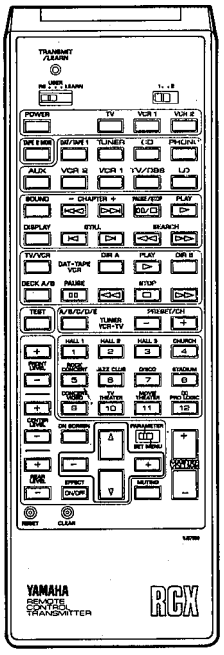
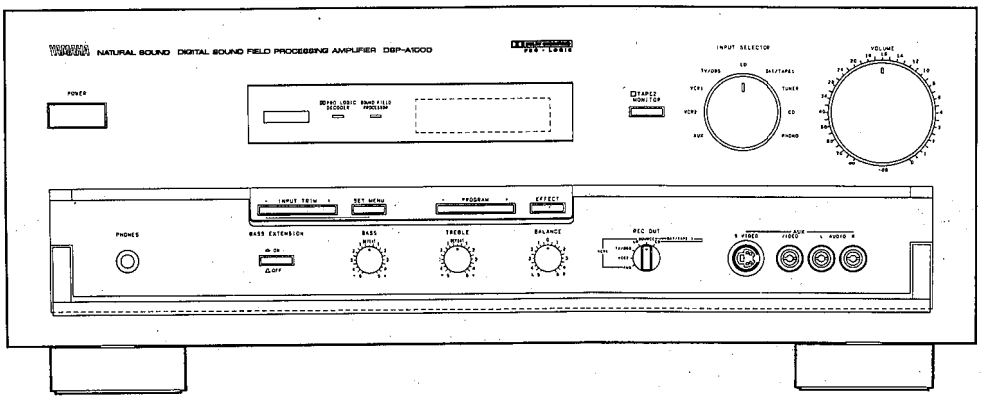
DIGITAL SOUND FIELD PROCESSING AMPLIFIER

DSP-A1000

SERVICE MANUAL





DSP-A1000

IMPORTANT NOTICE

This manual has been provided for the use of authorized YAMAHA Retailers and their service personnel. It has been assumed that basic service procedures inherant to the industry, and more specifically YAMAHA Products, are already known and understood by the users, and have therefore not been restated.

WARNING: Failure to follow appropriate service and safety procedures when servicing this product may result in personal injury, destruction of expensive components and failure of the product to perform as specified. For these reasons, we advise all YAMAHA product owners that all service required should be performed by an authorized YAMAHA Retailer or the appointed service representative.

IMPORTANT: The presentation or sale of this manual to any individual or firm does not constitute authorization, certification or recognition of any applicable technical capabilities, or establish a principle-agent relationship of any form.

The data provided is believed to be accurate and applicable to the unit(s) indicated on the cover. The reserch, engineering, and service departments of YAMAHA are continually striving to improve YAMAHA products. Modifications are, therefore, inevitable and specifications are subject to change without notice or obligation to retrofit. Should any discrepancy appear to exist, please contact the distributor's Service Division.

WARNING: Static discharges can destroy expensive components. Discharge any static electricity your body may have accumulated by grounding yourself to the ground buss in the unit (heavy gauge black wires connect to this buss).

IMPORTANT: Turn the unit OFF during disassembly and parts replacement. Recheck all work before you apply power to the unit.

■ CONTENTS

100384

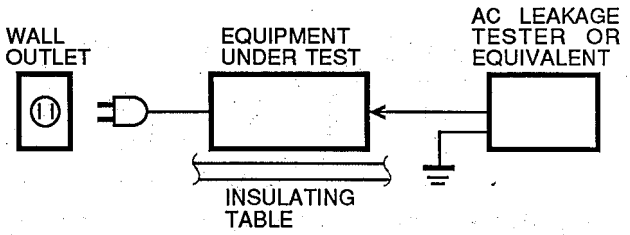
YAMAHA
YAMAHA CORPORATION
P.O.Box 1, Hamamatsu, Japan

0.29K-126 回 ⊖ Printed in Japan '91.1

■ TO SERVICE PERSONNEL

1. Critical Components Information.
   Components having special characteristics are marked and must be replaced with parts having specifications equal to those originally installed.
2. Leakage Current Measurement (For 120V Models Only).
   When service has been completed, it is imperative to verify that all exposed conductive surfaces are properly insulated from supply circuits.

- Meter impedance should be equivalent to 1500 ohm shunted by 0.15μF.
- Leakage current must not exceed 0.5mA.
- Be sure to test for leakage with the AC plug in both polarities.



- **POLARIZATION (U, C models)**
  This amplifier product is equipped with a polarized alternating-current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature.

WARNING: CHEMICAL CONTENT NOTICE!

The solder used in the production of this product contains LEAD. In addition, other electrical/electronic and/or plastic (where applicable) components may also contain traces of chemicals found by the California Health and Welfare Agency (and possibly other entities) to cause cancer and/or birth defects or other reproductive harm.

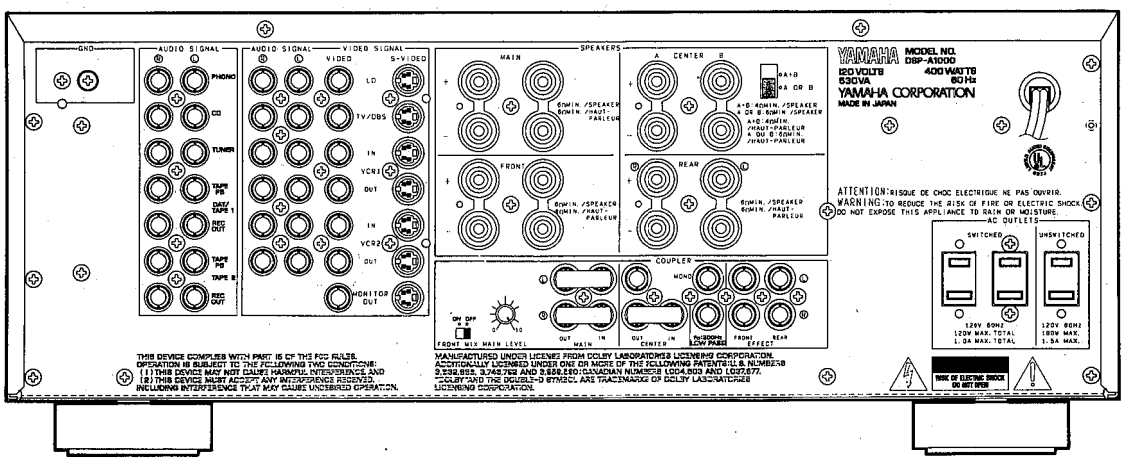
DO NOT PLACE SOLDER, ELECTRICAL/ELECTRONIC OR PLASTIC COMPONENTS IN YOUR MOUTH FOR ANY REASON WHATSOEVER!

Avoid prolonged, unprotected contact between solder and your skin! When soldering, do not inhale solder fumes or expose eyes to solder/flux vapor!

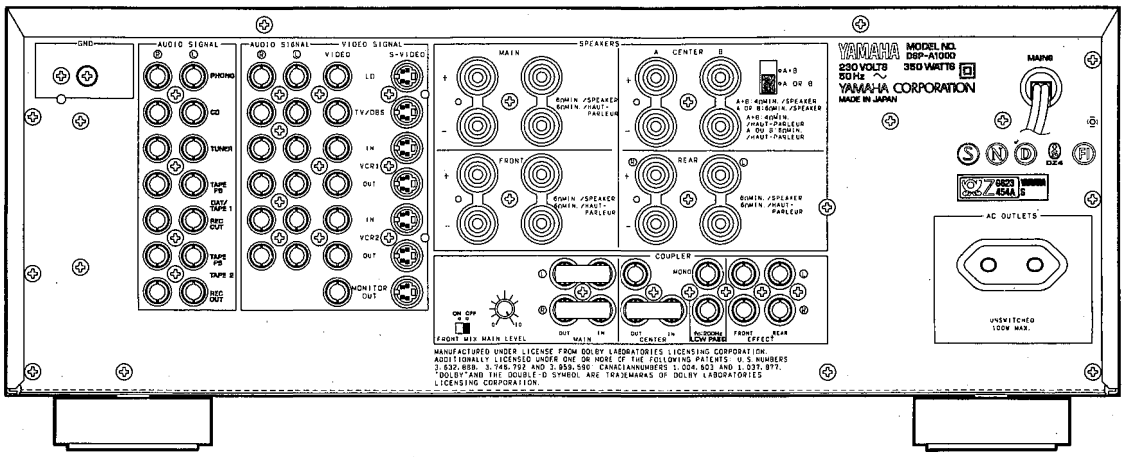
If you come in contact with solder or components located inside the enclosure of this product, wash your hands before handling food.

■ REAR PANELS

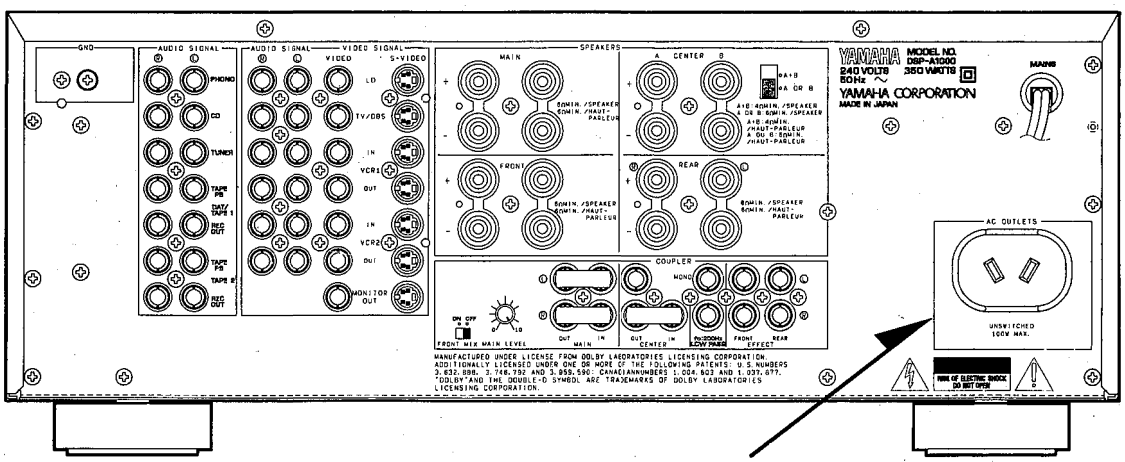
▼ USA & Canadian models



▼ European model

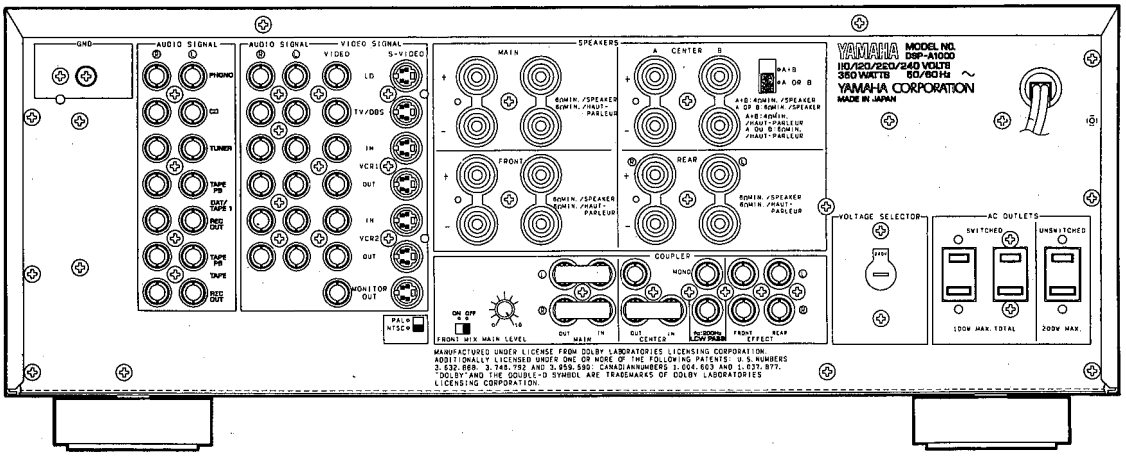


▼ Australian & British models



British model only

▼ General model



■ SPECIFICATIONS

Minimum RMS Output Power Per Channel	
Main (20Hz—20kHz 0.015% THD 8Ω/6Ω)	80W/100W
Center (20Hz—20kHz 0.015% THD 8Ω/6Ω)	
(U, C, R models)	80W/100W
(A, B, G models)	100W/100W
Front, Rear Effect (20Hz—20kHz 0.05% THD 8Ω/6Ω)	
(U, C, R models)	25W/30W
(A, B, G models)	22W/26W
Dynamic Power Per Channel	
(by IHF Dynamic Headroom Measuring Method)	
(U, C, R models) Main (8Ω/6Ω)	130W/160W
(A, B, G models) Main (8Ω/6Ω/4Ω)	75W/90W/110W
DIN Standard Output Power Per Channel (G model) (Main)	
Main (1kHz 0.7% THD 4Ω)	130W
Dynamic Headroom (U, C, R models) (Main)	
Main (8Ω/6Ω)	2.1dB/2/0dB
IEC Power (G model)	
Main (1kHz 0.015% THD 8Ω/6Ω)	85W/105W
Damping Factor	
Main (1kHz 8Ω)	120
Input Sensitivity/Impedance	
Phono MM	2.5mV/47kΩ
CD/TUNER/TAPE/LD/VCR/TV•DBS	150mV/47kΩ
MAIN IN/CENTER IN	1.0mV/47kΩ
Maximum Input Signal (1kHz 0.01% THD)	
Phono MM	140mV
Output Level/Impedance	
REC OUT	150mV/1kΩ
PRE OUT (MAIN L, R, CENTER)	1V/1.2kΩ
PRE OUT (FRONT L, R, CENTER)	1V/1.2kΩ
PRE OUT (LOW PASS)	0.4V/1.2kΩ
PRE OUT (MONO)	0.6V/1.2kΩ
Maximum Voltage Output (20Hz—20kHz 0.005% THD)	
PRE OUT (MAIN L, R)	3V
Headphone Jack Rated Output/Impedance	
Output Level 0.03% THD 1kHz RL=8Ω	0.25V
Impedance	100Ω
Frequency Response (20Hz—20kHz)	
CD/TUNER/TAPE/LD/VCR/TV•DBS	0±1.0dB
MAIN IN	0±1.0dB
RIAA Equalization Deviation	
Phono MM	0±0.5dB
Total Harmonic Distortion (20Hz—20kHz)	
Phono MM to REC OUT, 3V	0.01%
CD/TUNER/TAPE/LD/VCR/TV•DBS to PRE OUT (MAIN L, R), 3V	0.005%
MAIN IN to SP out (MAIN L, R, CENTER)	
40W/8Ω	0.005%
50W/6Ω	0.005%
Signal-to-Noise Ratio (IHF-A Network)	
Phono MM (Input Shorted)	More than 86dB
CD/TUNER/TAPE/LD/VCR/TV•DBS (Input Shorted)	More than 96dB
Residual Separation (Vol—30dB)	
Phono MM Input shorted	
1kHz/10kHz	More than 70dB/55dB
CD/TUNER/TAPE/LD/VCR/TV•DBS Input 5.1kΩ Terminated	
1kHz/10kHz	More than 60dB/45dB
Tone Control Characteristics	
Bass	
Boost/Cut	±10dB (50Hz)
Turnover frequency	350Hz
Treble	
Boost/Cut	±10dB (20Hz)
Turnover frequency	3.5kHz
BASS EXTENSION	+7dB (70Hz)
AUDIO MUTING	–20dB
Video	
Video Signal Type	
(U, C models)	NTSV
(A, B, G models)	PAL
(R model)	NTSC/PAL
Video Signal Level	1Vp-p75Ω
S-Video Signal Level	
Y	1Vp-p75Ω
C	0.286Vp-p75Ω
Maximum Input Level	More than 1.5Vp-p
Frequency response	5—10MHz, –3dB
Power Supply	
U, C models	AC120V 60Hz
A, B models	AC240V 50Hz
G model	AC230V 50Hz
R model	Ac110/120/220/240V 60/50Hz
Power Consumption	
U model	400W
C model	400W, 530VA
A, B, G, R models	350W
AC Outlets	
2 Switched Outlets	
(U, C models)	120W max. total
(R model)	100W max. total
1 Switched Outlets	
(A, B, G models)	100W max. total
1 Unswitched Outlets	
(U, C models)	180W max. total
(R model)	200W max. total
Dimensions (W x H x D)	435 x 170 x 468.5mm (17-1/8" x 6-11/16" x 18-7/16")
Weight	20.0kg (44 lbs. 0 oz)

**Specifications are subject to change without notice.*

U ..... ***U. S. A. model***
C ..... ***Canadian model***
B ..... ***British model***
A ..... ***Australian model***
G ..... ***European model***
R ..... ***General model***

DOLBY SURROUND PRO · LOGIC

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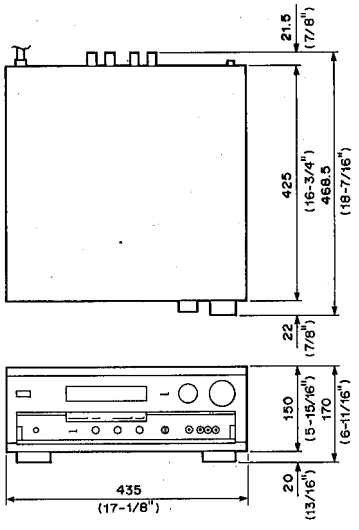
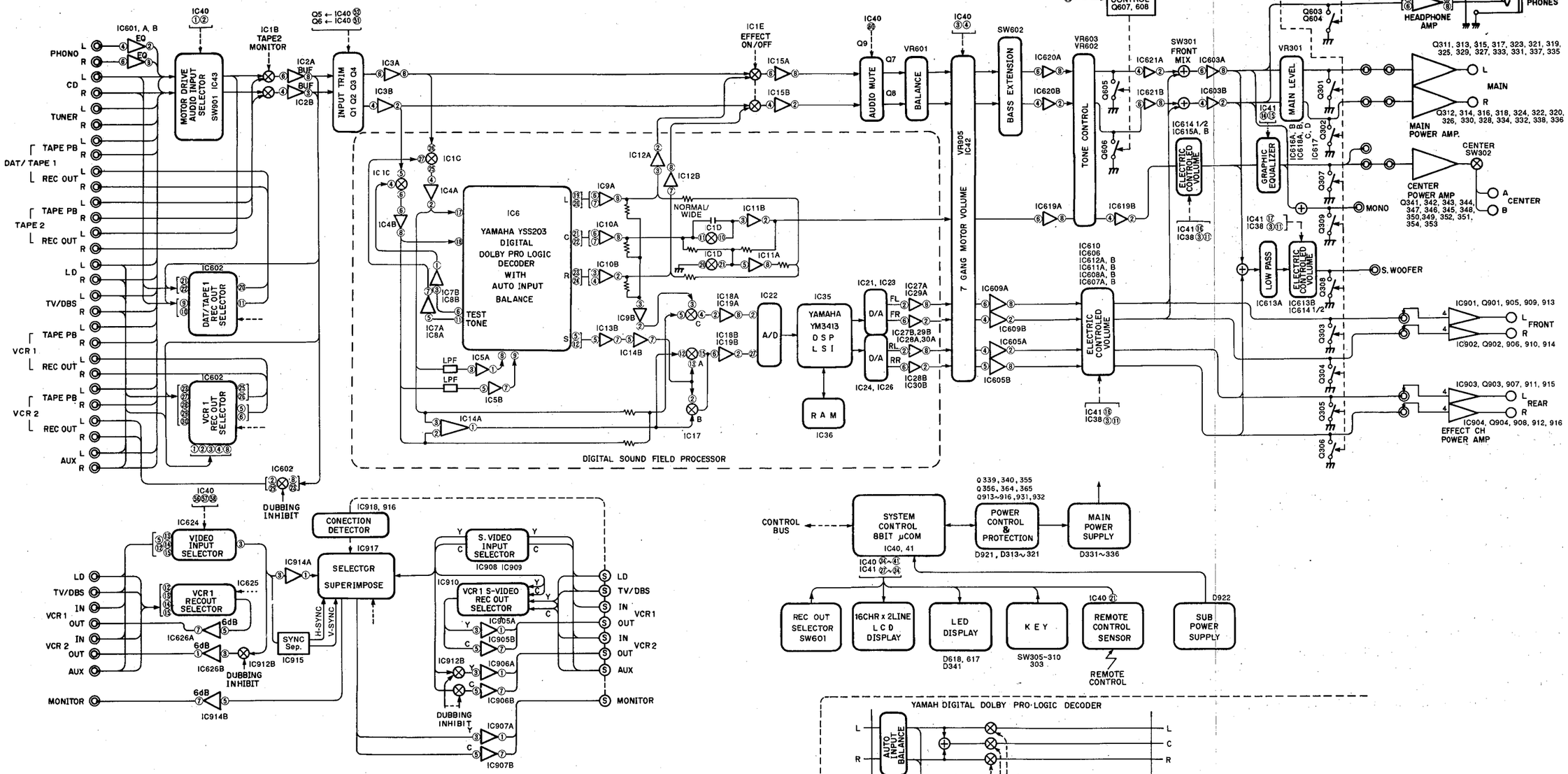
● DIMENSIONS

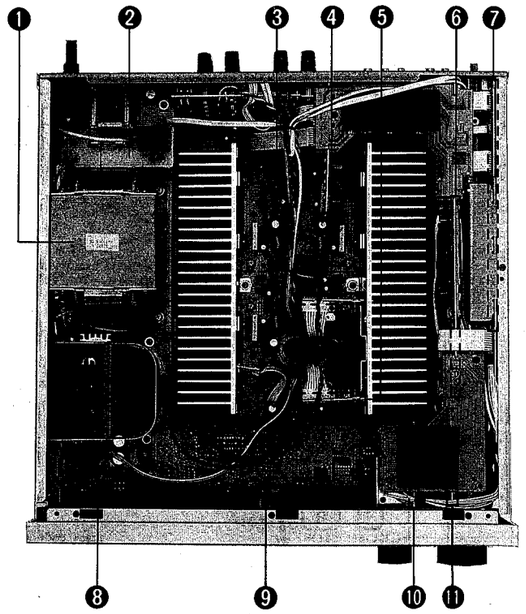


Unit : mm (inch)

■ BLOCK DIAGRAM



■ INTERNAL VIEW



❶ POWER TRANSFORMER
❷ EFFECT CIRCUIT BOARD (6)
❸ MAIN CIRCUIT BOARD (1)
❹ EFFECT CIRCUIT BOARD (4)
❺ EFFECT CIRCUIT BOARD (3)
❻ FUNCTION CIRCUIT BOARD (1)
❼ DSP CIRCUIT BOARD
❽ MAIN CIRCUIT BOARD (3)
❾ FUNCTION CIRCUIT BOARD (2)
❿ EFFECT CIRCUIT BOARD (5)
⓫ EFFECT CIRCUIT BOARD (7)

■ DISASSEMBLY PROCEDURES

(Remove parts in disassembly order as numbered.)

1 . Removal of Top Cover

a. Remove 4 screws (①) and 2 screws (②) and then remove the Top Cover in Fig. 1.

2. Removal of Bottom Cover

a. Remove 12 screws (③) and then remove the Bottom Cover in Fig. 1.

3. Removal of Front Panel

a. Remove 6 knobs in Fig. 1.

b. Remove 3 screws (④) and then the remove the Front Panel in Fig. 1. For this removal, also remove connectors (#7, #9—#14) as necessary.
(Refer to Fig. 4 Bottom Side Wire Connection Diagram.)

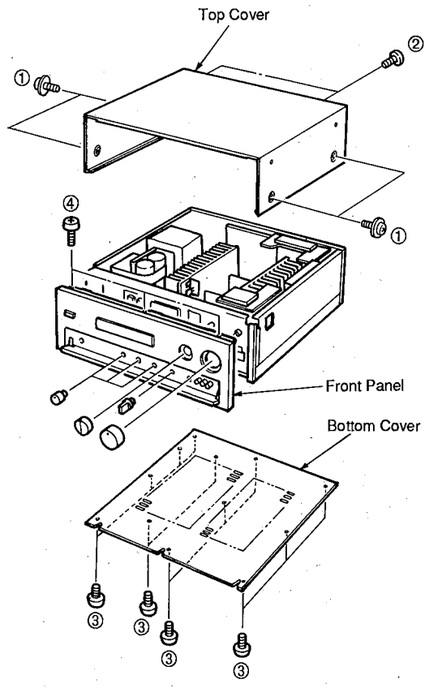


Fig. 1

4. Removal of DSP Circuit Board

a. Remove 9 screws (⑤) and then remove the Frame R (upper) in Fig. 2.

b. Remove 3 screws (⑥) and then remove the Effect Circuit Board (2) by lifting it up gradually in Fig. 2. For this removal, also remove connectors (#1, #2, #21—#23) as necessary. (Fig.5 Wiring Diagram)

c. Remove 3 connectors of the Effect Circuit Board (1).

d. Remove 1 plastic rivet (⑦) and 1 screw (⑧) and then remove the Effect Circuit Board (1) by lifting it up gradually in Fig. 2.

e. Remove 5 screws (⑨) and then remove the DSP Circuit Board (with shield case DSP) in Fig. 2. For this removal, also remove connectors (#19, #20, #30—#38) as necessary. (Fig. 4, Fig. 5 Wiring Diagram)

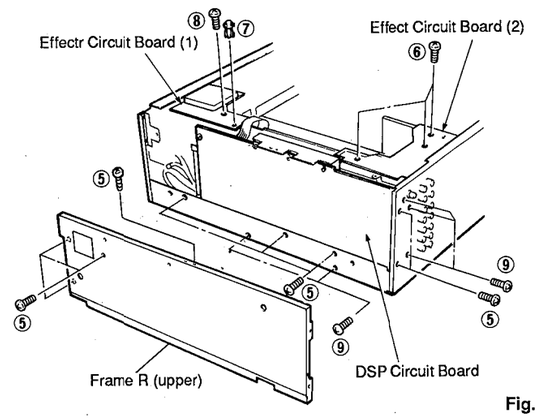


Fig. 2

5. Removal of Function circuit Board (1)

a. Remove 4 screws (⑩) and 2 plastic rivets (⑪) and then remove the Function Circuit Board (1) in Fig. 3. For this removal, also remove connectors (#17, #18, #41, #42) as necessary. (Fig. 5 Wiring Diagram)

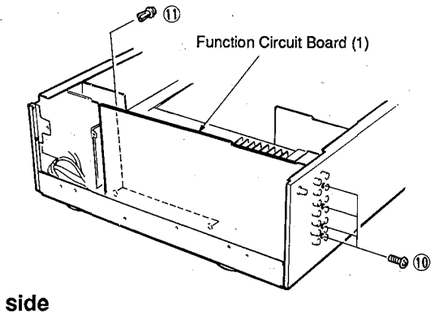


Fig. 3

● WIRING DIAGRAM

Bottom side

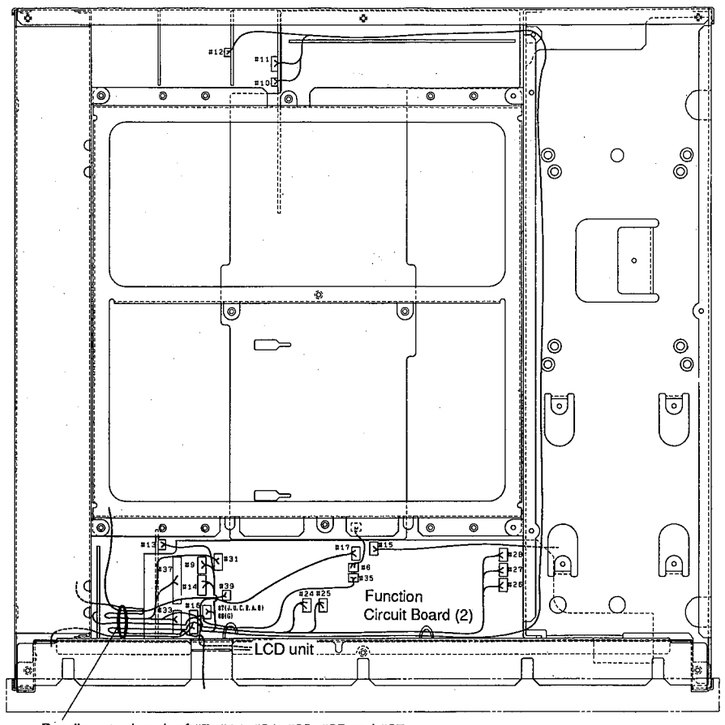


Fig. 4

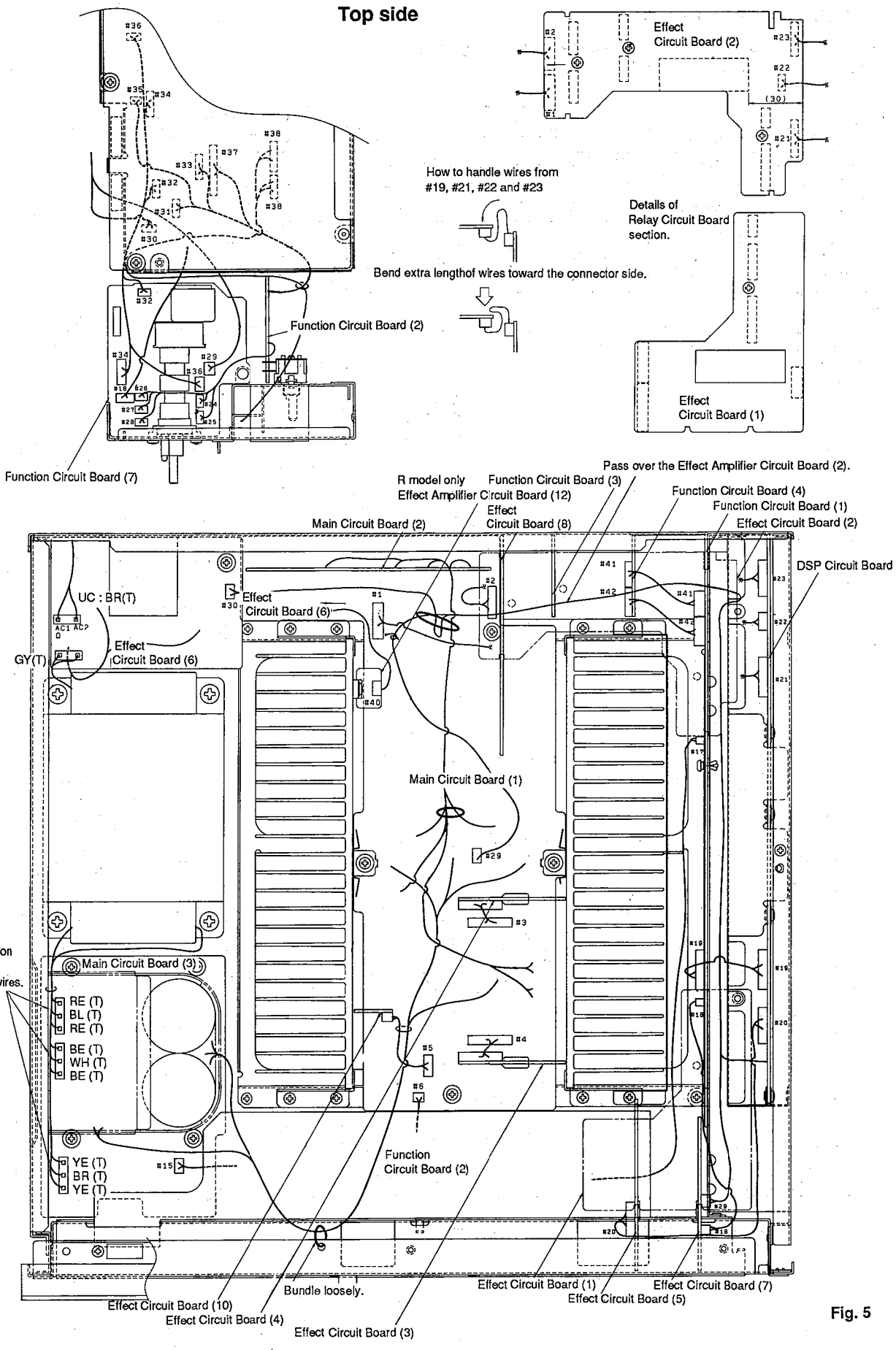

Top side
Effect
Circuit Board (2)
How to handle wires from
#19, #21, #22 and #23
Bend extra lengthof wires toward the connector side.
Details of
Relay Circuit Board
section.
Effect
Circuit Board (1)
Function Circuit Board (2)
Function Circuit Board (7)
Pass over the Effect Amplifier Circuit Board (2).
R model only
Effect Amplifier Circuit Board (12)
Function Circuit Board (3)
Function Circuit Board (4)
Function Circuit Board (1)
Effect Circuit Board (2)
Effect
Circuit Board (8)
Main Circuit Board (2)
DSP Circuit Board
UC : BR(T)
Effect
Circuit Board (6)
GY(T)
Effect
Circuit Board (6)
Main Circuit Board (1)
Reverse connection
possible between
the same color wires.
Main Circuit Board (3)
RE (T)
BL (T)
RE (T)
BE (T)
WH (T)
BE (T)
YE (T)
BR (T)
YE (T)
Function
Circuit Board (2)
Bundle loosely.
Effect Circuit Board (10)
Effect Circuit Board (4)
Effect Circuit Board (3)
Effect Circuit Board (1)
Effect Circuit Board (5)
Effect Circuit Board (7)

Fig. 5

■ ADJUSTMENTS

● IDLING CURRENT ADJUSTMENT

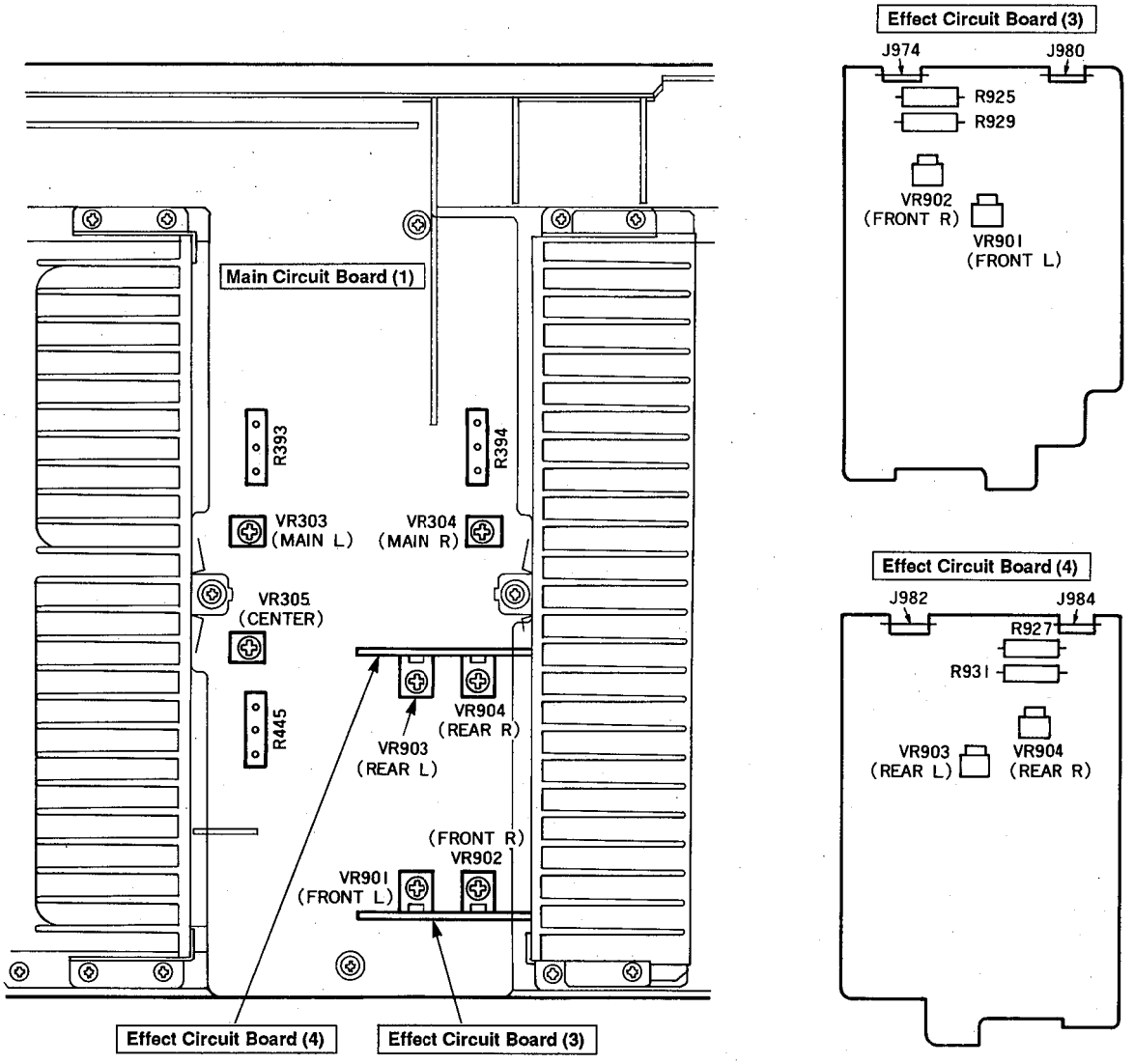
Before this adjustment, wait for 2 minutes with no signal applied after the power is turned ON.

Item	Test Point	Adjustment point	Rating (DC)
MAIN L	Between terminals of R393, at the center and one end	VR303	2.5mV~5mV
MAIN R	Between terminals of R394, at the center and one end	VR404	
CENTER	Between terminals of R445, at the center and one end	VR305	2.5mV~5mV
FRONT L	Between terminals of R925 or R929, at both ends	VR901	2.5mV~5mV
FRONT R	Between J974 and J980	VR902	
REAR L	Between terminals of R927, or R931, at both ends	VR903	2.5mV~5mV
REAR R	Between J982 and J984	VR904	

Note :

1. When the rear panel has been removed, the ground wire of the input/output pin jack becomes loose. Connect it to the chassis by using a lead wire.
2. When the Effect Circuit Board (2) has been removed, protection operation becomes effective to prevent the power from coming ON.

● Test Point



■ TEST SIGNAL PROGRAM

The test signal program has been programmed in this set to facilitate inspection and measurement.

1. Starting test Signal Program

While pressing 3 keys of INPUT TRIM (+), SET MENU and PROGRAM (–), press the power switch to turn ON the power, and the diagnosis program is activated. When the program is started, it causes the LCD to display as follows and performs the LED lighting check and the LCD check at once.

DIAGNOSTICS
2. DSP RAM THR

● **LED lighting check**

All OFF (including Led back light)
STANDBY (G model only)
PRO LOGIC INDICATOR
DSP INDICATOR
TAPE 2 MONITOR
VOLUME

After the indicators and lamps light in the above sequence, the LCD back light and the STANDBY Indicator (for G model only) turn ON again.
(The LED of the INPUT knob is always ON.)

● **LCD Check**

After LED lighting check, all dots of the LCD turn ON and the Above message "2. DSP RAM THR" is displayed again.

2. Connect of Test Signal Program

Unless other wire specified, the conditopns of the signal program are as follows.

* FRONT LEVEL	+10dB
* REAR LEVEL	+10dB
* CENTER LEVEL	+10dB
SUB WOOFER LEVEL	0dB
INPUT TRIM	0dB
CENTER GEQ	FLAT (0dB 5 Band All)
PRO LOGIC MODE	NORMAL
CENTER MODE	WIDE
MUTING	OFF

* Adjustable by means control.

2-1. Cancellation of Test Signal Program (Hall 1 key)

The normal mode is recovered from the test signal program. Then all the back-up data are automatically intized. (The test signal program can be cancelled also by turning OFF the power switch.)

● **Memory initialization**

Each condition is set as follows.

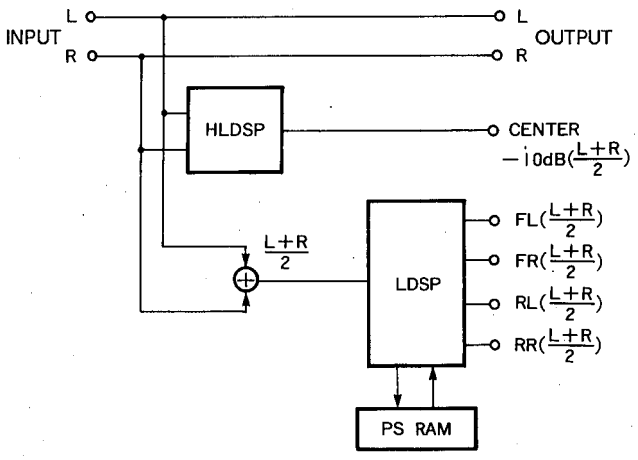
PROGRAM	1. CONCERT HALL 1
PARAMETER	Initialized value
PRO LOGIC MODE	Normal
CENTER MODE	NRML
CENTER GEQ	All bands• flat
SUB WOOFER	0dB
COLOR No.	1
TAPE 2 MONITOR	OFF
FRONT LEVEL	0dB
CENTER LEVEL	0dB
REAR LEVEL	0dB
INPUT TRIM	0dB
MUTING	OFF
EFFECT	ON

2-2. DSP RAM THROUGH (Hall 2 key)

The following message appears on the LCD.

DIAGNOSTICS
2. DSP RAM THR

Inputs and outputs of the DSP are as follows.



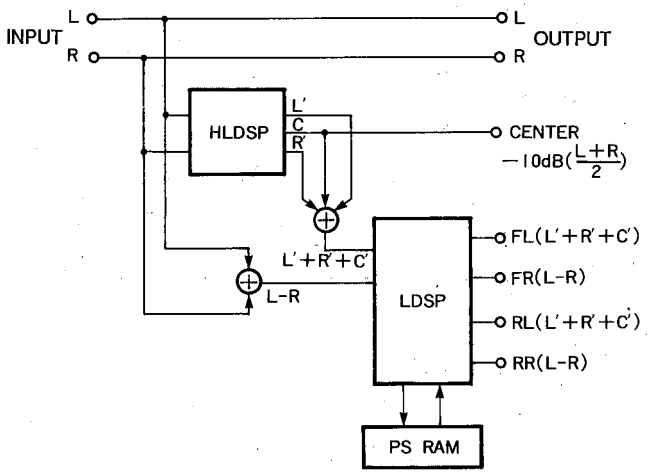
*) HLDSP undergoes Steering OFF and outputs $-10dB \cdot \frac{L+R}{2}$ from the center through manual mix.

*) LDSP receives $\frac{L+R}{2}$ input from A/D and then outputs as it to FL, FR, RL and RR.

2-3. Verification of signal passage (Hall 3 key)
The following message appears on the LCD.

```
*DIAGNOSTICS*
3. SIGNAL LINE
```

Inputs and outputs of DSP are as follows.



*) HLDSP undergoes STEERING OFF and provides outputs as follows.

L output $L' = -20dB \cdot (\frac{L+R}{2})$

R output $R' = -20dB \cdot (\frac{L+R}{2})$

C output $C' = -10dB \cdot (\frac{L+R}{2})$, $C' = \frac{2}{3} \cdot C$

$L' + R' + C' = \frac{L+R}{2}$

*) LDSP provides a composite output of 3 HLDSP outputs FL and RL, and L-R output from A/D to FR and RR.

■ PROTECTION FUNCTION

The protection function is activated and the powe turns OFF when :

1. **DC occurs in the output the power amplifier**
2. **An abnormal current flows to the power amplifier due to such reason as short circuit in the speaker**
3. **±15V is abnormal**
4. **±5V is abnormal**
5. **±B is abnormal**

Also , there are cases when the power is turned OFF due to an error in detecting the above conditions or abnormality in the protection circuit itself.

The protection circuit consists of a microcomputer (IC40), an interface (IC41), Q364, 365 and a peripheral diode.

The function of each element is as follows.

a) **Q364, 365 :** Detecting abnormality and sending that signal to the microcomputer (IC40)

b) **PRT (17) terminal of microcomputer (IC40) :** Input terminal for the signal from Q364, 365

c) **PRL (32) terminal of microcomputer (IC40) :** Output terminal for the signal to the power ON/OFF relay

d) **SRY (37) terminal of interface (IC41) :** Output terminal for the ON/OFF signal to the speaker protection relay

The microcomputer does not detect abnormality for 3 or 4 seconds after the power is turned ON. During this time, abnormality can be located by checking the above listed conditions 1 to 5. Before this check, however, make sure to check that is no danger of ignition or fuming.

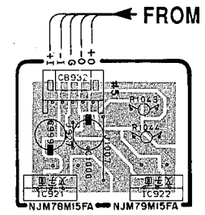
■ PRINTED CIRCUIT BOARD (Foil side)

Note) 文字面 : Component side

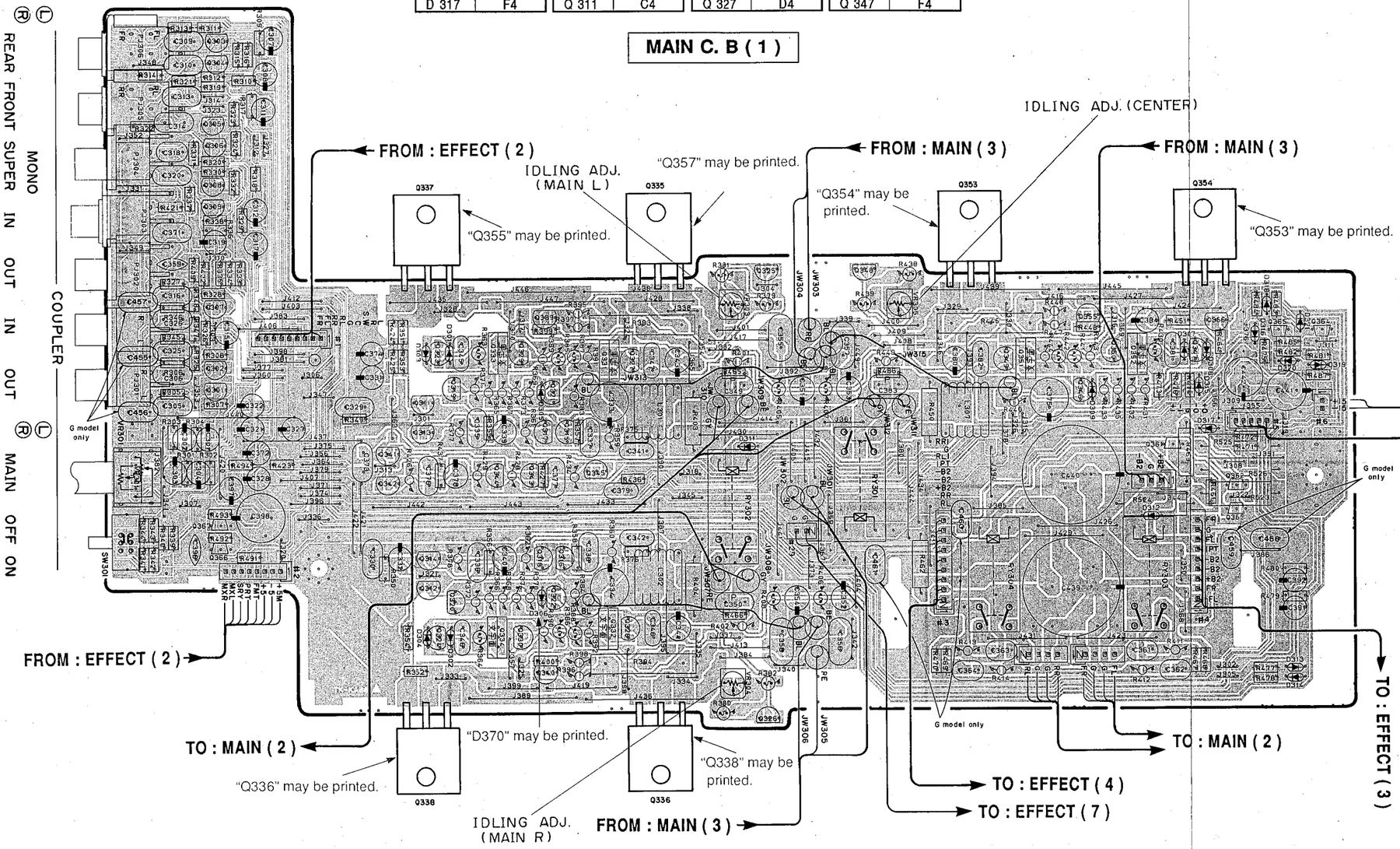
● Semiconductor Location

Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D 301	C4	D 318	G3	Q 312	C5	Q 328	D5	Q 348	E3
D 302	C5	D 319	G4	Q 313	C4	Q 329	C4	Q 349	E3
D 303	C4	D 320	G4	Q 314	C4	Q 330	C5	Q 350	F4
D 304	C5	D 321	G4	Q 315	D4	Q 331	D4	Q 351	E4
D 305	C4	IC921	F2	Q 316	D4	Q 332	D5	Q 352	F4
D 306	C5	IC922	G2	Q 317	C4	Q 333	C4	Q 355	F4
D 307	F4	Q 301	B4	Q 318	C4	Q 334	C5	Q 356	F4
D 308	F4	Q 302	B4	Q 319	C4	Q 339	C3	Q 361	F4
D 309	F4	Q 303	B2	Q 320	C5	Q 340	C5	Q 362	F4
D 311	D4	Q 304	B2	Q 321	D4	Q 341	C4	Q 363	F4
D 312	F4	Q 305	B3	Q 322	D5	Q 342	C4	Q 364	G4
D 313	G5	Q 306	B3	Q 323	C4	Q 343	C4	Q 365	G4
D 314	G5	Q 307	B3	Q 324	C5	Q 344	C4	Q 366	B4
D 315	F4	Q 308	B3	Q 325	D3	Q 345	D4	Q 367	B4
D 316	F4	Q 309	B3	Q 326	D5	Q 346	F4		
D 317	F4	Q 311	C4	Q 327	D4	Q 347	F4		

EFFECT C. B (10)



MAIN C. B (1)

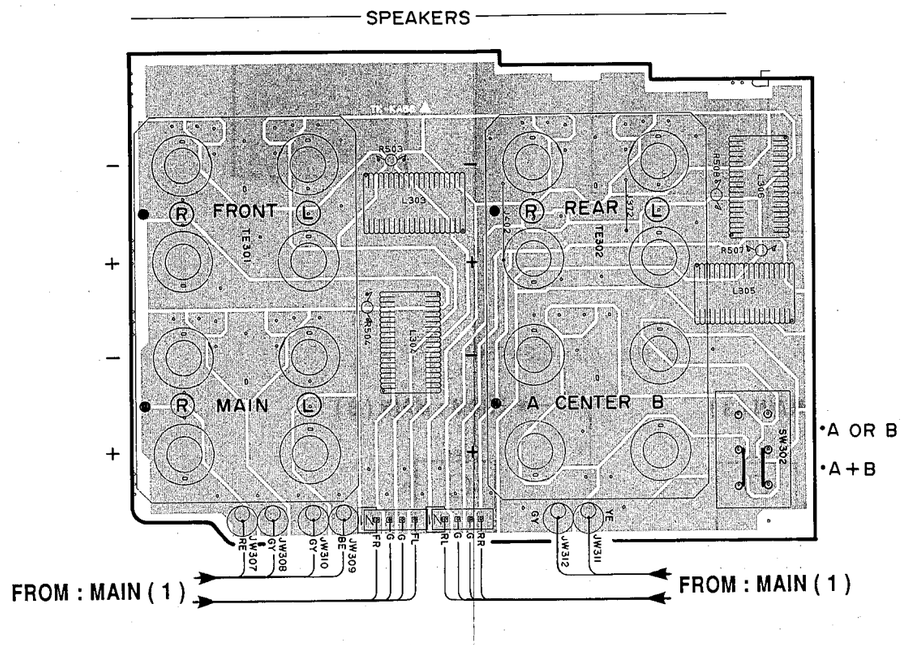


■ PRINTED CIRCUIT BOARD (Foil side)

Note) 文字面 : Component side

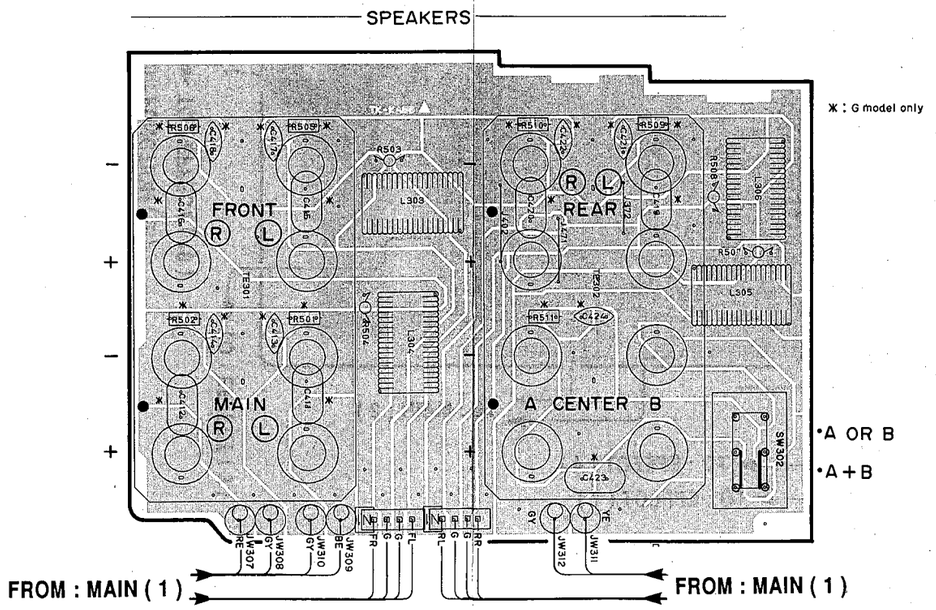
MAIN C. B (2)

● U, C, R, A, B models

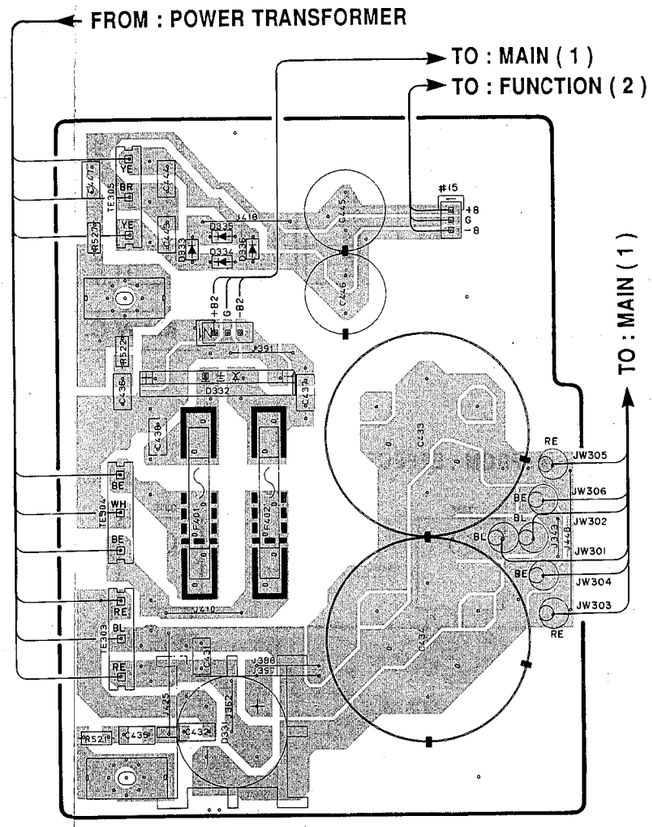


MAIN C. B (2)

● G model only

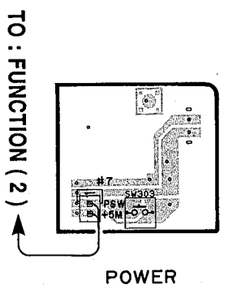


MAIN C. B (3)



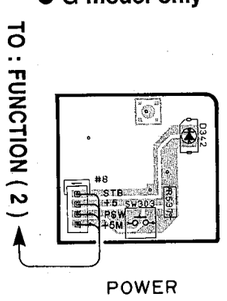
MAIN C. B (4)

● U, C, R, A, B models

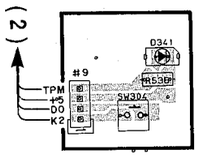


MAIN C. B (4)

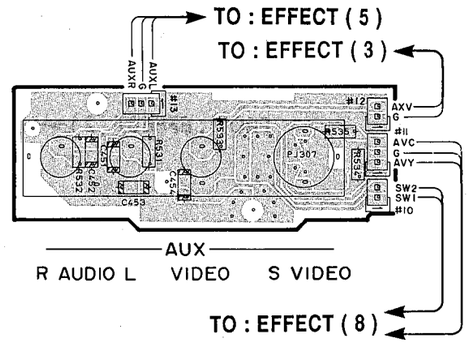
● G model only



MAIN C. B (5)



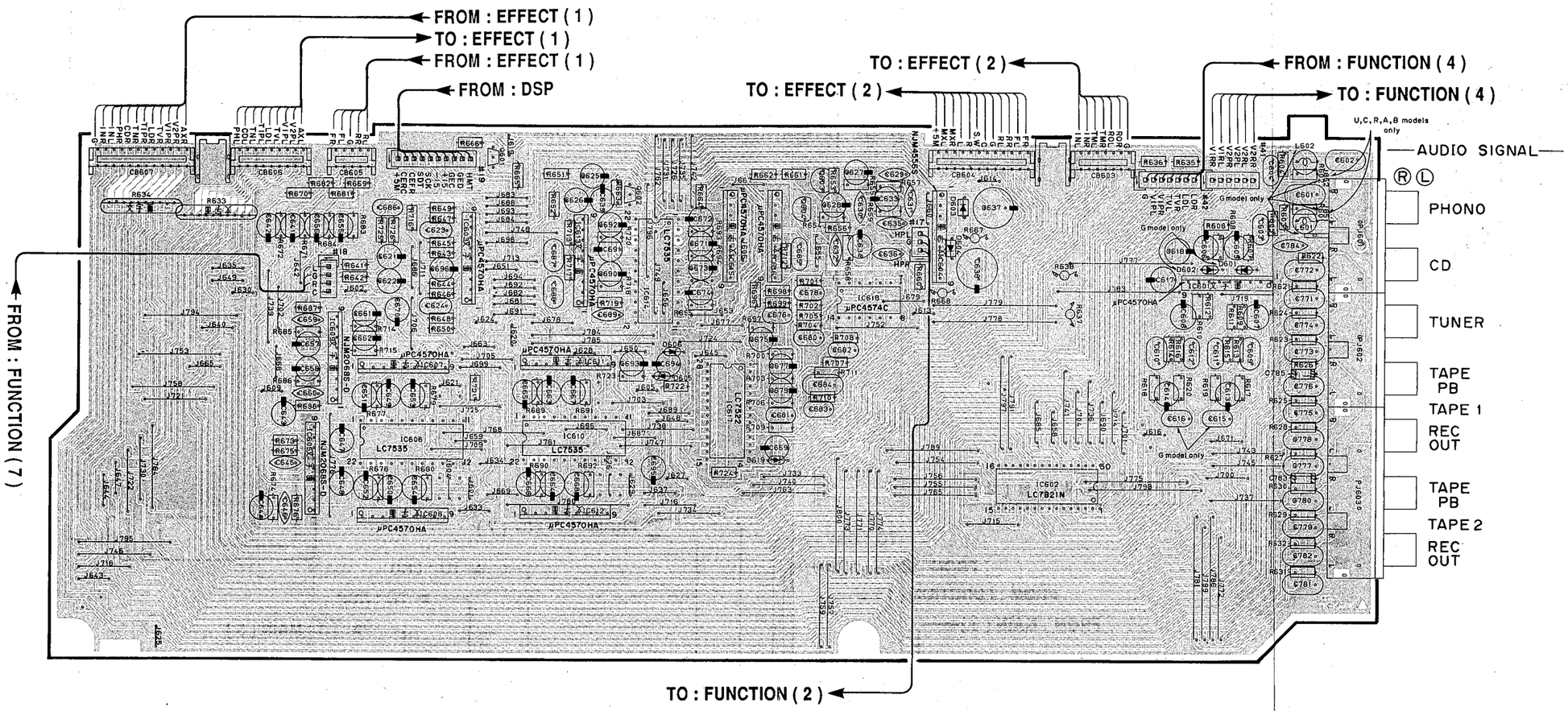
MAIN C. B (6)



■ PRINTED CIRCUIT BOARD (Foil side)

Note) 文字面 : Component side

FUNCTION C. B (1)



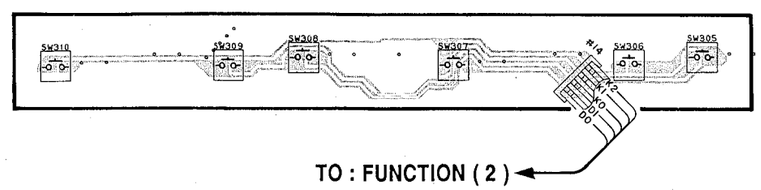
Note) * Marked

	U, C, R, A, B	G
R601, 602	SHORT	2.2K
L601, 602	OPEN	220μH
C615, 616	OPEN	1000P
D601, 602	OPEN	1SS133

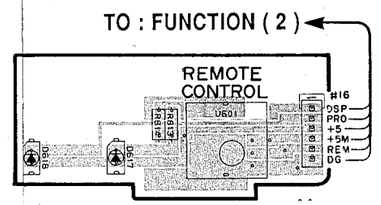
● **Semiconductor Location**

Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D 603	E2	IC604	E2	IC614	D2
D 604	E2	IC605	B3	IC615	D2
D 605	D3	IC606	C3	IC616	D2
D 606	D3	IC607	C3	IC617	D3
D 617	F5	IC608	C3	IC618	E2
D 618	F5	IC609	B3	Q 601	C2
D 619	D3	IC610	C3	Q 602	D2
IC601	F2	IC611	C3	Q 603	D2
IC602	E3	IC612	C3	Q 604	D2
IC603	C2	IC613	C2		

MAIN C. B (7)



FUNCTION C. B (5)



■ PRINTED CIRCUIT BOARD (Foil side)

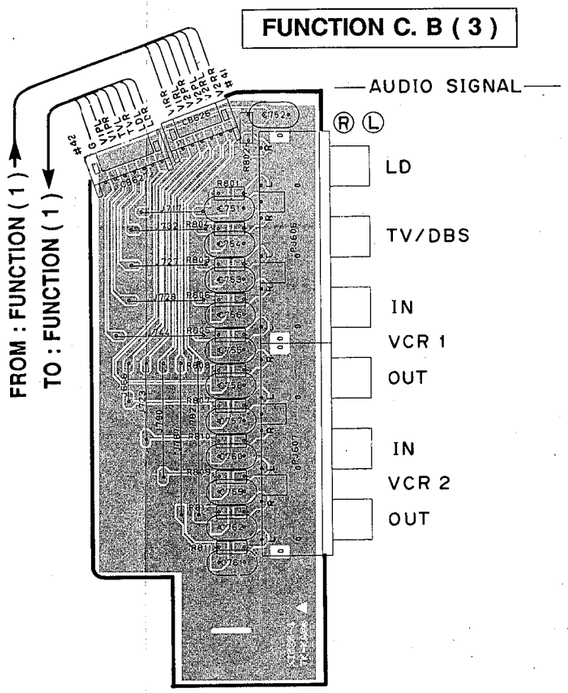
Note) 文字面 : Component side

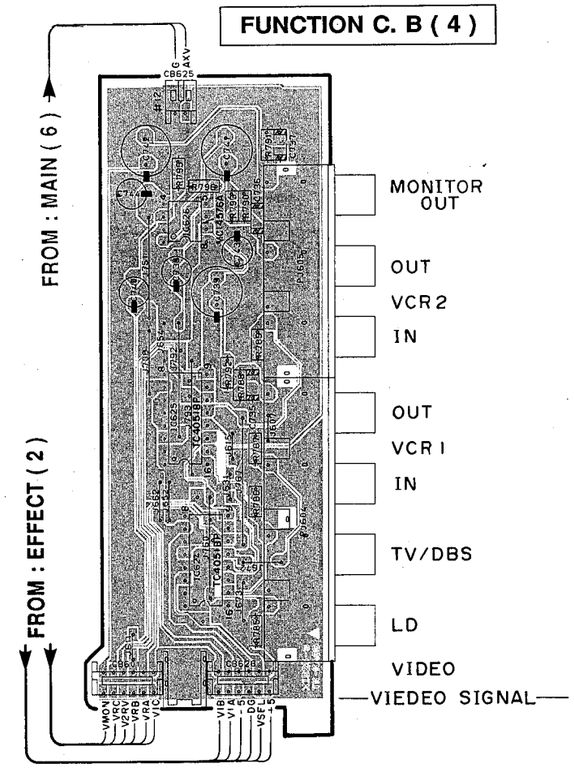
● **Semiconductor Location**

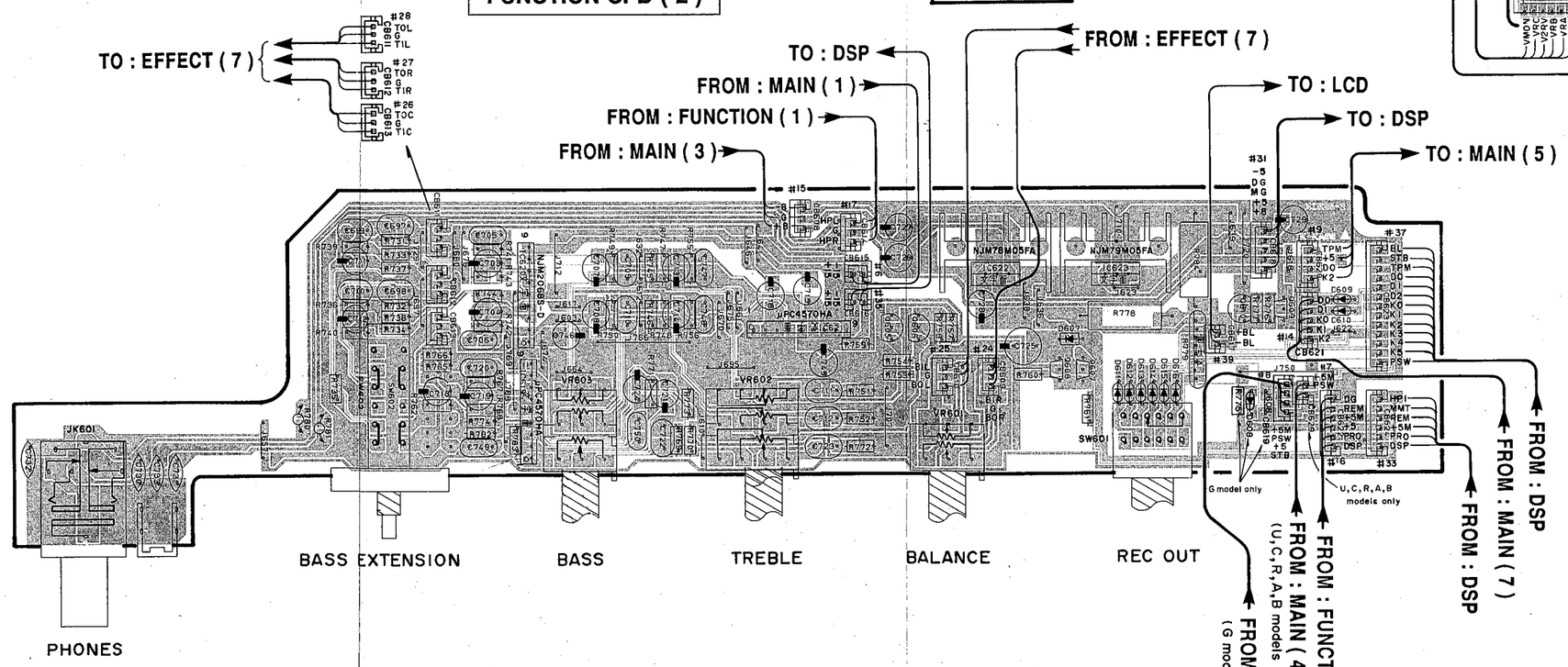
Ref. No.	Location
D 607	E4
D 609	F4
D 610	F4
D 611	E5
D 612	E5
D 613	E5
D 614	E5
D 615	E5
D 616	E5
IC619	C5

Ref. No.	Location
IC620	C4
IC621	D4
IC622	E4
IC623	E4
IC624	G3
IC625	G2
IC626	G2
Q 605	D4
Q 606	D5
Q 607	E5

Ref. No.	Location
Q 608	E5
Q 609	F4
Q 610	F4







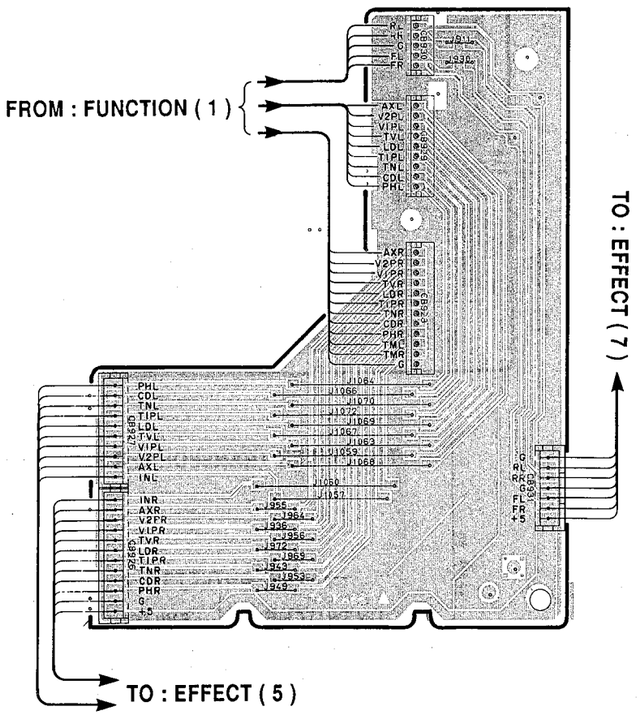
Note) * Marked

	U, C, R, A, B	G
D608	OPEN	1SS133
R775	OPEN	1K
CB629	SET	OPEN
CB619	OPEN	SET

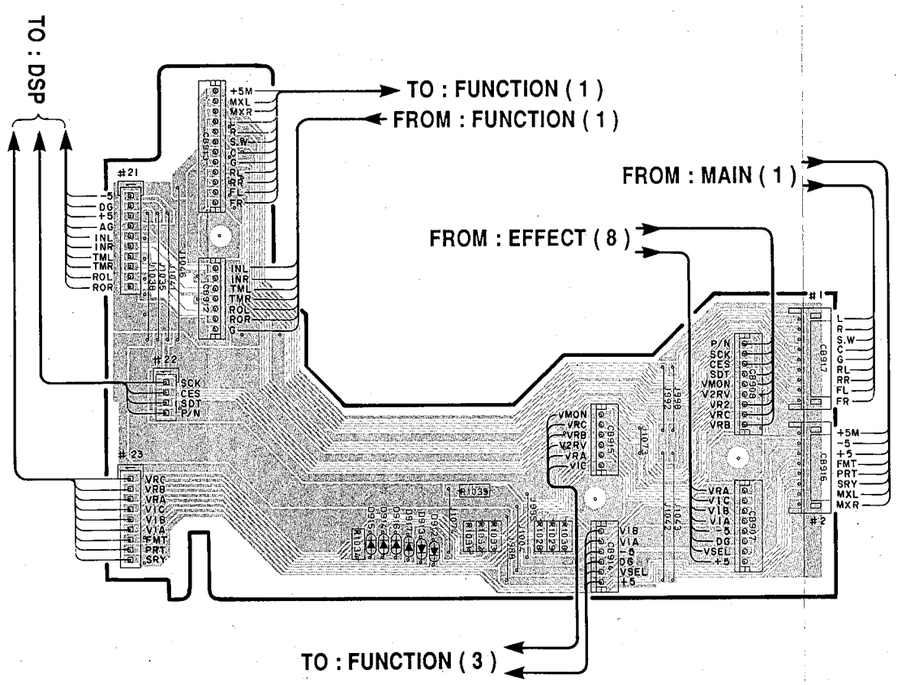
■ PRINTED CIRCUIT BOARD (Foil side)

Note) 文字面 : Component side

EFFECT C. B (1)



EFFECT C. B (2)

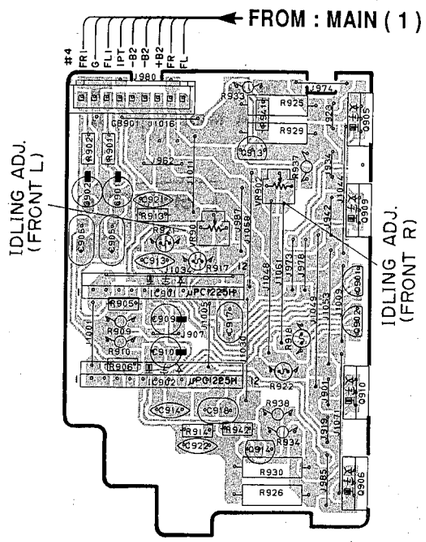


● Semiconductor Location

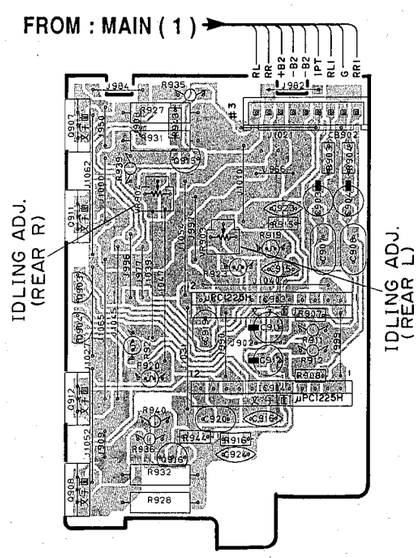
Ref. No.	Location
D 912	E3
D 913	E3
D 914	E3
D 915	E3
D 916	E3
D 917	E3
D 931	G4
D 932	G4
D 933	G4
D 934	G4
D 935	G4
D 936	G4
D 937	G4
D 938	G4
D 939	G4
D 940	G5
D 941	G5
D 942	G5
D 943	G5
D 944	G5
D 945	G5

Ref. No.	Location
IC901	B5
IC902	B5
IC903	D5
IC904	D5
Q 901	C5
Q 902	C5
Q 903	D5
Q 904	D5
Q 905	C4
Q 906	C6
Q 907	D4
Q 908	D6
Q 909	C5
Q 910	C5
Q 911	D5
Q 912	D5
Q 913	B5
Q 914	B5
Q 915	D5
Q 916	D5

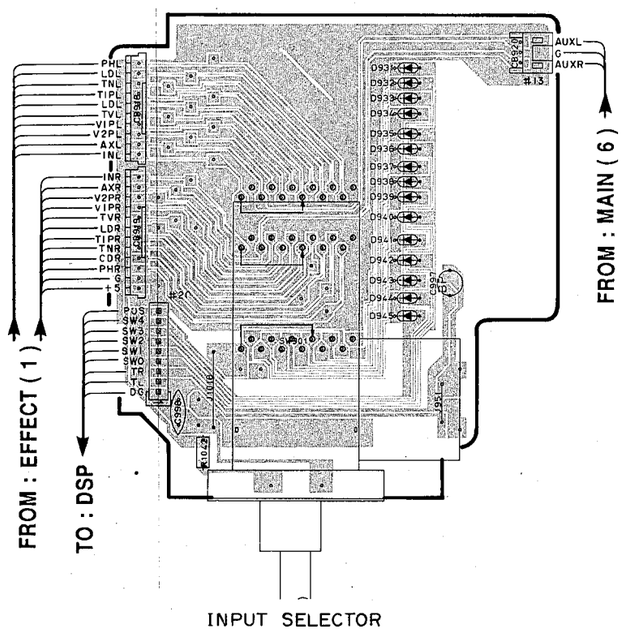
EFFECT C. B (3)



EFFECT C. B (4)



EFFECT C. B (5)



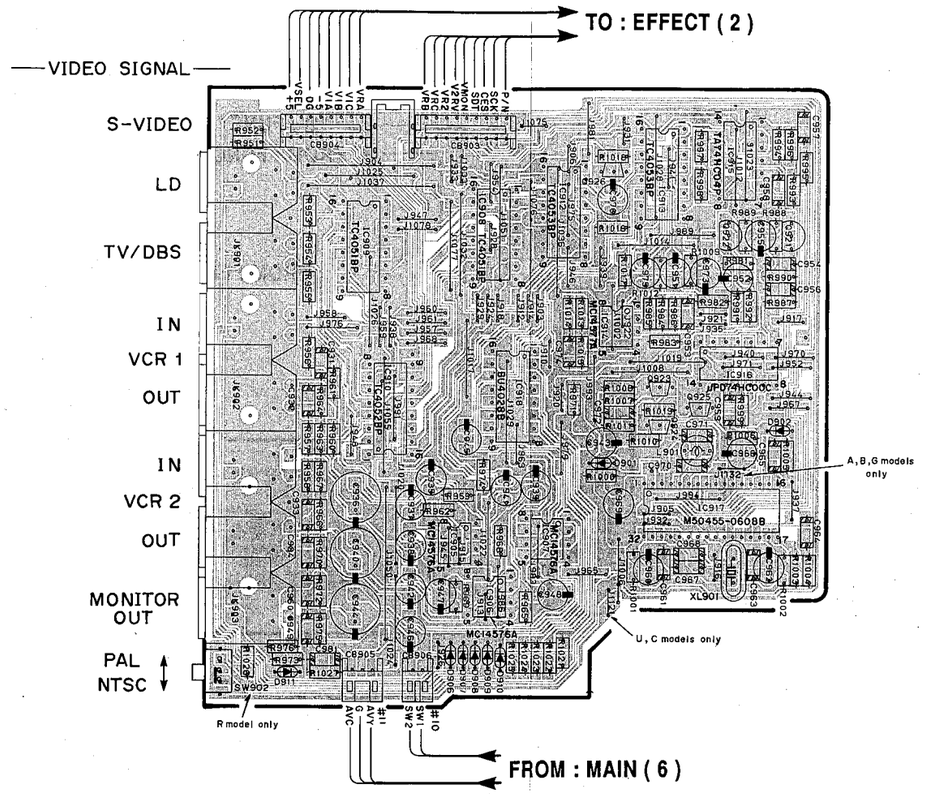
■ PRINTED CIRCUIT BOARD (Foil side)

Note) 文字面 : Component side

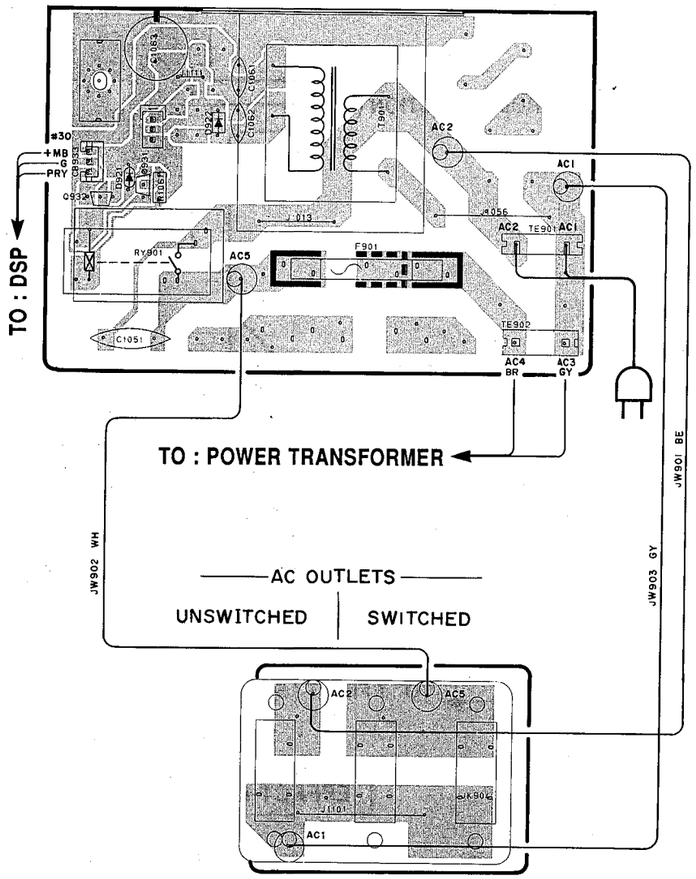
● **Semiconductor Location**

Ref. No.	Location
D 901	E3
D 902	E3
D 906	D3
D 907	D3
D 908	D3
D 909	D3
D 910	D3
D 911	D3
D 921	F2
D 922	G2
IC905	D3
IC906	D3
IC907	D3
IC908	D2
IC909	D2
IC910	D2
IC912	E2
IC913	E2
IC914	E2
IC915	E2
IC916	E2
IC917	E3
IC918	D2
Q 921	E2
Q 922	E2
Q 923	E2
Q 924	E3
Q 925	E2
Q 926	E2
Q 931	F2
Q 932	F2

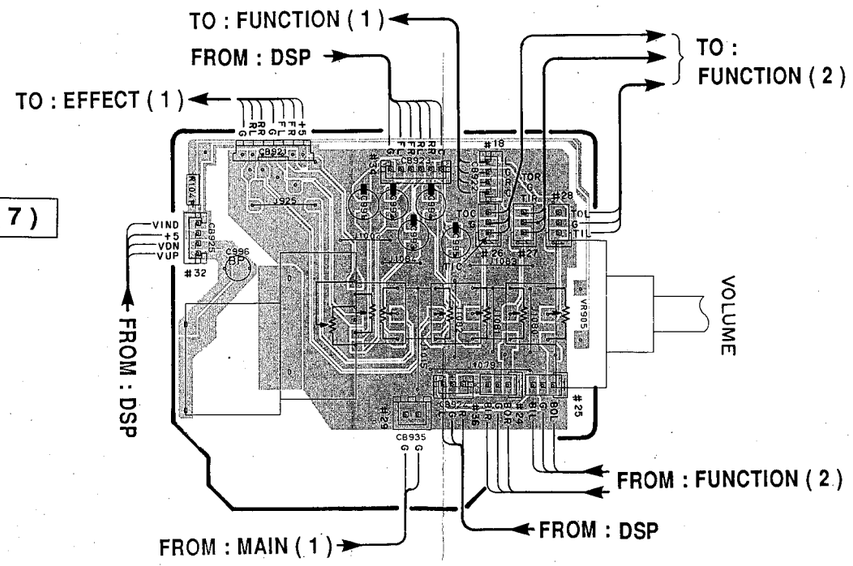
EFFECT C. B (8)



EFFECT C. B (6)



EFFECT C. B (7)



EFFECT C. B (9)

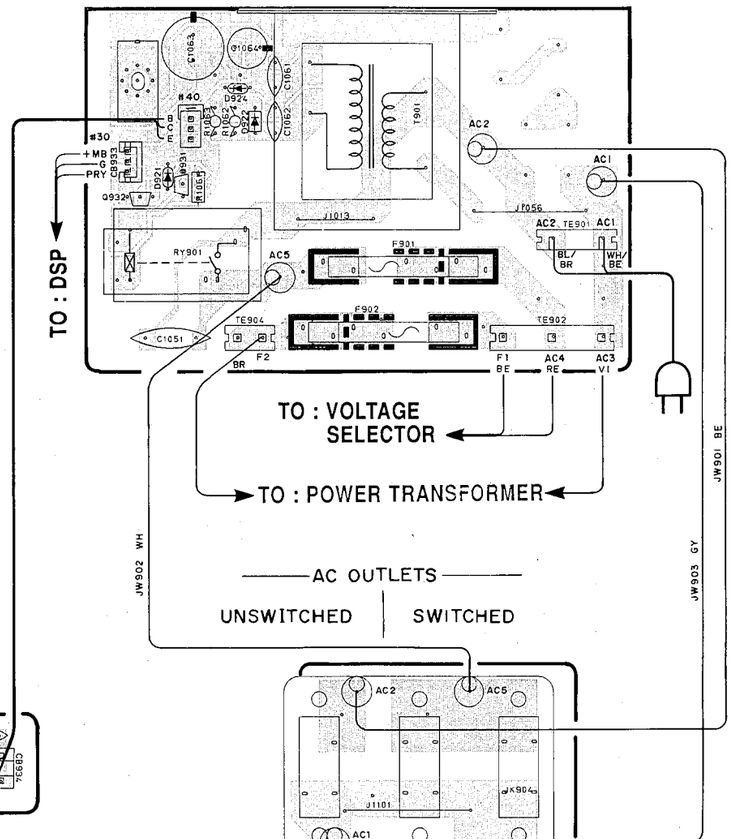
● **U, C models**

■ PRINTED CIRCUIT BOARD (Foil side)

Note) 文字面 : Component side

EFFECT C. B (6)

● R model

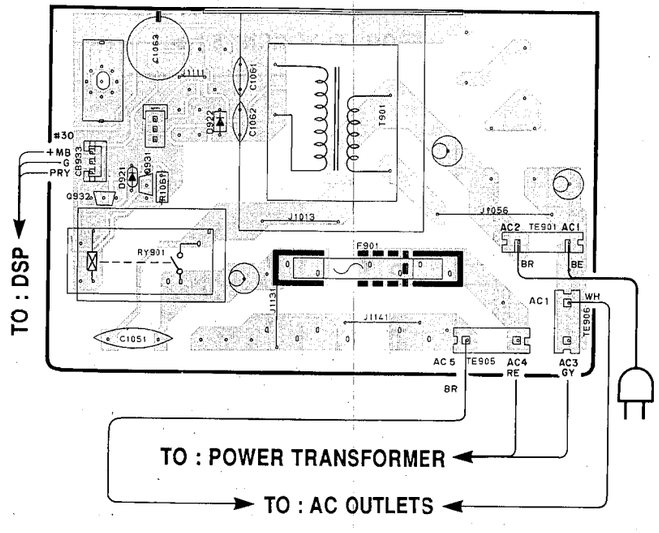


EFFECT C. B (12)

● R model

EFFECT C. B (6)

● A, B models

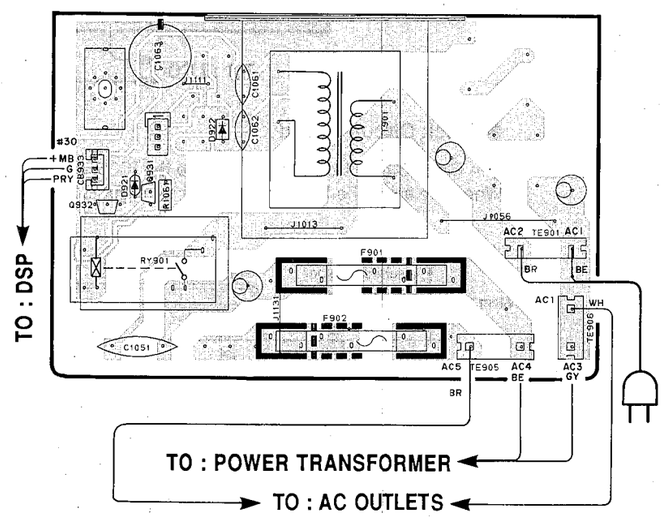


EFFECT C. B (9)

● R model

EFFECT C. B (5)

● G model

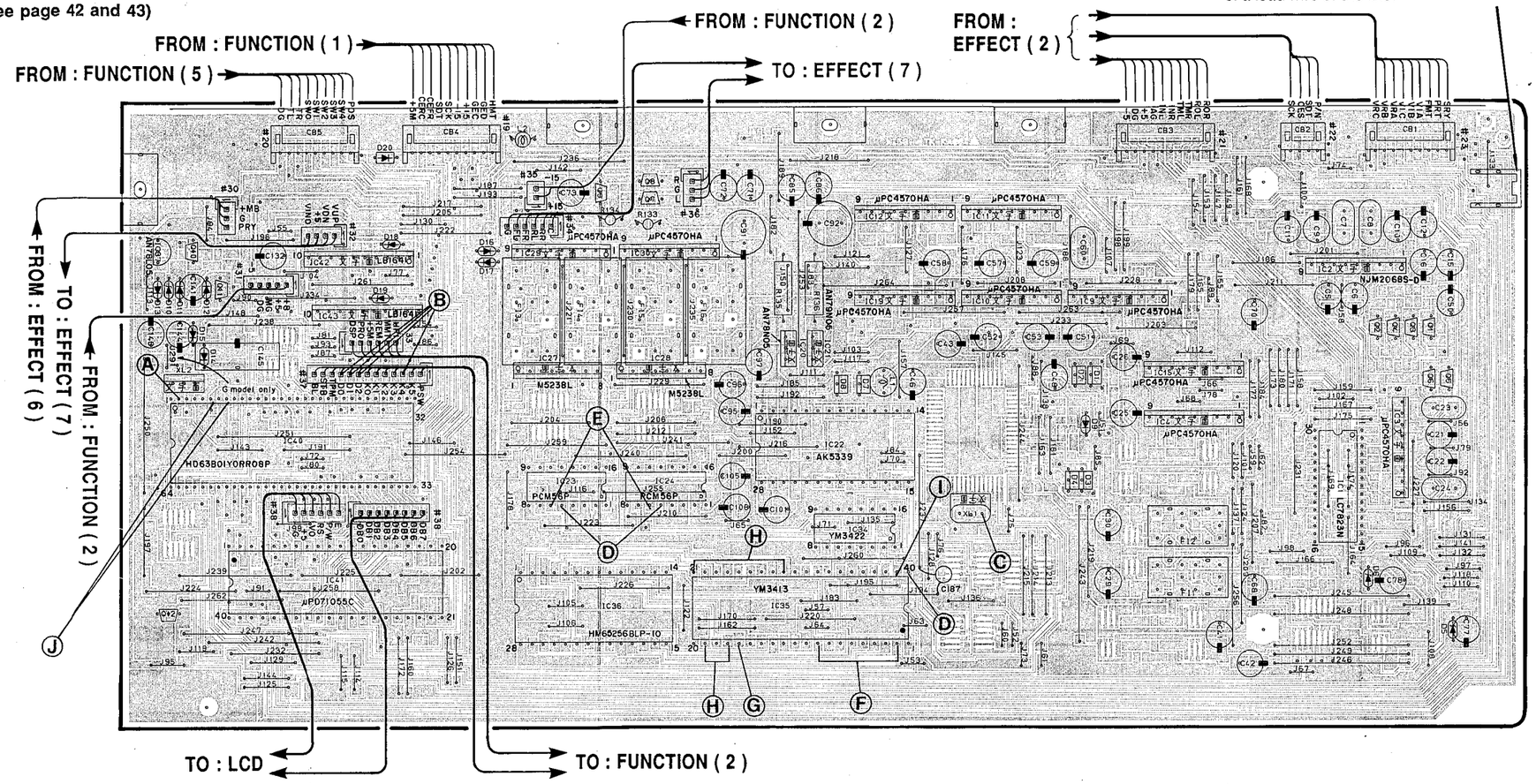


■ PRINTED CIRCUIT BOARD (Foil side)

Note) 文字面 : Component side

Ⓐ to Ⓙ : WAVEFORM OF TEST POINT (See page 42 and 43)

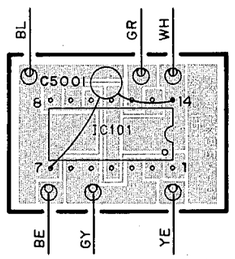
When the DSP Circuit Board has been removed, the ground wire becomes loose. The connect it to the chassis by means of a lead wire or the like.



● Semiconductor Location

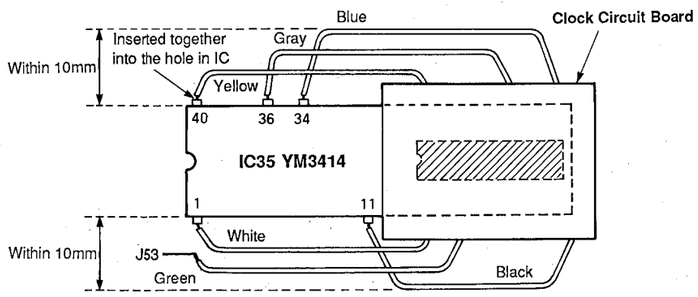
Ref. No.	Location	Ref. No.	Location
D 1	F3	IC 20	E3
D 2	F3	IC 21	E3
D 3	F3	IC 22	E3
D 4	F3	IC 23	D3
D 5	G4	IC 24	E3
D 6	G3	IC 27	D3
D 7	E3	IC 28	E3
D 8	E3	IC 29	D2
D 9	F3	IC 30	E2
D 10	C2	IC 34	E3
D 11	C2	IC 35	E3
D 12	C2	IC 36	D3
D 13	C2	IC 37	C2
D 14	C3	IC 40	C3
D 15	C2	IC 41	C3
D 16	D2	IC 42	C2
D 17	D2	IC 43	C2
D 18	D2	Q 1	G2
D 19	D2	Q 2	G2
D 20	D2	Q 3	G2
IC 1	G3	Q 4	G2
IC 2	G2	Q 5	G3
IC 3	G3	Q 6	G3
IC 4	F3	Q 7	E2
IC 9	F2	Q 8	E2
IC 10	F2	Q 9	D2
IC 11	F2	Q 10	C2
IC 12	E2	Q 11	C2
IC 15	F3	Q 12	C3
IC 19	E2		

CLOCK C. B

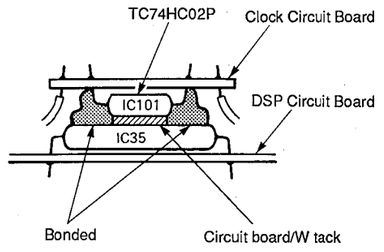


● Clock Circuit Board

The Clock Circuit Board is attached to the IC35 as shown in the figure.
When replacing the IC35, be sure not to forget to reattach it.



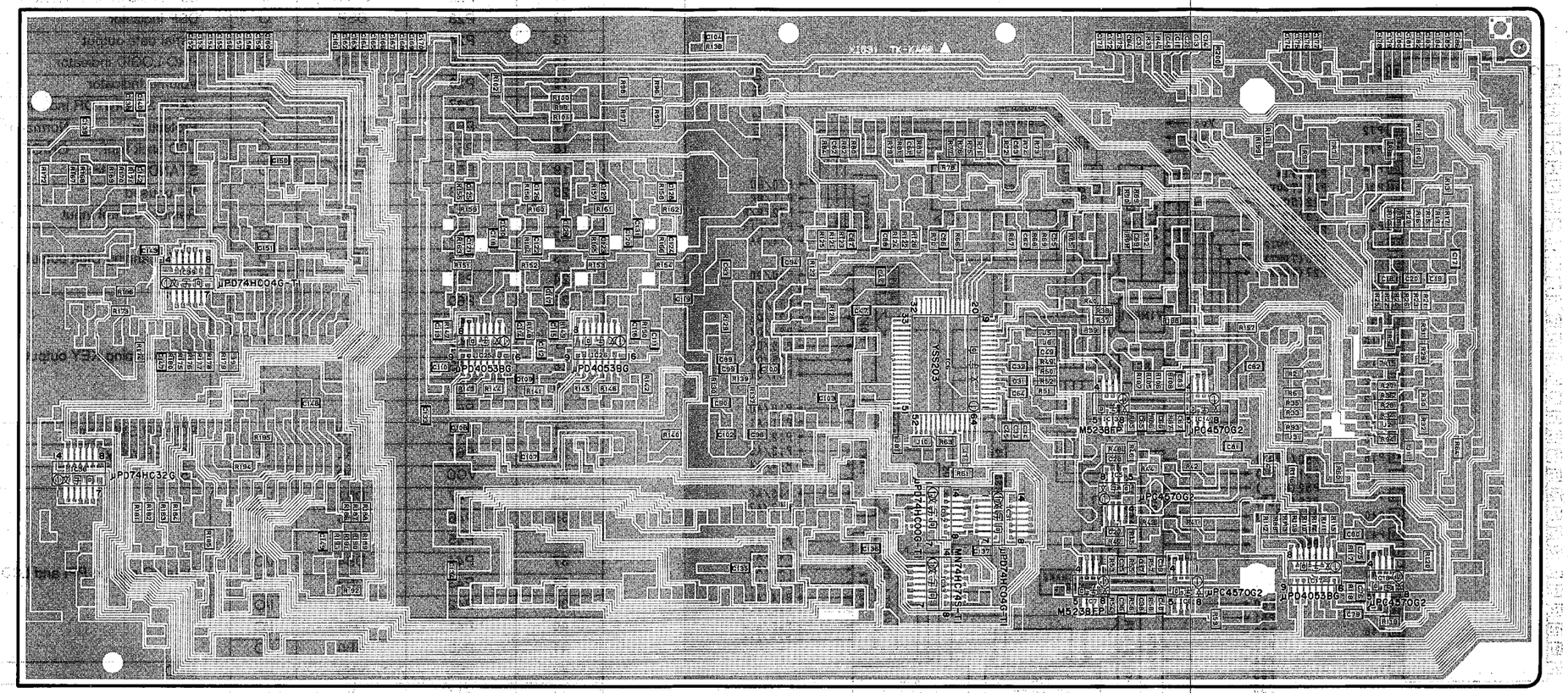
Note : Arrange wires so that they will not spread too far out (beyond 10mm from the end face of IC35).
When installing the DSP Circuit Board to the shield case, be careful not to allow the wire to be caught by the cut in the shield case.



■ PRINTED CIRCUIT BOARD (Foil side)

Note) 文字面 : Component side

DSP C. B

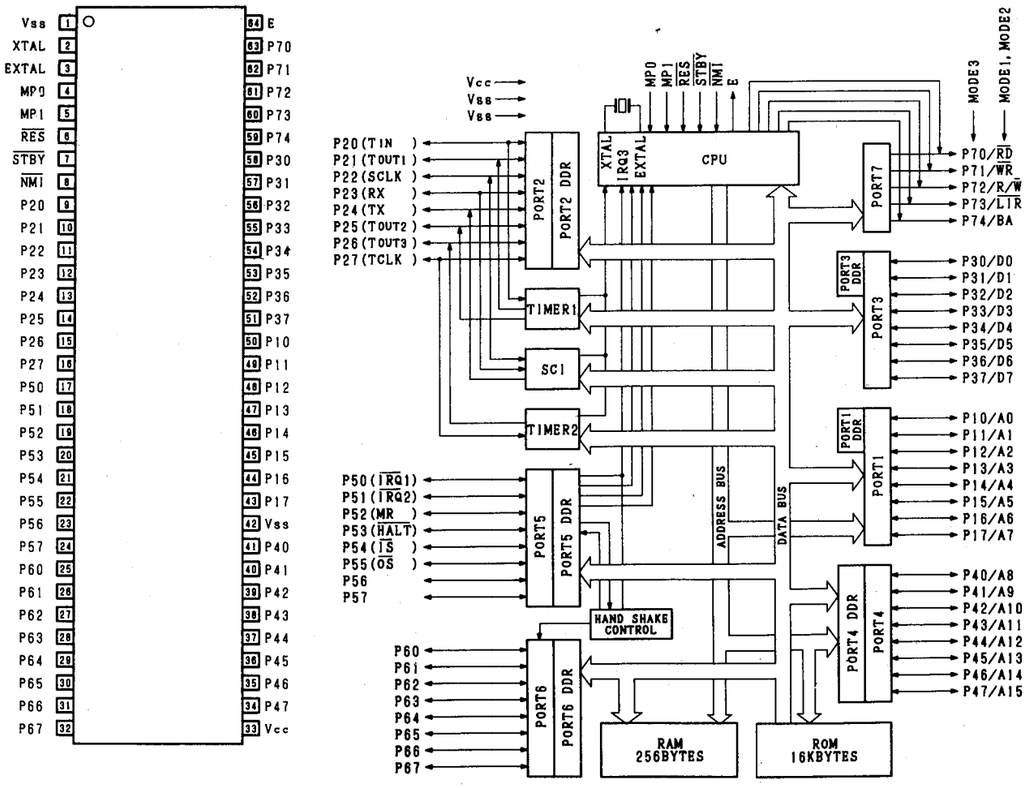


● Semiconductor Location

Ref. No.	Location
IC 5	F3
IC 6	E3
IC 7	F4
IC 8	F4
IC 13	F3
IC 14	F3
IC 17	G4
IC 18	G4
IC 25	C3
IC 26	C3
IC 31	E3
IC 32	E3
IC 33	E4
IC 38	B3
IC 39	B2

■ IC DATA

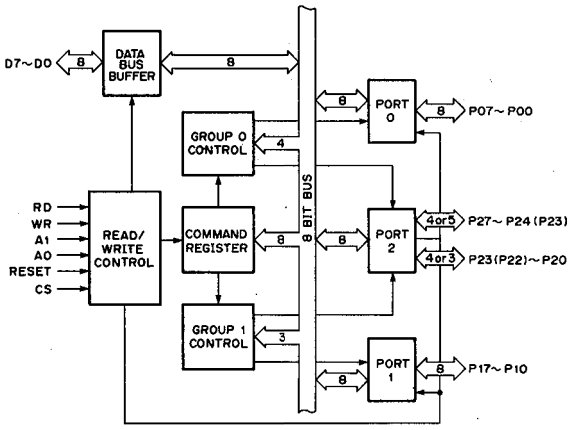
IC40 : HD637BO1YOP or HD63BO1YORS11P
8 bit μ-COM

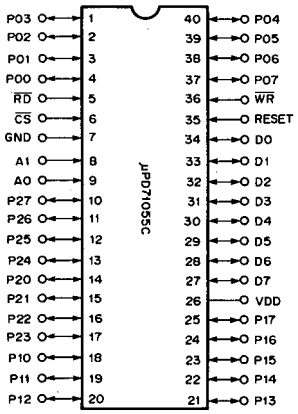


Pin No.	Pin Name	Symbol	I/O	Function
1	VSS	VSS	—	GND
2	XTAL	XTAL	—	Oscillator (8MHz)
3	EXTAL	EXTAL	I	
4	MP0	MP0	I	"H" mode setting
5	MP1	MP1	I	
6	$\overline{RES}$	$\overline{REX}$	I	Reset input
7	$\overline{STBY}$	$\overline{STBY}$	I	"H" unused
8	NMI	PDET	I	POWER ON/OFF detection

Pin No.	Pin Name	Symbol	I/O	Function
9	P20	PMOD	I	POWER mode For $\overline{G}$ model/others
10	P21	SSEL	O	SCI select LDSP/others
11	P22	SCLK	O	Serial data transfer clock
12	P23	DSP	O	DSP indicator
13	P24	TX	O	Serial data output
14	P25	PRO	O	PRO-LOGIC indicator
15	P26	VOL	O	Volume Indicator
16	P27	TM	O	TAPE 2 MONITOR indicator
17	P50	PRT	I	Protection Normal/abnormal
18	P51	$\overline{BL}$	O	LCD back light $\overline{ON}$/OFF
19	P52	STBY	O	STANDBY indicator
20	P53		I	"H" unused
21	P54	REM	I	Remote control input
22	P55	D0	O	KEY scanning Digit output
23	P56	D1	O	
24	P57	D2	O	
25	P60	K0	I	KEY scanning KEY output
26	P61	K1	I	
27	P62	K2	I	
28	P63	K3	I	
29	P64	K4	I	
30	P65	K5	I	
31	P66	PSW	I	POWER SW input
32	P67	PRL	O	POWER relay
33	VCC	VDD	—	+5V
34	P47	DB7	I/O	Data I/O port (to PPI and LCD)
35	P46	DB6	I/O	
36	P45	DB5	I/O	
37	P44	DB4	I/O	
38	P43	DB3	I/O	
39	P42	DB2	I/O	
40	P41	DB1	I/O	
41	P40	DB0	I/O	
42	VSS	VSS	—	GND
43	P17	E	O	LCD control
44	P16	R/W	O	
45	P15	RS	O	
46	P14	A0	O	PPI control
47	P13	A1	O	
48	P12	$\overline{WR}$	O	
49	P11	$\overline{CS}$	O	
50	P10	$\overline{RD}$	O	
51	P37	IT1	O	INPUT TRIM
52	P36	IT0	O	
53	P35	VRC	O	Video REC OUT select
54	P34	VRB	O	
55	P33	VRA	O	
56	P32	VIC	O	Video INPUT select
57	P31	VIB	O	
58	P30	VIA	O	
59	P74	$\overline{IC}$	O	Initial clear
60	P73	$\overline{ANT}$	O	Audio muting
61	P72	$\overline{HMT}$	O	Headphone muting
62	P71	$\overline{MMT}$	O	Main muting
63	P70	$\overline{FMT}$	O	Full muting
64	E	E	—	Open (unused)

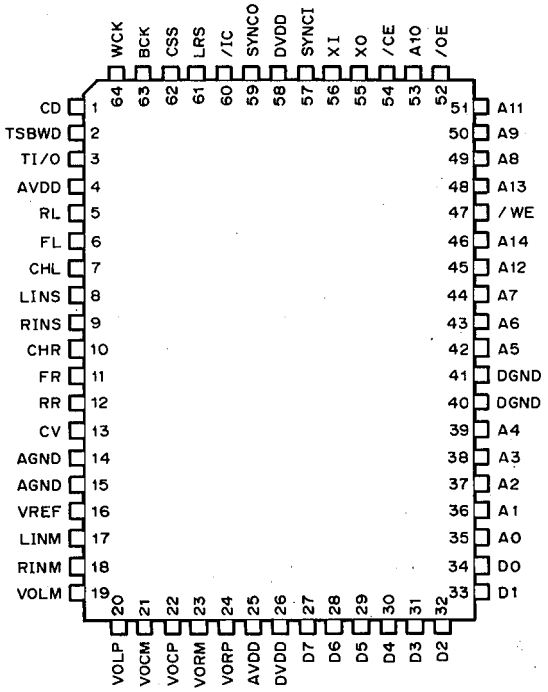
IC41 : μPD71055C or MSM82C55A-2RS
Programmable Peripheral Interface

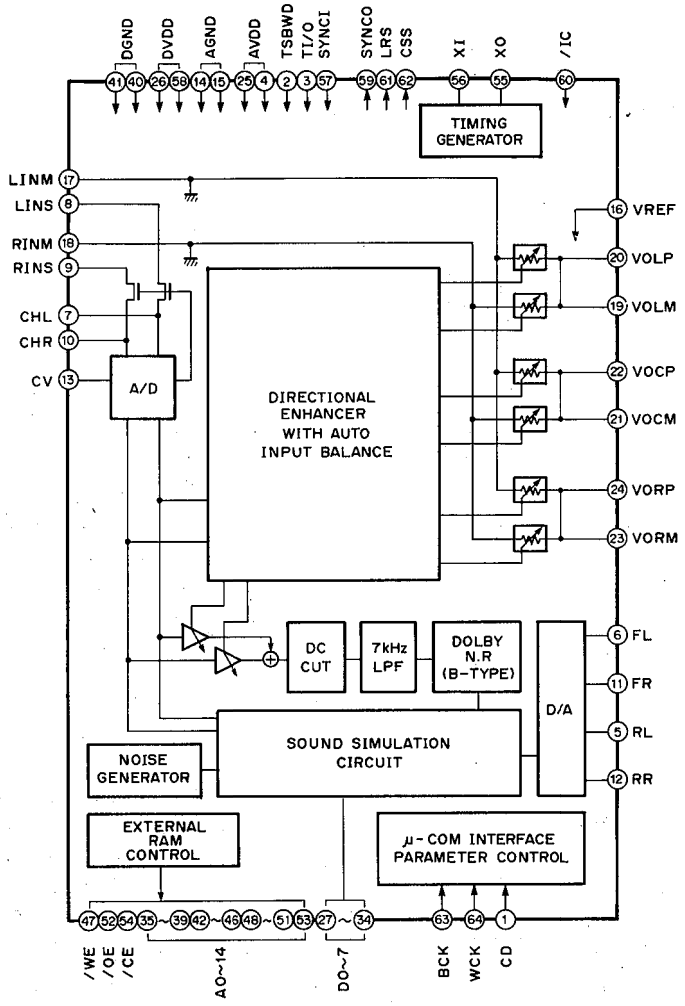




Pin No.	Pin Name	I/O	Function
1	P03	O	Turn Left Input Selector
2	PO2	O	Turn Right Input Selector
3	PO1	O	Vol. Down
4	P00	O	Vol. Up
5	$\overline{RD}$	—	Read
6	$\overline{CS}$	—	Chip select
7	GND	—	Port select
8	A1	—	
9	A0	—	
10	P27	O	CESR chip enable for LC7823
11	P26	O	CES chip select for M50455
12	P25	O	WCK word clock for YSS203
13	P24	O	CRS chip select for YM3413
14	P20	O	GED center GEQ data
15	P21	O	GEC center GEQ clock
16	P22	O	CEFR chip enable front/rear effect VOL
17	P23	O	CEFR chip enable center/super woofer VOL
18	P10	I	SW0 input selector data input
19	P11	I	SW1 input selector data input
20	P12	I	SW2 input selector data input
21	P13	I	SW3 input selector data input
22	P14	I	SW4 input selector data input
23	P15	I	POS input selector position input
24	P16	I	P/N Pal/$\overline{NTSC}$ determination
25	P17	I	$\overline{HPI}$ Headphone input status
26	VDD	—	+5V
27	D7	I/O	Data bus
28	D6	I/O	
29	D5	I/O	
30	D4	I/O	
31	D3	I/O	
32	D2	I/O	
33	D1	I/O	
34	D0		
35	RESET	—	Reset
36	$\overline{WR}$	—	Write
37	P07	O	Speaker relay
38	P06	O	SR0
39	P05	O	SR1 Surround signal passage selector.
40	P04	O	SR2

IC6 : YSS203
Digital Dolby Pro Logic Decoder with Auto Input Balance





Pin No.	Pin Name	I/O	Function
1	CD	Its	Serial data of parameter data input
2	TSBWD	Ic	LSI test terminal Normally connected to DVDD
3	TI/O	Ic	LSI test terminal Normally connected to /CSS terminal
4	AVDD	A—	+5V power supply (D/A, A/D section)
5	RL	AO	RL channel D/A output
6	FL	AO	FL channel D/A output
7	CHL	A—	LINS input Sample/hold Capacitor external terminal
8	LINS	AI	L channel A/D input
9	RINS	AI	R channel A/D input
10	CHR	A—	RINS input Sample/hold Capacitor external terminal
11	FR	AO	FR channel D/A input
12	RR	AO	RR channel D/A input
13	CV	AO	A/D, multiplaying DAC center voltage
14	AGND	A—	Ground (D/A, A/D section)
15	AGND	A—	Ground (Multiplaying DAC section)
16	VREF	AI	Multiplaying DAC reference voltage input
17	LINM	AI	L channel Multiplaying DAC input
18	RINM	AI	R channel Multiplaying DAC input
19	VOLM	AO	L channel operation amplifier, connected to (–) terminal
20	VOLP	AO	L channel operation amplifier, connected to (+) terminal

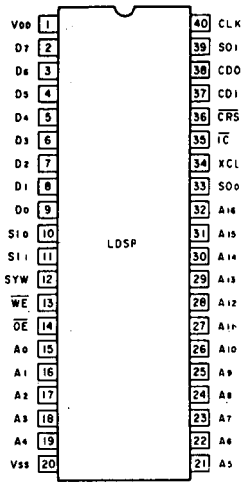
Pin No.	Pin Name	I/O	Function
21	VOCM	AO	C channel operation amplifier, connected to (–) terminal
22	VOCP	AO	C channel operation amplifier, connected to (+) terminal
23	VORM	AO	R channel operation amplifier, connected to (–) terminal
24	VORP	AO	R channel operation amplifier, connected to (+) terminal
25	AVDD	A—	+5V power supply (multiplying DAC section)
26	DVDD	—	+5V power supply (digital section)
27	D7	I/Ot	External delay RAM data terminal
28	D6	I/Ot	External delay RAM data terminal
29	D5	I/Ot	External delay RAM data terminal
30	D4	I/Ot	External delay RAM data terminal
31	D3	I/Ot	External delay RAM data terminal
32	D2	I/Ot	External delay RAM data terminal
33	D1	I/Ot	External delay RAM data terminal
34	D0	I/Ot	External delay RAM data terminal
35	A0	O	External data RAM address terminal
36	A1	O	External data RAM address terminal
37	A2	O	External data RAM address terminal
38	A3	O	External data RAM address terminal
39	A4	O	External data RAM address terminal
40	DGND	—	Ground (digital section)
41	DNND	—	Ground (digital section)
42	A5	O	External data RAM address terminal
43	A6	O	External data RAM address terminal
44	A7	O	External data RAM address terminal
45	A12	O	External data RAM address terminal
46	A14	O	External data RAM address terminal
47	/WE	O	External delay RAM write enable terminal
48	A13	O	External dalay RAM address terminal
49	A8	O	External dalay RAM address terminal
50	A9	O	External dalay RAM address terminal
51	A11	O	External dalay RAM address terminal
52	/OE	O	External dalay RAM output enable terminal
53	A10	O	External dalay RAM address terminal
54	/CE	O	External delay RAM chip enable terminal
55	XO	O	Crystal oscillator connecting terminal
56	XI	I	Crystal oscillator connecting terminal
57	SYNCI	It	Test terminal for system synchronization, normally connected to DVDD
58	DVDD	—	+5V power supply (digital section)
59	SYNCO	O	Test terminal for system synchronization, normally unconnected
60	/IC	Ics	Initial clear terminal (Power ON resetting is necessary)
61	LRS	O	External automatic input balance terminal, normally left open
62	/CSS	O	External automatic input balance terminal, connected to TI/O terminal
63	BCK	Its	Bit clock for parameter data input
64	WCK	Its	Word clock for parameter data input

Note : Alphabets used in the above I/O column represent as follows.

I : Input terminal **O** : Output terminal **t** : TTL level

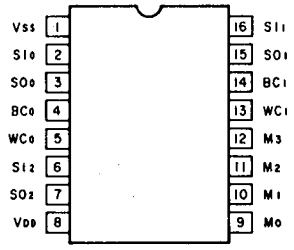
C : CMOS level **S** : Schmidt input **A** : Analog terminal

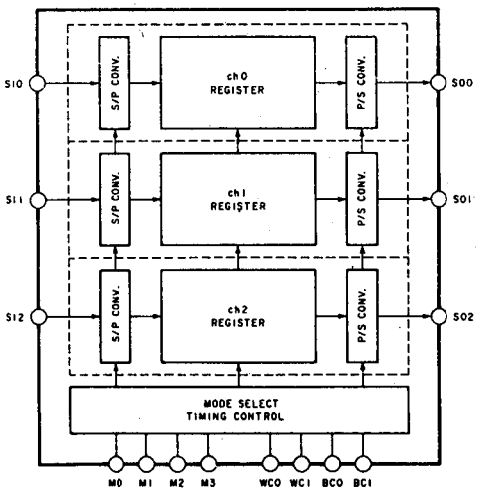
IC35 : YM3413
LDSP



Pin No.	Pin Name	I/O	Function	Pin No.	Pin Name	I/O	Function
1	VDD	—	+5V voltage supply	40	CLK	I	Master clock input
2	D7	I/O	I/O pins connected to memory data bus (8bit)	39	SO1	O	Serial data output
3	D6	I/O		38	CDO	O	CD data output
4	D5	I/O		37	CDI	I	CD data input
5	D4	I/O		36	CRS	I	CD data sync signal input
6	D3	I/O		35	IC	I	LDSP initial clear signal input
7	D2	I/O		34	XCLK	I	ACIA clock input
8	D1	I/O		33	SDO	O	Serial data output
9	D0	I/O		32	A16	O	Outputs connected to memory address bus
10	SI0	I	Serial data input	31	A15	O	
11	SI1	I		30	A14	O	
12	SYW	I	System sync signal input	29	A13	O	
13	WE	O	Read/write signal to memory input	28	A12	O	
14	OE	O	Pin connected to memory OE term	27	A11	O	
15	A0	O	Outputs connected to memorys address bus	26	A10	O	
16	A1	O		25	A9	O	
17	A2	O		24	A8	O	
18	A3	O		23	A7	O	
19	A4	O		22	A6	O	
20	VSS	O	GND 0V	21	A5	O	

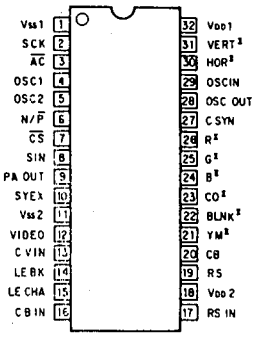
IC34 : YM3422
Digital Signal Format Converter

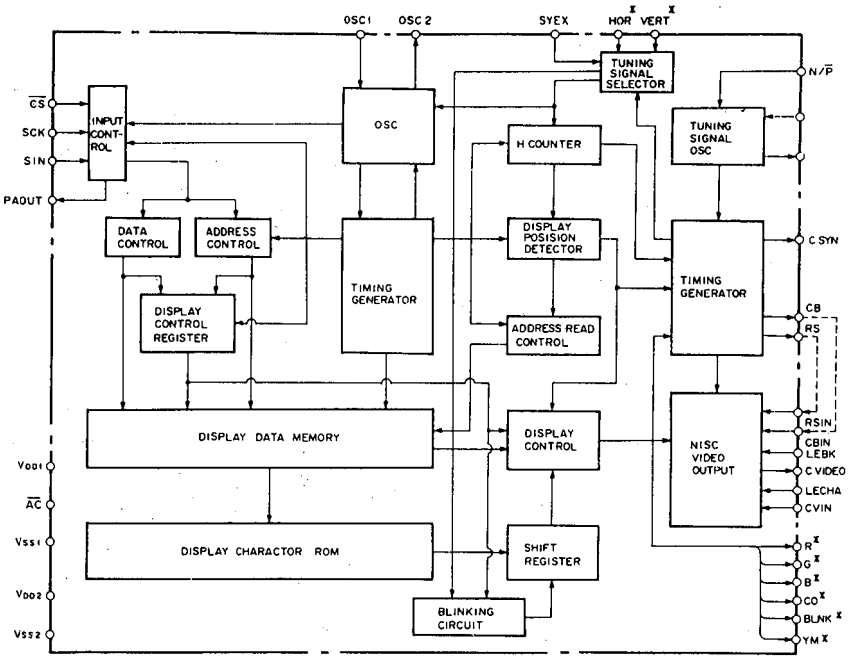




Pin No.	Pin Name	I/O	Function
1	VSS	—	GND terminal
2	SI0	IN	Serial data input (ch 0)
3	SO0	OUT	Serial data output (ch 0)
4	BC0	IN	Bit clock input
5	WC0	IN	System synchronized signal input
6	SI2	IN	Serial data input (ch 0)
7	SO2	OUT	Serial data output (ch 0)
8	VDD	—	Voltage supply (+5V)
9	MO	IN	Mode select signal
10	M1	IN	
11	M2	IN	
12	M3	IN	
13	WC1	IN	System synchronized signal input (Word clock)
14	BC1	IN	Bit clock input
15	SC1	IN	Serial data output (ch 1)
16	SI1	OUT	Serial data input (ch 1)

IC917 : M50455-060SP
Supper Impose

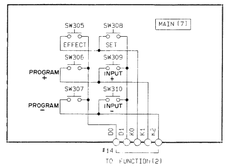


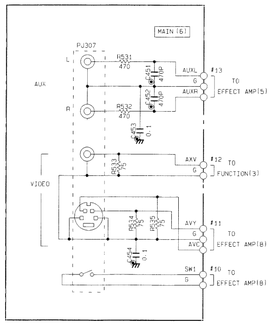


Pin No.	Pin Name	Pin Description	Function
1	VSS 1	Earth terminal	Connect with GND by digital system earth terminal
2	SCX	Serial clock input	When it is SC terminal "L", serial data of SIN is taken in with the start-up of SCK. Hysteresis input.
3	AC	Automatic clear input	Reset IC internal circuit with "L" status. Pull-up resistance has been contained. Hysteresis input.
4	OSC 1	Oscillation circuit external terminal	External terminal for oscillation circuit for indication use. The standard oscillation frequency is about 7MHz
5	OSC 2		Display position toward horizontal direction of TV picture and letter width are determined by the oscillation frequency.
6	N/P	NISC/PAL switching input	It is NTSC or PAL system synchronized signal generation switching terminal.
7	CS	Chip selection input	Chip selection terminal. When serial data transfer is conducted, the chip selection terminal shall be "L" status.
8	SIN	Serial data input	Data and address of memory for use in the display resistor and display data are input by serial.
9	PAOUT	Parity output	It is odd number parity output, and it will detect 1 bit mistake in a word of SIN.
10	SYEX	Synchronized signal changeover input	Externally synchronized or internally synchronized signal switching terminal. Under "H" status, it becomes externally synchronized signal mode, and with "L" status, it becomes internally synchronized signal mode. SYEX composes "or" of priority of internal synchronization and EX resistor of address 243 in the display control resistor. Pull-up resistance is contained.

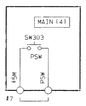
Pin No	Pin Name	Pin Description	Function
11	VSS 1	Earth terminal	Connect with GND by analog earth terminal.
12	VIDEO	Composite video output	It is composite video signal output terminal Composite video signal of 2Vp-p is output. When it is supper imposition, it will output increasing the volume of letter output to CVIN signal.
13	CVIN	Composite video input	It is composite video signal input terminal When it is supper impose, letter output etc. Will be increases for the composite video signal.
14	LEBK	Blanking level	It is input terminal to determine blanking level of video signal.
15	LECHA	Character level input	It is input terminal to determine the letter output level in the video signal. Color of letter is white.
16	CBIN	Color burst input	It will input transforming CB output to color burst level by external circuit.
17	RSIN	Lettering background carrier color signal input	Input is done transforming RS output to carrier color signal level of video signal by external circuit.
18	VDD 2	Power source terminal	Connect with +5V by analog system power source terminal.
19	RS	Lettering background carrier color signal output	It is carrier color signal output for the coloring of lettering background. It will output signal having phase analog for color burst signal CB. Amplitude : 5V.
20	CB	Color burst output	When it is NTSC system, it will output color burst of 3.58MHz and 4.43MHz when it is PAL system. Amplitude : 5V.
21	YM*	Brightness signal output	It is brightness sihnal output. Polarity selection can be done when lettering type ROM is determined.
22	BLNK*	Lettering background output	It will output lettering background signal. Polarity selection can be done when lettering type ROM is decided.
23	CO*	Lettering type output	Lettering type signal is output. Polarity selection can be done when lettering type is determined.
24	B*	Blue output	It is Blue output terminal. Polarity selection can be done when lettering type is determined.
25	H*	Green output	It is Green output terminal. Polarity selection can be done when lettering type is determined.
26	R*	Red output	It is Red output terminal. Polarity selection can be done when lettering type is determined.
27	CSYN	Composite burst output	NTSC or PAL system composite burst is output. Polarity is negative polarity, and amplitude is 4V.
28	OSCOUT	Oscillation circuit for burst generation	It is external terminal of oscillation circuit for the generation of burst. when it is NTSC system, it is 14.32MHz.
29	OSCIN		When it is PAL system, oscillation frequency of 17.73MHz is used.
30	HOR*	Horizontal burst	Horizontal selection burst is output. Hysteresis input. Polarity selection can be done when lettering type ROM is determined.
31	VERT*	Vertical burst	Vertical burst is input . Hysteresis input. Polarity selection can be done when lettering type ROM is determined.
32	VDD 2	Power source terminal	Connect with +5V by digital power source terminal.

■ SCHEMATIC DIAGRAM (MAIN)

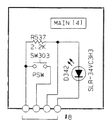


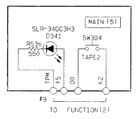


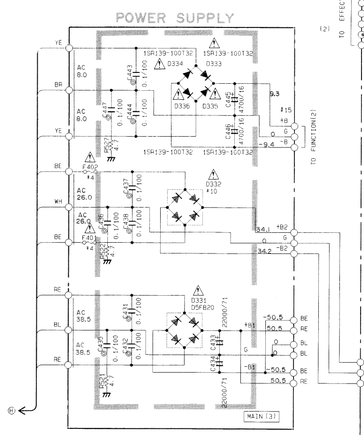
(U, C, R, A, B)

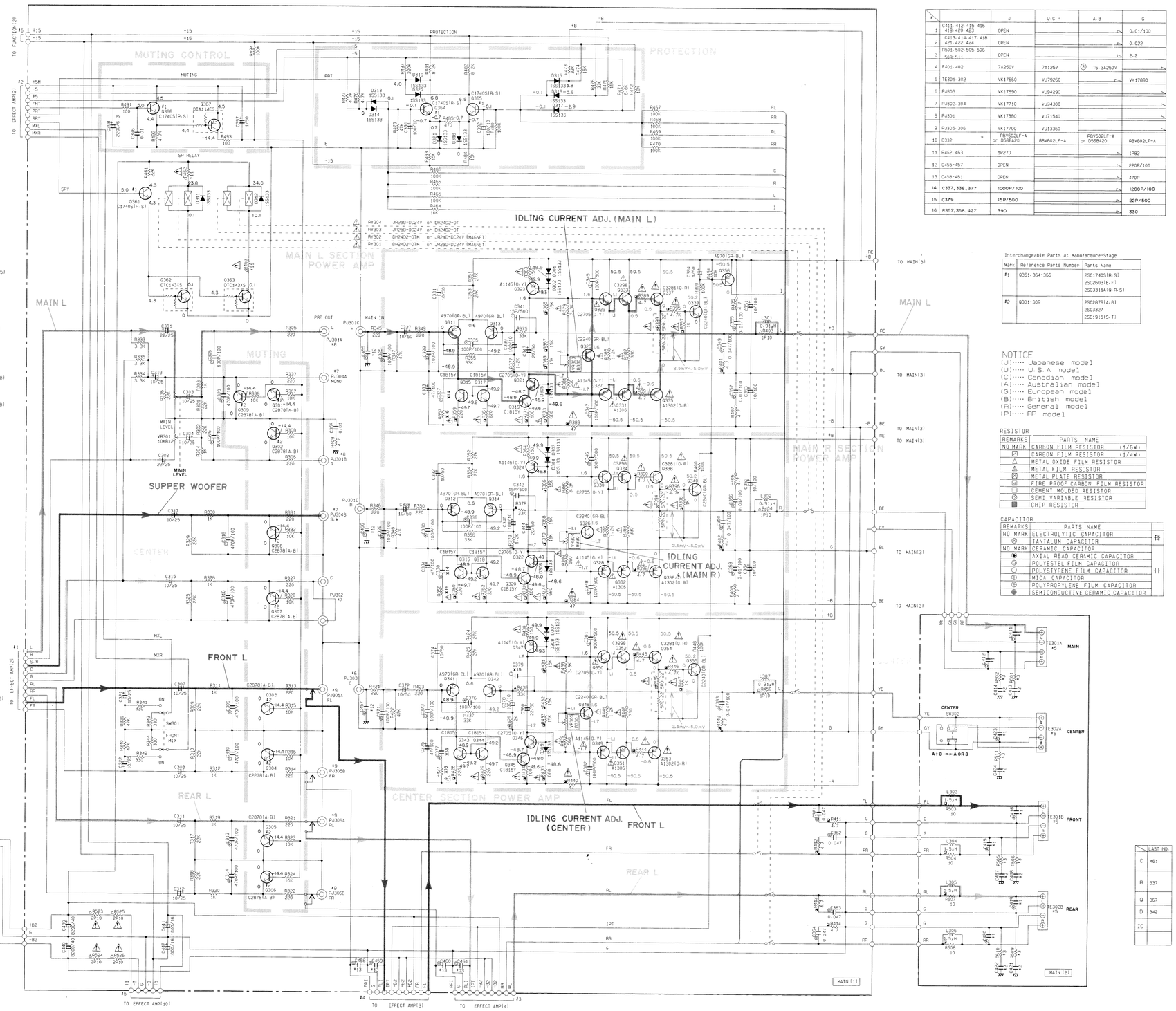


(G only)









		J	U·C·R	A·B	G
1	C411·412·415·416 419·420·423	OPEN			0·01/100
2	C413·414·417·418 421·422·424	OPEN			0·022
3	R501·502·505·506 509·511	OPEN			2·2
4	F401·402	7A250V	7A125V	Ⓢ T6.3A250V	
5	TE301·302	VK17660	VJ79260		VK17890
6	PJ303	VK17690	VJ94290		
7	PJ302·304	VK17710	VJ94300		
8	PJ301	VK17880	VJ71540		
9	PJ305·306	VK17700	VJ13360		
10	D332	RBV602LF-A or D5SBA20	RBV602LF-A	RBV602LF-A or D5SBA20	RBV602LF-A
11	R452·453	1P270			1P82
12	C455·457	OPEN			220P/100
13	C458·461	OPEN			470P
14	C337, 338, 377	1000P/100			1200P/100
15	C379	15P/500			22P/500
16	R357, 358, 427	39Ω			33Ω

Interchangeable Parts at Manufacture-Stage

Mark	Reference Parts Number	Parts Name
#1	Q351·354·356	2SC1740S(R, S) 2SC2603(E, F) 2SC3311A(Q, R, S)
#2	Q301·309	2SC2878(A, B) 2SC3327 2SD1915(S, T)

NOTICE
(J)····· Japanese model
(U)····· U.S.A model
(C)····· Canadian model
(A)····· Australian model
(G)····· European model
(B)····· British model
(R)····· General model
(P)····· PP model

RESISTOR

REMARKS	PARTS NAME
NO MARK	CARBON FILM RESISTOR (1/5W)
☑	CARBON FILM RESISTOR (1/4W)
△	METAL OXIDE FILM RESISTOR
⚠	METAL FILM RES.STOR
⊠	METAL PLATE RESISTOR
▨	FIRE PROOF CARBON FILM RESISTOR
□	CEMENT MOLDED RESISTOR
⊘	SEMI VARIABLE RESISTOR
■	CHIP RESISTOR

CAPACITOR

REMARKS	PARTS NAME	
NO MARK	ELECTROLYTIC CAPACITOR	㎌
⊗	TANTALUM CAPACITOR	
NO MARK	CERAMIC CAPACITOR	㎊
◈	AXIAL·LEAD CERAMIC CAPACITOR	
◎	POLYESTEL FILM CAPACITOR	
○	POLYSTYRENE FILM CAPACITOR	
ⓘ	MICA CAPACITOR	
⊛	POLYPROPYLENE FILM CAPACITOR	
◉	SEMICONDUCTIVE CERAMIC CAPACITOR	

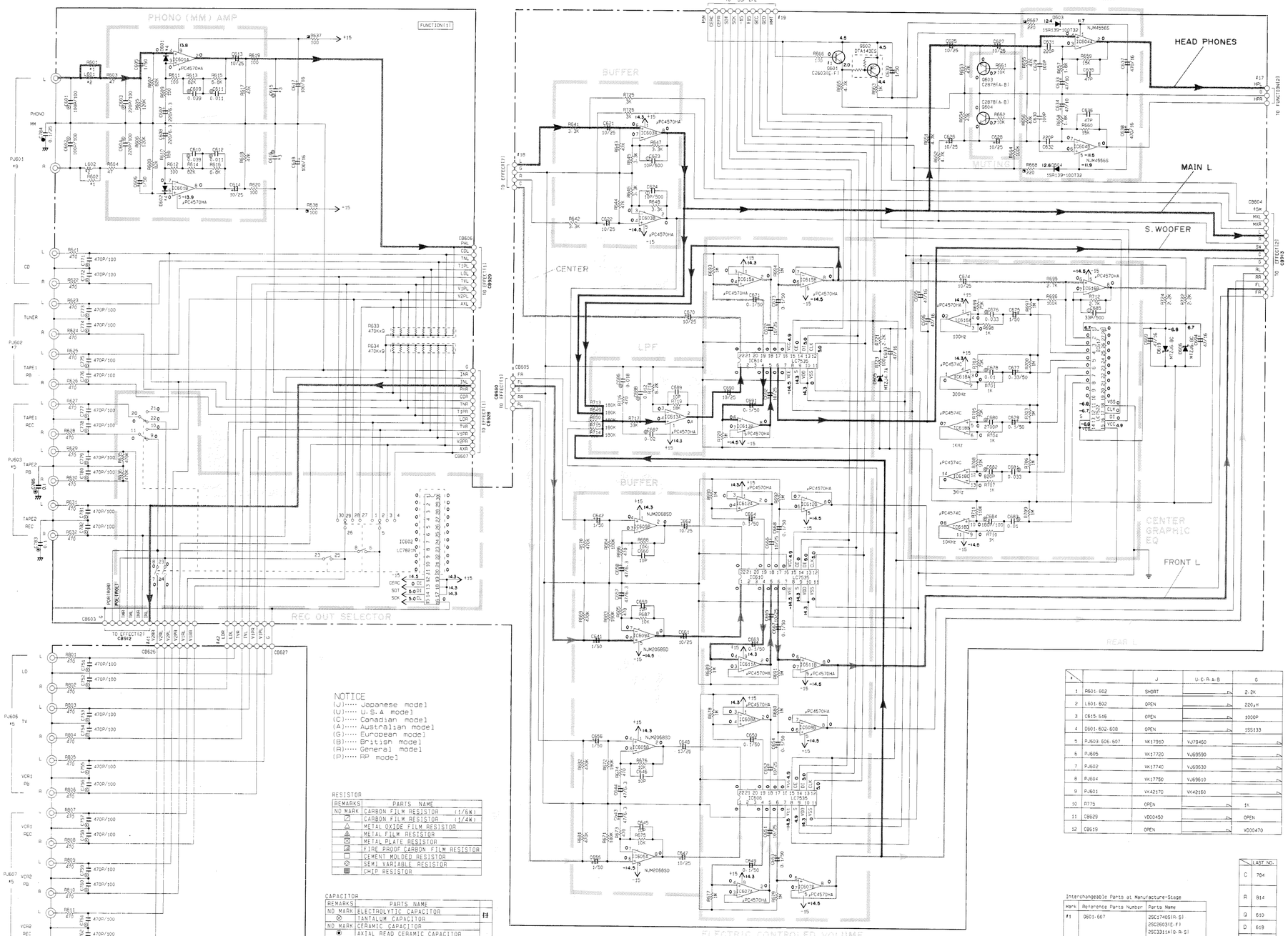
	LAST NO.
C	461
R	537
Q	367
D	342
IC	

PIN CONNECTION DIAGRAM OF TRANSISTORS, DIODES AND ICS.

2SA970(GR, BL) 2SA1145(O, Y) 2SC1740S(R, S) 2SC2603(E, F) 2SC3311A(Q, R, S) 2SC1815Y 2SC2240(GR, BL) 2SC2878(A, B) 2SC3327 2SD1915(S, T)	2SC2705(O, Y) DTA114ES DTC143XS	2SA1306 2SC3298		1SS133 1SR139-100T32	D5FB20	RBV602LF-A D5SBA20

** All voltage are measured with a 10MΩ/V DC electric volt meter.*
** Components having special characteristics are marked ⚠ and must be replaced with parts having specifications equal to those originally installed.*
** Schematic diagram is subject to change without notice.*

■ SCHEMATIC DIAGRAM (FUNCTION)



NOTICE
(J)····· Japanese model
(U)····· U.S.A model
(C)····· Canadian model
(A)····· Australian model
(G)····· European model
(B)····· British model
(R)····· General model
(P)····· RP model

RESISTOR

REMARKS	PARTS NAME	
NO MARK	CARBON FILM RESISTOR	(1/6W)
☑	CARBON FILM RESISTOR	(1/4W)
△	METAL OXIDE FILM RESISTOR	
△	METAL FILM RESISTOR	
⊠	METAL PLATE RESISTOR	
▨	FIRE PROOF CARBON FILM RESISTOR	
□	CEMENT MOLDED RESISTOR	
⊘	SEMI VARIABLE RESISTOR	
■	CHIP RESISTOR	

CAPACITOR

REMARKS	PARTS NAME	
	ELECTROLYTIC CAPACITOR	⊟
⊗	TANTALUM CAPACITOR	
NO MARK	CERAMIC CAPACITOR	
◉	AXIAL LEAD CERAMIC CAPACITOR	
◎	POLYESTEL FILM CAPACITOR	
○	POLYSTYRENE FILM CAPACITOR	⊟
Ⓜ	MICA CAPACITOR	
Ⓟ	POLYPROPYLENE FILM CAPACITOR	
◍	SEMICONDUCTIVE CERAMIC CAPACITOR	

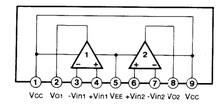
		J	U·C·R·A·B	G
1	R601-602	SHORT		2.2K
2	L601-602	OPEN		220μH
3	C615-616	OPEN		1000P
4	D601-602-608	OPEN		1SS133
5	PJ603-606-607	VK17910	VJ79450	
6	PJ605	VK17720	VJ69590	
7	PJ602	VK17740	VJ69630	
8	PJ604	VK17750	VJ69610	
9	PJ601	VK42170	VK42160	
10	R775	OPEN		1K
11	CB629	OPEN		VD00450
12	CB619	OPEN		VD00470

Interchangeable Parts at Manufacture-Stage

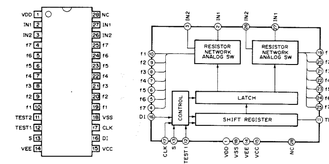
Mark	Reference Parts Number	Parts Name
#1	Q601-607	2SC1740S(R-S) 2SC2603(E-F) 2SC3311A(O-R-S)

	LAST NO.
C	784
R	814
Q	610
D	619
IC	626

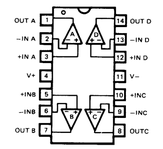
IC604 : NJM4556S
IC601, 603, 607, 608, 611~613, 615, 616 : μPC4570HA
IC605, 609 : NJM2068SD
Dual Ope-amp



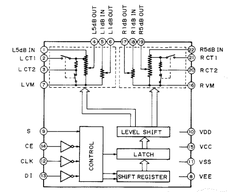
IC617 : LC7522
Graphic Equalizer



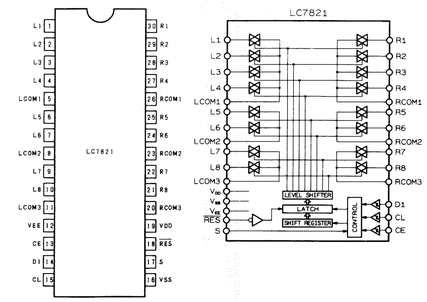
IC618 : μPC4574C
4-Channel Ope-amp



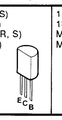
IC606, 610, 614 : LC7535
Electric Controled Volume



IC602 : LC7821N
Analog Function Switch

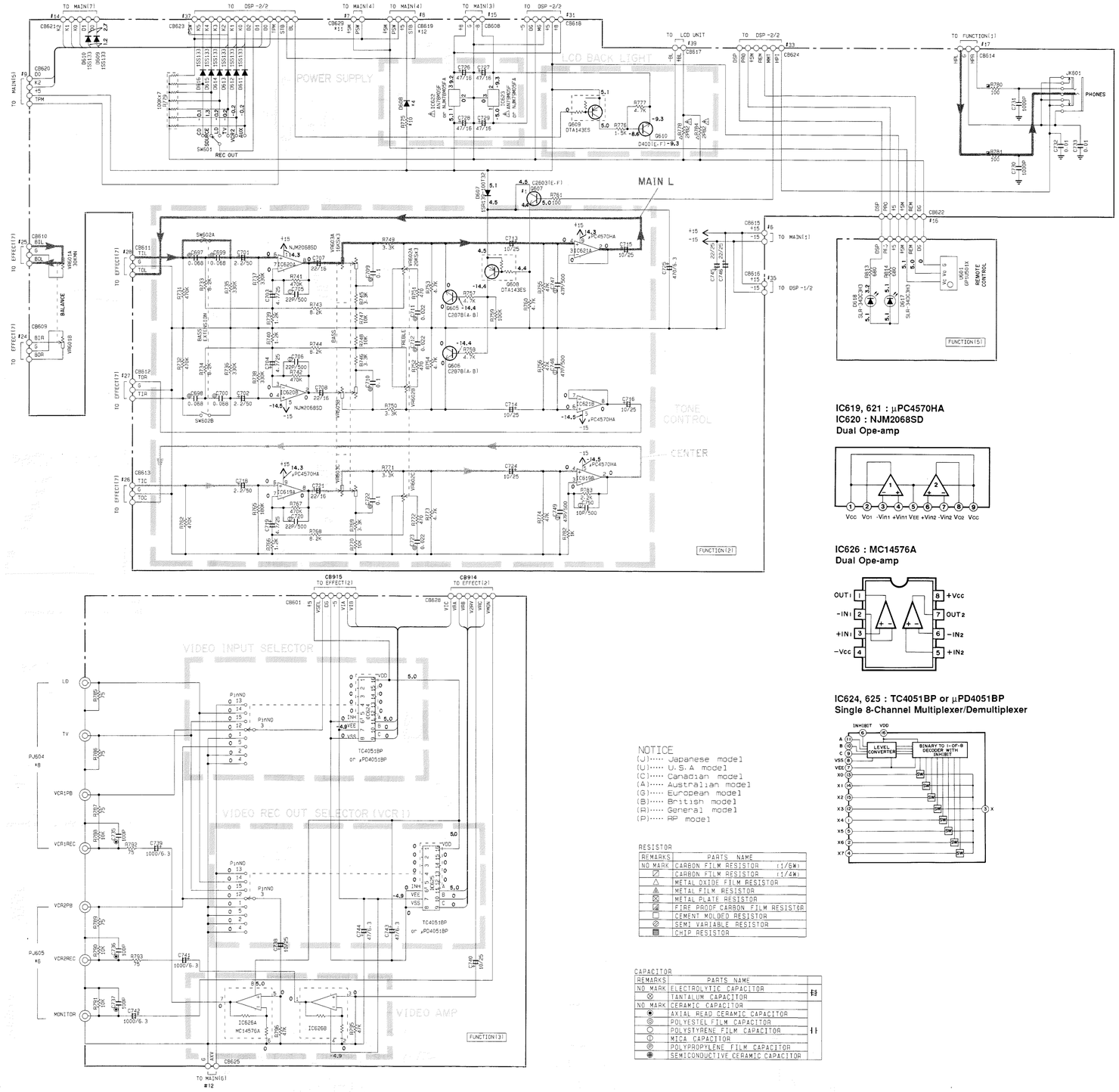


PIN CONNECTION DIAGRAM OF TRANSISTORS, DIODES AND ICS.

2SC1740S(R, S) 2SC2603(E, F) 2SC3311A(O, R, S) 2SC2878(A, B) DTA143ES	1SS133 1SR139-100T32 MTZJ4.7A MTZJ6.8C	NJM4556S μPC4570HA MJM2068SD	μPC4574C	LC7535	LC7522	LC7821N
						

** All voltage are measured with a 10MΩ/V DC electric volt meter.*
** Components having special characteristics are marked ⚠ and must be replaced with parts having specifications equal to those originally installed.*
** Schematic diagram is subject to change without notice.*

■ SCHEMATIC DIAGRAM (FUNCTION)



IC619, 621 : µPC4570HA
IC620 : NJM2068SD
Dual Ope-amp

IC626 : MC14576A
Dual Ope-amp

IC624, 625 : TC4051BP or µPD4051BP
Single 8-Channel Multiplexer/Demultiplexer

NOTICE
(J)····· Japanese model
(U)····· U.S.A model
(C)····· Canadian model
(A)····· Australian model
(G)····· European model
(B)····· British model
(R)····· General model
(P)····· RP model

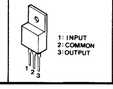
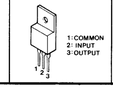
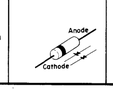
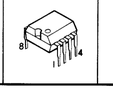
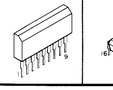
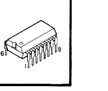
RESISTOR

REMARKS	PARTS NAME
NO MARK	CARBON FILM RESISTOR (1/6W)
▨	CARBON FILM RESISTOR (1/4W)
△	METAL OXIDE FILM RESISTOR
▲	METAL FILM RESISTOR
⊠	METAL PLATE RESISTOR
▨	FIRE PROOF CARBON FILM RESISTOR
□	CEMENT MOLDED RESISTOR
⊘	SEMI VARIABLE RESISTOR
■	CHIP RESISTOR

CAPACITOR

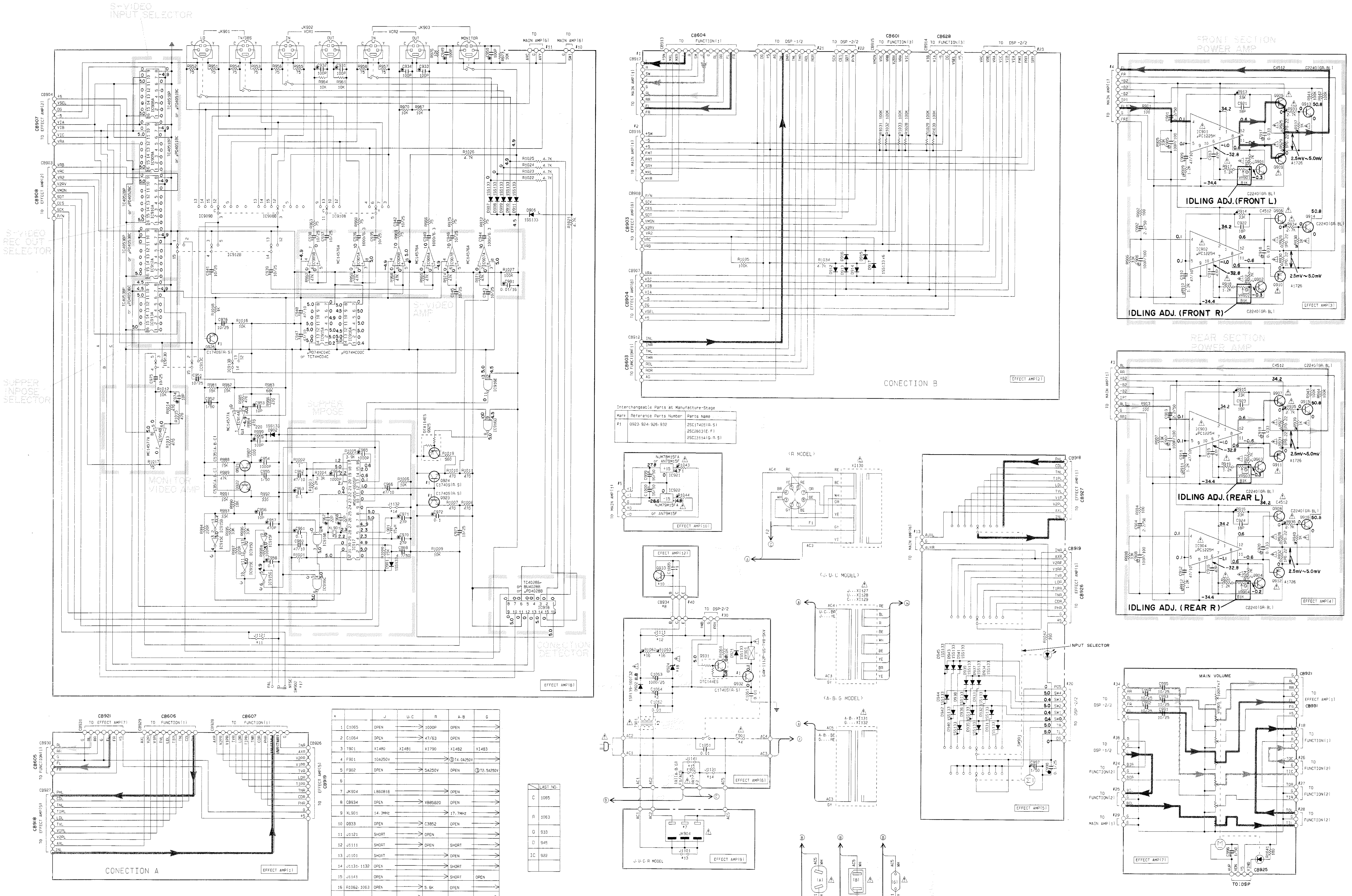
REMARKS	PARTS NAME	
NO MARK	ELECTROLYTIC CAPACITOR	⫼
⊗	TANTALUM CAPACITOR	
NO MARK	CERAMIC CAPACITOR	⫼
◉	AXIAL LEAD CERAMIC CAPACITOR	
◎	POLYESTEL FILM CAPACITOR	
○	POLYSTYRENE FILM CAPACITOR	
Ⓘ	MICA CAPACITOR	
◎	POLYPROPYLENE FILM CAPACITOR	
●	SEMICONDUCTIVE CERAMIC CAPACITOR	

PIN CONNECTION DIAGRAM OF TRANSISTORS, DIODES AND ICS.

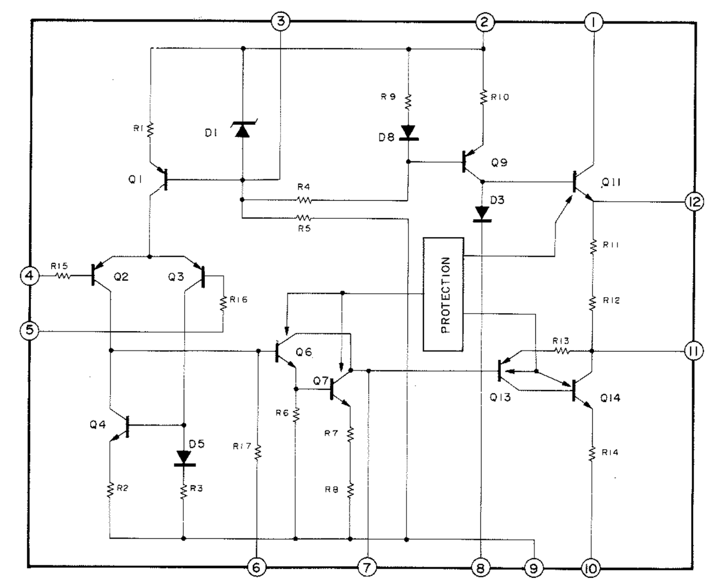
2SC2878(A, B) 2SD400(E, F) DTA143ES	AN78M05F NJM78M05FA	AN79M05F NJM79M05FA	1SS133 1SR139-100T32	MC14576A	µPC4570HA NJM2068SD	TC4051BP µPD4051BP
						

** All voltage are measured with a 10MΩ/V DC electric volt meter.*
** Components having special characteristics are marked ⚠ and must be replaced with parts having specifications equal to those originally installed.*
** Schematic diagram is subject to change without notice.*

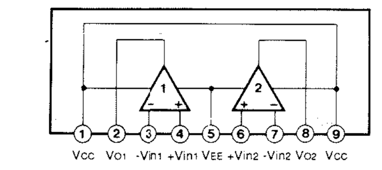
■ SCHEMATIC DIAGRAM (EFFECT)



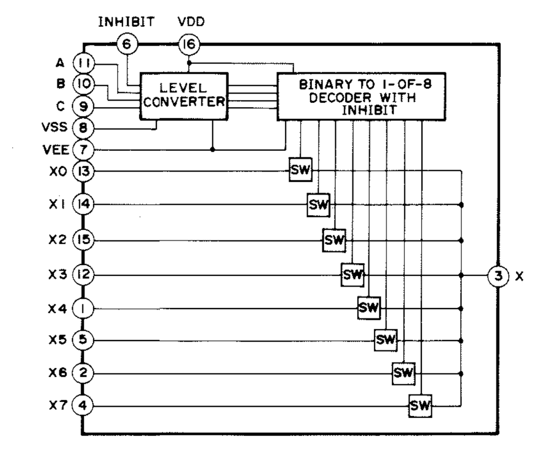
IC901~904 : µPC1225H
Power Amp



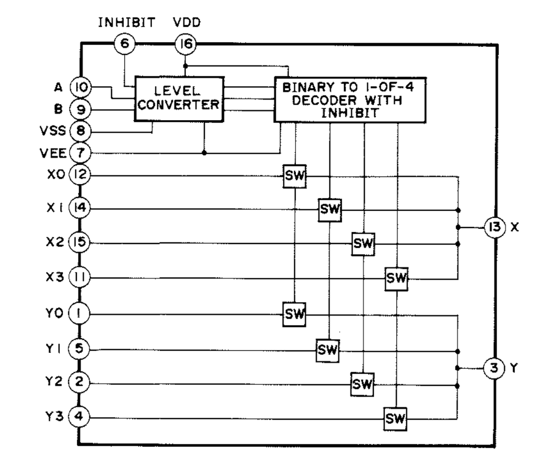
IC905~907 : MC14576A
IC914 : MC14577A
Dual Ope-amp



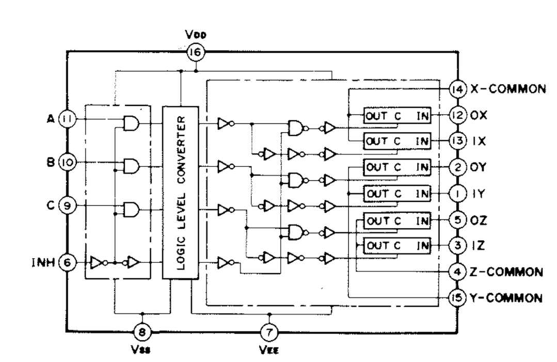
IC908, 909 : TC4051BP or µPD4051BP
Single 8-Channel Multiplexer/Demultiplexor



IC910 : TC4052BP or µPD4052BC
Differential 4-Channel Multiplexer/Demultiplexer



IC912, 913 : TC4053BP or µPD4053BC
Triple 2-Channel Multiplexer/Demultiplexer



CONTROL INPUTS				"ON" CHANNEL
INHIBIT (Pin 6)	C (Pin 9)	B (Pin 10)	A (Pin 11)	0X (Pin 12), 0Y (Pin 2), 0Z (Pin 5) 1X (Pin 13), 1Y (Pin 1), 1Z (Pin 3)
L	L	L	L	0X, 0Y, 0Z
L	L	L	H	1X, 0Y, 0Z
L	L	H	L	0X, 1Y, 0Z
L	L	H	H	1X, 1Y, 0Z
L	H	L	L	0X, 0Y, 1Z
L	H	L	H	1X, 0Y, 1Z
L	H	H	L	0X, 1Y, 1Z
L	H	H	H	1X, 1Y, 1Z
H	*	*	*	NOTE

* Don't Care

RESISTOR

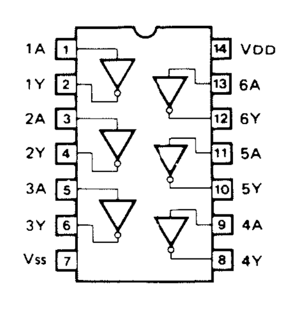
REMARKS	PARTS NAME
NO MARK	CARBON FILM RESISTOR (1/6W)
⧄	CARBON FILM RESISTOR (1/4W)
△	METAL OXIDE FILM RESISTOR
◬	METAL FILM RESISTOR
⊠	METAL PLATE RESISTOR
◪	FIRE PROOF CARBON FILM RESISTOR
☐	CEMENT MOLDED RESISTOR
⊘	SEMI VARIABLE RESISTOR
▤	CHIP RESISTOR

NOTICE
(J)····· Japanese model
(U)····· U.S.A model
(C)····· Canadian model
(A)····· Australian model
(G)····· European model
(B)····· British model
(R)····· General model
(P)····· RP model

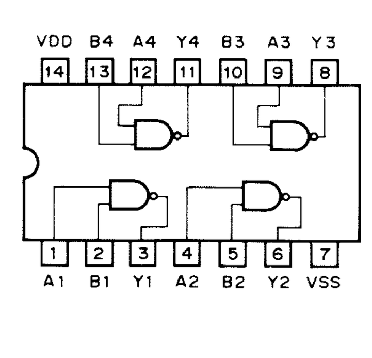
CAPACITOR

REMARKS	PARTS NAME	
NO MARK	ELECTROLYTIC CAPACITOR	
⊗	TANTALUM CAPACITOR	
NO MARK	CERAMIC CAPACITOR	
◉	AXIAL READ CERAMIC CAPACITOR	
◎	POLYESTEL FILM CAPACITOR	
○	POLYSTYRENE FILM CAPACITOR	
⦶	MICA CAPACITOR	
Ⓟ	POLYPROPYLENE FILM CAPACITOR	
⊜	SEMICONDUCTIVE CERAMIC CAPACITOR	

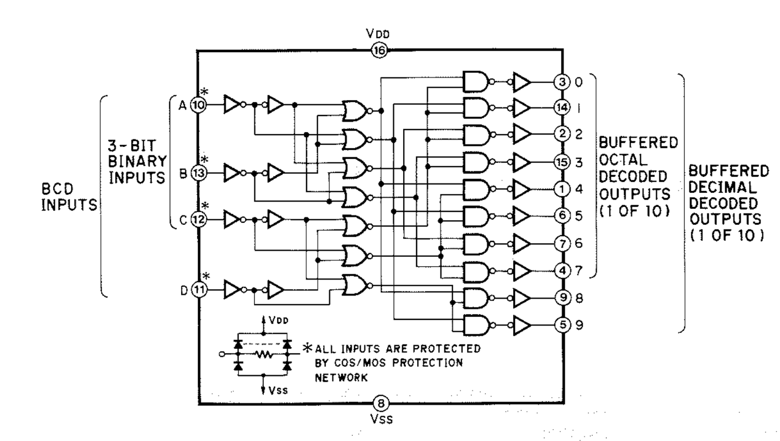
IC915 : µPD74HC04C or TC74HC04P
Hex Inverters



IC916 : µPD74HC00C
Quad 2 Input NAND



IC918 : TC4028BP, BU4028B or µPD4028B
BCD-to-Decimal Decoder

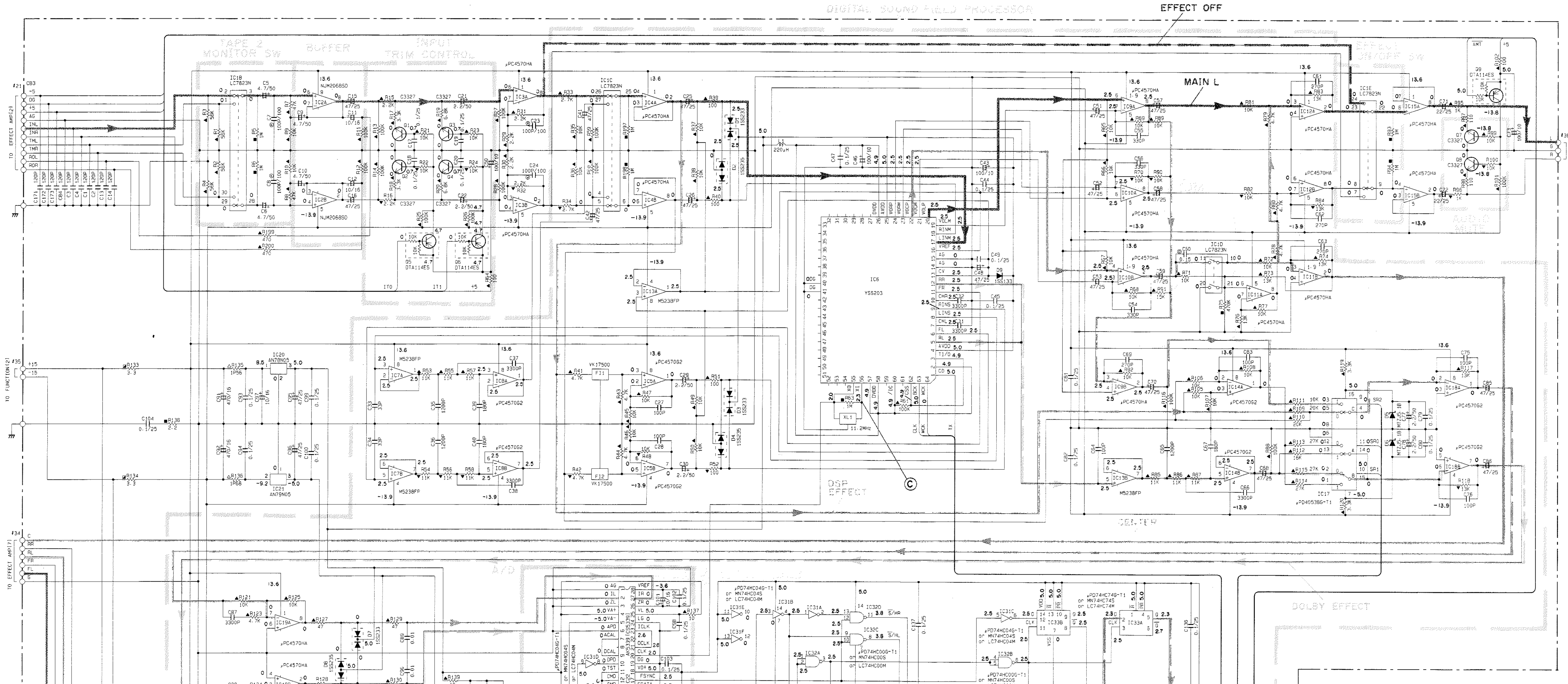
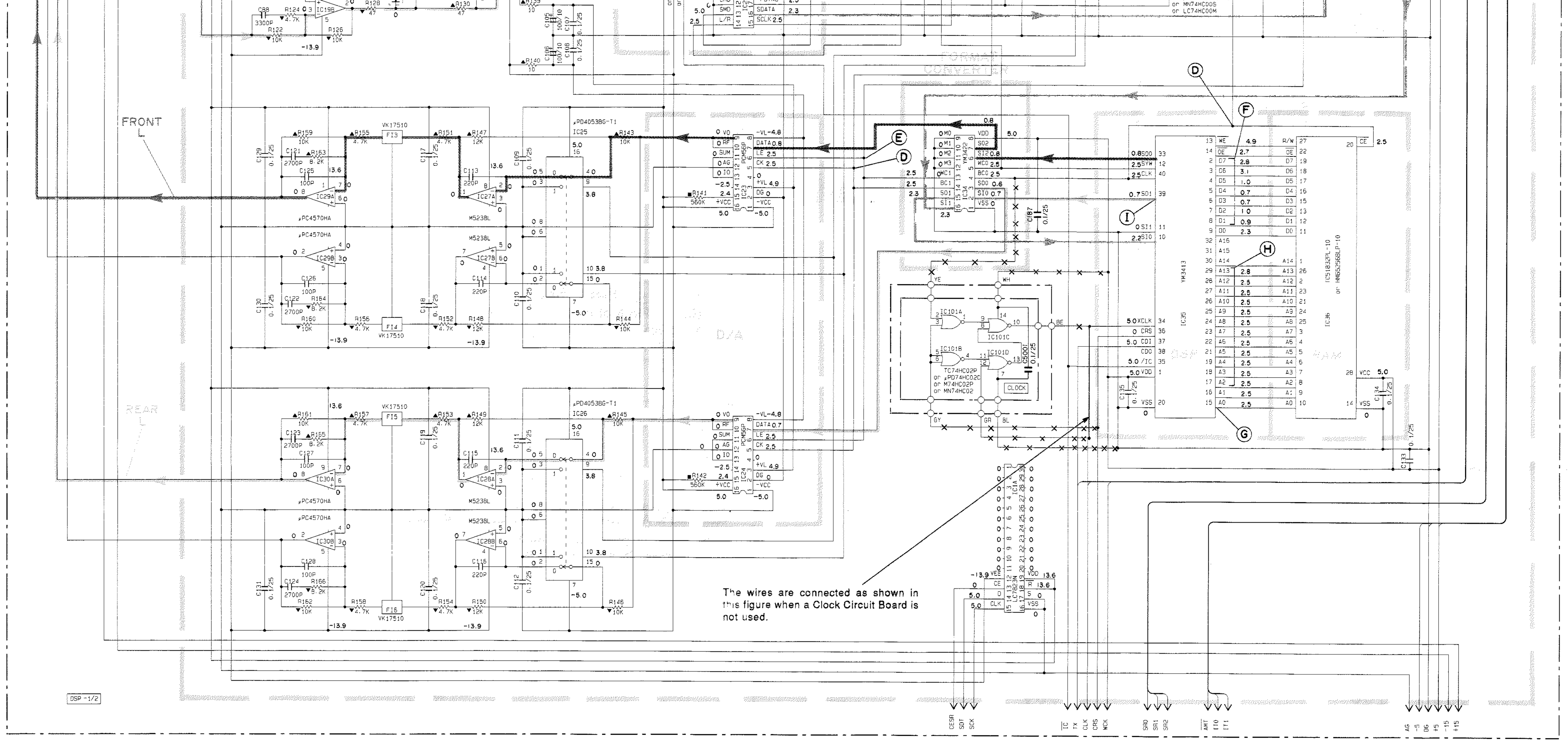


PIN CONNECTION DIAGRAM OF TRANSISTORS, DIODES AND ICS.

2SC535(A, B, C) 2SC1740S(R, S) 2SC2603(E, F) 2SC3311A(Q, R, S) 2SC2240(GR, BL) DTC144ES DTA114ES	2SC3852 2SA1726 2SC4512	NJM78M15FA AN78M15F	NJM79M15FA AN79M15F	1SS133 1SR139-100T32 MTZJ13A	MC14576A MC14577A	µPC1225H	µPD74HC04C TC74HC04P µPD74HC00C	TC4051BP µPD4051BC TC4028BP BU4028B µPD4028B TC4053BP µPD4053BC TC4052BP µPD4052BC	M50455-060SP

* All voltage are measured with a 10MΩ/V DC electric volt meter.
* Components having special characteristics are marked ⚠ and must be replaced with parts having specifications equal to those originally installed.
* Schematic diagram is subject to change without notice.

■ SCHEMATIC DIAGRAM (DSP)

RESISTOR

REMARKS	PARTS NAME
NO MARK	CARBON FILM RESISTOR (1/6W)
⊠	CARBON FILM RESISTOR (1/4W)
△	METAL OXIDE FILM RESISTOR
△	METAL FILM RESISTOR
⊠	METAL PLATE RESISTOR
◪	FIRE PROOF CARBON FILM RESISTOR
□	CEMENT MOLDED RESISTOR
⊘	SEMI VARIABLE RESISTOR
▤	CHIP RESISTOR

CAPACITOR

REMARKS	PARTS NAME
NO MARK	ELECTROLYTIC CAPACITOR
⊗	TANTALUM CAPACITOR
NO MARK	CERAMIC CAPACITOR
◉	AXIAL READ CERAMIC CAPACITOR
©	POLYESTEL FILM CAPACITOR
○	POLYSTYRENE FILM CAPACITOR
⦶	MICA CAPACITOR
Ⓟ	POLYPROPYLENE FILM CAPACITOR
⊜	SEMICONDUCTIVE CERAMIC CAPACITOR

NOTICE
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(A)····· Australian model
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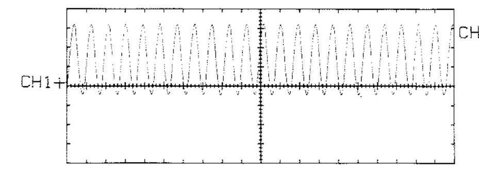
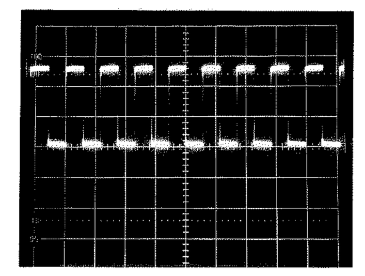
(B)····· British model
(R)····· General model
(P)····· RP model

Point Ⓒ : XI (Pin 56 of IC6) V : 2V/div H : 100nsec/div DC range 1 : 1 probe

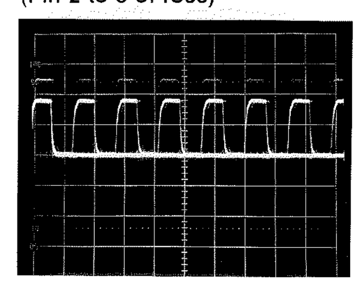


Point Ⓔ : LE (Pin 6 of IC23 and IC24)



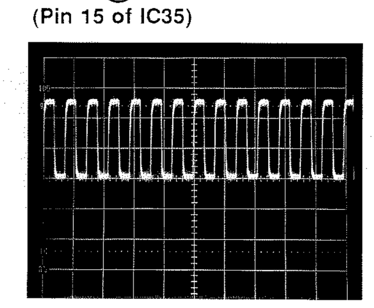
V : 2V/div H : 10μsec/div DC range 1 : 1 probe

Point Ⓕ : D7~D1 (Pin 2 to 8 of IC35)



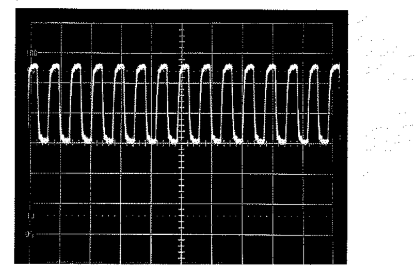
V : 2V/div H : 0.5μsec/div DC range 1 : 1 probe

Point Ⓖ : A0 (Pin 15 of IC35)



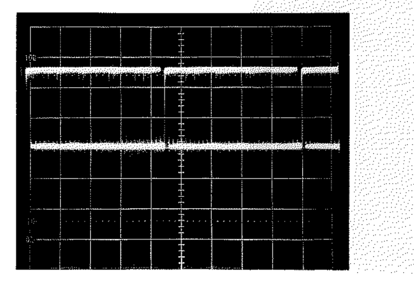
V : 2V/div H : 1μsec/div DC range 1 : 1 probe

Point Ⓓ : CLK (Pin 40 of IC35 and Pin 5 of IC23 and IC24)



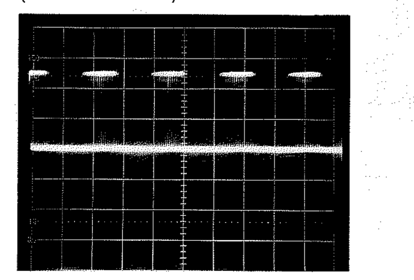
V : 2V/div H : 0.5μsec/div DC range 1 : 1 probe

Point Ⓗ : A2~A13 (Pin 17 to19, 21 to 29 of IC35)



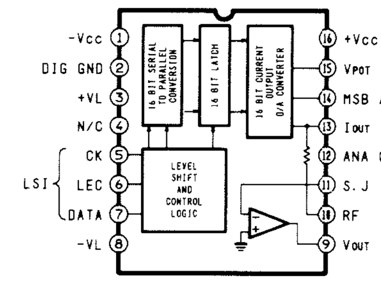
V : 2V/div H : 5μsec/div DC range 1 : 1 probe

Point Ⓘ : SDI (Pin 39 of IC35)

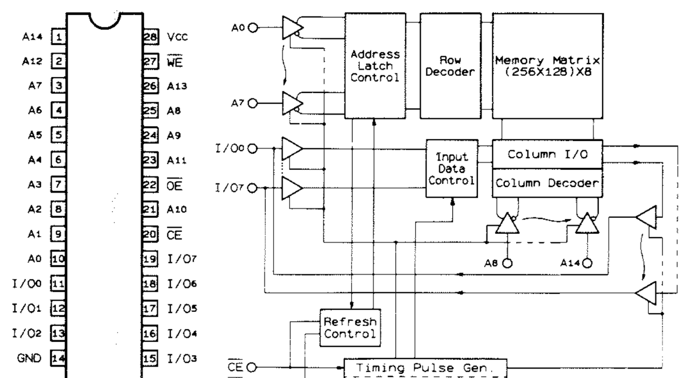


V : 2V/div H : 5μsec/div DC range 1 : 1 probe

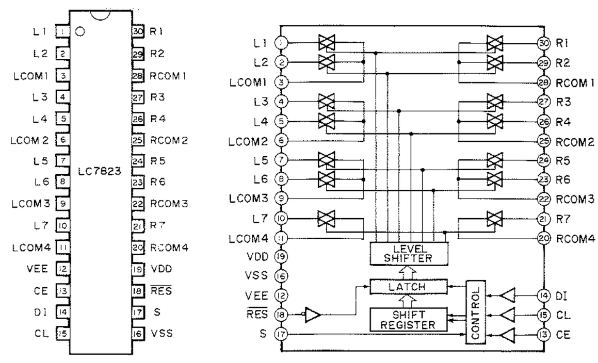
IC23, 24 : PCM56P
D/A Converter



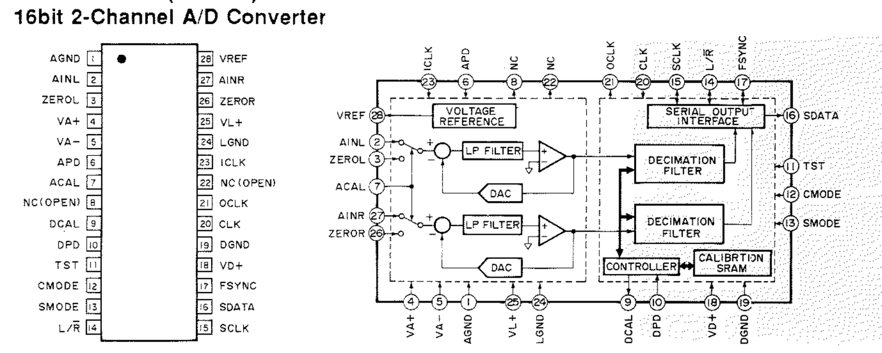
IC36 : TC51832PL-10 or HM65256BLP-10
32768-word x 8bit High Speed Pseudo Static RAM



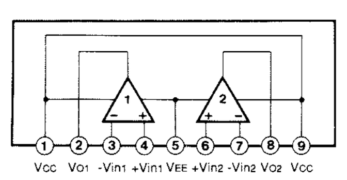
IC1 : LC7823N
Analog Function Switch



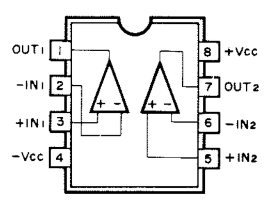
IC22 : AK5339 (CS5339)
16bit 2-Channel A/D Converter



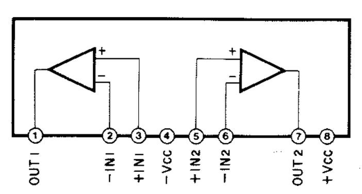
IC3, 4, 9~12, 15, 19, 29, 30 : μPC4570HA
IC2 : NJM2068SD
Dual Ope-amp



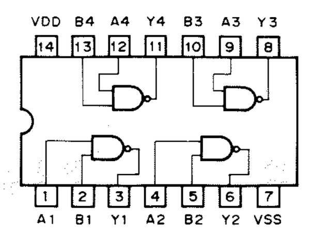
IC7, 13 : M5238FP
IC5, 8, 14, 18 : μPC4570G2
Dual ope-amp



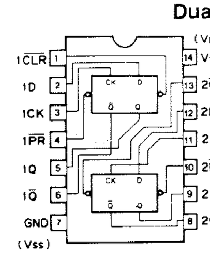
IC27, 28 : M5238L
Dual Ope-amp



IC32 : μPD74HC00G-TI, MN74HC00S or LC74HC00M
Quad 2-Input NAND



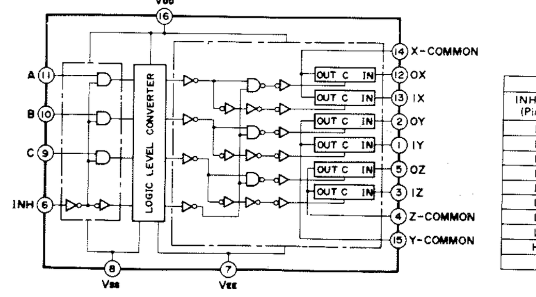
IC33 : μPD74HC74G-TI, MN74HC74S or LC74HC74M
Dual D-EFs with Preset and Clear



INPUTS				OUTPUTS	
PR	CLR	CLK	D	Q	Q̄
L	H	×	×	H	L
H	L	×	×	L	H
L	L	×	×	H*	H*
H	H	↑	H	H	L
H	H	↑	L	L	H
H	H	L	×	Q0	Q̄0

Note) 1. X : Either "H" or "L"
2. / : Rise in positive direction
3. Q0 : Q level before the input conditions in the table are established.
4. Q̄0 : Q̄ level before the input conditions in the table are established.
5. H* : When the preset and clear are "L", Q and Q̄ are "H" but when the preset and clear are made "H" simultaneously, the level of Q and Q̄ can not be predicted.

IC17, 25, 26 : μPD4053BG-TI
Triple 2-Channel Multiplexer/Demultiplexer

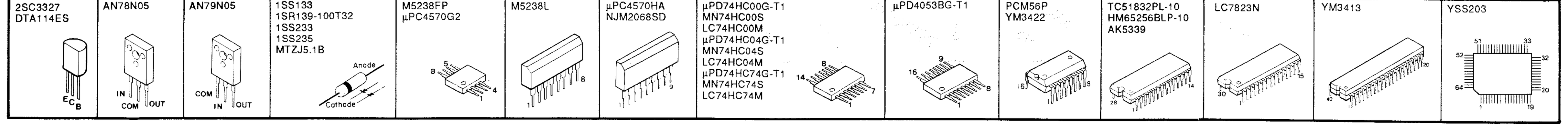


CONTROL INPUTS				"ON" CHANNEL
INHIBIT (Pin 6)	C (Pin 9)	B (Pin 10)	A (Pin 11)	0X (Pin 12), 0Y (Pin 2), 0Z (Pin 5) 1X (Pin 13), 1Y (Pin 1), 1Z (Pin 3)
L	L	L	L	0X, 0Y, 0Z
L	L	L	H	1X, 0Y, 0Z
L	L	H	L	0X, 1Y, 0Z
L	L	H	H	1X, 1Y, 0Z
L	H	L	L	0X, 0Y, 1Z
L	H	L	H	1X, 0Y, 1Z
L	H	H	L	0X, 1Y, 1Z
L	H	H	H	1X, 1Y, 1Z
H	*	*	*	NOTE

* Don't Care

PIN CONNECTION DIAGRAM OF TRANSISTORS, DIODES AND ICS.

2SC3327 DTA114ES	AN78N05	AN79N05	1SS133 1SR139-100T32 1SS233 1SS235 MTZJ5.1B	M5238FP μPC4570G2	M5238L	μPC4570HA NJM2068SD	μPD74HC00G-T1 MN74HC00S LC74HC00M μPD74HC04G-T1 MN74HC04S LC74HC04M μPD74HC74G-T1 MN74HC74S LC74HC74M	μPD4053BG-T1	PCM56P YM3422	TC51832PL-10 HM65256BLP-10 AK5339	LC7823N	YM3413	YSS203



* *All voltage are measured with a 10MΩ/V DC electric volt meter.*
* *Components having special characteristics are marked ⚠ and must be replaced with parts having specifications equal to those originally installed.*
* *Schematic diagram is subject to change without notice.*

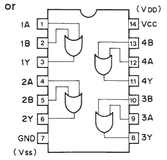
■ SCHEMATIC DIAGRAM (DSP)

CAPACITOR		
REMARKS	PARTS NAME	
NO MARK	ELECTROLYTIC CAPACITOR	⊟
⊗	TANTALUM CAPACITOR	
NO MARK	CERAMIC CAPACITOR	
◉	AXIAL LEAD CERAMIC CAPACITOR	
Ⓜ	POLYESTEL FILM CAPACITOR	
Ⓢ	POLYSTYRENE FILM CAPACITOR	⫴
Ⓜ	MICA CAPACITOR	
Ⓟ	POLYPROPYLENE FILM CAPACITOR	
Ⓒ	SEMICONDUCTIVE CERAMIC CAPACITOR	

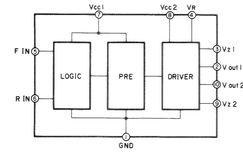
RESISTOR		
REMARKS	PARTS NAME	
NO MARK	CARBON FILM RESISTOR (1/6W)	
☑	CARBON FILM RESISTOR (1/4W)	
△	METAL OXIDE FILM RESISTOR	
△	METAL FILM RESISTOR	
☒	METAL PLATE RESISTOR	
▨	FIRE PROOF CARBON FILM RESISTOR	
□	CEMENT MOLDED RESISTOR	
⊘	SEMI VARIABLE RESISTOR	
■	CHIP RESISTOR	

NOTICE
(J)····· Japanese model
(U)····· U.S.A model
(C)····· Canadian model
(A)····· Australian model
(E)····· European model
(B)····· British model
(R)····· General model
(P)····· RP model

IC38 : LC74HC32M, MN74HC32S or μPD74HC32G-TI
Quad 2 Input OR



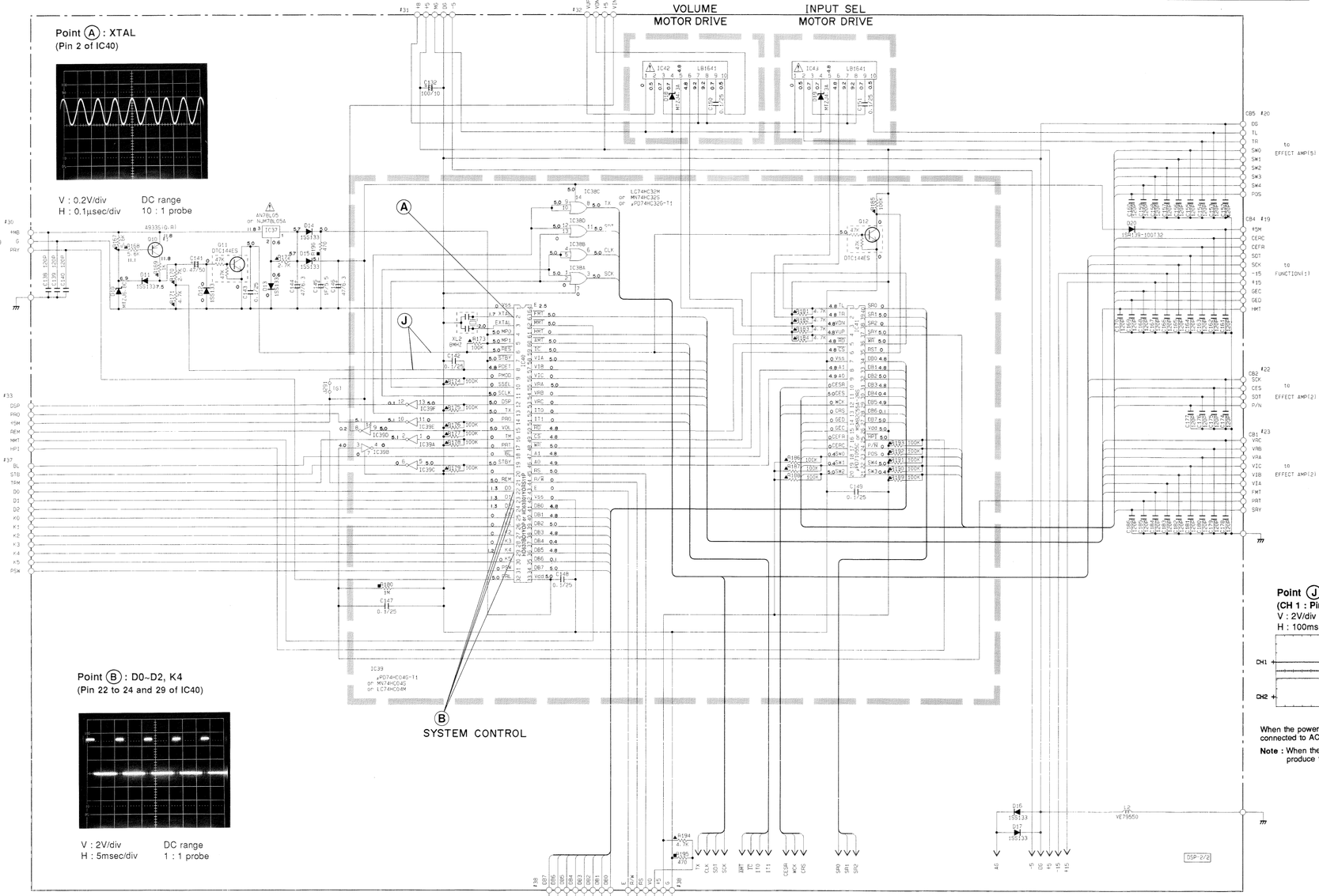
IC42, 43 : LB1641
Motor Driver



F IN	R IN	Vout1	Vout2
1	1	L	L
0	1	L	H
1	0	H	L
0	0	L	L

Point Ⓐ : XTAL
(Pin 2 of IC40)

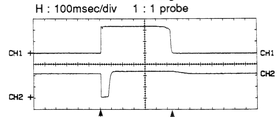
V : 0.2V/div DC range
H : 0.1μsec/div 10 : 1 probe



Point Ⓑ : D0~D2, K4
(Pin 22 to 24 and 29 of IC40)

V : 2V/div DC range
H : 5msec/div 1 : 1 probe

Point Ⓙ : PDET, $\overline{RES}$
(CH 1 : Pin 8 of IC40 CH 2 : Pin 6 of IC40)
V : 2V/div DC range
H : 100msec/div 1 : 1 probe



When the power cord is connected to AC outlet.
When the power cord is disconnected from AC outlet.

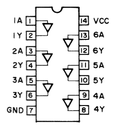
Note : When the power switch ON/OFF will produce the above waveform.

	LAST NO.
C	186
R	200
Q	12
D	20
IC	43

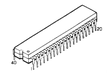
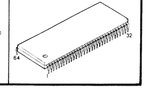
Interchangeable Parts at Manufacture-Stage

Mark	Reference Parts Number	Parts Name
‡1	Q10	2SA933S(Q,R) 2SA1115(E,F) 2SA1309A(Q,R,S)

IC31, 39 : μPD74HC04G-TI,
MN74HC04S or LC74HC04M
Hex Inverter

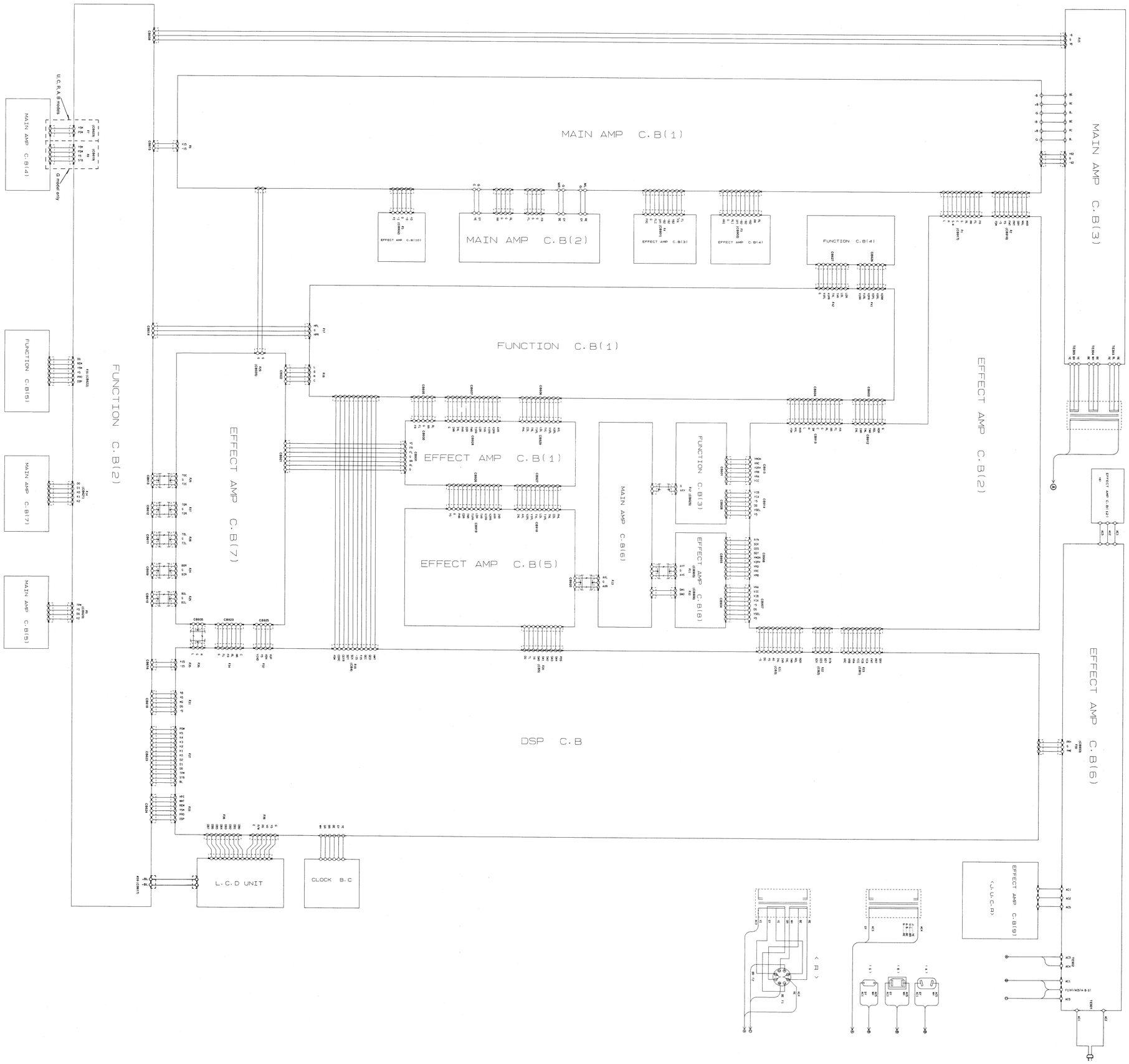


PIN CONNECTION DIAGRAM OF TRANSISTORS, DIODES AND ICS.

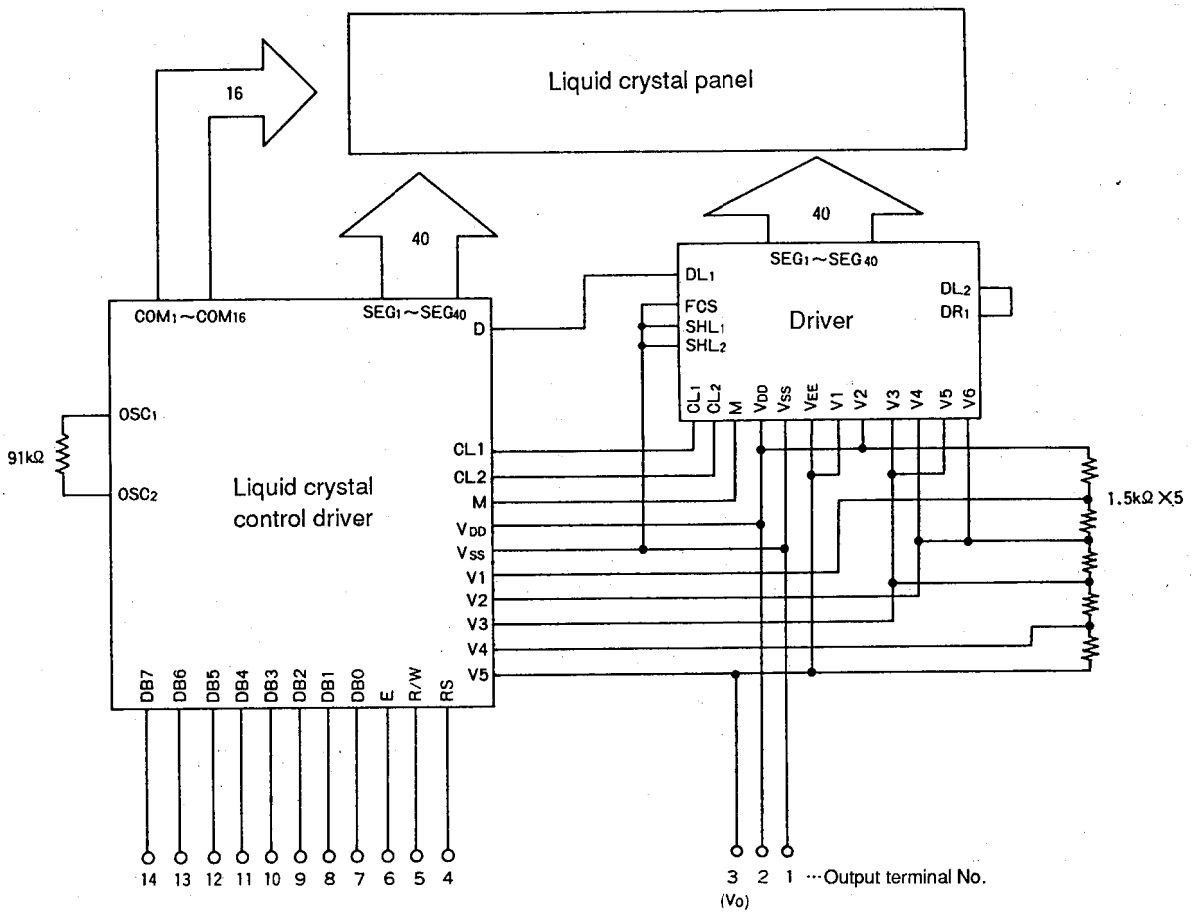
2SA933S(Q, R) 2SA1115(E, F) 2SA1309A(Q, R, S) DTC144ES	AN78L05 NJM78L05A	1SS133 MTZJ4.3A MTZJ6.8C	LB1641	μPD74HC04G-T1 MN74HC04S LC74HC04M LC74HC32M MN74HC32S μPD74HC32G-T1	μPD71055C MSM82C55A-2RS	HD63B01YORS11P HD637B01Y0P
						

* All voltage are measured with a 10MΩ/V DC electric volt meter.
* Components having special characteristics are marked ⚠ and must be replaced with parts having specifications equal to those originally installed.
* Schematic diagram is subject to change without notice.

■ INTERCONNECT WIRING DIAGRAM



■ LCD UNIT DATA (VK421500)



Pin No.	Pin Name	Function
1	VSS	(–) side power supply terminal, 0V
2	VDD	(+) side power supply terminal, +5V
3	VO	LCD drive voltage application terminal
4	RS	Input terminal , HI = Data, LOW = Instruction
5	R/W	Input terminal , HI = Read, LOW = Write
6	E	Input terminal , enable signal
7	DB0	Data bus line
8	DB1	
9	DB2	
10	DB3	
11	DB4	
12	DB5	
13	DB6	
14	DB7	

* The IC's used for the LCD unit are as follows.

iX607280(LC7930)

iX607290 (HD44780A00)

Any part other than IC can't be replaced individually. If replacement becomes necessary, be sure to replace as a whole unit.

PARTS LIST

■ ELECTRICAL PARTS

■ WARNING

Components having special characteristics are marked ⚠ and must be replaced with parts having specifications equal to those originally installed.

● Carbon resistors (1/6W or 1/4W) are not included in the ELECTRICAL PARTS List. For the parts No. of the carbon resistors, refer to P. 64.

Ref. NO.	PART NO.	Description		部品名	Remarks	Markets	ランク
※	VK214600	DSP CIRCUIT BOARD		DSPシート		JUCRAB	
※	VK214700	DSP CIRCUIT BOARD		DSPシート		G	
	FA155150	MYLAR FILM CAP	0.15uF 50V	マイラーコン	C60		
	UT452100	POLYPROPYLENE FILM CAP	100pF 100V	PPコン	C7,8,23,24		
※	Vi225600	CHIP MULTILAYER CERAMIC CAP	33pF 50V	チップ積層セラコン	C33,34		
	Vi226800	CHIP MULTILAYER CERAMIC CAP	100pF 50V	チップ積層セラコン	C27,28,64,75,76,83, 125-128		
	Vi227000	CHIP MULTILAYER CERAMIC CAP	120pF 50V	チップ積層セラコン	C1-4,13,14,84,138-140, 152-186		
※	Vi227400	CHIP MULTILAYER CERAMIC CAP	180pF 50V	チップ積層セラコン	C39,40,67		
	Vi227600	CHIP MULTILAYER CERAMIC CAP	220pF 50V	チップ積層セラコン	C113-116		
※	Vi227800	CHIP MULTILAYER CERAMIC CAP	270pF 50V	チップ積層セラコン	C61-63,69		
	Vi228000	CHIP MULTILAYER CERAMIC CAP	330pF 50V	チップ積層セラコン	C54-56		
	Vi229500	CHIP MULTILAYER CERAMIC CAP	1200pF 50V	チップ積層セラコン	C35,36,65		
	Vi230300	CHIP MULTILAYER CERAMIC CAP	2700pF 50V	チップ積層セラコン	C121-124		
	Vi230500	CHIP MULTILAYER CERAMIC CAP	3300pF 50V	チップ積層セラコン	C31,32,37,38,66,87,88		
	Vi231700	CHIP MULTILAYER CERAMIC CAP	0.01uF 50V	チップ積層セラコン	C89,90		
	VD409400	CHIP MULTILAYER CERAMIC CAP	0.1uF 25V	チップ積層セラコン	C17-20,44,45,47,49,93, 79-82,94,98-100,142, 102-104,107-112,143, 117-120,129-131,187, 133-137,147-151		
	Vi840900	ELECTROLYTIC CAP	47uF 6.3V	ケミコン	C144,146		
※	Vi841800	ELECTROLYTIC CAP	100uF 10V	ケミコン	C43,46,50,73,105,106, 132		
	Vi842200	ELECTROLYTIC CAP	10uF 16V	ケミコン	C11,12,97,101		
※	Vi842900	ELECTROLYTIC CAP	470uF 16V	ケミコン	C91,92		
※	Vi843200	ELECTROLYTIC CAP	22uF 25V	ケミコン	C71,72		
※	Vi843400	ELECTROLYTIC CAP	47uF 25V	ケミコン	C15,16,25,26,41,42,48, 51-53,57-59,68,70,85, 86,95,96		
※	Vi844800	ELECTROLYTIC CAP	0.47uF 50V	ケミコン	C141		
※	Vi845000	ELECTROLYTIC CAP	2.2uF 50V	ケミコン	C21,22,29,30,77,78		
※	Vi845200	ELECTROLYTIC CAP	4.7uF 50V	ケミコン	C5,6,9,10		
※	VK348300	ELECTROLYTIC CAP	1F 5.5V	ゴールドキャパシタ	C145		
	VB109600	COIL	220uH EL0606RA	固定コイル	L1		
	VE795500	FERRITE BEAD	B-01-RTF	フェライトビーズ	L2		
	RD253220	CHIP RESISTOR	2.2Ω 1/10W	チップ抵抗	R138		
	RD255470	CHIP RESISTOR	470Ω 1/10W	チップ抵抗	R196,195		
	RD258470	CHIP RESISTOR	470KΩ 1/8W	チップ抵抗	R75		
	RD258560	CHIP RESISTOR	560KΩ 0.1W	チップ抵抗	R141,142		
	RD259100	CHIP RESISTOR	1MΩ 1/10W	チップ抵抗	R63,93,94,180,197,198, 5,6		
※	Vi190100	CHIP METAL FILM RESISTOR	10Ω 1/16W	チップ金被抵抗	R137,139,140		
※	Vi191700	CHIP METAL FILM RESISTOR	47Ω 1/16W	チップ金被抵抗	R127-130		
※	Vi192500	CHIP METAL FILM RESISTOR	100Ω 1/16W	チップ金被抵抗	R39,40,51,52,64,102		
※	Vi192600	CHIP METAL FILM RESISTOR	110Ω 1/16W	チップ金被抵抗	R97,98		
※	Vi194100	CHIP METAL FILM RESISTOR	470Ω 1/16W	チップ金被抵抗	R199,200		
※	Vi194900	CHIP METAL FILM RESISTOR	1KΩ 1/16W	チップ金被抵抗	R95,96,169		
※	Vi195700	CHIP METAL FILM RESISTOR	2.2KΩ 1/16W	チップ金被抵抗	R15,16,29-32		

※New Parts (新規部品)

ランク : Japan only

	Ref. NO.	PART NO.	Description		部品名	Remarks	Markets	ランク	
*		Vi195900	CHIP METAL FILM RESISTOR	2.7KΩ 1/16W	チップ金被抵抗	R33,34,170,172			
		Vi196100	CHIP METAL FILM RESISTOR	3.3KΩ 1/16W	チップ金被抵抗	R17,18,119,120			
		Vi196600	CHIP METAL FILM RESISTOR	4.7KΩ 1/16W	チップ金被抵抗	R41-44,78-80,123,124, 151-158,171,181-184, 194			
*		Vi196800	CHIP METAL FILM RESISTOR	5.6KΩ 1/16W	チップ金被抵抗	R167,168			
*		Vi197000	CHIP METAL FILM RESISTOR	6.8KΩ 1/16W	チップ金被抵抗	R19,20			
*		Vi197200	CHIP METAL FILM RESISTOR	8.2KΩ 1/16W	チップ金被抵抗	R163-166			
		Vi197400	CHIP METAL FILM RESISTOR	10KΩ 1/16W	チップ金被抵抗	R9,10,21-24,35-38,77, 45-50,65-72,81,82,92, 99,100,105-108,111,121 122,125,126,143-146, 159-162,89,90			
*		Vi197500	CHIP METAL FILM RESISTOR	11KΩ 1/16W	チップ金被抵抗	R53-58,85-87			
*		Vi197600	CHIP METAL FILM RESISTOR	12KΩ 1/16W	チップ金被抵抗	R147-150			
*		Vi197700	CHIP METAL FILM RESISTOR	13KΩ 1/16W	チップ金被抵抗	R73,74,76,83,84,117, 118			
*		Vi197800	CHIP METAL FILM RESISTOR	15KΩ 1/16W	チップ金被抵抗	R91			
*		Vi197900	CHIP METAL FILM RESISTOR	16KΩ 1/16W	チップ金被抵抗	R112			
*		Vi198100	CHIP METAL FILM RESISTOR	20KΩ 1/16W	チップ金被抵抗	R109,110			
*		Vi198400	CHIP METAL FILM RESISTOR	27KΩ 1/16W	チップ金被抵抗	R114,115,113			
*		Vi199000	CHIP METAL FILM RESISTOR	47KΩ 1/16W	チップ金被抵抗	R7,8			
*		Vi199200	CHIP METAL FILM RESISTOR	56KΩ 1/16W	チップ金被抵抗	R1-4			
*		Vi200000	CHIP METAL FILM RESISTOR	100KΩ 1/16W	チップ金被抵抗	R11-14,25-28,59-61,88, 101,116,173-179, 185-193			
		HV453330	FLAME PROOF CARBON RESISTOR	3.3Ω 1/4W	不燃化カーボン抵抗	R133,134			
		HL314560	METAL OXIDE RESISTOR	56Ω 1W	酸化金属被膜抵抗	R135			⚠
		HL314680	METAL OXIDE RESISTOR	68Ω 1W	酸化金属被膜抵抗	R136			⚠
		XB247A00	IC	uPC4570HA	IC	IC3,4,9-12,15,19,29,30			
		XB248001	IC	M5238L	IC	IC27,28			
		XB496001	IC	M5238FP	IC	IC7,13			
		XE322001	IC	NJM2068S-D	IC	IC2			
		XF291A00	IC	uPC4570G2	IC	IC5,8,14,18			
		XF494A00	IC	LB1641	IC	IC42,43			⚠
		iG157200	IC	AN78L05	IC	IC37			⚠
		XA507A00	IC	AN78N05	IC	IC20			⚠
		XG780A00	IC	AN79N05	IC	IC21			⚠
		XG758A00	IC	LC7823N	IC	IC1			
		XB736001	IC	UPD4053BG	IC	IC17,25,26			
		XE520A00	IC	uPD74HC00G-T1	IC	IC32			
*		XE819A00	IC	uPD74HC04G-T1	IC	IC31,39			
		XE822001	IC	MN74HC74S-T1	IC	IC33			
*		Xi466A00	IC	UPD74HC32G	IC	IC38			
		XB361001	IC	UPD71055C	IC	IC41			
*		Xi468B00	IC	HD63B01Y	IC	IC40			
		XG874A00	IC	HM65256BLP-10	IC	IC36			
*		XB637A00	IC	PCM56P	IC	IC23,24			
*		Xi112A00	IC	AK5339	IC	IC22			
		XE449A00	IC	YM3413	IC	IC35			

※New Parts（新規部品）

ランク：Japan only

Ref. NO.	PART NO.	Description		部品名	Remarks	Markets	ランク
	XE862001	IC	YM3422	IC	IC34		
*	Xi022A00	IC	YSS203(HLDSP)	IC	IC6		
	VB858300	BASE PIN	PH 4P SE	コネクタベースポスト	CB2		
	VB858800	BASE PIN	PH L-TYPE 9P SE	ベースピン	CB1,5		
	VB858900	BASE PIN	PH L-TYPE 10P SE	ベースピン	CB3,4		
*	VK175000	FILTER,L. PASS	TFB-2D 18KHZ	LCフィルター	EI1,2		
*	VK175100	LC FILTER	PFB-2 2ﾚﾝ 10ｶｹ	LCフィルター	FI3-6		
	VB657100	CERAMIC RESONATOR	8MHz	セラミック振動子	XL2		
*	VK175200	CERAMIC RESONATOR	11.28MHz	セラミック振動子	XL1		
	iA093320	TRANSISTOR	2SA933S Q,R	トランジスタ	Q10		
*	iC332720	TRANSISTOR	2SC3327	トランジスタ	Q1-4,7,8		
	VD678500	DIGITAL TRANSISTOR	DTA114ES	デジタルトランジスタ	Q5,6,9		
	VG722000	DIGITAL TRANSISTOR	DTC144ES	デジタルトランジスタ	Q11,12		
	iF004600	DIODE	1SS133 T-77	ダイオード	D9,11-17		
	VH770800	DIODE	1SR139-100 T-32	ダイオード	D20		
	VD450400	DIODE ARRAY	1SS233	ダイオードアレイ	D1,3,7		
	VD450500	DIODE ARRAY	1SS235	ダイオードアレイ	D2,4,8		
	VG436700	ZENER DIODE	MTZJ4.3A	ツェナーダイオード	D18,19		
	VG437400	ZENER DIODE	MTZJ5.1B	ツェナーダイオード	D5,6		
	VG438400	ZENER DIODE	MTZJ6.8C	ツェナーダイオード	D10		
	RD250000	CHIP JUMPER	0Ω 1/10W	チップ抵抗	J1-10		
	BB071360	TERMINAL,SCREW	8.3x13	ネジ端子			
	BB069510	GROUND METAL		ランド金具			
*	VJ893200	SHIELD CASE		シールドケース			
	CB605620	PLASTIC RIVET	NO.1057	プラリベット			
	EX600700	BW HEAD TAPPING SCREW	3x8 FCM3	BWヘッドタッピングネジ			
*	VL000300	CLOCK CIRCUIT BOARD		クロックシート			
	iR000280	IC	M74HC02P	IC			
	VD499400	CHIP CERAMIC CAP	0.1uF 50V	チップセラコン	C5001		
*	VK214000	EFFECT CIRCUIT BOARD		エフェクトシート		U,C	
*	VK214200	EFFECT CIRCUIT BOARD		エフェクトシート		A,B	
*	VK213900	EFFECT CIRCUIT BOARD		エフェクトシート		J	
*	VK214100	EFFECT CIRCUIT BOARD		エフェクトシート		R	
*	VK214300	EFFECT CIRCUIT BOARD		エフェクトシート		G	
	FA154330	MYLAR FILM CAP	0.33uF 50V	マイラーコン	C917-920		
	UT452100	POLYPROPYLENE FILM CAP	100pF 100V	PPコン	C905-908		
*	Fi551470	CERAMIC CAP	47pF 50V	セラコン	C913-916		
*	Fi551180	CERAMIC CAP	18pF 50V	セラコン	C921-924		
*	Fi553100	CERAMIC CAP	1000pF 50V	セラコン	C1065		
	Fi554100	CERAMIC CAP	0.01uF 50V	セラコン	C1061,1062		
	VF466600	CERAMIC CAP	10pF 50V	円筒セラコン	C953,956,974		
	VG276600	CERAMIC CAP	22pF 50V	円筒セラコン	C967,968		
	VG276800	CERAMIC CAP	27pF 50V	円筒セラコン	C970,971		
	VF466800	CERAMIC CAP	100pF 50V	円筒型セラコン	C931-934,949,950,959		
	VF466900	CERAMIC CAP	470pF 50V	円筒型セラコン	C957		
	VF467000	CERAMIC CAP	1000pF 50V	円筒セラコン	C954,964,965		
	VF467300	CERAMIC CAP	0.01uF 16V	円筒セラコン	C981		
	VJ599100	CERAMIC CAP	0.1uF 50V	円筒型セラコン	C958,961,963,972		
*	Vi841400	ELECTROLYTIC CAP	1000uF 6.3V	ケミコン	C936,940,944		
*	Vi841700	ELECTROLYTIC CAP	47uF 10V	ケミコン	C947,948,960,962,966		

※New Parts (新規部品)　　ランク：Japan only

Ref. NO.	PART NO.	Description		部品名	Remarks	Markets	ランク	
*	VH619500	ELECTROLYTIC CAP	47uF 10V	ケミコン	C909-912			
*	Vi843100	ELECTROLYTIC CAP	10uF 25V	ケミコン	C935,937-939,941-943, 945,946,973,975,976, 991-995,951			
	Vi844900	ELECTROLYTIC CAP	1uF 50V	ケミコン	C952,955			
*	VH621800	ELECTROLYTIC CAP	2.2uF 50V	ケミコン	C901-904			
*	Vi845200	ELECTROLYTIC CAP	4.7uF 50V	ケミコン	C969			
*	VH622100	ELECTROLYTIC CAP	10uF 50V	ケミコン	C999,100			
*	Vi846200	ELECTROLYTIC CAP	47uF 63V	ケミコン	C1064	R		
*	VK181000	ELECTROLYTIC CAP	1000uF 25V	ケミコン	C1063			
	UK166100	ELECTROLYTIC CAP	1uF 50V	BPケミコン	C996,997			
	VD930900	SEMI-CONDUCTIVE CAP	0.1uF 25V	半導体セラコン	C998			
	Fi514100	CERAMIC CAP	0.01uF VA-1	スパークキラーコン	C1051			⚠
*	Xi480A00	POWER TRANSFORMER		電源トランス	T901	J		⚠
*	Xi481A00	POWER TRANSFORMER		電源トランス	T901	U,C		⚠
*	Xi790A00	POWER TRANSFORMER		電源トランス	T901	R		⚠
*	Xi482A00	POWER TRANSFORMER		電源トランス	T901	A,B		⚠
*	Xi483A00	POWER TRANSFORMER		電源トランス	T901	G		⚠
	VB115600	COIL	15uH EL0606RA	固定コイル	L901			
	HV453100	FLAME PROOF CARBON RESISTOR	1Ω 1/4W	不燃化カーボン抵抗	R1043,1044			
	HV456100	FLAME PROOF CARBON RESISTOR	1KΩ 1/4W	不燃化カーボン抵抗	R937-940			⚠
	HV456270	FLAME PROOF CARBON RESISTOR	2.7KΩ 1/4W	不燃化カーボン抵抗	R933-936			⚠
	HV456560	FLAME PROOF CARBON RESISTOR	5.6KΩ 1/4W	不燃化カーボン抵抗	R1062,1063	R		
*	VK189100	FUSABLE RESISTOR	1.2KΩ 1/4W	ヒューズ抵抗	R917-920			⚠
*	VK189400	FUSABLE RESISTOR	2.7KΩ 1/4W	ヒューズ抵抗	R921-924			⚠
	HL312220	METAL OXIDE RESISTOR	0.22Ω 1W	酸化金属被膜抵抗	R925-932			⚠
*	Vi513100	METAL FILM RESISTOR	33KΩ 1/4W	金属被膜抵抗	R913-916			
*	Xi109A00	IC	MC14576A	IC	IC905-907			
*	Xi110A00	IC	MC14577A	IC	IC914			
	iG067100	IC	uPC1225H	IC	IC901-904			⚠
	XE584A00	IC	NJM78M15FA	IC	IC921			
	XG505A00	IC	NJM79M15FA	IC	IC922			
	iG001770	IC	TC4051BP	IC	IC908,909			
	iG148700	IC	BU4028B	IC	IC918			
	iG055100	IC	TC4053BP	IC	IC912,913			
	iR000400	IC	TC74HC04P	IC	IC915			
	iR000020	IC	UPD74HC00C	IC	IC916			
	XD132001	IC	M50455-060SP	IC	IC917			
	XA053A00	IC	TC4052BP	IC	IC910			
	KA401690	SLIDE SWITCH	SSJ312	スライドSW	SW902	R		
*	VK176800	ROTARY SWITCH		ロータリーSW	SW901			
	KB001490	FUSE	10A 250V	ヒューズ	F901	J,R		⚠
	VD370900	FUSE	10A 250V	ヒューズ	F901	U,C		⚠
	KB000790	FUSE	T4A 250V	ヒューズ	F901	A,B,G		⚠
*	VD213900	FUSE	5A 250V	ヒューズ	F902	R		⚠
	KB003080	FUSE	T2.5A 250V	ヒューズ	F902	G		⚠
*	VJ784400	RELAY	DC G4W-1112P-US-TV	リレー 12V	RY901			⚠
	LA003870	LAPPING TERMINAL	2P L-102NE	ラッピング端子	TE901			
	LA002140	LAPPING TERMINAL	2P i-TYPE P=10	ラッピング端子	TE902	J,U,C		
	LA002150	LAPPING TERMINAL	3P I-103NA	ラッピング端子	TE902	R		

※New Parts (新規部品)

ランク : Japan only

Ref. NO.	PART NO.	Description		部品名	Remarks	Markets	ランク
	LA002140	LAPPING TERMINAL	2P i-TYPE P=10	ラッピング端子	TE905	A,B,G	
	LA002110	LAPPING TERMINAL	2P i-TYPE	ラッピング端子	TE904	R	
	LA002000	LAPPING TERMINAL	2P i-TYPE P=7.5	ラッピング端子	TE906	A,B,G	
	LB608160	AC OUTLET	3P	電源コネクター	JK904	J,U,C,R	⚠
	VH842600	S CONNECTOR		2連 Sコネクター	VJ902		
※	VJ784800	S CONNECTOR		3連 Sコネクター	JK903		
	Vi234500	DIN CONNECTOR		2連DNコネクター	JK901		
	LB918020	BASE PIN	XH i-TYPE 2P TE	ベースツキポスト	CB935		
	LB918090	BASE PIN	XH 9P TE	ベースツキポスト	CB901,902		
※	Vi378600	MQ CONNECTOR	8P	MQコネクタソケット	CB904		
※	Vi378700	MQ CONNECTOR	9P	MQコネクタソケット	CB903		
	VA252300	MQ CONNECTOR	5P	MQコネクタ	CB930		
※	Vi377600	MQ BASE PIN	6P	MQ ベースピン	CB914,915		
※	VB994800	MQ CONNECTOR	B07P-MQ	MQコネクタ	CB912		
※	Vi377800	MQ BASE PIN	8P	MQ ベースピン	CB907		
※	VB994900	MQ CONNECTOR	B09P-MQ	MQコネクタ	CB929,908		
	VA252400	MQ CONNECTOR	12P	MQコネクタ	CB913,928		
※	VK216200	FJ-L PLUG	7P	FJ-L プラグ	CB921		
※	VK216500	FJ-L PLUG	10P	FJ-L プラグ	CB918		
※	VK216700	FJ-L PLUG	12P	FJ-L プラグ	CB919		
※	VK217000	FJ-RECEPTACLE	7P	FJ-リセプタクル	CB931		
※	VK217300	FL-RECEPTACLE	10P	FJ-リセプタクル	CB927		
※	VK217500	FJ-RECEPTACLE	12P	FJ-リセプタクル	CB926		
	VB858100	BASE POST	PH 2P SE	コネクタベースポスト	CB906		
	VB858200	BASE PIN	3P	ベースピン	CB920,905		
	VB858200	BASE PIN	3P	ベースピン	CB934	R	
	VB858400	BASE PIN	PH L-TYPE 5P SE	ベースピン	CB932		
	VB858700	BASE PIN	PH 8P SE	ベースピン	CB916		
	VB858800	BASE PIN	PH L-TYPE 9P SE	ベースピン	CB917		
	VD004600	BASE PIN	PH 3P TE	ベースピン	CB924,933		
	VD004700	BASE PIN	PH 4P TE	ベースピン	CB922,925		
	VD004900	BASE PIN	PH 6P TE	ベースピン	CB923		
	VD980900	CRYSTAL RESONATOR	14.3181MHz	水晶振動子	XL901	J,U,C,R	
	VF066800	CRYSTAL RESONATOR	17.7344MHz	水晶振動子	XL901	A,B,G	
※	VJ808500	PRE-SET POTENTIOMETER	B1K	半固定VR	VR901-904		
※	VJ781500	POTENTIOMETER WITH MOTOR	100KYx7	7連モーターVR	VR905		
	iC053540	TRANSISTOR	2SC535 A,B,C	トランジスタ	Q921,922		
	iC174020	TRANSISTOR	2SC1740S R,S	トランジスタ	Q923,924,932,926		
	iC224000	TRANSISTOR	2SC2240 GR,BL	トランジスタ	Q901-904		
	iC224030	TRANSISTOR	2SC2240 GR,BL	トランジスタ	Q913-916		
	VC938500	TRANSISTOR	2SC3852	トランジスタ	Q933	R	
※	iX619590	TRANSISTOR	2SA1726 O,P,Y	トランジスタ	Q909-912		⚠
※	iX619600	TRANSISTOR	2SC4512 O,P,Y	トランジスタ	Q905-908		⚠
	VG722000	DIGITAL TRANSISTOR	DTC144ES	デジタルトランジスタ	Q931		
	VD678500	DIGITAL TRANSISTOR	DTA114ES	デジタルトランジスタ	Q925		
	iF004600	DIODE	1SS133 T-77	ダイオード	D901,902,906-910,921, 931-945,911,912-917		
	VH770800	DIODE	1SR139-100 T-32	ダイオード	D922		⚠
	VG440400	ZENER DIODE	MTZJ13A	ツェナーダイオード	D924	R	
	LB201880	FUSE HOLDER PIN	PC-FH1	ヒューズホルダピン			

※New Parts (新規部品)　　ランク : Japan only

Ref. NO.	PART NO.	Description		部品名	Remarks	Markets	ランク
	BB069510	GROUND METAL		ランド金具			
	BB071360	TERMINAL,SCREW	8.3x13	ネジ端子			
※	VK213700	FUNCTION CIRCUIT BOARD		ファンクションシート		U,C,R,A,B	
※	VK213600	FUNCTION CIRCUIT BOARD		ファンクションシート		J	
※	VK213800	FUNCTION CIRCUIT BOARD		ファンクションシート		G	
	UA652820	MYLAR FILM CAP	820pF 50V	マイラーコン	C682		
	FA153100	MYLAR FILM CAP	1000pF 50V	マイラーコン	C615,616	G	
	FA153270	MYLAR FILM CAP	2700pF 50V	マイラーコン	C680		
	FA154100	MYLAR FILM CAP	0.01uF 50V	マイラーコン	C678,683		
	FA154120	MYLAR FILM CAP	0.012uF 50V	マイラーコン	C688		
	FA154110	MYLAR FILM CAP	0.011uF 50V	マイラーコン	C611,612		
	FA154180	MYLAR FILM CAP	0.018uF 50V	マイラーコン	C686		
	FA154200	MYLAR FILM CAP	0.02uF 50V	マイラーコン	C687		
	FA154220	MYLAR FILM CAP	0.022uF 50V	マイラーコン	C711,712,723		
	FA154330	MYLAR FILM CAP	0.033uF 50V	マイラーコン	C676,681		
	FA154390	MYLAR FILM CAP	0.039uF 50V	マイラーコン	C609,610		
	FA154680	MYLAR FILM CAP	0.068uF 50V	マイラーコン	C697-700		
	FA155100	MYLAR FILM CAP	0.1uF 50V	マイラーコン	C709,710,722		
	UT452100	POLYPROPYLENE FILM CAP	100pF 100V	ＰＰコン	C601,602		
	UT452180	POLYPROPYLENE FILM CAP	180pF 100V	ＰＰコン	C684		
	UT452220	POLYPROPYLENE FILM CAP	220pF 100V	ＰＰコン	C603,604		
	UT452470	POLYPROPYLENE FILM CAP	470pF 100V	ＰＰコン	C751-762,771-782		
※	Fi551100	CERAMIC CAP	10pF 50V	セラコン	C645,646,659,660,689		
※	Fi551470	CERAMIC CAP	47pF 50V	セラコン	C635,636		
※	Fi552100	CERAMIC CAP	100pF 50V	セラコン	C629,630		
	FG212220	CERAMIC CAP	220pF 50V	セラコン	C631,632		
※	Fi553100	CERAMIC CAP	1000pF 50V	セラコン	C730,731		
	FG244100	CERAMIC CAP	0.01uF 50V	セラコン	C732,733		
	VD930900	SEMI-CONDUCTIVE CAP	0.1uF 25V	半導体セラコン	C784		
	VF466800	CERAMIC CAP	100pF 50V	円筒型セラコン	C735-737		
	VJ599100	CERAMIC CAP	0.1uF 50V	円筒型セラコン	C783,785		
	VH620200	ELECTROLYTIC CAP	47uF 16V	ケミコン	C726,727		
	Vi840900	ELECTROLYTIC CAP	47uF 6.3V	ケミコン	C643,644,657,658,743, 744		
	Vi841100	ELECTROLYTIC CAP	220uF 6.3V	ケミコン	C607,608		
※	Vi841300	ELECTROLYTIC CAP	470uF 6.3V	ケミコン	C725		
※	Vi841400	ELECTROLYTIC CAP	1000uF 6.3V	ケミコン	C739,741,742		
※	Vi841700	ELECTROLYTIC CAP	47uF 10V	ケミコン	C633,634,728,729		
	Vi842300	ELECTROLYTIC CAP	22uF 16V	ケミコン	C707,708,721		
	Vi842500	ELECTROLYTIC CAP	47uF 16V	ケミコン	C963-696,669		
※	Vi842600	ELECTROLYTIC CAP	100uF 16V	ケミコン	C617,618		
※	Vi842900	ELECTROLYTIC CAP	470uF 16V	ケミコン	C637,638		
※	Vi843000	ELECTROLYTIC CAP	4.7uF 25V	ケミコン	C703,704,719		
※	Vi843100	ELECTROLYTIC CAP	10uF 25V	ケミコン	C613,614,621,622,647, 625-628,648,651,652, 661,662,665,666,670, 672,674,690,692,724, 713-716,738,740		

※New Parts（新規部品）

ランク：Japan only

	Ref. NO.	PART NO.	Description		部品名	Remarks	Markets	ランク	
※		Vi843200	ELECTROLYTIC CAP	22uF 25V	ケミコン	C745,746			
		Vi844500	ELECTROLYTIC CAP	0.1uF 50V	ケミコン	C649,650,653,654,663, 664,667,668,671,673, 679,691			
※		Vi844700	ELECTROLYTIC CAP	0.33uF 50V	ケミコン	C677			
		Vi844900	ELECTROLYTIC CAP	1uF 50V	ケミコン	C605,606,639,641,642, 655,656,675			
※		Vi845000	ELECTROLYTIC CAP	2.2uF 50V	ケミコン	C701,702,718			
※		FU451100	MICA CAP	10pF 500V	マイカコン	C623,624,750			
※		FU451330	MICA CAP	33pF 500V	マイカコン	C685			
		FU351220	MICA CAP	22pF 500V	マイカコン	C705,706,720			
※		FU451470	MICA CAP	47pF 500V	マイカコン	C747-749			
		VA983600	COIL	220uH ELF0505SKI	コイル	L601,602	G		
		HV455100	FLAME PROOF CARBON RESISTOR	100Ω 1/4W	不燃化カーボン抵抗	R637,638,780,781			
		HV455220	FLAME PROOF CARBON RESISTOR	220Ω 1/4W	不燃化カーボン抵抗	R667,668			
		HL324820	METAL OXIDE RESISTOR	82Ω 2W	酸化金属被膜抵抗	R778,784			⚠
※		VK174500	RESISTOR ARRAY	RYLS7J104	抵抗アレイ	R779			
※		VK228700	RESISTOR ARRAY	RYLS9J474	抵抗アレイ	R633,634			
		iG077400	IC	NJM4556S	ＩＣ	IC604			
		XB247A00	IC	uPC4570HA	ＩＣ	IC601,603,607,608,615, 611-613,616,619,621			
		XE322001	IC	NJM2068S-D	ＩＣ	IC605,609,620			
		XF971A00	IC	uPC4574C	ＩＣ	IC618			
		XE536001	IC	LC7535	ＩＣ	IC606,610,614			
		XG732A00	IC	LC7821N	ＩＣ	IC602			
※		Xi109A00	IC	MC14576A	ＩＣ	IC626			
※		Xi113A00	IC	LC7522	ＩＣ	IC617			
		XF740A00	IC	NJM78M05FA	ＩＣ	IC622			⚠
		XE436A00	IC	NJM79M05FA	ＩＣ	IC623			⚠
		iG001770	IC	TC4051BP	ＩＣ	IC624,625			
		VF926500	LIGHT DETECTING MODULE	GP1U501X	リモコン受光ユニット	U601			
※		VJ787200	ROTARY SWITCH	SRBU16032A 1/6S	ロータリーＳＷ	SW601			
		KA805170	PUSH SWITCH	SUN4-2NS	プッシュＳＷ	SW602			
※		VK177200	PIN JACK	3P	ピンジャック	PJ605	J		
※		VJ695900	PIN JACK	3P	ピンジャック	PJ605	UCRABG		
※		VK177400	PIN JACK	4P	ピンジャック	PJ602	J		
※		VJ696300	PIN JACK	4P	ピンジャック	PJ602	UCRABG		
※		VK177500	PIN JACK	4P	ピンジャック	PJ604	J		
※		VJ696100	PIN JACK	4P	ピンジャック	PJ604	UCRABG		
※		VK421700	PIN JACK	4P	ピンジャック	PJ601	J		
※		VK421600	PIN JACK	4P	ピンジャック	PJ601	UCRABG		
※		VK179100	PIN JACK	6P	ピンジャック	PJ603,606,607	J		
		VJ794600	PIN JACK	6P	ピンジャック	PJ603,606,607	UCRABG		
※		VK175300	PHONES JACK		ヘッドホンジャック	JK601			
		Vi378300	CONNECTOR	MQ 5P	ＭＱコネクタソケット	CB605			
※		Vi378400	CONNECTOR	MQ 6P	ＭＱコネクタソケット	CB601,628			
※		Vi378500	CONNECTOR	MQ 7P	ＭＱコネクタソケット	CB603			
※		Vi378700	CONNECTOR	MQ 9P	ＭＱコネクタソケット	CB606			
※		Vi379200	CONNECTOR	MQ 12P	ＭＱコネクタソケット	CB604,607			
		VD004500	BASE PIN	PH 2P TE	ベースピン	CB629	JUCRAB		

※New Parts (新規部品)　　ランク：Japan only

Ref. NO.	PART NO.	Description		部品名	Remarks	Markets	ランク
	VD004500	BASE PIN	PH 2P TE	ベースピン	CB615-617		
	VD004600	BASE PIN	PH 3P TE	ベースピン	CB608-614		
	VD004700	BASE PIN	PH 4P TE	ベースピン	CB620		
	VD004700	BASE PIN	PH 4P TE	ベースピン	CB619	G	
	VD004800	BASE PIN	PH 5P TE	ベースピン	CB621,618		
	VD004900	BASE PIN	PH 6P TE	ベースピン	CB622,624		
※	VH431000	BASE PIN	PH 13P TE	ベースピン	CB623		
	VB858100	BASE POST	PH 2P SE	コネクタベースポスト	CB625		
	VB858500	BASE PIN	PH i-TYPE 6P SE	ベースピン	CB626		
	VB858600	BASE PIN	PH L-TYPE 7P	ベースピン	CB627		
※	VK174600	POTENTIOMETER	MN30K	二連ロータリーVR	VR601		
※	VJ801400	ROTARY POTENTIOMETER	16Kx3	ロータリーVR	VR603		
※	VK176700	ROTARY POTENTIOMETER	20Kx3	ロータリーVR	VR602		
	iC174020	TRANSISTOR	2SC1740S R,S	トランジスタ	Q601,607		
	iC287820	TRANSISTOR	2SC2878 A,B	トランジスタ	Q603-606		
※	iD040040	TRANSISTOR	2SD400 E,F	トランジスタ	Q610		
	VH964100	DIGITAL TRANSISTOR	DTA143ES	デジトラ	Q602,608,609		
	iF004600	DIODE	1SS133 T-77	ダイオード	D609-616		
	iF004600	DIODE	1SS133 T-77	ダイオード	D601,602,608	G	
	VH770800	DIODE	1SR139-100 T-32	ダイオード	D603,604,607		
	VG437000	ZENER DIODE	MTZJ4.7A	ツェナーダイオード	D605		
	VG438400	ZENER DIODE	MTZJ6.8C	ツェナーダイオード	D606,619		
	VF402500	LED	SLR-34DC3H3	LED	D617,618		
	BB071360	TERMINAL,SCREW	8.3x13	ネジ端子			
	BA092970	HEAT SINK		放熱器			
	ED330086	BIND HEAD SCREW	3x8 FCRM3-BL	バインド小ネジ			
※	VK213000	MAIN CIRCUIT BOARD		メインシート		U,C,R	
※	VK213100	MAIN CIRCUIT BOARD		メインシート		A,B	
※	VK212900	MAIN CIRCUIT BOARD		メインシート		J	
※	VK213200	MAIN CIRCUIT BOARD		メインシート		G	
	UA652470	MYLAR FILM CAP	470pF 50V	マイラーコン	C458-461	G	
	FA154470	MYLAR FILM CAP	0.047uF 50V	マイラーコン	C361-364,318		
※	VD339900	POLYPROPYLENE FILM CAP	220pF 100V	PPコン	C455-457	G	
	UT452100	POLYPROPYLENE FILM CAP	100pF 100V	PPコン	C305,306,325,326,329,330,335,336,371,373,376		
	UT452470	POLYPROPYLENE FILM CAP	470pF 100V	PPコン	C309,310,313,314,316,320		
	UT453100	POLYPROPYLENE FILM CAP	1000pF 100V	PPコン	C337,338,377	JUCRAB	
	UT453120	POLYPROPYLENE FILM CAP	1200pF 100V	PPコン	C337,338,377	G	
	UT454100	POLYPROPYLENE FILM CAP	0.01uF 100V	PPコン	C355-358		
	UT454100	POLYPROPYLENE FILM CAP	0.01uF 100V	PPコン	C411,412,415,416,419,420,423	G	
	UT454470	POLYPROPYLENE FILM CAP	0.047uF 100V	PPコン	C349,350,383		
	FG244100	CERAMIC CAP	0.01uF 50V	セラコン	C359,396		
	FG244220	CERAMIC CAP	0.022uF 50V	セラコン	C413,414,417,418,421,422,424	G	

※New Parts (新規部品)

ランク：Japan only

	Ref. NO.	PART NO.	Description		部品名	Remarks	Markets	ランク	
		VF466900	CERAMIC CAP	470pF 50V	円筒型セラコン	C451,452			
		VJ599100	CERAMIC CAP	0.1uF 50V	円筒型セラコン	C453,454			
※		Vi841800	ELECTROLYTIC CAP	100uF 10V	ケミコン	C391,392			
※		VH619600	ELECTROLYTIC CAP	100uF 10V	ケミコン	C339,340,378			
※		Vi843100	ELECTROLYTIC CAP	10uF 25V	ケミコン	C303,304,307,308,311,			
						312,315,317,319,321,			
						322			
※		Vi843200	ELECTROLYTIC CAP	22uF 25V	ケミコン	C301,302			
		Vi844900	ELECTROLYTIC CAP	1uF 50V	ケミコン	C384,397			
※		VH622100	ELECTROLYTIC CAP	10uF 50V	ケミコン	C327,328,331,332,372,			
						374			
		VH622200	ELECTROLYTIC CAP	22uF 50V	ケミコン	C343,344,380			
※		Vi846900	ELECTROLYTIC CAP	10F 100V	ケミコン	C351-354			
※		VK179200	ELECTROLYTIC CAP	2200uF 6.3V	ケミコン	C398			
※		VK180400	ELECTROLYTIC CAP	1000uF 16V	ケミコン	C441,442			
※		VK180700	ELECTROLYTIC CAP	4700uF 16V	ケミコン	C445,446			
		VH574800	ELECTROLYTIC CAP	47uF 100V	ケミコン	C333,334,375			
※		VK183300	ELECTROLYTIC CAP	8200uF 40V	ブロックケミコン	C439,440			
※		VK183400	ELECTROLYTIC CAP	22000uF 71V	ブロックケミコン	C433,434			
※		FU451150	MICA CAP	15pF 500V	マイカコン	C341,342			
		FU450050	MICA CAP	15pF 500V	マイカコン	C379	JUCRAB		
		FU451220	MICA CAP	22pF 500V	マイカコン	C379	G		
		FU352100	MICA CAP	100pF 500V	マイカコン	C345-348,381,382			
		Vi862200	POLYETHYLENE FILM CAP	0.1uF 100V	ポリエチレンコン	C431,432,437,438,435,			
						436,443,444,447			
※		VK175800	COIL	1.5uH	空芯コイル	L303-306			
		VC664100	COIL	0.91uH	空芯コイル	L301,302,307			
※		VK577900	CARBON FILM RESISTOR	1,2KΩ 1/4W	カーボン抵抗	R377,378,426			
		VE009700	FUSABLE RESISTOR	4.7Ω 1/4W	ヒューズ抵抗	R405-408			⚠
※		VK188000	FUSABLE RESISTOR	150Ω 1/4W	ヒューズ抵抗	R363,364,430			⚠
※		VK188400	FUSABLE RESISTOR	330Ω 1/4W	ヒューズ抵抗	R387,388,442			⚠
※		VK188700	FUSABLE RESISTOR	560Ω 1/4W	ヒューズ抵抗	R381,382,439			⚠
※		VK189100	FUSABLE RESISTOR	1.2KΩ 1/4W	ヒューズ抵抗	R385,386,441			⚠
※		VK189500	FUSABLE RESISTOR	3.3KΩ 1/4W	ヒューズ抵抗	R379,380,438			⚠
		HV453470	FLAME PROOF CARBON RESISTOR	4.7Ω 1/4W	不燃化カーボン抵抗	R389-392,401,402,443,			⚠
						411-414,444,449			⚠
		HV454100	FLAME PROOF CARBON RESISTOR	10Ω 1/4W	不燃化カーボン抵抗	R503,504,507,508			
		HV454470	FLAME PROOF CARBON RESISTOR	47Ω 1/4W	不燃化カーボン抵抗	R383,384,440			
		HV455100	FLAME PROOF CARBON RESISTOR	100Ω 1/4W	不燃化カーボン抵抗	R371,372,434			
		HV455220	FLAME PROOF CARBON RESISTOR	220Ω 1/4W	不燃化カーボン抵抗	R359-362,428,429			
		HV455680	FLAME PROOF CARBON RESISTOR	680Ω 1/4W	不燃化カーボン抵抗	R373,374,435			
		HV456100	FLAME PROOF CARBON RESISTOR	1KΩ 1/4W	不燃化カーボン抵抗	R397,398,447			
		HV456470	FLAME PROOF CARBON RESISTOR	4.7KΩ 1/4W	不燃化カーボン抵抗	R395,396,446			
		HV457150	FLAME PROOF CARBON RESISTOR	15KΩ 1/4W	不燃化カーボン抵抗	R365-370,431-433			
		HL314100	METAL OXIDE RESISTOR	10Ω 2W	酸化金属被膜抵抗	R403,404,450			
		HL315270	METAL OXIDE RESISTOR	270Ω 1W	酸化金属被膜抵抗	R462,463	JUCRAB		⚠
		HL314820	METAL OXIDE RESISTOR	82Ω 1W	酸化金属被膜抵抗	R462,463	G		⚠
		HL324100	METAL OXIDE RESISTOR	10Ω 2W	酸化金属被膜抵抗	R523-526			⚠
※		Vi513100	METAL FILM RESISTOR	33KΩ 1/4W	金属被膜抵抗	R375,376,436			
		VJ787600	METAL PLATE RESISTOR	MPC725 0.22+0.22	金属板抵抗	R393,394,445			⚠

※New Parts (新規部品)

ランク : Japan only

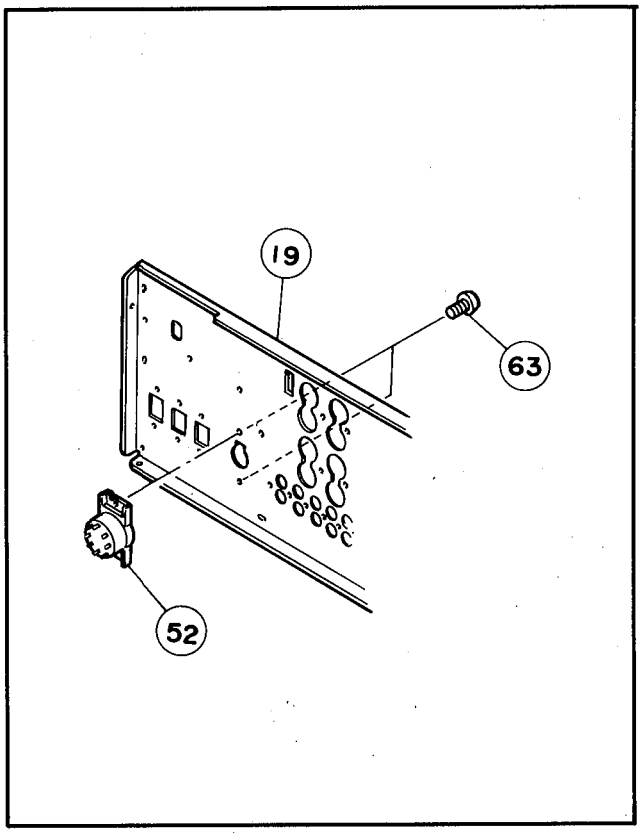
Ref. NO.	PART NO.	Description		部品名	Remarks	Markets	ランク	
*	VJ769200	SLIDE SWITCH	ESD-2764	スライドSW	SW302			
*	VJ787100	SLIDE SWITCH	SSSF12175A	スライドSW	SW301			
	VG392900	TACT SWITCH	SKHVAA	タクトSW	SW303-310			
	KB001300	FUSE	7A 250V	ヒューズ	F401,402	J		⚠
	KB001520	FUSE	7A 125V	ヒューズ	F401,402	U,C,R		⚠
	KB001760	FUSE	6.3A 250V	ヒューズ	F401,402	A,B,G		⚠
	KC001940	RELAY	DH24D2-0T(M)	リレー	RY303,304			⚠
	KC002020	RELAY	DH24D2-0TM	リレー	RY301,302			⚠
	LA002320	LAPPING TERMINAL	3P i-TYPE P=7.5	ラッピング端子	TE303-305			
*	VK176600	SPEAKER TERMINAL		スピーカー端子	TE301,302	J		
*	VJ792600	SPEAKER TERMINAL		スピーカー端子	TE301,302	U,C,R,A,B		
*	VK178900	SPEAKER TERMINAL	8P	スピーカ端子	TE301,302	G		
*	VK176900	PIN JACK	1P	ピンコジャック	PJ303	J		
*	VJ942900	PIN JACK	1P	ピンジャック	PJ303	UCRABG		
*	VK177100	PIN JACK	2P	ピンジャック	PJ302,304	J		
*	VJ943000	PIN JACK	2P	ピンジャック	PJ302,304	UCRABG		
*	VK178800	PIN JACK	4P	ピンジャック	PJ301	J		
*	VJ715400	PIN JACK	4P	ピンジャック	PJ301	UCRABG		
*	VK177000	PIN JACK	2P	ピンジャック	PJ305,306	J		
	VJ133600	PIN JACK	2P	ピンジャック	PJ305,306	UCRABG		
*	VJ788300	JACK	TCX0146	SW付きジャック板	PJ307			
*	VJ692700	PRE-SET POTENTIOMETER	B330	半固定VR	VR303-305			
*	VJ784500	POTENTIOMETER	B10K	二連ロータリーVR	VR301			
	iA097000	TRANSISTOR	2SA970 GR,BL	トランジスタ	Q311-314,341,342,356			
	iA130640	TRANSISTOR	2SA1306 O,Y	トランジスタ	Q331,332,351			⚠
	VE198700	TRANSISTOR	2SA1145 O,Y	トランジスタ	Q323,324,327,328,347,			⚠
					349			⚠
	iC174020	TRANSISTOR	2SC1740S R,S	トランジスタ	Q361,364-366			
	iC181511	TRANSISTOR	2SC1815 Y	トランジスタ	Q315-320,343-345			
	iC224000	TRANSISTOR	2SC2240 GR,BL	トランジスタ	Q339,340,355			
	iC287820	TRANSISTOR	2SC2878 A,B	トランジスタ	Q301-309			
	iC224030	TRANSISTOR	2SC2240 GR,BL	トランジスタ	Q325,326,348			
	iC329840	TRANSISTOR	2SC3298	トランジスタ	Q333,334,352			⚠
	VE198800	TRANSISTOR	2SC2705 O,Y	トランジスタ	Q321,322,329,330,346,			⚠
					350			⚠
	VD678500	DIGITAL TRANSISTOR	DTA114ES	デジタルトランジスタ	Q367			
	VD488500	DIGITAL TRANSISTOR	DTC143XS	デジタルトランジスタ	Q362,363			
	iF004600	DIODE	1SS133 T-77	ダイオード	D301-309,311-320,321			
	VH770800	DIODE	1SR139-100 T-32	ダイオード	D333-336			⚠
	iH001370	DIODE BRIDGE	D5FB20	ダイオードスタック	D331			⚠
	Vi711600	DIODE BRIDGE	RBV-602 LF-A	ダイオードブリッジ	D332			⚠
	VF402500	LED	SLR-34DC3H3	LED	D341			
	Vi013600	LED	SLR-34VC3H3	LED	D342	G		
	LB201880	FUSE HOLDER PIN	PC-FH1	ヒューズホルダピン				
	VB966900	PIN	IMSA-6024	スタイルピン				
	BB069510	GROUND METAL		ランド金具				

※New Parts (新規部品)

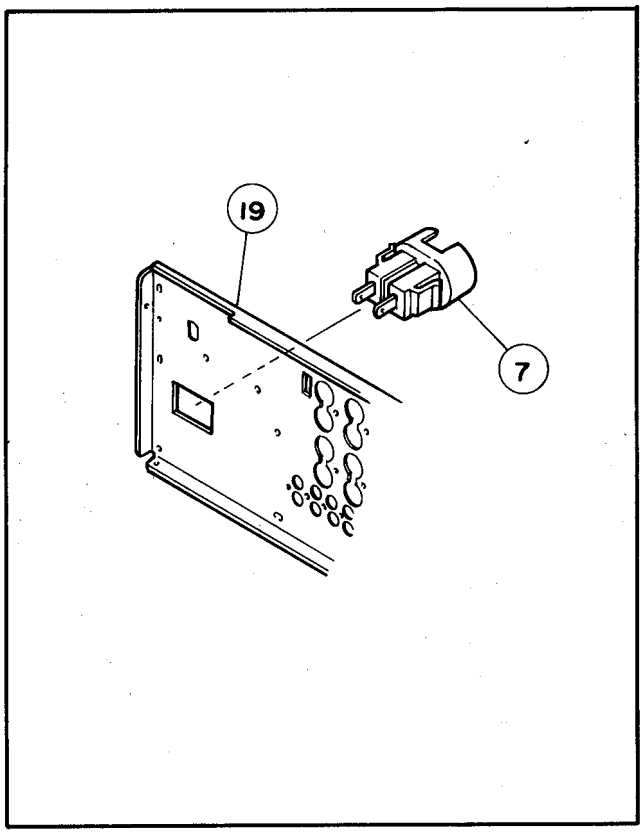
ランク : Japan only

■ EXPLODED VIEW

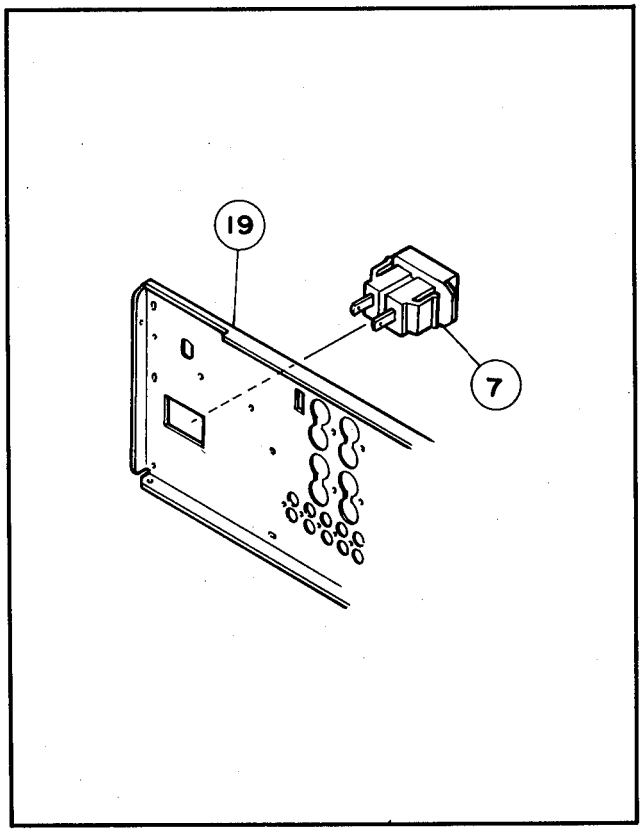
R model



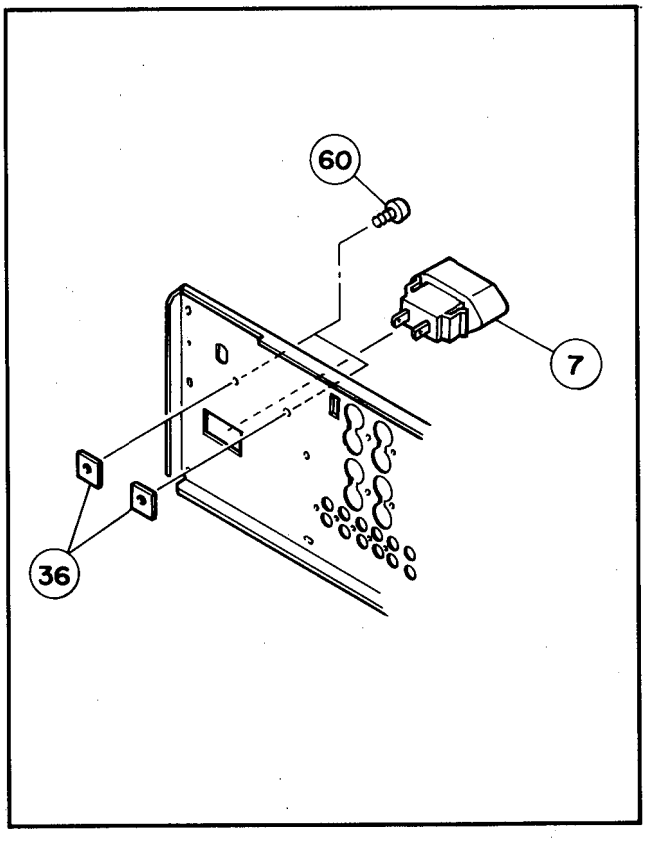
A model



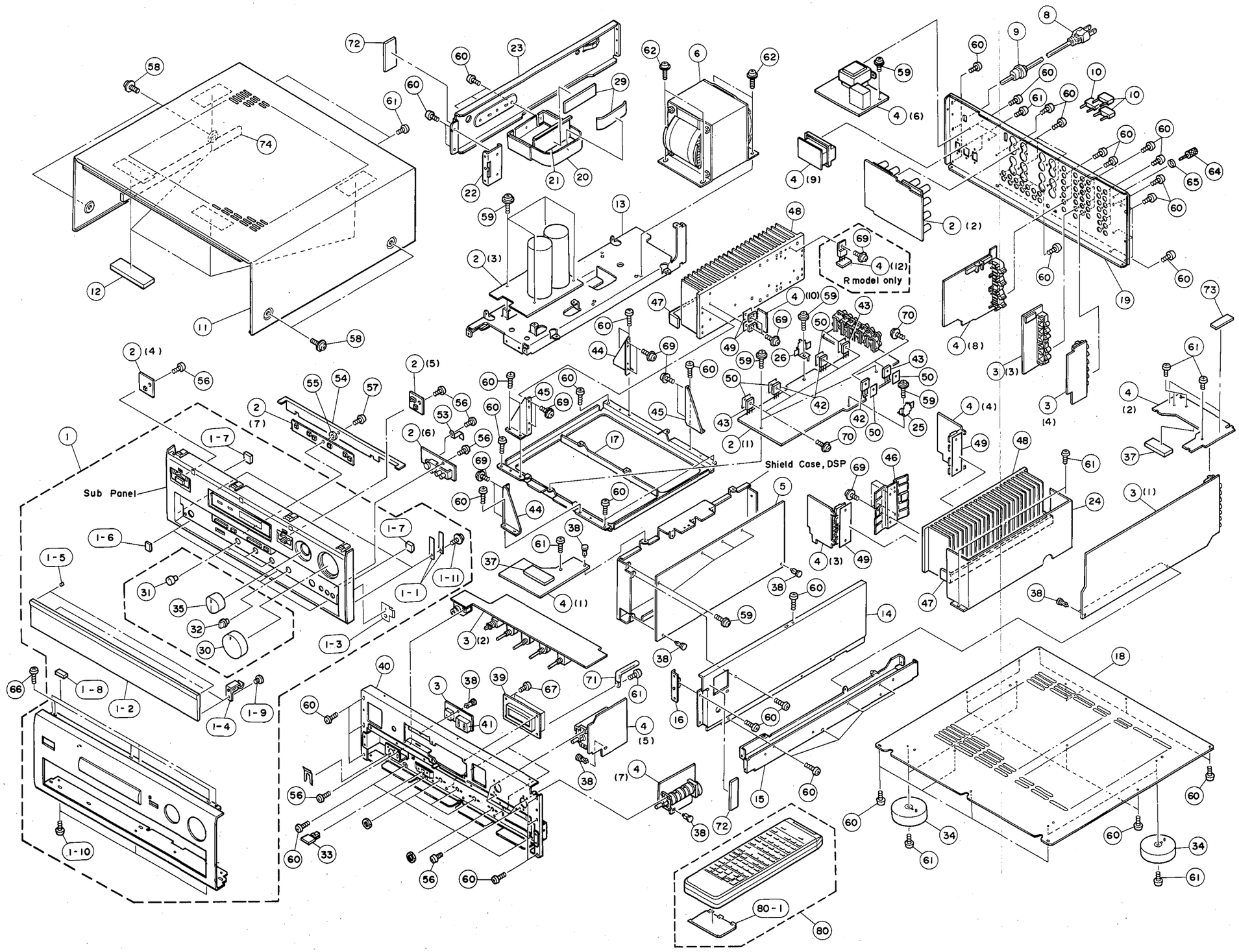
B model



G model



■ EXPLODED VIEW



■ MECHANICAL PARTS Note) Ø : Diameter

	Ref. NO.	PART NO.	Description		部品名	Remarks	Markets	ランク	
*	01	VK964500	PANEL UNIT	AVX-2000DSP	パネルユニット	BL	J		
*	01	VK964700	PANEL UNIT	DSP-A1000	パネルユニット	BL	U,C,R,A,B		
*	01	VK964900	PANEL UNIT	DSP-A1000	パネルユニット	BL	G		
*	01	VK964600	PANEL UNIT	AVX-2000DSP	パネルユニット	T	J		
*	01	VK964800	PANEL UNIT	DSP-A1000	パネルユニット	T	U,C,R,A,B		
*	01	VK965000	PANEL UNIT	DSP-A1000	パネルユニット	T	G		
*	01-01	VJ888200	SPRING		スプリング				
*	01-02	VJ896500	SUB PANEL		サブパネル	BL			
*	01-02	VJ896600	SUB PANEL		サブパネル	T			
*	01-03	VK689800	GROUND PLATE	R	アースプレート				
*	01-04	VJ888100	STOPPER		ストッパ	BL			
*	01-04	VJ888000	STOPPER		ストッパ	T			
	01-05	CB621930	DAMPER		ダンパ	BL			
	01-05	VE798100	DAMPER		ダンパ	T			
	01-06	VE798200	CUSHION		クッション				
*	01-07	VK421400	DAMPER		ダンパー				
	01-08	VE222600	CUSHION		クッション				
	01-09	ED330066	BIND HEAD SCREW	3x6 FCRM3-BL	バインド小ネジ				
	01-10	Ei330066	BIND HEAD TAPPING SCREW	3x6 FCM3-BL	バインドタッピングネジ				
	01-11	EK336010	BW HEAD TAPPING SCREW	3x8 FCM3-BL	BWヘッドタッピングネジ				
*	02	VK212900	MAIN CIRCUIT BOARD		メインシート		J		
*	02	VK213000	MAIN CIRCUIT BOARD		メインシート		U,C,R		
*	02	VK213100	MAIN CIRCUIT BOARD		メインシート		A,B		
*	02	VK213200	MAIN CIRCUIT BOARD		メインシート		G		
*	03	VK213600	FUNCTION CIRCUIT BOARD		ファンクションシート		J		
*	03	VK213700	FUNCTION CIRCUIT BOARD		ファンクションシート		U,C,R,A,B		
*	03	VK213800	FUNCTION CIRCUIT BOARD		ファンクションシート		G		
*	04	VK213900	EFFECT CIRCUIT BOARD		エフェクトシート		J		
*	04	VK214000	EFFECT CIRCUIT BOARD		エフェクトシート		U,C		
*	04	VK214100	EFFECT CIRCUIT BOARD		エフェクトシート		R		
*	04	VK214200	EFFECT CIRCUIT BOARD		エフェクトシート		A,B		
*	04	VK214300	EFFECT CIRCUIT BOARD		エフェクトシート		G		
*	05	VK214600	DSP CIRCUIT BOARD		DSPシート		JUCRAB		
*	05	VK214700	DSP CIRCUIT BOARD		DSPシート		G		
*	06	Xi127A00	POWER TRANSFORMER		電源トランス		J		⚠
*	06	Xi128A00	POWER TRANSFORMER		電源トランス		U		⚠
*	06	Xi129A00	POWER TRANSFORMER		電源トランス		C		⚠
*	06	Xi131A00	POWER TRANSFORMER		電源トランス		A,B		⚠
*	06	Xi132A00	POWER TRANSFORMER		電源トランス		G		⚠
*	06	Xi130A00	POWER TRANSFORMER		電源トランス		R		⚠
	07	VC626100	AC OUTLET	S2-739T	電源コネクタ		A		⚠
	07	VJ775000	AC OUTLET	S2-741T-110	ACアウトレット		B		⚠
	07	VJ775100	AC OUTLET	S2-729T	ACアウトレット		G		⚠
	08	MG002170	POWER CORD	15A 125V	電源コード		J		⚠
	08	MG002220	POWER CORD	10A 125V	電源コード		U		⚠
	08	MG001630	POWER CORD	7A 250V	電源コード		R		⚠
	08	MG002310	POWER CORD	7.5A 250V	電源コード		A		⚠
	08	MG002330	POWER CORD	6A 300V	電源コード		B		⚠
	08	MG002320	POWER CORD	2.5A 250V	電源コード		G		⚠
	09	CB620200	CORD STOPPER	CM-22C	コードストッパー		U,C		

※New Parts (新規部品)　　ランク : Japan only

	Ref. NO.	PART NO.	Description		部品名	Remarks	Markets	ランク	
	09	CB620190	CORD STOPPER	CM-22B	コードストッパー		R,A,B,G		
	10	LB101890	SHORT PIN		ショートプラグ				
*	11	VJ895300	TOP COVER		トップカバー	BL	J		
*	11	VJ895100	TOP COVER		トップカバー	BL	UCRABG		
*	11	VJ895400	TOP COVER		トップカバー	T	J		
*	11	VJ895200	TOP COVER		トップカバー	T	UCRABG		
*	12	VK70G800	DAMPER	TOP	ダンパー				
*	13	VJ892600	FRAME	L	フレーム				
*	14	VK380200	FRAME R/UPPER		フレーム				
*	15	VK380300	FRAME R/LOWER		フレーム				
*	16	VK380400	FRAME R/FRONT		フレーム				
*	17	VJ892800	FRAME CENTER		フレーム				
*	18	VJ893400	BOTTOM COVER		ボトムカバー				
*	19	VJ893700	REAR PANEL		リヤパネル		J		
*	19	VJ893800	REAR PANEL		リヤパネル		U,C		
*	19	VJ893900	REAR PANEL		リヤパネル		R		
*	19	VJ894000	REAR PANEL		リヤパネル		A,B		
*	19	VJ894100	REAR PANEL		リヤパネル		G		
*	20	VK390900	SUPPORT		サポート				
*	21	VK391000	SUPPORT		サポート				
*	22	VJ895500	FRAME A		フレーム				
*	23	VJ895600	FRAME B		フレーム				
*	24	VK434000	SHEILD CASE B		シールドケース B				
*	25	VK434100	PUSHER,TR		TRプッシャー				
*	26	VK839200	PUSHER,TR		TRプッシャー				
*	27	VK678700	SIDE PANEL		サイドパネル		J		
*	28	VK492400	SPACER		スペーサ		J		
*	29	VK492200	DAMPER A		ダンパーA				
*	30	VK015100	KNOB		ノブ	BL			
*	30	VK015200	KNOB		ノブ	T			
	31	VG078900	KNOB		ノブ	BL			
*	31	VJ891400	KNOB		ノブ	T			
	32	VG079100	KNOB		ノブ	BL			
*	32	VJ891500	KNOB		ノブ	T			
	33	VH816000	BUTTON	3/14	ボタン	BL			
	33	VH816100	BUTTON	3/14	ボタン	T			
*	34	VK724100	LEG ASS'y		レッグASSY				
*	35	VK219900	KNOB		ノブ	BL			
*	35	VK220000	KNOB		ノブ	T			
	36	Vi707300	DAMPER		ダンパー		G		
*	37	VK493300	DAMPER C		ダンパ				
	38	CB605620	PLASTIC RIVET	NO.1057	プラリベット				
*	39	VK421500	LCD		LCD表示器				
*	40	VJ896700	SUB CHASSIS		サブシャーシ				
*	41	VK220300	PAD	LED	パッド				
	42	iX801420	TRANSISTOR	2SA1302 O,R	トランジスタ	Q335,353,336			⚠
	43	iX801430	TRANSISTOR	2SC3281 O,R	トランジスタ	Q337,354,338			⚠
*	44	VJ892300	SUPPORT	R	サポート				
*	45	VJ892400	SUPPORT	L	サポート				
*	46	VJ892500	SUPPORT	TR	サポート				

※New Parts (新規部品)　　ランク : Japan only

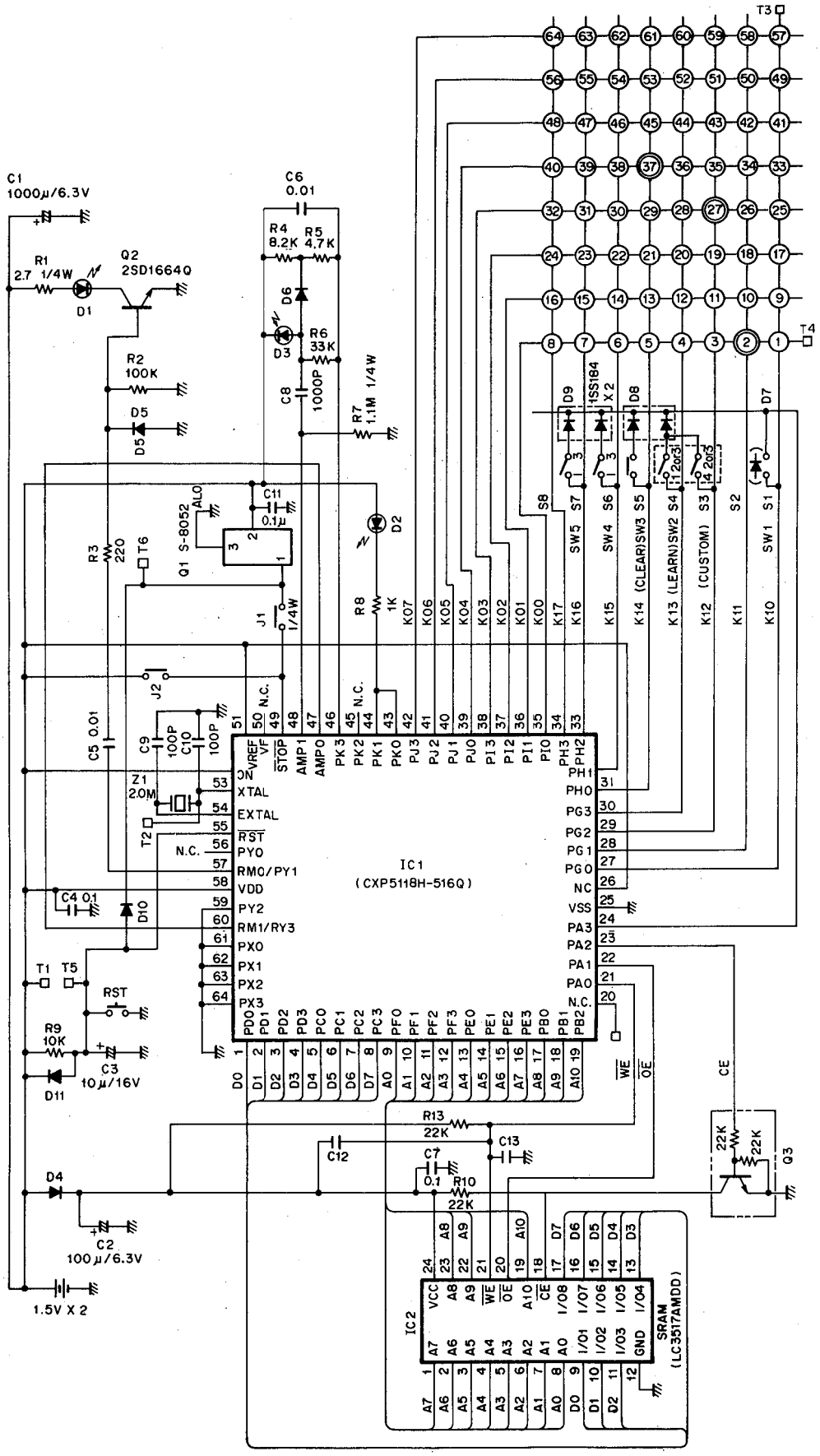
	Ref. NO.	PART NO.	Description		部品名	Remarks	Markets	ランク	
※	47	VK706700	DAMPER	FIN	ダンパー				
※	48	VJ892100	RADIATOR	L=90	ラジエータ				
※	49	VK065100	SHEET	20x86	シート				
※	50	VK196000	SHEET	22x29	シート				
※	51	VK195900	SHEET	19x24	シート				
	52	Vi449800	VOLTAGE SELECTOR	ESE-37284-F	電圧切替器		R		⚠
※	53	VK015300	GROUND PLATE		アースプレート				
※	54	VK896900	FLAME/PANEL		フレーム／パネル				
	55	Vi867800	SPACER	PCB	スペーサ				
	56	Ei330066	BIND HEAD TAPPING SCREW	3x6 FCM3-BL	バインドタッピングネジ				
	57	EX601090	BW HEAD TAPPING SCREW	3x12 FCM3-BL	BWヘッドタッピングネジ				
※	58	VC077200	SPECIAL SCREW	4x27 FCRM3-BR	外装トメネジ		J		
	58	EX601150	BW HEAD S-TITE SCREW	4x8-10 FNM3-BL	BWH Sタイトネジ	T	UCRABG		
	58	EK365090	BW HEAD SCREW	4x8 ZMC2-BL	BWヘッドネジ	BL	UCRABG		
	59	EX600700	BW HEAD TAPPING SCREW	3x8 FCRM3	BWヘッドタッピングネジ				
	60	EN301010	BIND HEAD BONDING TAP. SCREW	3x8 FCRM3-BL	ボンディングBタイトネジ				
	61	Ei330086	BIND HEAD TAPPING SCREW	3x8 FCRM3-BL	バインドタッピングネジ				
※	62	VK625000	CUP S-TYTE SCREW	5x10 ZMC2-BL	カップSタイトネジ				
	63	ED330066	BIND HEAD SCREW	3x6 FCRM3-BL	バインド小ネジ				
	64	AA627310	GROUND TERMINAL		GNDターミナル				
	65	EV265560	PLAIN WASHER	3.6x10x0.8FNM3-3G	平座金みがき丸				
	66	EN335030	BONDING TAP SCREW	3x10 FCRM3-BL	ボンディングタップネジ				
	67	Ei326066	BIND HEAD TAPPING SCREW	2.6x6 FCRM3-BL	バインドタッピングネジ				
	68	EV413036	TOOTHED LOCKED WASHER	3MM FCM3-BL	歯付座金				
	69	EX600250	CUP TIGHT SCREW	3x10 FCRM3-BL	カップタイトネジ				
※	70	VK173200	SCREW	3x15 FCM3	ネジ				
	71	CB040540	BINDING TIE	S-72B	束線止め				
※	72	VL055600	DAMPER		ダンパー				
※	73	VL127900	DAMPER		ダンパー				
※	74	VL126500	DAMPER		ダンパー				
		CB069250	BINDING TIE		束線止め				
			ACCESSORIES		付属品				
※	80	VJ979300	REMOTE CONTROL TRANSMITTER		トランスミッター		J		
※	80	VK577300	REMOTE CONTROL TRANSMITTER		トランスミッター		UCRABG		
※	80-1	CX615940	LID		電池蓋				
			DRY CELL	1.5V LR6(2S)NE	アルカリマンガン電池		J,U,C,R,A		
			DRY CELL	1.5V LR6(2S)NER	アルカリマンガン電池		B,G		

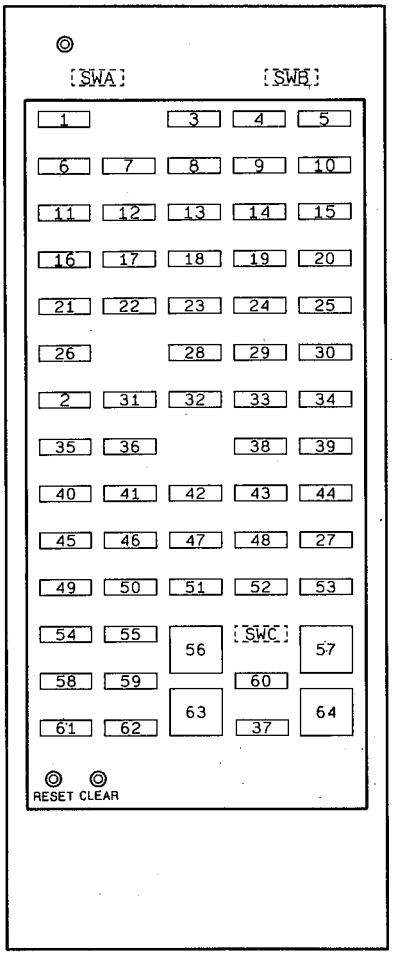
※New Parts（新規部品）

ランク：Japan only

REMOTE CONTROL TRANSMITTER

■ SCHEMATIC DIAGRAM





KEY No.	CONTROL CODE		FUNCTION
SW B	1	2	
1	7D8F	←	POWER
2	7A-06	←	DECK A/B
3	—	←	TV
4	—	←	VCR 1
5	—	←	VCR 2
6	7D-8C	←	INPUT TAPE 2 MON
7	7D-8B	←	TAPE 1
8	7D-89	←	TUNER
9	7D-87	←	CD
10	7D-88	←	PHONO
11	7D-8A	←	AUX
12	7D-82	←	VCR 2
13	7D-81	←	VCR 1
14	7D-84	←	TV/DBS
15	7D-83	←	LD
16	—	7C-12	CD/LD SOUND
17	7A-0B	7C-02	SKIP/CHAPTER -
18	7A-0A	7C-03	SKIP/CHAPTER +
19	7A-09	7C-04	PAUSE/STOP
20	7A-08	7C-05	PLAY
21	7A-0A	7C-13	DISPLAY
22	—	7C-0A	STILL ⏮
23	—	7C-0B	STILL ⏭
24	7A-0D	7C-06	SEARCH ◀◀
25	7A-0C	7C-07	SEARCH ▶▶
26	—	←	TAPE/VCR TV/VCR
27	7D-D7	←	STUDIUM
28	7A-07	←	DIR A
29	7A-00	←	PLAY
30	7A-40	←	TAPE DIR B

KEY No.	CONTROL CODE		FUNCTION
SW B	1	2	
31	—	←	PAUSE
32	7A-01	←	◀◀
33	7A-03	←	STOP
34	7A-02	←	▶▶
35	7D-CA	←	TEST
36	7A-12	←	TUNER/VCR PAGE
37	7D-94	←	MUTING –20dB
38	7A-11	←	–
39	7A-10	←	+
40	7D-CD	←	FRONT LEVEL +
41	7D-D0	←	HALL 1
42	7D-D1	←	HALL 2
43	7D-D2	←	HALL 3
44	7D-D3	←	CHURCH
45	7D-CE	←	FRONT LEVEL –
46	7D-D4	←	ROCK CONCERT
47	7D-D5	←	JAZZ CLUB
48	7D-D6	←	DISCO
49	7D-CB	←	CENTER LEVEL +
50	7D-D8	←	CONCERT VIDEO
51	7D-D9	←	TV THEATER
52	7D-DA	←	MOVIE THEATER
53	7D-DB	←	□□ PRO LOGIC
54	7D-CC	←	CENTER LEVEL –
55	7D-C2	←	ON SCREEN
57	7D-8D	←	MASTER VOLUME +
58	7D-C8	←	REAR LEVEL +
61	7D-C9	←	REAR LEVEL –
62	7D-C1	←	EFFECT ON/OFF
64	7D-8E	←	MASTER VOLUME –

KEY No.	CONTROL CODE		FUNCTION
SW C	PARAMETER	SET MODE	
56	7D-C5	7D-9D	PARAMETER SET MENU ↑
59	7D-C7	7D-9F	PARAMETER SET MENU –
60	7D-C6	7D-9E	PARAMETER SET MENU +
63	7D-C4	7D-9C	PARAMETER SET MENU ↓

Parts List for Carbon Resistors

Value	1/4W Type Part No.	1/6W Type Part No.	Value	1/4W Type Part No.	1/6W Type Part No.
1.0 Ω	HJ35 3100	HF85 3100	12 KΩ	HJ35 7120	HF85 7120
1.8 Ω	HJ35 3180	*	15 KΩ	HJ35 7150	HF85 7150
2.2 Ω	HJ35 3220	HF85 3220	18 KΩ	HJ35 7180	HF85 7180
3.3 Ω	HJ35 3330	HF85 3330	22 KΩ	HJ35 7220	HF85 7220
4.7 Ω	HJ35 3470	HF85 3470	27 KΩ	HJ35 7270	HF85 7270
5.6 Ω	HJ35 3560	HF85 3560	33 KΩ	HJ35 7330	HF85 7330
10 Ω	HJ35 4100	HF85 4100	39 KΩ	HJ35 7390	HF85 7390
15 Ω	HJ35 4150	HF85 4150	47 KΩ	HJ35 7470	HF85 7470
22 Ω	HJ35 4220	HF85 4220	56 KΩ	HJ35 7560	HF85 7560
27 Ω	HJ35 4270	HF85 4270	68 KΩ	HJ35 7680	HF85 7680
33 Ω	HJ35 4330	HF85 4330	82 KΩ	HJ35 7820	HF85 7820
39 Ω	HJ35 4390	HF85 4390	91 KΩ	HJ35 7910	HF85 7910
47 Ω	HJ35 4470	HF85 4470	100 KΩ	HJ35 8100	HF85 8100
56 Ω	HJ35 4560	HF85 4560	120 KΩ	HJ35 8120	HF85 8120
68 Ω	HJ35 4680	HF85 4680	150 KΩ	HJ35 8150	HF85 8150
82 Ω	HJ35 4820	HF85 4820	180 KΩ	HJ35 8180	HF85 8180
100 Ω	HJ35 5100	HF85 5100	220 KΩ	HJ35 8220	HF85 8220
110 Ω	HJ35 5110	HF85 5110	270 KΩ	HJ35 8270	HF85 8270
120 Ω	HJ35 5120	HF85 5120	330 KΩ	HJ35 8330	HF85 8330
150 Ω	HJ35 5150	HF85 5150	390 KΩ	HJ35 8390	HF85 8390
160 Ω	HJ35 5160	*	470 KΩ	HJ35 8470	HF85 8470
180 Ω	HJ35 5180	HF85 5180	560 KΩ	HJ35 8560	HF85 8560
220 Ω	HJ35 5220	HF85 5220	680 KΩ	HJ35 8680	HF85 8680
270 Ω	HJ35 5270	HF85 5270	820 KΩ	HJ35 8820	HF85 8820
330 Ω	HJ35 5330	HF85 5330	1.0 MΩ	HJ35 9100	HF85 9100
390 Ω	HJ35 5390	HF85 5390	1.2 MΩ	HJ35 9120	*
470 Ω	HJ35 5470	HF85 5470	1.5 MΩ	HJ35 9150	HF85 9150
510 Ω	*	HF85 5510	1.8 MΩ	HJ35 9180	HF85 9180
560 Ω	HJ35 5560	HF85 5560	2.2 MΩ	HJ35 9220	HF85 9220
680 Ω	HJ35 5680	HF85 5680	3.3 MΩ	HJ35 9330	HF85 9330
820 Ω	HJ35 5820	HF85 5820	3.9 MΩ	HJ35 9390	*
910 Ω	HJ35 5910	HF85 5910	4.7 MΩ	HJ35 9470	HF85 9470
1.0 KΩ	HJ35 6100	HF85 6100			
1.2 KΩ	HJ35 6120	HF85 6120			
1.5 KΩ	HJ35 6150	HF85 6150			
1.8 KΩ	HJ35 6180	HF85 6180			
2.0 KΩ	HJ35 6200	HF85 6200			
2.2 KΩ	HJ35 6220	HF85 6220			
2.4 KΩ	HJ35 6240	HF85 6240			
2.7 KΩ	HJ35 6270	HF85 6270			
3.0 KΩ	HJ35 6300	HF85 6300			
3.3 KΩ	HJ35 6330	HF85 6330			
3.6 KΩ	HJ35 6360	HF85 6360			
3.9 KΩ	HJ35 6390	HF85 6390			
4.7 KΩ	HJ35 6470	HF85 6470			
5.1 KΩ	HJ35 6510	HF85 6510			
5.6 KΩ	HJ35 6560	HF85 6560			
6.8 KΩ	HJ35 6680	HF85 6680			
8.2 KΩ	HJ35 6820	HF85 6820			
9.1 KΩ	HJ35 6910	HF85 6910			
10 KΩ	HJ35 7100	HF85 7100