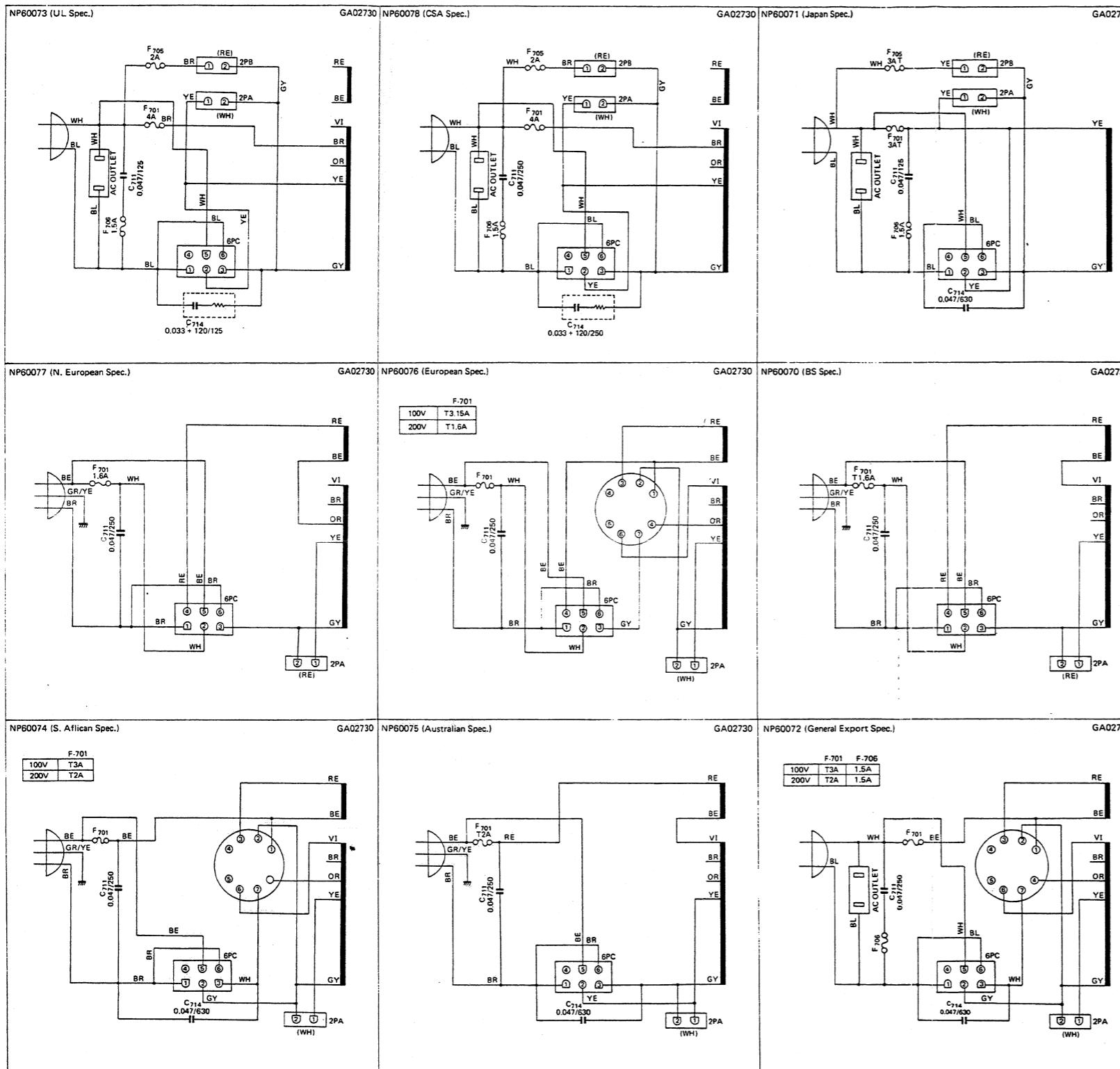
TREMOLO DRIVE UNIT Circuit Diagram



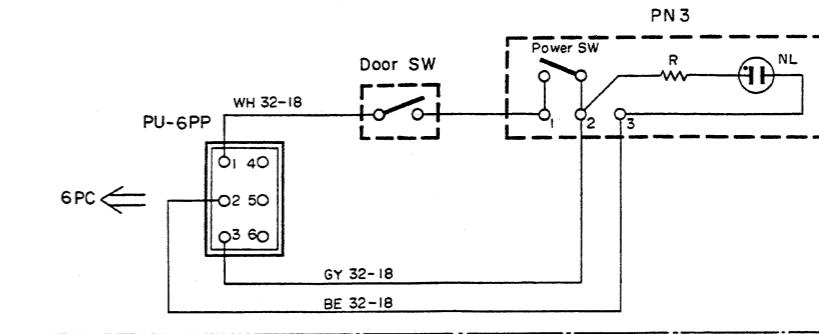
Notes)

1. LC20961
2. Transistor
Tr1 : 2SC458
Tr2 : 2SC735
3. Diode
D₁ ~ D₃ : 1N34A
D₄ ~ D₈ : 10D-4
ZD : 1S1715 6V
4. R : Metal oxide resistor
D₄ ~ D₈
25mm
Red CB00803
Yellow CB00463

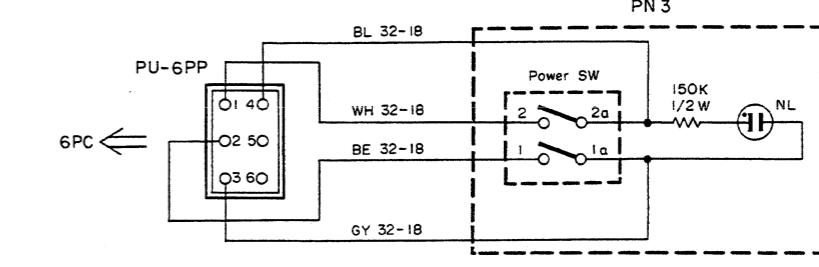
PU(Primary) Circuit Diagram



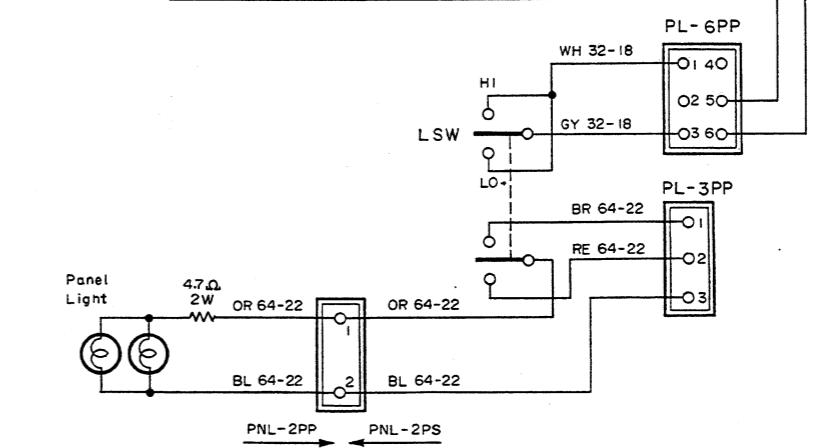
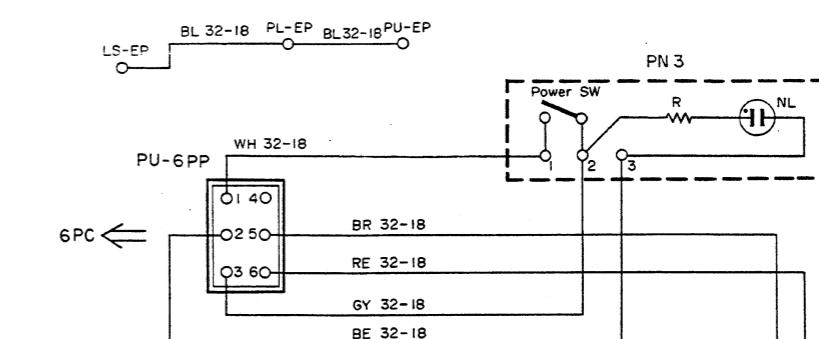
Japan, General, US.American, Canadian, S.African, Australian MODELS



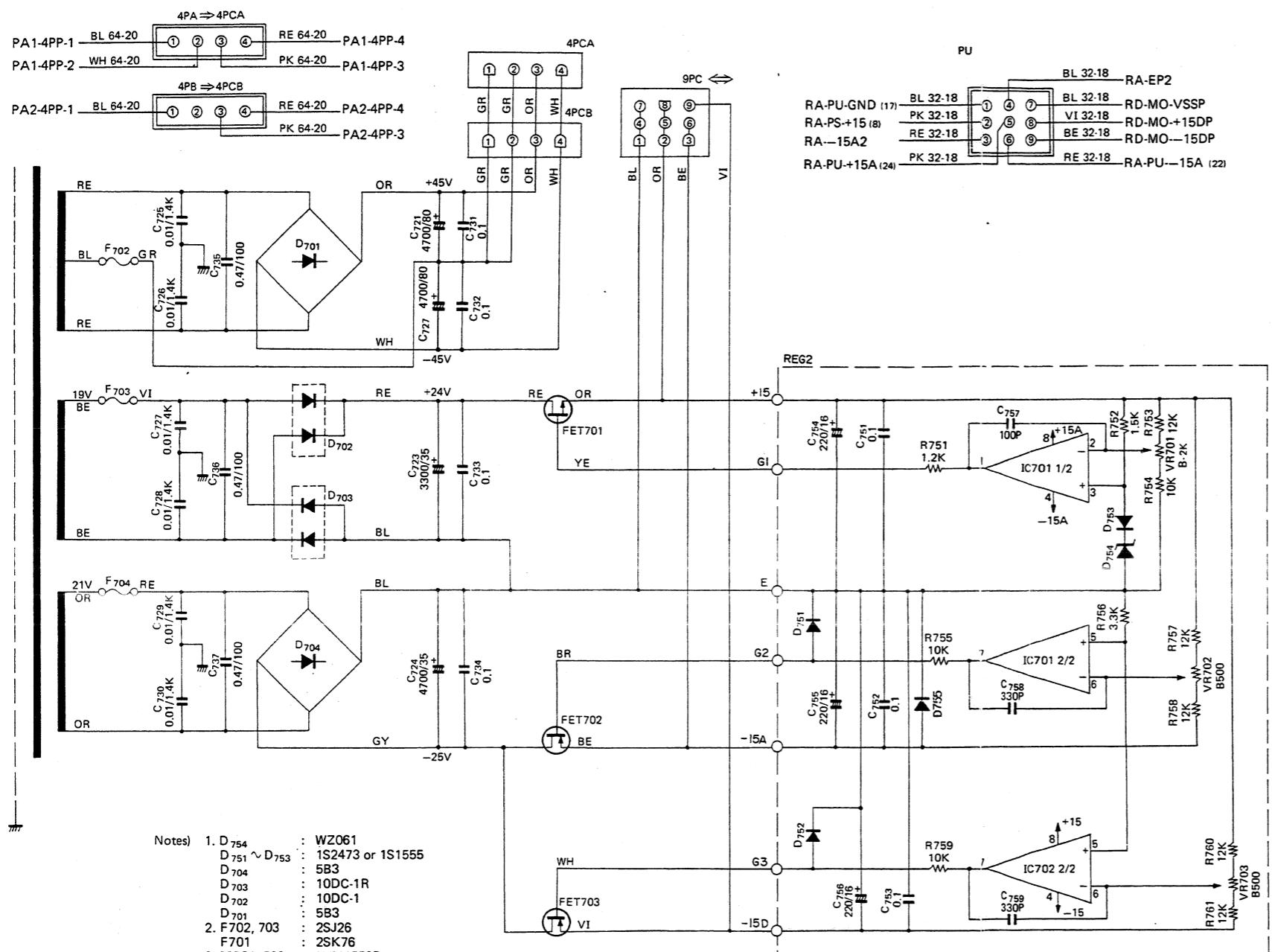
N. European, European, British MODELS



D-80 UTH (American) MODEL



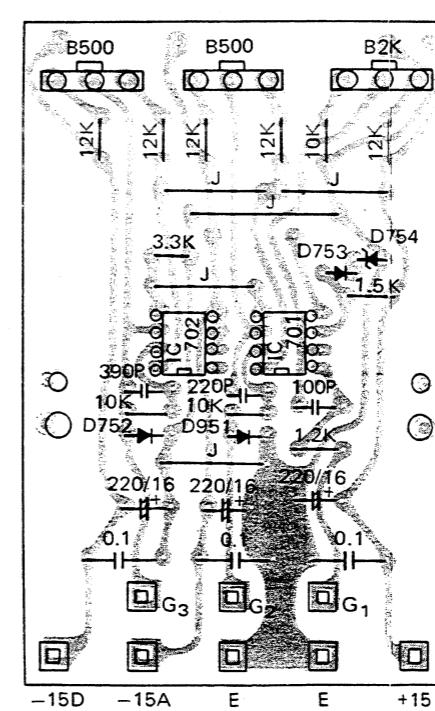
PU(Secondary) Circuit Diagram(NP6007Z)



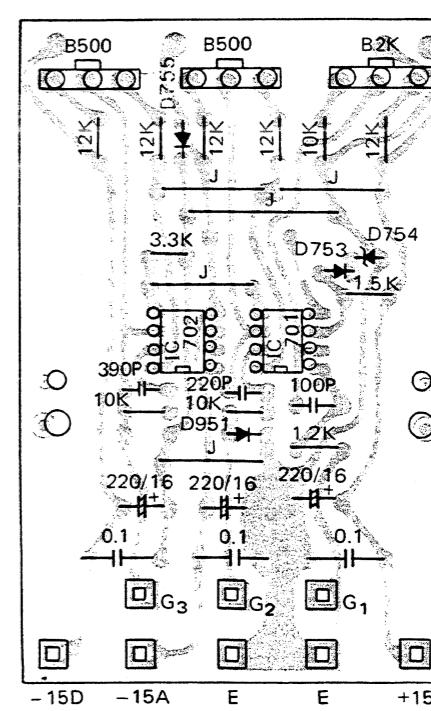
Note) D755:Only Domestic(国内のみ)
D752:Only Export(輸出のみ)

| CSA | 4A (KB00105) | 2.5A (KB00111) | 2.5A (KB00111) | 4A (KB00105) | 2A (KB00103) | 1.5A (KB00083) |
|----------------|-----------------------|------------------|------------------|------------------|------------------|------------------|
| European | 100V T3.15A (KB00076) | T2A (KB00075) | T2A (KB00075) | T3.15A (KB00076) | | |
| | 200V T1.6A (KB00074) | T2A (KB00075) | T2A (KB00075) | T3.15A (KB00076) | | |
| Australian | T2A (KB00035) | T2A (KB00035) | T2A (KB00035) | T3A (KB00036) | | |
| | 100V T3A (KB00036) | T2A (KB00035) | T2A (KB00035) | T3A (KB00036) | | |
| S. Africian | 200V T2A (KB00035) | T2A (KB00035) | T2A (KB00035) | T3A (KB00036) | | |
| | | | | | | |
| USA | 4A (KB00105) | 2.5A (KB00111) | 2.5A (KB00111) | 4A (KB00105) | 2A (KB00103) | 1.5A (KB00083) |
| | | | | | | |
| General Export | 100V T3A (KB00036) | T2A (KB00035) | T2A (KB00035) | T3A (KB00036) | 1.5A (KB00083) | |
| | 200V T2A (KB00035) | T2A (KB00035) | T2A (KB00035) | T3A (KB00036) | 1.5A (KB00083) | |
| Domestic | T3A (KB00036) | T2A (KB00035) | T2A (KB00035) | T3A (KB00036) | 1.5A (KB00147) | |
| | | | | | | |
| BS N. European | T1.6A (KB00074) | T2A (KB00075) | T2A (KB00075) | T3.15A (KB00076) | | |
| | | | | | | |
| Fuse | F ₇₀₁ | F ₇₀₂ | F ₇₀₃ | F ₇₀₄ | F ₇₀₅ | F ₇₀₆ |

(Export)



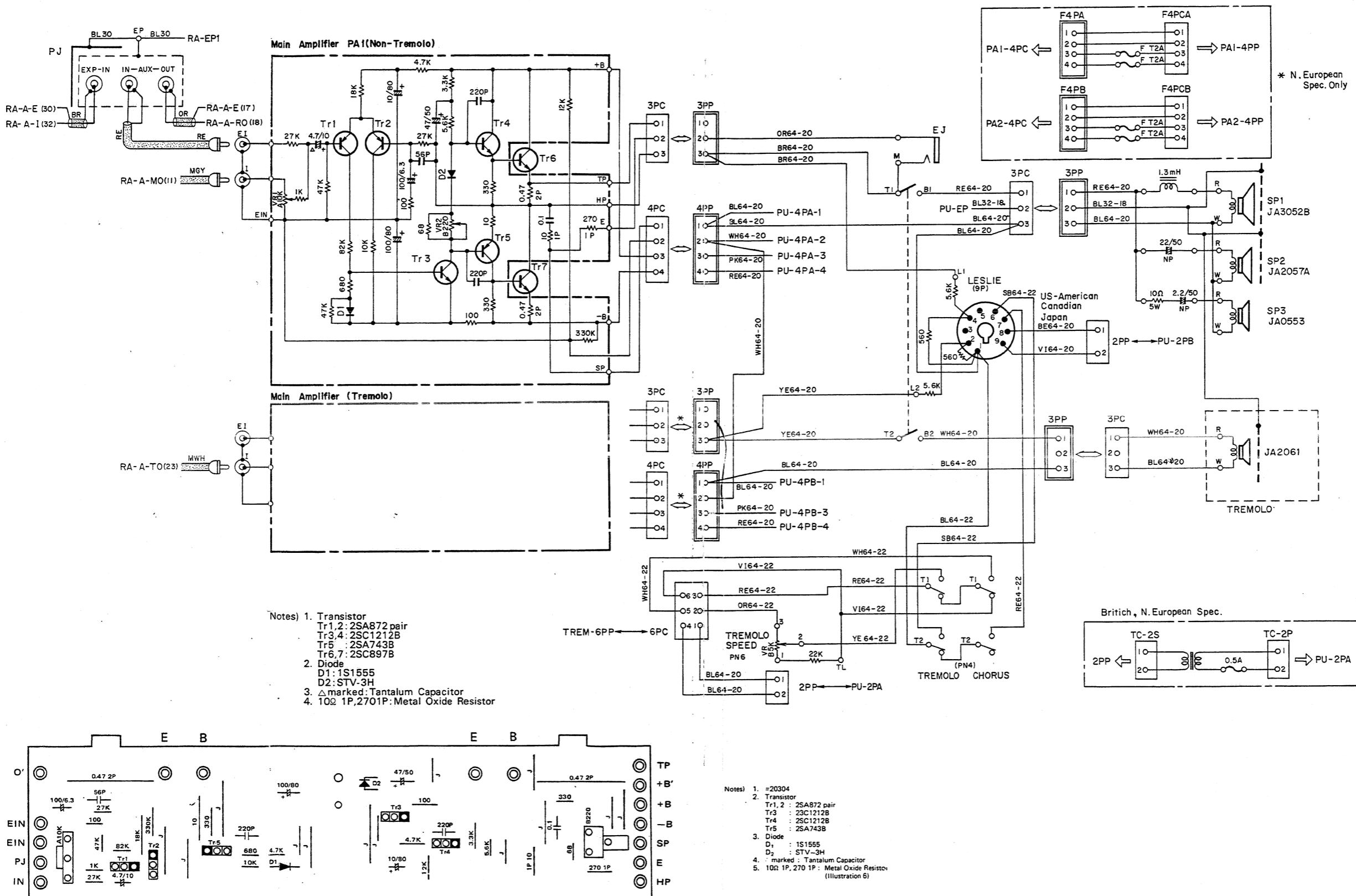
(Domestic)



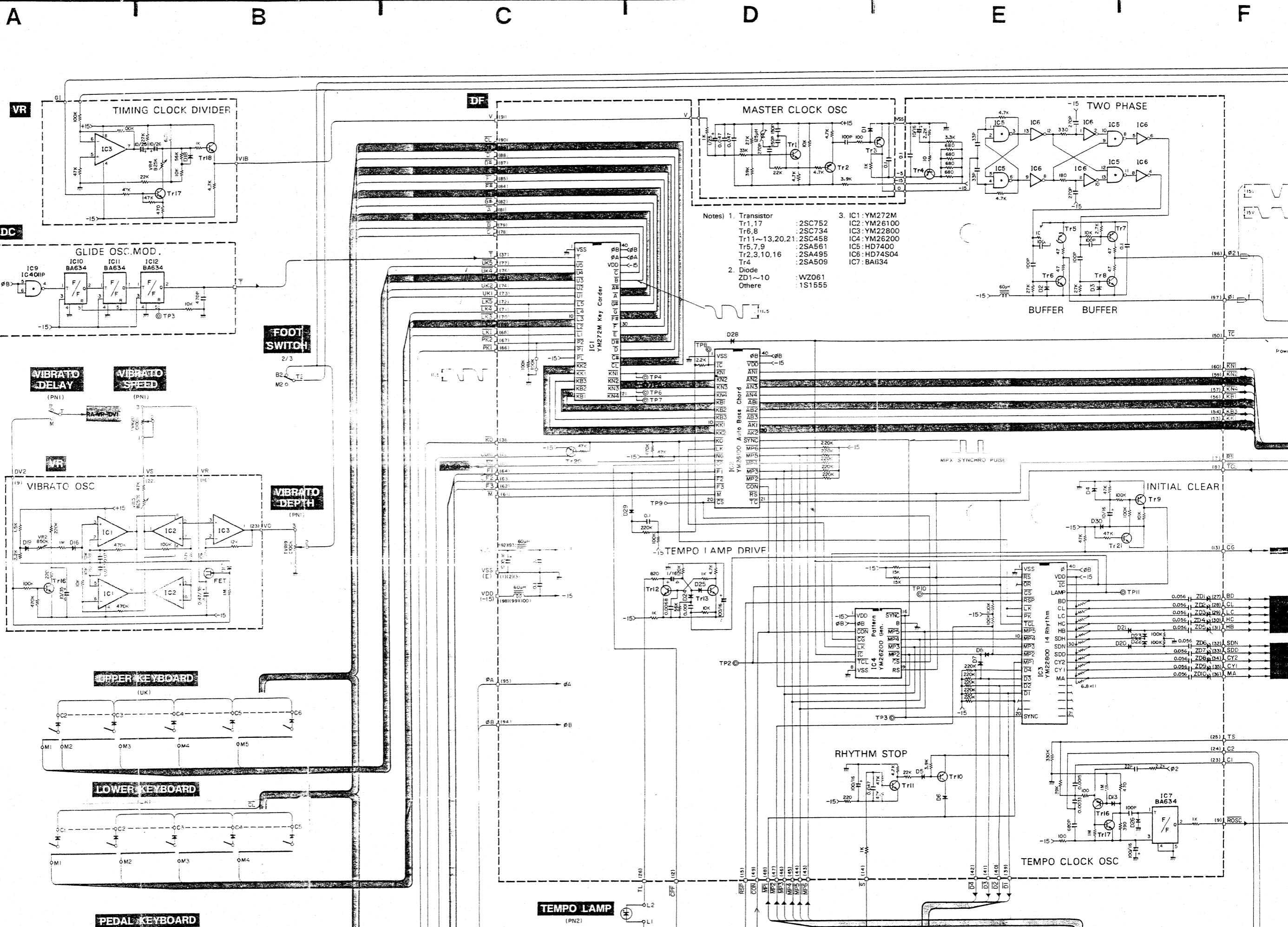
Notes)

1. IC : IC701 ~ 702 NJM4558D
2. Diode : D₇₅₁ ~ D₇₅₃ 1S2473 (VA)
D₇₅₄ WZ-061
D₇₅₅ 10E-1
3. Capacitor : 0.1μF Ceramic Capacitor
4. Volume : 18K-3-1

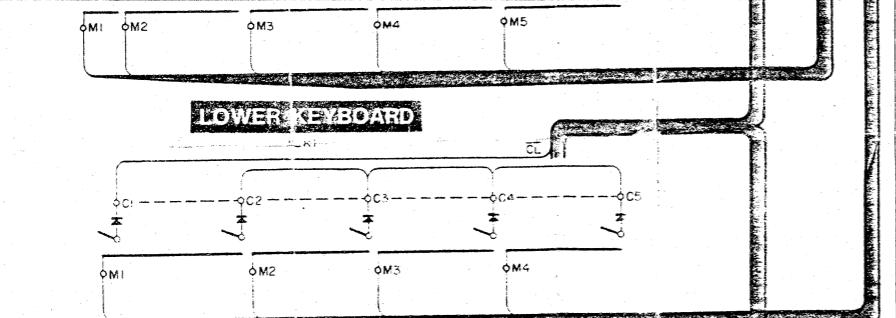
PA(ND6060) Circuit Diagram



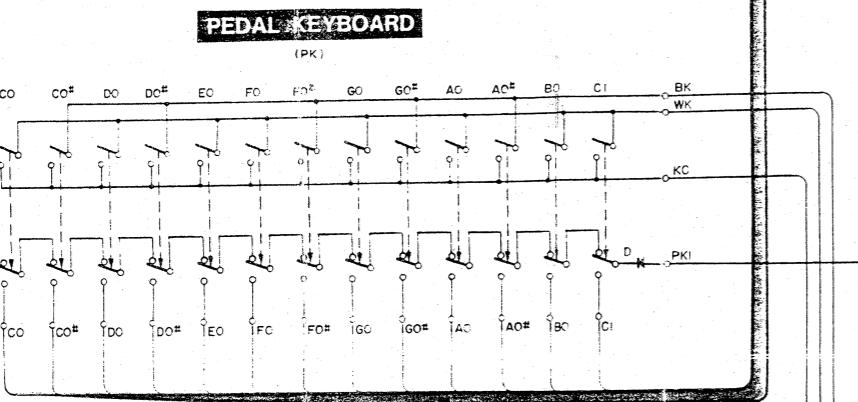
D-80 OVERA



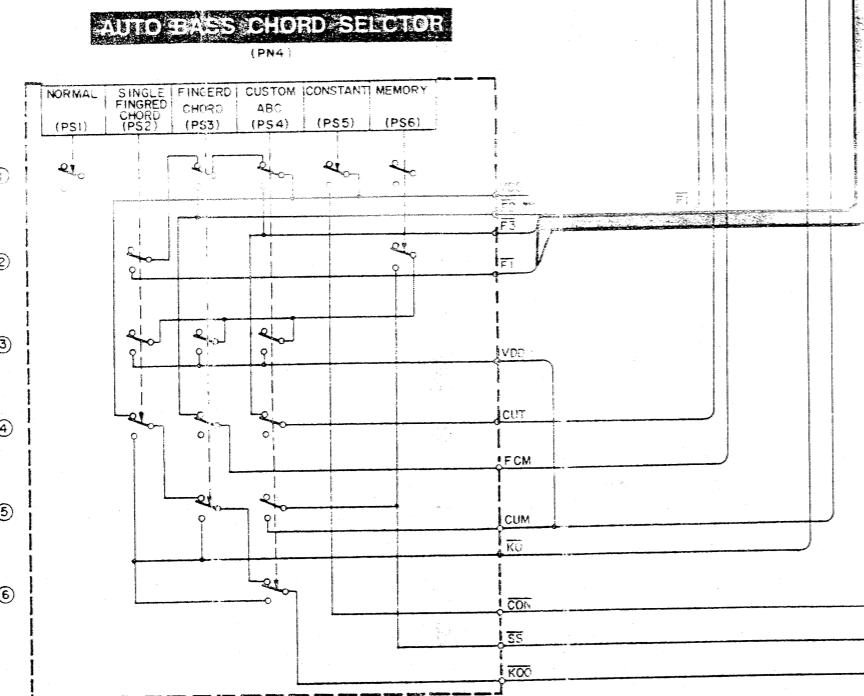
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6

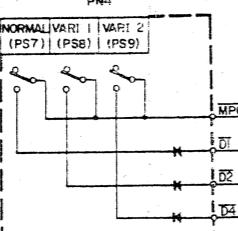


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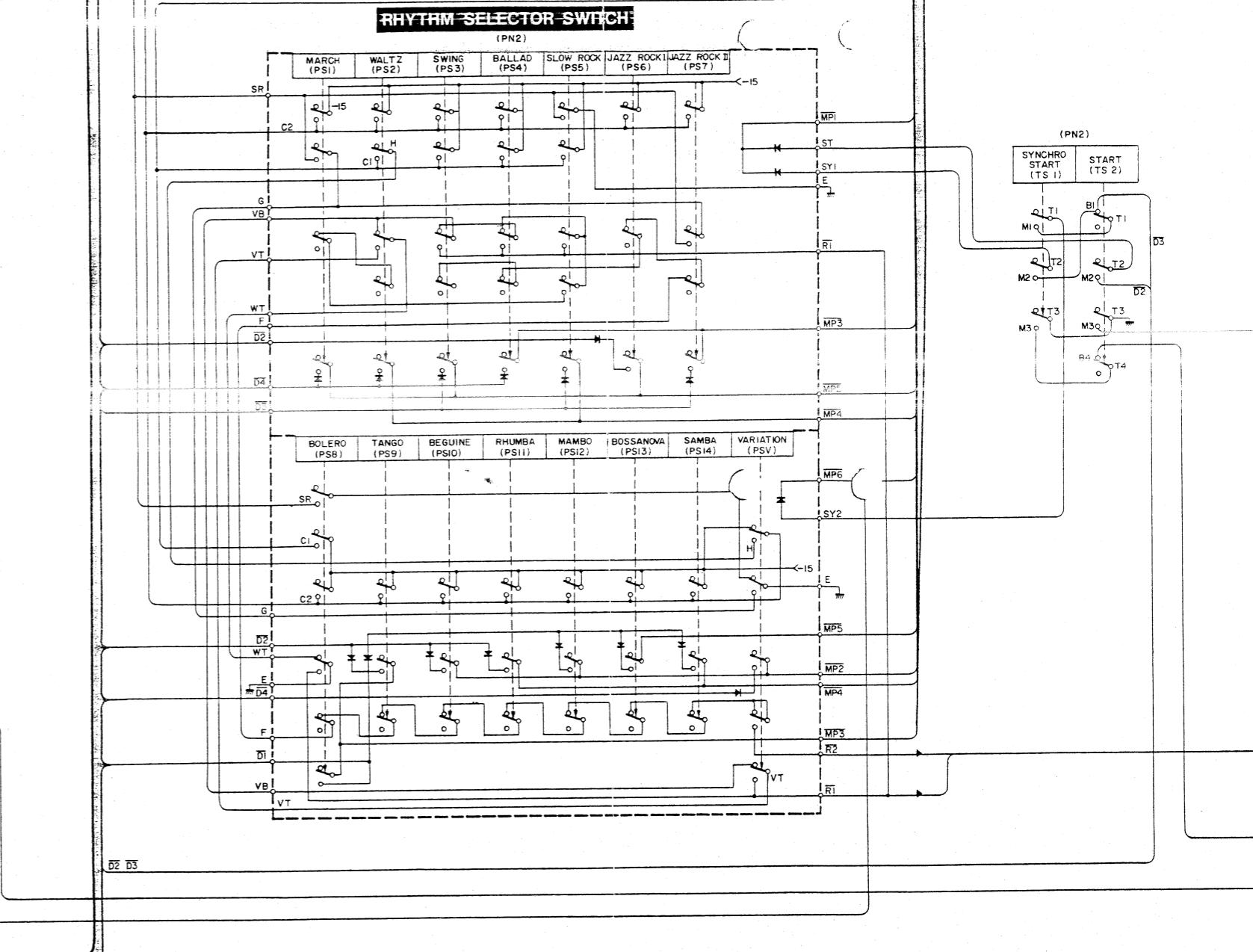
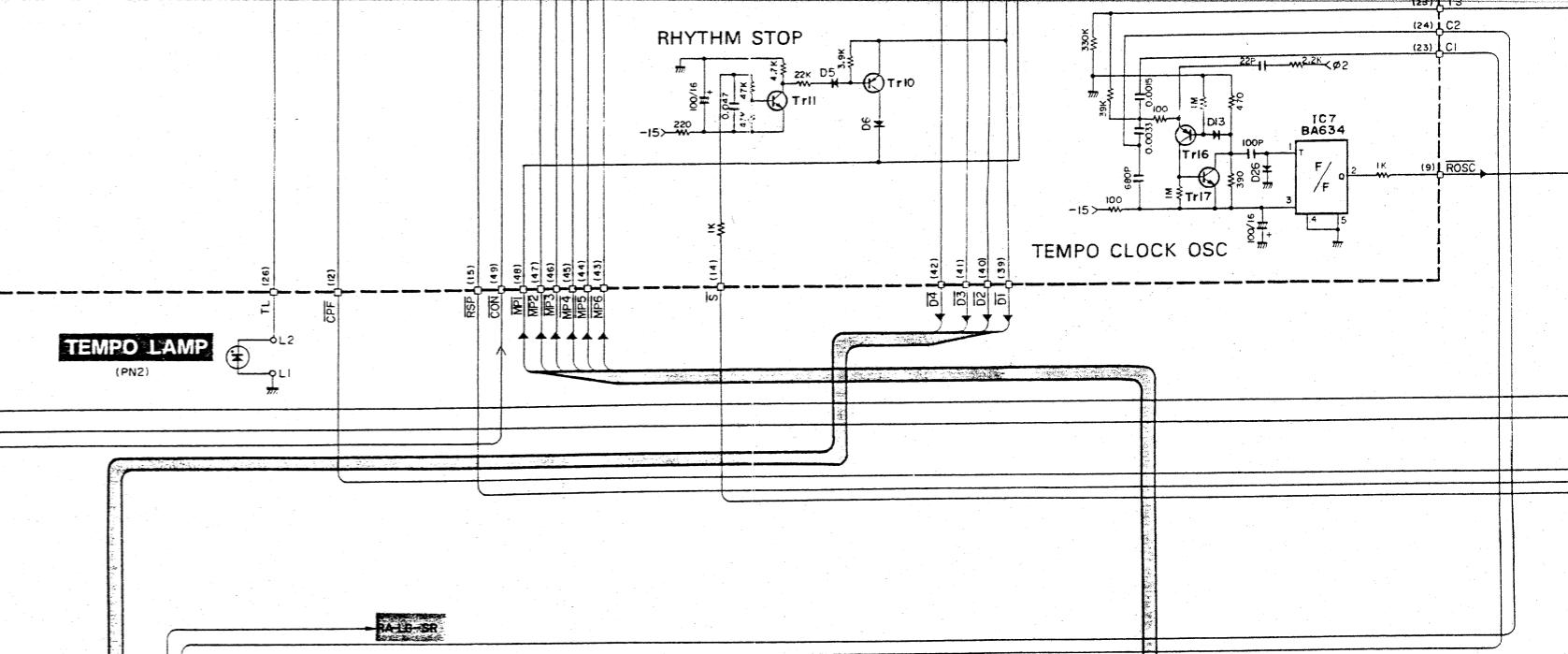


8

PN4



9



C

D

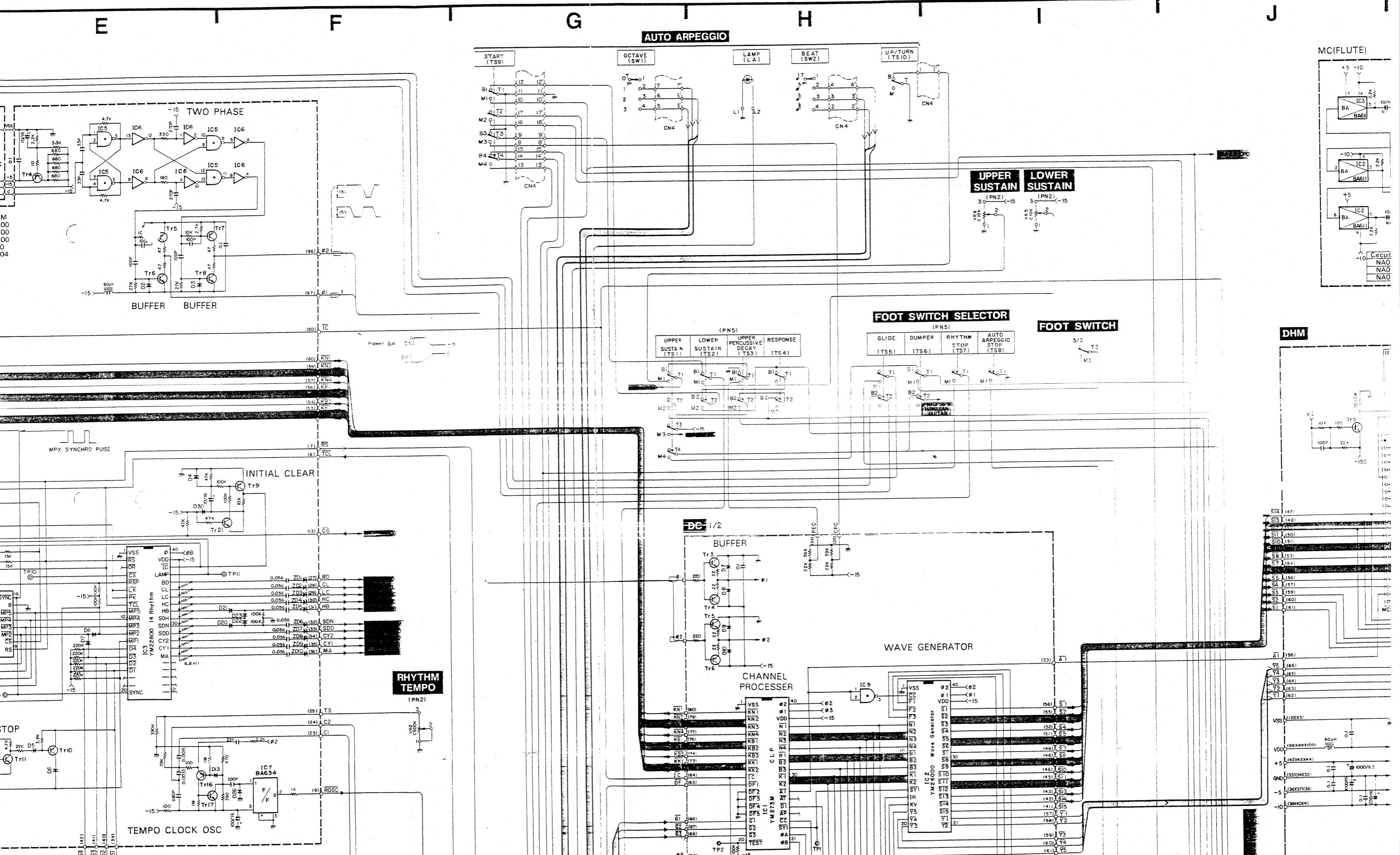
E

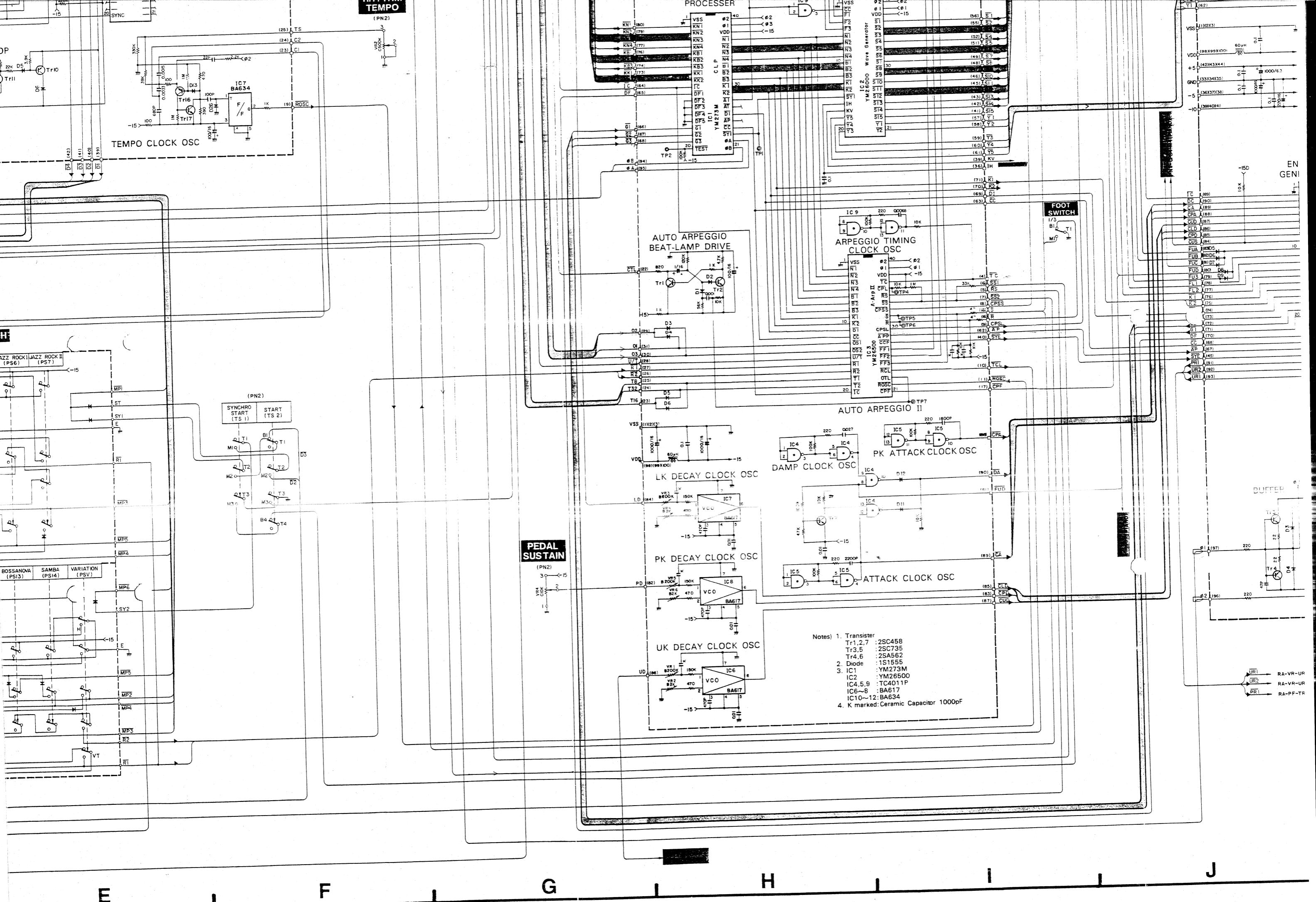
F

A

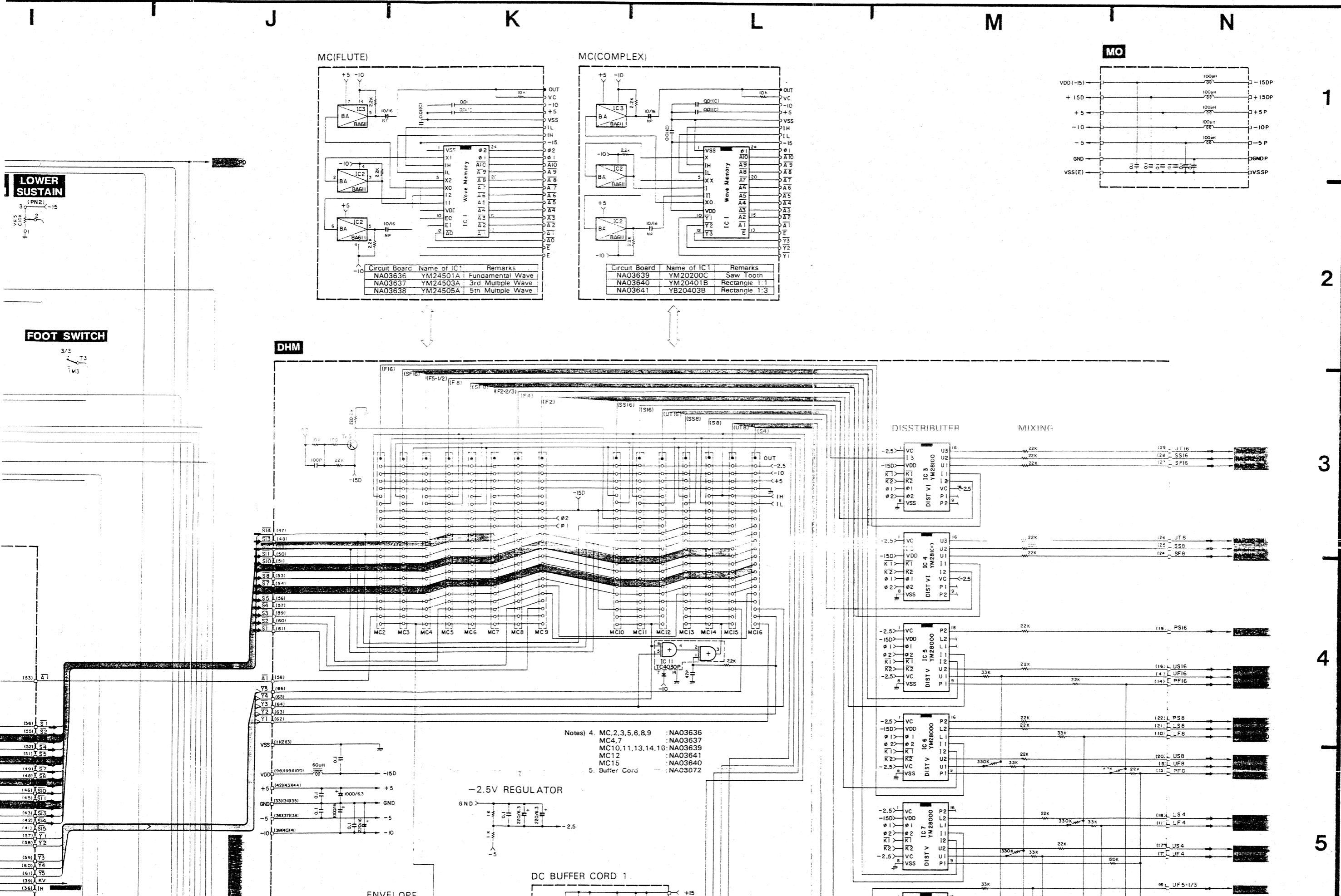
B

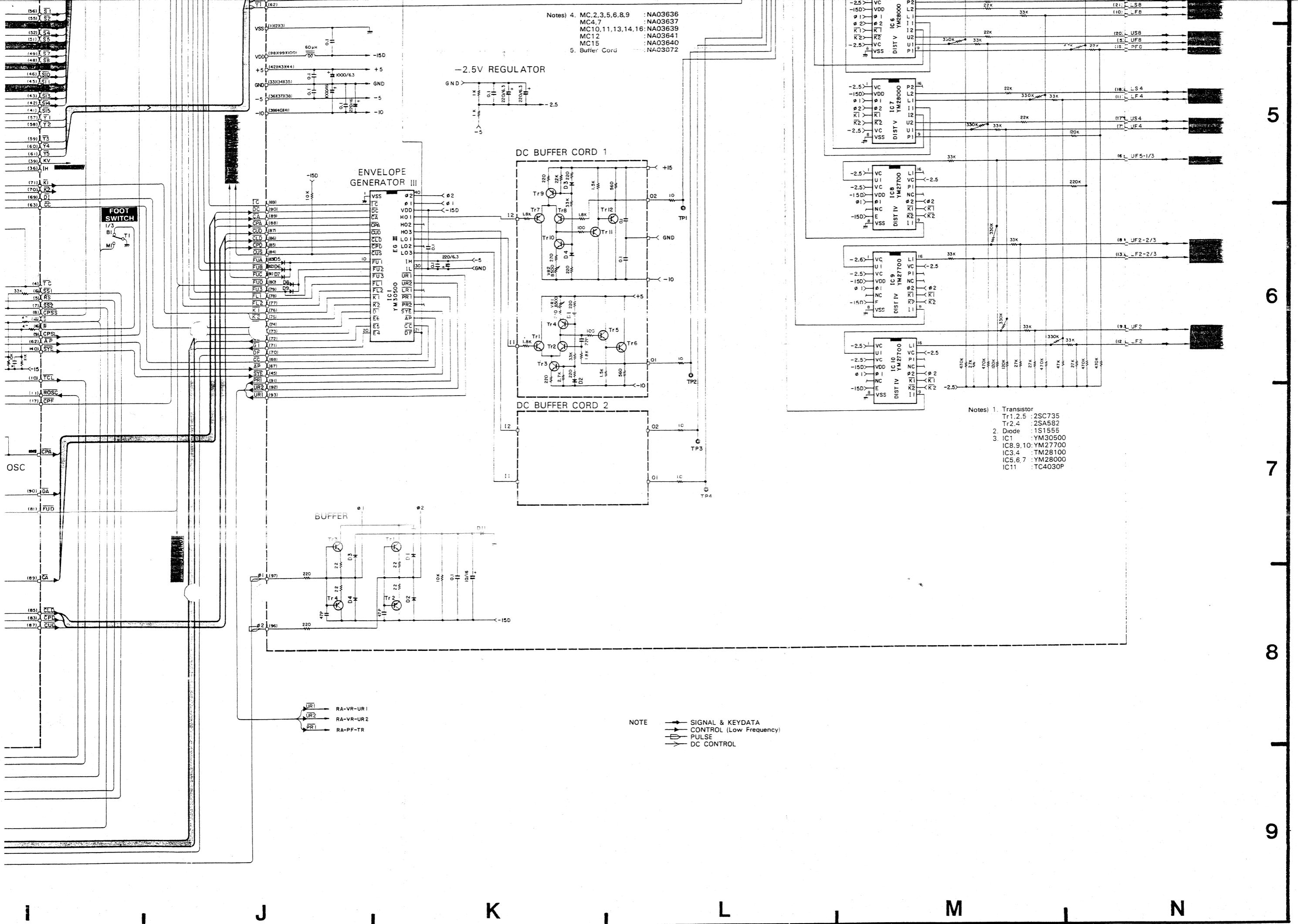
D-80 OVERALL CIRCUIT (DIGITAL SECTION)



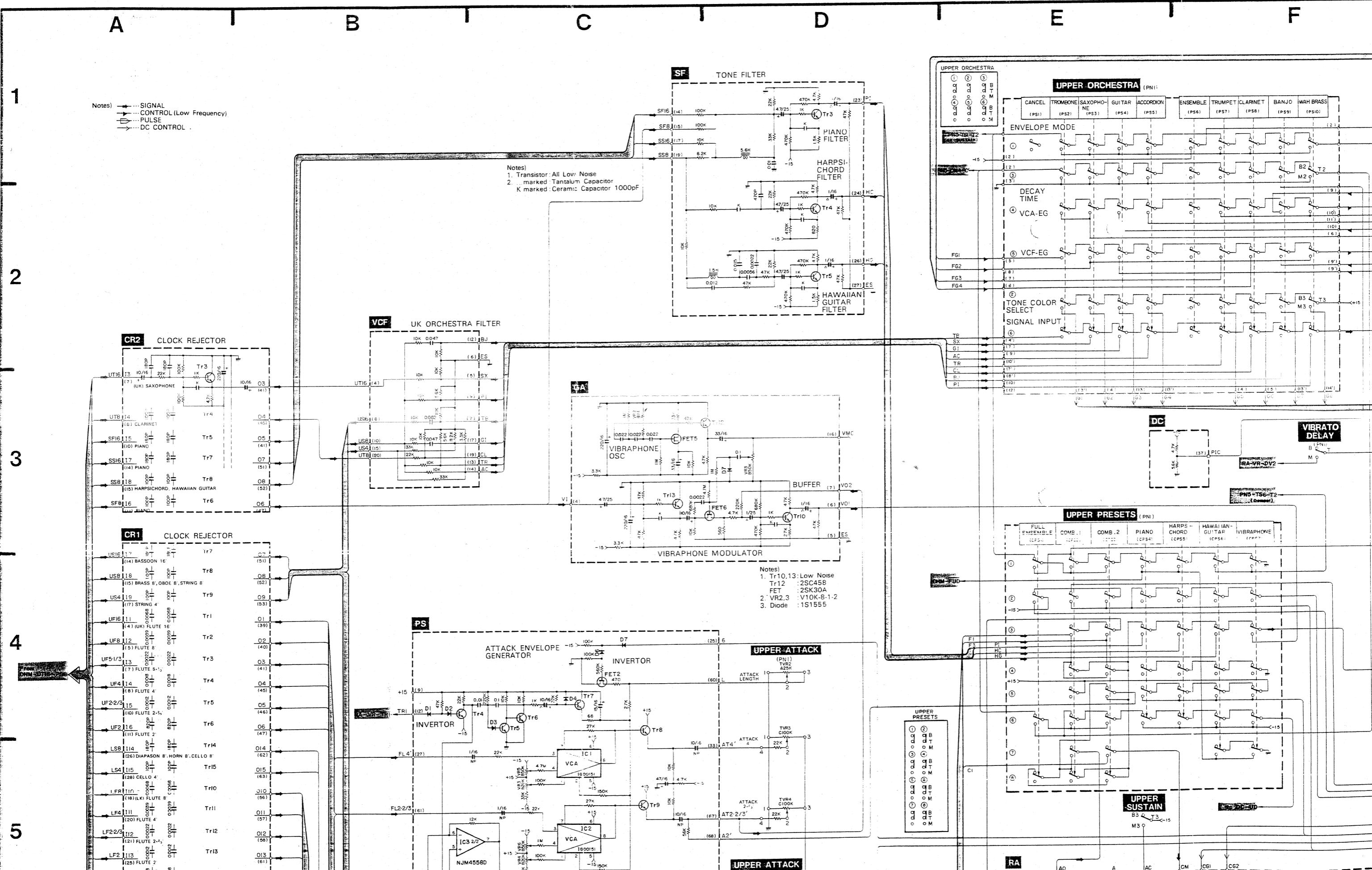


L SECTION)

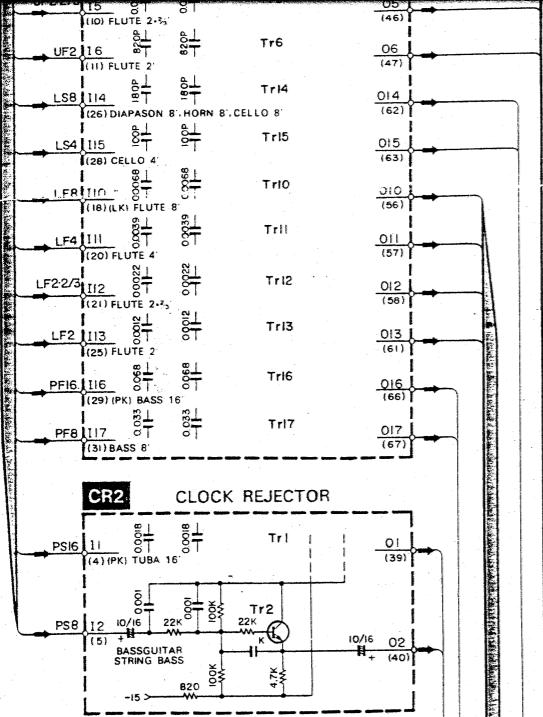




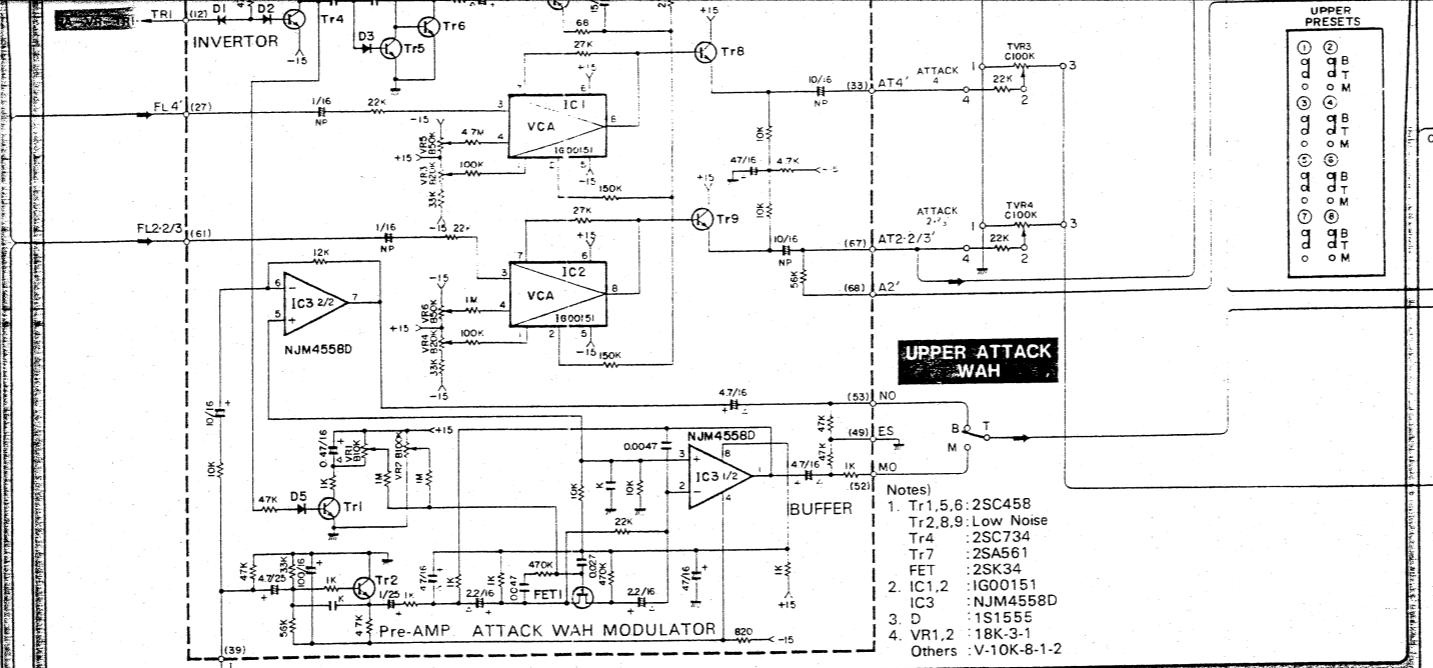
D-80 OVERAL



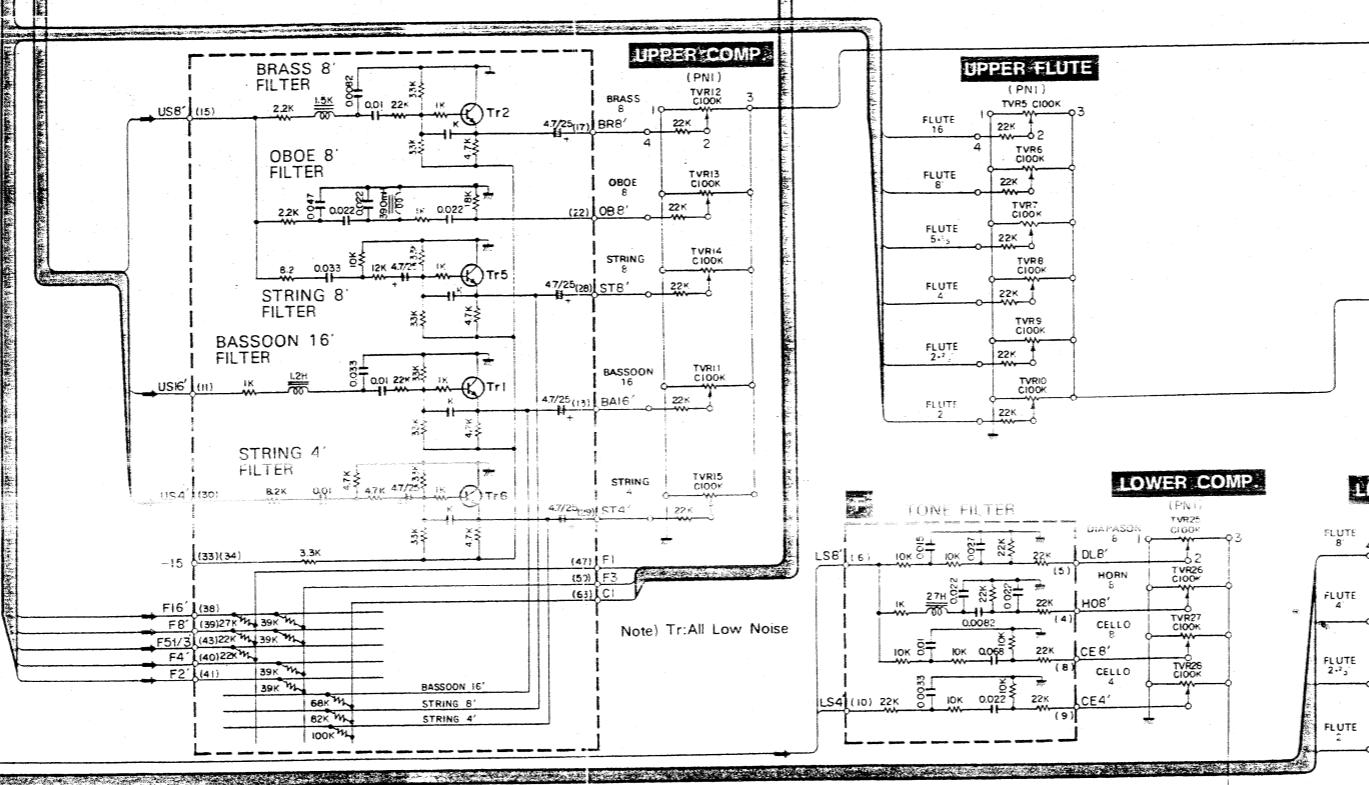
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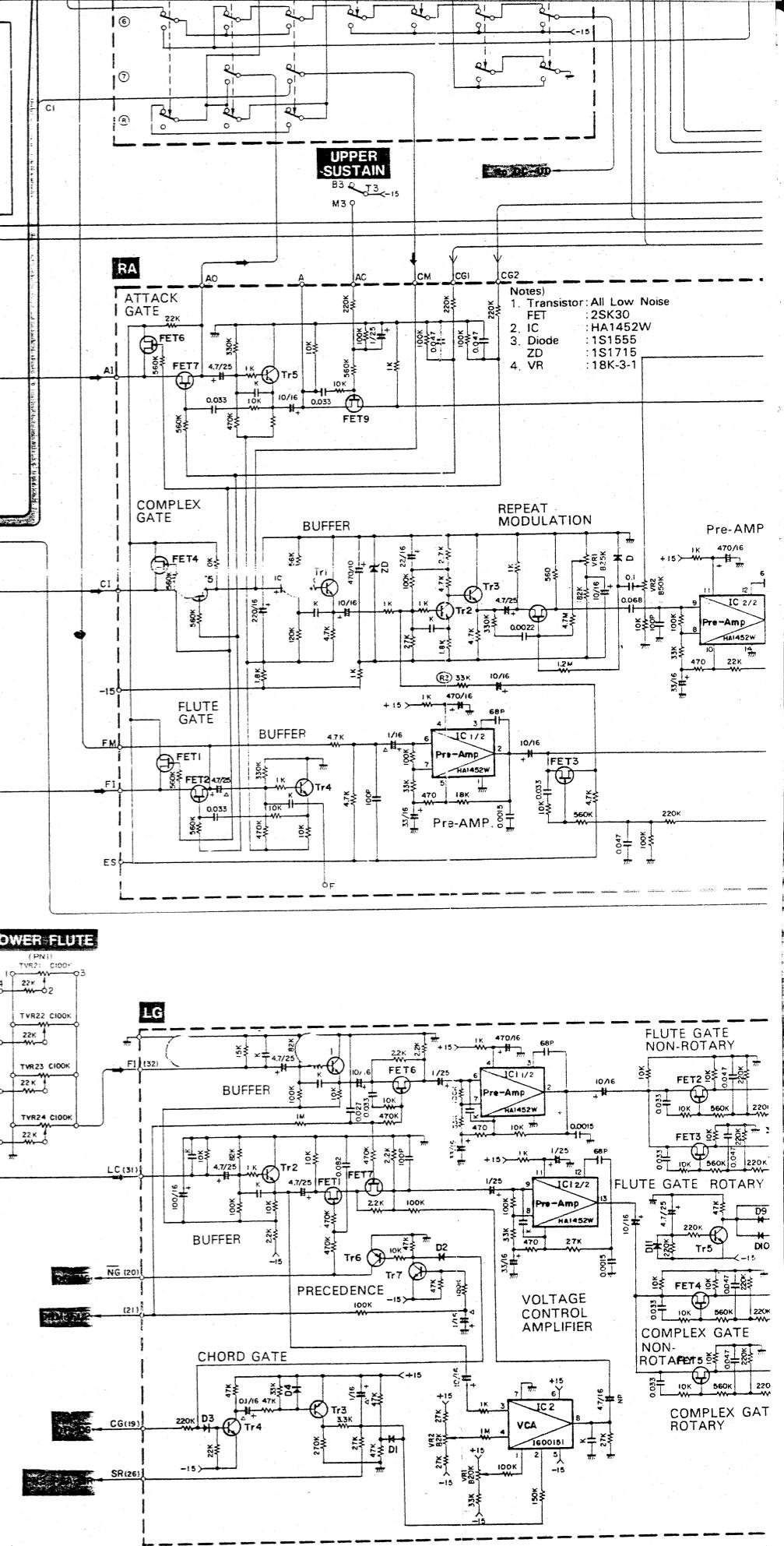
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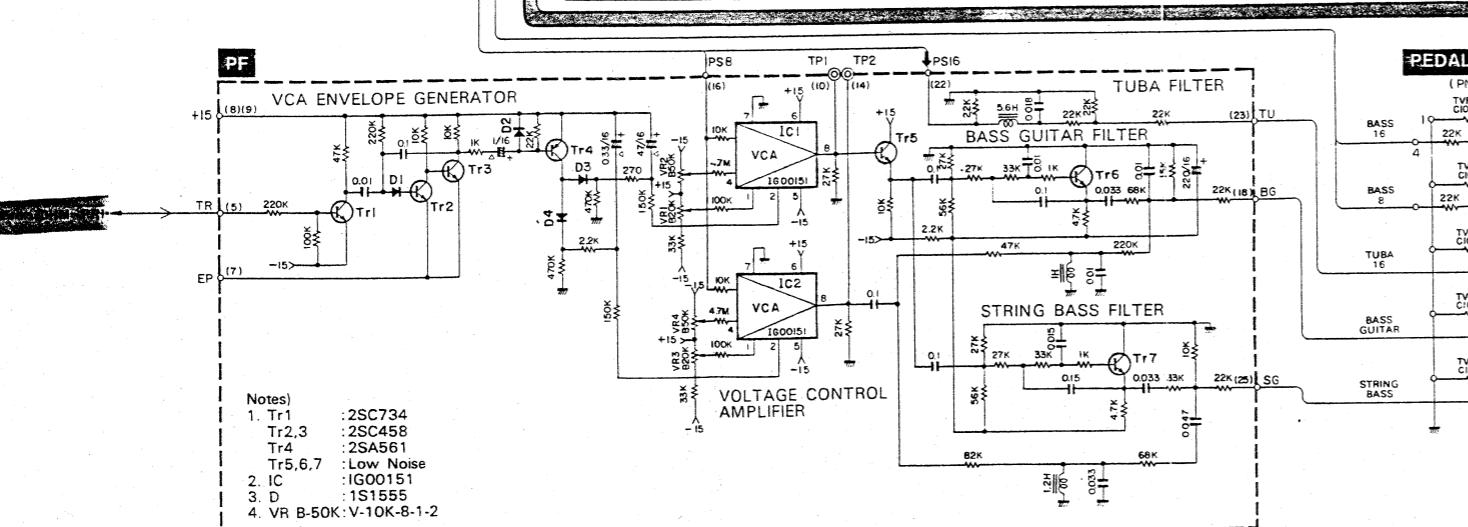
7



8



9



A

B

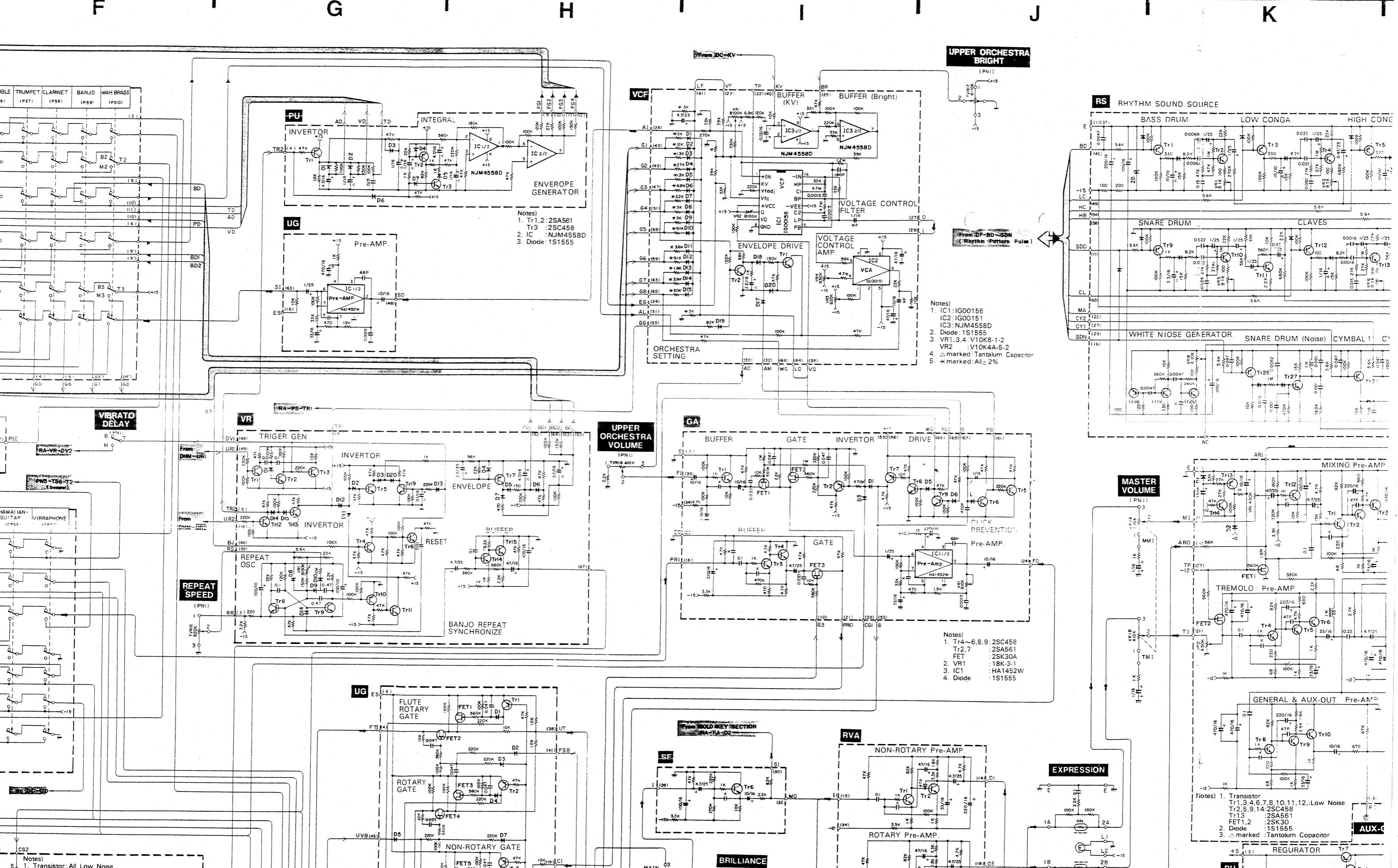
C

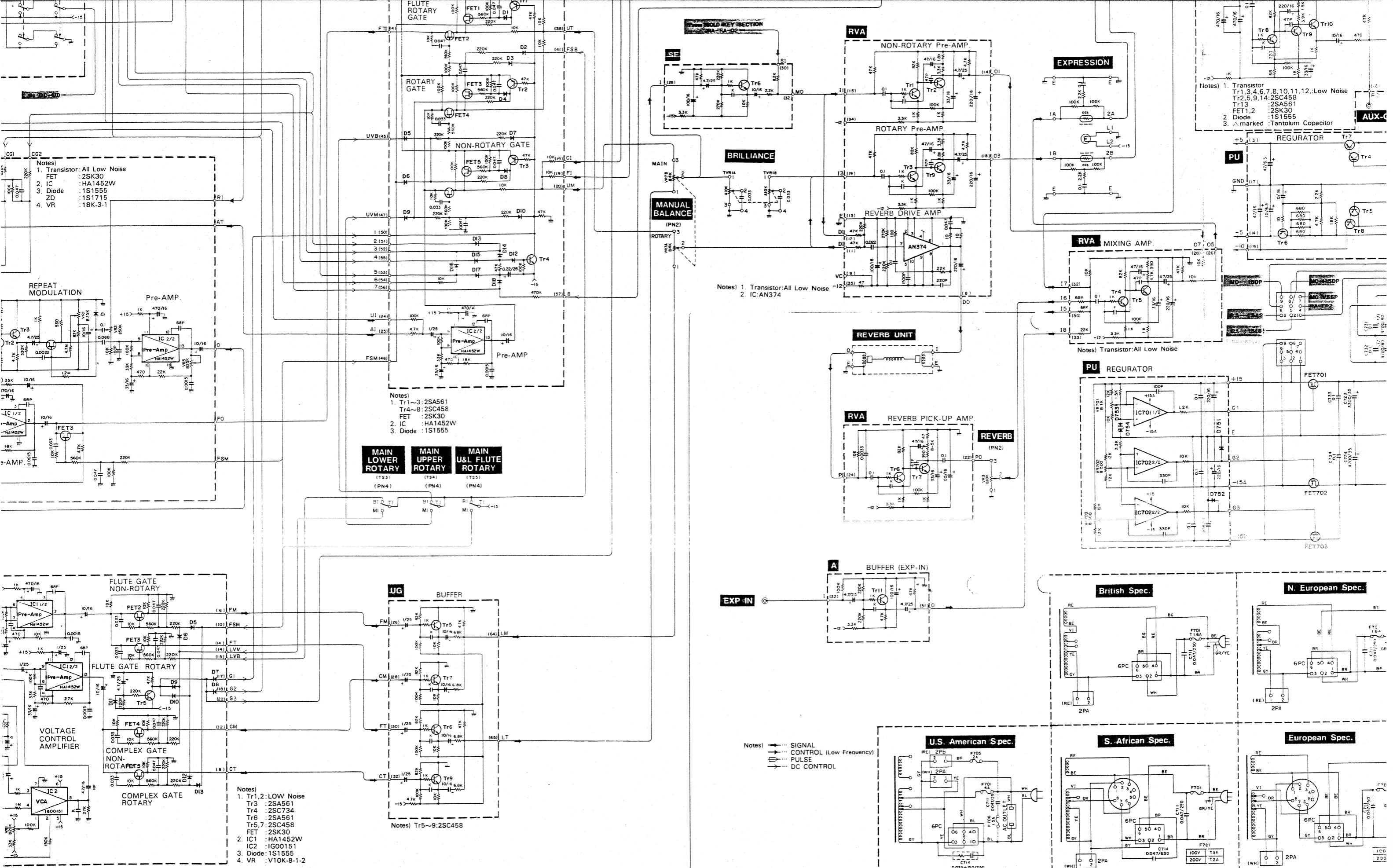
D

E

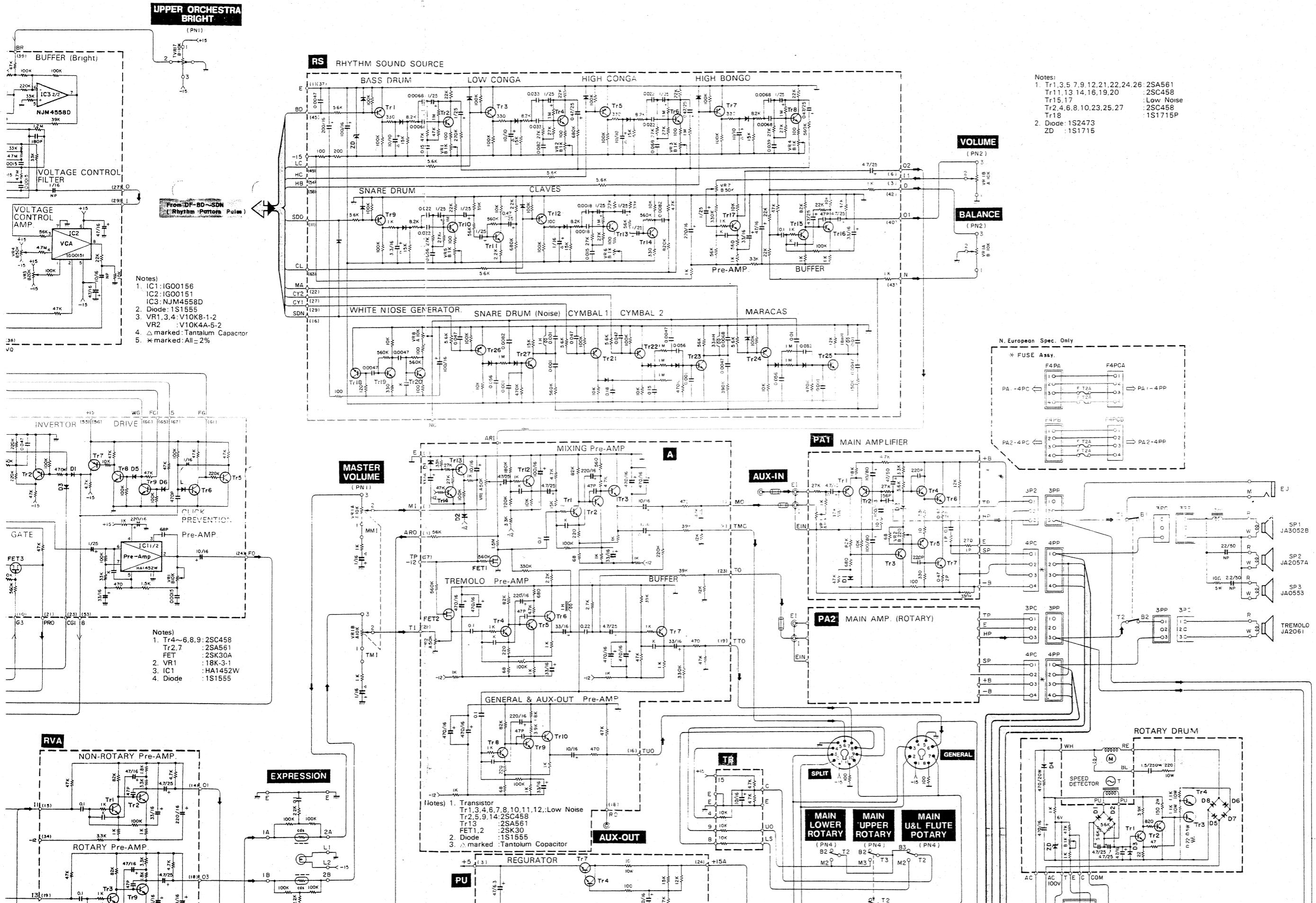
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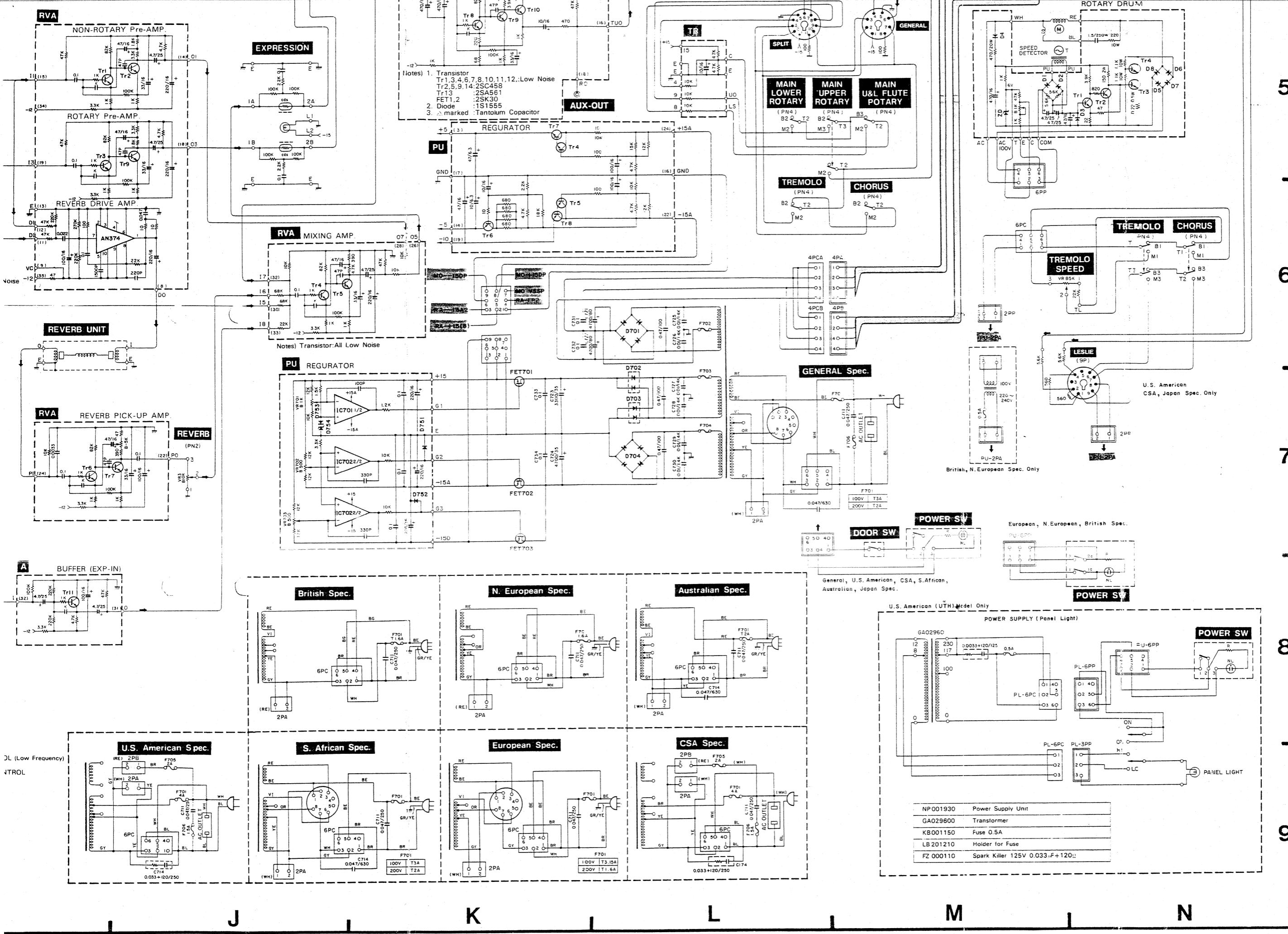
OVERALL CIRCUIT (ANALOG SECTION)





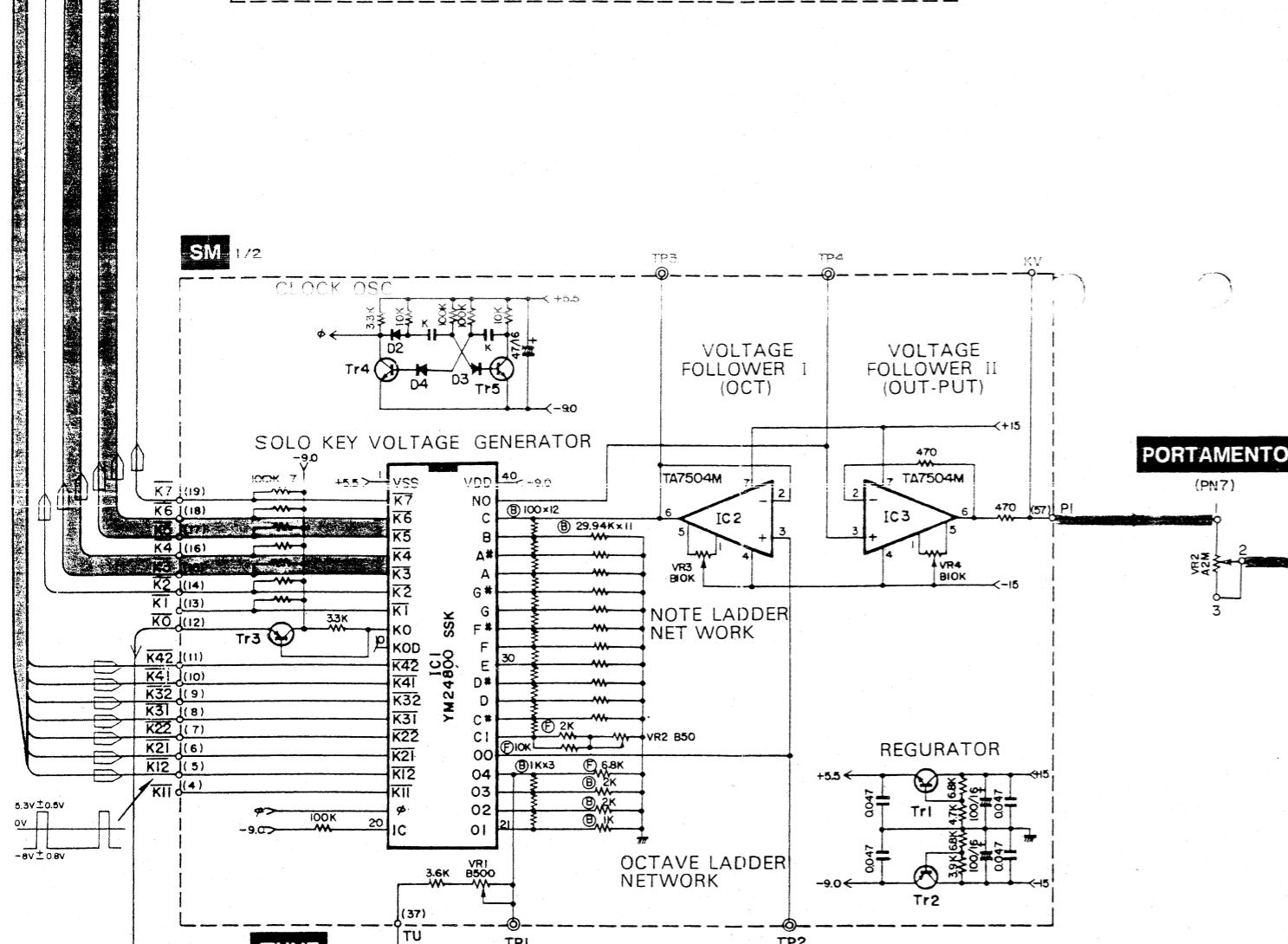
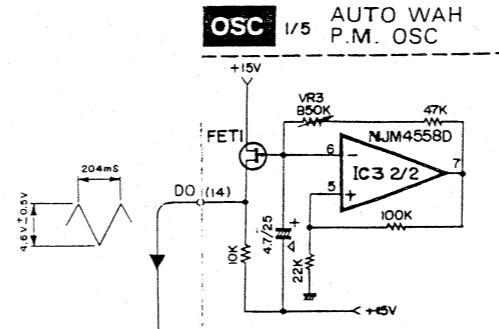
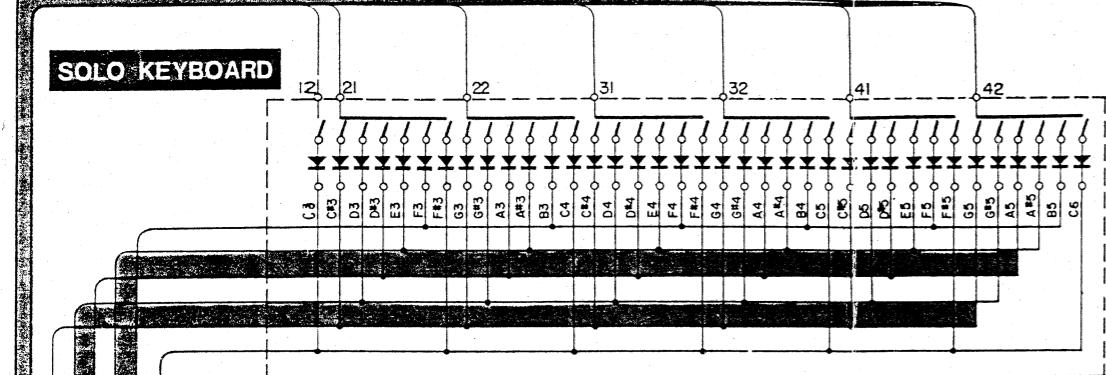
SECTION)



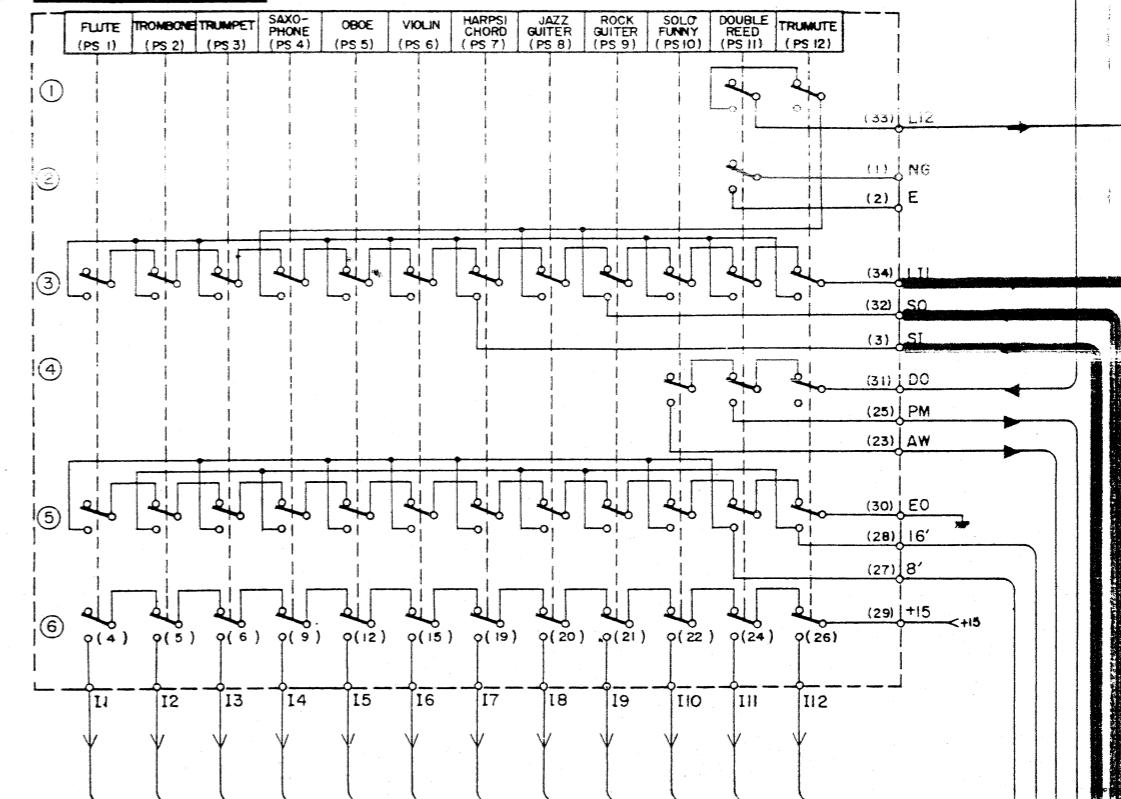


D-80 OVERALL CIRCUIT (SC)

A B C D E F G H



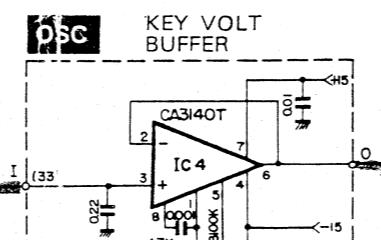
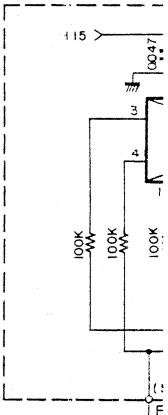
TONE SELECTOR

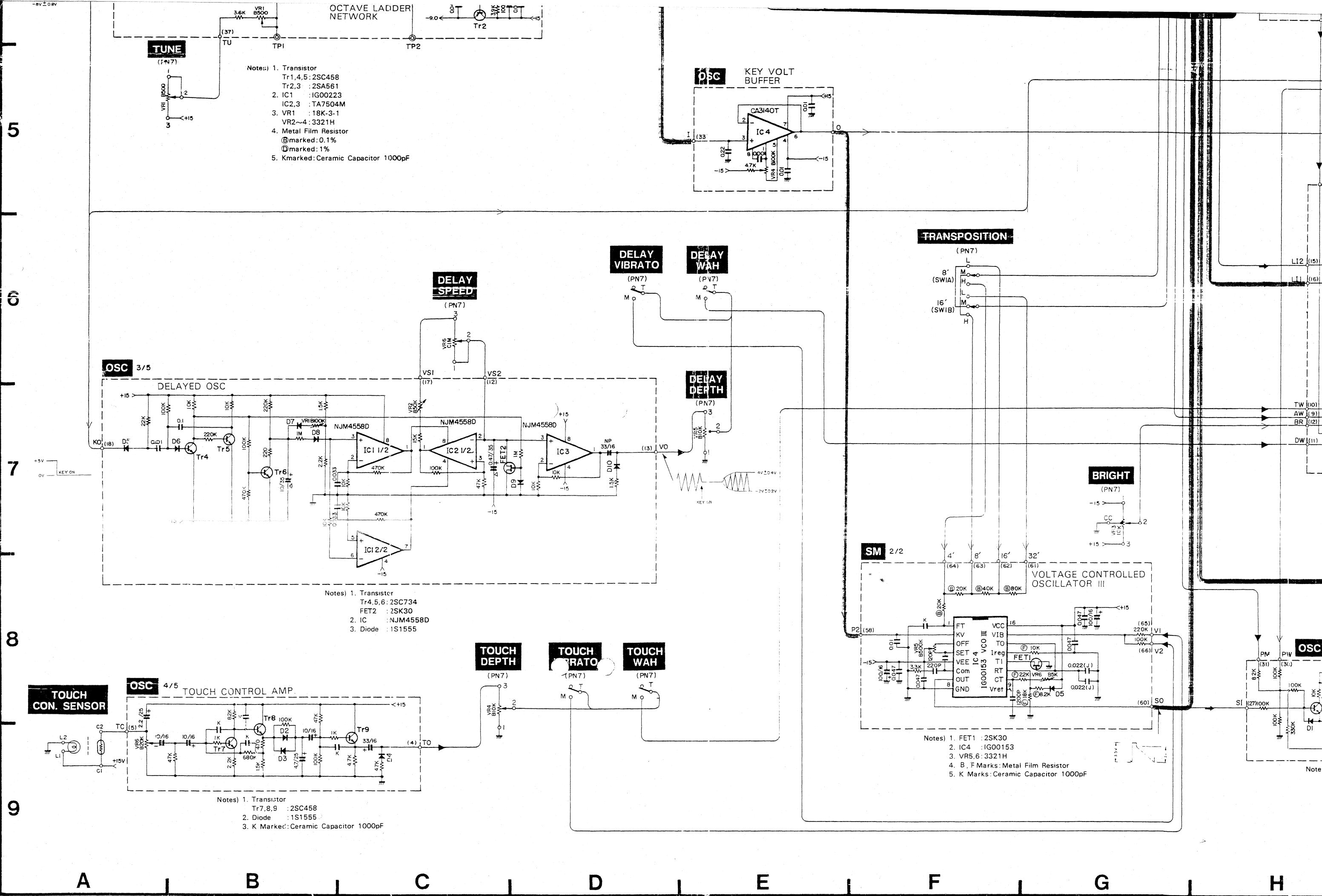


FEG 1/2

PRESET TON VOLTAGE SE

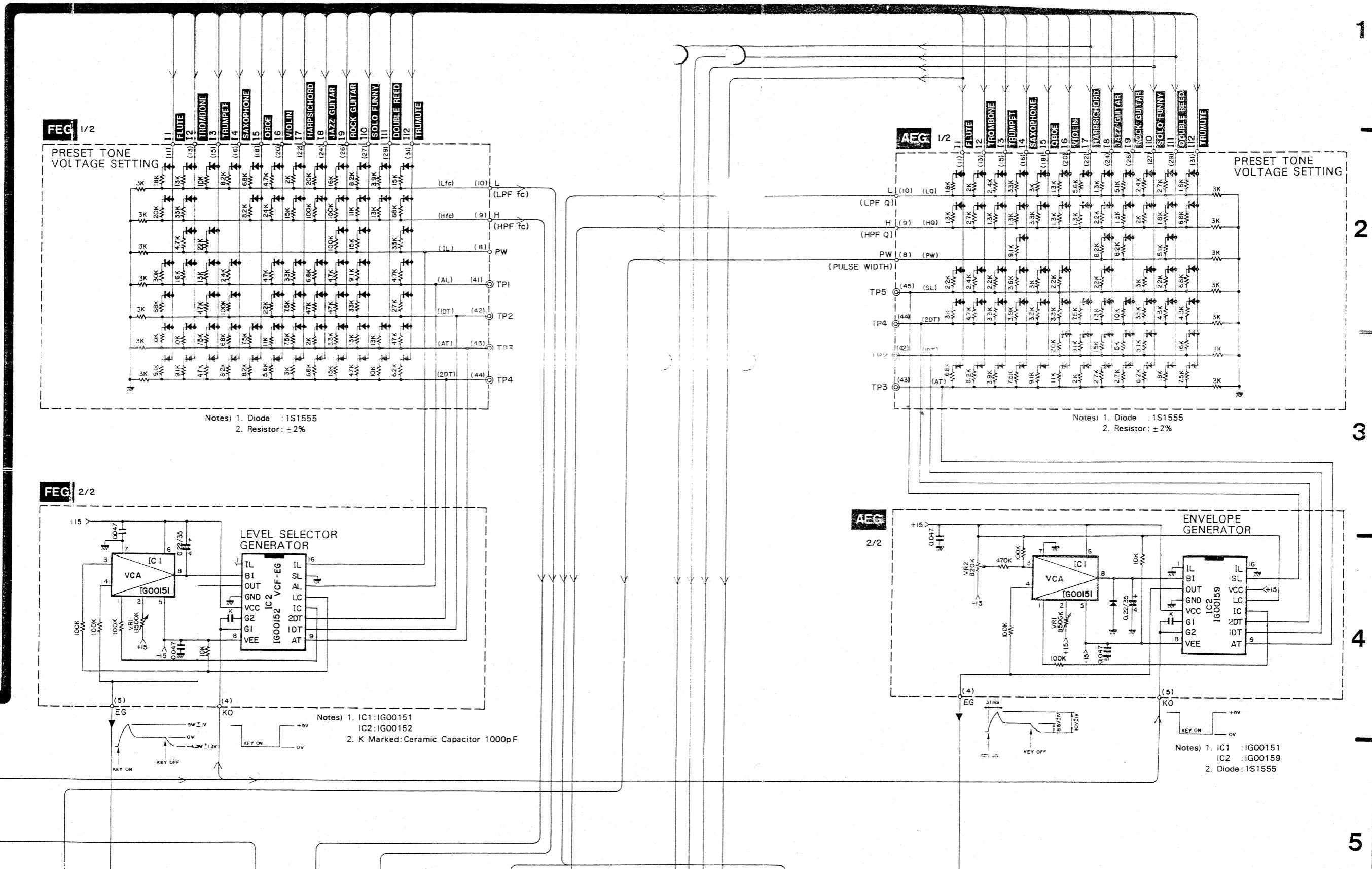
FEG 2/2





CIRCUIT (SOLO KEY SECTION)

G H I J K L M N Z



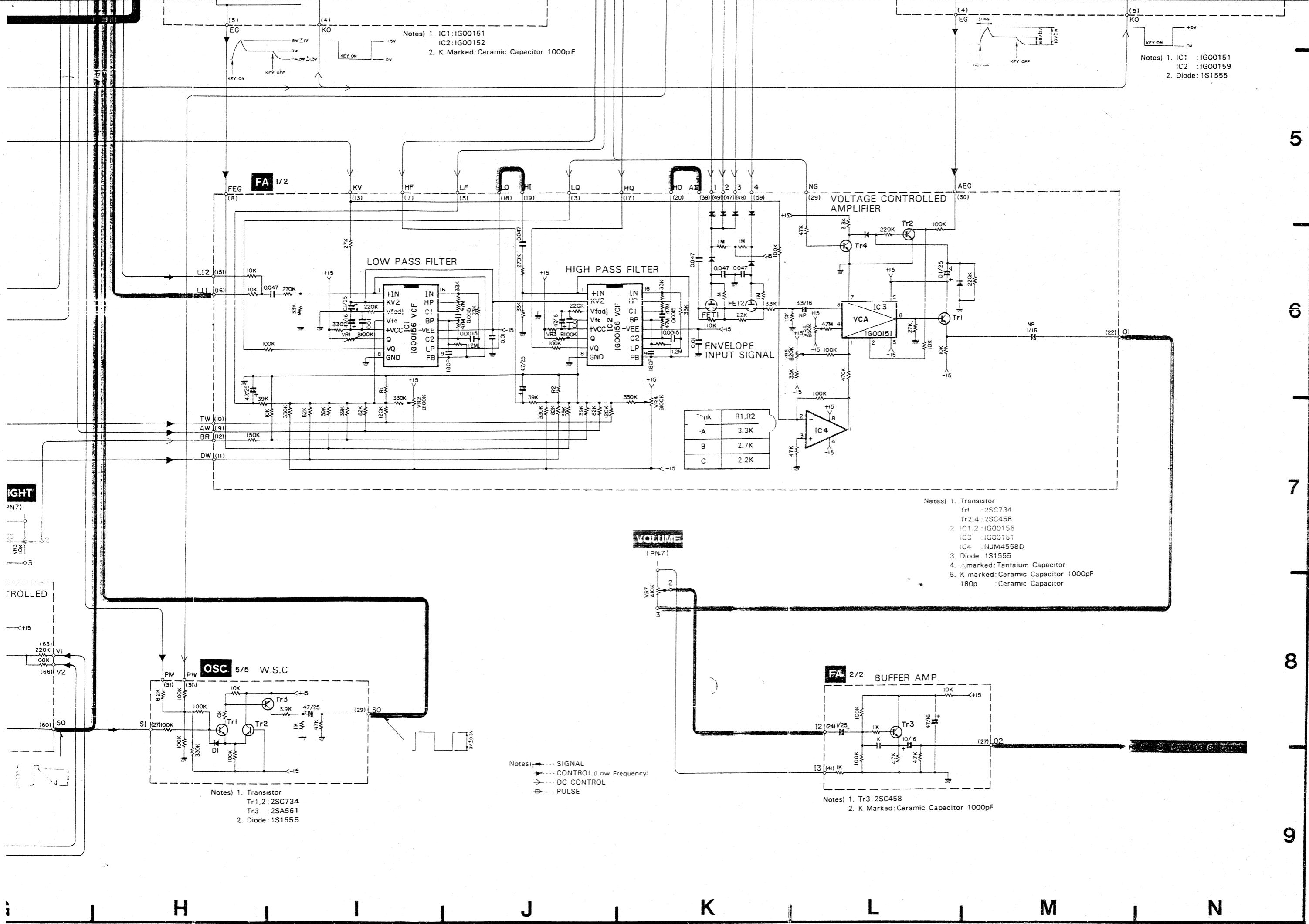
1

2

3

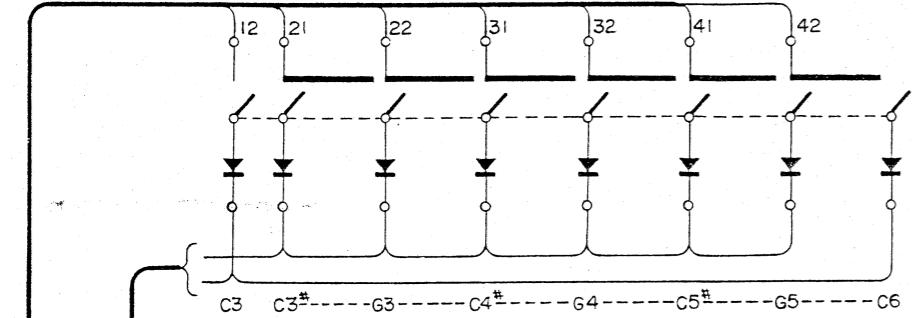
4

5

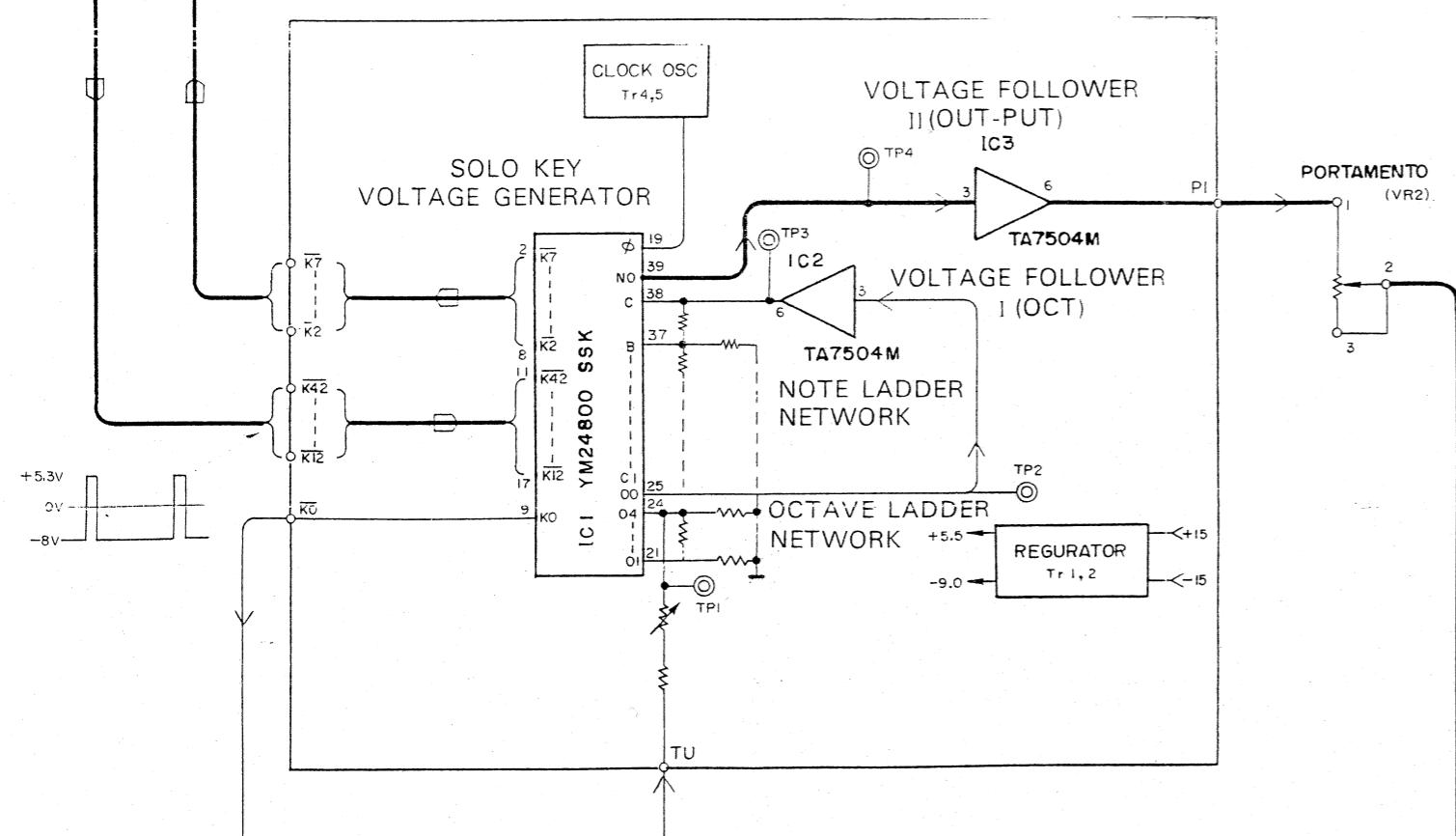


D-80 BLOCK DIAGRAM (SC)

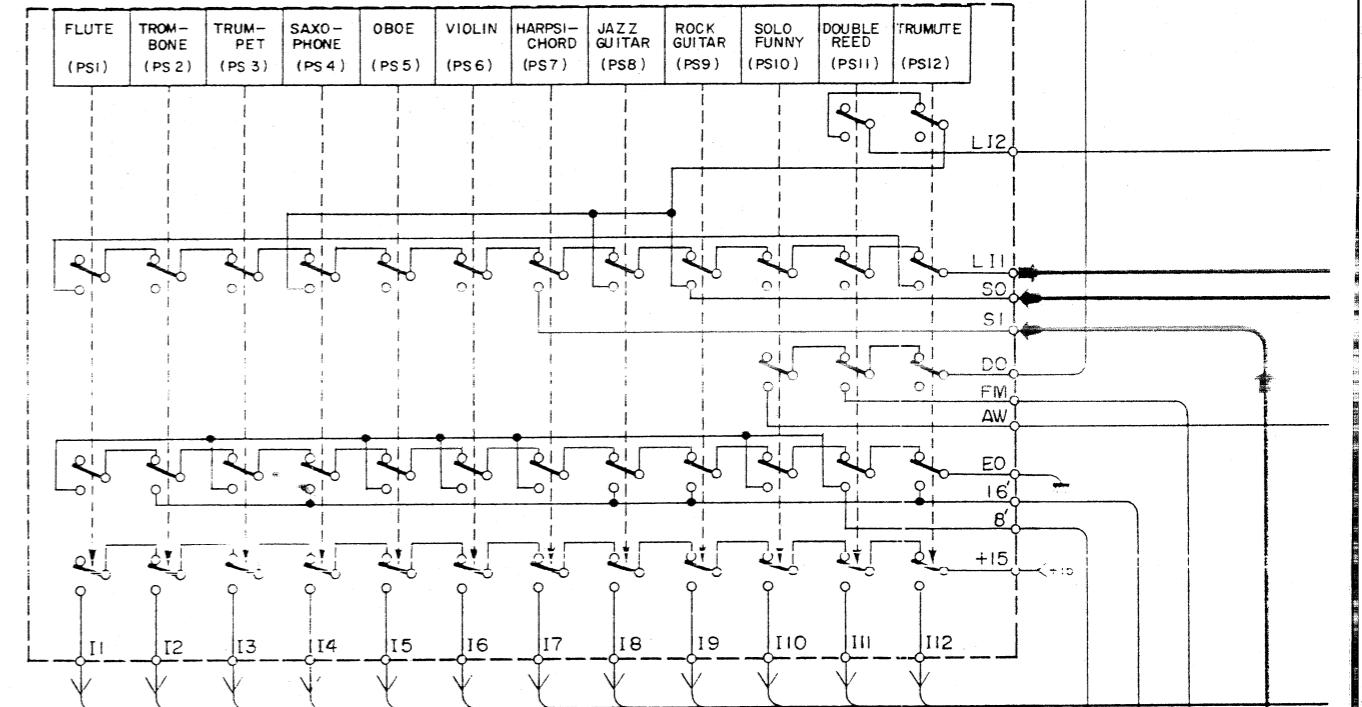
SOLO KEYBOARD



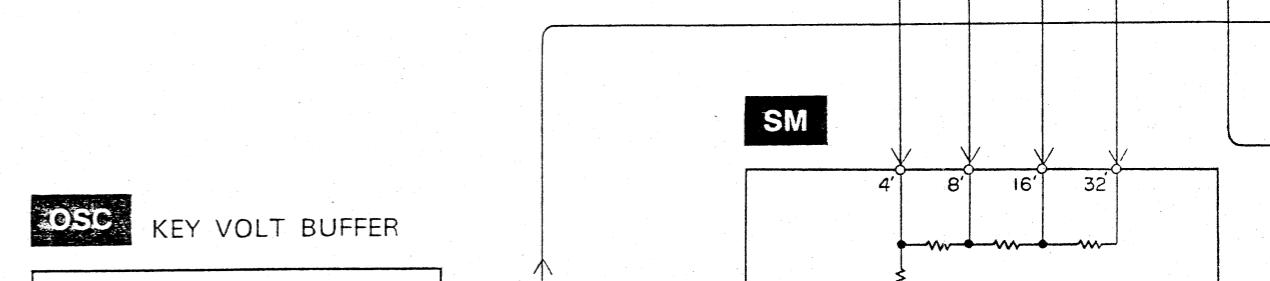
SM



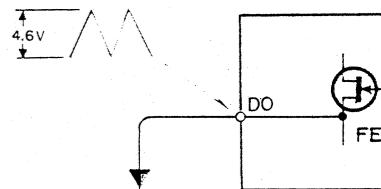
TONE SELECTOR

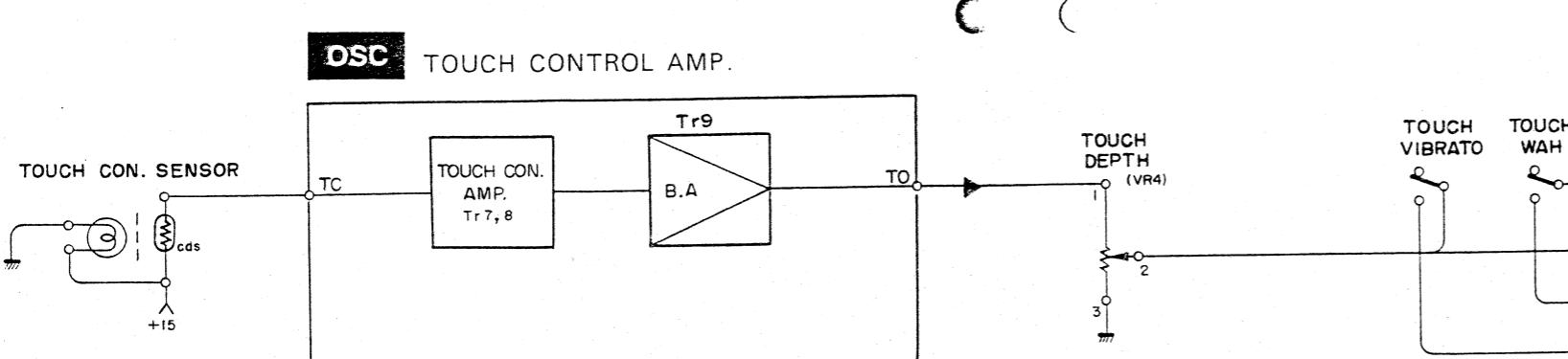
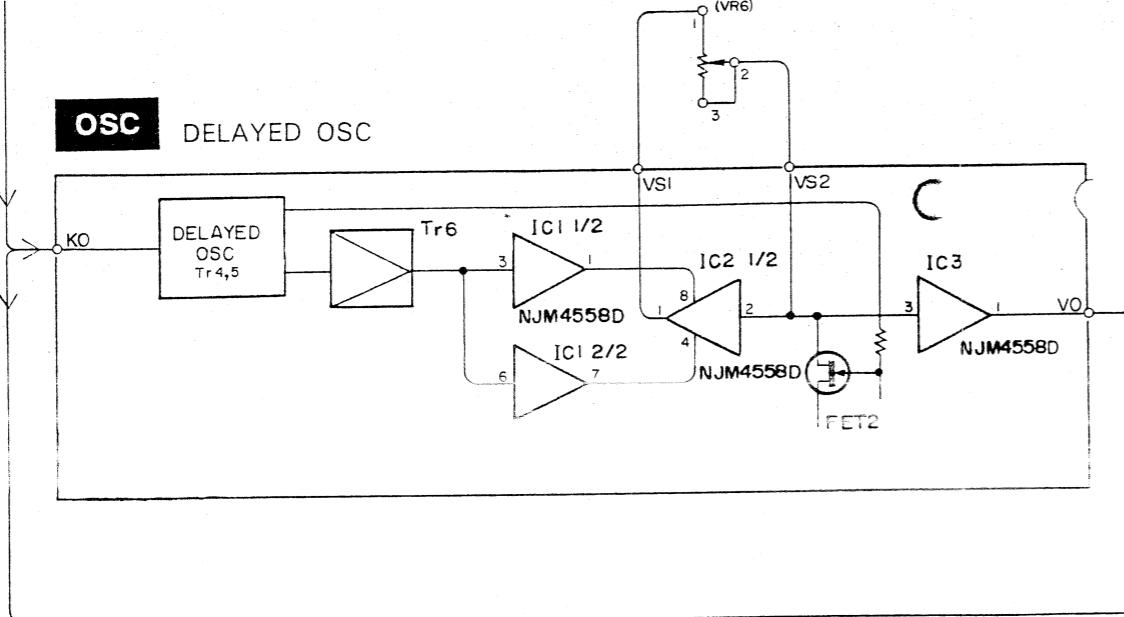
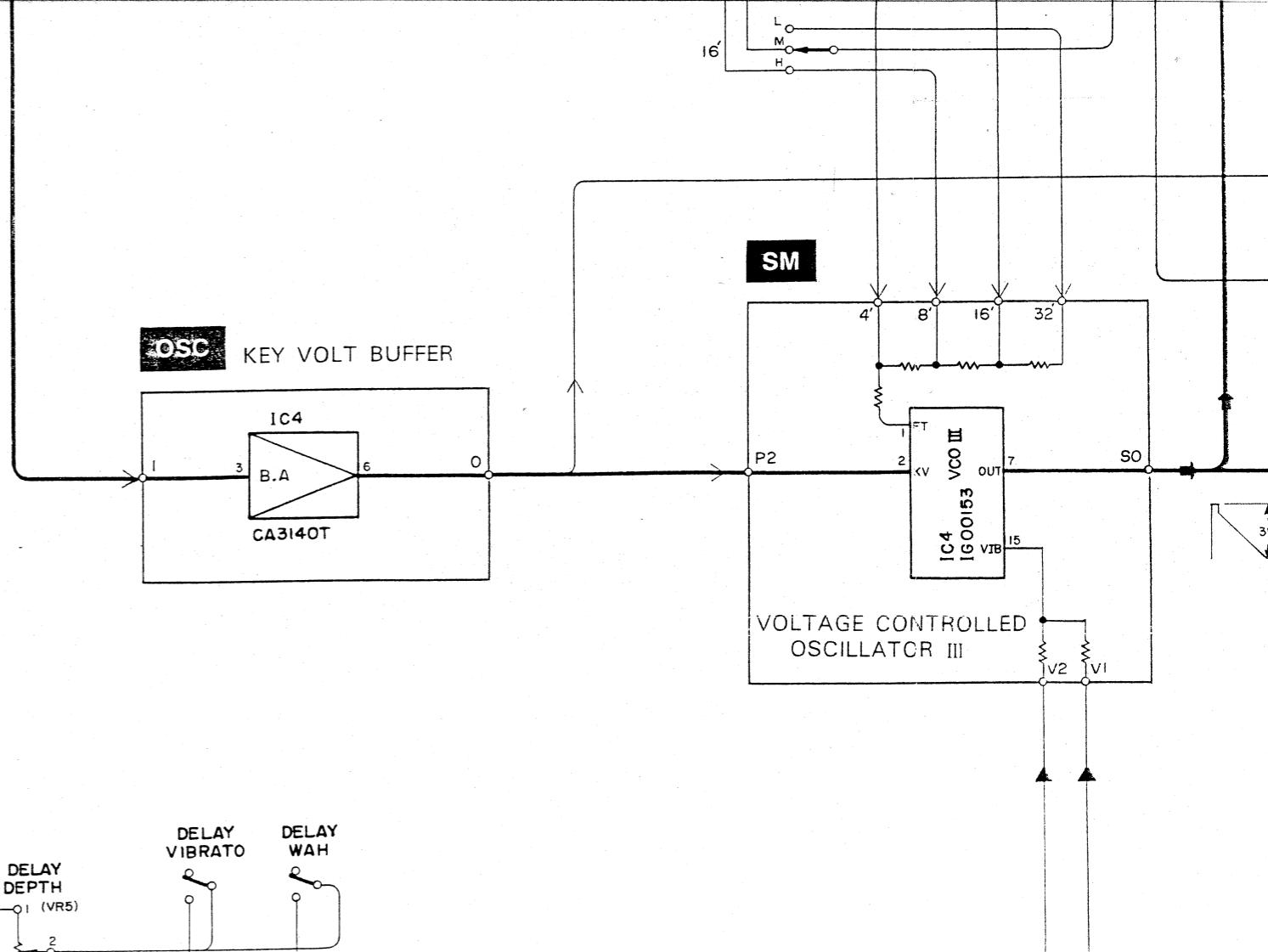
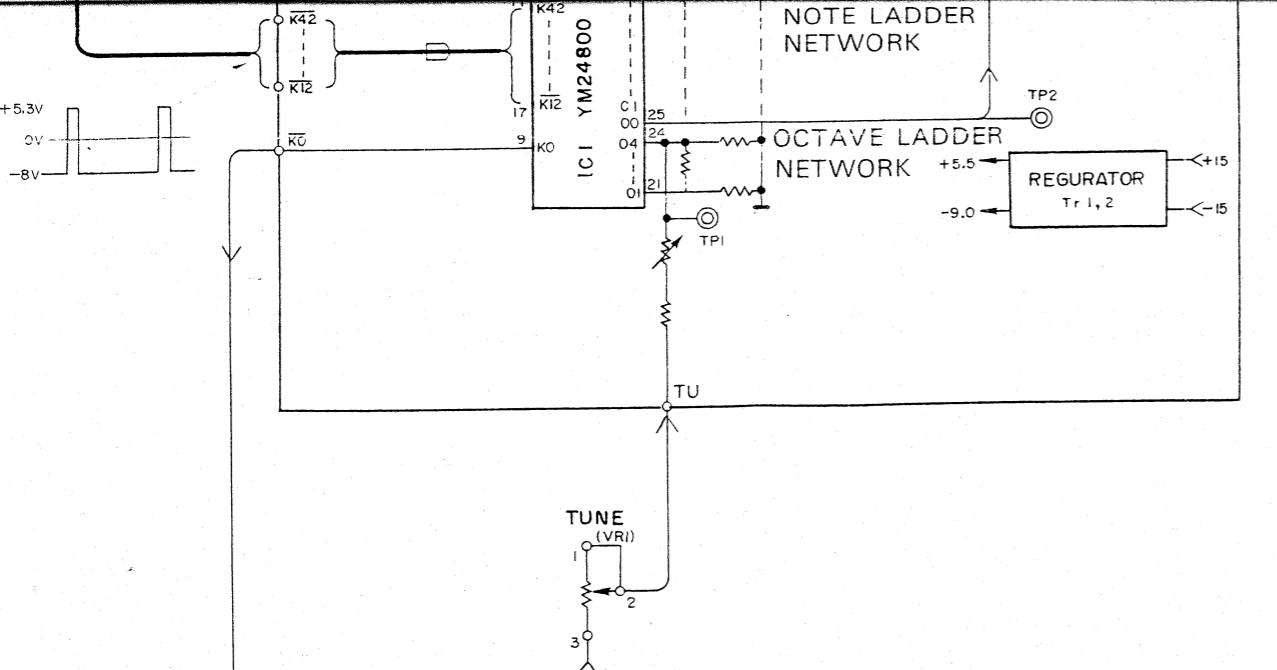


OSC KEY VOLT BUFFER

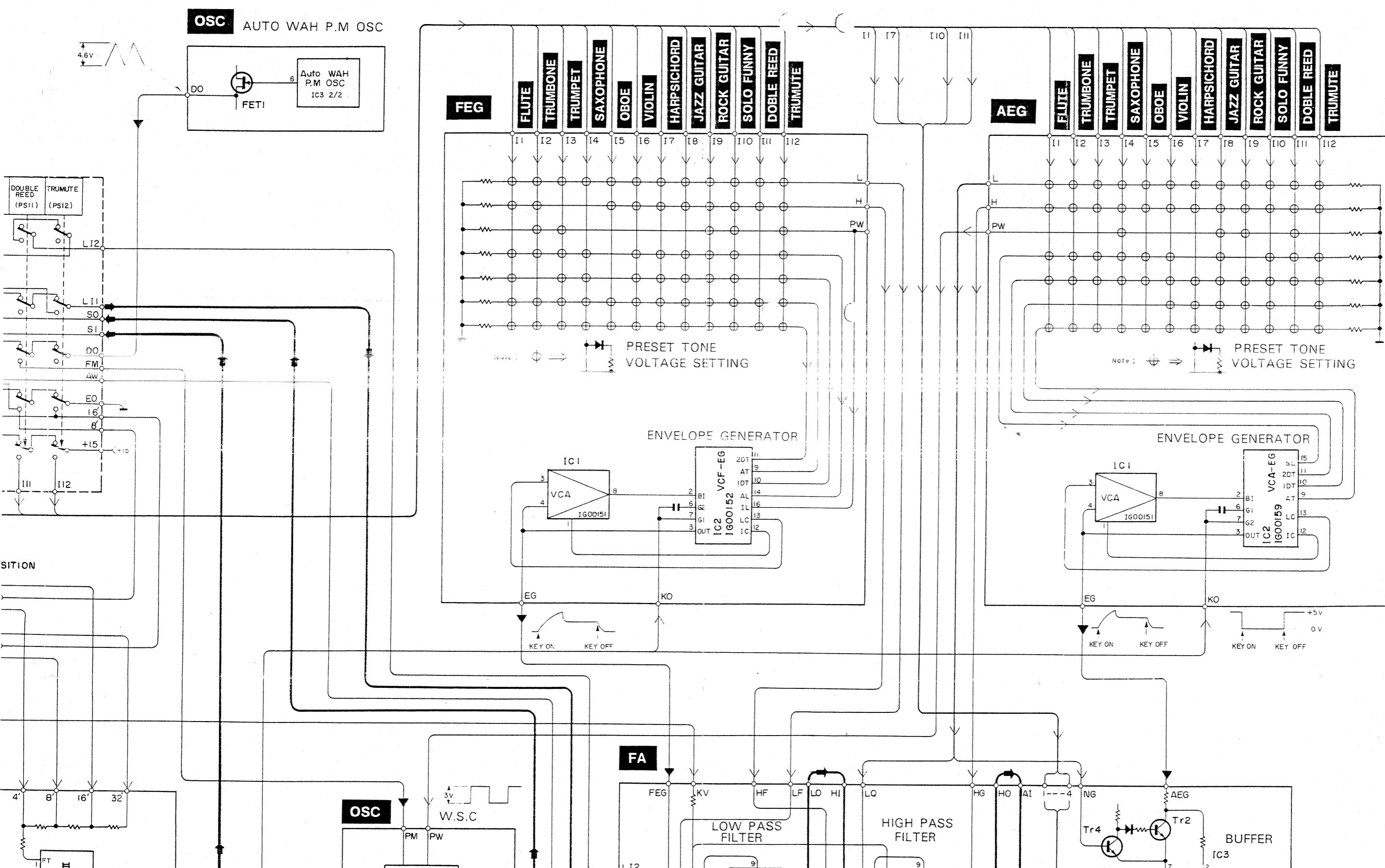


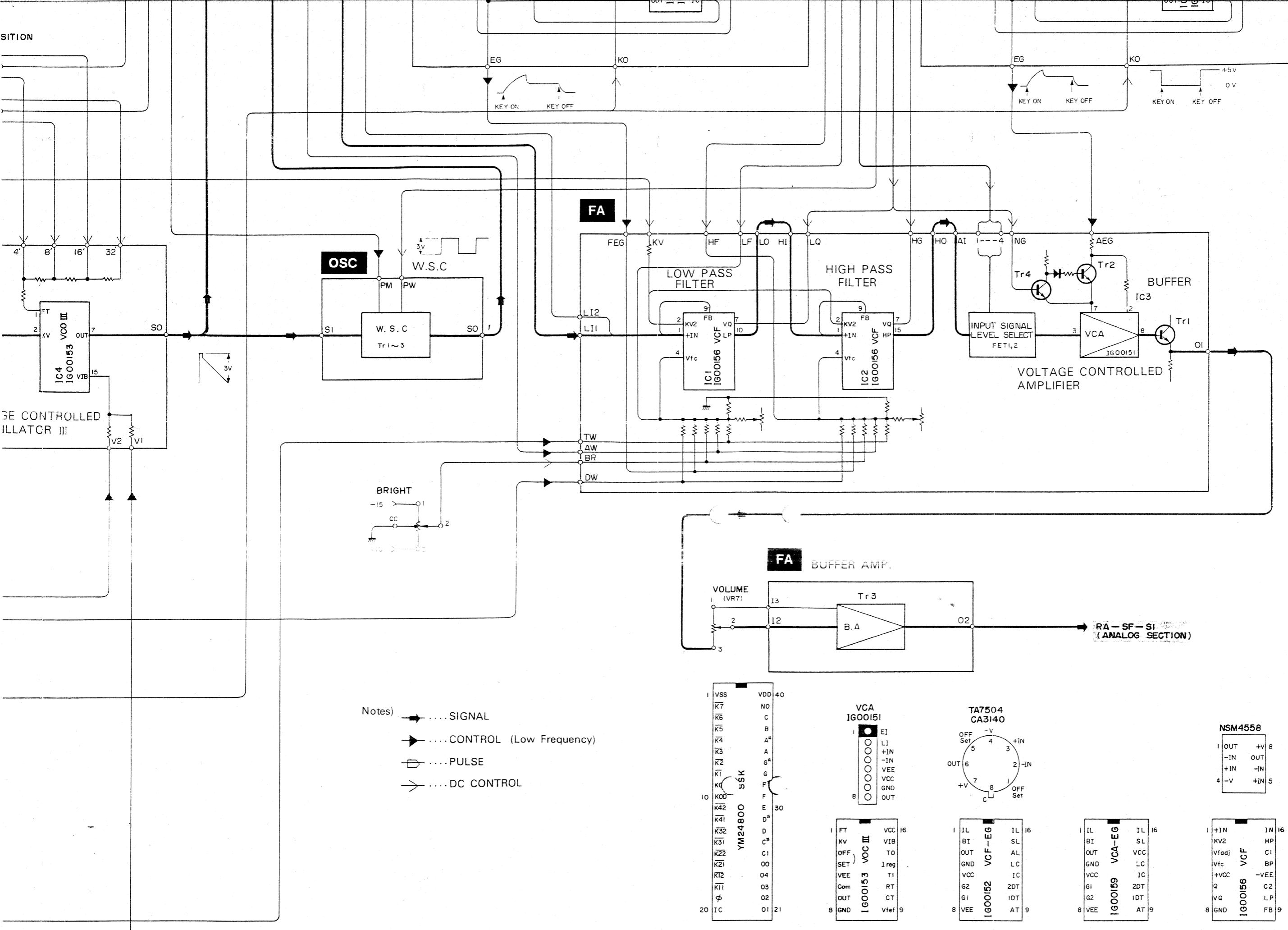
OSC AL



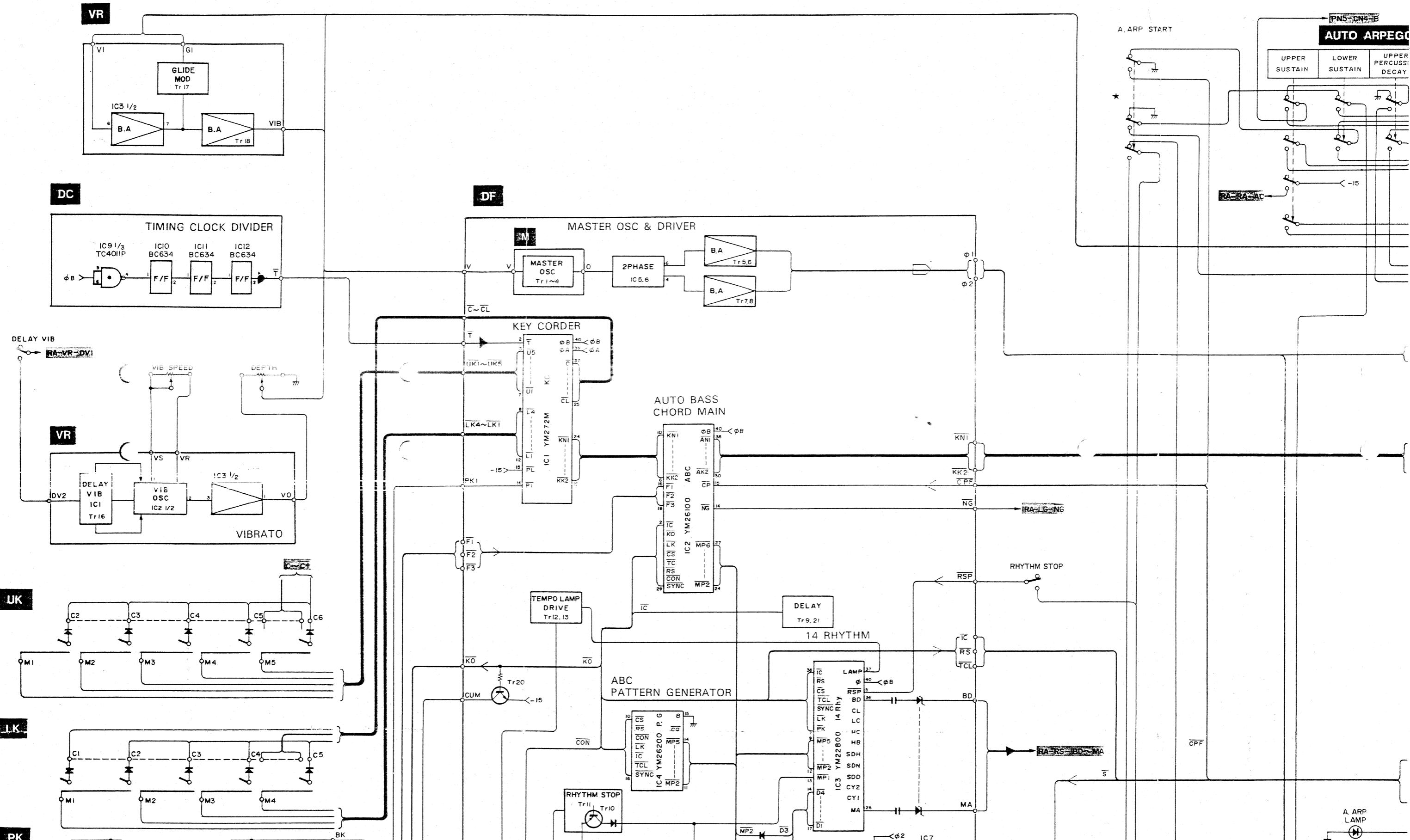


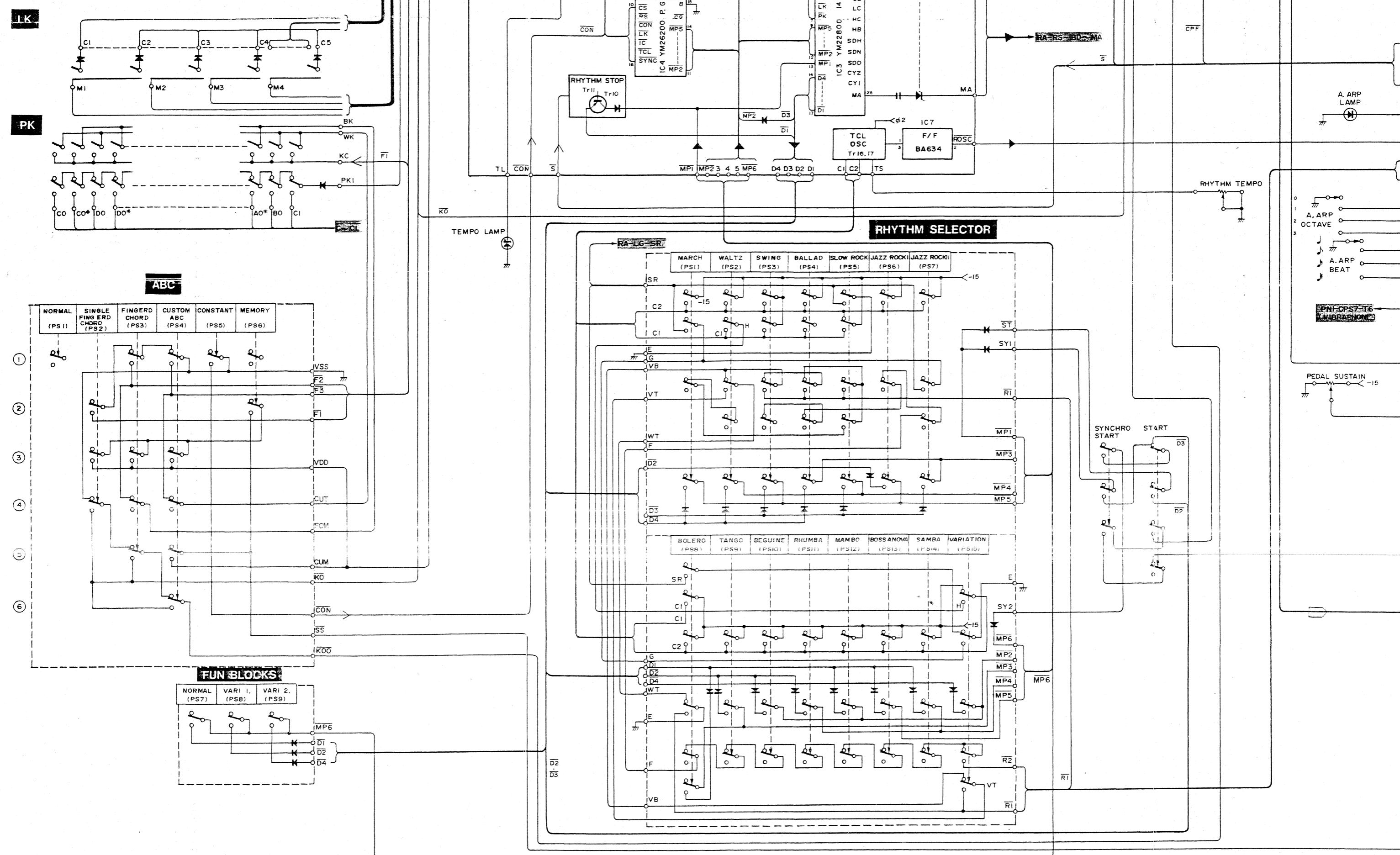
RAM (SOLO KEY SECTION)



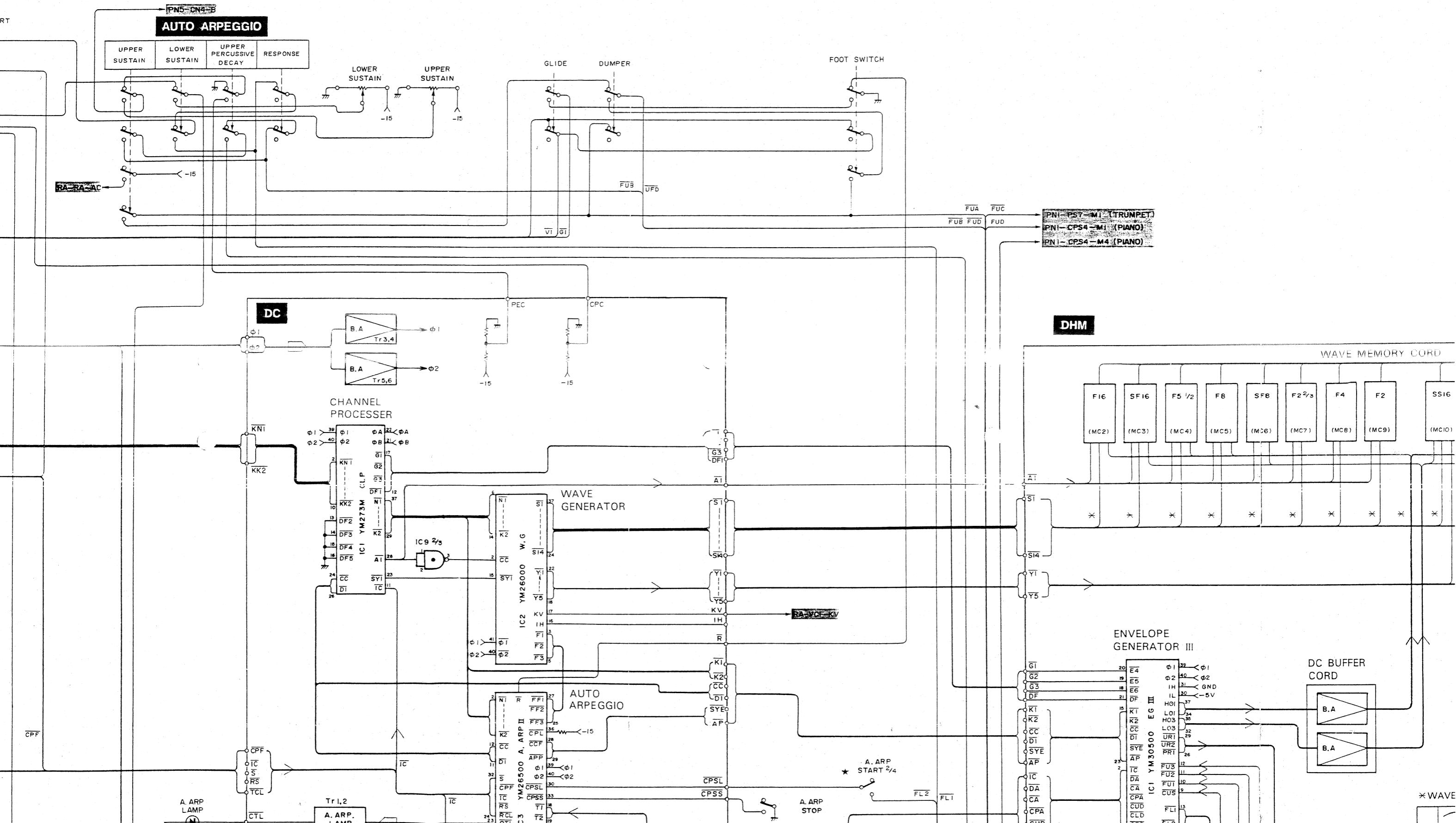


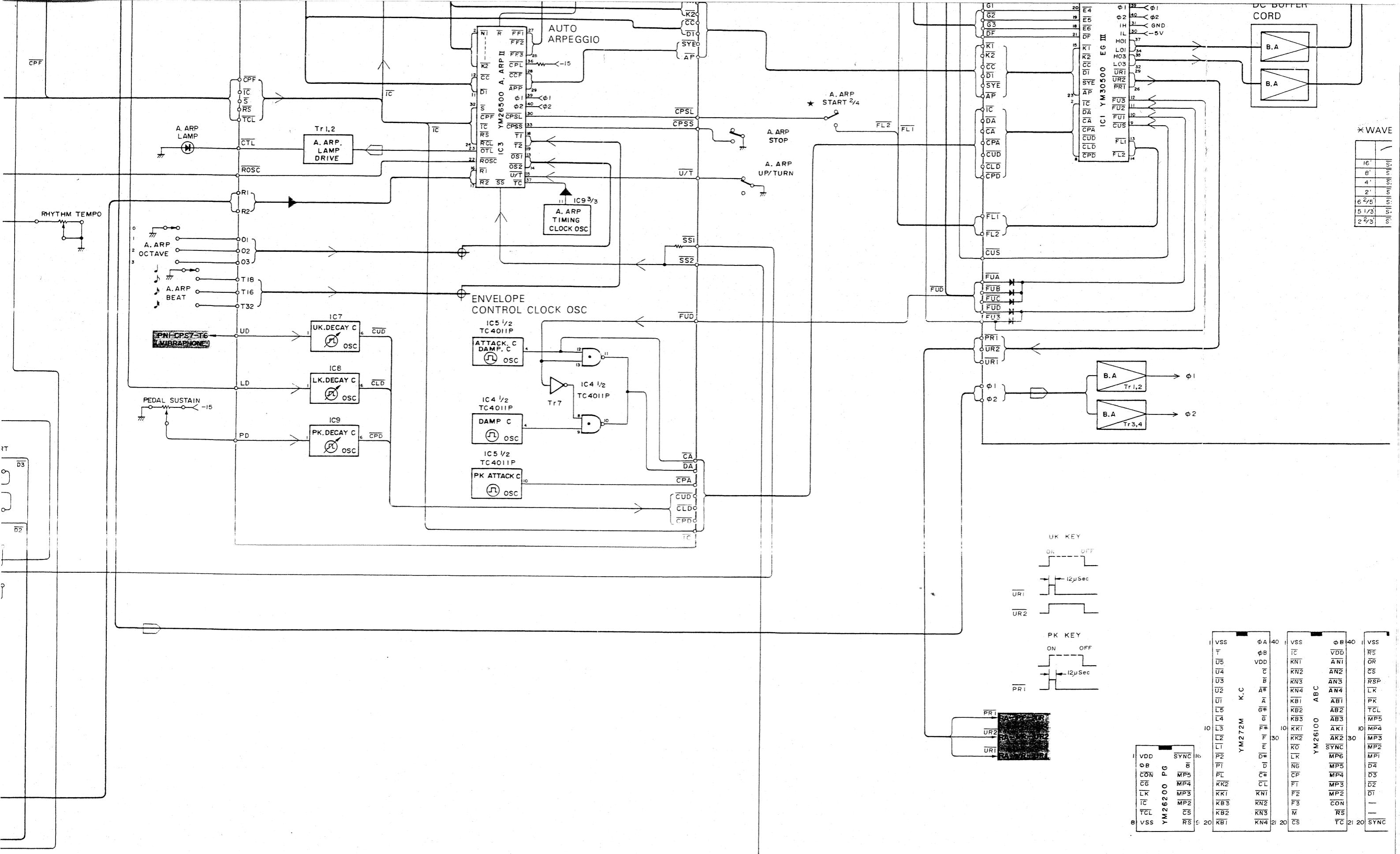
D-80 BLOCK D





LOCK DIAGRAM (DIGITAL SECTION)

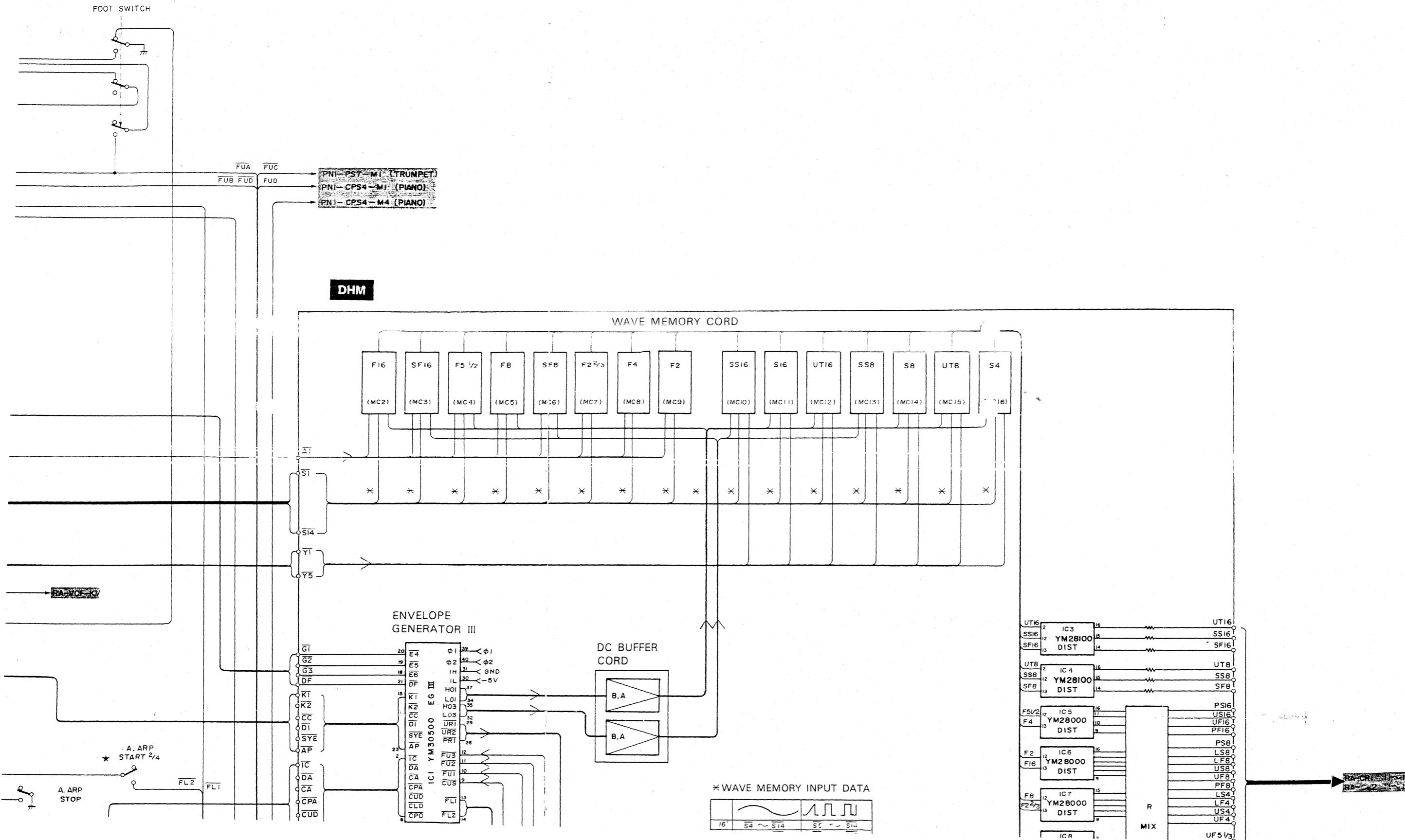


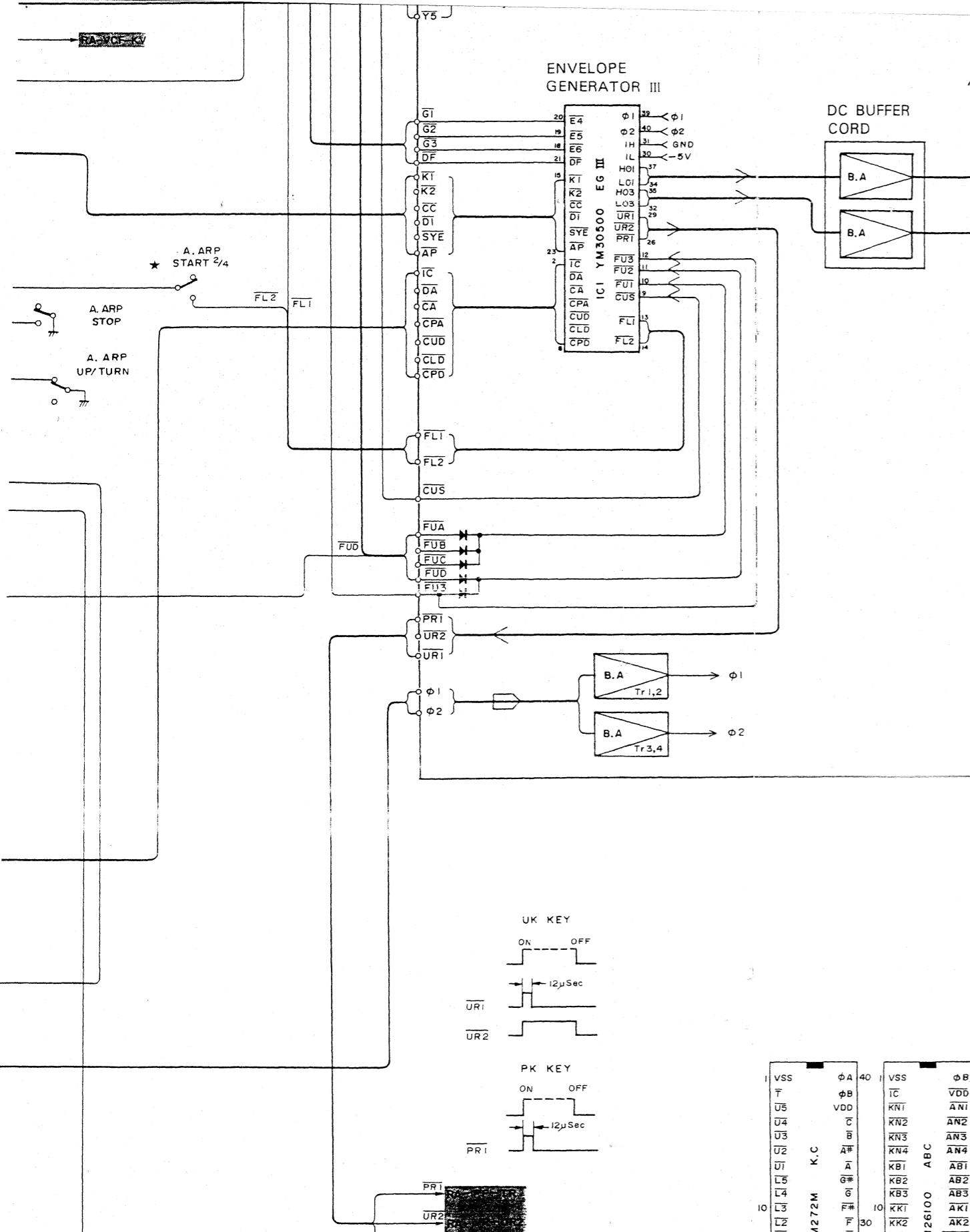


| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|------|--------|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|
| * | WAVE 1 | | | | | | | | | | | | | | | | | | | |
| WAVE | | | | | | | | | | | | | | | | | | | | |
| 1 | | | | | | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | | | | | | | | | |
| 19 | | | | | | | | | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | | | | | | | | | |

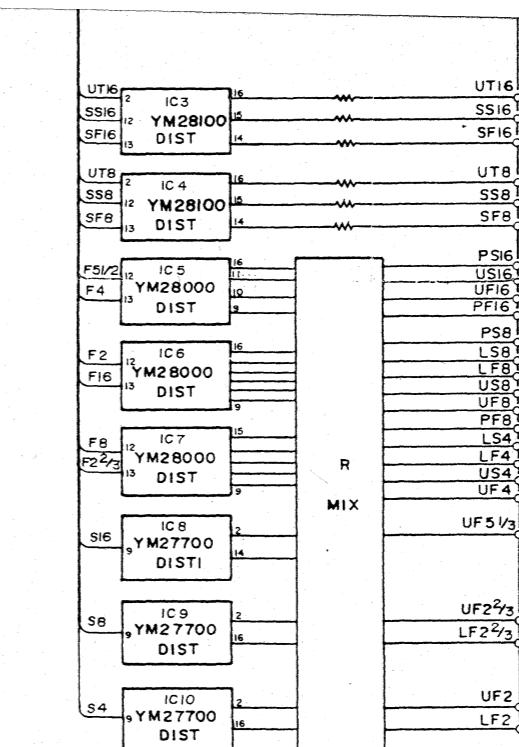
| I | VSS | φ A | φ B | 40 | I | VSS | φ A | φ B | 40 |
|-----|-----|-------|-----|-----|-----|-----|-----|-----|-----|
| U5 | VDD | φ B | VDD | R5 | U5 | VDD | φ B | VDD | R5 |
| U4 | GND | φ A | GND | R6 | U4 | GND | φ A | GND | R6 |
| U3 | φ B | φ A | φ B | R7 | U3 | φ B | φ A | φ B | R7 |
| U2 | φ A | φ B | φ A | R8 | U2 | φ A | φ B | φ A | R8 |
| U1 | φ B | φ A | φ B | R9 | U1 | φ B | φ A | φ B | R9 |
| L5 | φ A | φ B | φ A | R10 | L5 | φ A | φ B | φ A | R10 |
| L4 | φ B | φ A | φ B | R11 | L4 | φ B | φ A | φ B | R11 |
| L3 | φ A | φ B | φ A | R12 | L3 | φ A | φ B | φ A | R12 |
| L2 | φ B | φ A | φ B | R13 | L2 | φ B | φ A | φ B | R13 |
| L1 | φ A | φ B | φ A | R14 | L1 | φ A | φ B | φ A | R14 |
| P1 | φ B | φ A | φ B | R15 | P1 | φ B | φ A | φ B | R15 |
| PL | φ A | φ B | φ A | R16 | PL | φ A | φ B | φ A | R16 |
| KK2 | φ B | φ A | φ B | R17 | KK2 | φ B | φ A | φ B | R17 |
| KK1 | φ A | φ B | φ A | R18 | KK1 | φ A | φ B | φ A | R18 |
| NG | φ B | φ A | φ B | R19 | NG | φ B | φ A | φ B | R19 |
| CP | φ A | φ B | φ A | R20 | CP | φ A | φ B | φ A | R20 |
| F1 | φ B | φ A | φ B | R21 | F1 | φ B | φ A | φ B | R21 |
| F2 | φ A | φ B | φ A | R22 | F2 | φ A | φ B | φ A | R22 |
| F3 | φ B | φ A | φ B | R23 | F3 | φ B | φ A | φ B | R23 |
| CON | φ A | φ B | φ A | R24 | CON | φ A | φ B | φ A | R24 |
| M1 | φ B | φ A | φ B | R25 | M1 | φ B | φ A | φ B | R25 |
| M2 | φ A | φ B | φ A | R26 | M2 | φ A | φ B | φ A | R26 |
| M3 | φ B | φ A | φ B | R27 | M3 | φ B | φ A | φ B | R27 |
| M4 | φ A | φ B | φ A | R28 | M4 | φ A | φ B | φ A | R28 |
| MP1 | φ B | φ A | φ B | R29 | MP1 | φ B | φ A | φ B | R29 |
| MP2 | φ A | φ B | φ A | R30 | MP2 | φ A | φ B | φ A | R30 |
| MP3 | φ B | φ A | φ B | R31 | MP3 | φ B | φ A | φ B | R31 |
| MP4 | φ A | φ B | φ A | R32 | MP4 | φ A | φ B | φ A | R32 |
| MP5 | φ B | φ A | φ B | R33 | MP5 | φ B | φ A | φ B | R33 |
| MP6 | φ A | φ B | φ A | R34 | MP6 | φ A | φ B | φ A | R34 |
| MP7 | φ B | φ A</ | | | | | | | |

AL SECTION)

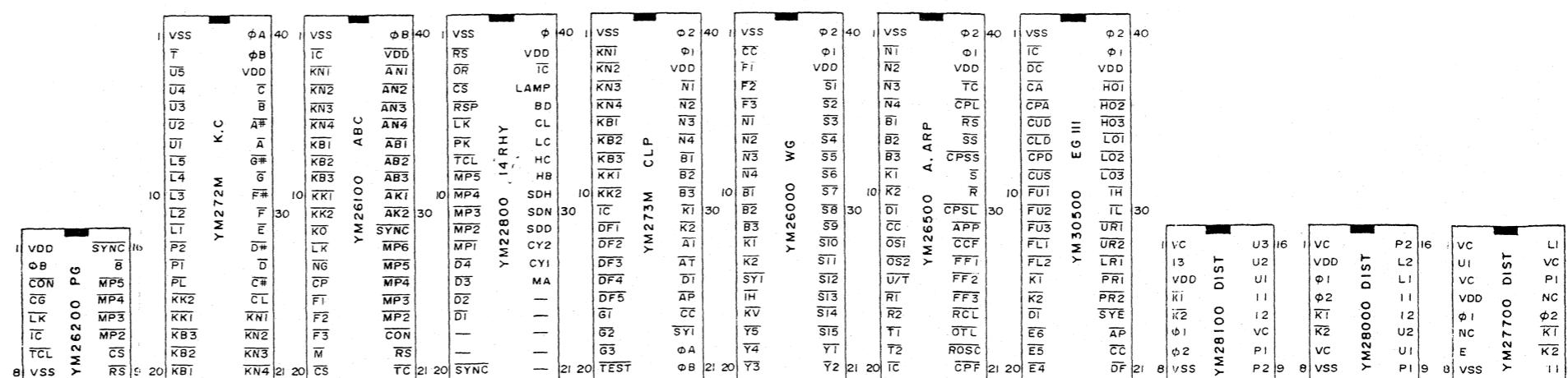




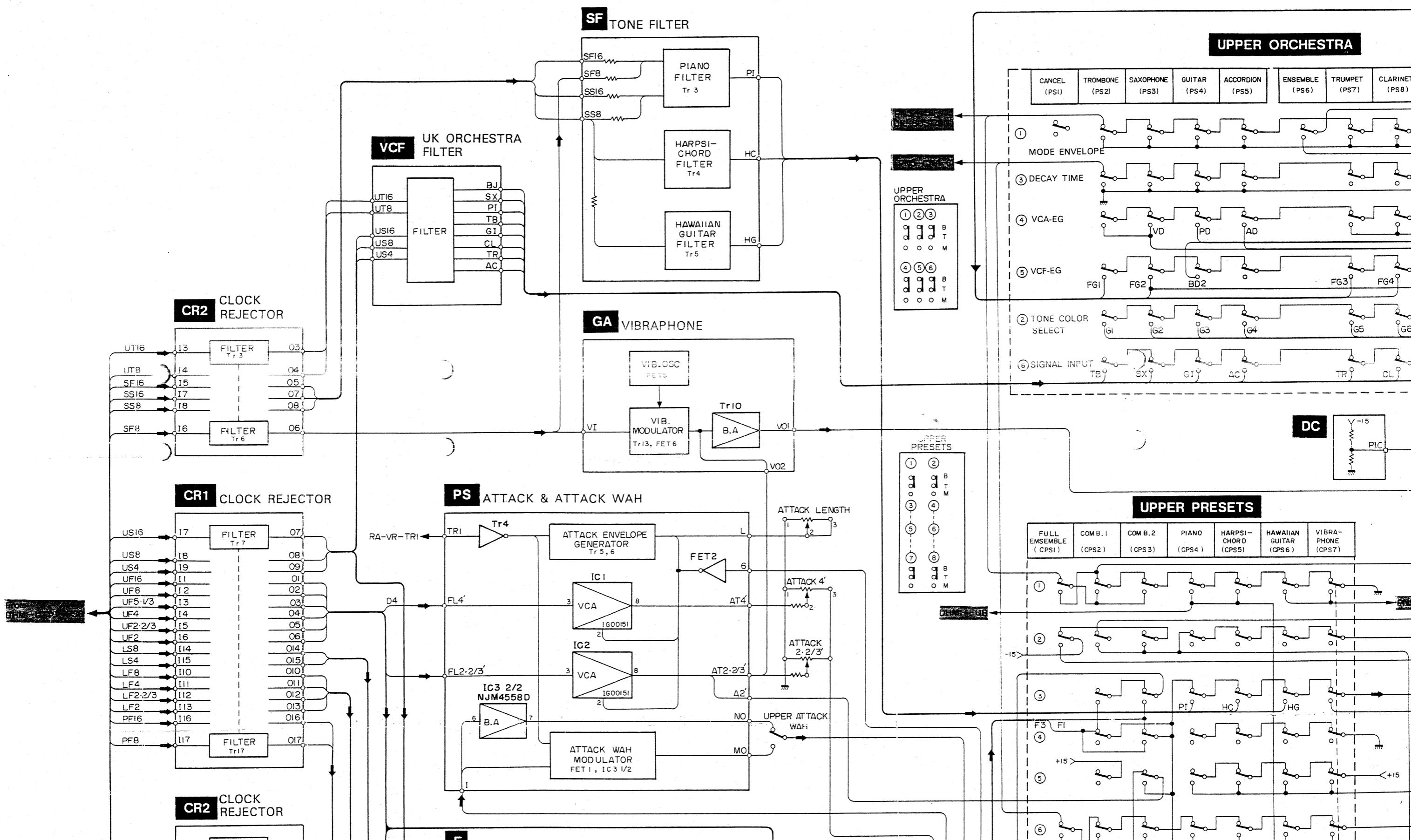
| | | |
|--------|----------|--------|
| | | |
| 16' | S4 ~ S14 | S5 ~ - |
| 8' | S3 ~ S13 | S4 ~ - |
| 4' | S2 ~ S12 | S3 ~ - |
| 2' | S1 ~ S11 | |
| 6 2/5' | S5 ~ S15 | |
| 5 1/3' | S4 ~ S14 | |
| 2 2/3' | S3 ~ S13 | |

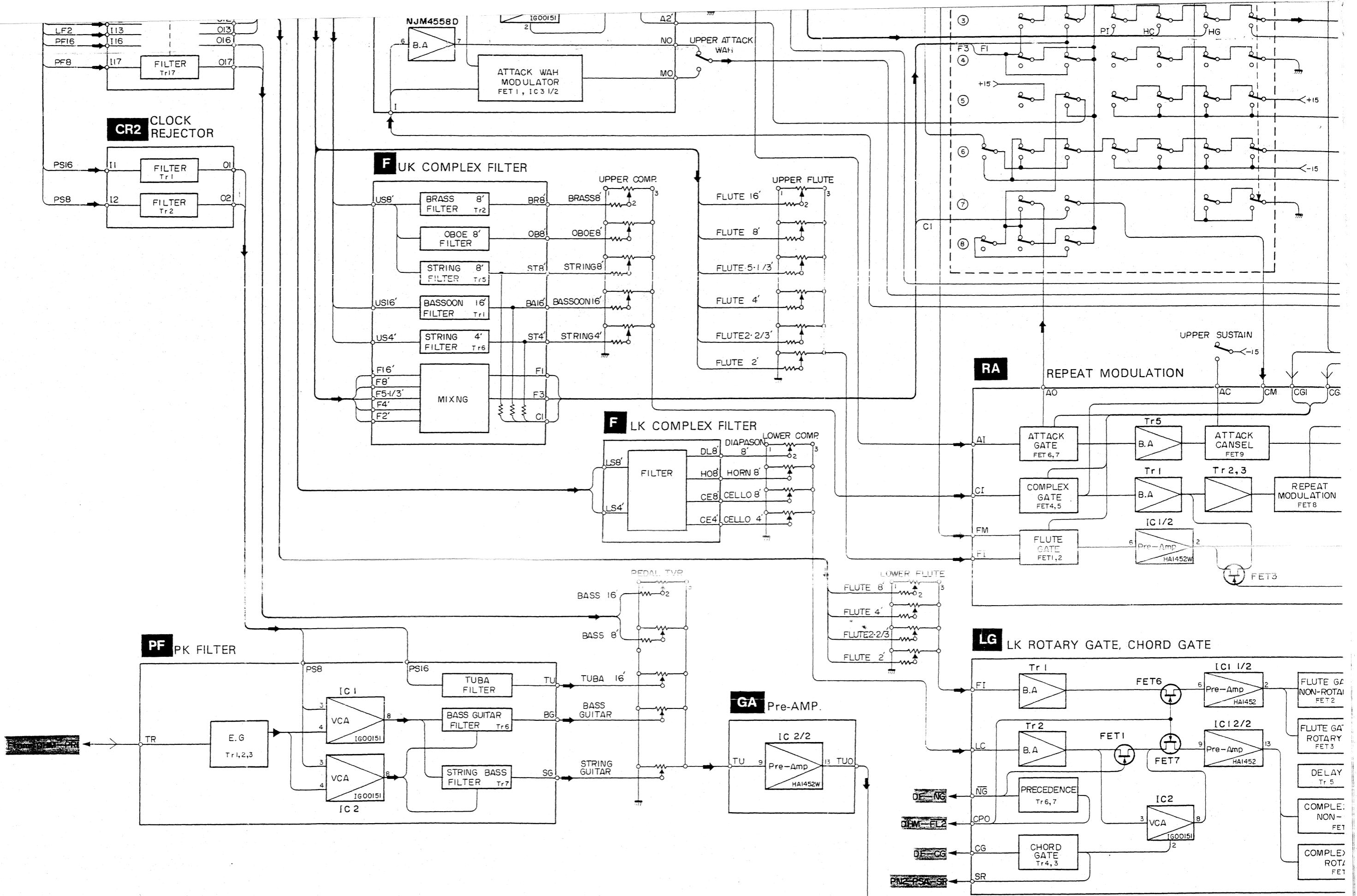


Notes) → ... SIGNAL & KEY DATA
→ ... CONTROL (Low Frequency)
→ ... PULSE
→ ... DC CONTROL

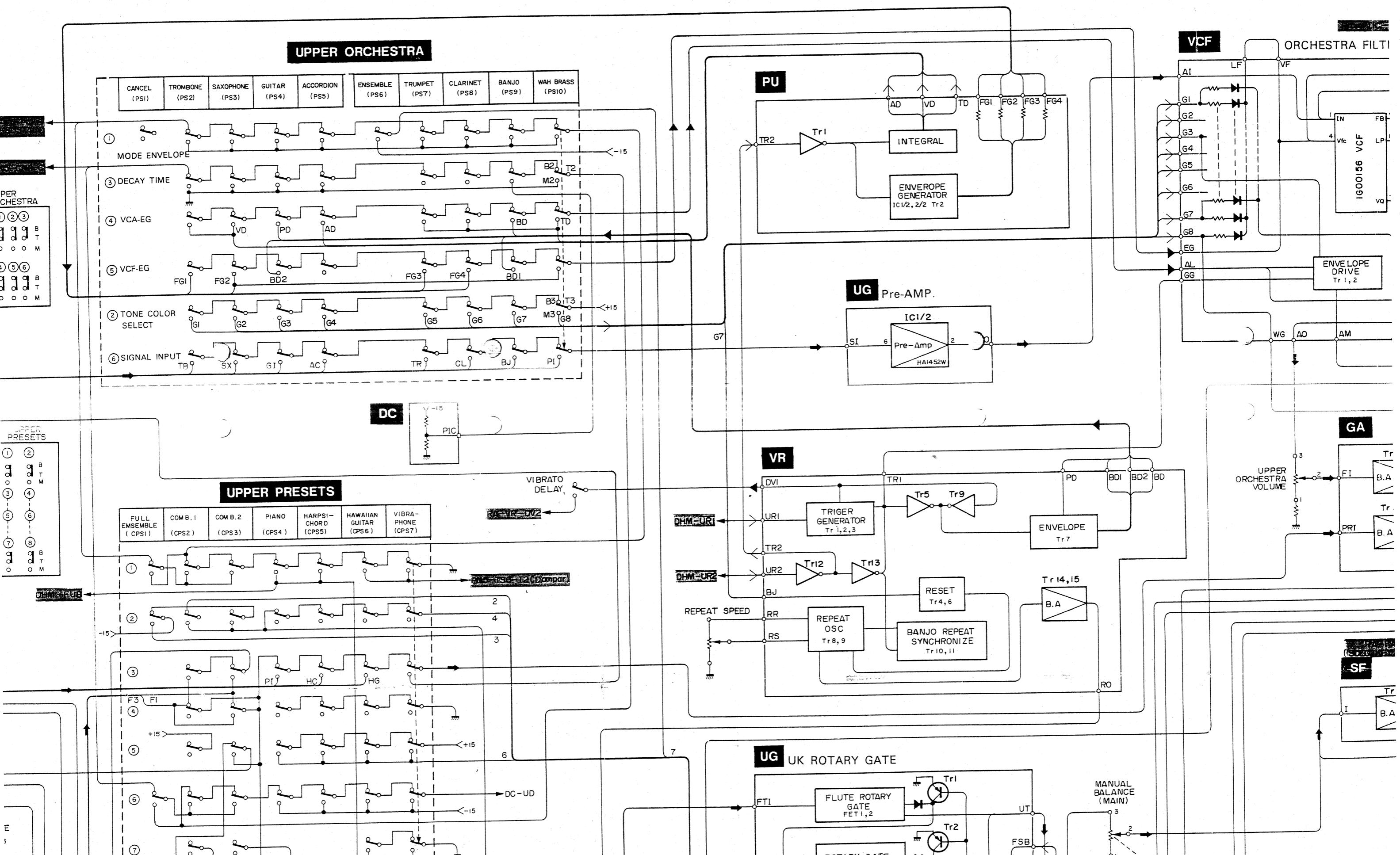


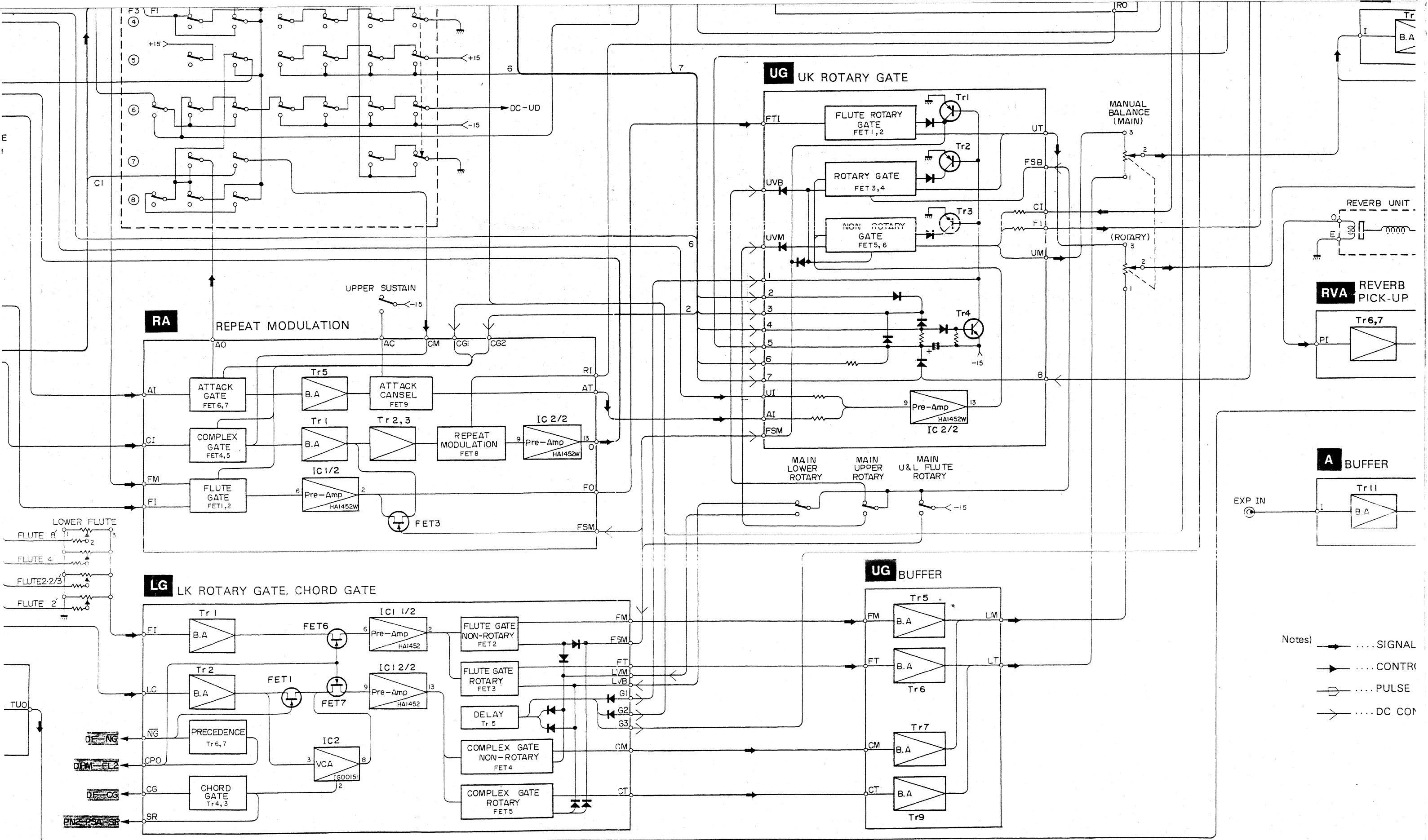
D-80 BLOCK



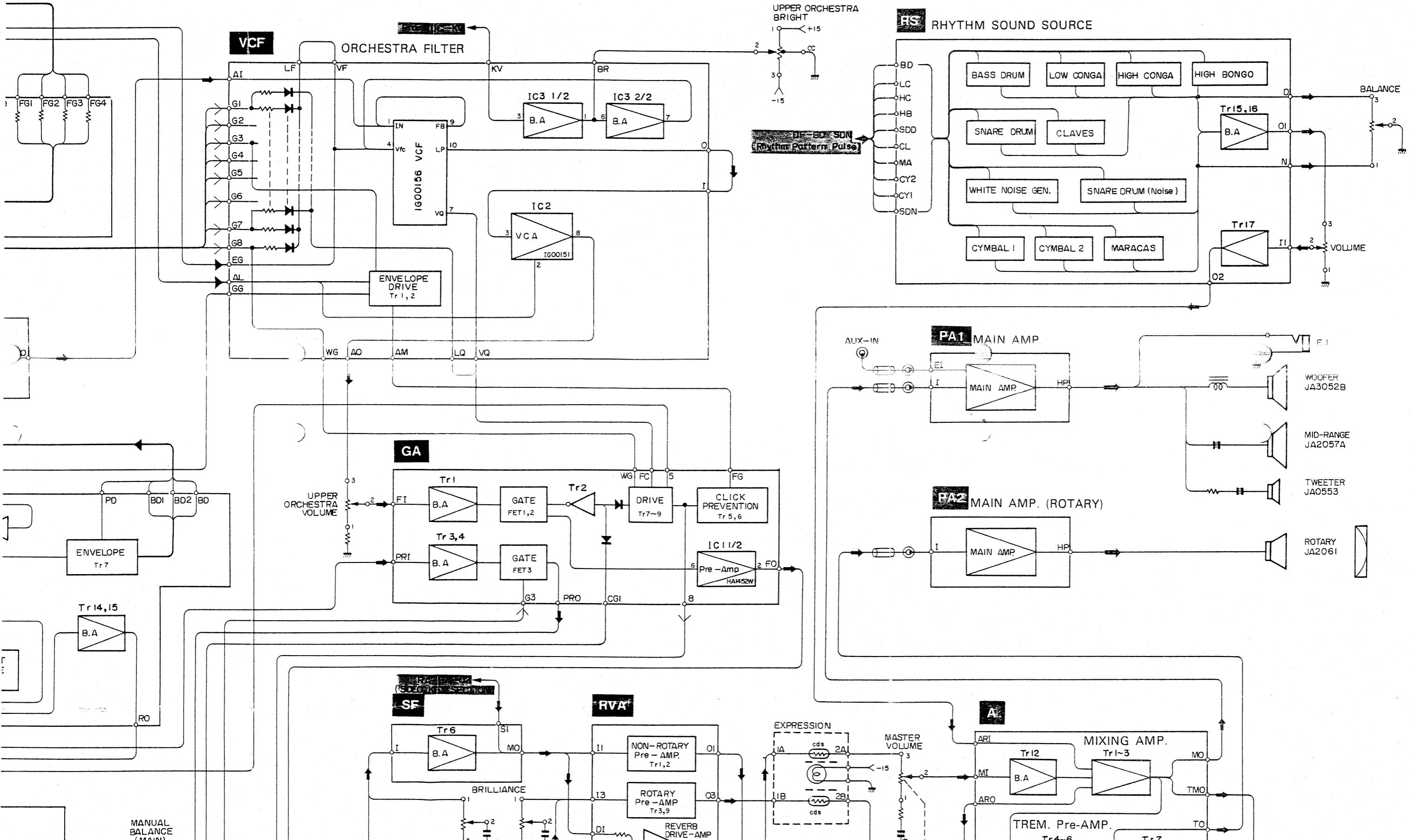


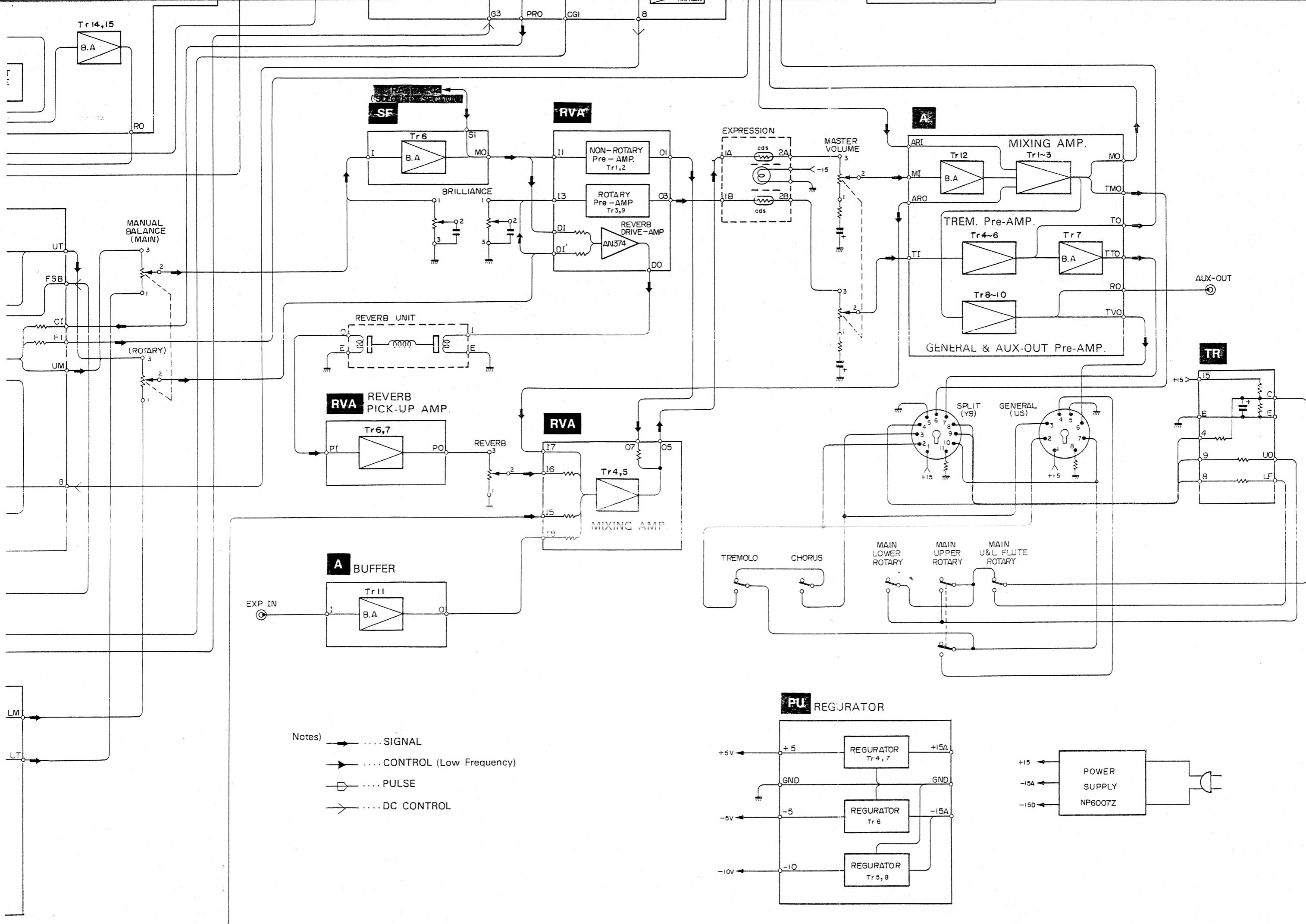
D-80 BLOCK DIAGRAM (ANALOG SECTION)





LOG SECTION)





YAMAHA

Electone ORGAN

D-80

Parts List



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| 4. Pedal Keyboard(ペダル鍵盤) | 8 |
| 5. Expression Pedal(EXPペダル) | 9 |
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| 8. Cabinet(外装部品) | 17 |

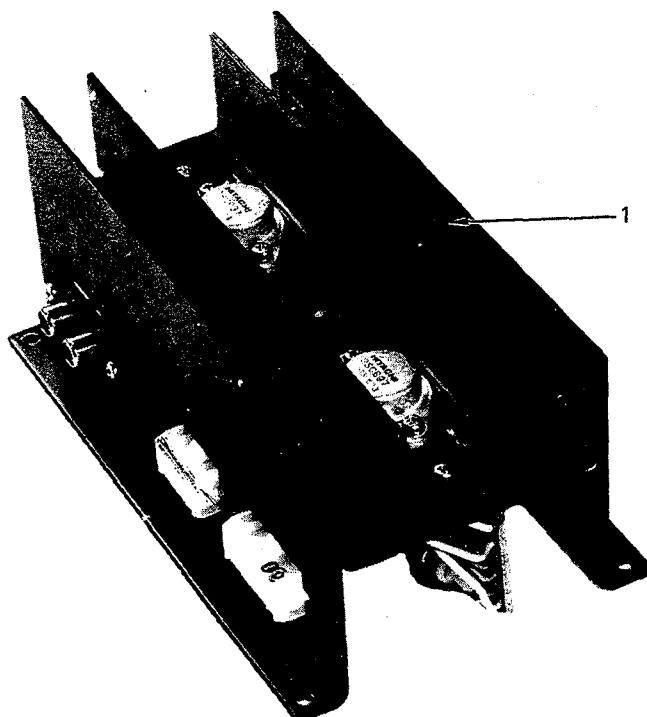
Adapter NA 03 86 10

D-80 (S/#1001~)

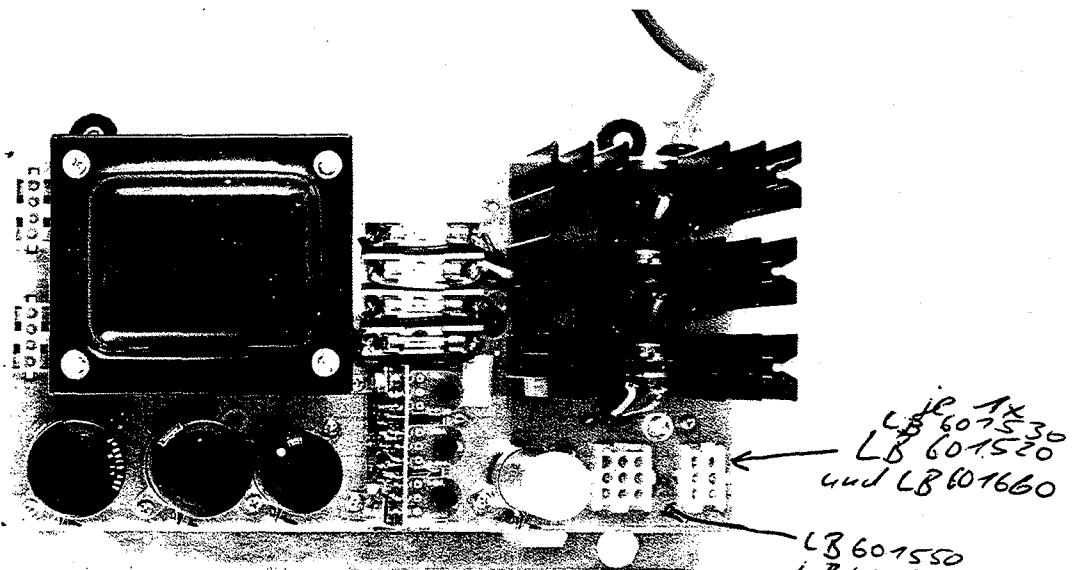
| Ref No. | Part No. (番号) | | Description (部品名) | | Remarks (備考) | Common Models (共通モデル) | 卸価 | 小売 |
|---------|---------------|-------|-------------------|----------------------------|--------------|-----------------------|----|----|
| | 30 | 10:00 | YM 22:80:00 | Integrated Circuit YM22800 | I C | 14 Rhythm | | |
| | 30 | 10:00 | YM 24:80:00 | —do.— YM24800 | " | SSK | | |
| | 30 | 10:00 | YM 26:00:00 | —do.— YM26000 | " | Wave Gen. | | |
| | 30 | 10:00 | YM 26:10:00 | —do.— YM26100 | " | ABC II | | |
| | 30 | 10:00 | YM 26:20:00 | —do.— YM26200 | " | ABC PG | | |
| | 30 | 10:00 | YM 26:50:00 | —do.— YM26500 | " | A-Arp. II | | |
| | 30 | 10:00 | YM 27:70:00 | —do.— YM27700 | " | Distributer IV | | |
| | 30 | 10:00 | YM 28:00:00 | —do.— YM28000 | " | —do.— V | | |
| | 30 | 10:00 | YM 28:10:00 | —do.— YM28100 | " | —do.— VI | | |
| | 30 | 10:00 | YM 30:50:00 | —do.— YM30500 | " | Envelope Gen. | | |
| | 40 | 10:00 | i G 00:01:50 | —do.— AN374 | " | Reverb Drive Amp. | | |
| | 40 | 10:00 | i G 00:10:20 | —do.— HA1452W | " | Pre-Amp. | | |
| | 40 | 10:00 | i G 00:10:40 | —do.— TA7504M | " | Voltage Follower | | |
| | 40 | 10:00 | i G 00:12:40 | —do.— TC4011P | " | NAND | | |
| | 40 | 10:00 | i G 00:13:90 | —do.— NJM4558D | " | Amp. Buffer Amp. | | |
| | 40 | 10:00 | i G 00:14:10 | —do.— BA617 | " | VCO | | |
| | 40 | 10:00 | i G 00:15:10 | —do.— IG00151 | " (M51621L) | VCA | | |
| | 40 | 10:00 | i G 00:15:20 | —do.— IG00152 | " | VCF-EG | | |
| | 40 | 10:00 | i G 00:15:30 | —do.— IG00153 | " | VCO III | | |
| | 40 | 10:00 | i G 00:15:60 | —do.— IG00156 | " | VCF | | |
| | 40 | 10:00 | i G 00:15:90 | —do.— IG00159 | " | VCA-EG | | |
| | 40 | 10:00 | i G 00:16:00 | —do.— BA634 | " | Divider | | |
| | 40 | 10:00 | i G 00:17:90 | —do.— TC4030P | " | Exclusive-OR | | |
| | 40 | 10:00 | i G 00:18:40 | —do.— HD7400 | " | FF | | |
| | 40 | 10:00 | i G 00:18:50 | —do.— HD74S04 | " | Inv. | | |
| | 40 | 10:00 | i G 00:18:60 | —do.— YM272M | " | Key Coder | | |
| | 40 | 10:00 | i G 00:18:70 | —do.— YM273M | " | Channel Pro. | | |
| | 40 | 10:00 | i G 00:22:20 | —do.— CA3140T | " | Key Volt Buffer | | |
| | i G ca 123 | | 2 S A 5 6 2 | | | | | |
| | 40 | 10:00 | i A 05:62:70 | Transistor 2SA562 | トランジスター | | | |
| | 40 | 10:00 | i A 04:95:00 | —do.— 2SA495 | " | | | |
| | 40 | 10:00 | i A 05:09:10 | —do.— 2SA509 | " | | | |
| | 40 | 10:00 | i A 05:61:20 | —do.— 2SA561 | " | | | |
| | 40 | 10:00 | i A 05:61:70 | —do.— 2SA561 | " | | | |
| | 40 | 10:00 | i A 04:90:10 | —do.— 2SA490 | " | | | |
| | 40 | 10:00 | i C 04:58:80 | —do.— 2SC458 | " | | | |
| | 40 | 10:00 | i C 04:58:50 | —do.— 2SC458LG | " | | | |
| | 40 | 10:00 | i C 04:58:10 | —do.— 2SC458 | " | | | |
| | 40 | 10:00 | i C 07:34:30 | —do.— 2SC734 | " | | | |
| | 40 | 10:00 | i C 07:34:40 | —do.— 2SC734 | " | | | |
| | 40 | 10:00 | i C 07:35:20 | —do.— 2SC735 | " | | | |
| | 40 | 10:00 | i C 07:52:20 | —do.— 2SC752 | " | | | |
| | 40 | 10:00 | i C 07:52:30 | —do.— 2SC752 | " | | | |
| | 40 | 10:00 | i D 02:35:10 | —do.— 2SD235 | " | | | |
| | 40 | 10:00 | i F 00:03:00 | —do.— 1S1715P | " | | | |

| Ref No. | Part No. (番号) | | | Description (部品名) | | Remarks(備考) | Common(共通) Models (モデル) | 単価 | 小売 |
|---------|---------------|----------|---------------------------|-------------------|----------|-------------|-------------------------|----|----|
| 4010:00 | iE | 00:00:10 | FET | 2SK30 | FET | | | | |
| 4010:00 | iE | 10:08:20 | -do.- | 2SK34 | " | | | | |
| 4010:00 | iF | 00:04:60 | Diode | 1S1555 | ダイオード | | | | |
| 4010:00 | iF | 00:00:70 | -do.- | 1S2473 | " | | | | |
| 4010:00 | iF | 00:03:20 | Zener Diode | WZ061 | ゼンナード | | | | |
| 4010:00 | iF | 00:01:00 | -do.- | 1S1715 | " | | | | |
| 4010:00 | HU | 89:5:00 | Metal Film Resistor | 100Ω±0.1% | 金属被膜抵抗 | SM.C.Board | | | |
| 4010:00 | HU | 89:6:00 | -do.- | 1KΩ -do.- | " | | | | |
| 4010:00 | HU | 89:62:00 | -do.- | 2KΩ -do.- | " | | | | |
| 4010:00 | HU | 89:72:00 | -do.- | 20Ω -do.- | " | | | | |
| 4010:00 | HU | 89:74:00 | -do.- | 40Ω -do.- | " | | | | |
| 4010:00 | HU | 89:78:00 | -do.- | 80Ω -do.- | " | | | | |
| 4010:00 | HZ | 00:08:60 | -do.- | 29.94KΩ | " | | | | |
| 4010:00 | HZ | 87:66:80 | -do.- | 6.8KΩ ±1% | " | | | | |
| 4010:00 | HZ | 87:68:20 | -do.- | 8.2KΩ -do.- | " | | | | |
| 4010:00 | HZ | 87:69:10 | -do.- | 9.1KΩ -do.- | " | | | | |
| 4010:00 | HZ | 87:71:00 | -do.- | 10KΩ -do.- | " | | | | |
| 4010:00 | HZ | 87:71:80 | -do.- | 18KΩ -do.- | " | | | | |
| 4010:00 | HZ | 87:72:20 | -do.- | 22KΩ -do.- | " | | | | |
| 4010:00 | HZ | 87:8:00 | -do.- | 100KΩ -do.- | " | | | | |
| 4010:00 | HL | 32:52:00 | Metal Oxide Film Resistor | 2W220Ω | 酸化金属被膜抵抗 | DHM | | | |
| 4010:00 | HM | 57:41:00 | Cement Molded Resistor | 10W10Ω | セメント抵抗 | PU | | | |
| 4010:00 | HT | 12:00:50 | Variable Resistor | V10K-4A-5-2 | B-50KΩ | 半固定抵抗 | 2 Terminals | | |
| 4010:00 | HT | 12:00:60 | -do.- | -do.- | B-500Ω | " | -do.- | | |
| 4010:00 | HT | 12:00:70 | -do.- | -do.- | B-100KΩ | " | -do.- | | |
| 4010:00 | HT | 12:00:80 | -do.- | -do.- | B-2KΩ | " | -do.- | | |
| 4010:00 | HT | 12:01:20 | -do.- | -do.- | B-500KΩ | " | -do.- | | |
| 4010:00 | HT | 12:01:30 | -do.- | -do.- | B-200KΩ | " | -do.- | | |
| 4010:00 | HT | 14:01:40 | -do.- | V18K-3-1 | B-500Ω | " | 3 Terminals | | |
| 4010:00 | HT | 14:01:80 | -do.- | -do.- | B-5KΩ | " | -do.- | | |
| 4010:00 | HT | 14:01:90 | -do.- | -do.- | B-10KΩ | " | -do.- | | |
| 4010:00 | HT | 14:02:10 | -do.- | -do.- | B-25KΩ | " | -do.- | | |
| 4010:00 | HT | 14:02:20 | -do.- | -do.- | B-50KΩ | " | -do.- | | |
| 4010:00 | HT | 14:02:40 | -do.- | -do.- | B-100KΩ | " | -do.- | | |
| 4010:00 | HT | 14:02:50 | -do.- | -do.- | B-250KΩ | " | -do.- | | |
| 4010:00 | HT | 18:00:30 | -do.- | V10K-8-1-2 | B-2KΩ | " | -do.- | | |
| 4010:00 | HT | 18:00:50 | -do.- | -do.- | B-20KΩ | " | -do.- | | |
| 4010:00 | HT | 18:00:60 | -do.- | -do.- | B-50KΩ | " | -do.- | | |
| 4010:00 | HT | 18:00:70 | -do.- | -do.- | B-100KΩ | " | -do.- | | |
| 4010:00 | HT | 18:00:90 | -do.- | -do.- | B-1MΩ | " | -do.- | | |
| 4010:00 | HT | 56:00:20 | -do.- | 3321-H | B-200Ω | " | | | |

2. Main Amplifier Unit(メインアンプユニット) ND6060

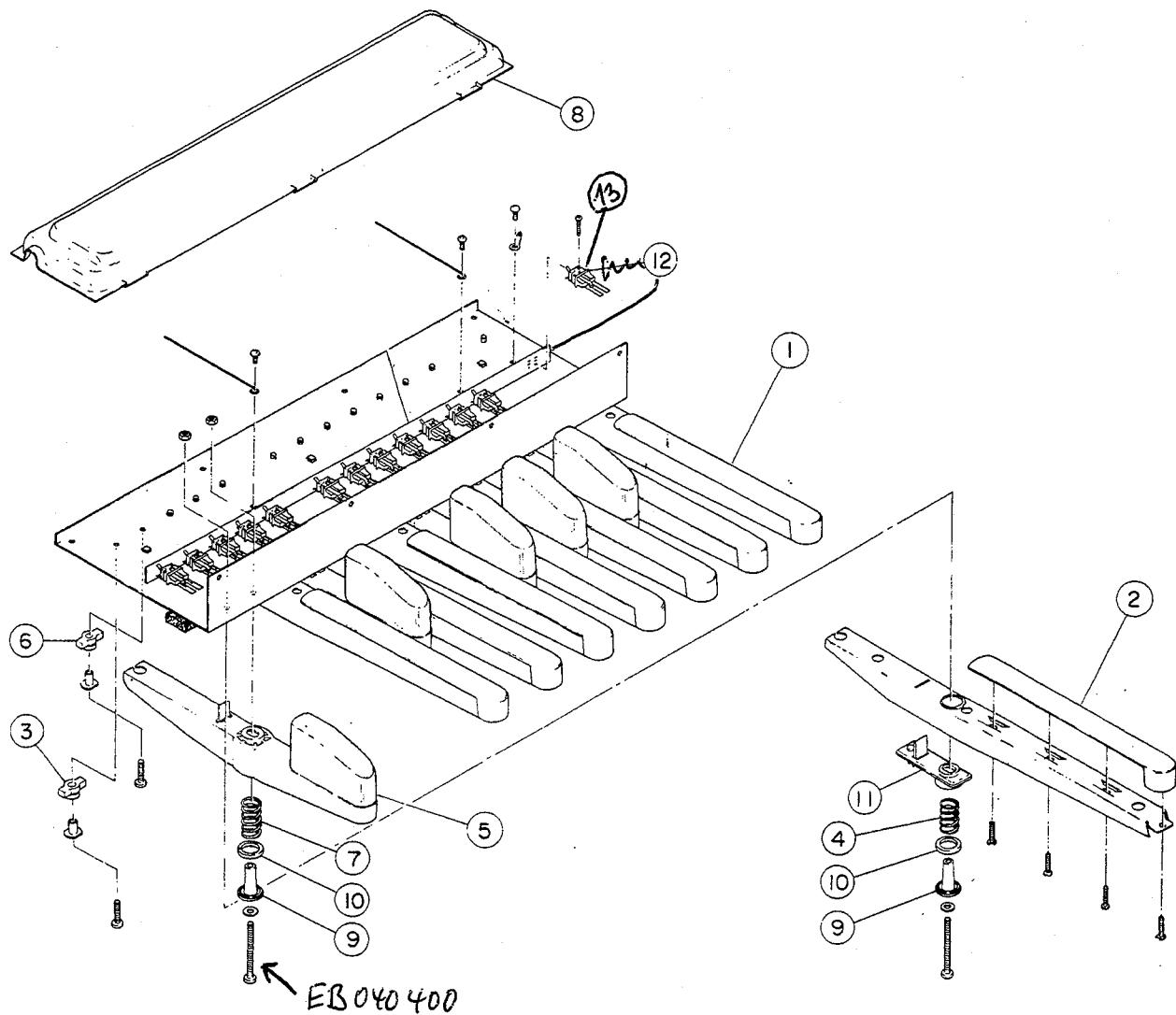


3. Power Supply (Transformer) NP6007Z



| Ref. No. | Part No. (番号) | Description (部品名) | Remarks (備考) | Common Models (共通モデル) | 卸価 | 小売 |
|----------|---------------|-----------------------------------|--------------|-------------------------------|----|----|
| 30:10:00 | NP:60:07:00 | Power Supply Unit | 電源ユニット | British | | |
| 30:10:00 | NP:60:07:10 | -do.- | " | Japan | | |
| 30:10:00 | NP:60:07:20 | -do.- | " | General | | |
| 30:10:00 | NP:60:07:30 | -do.- | " | US American | | |
| 30:10:00 | NP:60:07:40 | -do.- | " | South-African | | |
| 30:10:00 | NP:60:07:50 | -do.- | " | Australian | | |
| 30:10:00 | NP:60:07:60 | -do.- | " | European | | |
| 30:10:00 | NP:60:07:70 | -do.- | " | North-European | | |
| 30:10:00 | NP:60:07:80 | -do.- | " | Canadian | | |
| | | | | | | |
| 40:10:00 | GA:02:73:00 | Transformer | 電源トランス | | | |
| 40:10:00 | GA:02:75:00 | -do.- | " | Japan | | |
| | | | | | | |
| 40:10:00 | KB:00:03:50 | Fuse 250V 2AT | ヒューズ | | | |
| 40:10:00 | KB:00:03:60 | -do.- -do.- 3AT | " | | | |
| 40:10:00 | KB:00:10:50 | -do.- Approved by UL -do.- 4A | " | US American, Canadian | | |
| 40:10:00 | KB:00:11:10 | -do.- -do.- -do.- 2.5A | " | -do.- | | |
| 40:10:00 | KB:00:10:30 | -do.- -do.- -do.- 2A | " | -do.- | | |
| 40:10:00 | KB:00:07:40 | -do.- miniature type -do.- 1.6AT | " | European, N-European, British | | |
| 40:10:00 | KB:00:07:50 | -do.- -do.- -do.- 2AT | " | -do.- | | |
| 40:10:00 | KB:00:07:60 | -do.- -do.- -do.- 3.15AT | " | -do.- | | |
| | | | | | | |
| 40:10:00 | LB:20:11:00 | Holder for Fuse (Block) | ヒューズホルダー | | | |
| 40:10:00 | LB:20:11:10 | -do.- -do.- miniature | " | European, N-European, British | | |
| | LB:20:04:80 | -do.- (Cylindrical) | " (筒型) | →401000 L B200480 | | |
| 40:10:00 | LB:20:05:00 | -do.- -do.- miniature | " | European, N-European, British | | |
| | | | | | | |
| 40:10:00 | FL:25:93:30 | Electrolytic Capacitor 35V 3300μF | 電解コンデンサ | (FM059320 evtl.) | | |

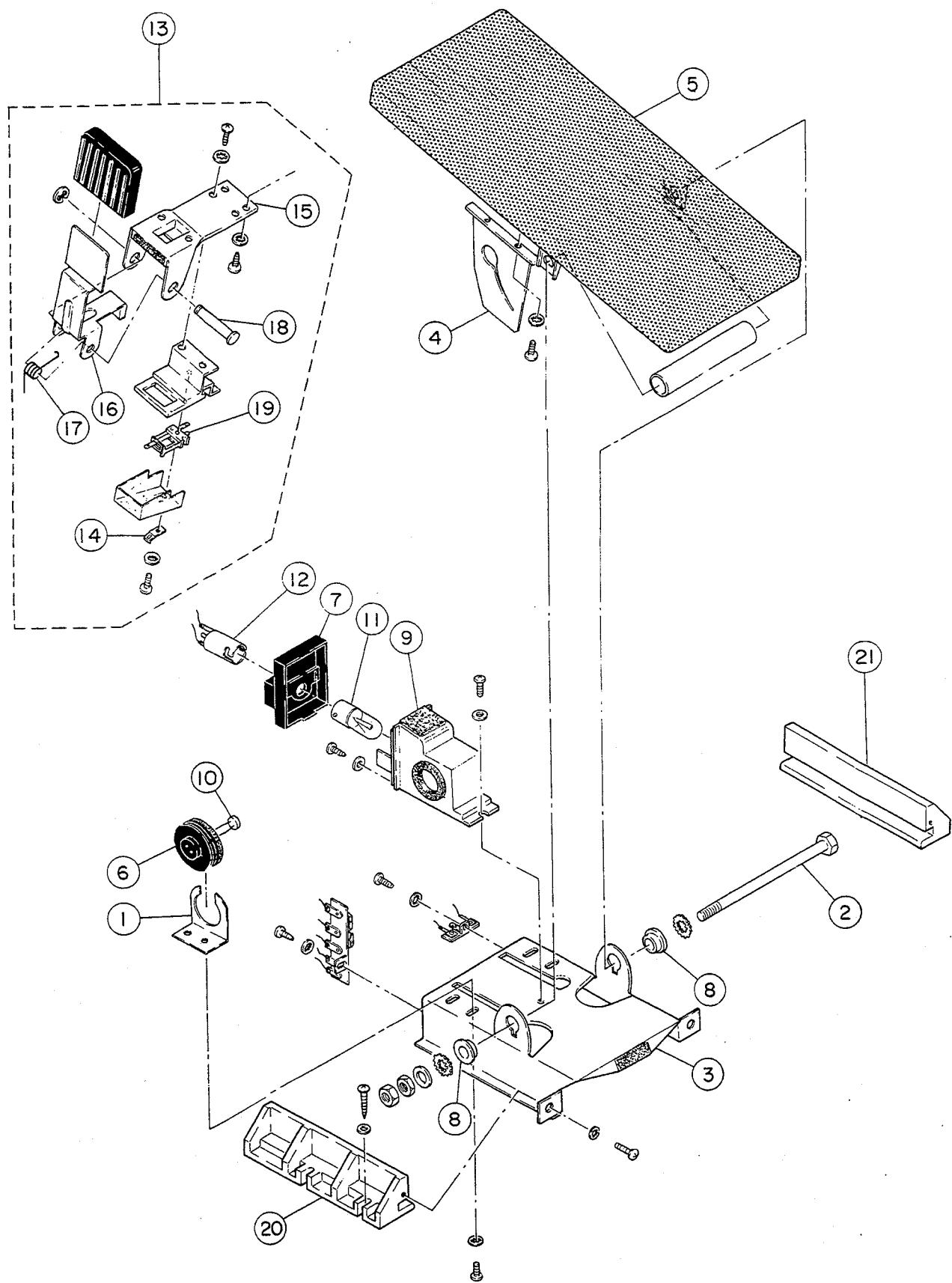
4. Pedal Keyboard(ペダル鍵盤)



| Ref No. | Part No. (パート番号) | Description (部品名) | Remarks (備考) | Common Models (共通モデル) | 卸価 | 小売 |
|---------|----------------------|-------------------------|--------------|-----------------------|------|----|
| | 30 10:00 NB 04:89:70 | Pedal Key Board | ペダル鍵盤 | | | |
| 1 | 30 10:00 NB 04:89:80 | White Key | #04898 | 白鍵 | | - |
| 2 | 30 10:00 CB 02:94:90 | White Key Head | #02949 | 白鍵ヘッド | | |
| 3 | 30 10:00 CB 02:02:40 | Pivot Rubber, White Key | #02024 | 白鍵ピボット | | - |
| 4 | 30 10:00 AA 01 22:50 | White Key Board Spring | #01225 | 白鍵バネ | | |
| 5 | 30 10:00 CB 02:67:50 | Black Key | #02675 | 黒鍵 | A-60 | |
| 6 | 30 10:00 CB 01 31:30 | Pivot Rubber, Black Key | #01313 | 黒鍵ピボット | | |
| 7 | 30 10:00 AA 01 22:60 | Black Key Board Spring | #01226 | 黒鍵バネ | | |
| 8 | 30 10:00 CB 02:82:20 | Dust Cover | #02822 | ダストカバー | | |
| 9 | 30 10:00 CB 00:87:40 | Guide Post | #00874 | ガイドポスト | | |
| 10 | 30 10:00 CB 00:87:50 | Stopper Rubber | #00875 | トップゴム | | |
| 11 | 30 10:00 CB 02:82:10 | PK Actuator | #02821 | PKアクチュエータ | | |
| 12 | 30 10:00 NB 04:81:80 | PK Switch Unit | | PKスイッチ ユニット | | |
| 43 | NB037010 | PK switch | | | | |

14 EB040400 Flat Head Screw M4x40

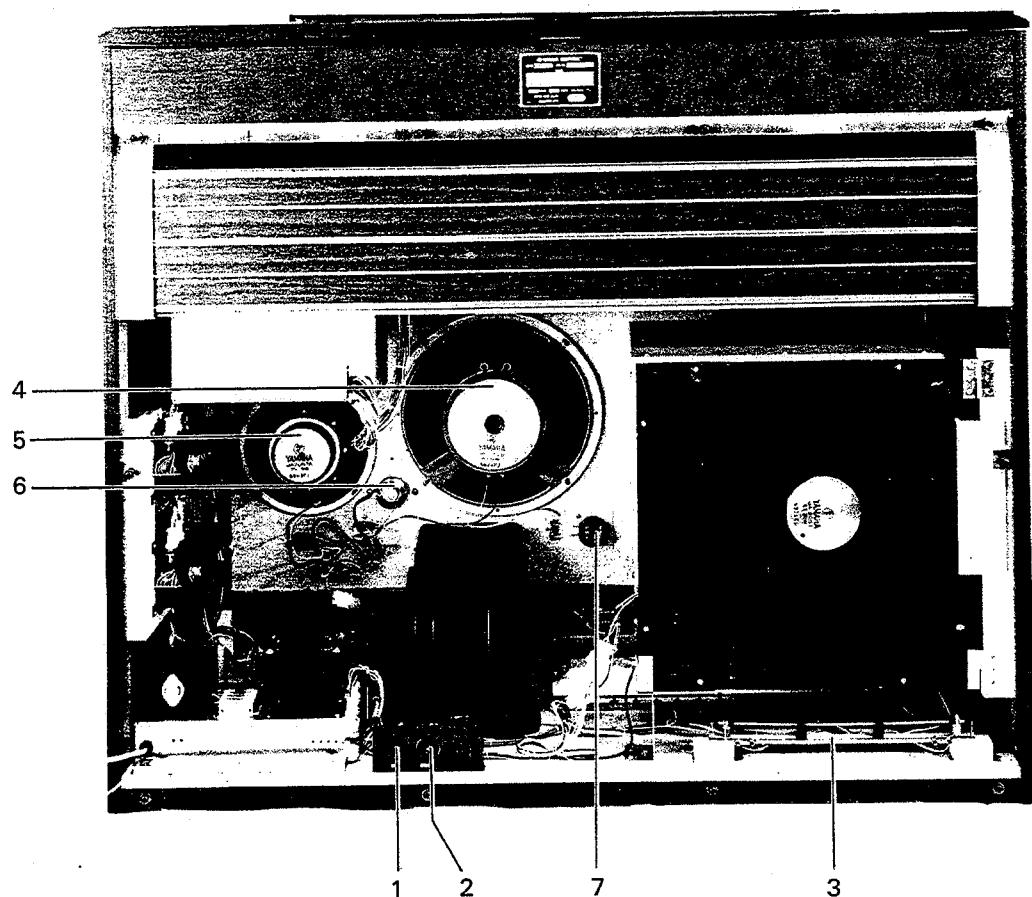
5. Expression Pedal(EXPペダル)



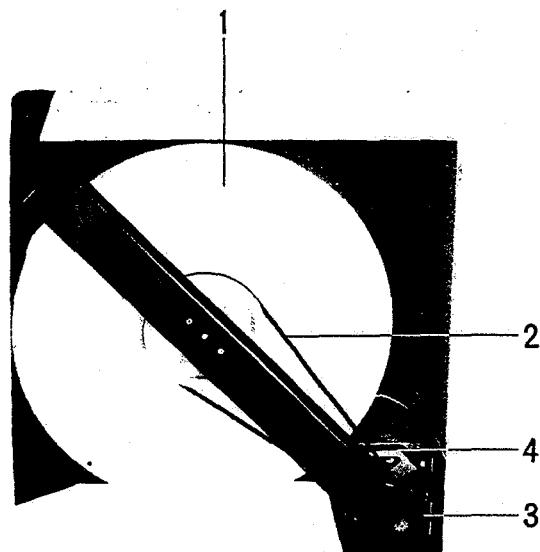
| Ref No. | Part No. (バーツ番号) | | | | Description (部品名) | Remarks (備考) | Common Models (共通モデル) | 卸価 | 小売 |
|---------|------------------|-------|----|-------|-------------------|---------------------------------------|-----------------------|--------------------------|------------|
| | 30 | 10:00 | CB | 01 | 64:70 | Dust Cover | ダストカバー | | |
| I0 | 30 | 10:00 | CB | 02 | 83:40 | Knob | ツマミ | for Slide Volume | |
| I1 | 30 | 10:00 | CB | 02 | 89:60 | -do.- | " | for Master Volume | A-60 |
| | 30 | 10:00 | CB | 01 | 67:80 | -do.- | (White) | for TVR | C,D,E-Type |
| | 30 | 10:00 | CB | 01 | 67:90 | -do.- | (Black) | " (黒) | -do.- |
| | 30 | 10:00 | CB | 01 | 68:00 | -do.- | (Red) | " (赤) | -do.- |
| | 30 | 10:00 | CB | 01 | 68:10 | -do.- | (Yellow) | " (黄) | -do.- |
| | 30 | 10:00 | CB | 01 | 68:20 | -do.- | (Green) | " (緑) | -do.- |
| | | | | | | | | | |
| | 40 | 10:00 | HP | 70:01 | 00 | Variable Resistor TCR-1G A10KΩ×2 | トーンボリューム | Brilliance | |
| | 40 | 10:00 | HP | 70:00 | 20 | -do.- TCR-2 B10KΩ | " | Upper Orchestra Bright | |
| | 40 | 10:00 | HP | 70:00 | 30 | -do.- TCR-1 A10KΩ | " | Upper Orchestra Volume | |
| | 40 | 10:00 | HP | 70:00 | 40 | -do.- TCR-1 A25KΩ | " | Attack Length | |
| | 40 | 10:00 | HP | 70:00 | 90 | -do.- TCR-1 C100KΩ | " | Other | |
| | 40 | 10:00 | HP | 70:00 | 70 | -do.- TCR-1 B20KΩ | " | Repeat Speed | |
| | 40 | 10:00 | HQ | 60:01 | 50 | Slide VR SER-2 B10KΩ | スライドボリューム | Bright | |
| | 40 | 10:00 | HQ | 60:00 | 60 | -do.- SER-1 B10KΩ | " | Touch Depth Delay Depth | |
| | 40 | 10:00 | HQ | 60:01 | 60 | -do.- SER-1 B500Ω | " | Tune | |
| | 40 | 10:00 | HQ | 60:00 | 40 | -do.- SER-1 A10KΩ | " | SK Volume | |
| | 40 | 10:00 | HQ | 60:01 | 00 | -do.- SER-1 C1MΩ | " | Delay Speed | |
| | 40 | 10:00 | HQ | 60:01 | 90 | -do.- SER-1 A2MΩ | " | Portamento | |
| I2 | 40 | 10:00 | HR | 20:00 | 30 | Variable Resistor RV24YG A10KΩ×2 | 可変抵抗器 | Master Volume | E-3 |
| | | | | | | | | | |
| I3 | 40 | 10:00 | KA | 20:00 | 00 | Lever Switch 8T | レバースイッチ | Delay Vibrato Attack-Wah | |
| I4 | 40 | 10:00 | KA | 20:00 | 20 | -do.- 8T | " | Upper Presets | |
| I5 | 40 | 10:00 | KA | 40:04 | 20 | Slide Switch SES-3G 3Positions 2T | スライドスイッチ | Transposition | |
| I6 | 40 | 10:00 | KA | 10:03 | 60 | Seesaw Switch SQ-14 Black | シーソースイッチ | | |
| I7 | 40 | 10:00 | KA | 98:42 | 70 | Push Switch (KA70101+LC22210) | プッシュスイッチ | for Solo Orchestra | |
| I8 | 40 | 10:00 | KA | 98:42 | 80 | -do.- (KA70102+LC222190+LC22180) | " | Upper Orchestra | |
| I9 | 30 | 10:00 | NB | 00:37 | 70 | Door Switch Assembly | ドアスイッチAss'y | C-4,C-4R C-5,A,C-5R | |
| | | | | | | | | | |
| 20 | 30 | 10:00 | AA | 03:72 | 10 | Keyboard Spacer (Upper Key) | 口金 | | |
| 21 | 30 | 10:00 | AA | 03:97 | 30 | -do.- (Lower Key) | " | | |
| | | | | | | | | | |
| 22 | 30 | 10:00 | CB | 02 | 89:60 | Knob | ツマミ | | A-60 |
| 23 | 30 | 10:00 | CB | 02 | 89:70 | -do.- | " | -do.- | |
| 24 | 30 | 10:00 | CB | 02 | 89:80 | -do.- | " | -do.- | |
| 25 | 30 | 10:00 | CB | 02 | 89:90 | -do.- | " | | |
| 26 | 30 | 10:00 | CB | 02 | 83:40 | -do.- | " | | |
| | | | | | | | | | |
| 27 | 40 | 10:00 | HR | 20:00 | 50 | Variable Resistor RV24YD A10KΩ, B10KΩ | 可変抵抗器 | Rhythm Vol & Bal | |
| 28 | 40 | 10:00 | HR | 20:02 | 30 | -do.- RV24YN C500KΩ | " | Tempo | |
| 29 | 40 | 10:00 | HR | 40:00 | 40 | -do.- 60°VR B10KΩ | " | Reverb | |
| 30 | 40 | 10:00 | HR | 40:00 | 90 | -do.- 60°VR C10KΩ | " | Sustain | |

| Ref No. | Part No. (パート番号) | Description (部品名) | Remarks(備考) | Common Models (共通モデル) | 単価 | 小売 |
|---------|--|---------------------------------------|-------------|-------------------------------|--------------------|----|
| 31 | 40:10:00: HR:40:10:20 | Variable Resistor 60° VR B4KΩ×2 | 可変抵抗器 | Manual Balance | | |
| 32 | 40:10:00: KA:98:32:40 | Push Switch (KA70098+NA03669+NA03670) | プッシュスイッチ | 14 Rhythm | | |
| 33 | 40:10:00: KA:98:42:60 | —do.— (KA70109+NA03667) | 〃 | for ABC | | |
| 34 | 40:10:00: KA:10:03:60 | Seesaw Switch SQ-14 Black | シーソースイッチ | | | |
| 35 | 40:10:00: KA:10:04:30 | —do.— | 〃 | Rhythm Stop | | |
| 36 | 40:10:00: KA:10:04:80 | —do.— | 〃 | Auto Arpeggio Stop | | |
| 37 | 40:10:00: KA:10:04:90 | —do.— | 〃 | Glide | | |
| 38 | 40:10:00: KA:10:05:00 | —do.— | 〃 | Damper | | |
| 39 | 40:10:00: KA:40:04:30 | Slide Switch | スライドスイッチ | Auto Arpeggio | | |
| 40 | 30:10:00: NB:04:89:90 | LED Unit | LEDユニット | | | |
| 41 | 30:10:00: NB:04:63:60 | Tablet Assembly | タブレットAss'y | Tremolo | C,D-40 | |
| | 30:10:00: NB:03:65:20 | Tablet Switch Ass'y TM #03652 | スイッチAss'y | | | |
| | 30:10:00: NB:03:55:60 | —do.— 2T #03556 | 〃 | | | |
| | 30:10:00: NB:03:69:80 | —do.— 2T #03698 | 〃 | | | |
| | 30:10:00: NB:03:70:10 | —do.— TM #03701 | 〃 | | | |
| | 30:10:00: NB:04:65:90 → <i>NB046580 E-70</i> | —do.— IM #04659 | 〃 | | | |
| | 30:10:00: NB:04:65:80 | —do.— 1T #04658 | 〃 | | | |
| 42 | 30:10:00: NB:04:64:00 | Tablet Assembly | タブレットAss'y | Sustain etc | | |
| | 30:10:00: NB:03:69:80 | Tablet Switch Ass'y 2T #03698 | スイッチAss'y | | | |
| | 30:10:00: NB:03:70:00 | —do.— 2B #03700 | 〃 | | | |
| | 30:10:00: NB:03:69:90 | —do.— 2M #03699 | 〃 | | | |
| | 30:10:00: AA:03:31:90 | EI Plate | EI板 | | C-50(T) E-50,70 | |
| | 40:10:00: LB:30:01:40 | Pin Jack | ピンジャック | | | |
| | 30:10:00: AA:01:34:40 | Ear-phone Jack Panel | EJ板 | | C-50(T) E-50,70 | |
| | 40:10:00: LB:30:00:60 | Phone Jack | ホーンジャック | | | |
| | 40:10:00: KA:30:00:50 | Toggle Switch S-7B Panel Light | トグルスイッチ | Only D-80 UTH Model | RA-50 | |
| 43 | 40:10:00: KA:10:00:60 | Power Switch | パワースイッチ | General Model | | |
| | 40:10:00: KA:10:00:70 | —do.— | 〃 | UL Model | | |
| | 40:10:00: KA:10:03:40 | —do.— | 〃 | N.European, BS European Model | | |
| | 30:54:00: CB:00:16:60 | Pilot Lamps Red | 赤玉 | N.European, BS European Model | YTA45, RA-50 | |
| | 30:10:00: CB:00:77:70 | Holder Lamp | ランプホルダー | —do.— | B-2,B-4B | |
| | 40:10:00: JB:00:01:80 | Neon Lamp NE-2 | ネオン管 | —do.— | | |

7. Reverb, Speaker, Tremolo Unit(リバーブ, スピーカー, トレモロユニット)

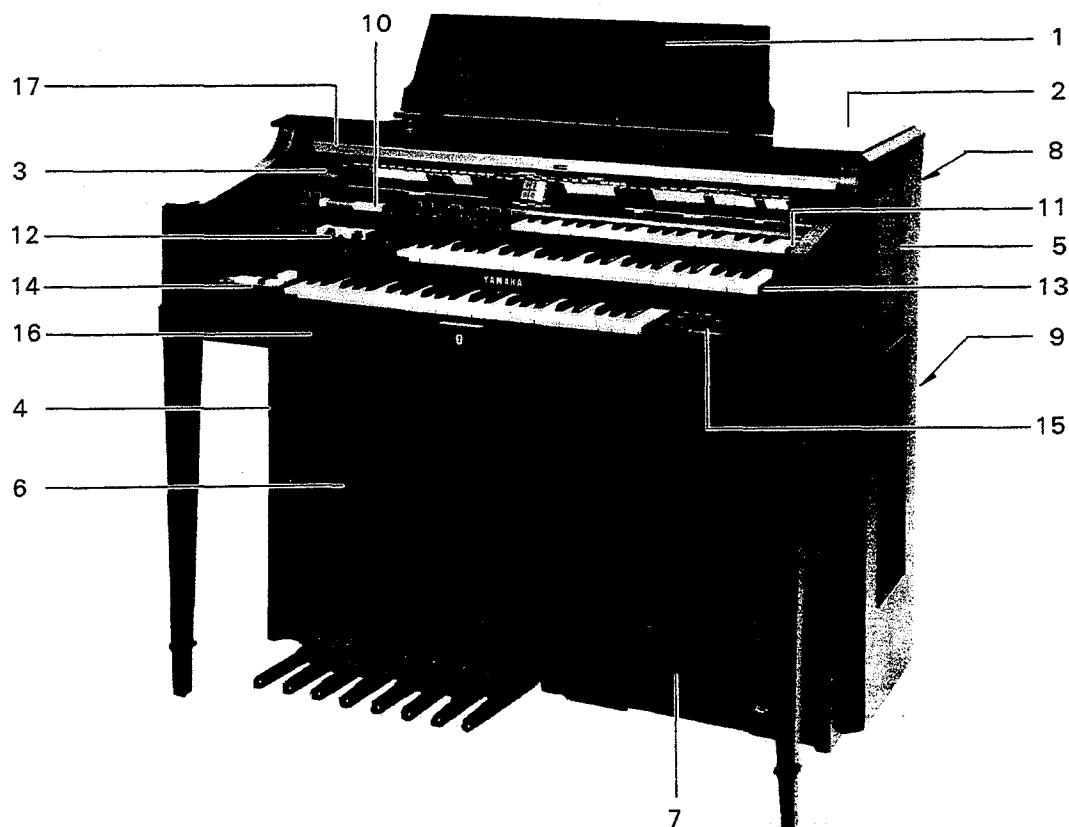


| Ref No. | Part No. (パート番号) | | | | Description (部品名) | | Remarks (備考) | Common Models (共通モデル) | 卸価 | 小売 |
|---------|----------------------|-----------------------|---------|-------------------|-------------------|-------------|---------------|-----------------------|----|----|
| 1 | 40 10:00 LB 60:01 10 | 11P Socket | SA-602B | 11P ソケット | | for SPLIT | E-50,70 | | | |
| 2 | 40 10:00 LB 60:00:30 | US Socket | SB-403B | US " | | for General | -do- | | | |
| | 40 10:00 LB 60:13:00 | 9P Socket | | 9P " | | for LESLIE | -do- | | | |
| | | | | | | | | | | |
| 3 | 40 10:00 JH 00:00:10 | Reverb Unit | | リバーブユニット | | | B-10A,E-50,70 | | | |
| | | | | | | | | | | |
| 4 | 30 10:00 JA 30:52:20 | Woofer Speaker | 30cm | スピーカー | | | | | | |
| 5 | 30 10:00 JA 20:57:10 | Squeaker Speaker | 20cm | " | | | E-50,70 | | | |
| 6 | 40 10:00 JA 05:53:00 | Tweeter Speaker | 5cm | " | | | EL-Comm | | | |
| 7 | 30 10:00 NB 04:84:90 | Dividing Network Coil | | ネットワーカ コイルユニット | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |



| Ref. No. | Part No. (部品番号) | Description (部品名) | Remarks (備考) |
|-------------|----------------------|--------------------------------------|------------------|
| | 047620 | Tremolo Unit \Rightarrow NB 052010 | |
| 1 | 30:10:00 NB:04:76 | Tremolo Unit Assembly | トレモロアッセン |
| | 30:10:00 CB:02:94:40 | Pulley | ブーリー |
| 2 | 30:10:00 CB:02:94:50 | Belt (Square Type) | 角ベルト |
| | 30:10:00 AA:03:84:00 | Hinge | 蝶番 |
| | 30:10:00 JA:20:61:00 | Speaker | スピーカー |
| 3 | 30:10:00 NB:04:83:80 | Drive Unit Assembly | ドライブユニット |
| 4 | 30:10:00 JC:00:02:60 | Motor 4P | モーター 4極 |
| | PB:00:00:80 | Coil Assembly | コイルアッセン |
| | | Tremolo Drive Unit | |
| | 40:10:00:IC:04:58:50 | Transistor 2SC458 | トランジスター |
| | 40:10:00:IC:07:35:20 | -do.- 2SC735 | " |
| | 40:10:00:iD:05:25:00 | -do.- 2SD525 | " |
| | 40:10:00:iF:00:00:10 | Diode 1N34A | ダイオード |
| | 40:10:00:iF:00:01:00 | -do.- 1S1715 | " |
| | 40:10:00:iH:00:00:60 | -do.- 10D-4 | " |
| | 40:10:00:HT:18:00:10 | Variable Resistor | 可変抵抗 V10K8-1-2 |
| | 40:10:00:HL:31:51:50 | Metal Oxide Resistor 2W 150Ω | 酸金抵抗 |
| | 40:10:00:HM:07:52:20 | Cement Molded Resistor 220Ω | セメント抵抗 10W MO-4P |
| | 40:10:00:HM:07:61:10 | -do.- 1.1KΩ | " -do.- |
| | 40:10:00:HM:09:54:70 | -do.- 470Ω | " 20W MO-4P |
| | 40:10:00:FR:05:61:50 | MP Capacitor 1.5/250V | MPコンデンサ |

8. Cabinet(外装部品)



| Ref No. | Part No. (バーツ番号) | Description (部品名) | Remarks (備考) | Common Models (共通モデル) | 卸価 | 小売 |
|---------|------------------|----------------------------|--------------|-----------------------|----|----|
| 1 | 30119044041030 | Music Rest | 譜面板 | D-80C | | |
| | 30119144041030 | -do.- | " | D-80I | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| 2 | 30119044041010 | Top Board | 屋根 | D-80C | | |
| | 30119144041010 | -do.- | " | D-80I | | |
| | | | | | | |
| | | | | | | |
| 3 | 30119044044510 | Control Panel | コントロールパネル | | | |
| | | | | | | |
| | | | | | | |
| 4 | 30119044040010 | Side Board Assembly (Left) | 親板 (左) | D-80C | | |
| | 30119144040010 | -do.- (Left) | " (左) | D-80I | | |
| 5 | 30119044040020 | -do.- (Right) | " (右) | D-80C | | |
| | 30119144040020 | -do.- (Right) | " (右) | D-80I | | |
| | | | | | | |
| 6 | 30119000032010 | Upper Front Panel | 上前板サランバリ | D-80C | | |
| | 30119100032010 | -do.- | " | D-80I | | |
| 7 | 30119044042030 | Lower Front Panel | 下前板 | D-80C | | |
| | 30119144042030 | -do.- | " | D-80I | | |