

TM9-3D

STANDARD CIRCUIT DIAGRAM

■ NOTE ON USING CIRCUIT DIAGRAMS

1.SAFETY

The components identified by the $\triangle$ symbol and shading are critical for safety. For continued safety replace safety critical components only with manufactures recommended parts.

2.SPECIFIED VOLTAGE AND WAVEFORM VALUES

The voltage and waveform values have been measured under the following conditions.

- (1)Input signal : Colour bar signal
- (2)Setting positions of each knob/button and variable resistor : Original setting position when shipped
- (3)Internal resistance of tester : DC 20k Ω /V
- (4)Oscilloscope sweeping time : H $\Rightarrow$ 20 μ s / div
: V $\Rightarrow$ 5ms / div
: Others $\Rightarrow$ Sweeping time is specified
- (5)Voltage values : All DC voltage values

* Since the voltage values of signal circuit vary to some extent according to adjustments, use them as reference values.

3.INDICATION OF PARTS SYMBOL [EXAMPLE]

- In the PW board : R1209 $\rightarrow$ R209

4.INDICATIONS ON THE CIRCUIT DIAGRAM

(1)Resistors

● Resistance value

- No unit : [Ω]
- K : [k Ω]
- M : [M Ω]

● Rated allowable power

- No indication : 1/16 [W]
- Others : As specified

● Type

- No indication : Carbon resistor
- OMR : Oxide metal film resistor
- MFR : Metal film resistor
- MPR : Metal plate resistor
- UNFR : Unflammable resistor
- FR : Fusible resistor

* Composition resistor 1/2 [W] is specified as 1/2S or Comp.

(2)Capacitors

● Capacitance value

- 1 or higher : [pF]
- less than 1 : [μ F]

● Withstand voltage

- No indication : DC50[V]
- Others : DC withstand voltage [V]
- AC indicated : AC withstand voltage [V]

* Electrolytic Capacitors

47/50[Example]: Capacitance value [μ F]/withstand voltage[V]

● Type

- No indication : Ceramic capacitor
- MM : Metalized mylar capacitor
- PP : Polypropylene capacitor
- MPP : Metalized polypropylene capacitor
- MF : Metalized film capacitor
- TF : Thin film capacitor
- BP : Bipolar electrolytic capacitor
- TAN : Tantalum capacitor

(3)Coils

- No unit : [μ H]
- Others : As specified

(4)Power Supply

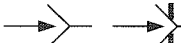
-  : B1
-  : B2 (12V)
-  : 9V
-  : 5V

* Respective voltage values are indicated

(5)Test point

-  : Test point
-  : Only test point display

(6)Connecting method

-  : Connector
-  : Wrapping or soldering
-  : Receptacle

(7)Ground symbol

-  : LIVE side ground
-  : ISOLATED(NEUTRAL) side ground
-  : EARTH ground
-  : DIGITAL ground

5.NOTE FOR REPAIRING SERVICE

This model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE : () side GND and the ISOLATED(NEUTRAL) : () side GND. Therefore, care must be taken for the following points.

- (1)Do not touch the LIVE side GND or the LIVE side GND and the ISOLATED(NEUTRAL) side GND simultaneously. If the above caution is not respected, an electric shock may be caused. Therefore, make sure that the power cord is surely removed from the receptacle when, for example, the chassis is pulled out.
- (2)Do not short between the LIVE side GND and ISOLATED(NEUTRAL) side GND or never measure with a measuring apparatus measure with a measuring apparatus (oscilloscope, etc.) the LIVE side GND and ISOLATED(NEUTRAL) side GND at the same time. If the above precaution is not respected, a fuse or any parts will be broken.

◆ Since the circuit diagram is a standard one, the circuit and circuit constants may be subject to change for improvement without any notice.

NOTE

◆ Due improvement in performance, some part numbers show in the circuit diagram may not agree with those indicated in the part list.

When ordering parts, please use the numbers that appear in the Parts List.

CONTENTS

USING P.W.BOARD 2-2

SEMICONDUCTOR SHAPES 2-2

WIRING DIAGRAM 2-3

BLOCK DIAGRAM 2-5

CIRCUIT DIAGRAMS 2-7

 SIGNAL PWB CIRCUIT DIAGRAM 2-7

 MAIN PWB CIRCUIT DIAGRAM 2-13

 CRT SOCKET PWB CIRCUIT DIAGRAM 2-15

 FRONT CONTROL PWB CIRCUIT DIAGRAM 2-17

 TALLY PWB CIRCUIT DIAGRAM 2-19

 LINE FILTER PWB CIRCUIT DIAGRAM 2-21

 SDI PWB CIRCUIT DIAGRAM 2-23

PATTERN DIAGRAMS 2-25

 SIGNAL PWB PATTERN 2-25

 MAIN PWB PATTERN 2-29

 CRT SOCKET PWB PATTERN 2-31

 LINE FILTER PWB PATTERN 2-31

 FRONT CONTROL PWB PATTERN 2-31

 TALLY PWB PATTERN 2-31

 SDI PWB PATTERN 2-33

VOLTAGE CHARTS 2-35

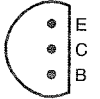
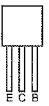
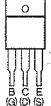
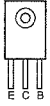
WAVEFORMS 2-36

USING P.W. BOARD

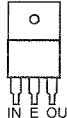
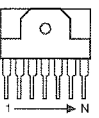
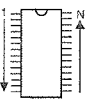
PWB ASS'Y name	TM9-3D
SIGNAL P.W. BOARD	FX-6153A-H2
MAIN P.W. BOARD	FX-1194A-H2
CRT SOCKET P.W. BOARD	FX-3079A-H2
FRONT CONTROL P.W. BOARD	FX-4098A-H2
TALLY P.W. BOARD	FX-7061A-H2
LINE FILTER P.W. BOARD	FX-9098A-H2
SDI P.W. BOARD	FX-M059A-H2

SEMICONDUCTOR SHAPES

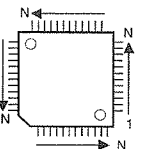
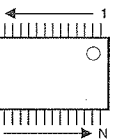
TRANSISTOR

BOTTOM VIEW	FRONT VIEW				TOP VIEW
					

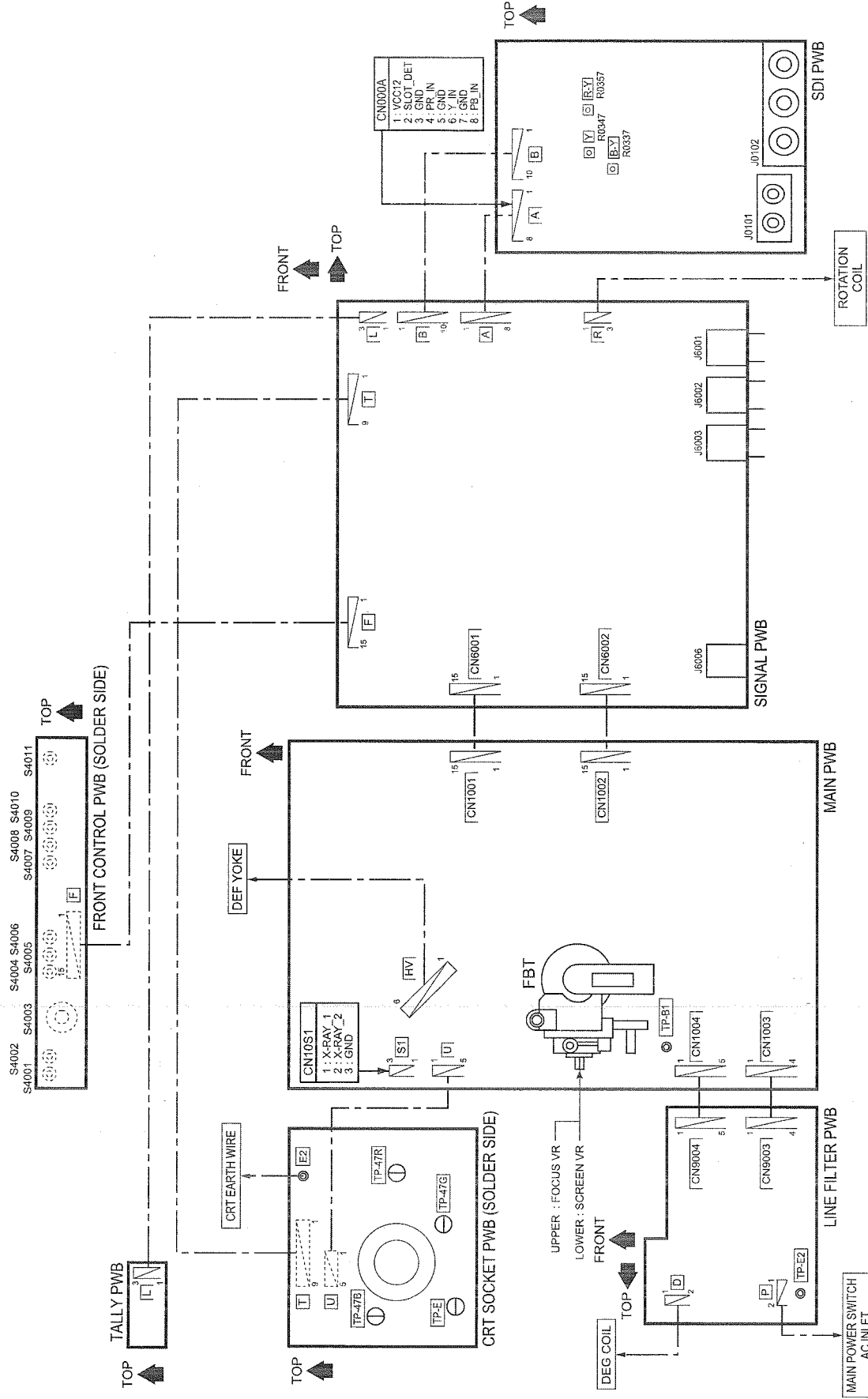
IC

BOTTOM VIEW	FRONT VIEW			TOP VIEW
				

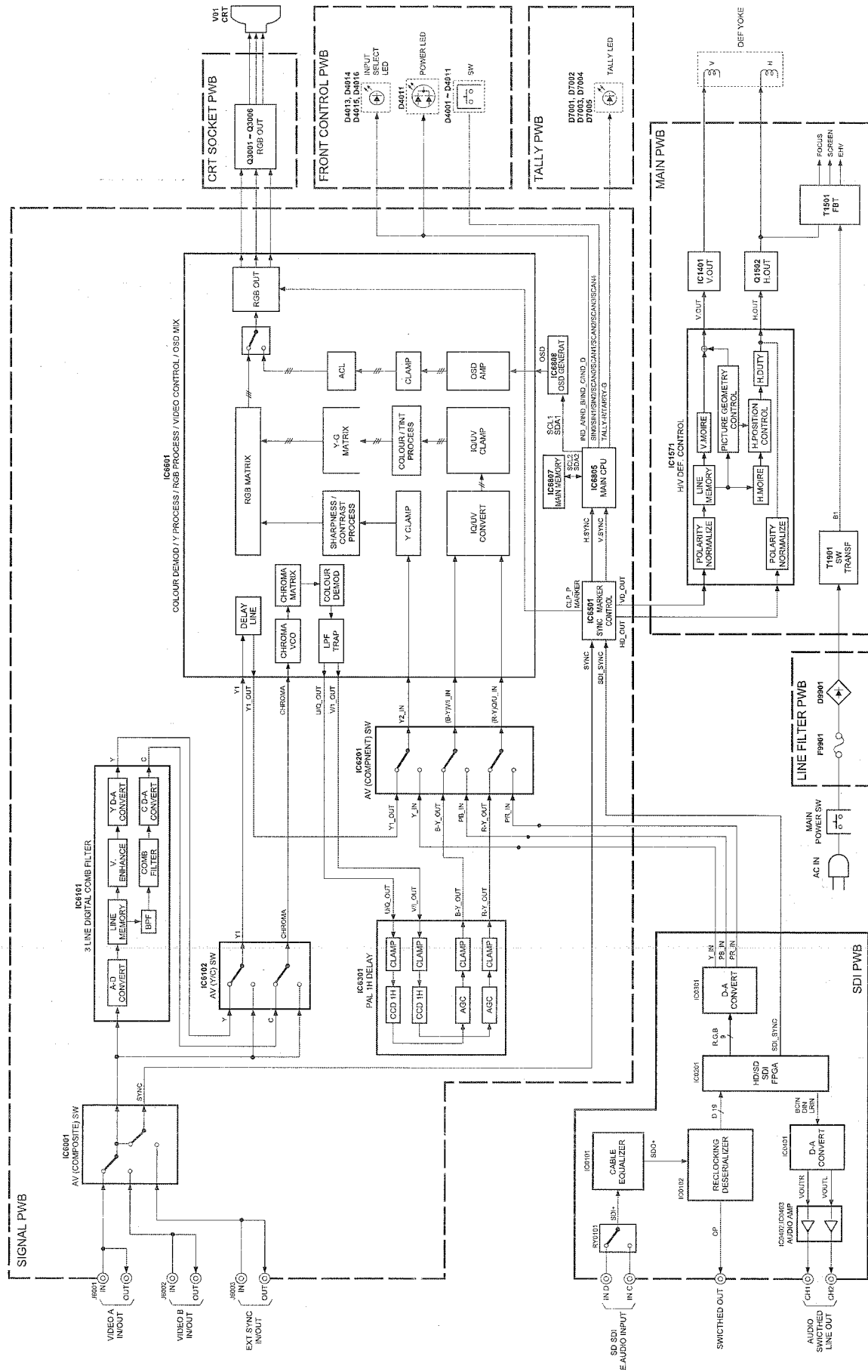
CHIP IC

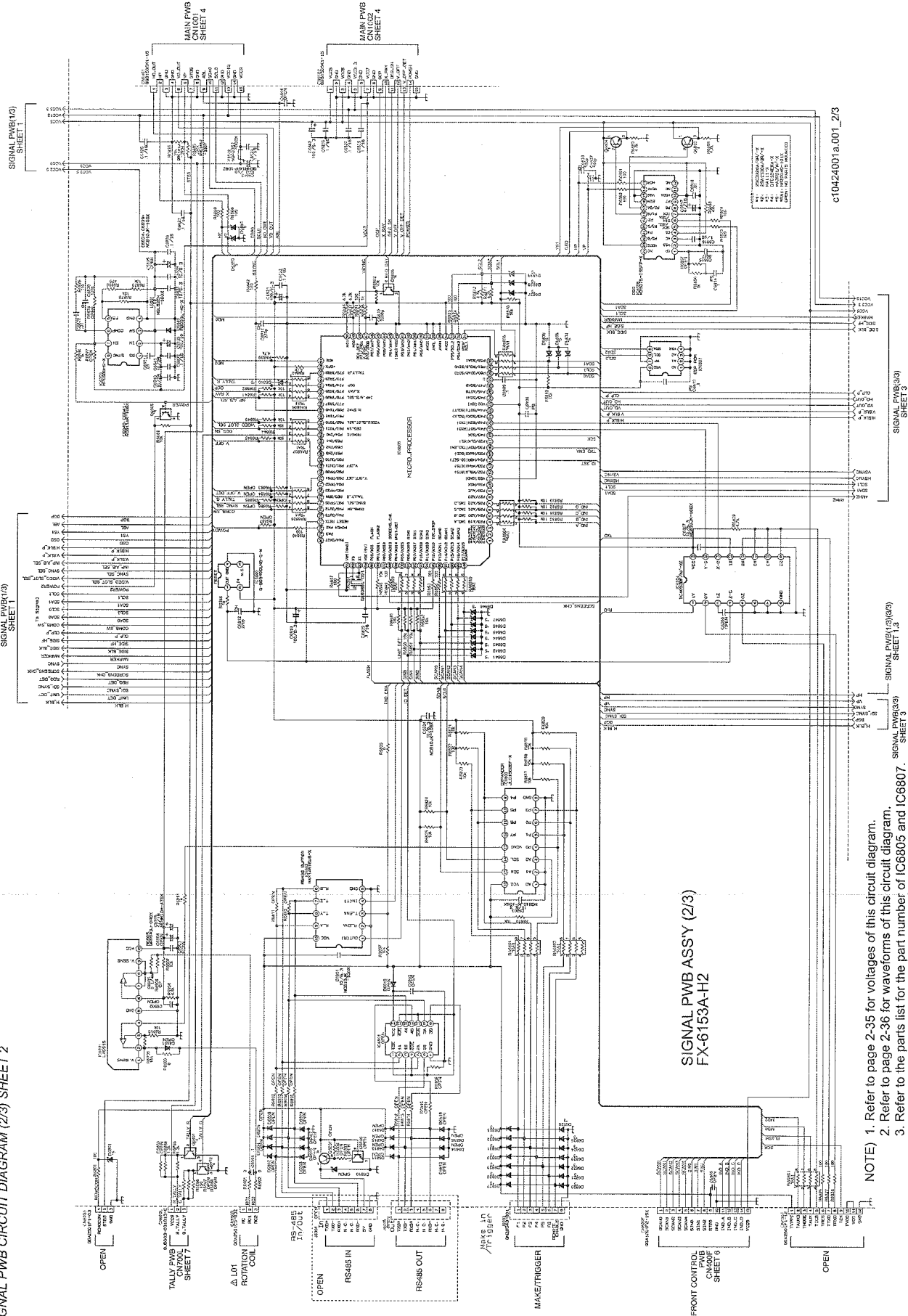
TOP VIEW		
		

WIRING DIAGRAM

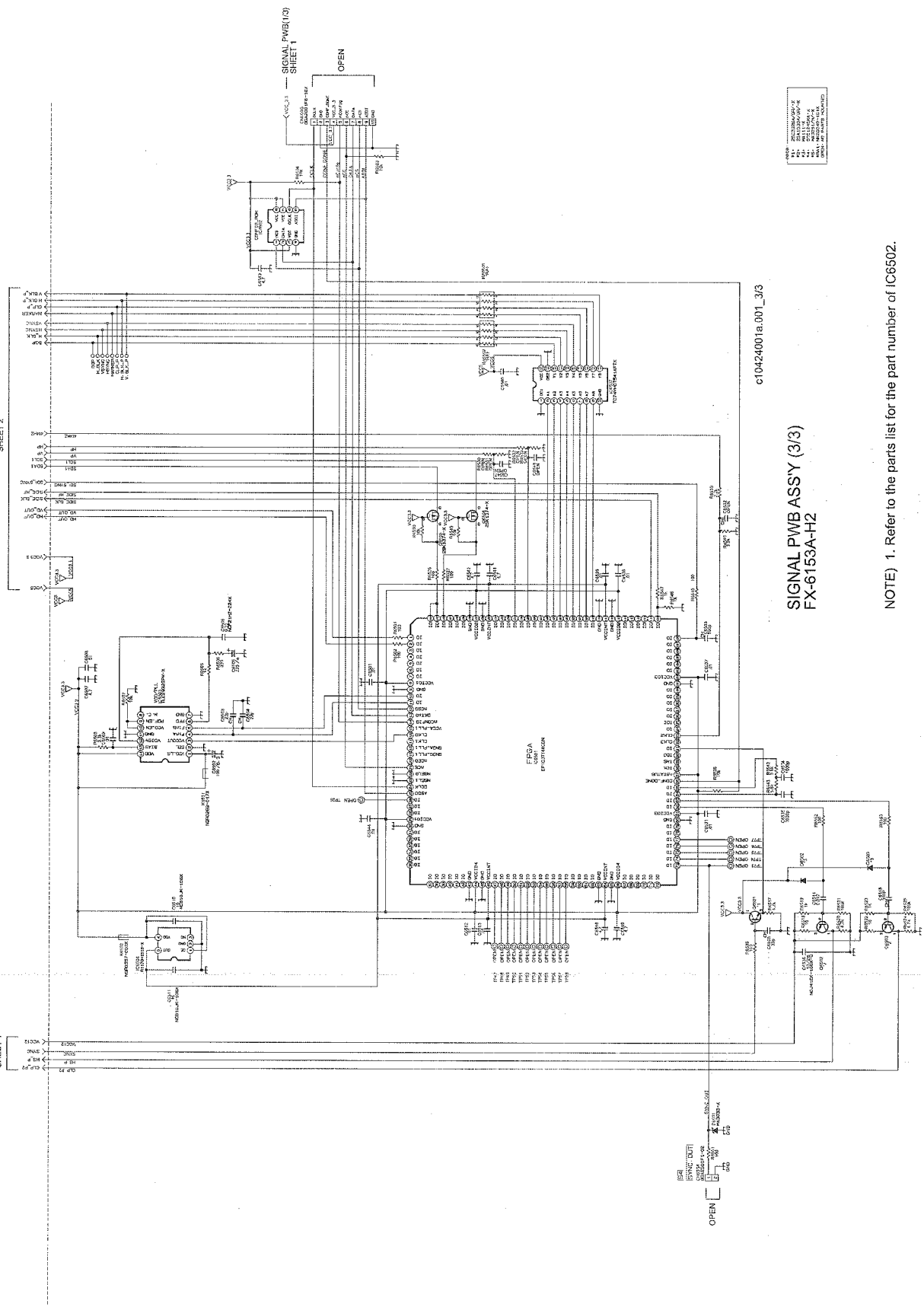


BLOCK DIAGRAM



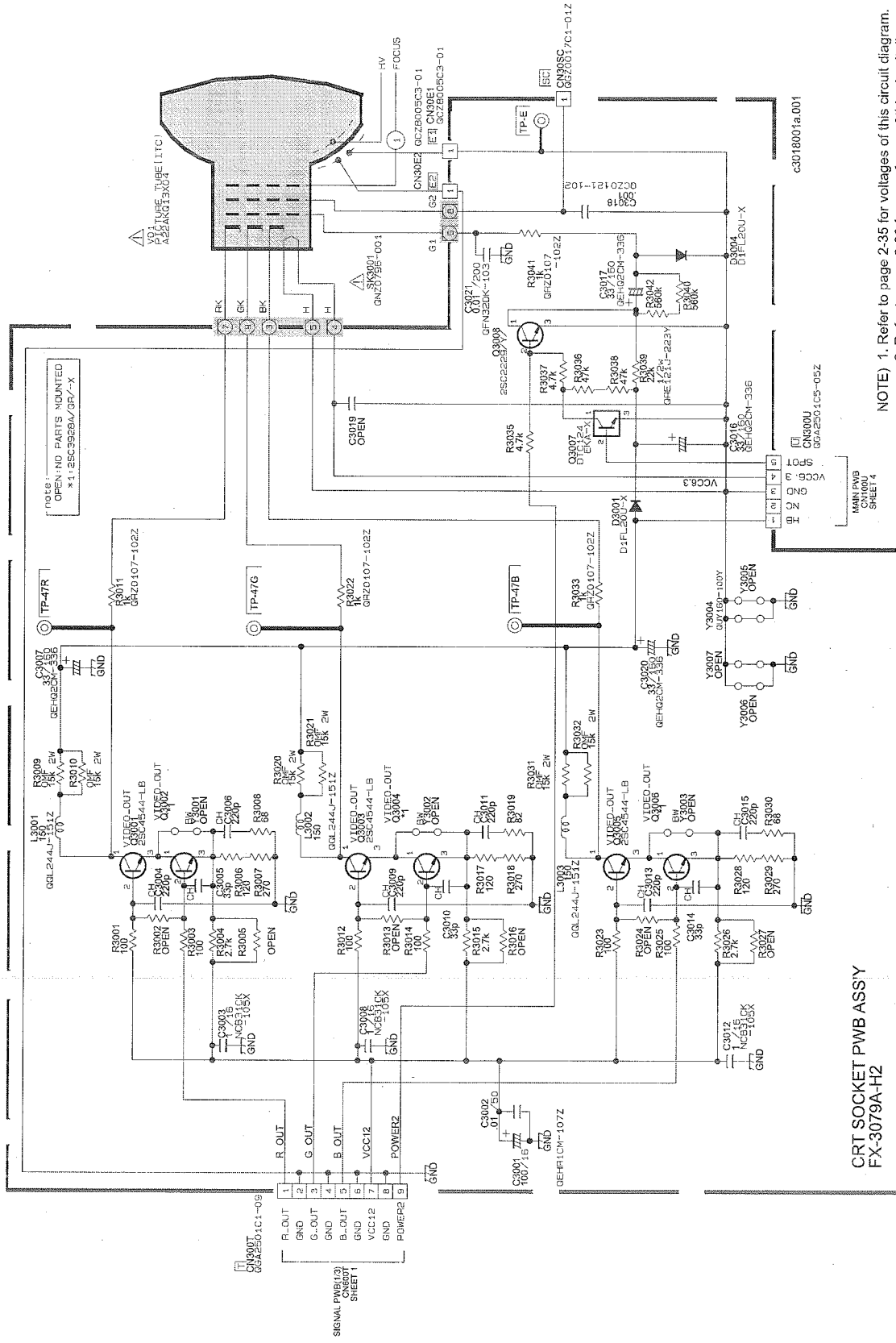


NOTE) 1. Refer to page 2-35 for voltages of this circuit diagram.
 2. Refer to page 2-35 for waveforms of this circuit diagram.
 3. Refer to the parts list for the part number of IC6805 and IC6807.

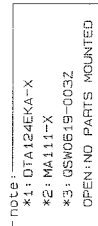


SIGNAL PWB ASSY (3/3)
FX-6153A-H2

c10424001a.001_3/3

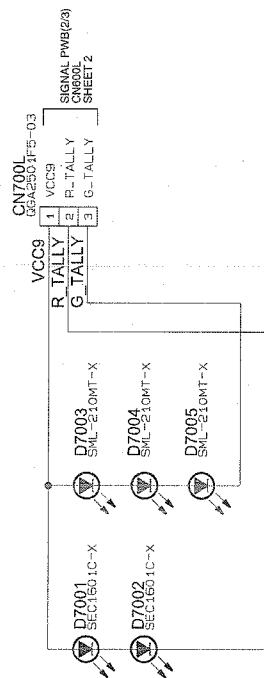


CRT SOCKET PWB ASSY
FX-3079A-H2



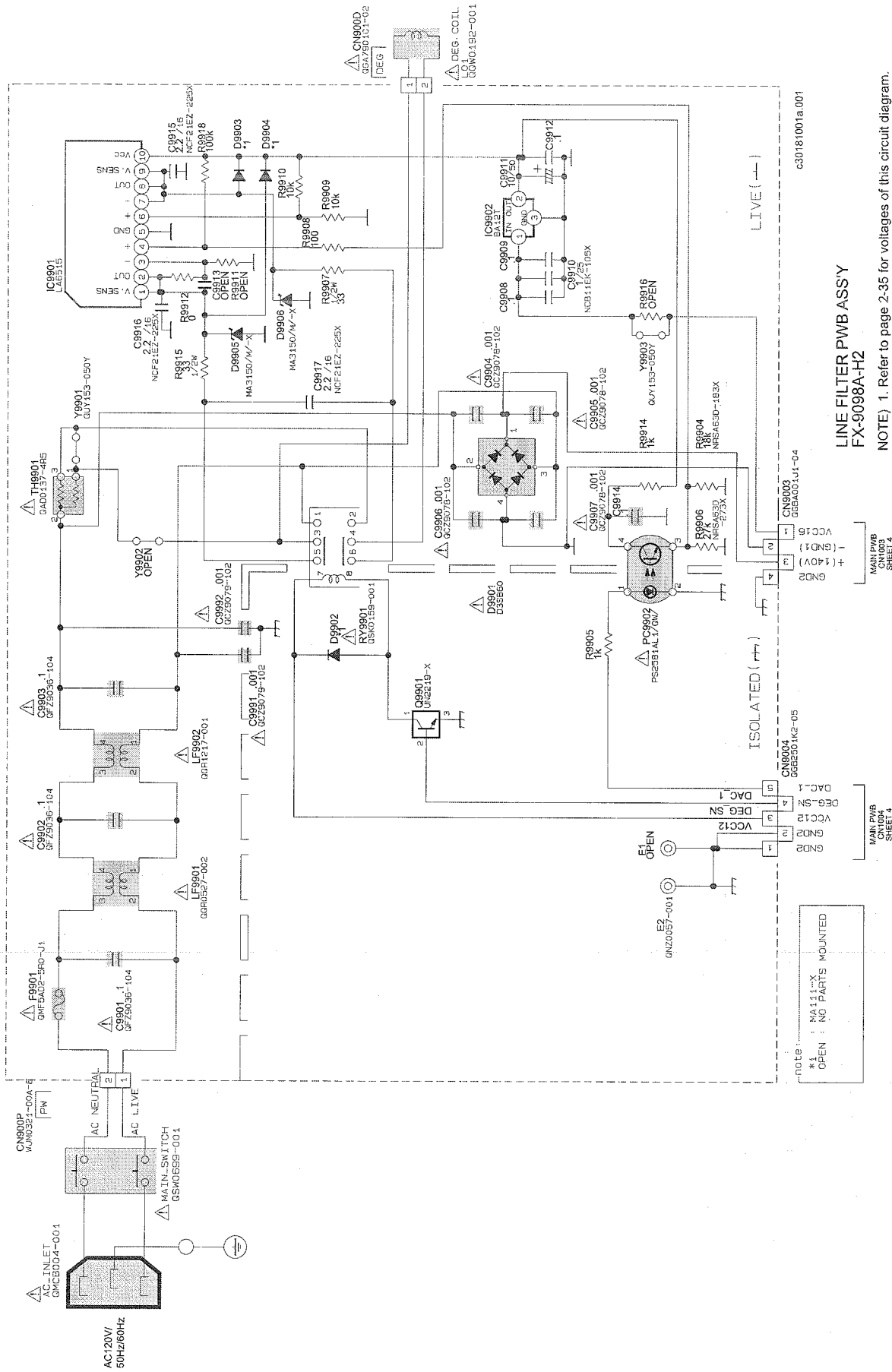
FRONT CONTROL PWB ASS'Y
FX-4098A-H2

NOTE) 1. Refer to page 2-35 for voltages of this circuit diagram.



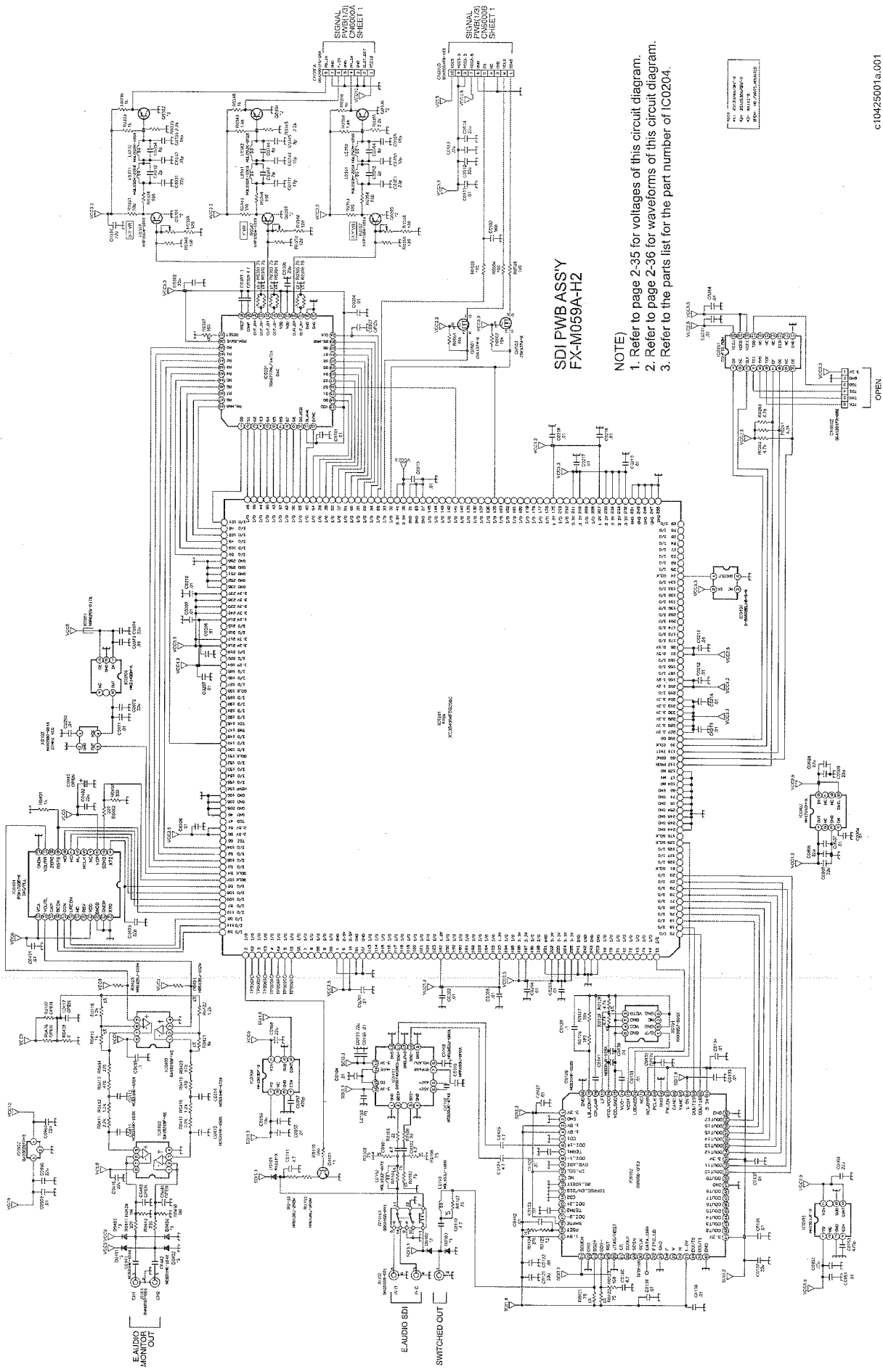
TALLY PWB ASSY
FX-7061A-H2

LINE FILTER PWB CIRCUIT DIAGRAM SHEET 8

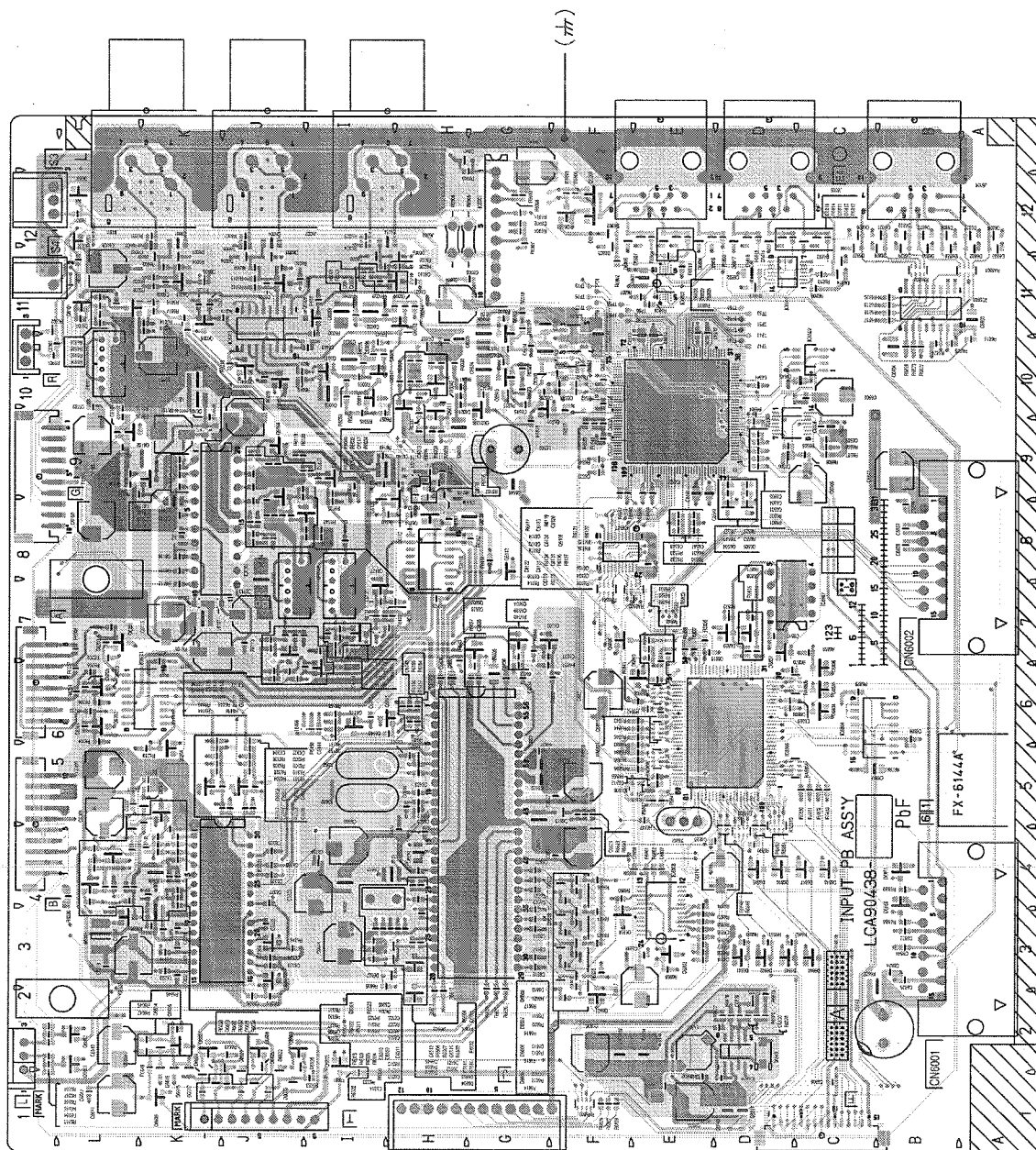


LINE FILTER PWB ASS'Y
FX-9098A-H2

NOTE) 1. Refer to page 2-35 for voltages of this circuit diagram.

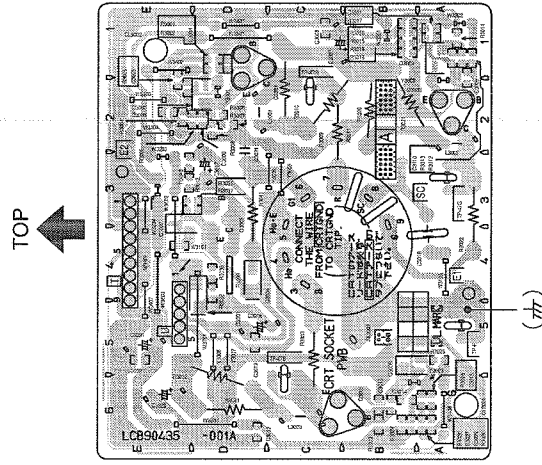


PATTERN DIAGRAMS
SIGNAL PWB PATTERN (PARTS SIDE)

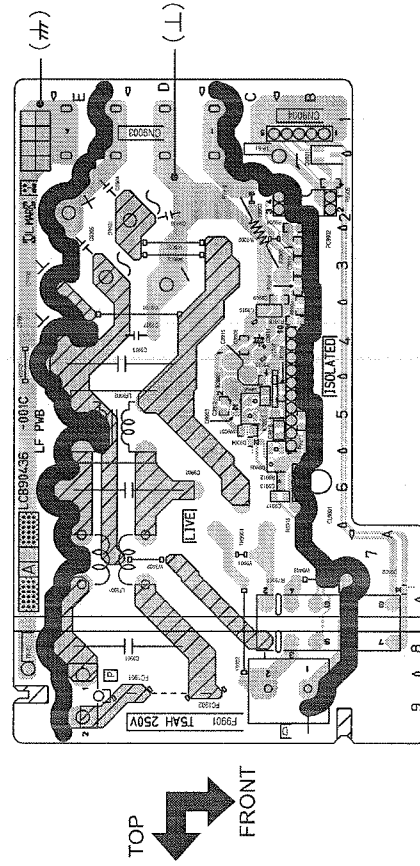


TOP
FRONT

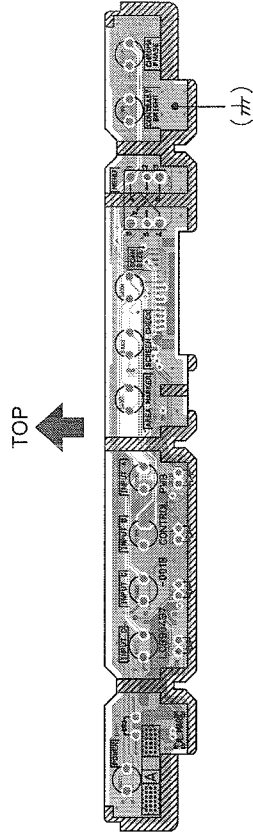
CRT SOCKET PWB PATTERN



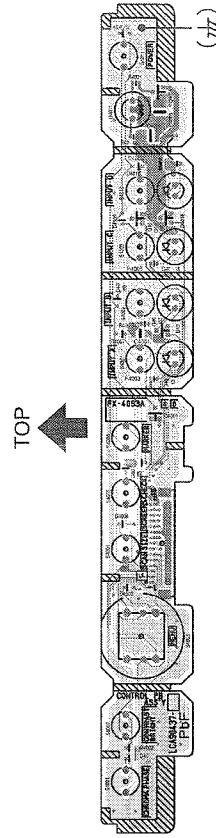
LINE FILTER PWB PATTERN



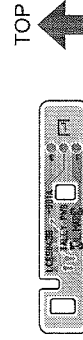
FRONT CONTROL PWB PATTERN [SOLDER SIDE]



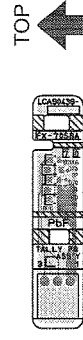
FRONT CONTROL PWB PATTERN [PARTS SIDE]



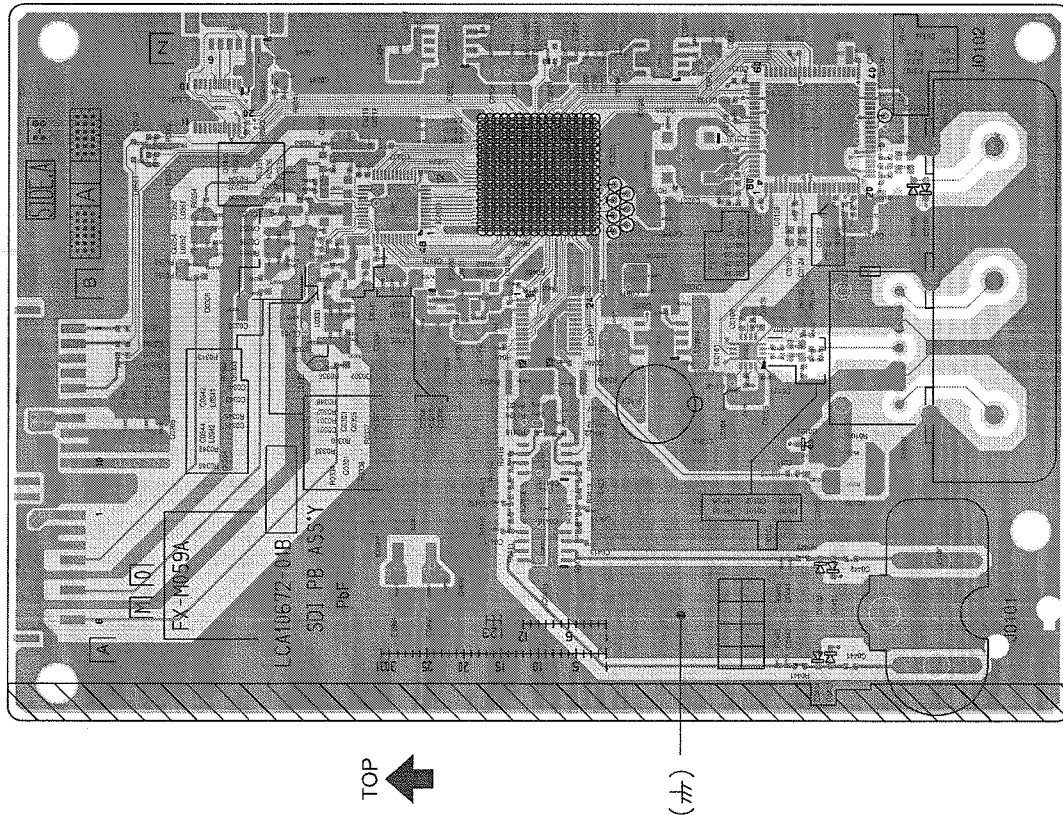
TALLY PWB PATTERN [SOLDER SIDE]



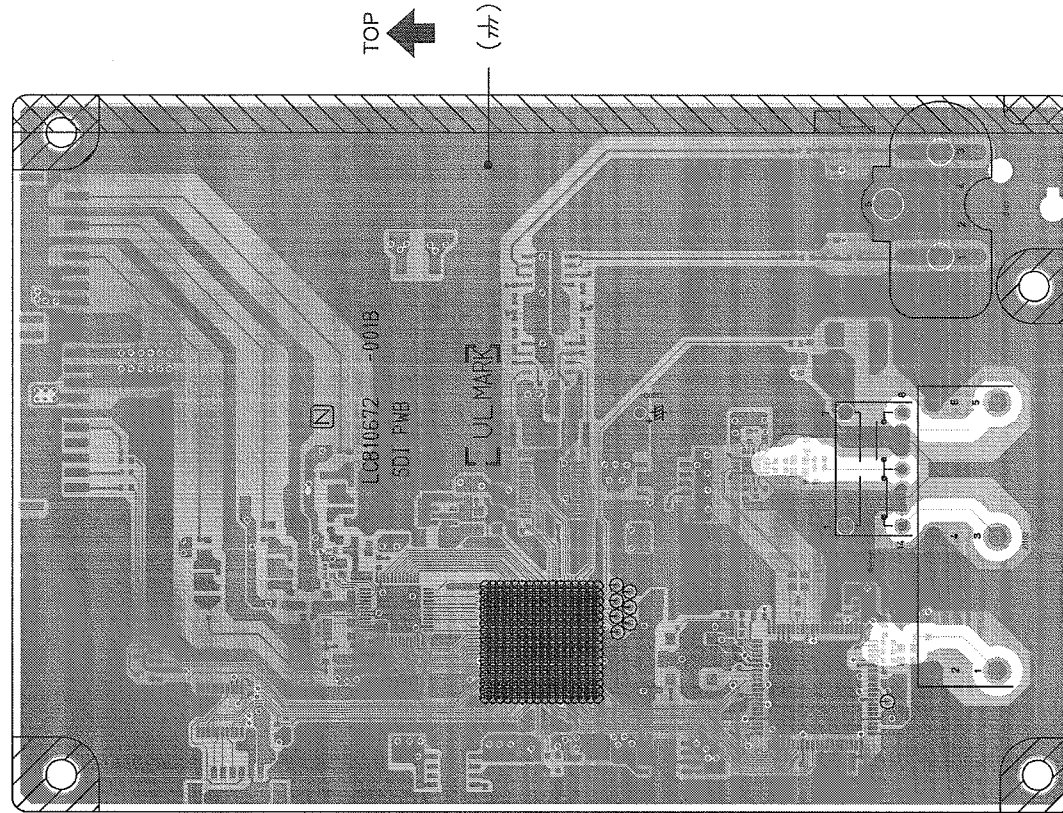
TALLY PWB PATTERN [PARTS SIDE]



SDI PWB PATTERN [PARTS SIDE]



SDI PWB PATTERN [SOLDER SIDE]

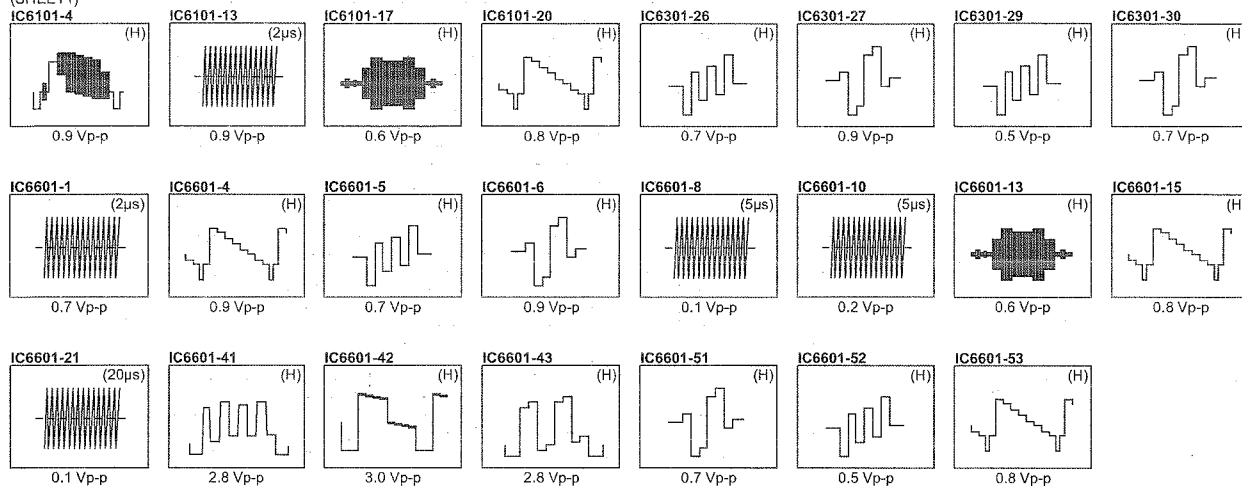


VOLTAGE CHARTS

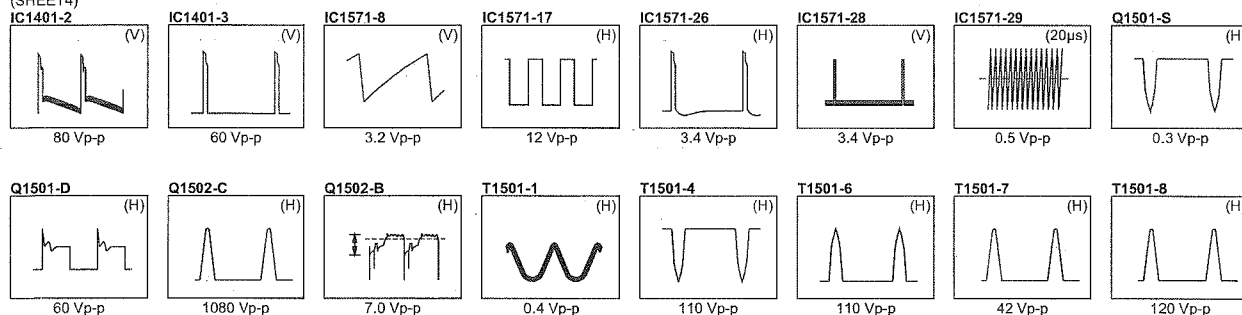
<SIGNAL PWB (1/3)>		<SIGNAL PWB (2/3)>		<MAIN PWB>		<SDI PWB>	
MODE PIN NO.	DC (V)	MODE PIN NO.	DC (V)	MODE PIN NO.	DC (V)	MODE PIN NO.	DC (V)
IC6001	-	42	2.5	IC6802	-	IC10101	80 0
IC6101	-	43	2.6	IC6803	-	IC0204	1 2.5
1	4.9	44	0	IC6804	-	1	0 2.5
2	1.2	45	6.1	IC6805	-	2	0 4 0
3	3.1	46	9.0	IC6806	-	3	0 5 2.5
4	2.3	47	0	IC6807	-	4	0 6 2.5
5	1.8	48	3.6	1	0	5	0 7 4.5
6	0	49	5.4	2	0	6	0 8 12.2
7	0	50	3.6	3	0	7	2.5 IC0403
8	4.9	51	4.9	4	0	8	0.3 1 4.6
9	3.7	52	5.0	5	3.8	9	0 2 4.5
10	3.7	53	6.4	6	3.9	10	2.3 3 4.6
11	0	54	6.9	7	0	11	0 4 0
12	0	55	5.0	8	4.9	12	0 5 4.5
13	2.5	56	0	IC6808	-	13	3.2 6 4.5
14	2.2	Q6001	-	IC6809	-	14	0 7 4.5
15	4.9	Q6002	-	IC6901	-	15	0 8 12.3
16	0	Q6003	-	1	7.8	16	0 IC0404
17	2.5	Q6004	-	2	7.8	17	2.4 1 3.3
18	3.1	Q6005	-	3	3.1	18	3.2 2 3.2
19	1.8	Q6006	-	4	3.1	19	3.3 3 0
20	2.2	Q6007	-	5	0	20	2.5 4 0
IC6102	-	Q6008	-	6	5.6	IC0301	1 1.2
IC6201	-	Q6009	-	7	5.6	2	0 2 0
IC6301	-	Q6010	-	8	5.6	3	0 3 0
1	4.6	Q6011	-	9	5.6	4	0 4 0.2
2	4.5	Q6013	-	10	12.2	5	0 5 2.5
3	4.5	Q6016	-	Q6801	-	6	0 6 0
4	4.0	Q6017	-	Q6802	-	7	3.2 7 0
5	8.9	Q6018	-	Q6803	-	8	0 8 2.5
6	1.3	Q6101	-	Q6804	-	9	0 IC0903
7	0.2	Q6102	-	Q6805	-	10	0 1 1.8
8	0	Q6103	-	Q6806	-	11	3.2 2 0
9	4.2	Q6104	-			12	1.5 3 0
10	2.2	Q6105	-			13	3.3 4 0.5
11	2.4	Q6106	-			14	0 5 0
12	0	Q6107	-			15	0 6 0
13	2.5	Q6109	-			16	0 7 2.4
14	5.0	Q6110	-			17	0 IC0904
15	2.6	Q6111	-			18	0 1 3.3
16	3.5	Q6112	-			19	0 2 0
17	1.5	Q6113	-			20	0 3 0
18	1.5	Q6114	-			21	0 4 1.9
19	3.5	Q6201	-			22	0 IC0906
20	10.4	Q6202	-			23	3.3 1 4.9
21	0	Q6203	-			24	2.5 2 0
22	4.4	Q6204	-			25	0 3 4.9
23	4.4	Q6301	-			26	0 4 0
24	0.1	Q6302	-			27	0.4 5 3.3
25	0	Q6303	-			28	1.1 IC0907
26	5.1	Q6304	-			29	3.2 1 11.7
27	5.1	Q6305	-			30	3.3 2 0
28	4.4	Q6306	-			31	0 3 9.0
29	4.5	Q6307	-			32	0 E 0
30	4.5	Q6601	-			33	0.4 C 0
IC6601	-	Q6602	-			34	1.2 B 0.8
1	3.2	Q6603	-			35	1.9 Q0301
2	1.1	Q6604	-			36	0 E 1.8
3	3.9	Q6605	-			37	1.2 C 0
4	1.8	Q6606	-			38	3.3 B 1.2
5	2.1	Q6607	-			39	0 Q0302
6	2.2	Q6608	-			40	0 E 1.6
7	0.1	Q6609	-			41	0 C 0
8	3.8					42	0 B 1.2
9	4.1					43	0 Q0303
10	4.0					44	0 E 0.8
11	2.2					45	0 C 0
12	5.0					46	0 B 0
13	2.4					47	0 IC0401
14	0					48	3.3 E 1.2
15	3.2					49	0 C 0
16	6.2					50	0 B 0.5
17	0					51	0 Q0305
18	4.5					52	0 E 1.9
19	0					53	3.3 C 0
20	7.4					54	0 B 1.2
21	5.9					55	0 Q0306
22	8.9					56	0 E 1.8
23	8.8					57	0 C 0
24	0					58	0 B 1.1
25	0.8					59	0 Q0501
26	0					60	0 S 3.3
27	3.6					61	3.3 D 3.2
28	3.7					62	0 G 3.7
29	4.7					63	1.8 S 3.3
30	4.8					64	1.8 D 3.1
31	4.7					65	0 G 3.6
32	0					66	0
33	3.0					67	3.3
34	3.0					68	1.6
35	3.0					69	3.3
36	0					70	3.3
37	3.5					71	NC
38	3.5					72	0
39	3.5					73	1.5
40	8.9					74	1.5
41	2.5					75	0
						76	2.4
						77	0.9
						78	0.9
						79	0.8

WAVEFORMS

SIGNAL PWB(1/3)
(SHEET1)



MAIN PWB
(SHEET4)



CRT SOCKET PWB
(SHEET5)

