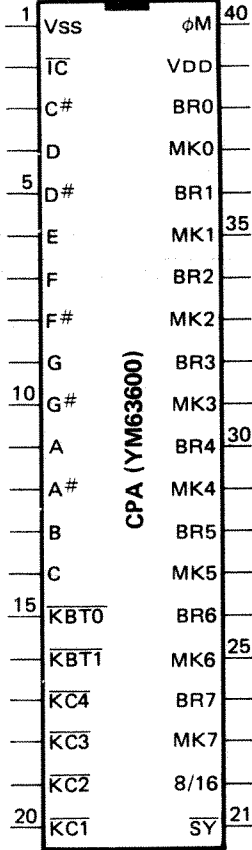


Part Name	YM636000	Function Name	CPA (Combo Piano—A) Key Code Channel Prozessor
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Terminal				Terminal			
Pin No.	Name	I/O	Description	Pin No.	Name	I/O	Description
1	VSS	I	Ground (0V)	40	φM	I	Master Clock (1MHz)
2	IC	I	Initial Clear	39	VDD	I	DC Supply (−15V)
3	C#	I/O	Note Block	38	BR0	O	Octave Block (Break)
4	D	I/O	— do. —	37	MK0	O	Octave Block (Make)
5	D#	I/O	— do. —	36	BR1	O	— do. — (Break)
6	E	I/O	— do. —	35	MK1	O	— do. — (Make)
7	F	I/O	— do. —	34	BR2	O	— do. — (Break)
8	F#	I/O	— do. —	33	MK2	O	— do. — (Make)
9	G	I/O	— do. —	32	BR3	O	— do. — (Break)
10	G#	I/O	— do. —	31	MK3	O	— do. — (Make)
11	A	I/O	— do. —	30	BR4	O	— do. — (Break)
12	A#	I/O	— do. —	29	MK4	O	— do. — (Make)
13	B	I/O	— do. —	28	BR5	O	— do. — (Break)
14	C	I/O	— do. —	27	MK5	O	— do. — (Make)
15	KBT0	I	Keyboard Transposition Data ..... No use	26	BR6	O	— do. — (Break)
16	KBT1	I	— do. —	25	MK6	O	— do. — (Make)
17	KC4	O	Key Code Data	24	BR7	O	— do. — (Break)
18	KC3	O	— do. —	23	MK7	O	— do. — (Make)
19	KC2	O	— do. —	22	8/16	I	8 Voice/16 Voice Select
20	KC1	O	— do. —	21	SY	O	Synchro Data



MEMO

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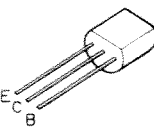
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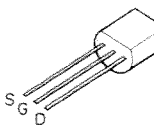
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• Transistor



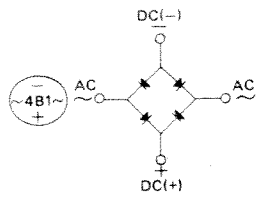
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2SA1015  
2SC1815  
2SC752

• FET



2SK105

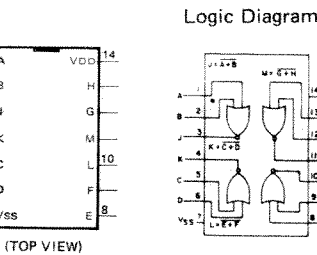
• Diode



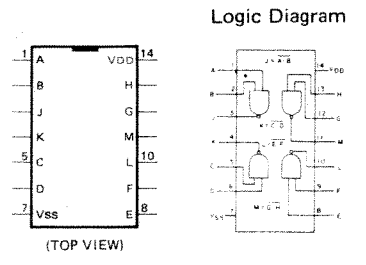
1D4B1

• IC

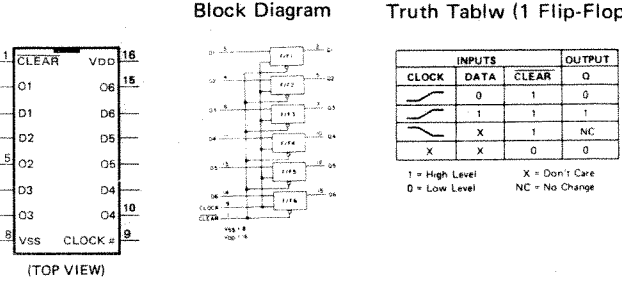
TC4001BP  
Quadruple 2-Input NOR Gate



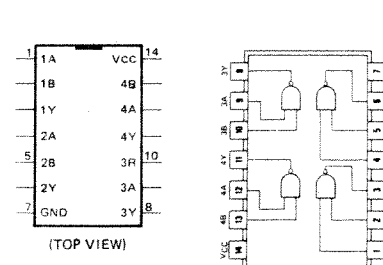
TC4011BP  
Quadruple 2-Input NAND Gate



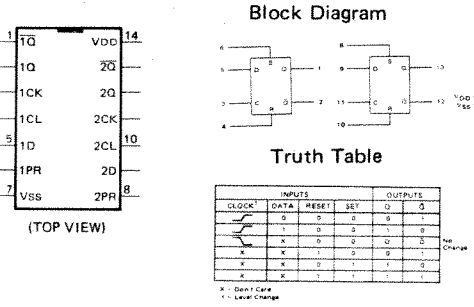
TC40174BP  
Hex "D"-Type Flip-Flop



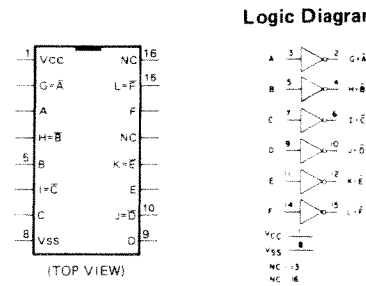
HD74LS37  
Quadruple 2-Input NAND Buffers



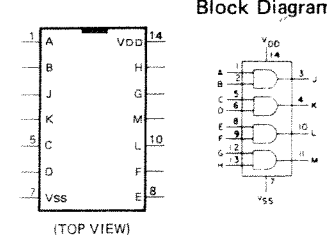
TC4013BP  
Dua "D" Flip-Flop  
with Set/Reset Capability



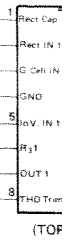
TC4049BP  
Hex Buffer/Converter (Inverting)



TC4081BP  
Quadruple 2-Input AND Gate



NEE  
COMP



iG0  
BBD



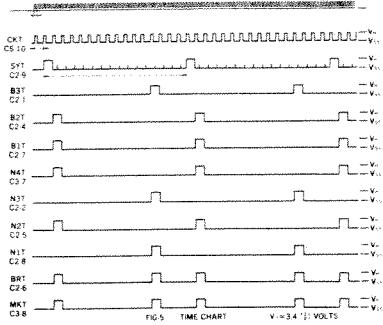
LO  
P SIP



3p  
8p

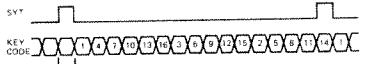
DM Circuit Board & Wining

\* KEY CODE DATA OUT  
After power has been turned on, if the A<sub>2</sub> key is first pressed, then while A<sub>2</sub> is held F<sub>3</sub> is pressed, the following timing results.



C2-3 become Vss when the foot pedal is OFF.  
C2-3 become VH-3.4 +2.1, -0.7 when the foot pedal is ON.

Key Code  
Key code is sent to a free channel in the order shown below.



Key and Key Code Relationship  
BRT(18p) ... "H" when the transfer point (T) is not connected with the break contact (BR), "L" when the transfer point is connected to the break contact.  
MKT(19p) ... "H" when transfer point (T) is connected to the make contact (MK), "L" when envelope has ended and there is no connection with break point (BR).  
DRT(20p) ... "H" when the sustain pedal is pressed, "L" when released.  
SYT(21p) ... Synchronization signal. Synchronization=48 microseconds  
OCT(16p) ... "L" in the case of CP  
CON(17p) ... "L"  
CKT(22p) ... Clock φM/3

	K2	K1
UK (CP for UK only)	L	H

\* H: TTL high level (0)  
\* L: TTL low level (-15)

	B3T	B2T	B1T
E <sub>0</sub> ~C <sub>1</sub>	L	L	H
C <sub>1</sub> ~C <sub>2</sub>	L	H	L
C <sub>2</sub> ~C <sub>3</sub>	L	H	H
C <sub>3</sub> ~C <sub>4</sub>	H	L	L
C <sub>4</sub> ~C <sub>5</sub>	H	L	H
C <sub>5</sub> ~C <sub>6</sub>	H	H	L
C <sub>6</sub> ~E <sub>6</sub>	H	H	H

	N4T	N3T	N2T	N1T
C <sub>1</sub>	L	L	L	L
D	L	L	L	H
D <sup>#</sup>	L	L	H	L
E	L	H	L	L
F	L	H	L	H
F <sup>#</sup>	L	H	H	L
G	H	L	L	L
G <sup>#</sup>	H	L	L	H
A	H	L	H	L
A <sup>#</sup>	H	H	L	L
B	H	H	L	H
C	H	H	H	L

• Connector

C1

Pin No.	Pin Name	Wire Color	Destination
1	V <sub>T</sub>	—	—
2	V <sub>T</sub>	BE	DC-V <sub>T</sub> (C2-1)
3	V <sub>SS</sub>	—	—
4	V <sub>SS</sub>	GY	DC-V <sub>SS</sub> (C1-2)
5	V <sub>SS</sub>	GY	DC-V <sub>SS</sub> (C1-1)
6	V <sub>DD</sub>	RE	DC-V <sub>DD</sub> (C2-3)
7	V <sub>DD</sub>	RE	DC-V <sub>DD</sub> (C2-4)

C7

Pin No.	Pin Name	Wire Color	Destination
1	BRO	—	—
2	MKO	—	—
3	BR1	GR	MK1-BR1 (C3-6)
4	MK1	BE	MK1-MK1 (C3-7)
5	BR2	VI	MK1-BR2 (C3-5)
6	MK2	GY	MK1-MK2 (C3-4)
7	BR3	WH	MK1-BR3 (C3-3)
8	MK3	GG	MK1-MK3 (C3-2)
9	BR4	SB	MK2-BR4 (C3-6)
10	MK4	PK	MK2-MK4 (C3-7)

C13

Pin No.	Pin Name	Wire Color	Destination
1	GND	—	—
2	IS5	S WH	FL-155 (C2-4)
3	GND	—	—
4	1A2	S BR	FL-1A2 (C4-10)
5	GND	—	—
6	IS2	S SB	FL-152 (C2-10)
7	GND	—	—

C2

Pin No.	Pin Name	Wire Color	Destination
1	B3T	BR	KC-B3T (CN-3)
2	N3T	GR	KC-N3T (CN-7)
3	DPT	SB	KC-DPT (CN-20)
4	B2T	RE	KC-B2T (CN-4)
5	N2T	BE	KC-N2T (CN-8)
6	BRT	GY	KC-BRT (CN-18)
7	B1T	OR	KC-B1T (CN-5)
8	N1T	VI	KC-N1T (CN-9)
9	SYT	PK	KC-SYT (CN-21)
10	CKT	SB	KC-CKT (CN-22)

C8

Pin No.	Pin Name	Wire Color	Destination
1	BR5	BR	MK2-BR5 (C3-5)
2	MK5	RE	MK2-MK5 (C3-4)
3	BR6	OR	MK2-BR6 (C3-3)
4	MK6	YE	MK2-MK6 (C3-2)
5	BR7	GR	MK3-BR7 (C1-2)
6	MK7	BE	MK3-MK7 (C1-3)
7	MK7	—	—

C14

Pin No.	Pin Name	Wire Color	Destination
1	1A5	S YE	FL-1A5 (C4-4)
2	GND	—	—
3	1A6	S GR	FL-1A6 (C4-2)
4	GND	—	—
5	1A3	S RE	FL-1A3 (C4-8)
6	GND	—	—
7	IS3	S VI	FL-153 (C2-8)
8	GND	—	—
9	IS6	S GG	FL-156 (C2-2)
10	GND	—	—

C3

Pin No.	Pin Name	Wire Color	Destination
1	V <sub>SS</sub>	WH	KC-V <sub>SS</sub> (CN-23)
2	V <sub>SS</sub>	WH	KC-V <sub>SS</sub> (CN-24)
3	CON	WH	KC-CON (CN-16)
4	OCT	WH	KC-OCT (CN-17)
5	K2	WH	KC-K2 (CN-1)
6	K1	VI	KC-K1 (CN-2)
7	N4T	YE	KC-N4T (CN-6)
8	MKT	GG	KC-MKT (CN-19)

C9

Pin No.	Pin Name	Wire Color	Destination
1	2WS0	WH	PN1-2WS0 (C5-2)
2	2WS1	GG	PN1-2WS1 (C5-5)
3	6TH	SB	PN3-6TH (C8-5)
4	6TH	PK	PN3-6TH (C8-4)
5	2E0	YE	PN1-2E0 (C2-5)
6	2E1	GR	PN1-2E1 (C2-6)
7	2E2	BE	PN1-2E2 (C2-7)
8	SUST	BR	JK-SUST (C1-5)

C15

Pin No.	Pin Name	Wire Color	Destination
1	GND	—	—
2	2S3	S VI	FL-2S3 (C3-4)
3	GND	—	—
4	2S6	S GG	FL-2S6 (C3-10)
5	GND	—	—

C4

Pin No.	Pin Name	Wire Color	Destination
1	V <sub>SS</sub>	—	—
2	P1	SB	PN1-P1 (C1-1)
3	V <sub>SS</sub>	WH	PN1-V <sub>SS</sub> (C1-2)
4	P2	PK	PN1-P2 (C1-4)
5	V <sub>DD</sub>	OR	PN1-V <sub>DD</sub> (C1-3)

C10

Pin No.	Pin Name	Wire Color	Destination
1	TE0	BR	PN1-TE0 (C2-2)
2	TE1	RE	PN1-TE1 (C2-3)
3	TE2	OR	PN1-TE2 (C2-4)
4	1WS1	GY	PN1-1WS1 (C5-3)
5	1WS0	VI	PN1-1WS0 (C5-4)

C16

Pin No.	Pin Name	Wire Color	Destination
1	GND	—	—
2	2S4	S GY	FL-2S4 (C3-6)
3	GND	—	—
4	2A2	S BR	FL-2A2 (C5-2)
5	GND	—	—
6	2S2	S BE	FL-2S2 (C3-2)
7	GND	—	—

C5

Pin No.	Pin Name	Wire Color	Destination
1	C <sup>#</sup>	BR	MK1-C <sup>#</sup> (C1-7)
2	D	RE	MK1-D (C1-6)
3	D <sup>#</sup>	OR	MK1-D <sup>#</sup> (C1-5)
4	E	YE	MK1-E (C1-4)
5	F	GR	MK1-F (C1-3)
6	F <sup>#</sup>	BE	MK1-F <sup>#</sup> (C1-2)
7	G	VI	MK1-G (C1-1)

C11

Pin No.	Pin Name	Wire Color	Destination
1	-15V	—	—
2	-15V	YE	DC-15V (C3-1)
3	GND	—	—
4	GND	BL	DC-GND (C4-6)
5	GND	BL	FL-GND (C1-5)
6	+15V	—	—
7	+15V	BR	DC+15V (C4-1)

C17

Pin No.	Pin Name	Wire Color	Destination
1	2A5	S YE	FL-2A5 (C5-8)
2	GND	—	—
3	2A6	S GR	FL-2A6 (C5-10)
4	GND	—	—
5	2A3	S RE	FL-2A3 (C5-4)
7	2A4	S OR	FL-2A4 (C5-6)
8	GND	—	—
9	2S5	S WH	FL-2S5 (C3-8)
10	GND	—	—

C6

Pin No.	Pin Name	Wire Color	Destination
1	G <sup>#</sup>	GY	MK1-G <sup>#</sup> (C2-5)
2	A	WH	MK1-A (C2-4)
3	A <sup>#</sup>	GG	MK1-A <sup>#</sup> (C2-3)
4	B	SB	MK1-B (C2-2)
5	C	PK	MK1-C (C2-1)

C12

Pin No.	Pin Name	Wire Color	Destination
1	GND	—	—
2	1A4	S OR	FL-1A4 (C4-6)
3	GND	—	—
4	1S4	S GY	FL-1S4 (C2-6)
5	GND	—	—

- Note)  
1. IC  
IC1 ~ 3 : HD74LS37  
IC4 : TC4011BP  
IC5, 6 : TC4013BP  
IC7 : TC4001BP  
IC8 ~ 11 : TC40174BP  
IC12, 13 : TC4081BP  
IC14 : YM636  
IC15 ~ 18 : YM722  
IC19 ~ 28 : NJM4558DV  
2. Transistor  
Tr1 ~ 10 : 2SC752 (Y)  
Tr11 : 2SA509Y  
3. Diode  
D1 ~ 27 : 1S1555



FL Circuit Board & Wining

• Connector

C1

Pin No.	Pin Name	Wire Color	Destination
1	-15V	YE	DC-15V (C3-2)
2	-15V	YE	DC-15V (C3-3)
3	GND	BL	DC-GND (C4-7)
4	GND	BL	DM-GND (C11-5)
5	GND	YL	EFT-GND (C4-4)
6	+15V	BR	DC+15V (C4-2)
7	+15V	BR	DC+15V (C4-3)

C2

Pin No.	Pin Name	Wire Color	Destination
1	GND	S GG S	-
2	156	S GG S	DM-156 (C14-9)
3	GND	S WH S	-
4	155	S WH S	DM-155 (C13-2)
5	GND	S GY S	-
6	154	S GY S	DM-154 (C12-4)
7	GND	S VI S	-
8	153	S VI S	DM-153 (C14-7)
9	GND	S BE S	-
10	152	S BE S	DM-152 (C13-6)

C3

Pin No.	Pin Name	Wire Color	Destination
1	GND	S BE S	-
2	252	S BE S	DM-252 (C16-6)
3	GND	S VI S	-
4	253	S VI S	DM-253 (C15-2)
5	GND	S GY S	-
6	254	S GY S	DM-254 (C16-2)
7	GND	S WH S	-
8	255	S WH S	DM-255 (C17-9)
9	GND	S GG S	-
10	256	S GG S	DM-256 (C15-4)

C4

Pin No.	Pin Name	Wire Color	Destination
1	GND	S GR S	-
2	1A6	S GR S	DM-1A6 (C14-3)
3	GND	S YE S	-
4	1A5	S YE S	DM-1A5 (C14-1)
5	GND	S DR S	-
6	1A4	S DR S	DM-1A4 (C12-2)
7	GND	S RE S	-
8	1A3	S RE S	DM-1A3 (C14-5)
9	GND	S BR S	-
10	1A2	S BR S	DM-1A2 (C13-4)

C5

Pin No.	Pin Name	Wire Color	Destination
1	GND	S BR S	-
2	2A2	S BR S	DM-2A2 (C16-4)
3	GND	S RE S	-
4	2A3	S RE S	DM-2A3 (C17-5)
5	GND	S DR S	-
6	2A4	S DR S	DM-2A4 (C17-7)
7	GND	S YE S	-
8	2A5	S YE S	DM-2A5 (C17-1)
9	GND	S GR S	-
10	2A6	S GR S	DM-2A6 (C17-3)

C6

Pin No.	Pin Name	Wire Color	Destination
1	PN24	GY	PN3-PN24 (C8-2)
2	PN23	VI	PN3-PN23 (C8-3)
3	F2	S RE	PN4-F2 (C12-4)
4	GND	-	-
5	PN22	BE	PN3-PN22 (C7-8)
6	PN21	GR	PN3-PN21 (C8-1)
7	FP	S DR	PN4-FP (C12-7)
8	GND	-	-

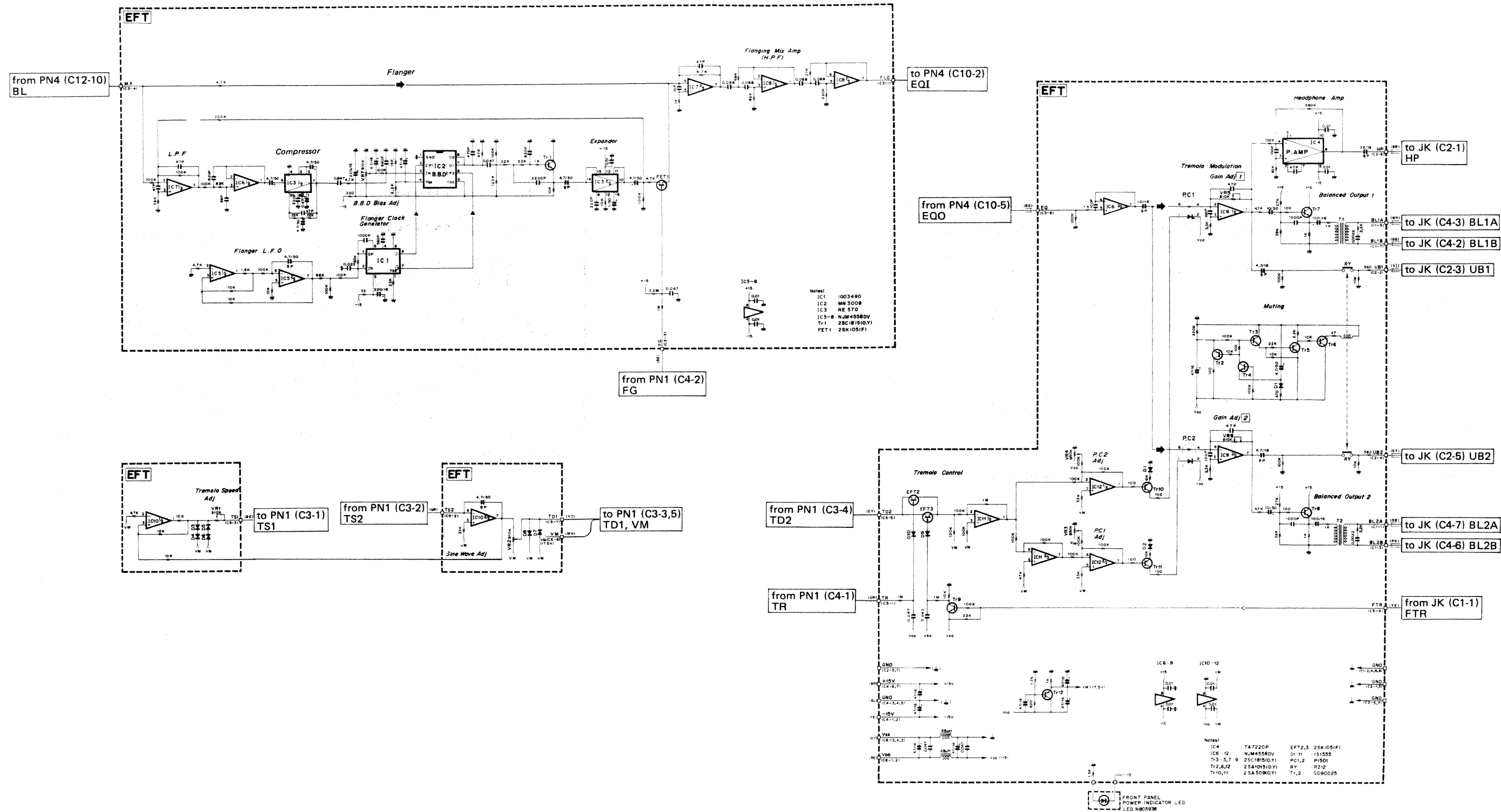
C7

Pin No.	Pin Name	Wire Color	Destination
1	PR1	WH	PN3-PR1 (C9-10)
2	PR3	SB	PN3-PR3 (C9-6)
3	PR2	GG	PN3-PR2 (C9-8)
4	PR4	PK	PN3-PR4 (C9-4)
5	F1	S BR	PN4-F1 (C12-1)
6	GND	-	-
7	PN11	BR	PN3-PN11 (C6-4)
8	PN12	RE	PN3-PN12 (C6-3)
9	PN13	OR	PN3-PN13 (C6-2)
10	PN14	YE	PN3-PN14 (C6-1)

- Notes)
- 1. IC  
IC1, 2, 3 :  $\mu$ PC14315  
IC4 :  $\mu$ PC14305
  - 2. Diode  
D1, 2, 3, 4 : 1D4B1

MEMO

EFT Circuit Diagram





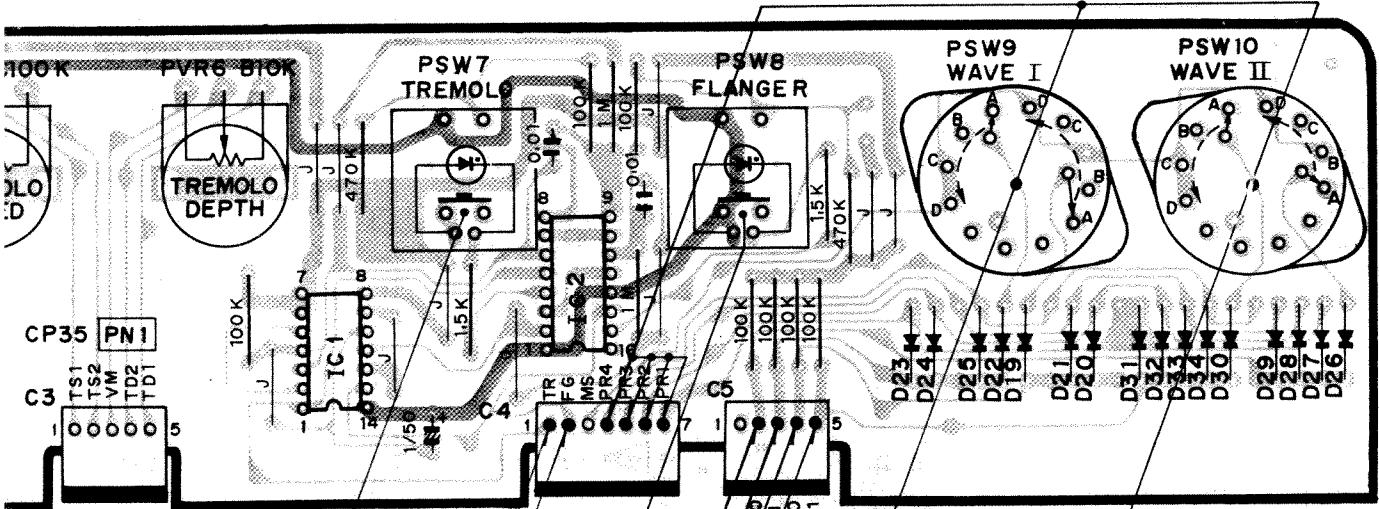
PN1, 4 Circuit Board & Wining

WAVE SELECT Data

PRESET SW. PSW21, 22, 23, 24 Wave Select Data PRESET SW 'ON'

PRESET "ON" POSITION	PR1 (C4-7)	PR2 (C4-6)	PR3 (C4-5)	PR4 (C4-4)	1WS1 (C5-3)	1WS0 (C5-4)	2WS1 (C5-5)	2WS0 (C5-2)
1	V <sub>SS</sub>	V <sub>DD</sub>	V <sub>DD</sub>	V <sub>DD</sub>	H	L	H	H
2	V <sub>DD</sub>	V <sub>SS</sub>	V <sub>DD</sub>	V <sub>DD</sub>	H	H	H	H
3	V <sub>DD</sub>	V <sub>DD</sub>	V <sub>SS</sub>	V <sub>DD</sub>	L	H	H	H
4	V <sub>DD</sub>	V <sub>DD</sub>	V <sub>DD</sub>	V <sub>SS</sub>	H	L	H	L

"V<sub>SS</sub>"="H"=" 0 v"  
"V<sub>DD</sub>"="L"=" -15 v"



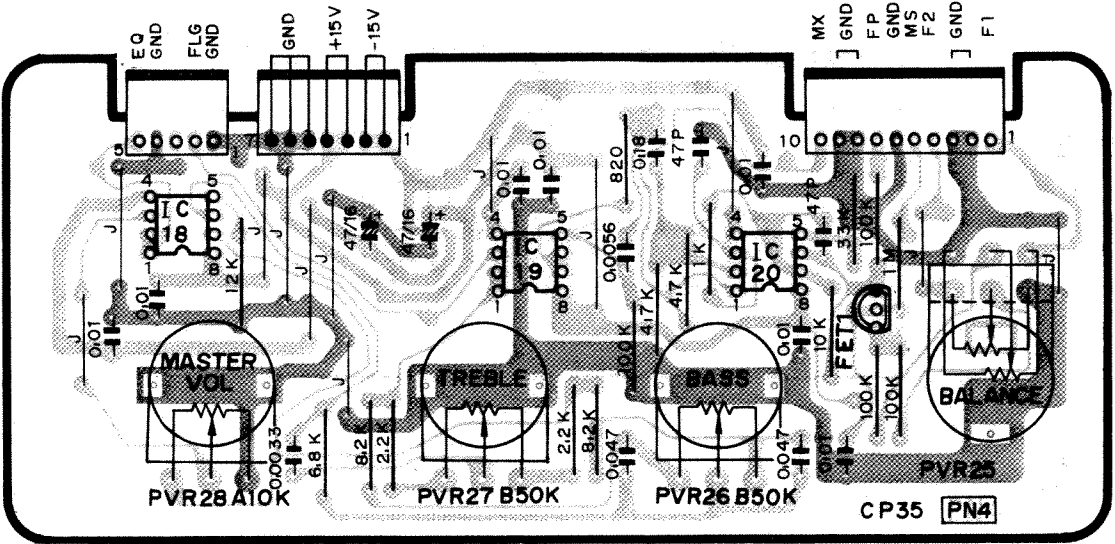
TREMOLO SW. "ON"=0V  
"OFF"= -15V  
FLANGER SW. "ON"=0V  
"OFF"= -15V

WAVE SW. PSW9, 10 Data PRESET SW. "OFF"

WAVE SW. POSITION	1WS1 (C5-3) 2WS1 (C5-5)	1WS0 (C5-4) 2WS0 (C5-2)
A	L	L
B	L	H
C	H	L
D	H	H

Pin No.	Pin Name	Wire Color	Destination
1	TS1	WH	DM-2WS0 (C9-1)
2	TS2	GY	DM-1WS1 (C10-4)
3	VM	VI	DM-1WS0 (C10-5)
4	TD1	GG	DM-2WS1 (C9-2)
5	TD2	GG	DM-2WS1 (C9-2)

- Notes)
- IC  
IC1 : TC4013BP  
IC2 : TC4049BP
  - Diode  
D1 ~ 34 : 1S1555



Pattern Side (パターン側)

• Connector

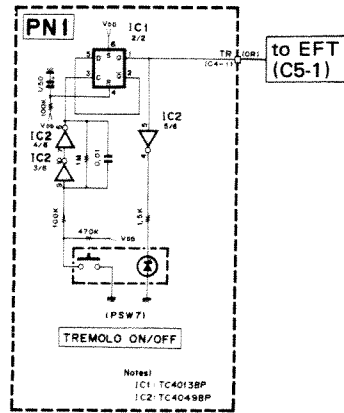
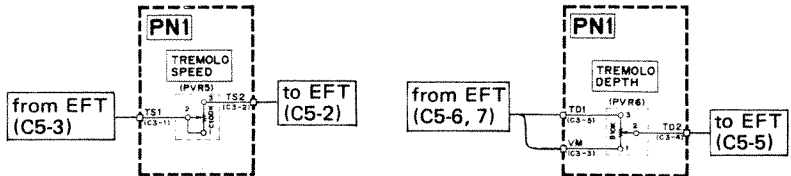
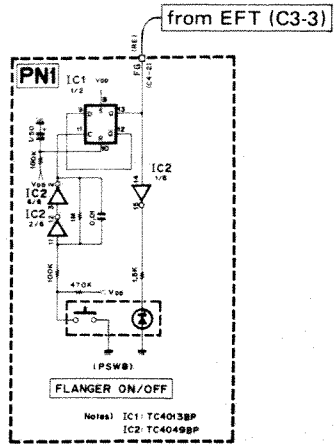
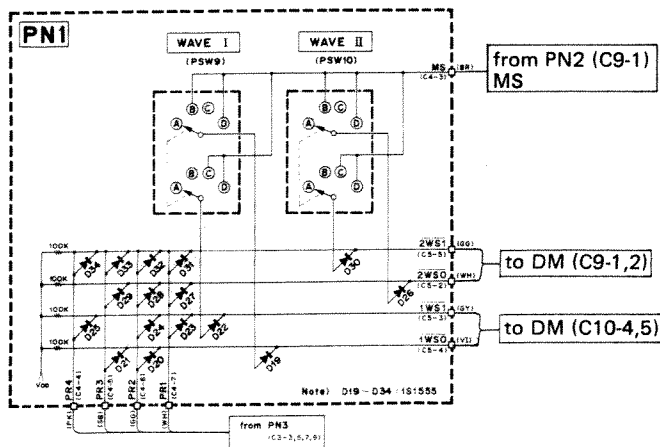
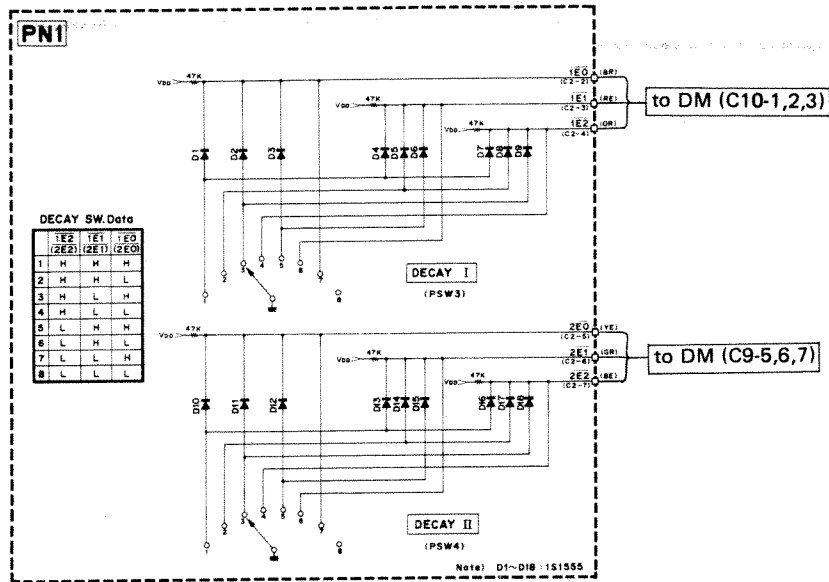
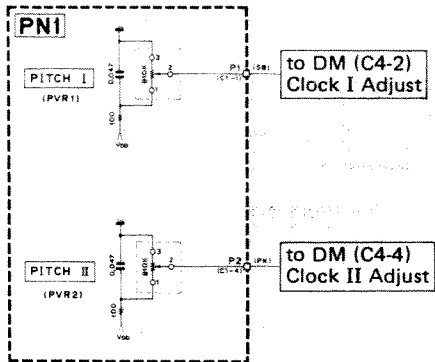
Pin No.	Pin Name	Wire Color	Destination
1	GND	S GR	S
2	FLG	S GR	EFT-FLG (C3-1)
3	—	—	—
4	GND	—	—
5	EQ	S BE	EFT-EQ (C3-6)

Pin No.	Pin Name	Wire Color	Destination
1	-15V	YE	DC-15V (C3-5)
2	-15V	YE	EFT-15V (C4-2)
3	+15V	BR	DC+15V (C4-5)
4	+15V	BR	EFT+15V (C4-7)
5	GND	—	—
6	GND	BL	DC-GND (C4-9)
7	GND	BL	EFT-GND (C4-5)

Pin No.	Pin Name	Wire Color	Destination
1	F1	S RE	FL-F1 (C7-5)
2	GND	S RE	—
3	GND	S BR	—
4	F2	S BR	FL-F2 (C6-3)
5	MS	BR	PN3-MS (C9-2)
6	GND	S OR	S
7	FP	S OR	FL-FP (C6-7)
8	GND	—	—
9	GND	—	—
10	MX	S YE	EFT-MX (C3-4)

- Note)
- IC  
IC1 ~ 39 : NJM4558DV
  - FET  
FET1 ~ 12 : 2SK105 (F)

PN1 Circuit Diagram



MK1, 2, 3 Circuit Board & Wining, Circuit Diagram

C3

Pin	7	6	5	4	3	2	1
MK1	MK1	BR1	BR2	MK2	BR3	MK3	MK3
(MK2)	MK4	BR4	BR5	MK5	BR6	MK6	MK6

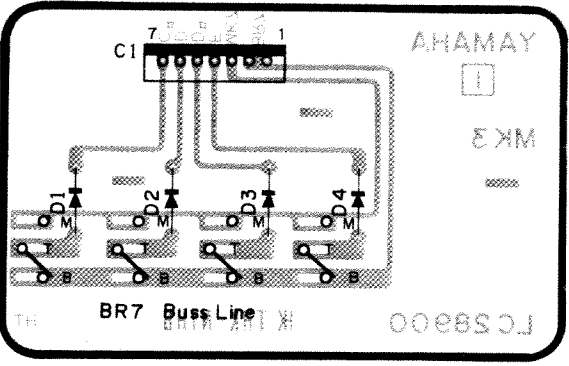
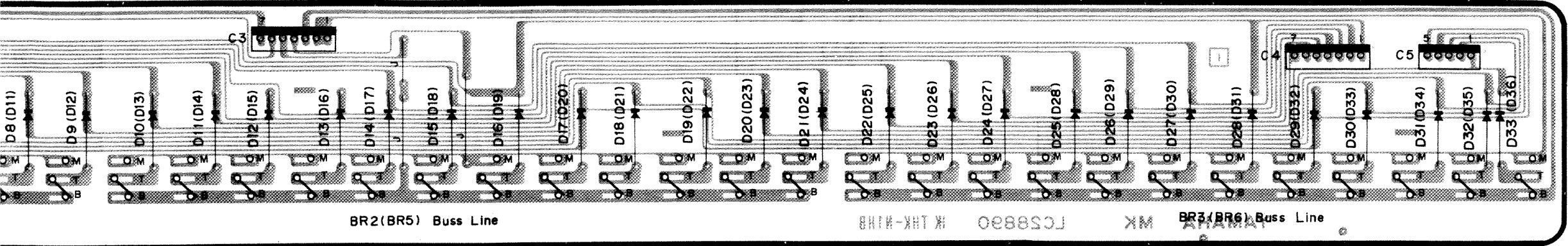
C4

Pin	7	6	5	4	3	2	1
MK1	C#	D	D#	E	F	F#	G
(MK2)	C#	D	D#	E	F	F#	G

C5

Pin	5	4	3	2	1
MK1	G#	A	A#	B	C
MK2	-	-	-	-	-

Pin	7	6	5	4	3	2	1
MK3	C#	D	D#	E	MK7	BR7	BR7



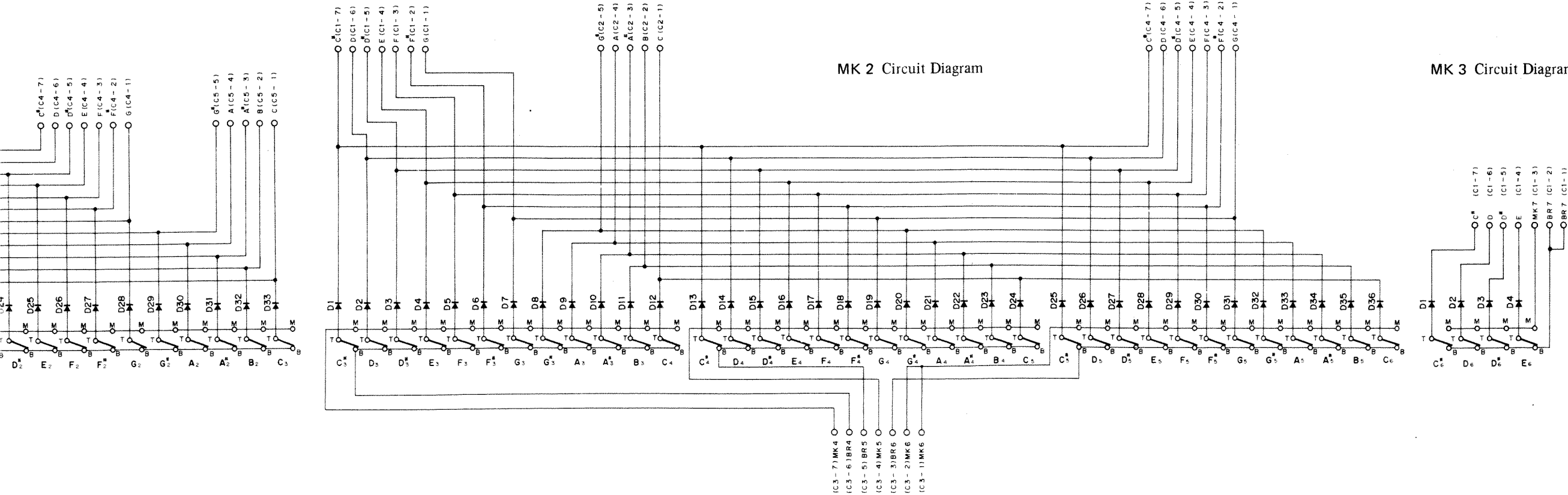
Bo (B3) C1 (C4) C# (C4) D1 (D4) D# (D4) E1 (E4) F1 (F4) F# (F4) G1 (G4) G# (G4) A1 (A4) A# (A4) B1 (B4) C2 (C5) C# (C5) D2 (D5) D# (D5) E2 (E5) F2 (F5) F# (F5) G2 (G5) G# (G5) A2 (A5) A# (A5) B2 (B5) C3 (C6) C#6 D6 D#6 E6

KEP-NA10700-13

KEP-NA10702-13

MK 2 Circuit Diagram

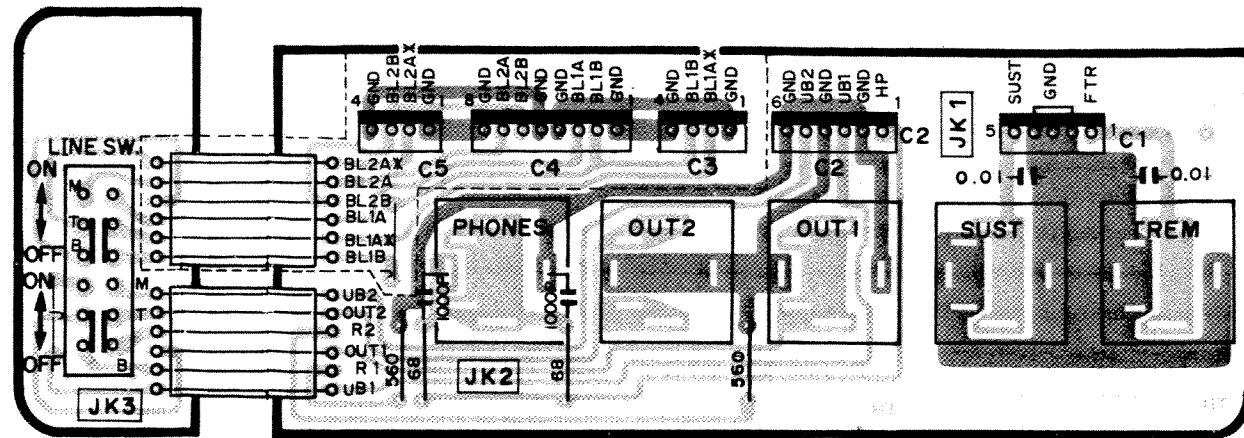
MK 3 Circuit Diagram



- Notes)
- MK1 Board
    - Diodes
      - D1 ~ 33 : 1S1555
  - MK2 Board
    - Diodes
      - D1 ~ 36 : 1S1555
  - MK3 Board
    - Diodes
      - D1 ~ 4 : 1S1555



### JK1, 2, 3, Circuit Board & Wining, Circuit Diagram



Pattern Side (パターン側)

- Connector

KEP-NA10696-17 

Pin No.	Pin Name	Wire Color	Destination
1	FTR	YE	EFT-FTR (C5-4)
2	GND	—	—
3	GND	BL	EFT-GND (C2-1)
4	GND	—	—
5	SUST.	BR	DM-SUST. (C9-8)

### C2

Pin No.	Pin Name	Wire Color	Destination
1	HP	S BR	EFT-HP (C2-6)
2	GND	S BR S	EFT-GND (C2-7)
3	UB1	S VI	EFT-UB1 (C2-2)
4	GND	S VI S	EFT-GND (C2-3)
5	UB2	S GY	EFT-UB2 (C2-4)
6	GND	S GY S	EFT-GND (C2-5)

**C3**

Pin No.	Pin Name	Wire Color	Destination
1	GND	S OR S	XLR1-GND (XLR1-1)
2	BL1A*	S OR	XLR1-BL1A* (XLR1-2)
3	BL1B	S YE	XLR1-BL1B (XLR1-3)
4	GND	S YE S	XLR1-GND (XLR1-1)

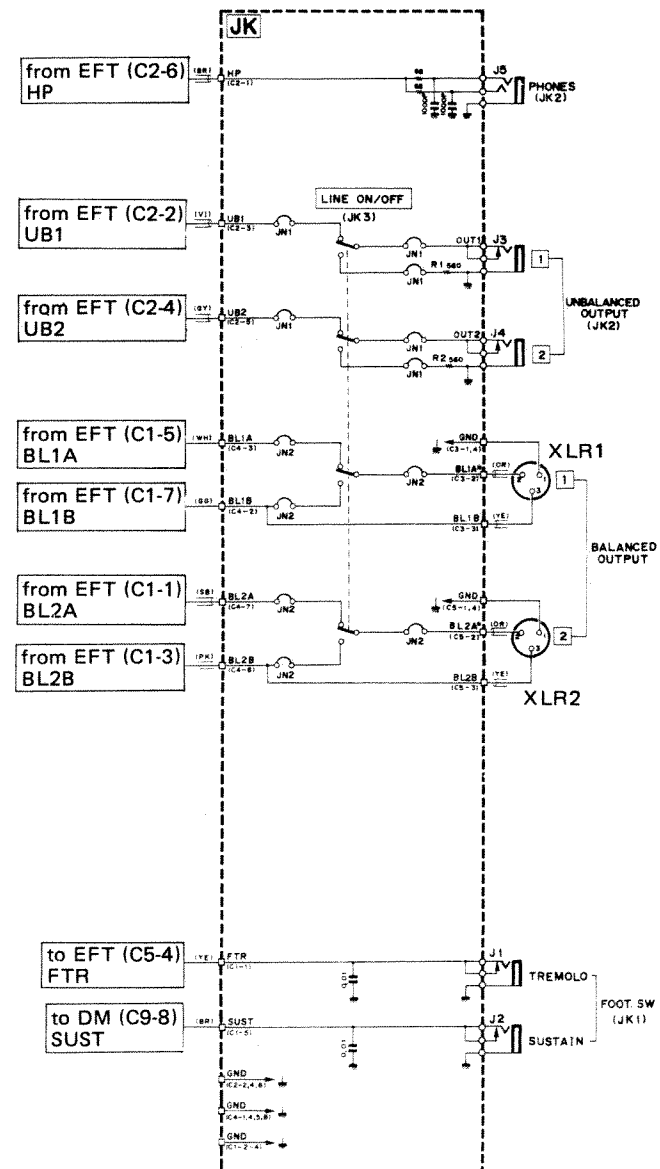
C4			
Pin No	Pin Name	Wire Color	Destination
1	GND	S GG S	EFT-GND (C1-8)
2	BL1B	S GG	EFT-BL1B (C1-7)
3	BL1A	S WH	EFT-BL1A (C1-6)
4	GND	S WH S	EFT-GND (C1-6)
5	GND	S PK S	EFT-GND (C1-4)
6	BL2B	S PK	EFT-BL2B (C1-3)
7	BL2A	S SB	EFT-BL2A (C1-1)
8	GND	S SB S	EFT-GND (C1-2)

Pin No.	Pin Name	Wire Color	Destination
1	GND	S OR S	XLR -GND(XLR2-1)
2	BL2A*	S OR	XLR2-BL2A*(XLR2-2)
3	BL2B	S YE	XLR2-BL2B(XLR2-3)
4	GND	S YE S	XLR2-GND(XLR2-1)

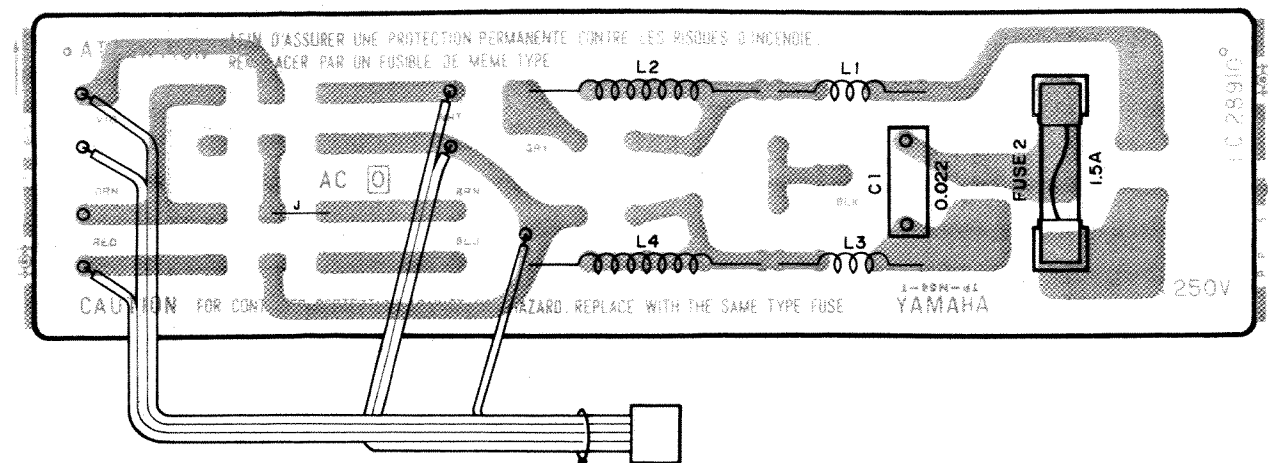
XLR1			
Pin No.	Pin Name	Wire Color	Destination
1	GND	S OR S	JK-GND (C3-1)
1	GND	S YE S	JK-GND (C3-4)
2	BL1A*	S OR	JK-BL1A* (C3-2)
3	BL1R	S YE	JK-BL1R (C3-3)

### XLR2

Pin No.	Pin Name	Wire Color	Destination
1	GND	S OR S	JK-GND (C5-1)
1	GND	S YE S	JK-GND (C5-4)
2	BL2A*	S OR	JK-BL2A* (C5-2)
3	BL2B	S YE	JK-BL2B (C5-3)

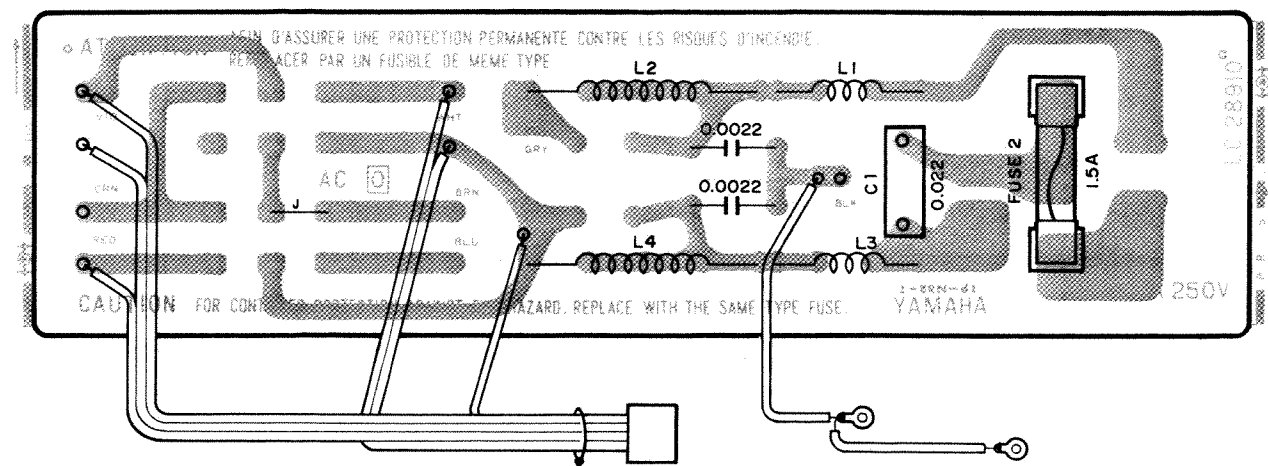
KEC-10173-13  $\triangle_2$ 

- Japanese, Canadian model



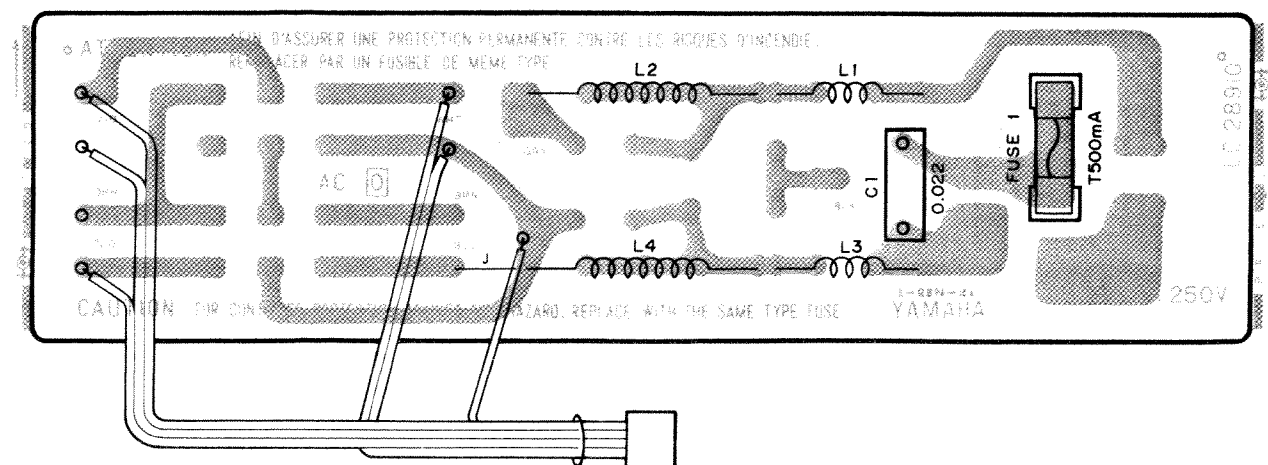
Pattern Side (パターン側)

- U.S. American model



Pattern Side (パターン側)

- N. European model



Pattern Side (パターン側)

