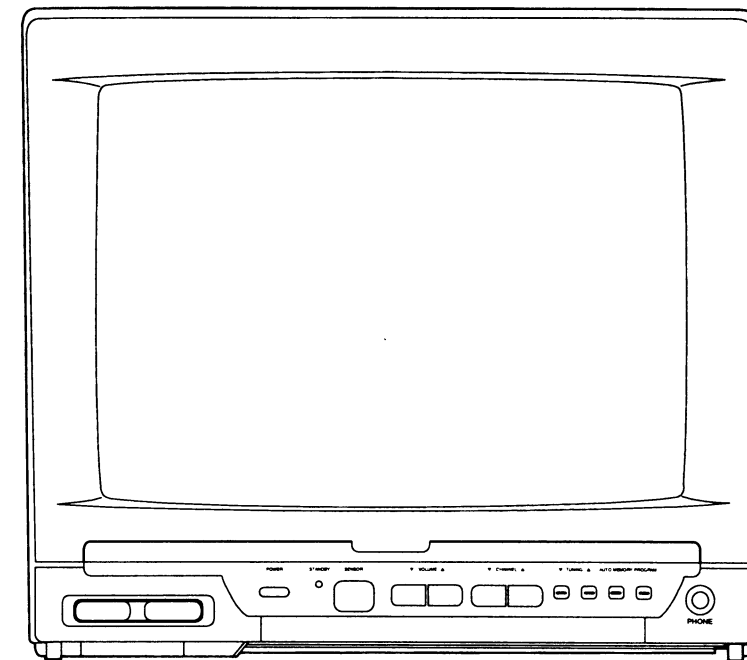




SERVICE MANUAL

14" COLOR TELEVISION

MS-14VN



12. White Balance Adjustment

Purpose: To mix red, green and blue beams correctly for pure white.

Symptom of Misadjustment: White becomes bluish or reddish.

Test Point	Adjustment Point	Input
Screen	VR454 VR455	White Raster (APL 100%)
Equipment		Spec.
Pattern Generator Color Analyzer		See below

- Reference Notes:** VR454, VR455 — CRT PCB
1. Degauss the CRT using Degaussing Coil..
 2. Set the color analyzer to the CHROMA mode and after zero point calibration, bring the optical sensor into close contact with center on the CRT surface.
 3. Adjust VR454 (R. DRIVE) and VR455 (B. DRIVE) so that the respective chroma temperatures becomes 8000K-10MPCD (x : 0.300 / y : 0.290) ±3%.

Note: Confirm that Cut Off Adj. is correct after this adjustment, and attempt Cut Off Adj. if needed.

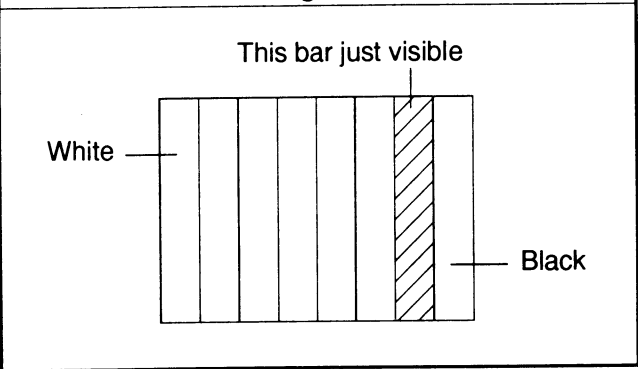
13. Sub Bright Adjustment

Purpose: To get proper brightness.

Symptom of Misadjustment: Proper brightness cannot be obtained by adjusting the Brightness Control.

Test Point	Adjustment Point	Input
Screen	Screen-VR	Gray Scale (8 step)
Equipment		Spec.
Pattern Generator		See Below

Figure



- Reference Notes:** Screen-VR — Main PCB (FBT)
- Adjust Screen-VR so that the level of dark gray bar (as shown above) is just visible.
- Note: Use the Gray Scale Signal without set up.

14. Focus Adjustment

Purpose: Set the optimum Focus.

Symptom of Misadjustment: Blurred images are shown on the display.

Test Point	Adjustment Point	Input
Screen	Focus VR	Monoscope Pattern
Equipment		Spec.
Monoscope		See below

- Reference Note:** Focus VR — Main PCB (FBT)
- Adjust Focus-VR (FBT) to be obtained clear picture.

15. V. Position & Size Adjustment

Purpose: To get correct vertical position and size of screen image.

Symptom of Misadjustment: Vertical position and size of screen image may not be properly displayed.

Test Point	Adjustment Point	Input
Screen	VR501, VR521	Monoscope Pattern
Equipment		Spec.
Monoscope		See below

- Reference Note:** VR501, VR521 — Main PCB
1. Adjust VR521 so that the top & bottom of Monoscope pattern will be equal.
 2. Adjust VR501 so that the vertical size will be 90±5% of Monoscope Pattern and the circle is round.

16. H. Position & Size* Adjustment

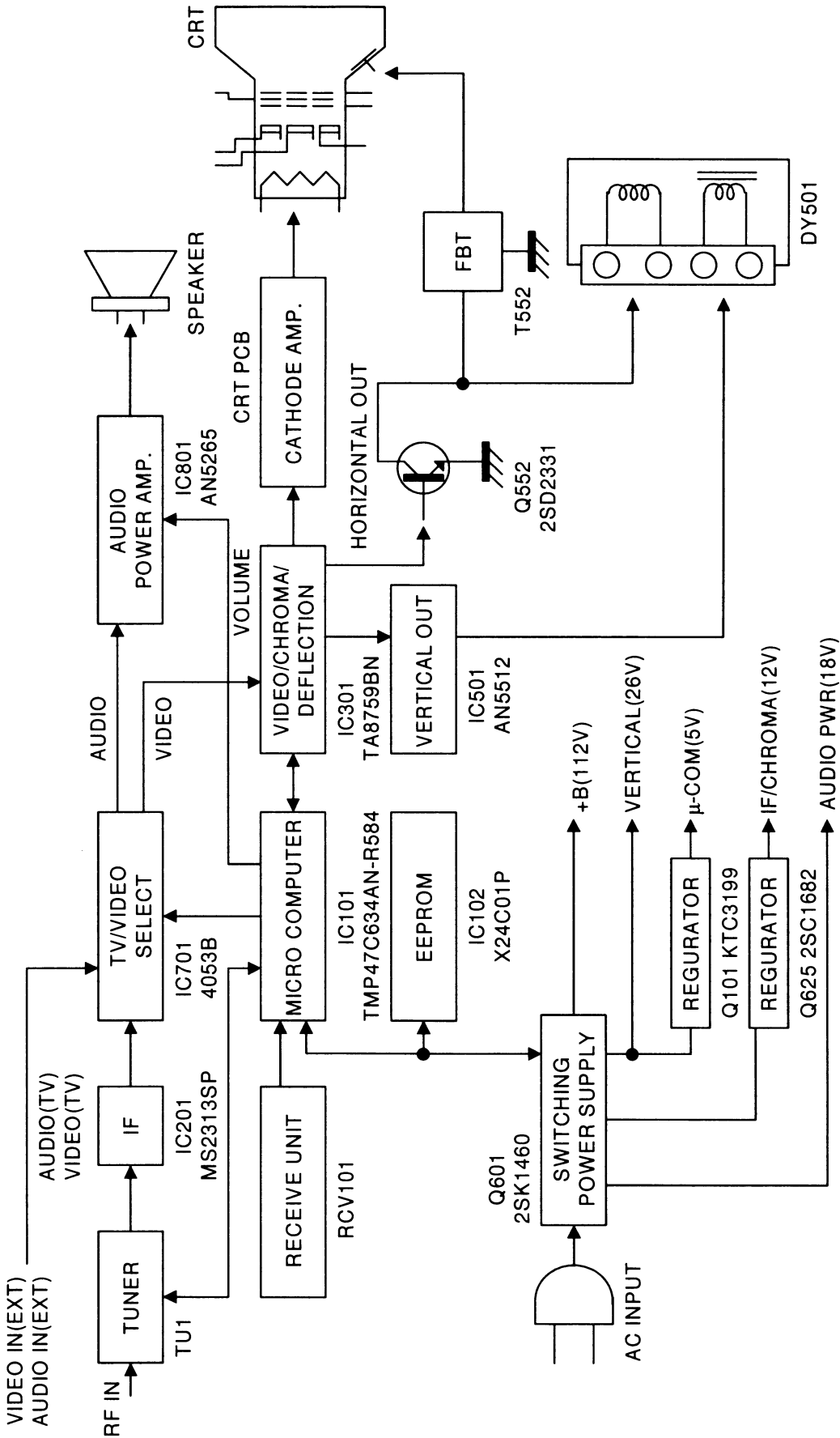
Purpose: To get correct horizontal position and size of screen image.

Symptom of Misadjustment: Horizontal position and size of screen image may not be properly displayed.

Test Point	Adjustment Point	Input
Screen	VR331 , L551	Monoscope Pattern
Equipment		Spec.
Monoscope		See below

- Reference Note:** VR331, L551 — Main PCB
1. Adjust VR331 so that the right & left of monoscope pattern will be equal.
 2. Adjust L551 so that the horizontal size will be 90±5% of Monoscope Pattern and the circle is round.
- * Only model with L551.

BLOCK DIAGRAM



SCHEMATIC DIAGRAMS / PCB'S AND TEST POINTS

Standard Notes

Warning

Critical components having special safety characteristics are identified with a  by the Ref. No. in the parts list and enclosed within a broken line * (where several critical components are grouped in one area) along with the safety symbol  on the schematics or exploded views.

Use of substitute replacement parts which do not have the same specified safety characteristics may create shock, fire, or other hazards.

Under no circumstances should the original design be modified or altered without written permission from Funai Electric Company. Funai assumes no liability,

express or implied, arising out of any unauthorized modification of design. Servicer assumes all liability.

Notes:

- ① Do not use the part number shown on these drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since these drawings were prepared.
- ② All resistance values are indicated in ohms (K=10³, M=10⁶).
- ③ Resistor wattages are 1/5W or 1/6W unless otherwise specified.
- ④ All capacitance values are indicated in μF (P=10⁻⁶ μF).

VOLTAGE CHART

(Unit: Volt)

Pin No.	IC101	IC102	IC201	IC501	IC601	IC701	IC801
1	2.4	0.0	2.1	0.0	44.0	5.9	0.0
2	4.5	0.0	5.9	14.2	42.9	6.1	5.0
3	4.4	0.0	5.0	0.0	0.0	2.5	0.0
4	3.8	0.0	2.7	27.6	0.6	2.5	7.3
5	1.3	4.9	1.9	15.3		0.7	9.0
6	0.0	4.9	1.5	0.7		0.0	9.0
7	0.0	0.0	0.0	-0.3		0.0	0.0
8	0.0	4.9	2.0	1.1		0.0	0.0
9	3.2		3.2	27.2		12.2	19.2
10	1.6		4.2			12.2	
11	1.6		3.6			12.2	
12	1.6		2.9			2.4	
13	0.0		5.3			2.4	
14	0.0		4.5			2.4	
15	0.0		4.4			5.9	
16	4.2		5.3			12.2	
17	0.2		2.6				
18	5.6		12.2				
19	6.0		2.6				
20	0.1		2.4				
21	0.0						
22	0.0						
23	0.0						
24	0.0						
25	0.0						
26	3.8						
27	4.7						
28	2.7						
29	2.8						
30	0.0						
31	2.1						
32	2.2						
33	4.9						
34	0.0						
35	4.0						
36	4.4						
37	0.0						
38	0.0						
39	4.9						
40	4.9						
41	4.9						
42	4.9						

Pin No.	IC301	Pin No.	IC301
1	8.8	33	7.0
2	8.2	34	3.2
3	8.8	35	0.8
4	6.6	36	7.9
5	6.6	37	
6	12.3	38	7.2
7	3.3	39	2.2
8	6.6	40	9.2
9	6.6	41	3.5
10	6.1	42	3.6
11	6.0	43	3.5
12	5.3	44	5.1
13	5.3	45	5.2
14	8.0	46	5.2
15	6.1	47	7.2
16	10.7	48	3.3
17	3.5	49	7.2
18	5.4	50	0.0
19	0.0	51	0.0
20	5.0	52	0.0
21	0.1	53	0.0
22	11.6	54	0.0
23	5.4	55	6.1
24	6.0	56	3.3
25	5.0	57	6.1
26	3.3	58	4.5
27	11.2	59	3.3
28	3.3	60	6.2
29	0.7	61	12.3
30	8.9	62	6.2
31	6.6	63	12.3
32	6.5	64	8.2

Input: PAL Color Bar Signal (with 1KHz Audio Signal)

Receiving Ch.: E2 ch (48.25MHz)

Preset Mode: Press Picture Select button on the remote control unit, then press the number "1" button.

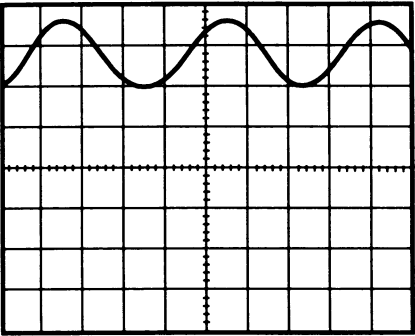
Brightness— Center
Color— Center
Contrast— Approx 70%

Pin No.	E	C	B
Q1	0.0	2.9	0.6
Q2	12.2	0.1	11.8
Q3	12.1	0.0	12.1
Q4	12.1	12.1	11.4
Q101	4.9	9.3	5.5
Q102	5.5	5.5	4.8
Q103	0.0	4.1	0.1
Q104	27.7	9.4	27.3
Q105	0.0	27.2	0.0
Q121	0.0	4.7	0.0
Q122	0.0	3.8	0.0
Q123	0.0	4.4	0.1
Q125	0.0	0.7	0.0
Q201	0.9	9.5	1.6
Q281	0.0	4.2	0.0
Q301	0.0	12.2	0.1
Q381	0.0	2.2	0.0
Q391	0.0	0.1	0.7
Q393	5.2	0.0	4.6
Q394	5.2	0.0	6.2
Q395	0.0	6.4	0.0
Q396	0.0	5.4	0.0
Q397	6.6	0.0	0.9
Q451	3.2	125.2	3.5
Q452	3.2	129	3.5
Q453	3.3	125.4	3.5
Q551	0.0	72.7	0.4
Q552	-0.2	122.7	0.0
Q601	0.7	-	0.1
Q602	0.0	0.7	-0.1
Q603	0.0	0.7	-8.0
Q604	0.6	0.0	0.7
Q621	6.7	43.0	7.3
Q622	3.2	112	0.1
Q623	0.0	0.0	0.5
Q625	12.8	14.0	12.3
Q702	2.4	12.3	3.0
Q703	1.8	12.3	2.4
Q704	0.0	12.2	0.0
Q705	0.0	12.2	0.0
Q801	0.0	4.1	0.4

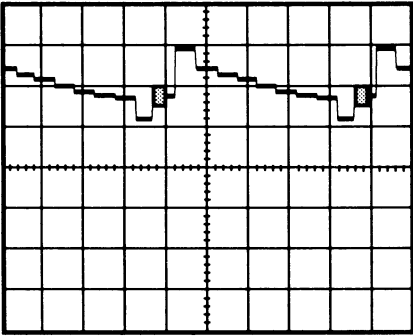
WAVEFORMS

Input: PAL Color Bar Signal (with 1KHz Audio Signal)
Receiving Ch.: E2 ch (48.25MHz)
Preset Mode: Press Picture Select button on the remote control unit,
then press the number "1" button.
(Brightness—Center Color—Center Contrast—Approx 70%)

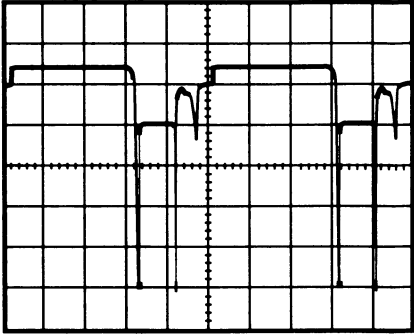
WFa ~ WFt = Waveforms to be observed at
Waveform check points.
(Shown in Schematic Diagram.)



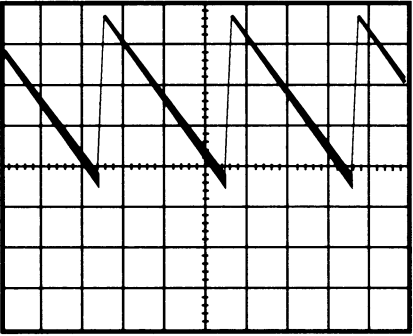
WFa 1DIV: 1V 0.2msec



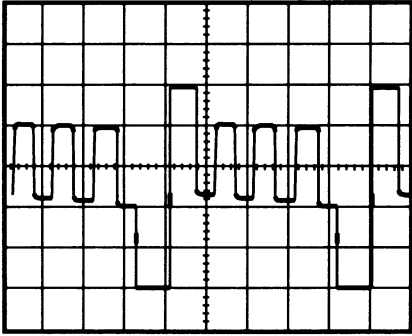
WFe 1DIV: 0.5V 10μsec



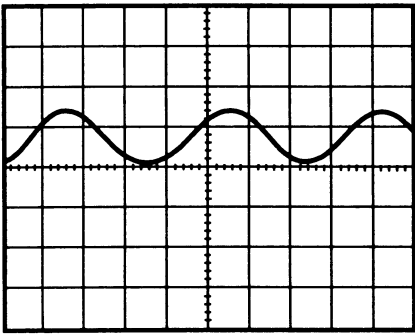
WFi 1DIV: 2V 10μsec



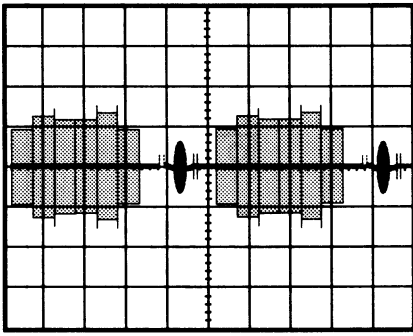
WFn 1DIV: 0.5V 5msec



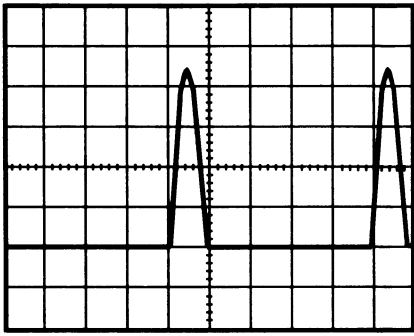
WFq 1DIV: 1V 10μsec



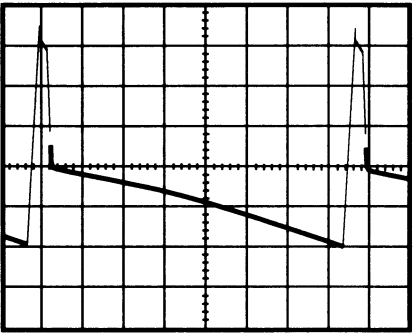
Wfb 1DIV: 1V 0.2msec



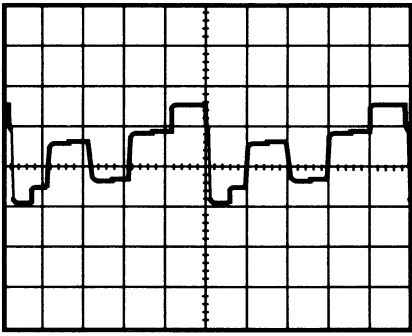
WFf 1DIV: 0.2V 10μsec



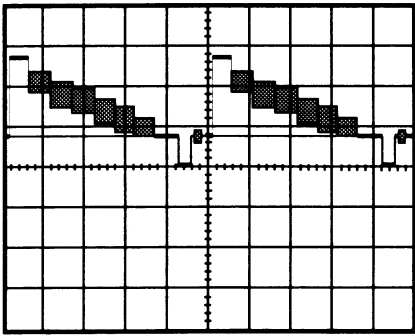
WFj 1DIV: 250V 10μsec



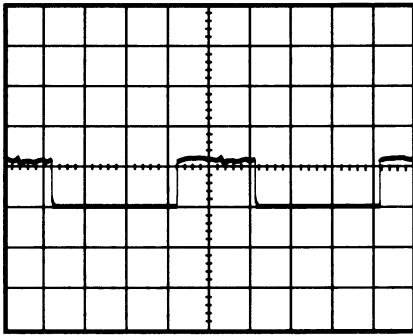
Wfn 1DIV: 10V 2msec



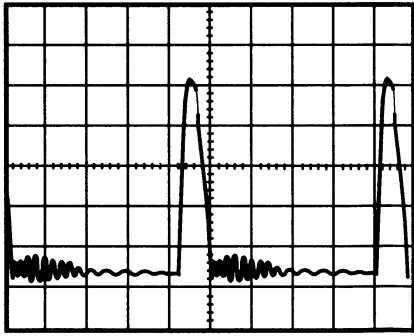
Wfr 1DIV: 50V 10μsec



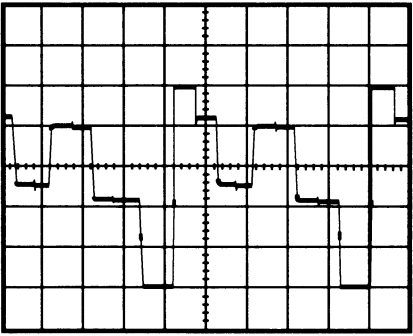
Wfc 1DIV: 1V 10μsec



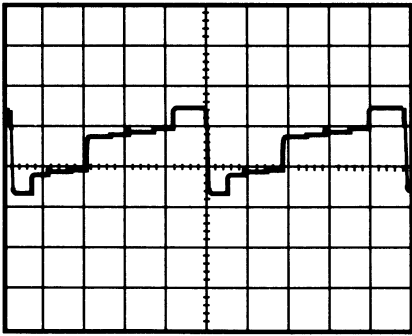
Wfg 1DIV: 0.5V 10μsec



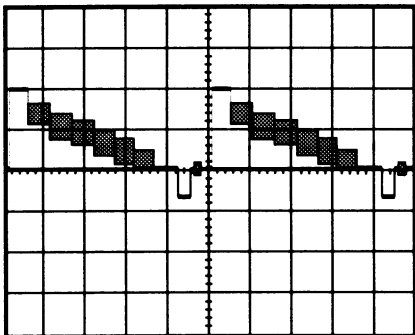
Wfk 1DIV: 5V 10μsec



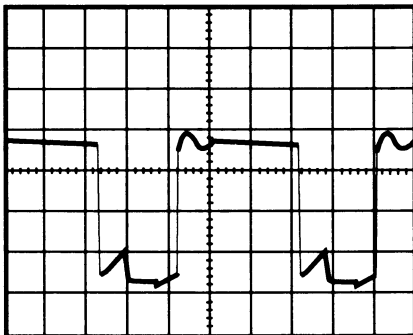
Wfo 1DIV: 1V 10μsec



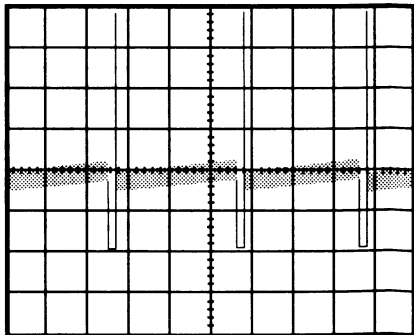
Wfs 1DIV: 50V 10μsec



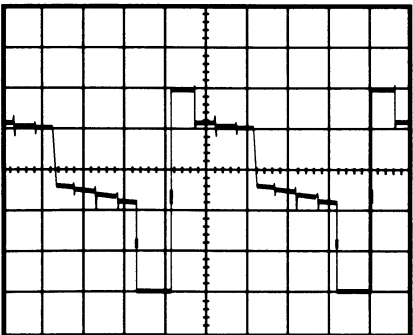
Wfd 1DIV: 1V 10μsec



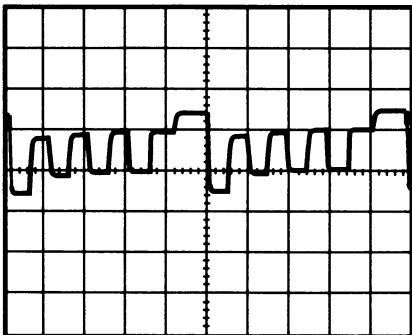
WFh 1DIV: 50V 10μsec



Wfi 1DIV: 0.5V 5msec

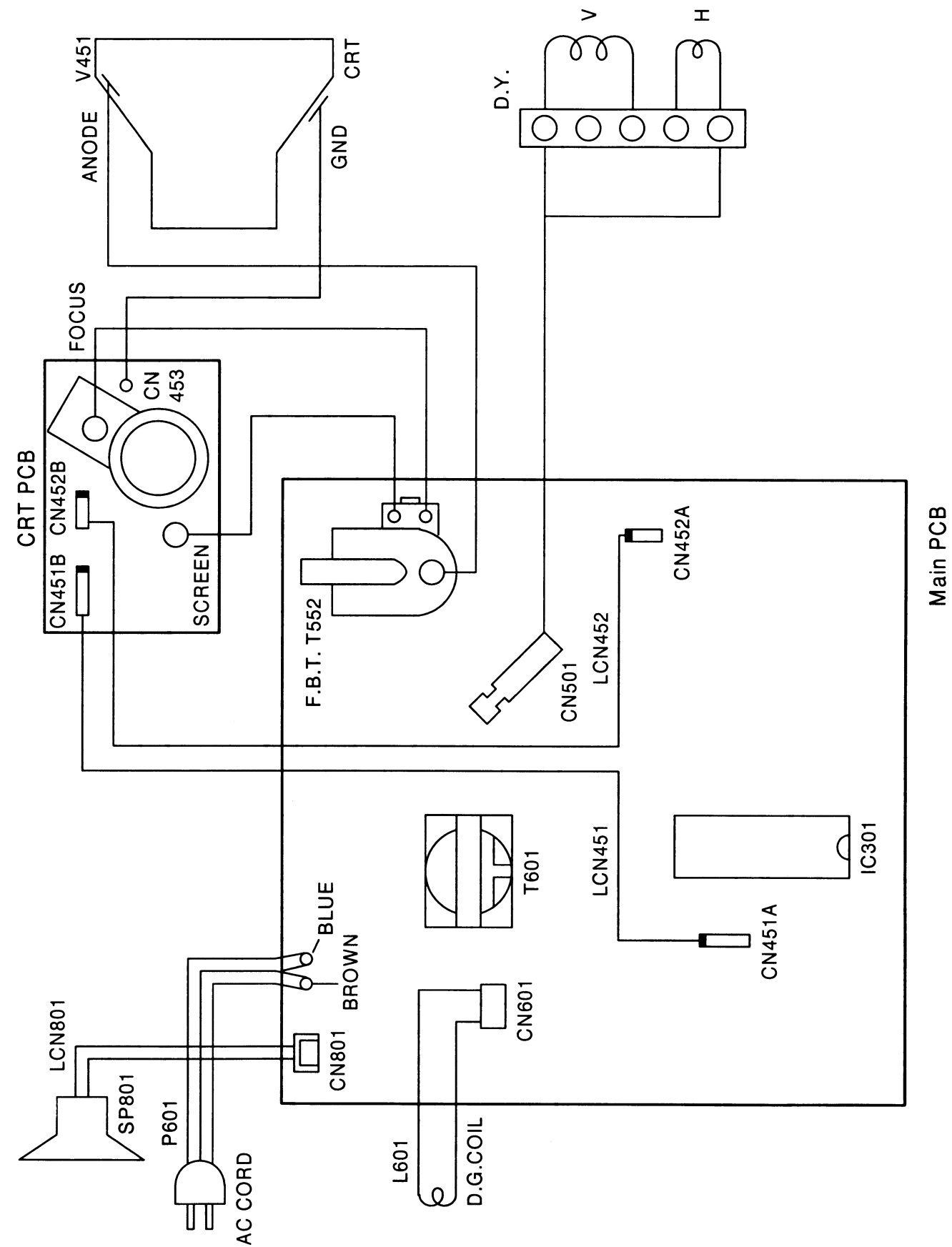


Wfp 1DIV: 1V 10μsec

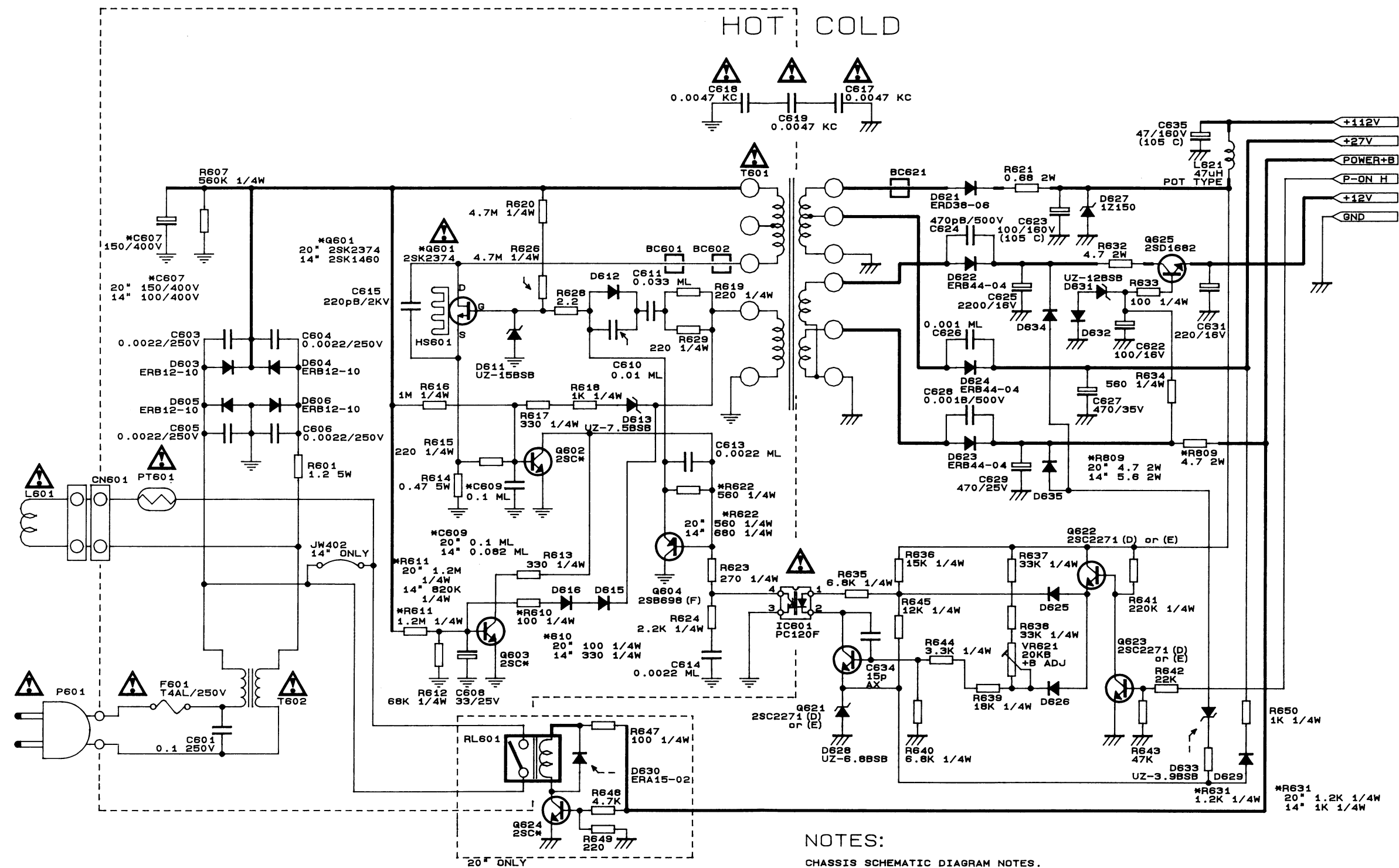


Wft 1DIV: 50V 10μsec

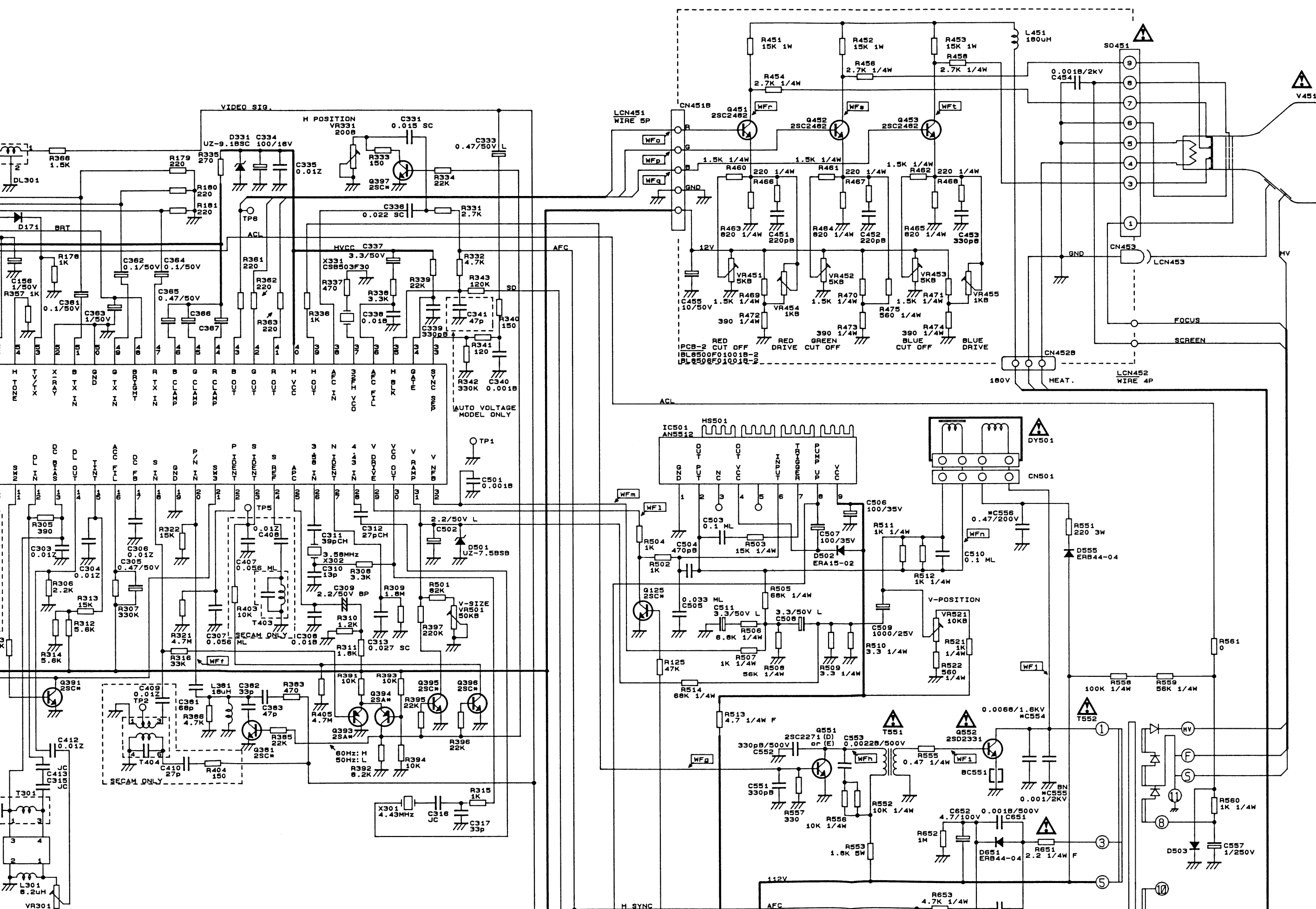
WIRING DIAGRAM



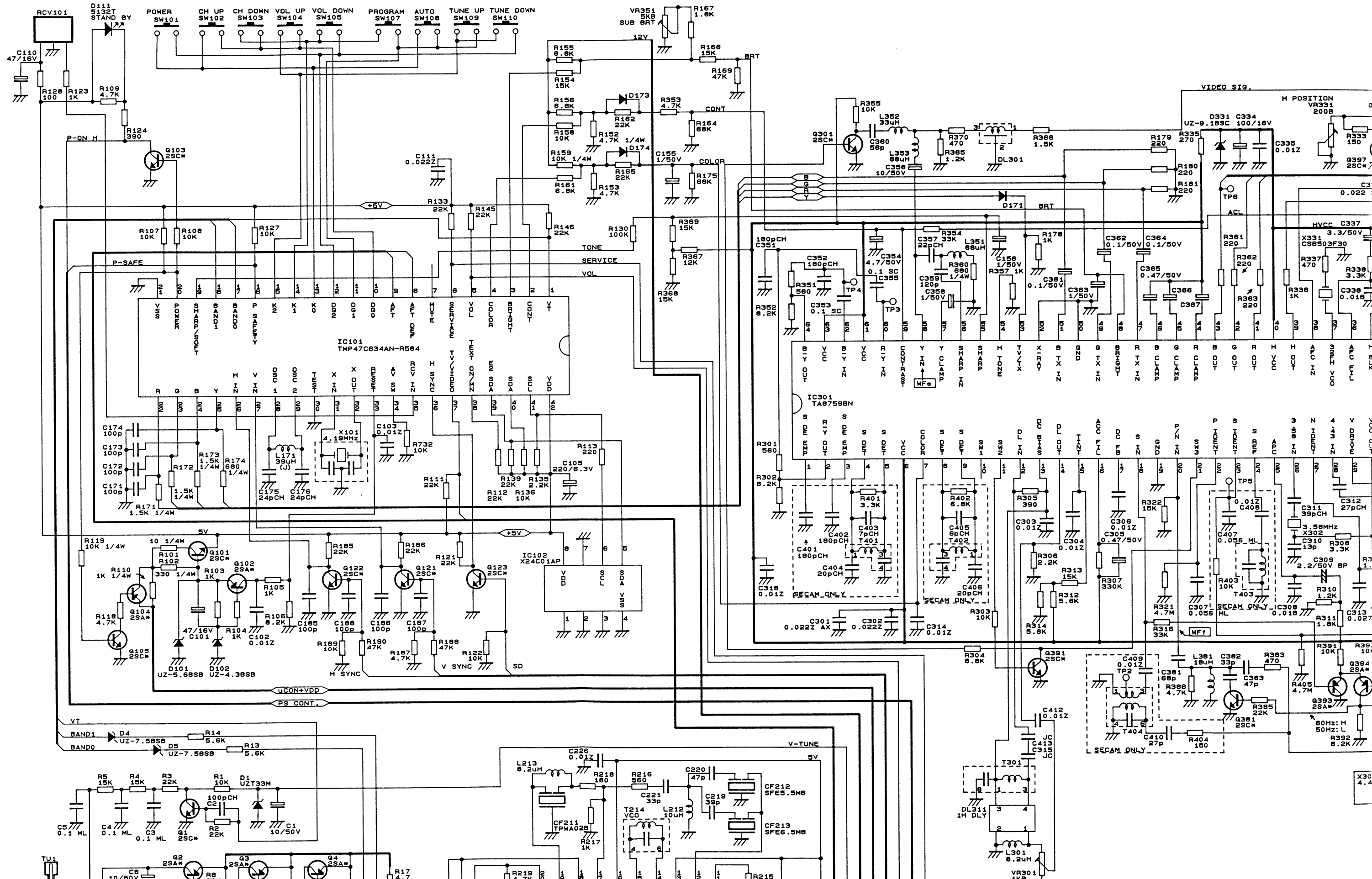
Power Supply Schematic Diagram

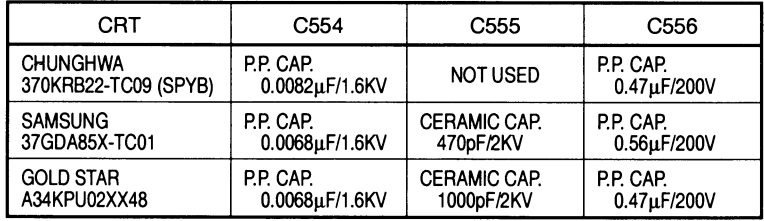


- NOTES:
- CHASSIS SCHEMATIC DIAGRAM NOTES.
1. ALL RESISTOR VALUES ARE IN OHMS. K=1000, M=1000K.
2. ALL CAPACITANCE VALUES ARE IN uF UNLESS OTHERWISE NOTED. pF=uuf.
3. SAFETY REQUIREMENTS COMPONENT IN ACCORDANCE WITH PRESENT SAFETY REGULATIONS. THESE COMPONENTS MUST ONLY BE REPLACED BY ORIGINAL PARTS.
4. IS COLD GROUND.
5. IS HOT GROUND.
6. WAVEFORM READINGS.
7. NO INDICATED DIODES ARE USED 1N4148M.
8. NO INDICATED 2SC* ARE USED KTC3199.
9. NO INDICATED 2SA* ARE USED KTA1267.



Main / CRT Schematic Diagram





CHASSIS SCHEMATIC DIAGRAM NOTES.

1. ALL RESISTOR VALUES ARE IN OHMS, K=1000, M=1000K.
2. ALL CAPACITANCE VALUES ARE IN μ F UNLESS OTHERWISE NOTED. pF= μ F.
3. SAFETY REQUIREMENTS COMPONENT IN ACCORDANCE WITH PRESENT SAFETY REGULATIONS. THESE COMPONENTS MUST ONLY BE REPLACED BY ORIGINAL PARTS.
4. IS HOT GROUND.
5. IS COLD GROUND.
6. WAVEFORM READINGS
7. NO INDICATED DIODES ARE USED 1N4148M
8. NO INDICATED 2SC* ARE USED KTC3199
9. NO INDICATED 2SA* ARE USED KTA1267

D

C

B

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