

# Service Manual

## Colour Television



# TC-29P10N

# TC-33P10N

## LX1 Chassis

## Specifications

**Power Source:** AC100 V, 60 Hz

**Power Consumption:**

TC-29P10N	TC-33P10N
134W	144 W
Stand-by condition 0.4W	Stand-by condition 0.4 W

**Aerial Impedance:** 75Ω unbalanced,  
Coaxial type

**Receiving system:** NTSC M

**Tuning System:** Voltage Synthesizer  
100 position (Auto Search)

**Receiving Channels:**

VHF Band	2-13 (NTSC M U.S.A.)
UHF Band	14-69 (NTSC M U.S.A.)
CATV	1-125 (U.S.A. CATV)

**Intermediate Frequency:**

Video	45.75 MHz
Sound	41.25 MHz
Color	42.17 MHz (NTSC)

**High Voltage:** 31.0 (+0.7, -1.5)kV  
at zero beam current

**Video / Audio Terminals:**

AV1,2,3	S-Video IN	Y:1.0 Vp-p 75 Ω C:0.3 Vp-p 75 Ω
	Video IN	1 Vp-p 75 Ω
	Audio IN	0.5 Vrms
Monitor Out	Video Out	1 Vp-p 75 Ω
	Audio Out	0.5 Vrms

**Picture Tube:**

TC-29P10N	TC-33P10N
M68LQL185X	M79LQM185X
Type29 (73 cm)	Type 33 (85 cm)
104° deflection	104° deflection

**Audio Output:** 15W (5W+5W+5W)(10% THD)

**Headphones:** 3.5 mm Plug

**Dimensions (W×D×H):**

TC-29P10N	688 mm × 492 mm × 570 mm
TC-33P10N	790 mm × 555 mm × 653 mm

**Mass:**

TC-29P10N	48.0 kg (Net)
TC-33P10N	71.0 kg (Net)

**Accessories Supplied:**

Remote Controller × 1  
"R6" Battery × 2

Specifications are subject to change without notice.  
Mass and dimensions shown are approximate.

# Panasonic

**⚠ WARNING**

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

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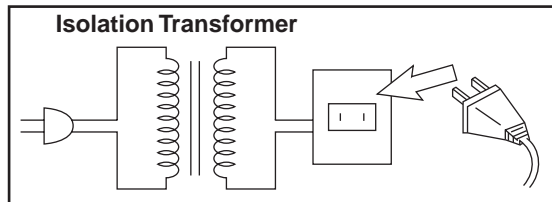
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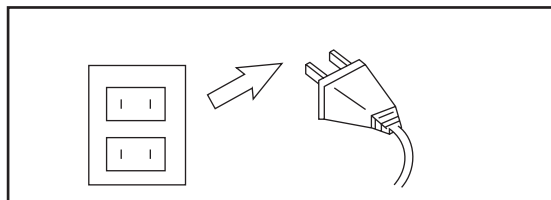
# Safety Precautions

## General Guide Lines

1. It is advisable to insert an isolation transformer in the AC supply before servicing a hot chassis.



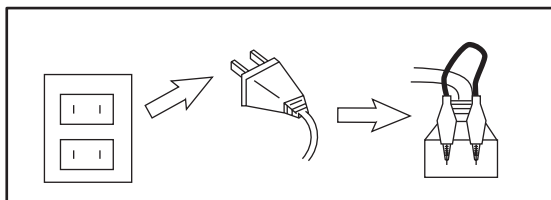
2. When servicing, observe the original lead dress, especially the lead dress in the high voltage circuits. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
3. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers, shields, and isolation R-C combinations, are properly installed.
4. When the receiver is not be used for a long period of time, unplug the power cord from the AC outlet.



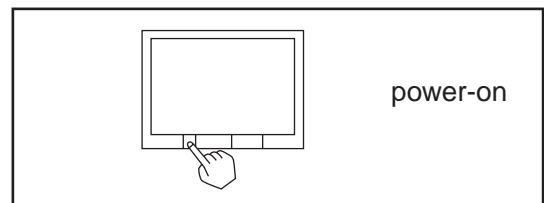
5. Potential, as high as **33.0 kV**, is present when this receiver is in operation. Operation of the receiver without the rear cover involves the danger of a shock hazard from the receiver power supply. Servicing should not be attempted by anyone who is not thoroughly familiar with the precautions necessary when working on high voltage equipment. Always discharge the anode of the picture tube to the receiver chassis before handling the tube.
6. After servicing make the following leakage current checks to prevent the customer from being exposed to shock hazards.

## Leakage Current Cold Check

1. Unplug the AC cord and connect a jumper between the two prongs on the plug.



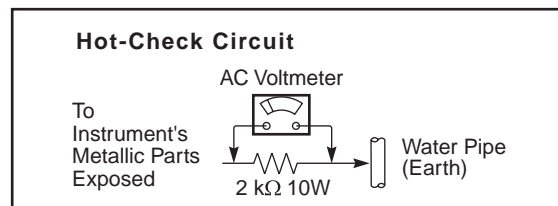
2. Turn on the receiver's power switch.



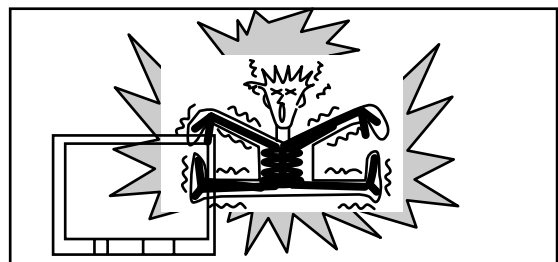
3. Measure the resistance value, with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the receiver, such as screw heads, aerals, connectors, control shafts, etc. When the exposed metallic part has a return path to the chassis, the reading should be between 4 MW and 20 MW. When the exposed metal does not have a return path to the chassis, the reading must be ∞.

## Leakage Current Hot Check

1. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.
2. Connect a 2kW, 10W resistor, in series with an exposed metallic part on the receiver and an earth such as a water pipe.
3. Use an AC voltmeter, with high impedance type, to measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.



5. Reverse the AC plug in the AC outlet and repeat each of the above measurements.
6. The potential at any point should not exceed **1.0 Vrms**. In case a measurement is outside of the limits specified, there is a possibility of a shock hazard, and the receiver should be repaired and rechecked before it is returned to the customer.



## X-Radiation

### Warning:

1. The potential sources of X-Radiation in TV sets are the High Voltage section and the picture tube.
2. When using a picture tube test jig for service, ensure that jig is capable of handling **33.0kV** without causing X-Radiation.

**Note:** It is important to use an accurate periodically calibrated high voltage meter.

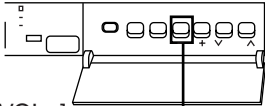
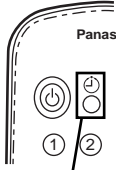

1. Set the brightness to minimum.
2. Measure the High Voltage. The meter reading should indicate **31.5 (+1.5, -1.5) kV**. If the meter indication is out of tolerance, immediate service and correction is required to prevent the possibility of premature component failure.
3. To prevent an X-Radiation possibility, it is essential to use the specified picture tube.



## In regard to the self-check function

When phenomena like “the power fails from time to time” or “the video/audio fails from time to time” can not be confirmed at the time of servicing, the self-check function can be used to confirm the occurrence and to limit the scope for the defective circuits. Also, when “the power fails from time to time”, display of the color bar on the screen can be used confirm the occurrence and to limit the scope for the defective circuits.

### Display method and display position

Display method	Display position																
<div>When display is desired</div> <p>Hold [⏻] (OFF TIMER) on the remote control pressed and press [VOL -] on the TV set. (The reception screen switches to TV monitor, and a screen as shown on the right appears.)</p> <div>Operation part on the main unit</div>  <p>[VOL -]</p> <p>Press simultaneously.</p> <div>Operation panel in the remote control</div>  <p>[OFF TIMER]</p>	<div>セルフチェック</div> <table><tr><td>H10 UV</td><td>OK</td><td>H21 音声</td><td>OK</td></tr><tr><td>H30 AVSW</td><td>OK</td><td>H34 DG</td><td>OK</td></tr><tr><td>H36 IC301</td><td>OK</td><td>H90 メモリー</td><td>OK</td></tr><tr><td>H91 拡 IOA</td><td>OK</td><td></td><td></td></tr></table> <div><p>Magenta Green Yellow Red Blue</p></div> <div>Display at the time of a fault</div>	H10 UV	OK	H21 音声	OK	H30 AVSW	OK	H34 DG	OK	H36 IC301	OK	H90 メモリー	OK	H91 拡 IOA	OK		
H10 UV	OK	H21 音声	OK														
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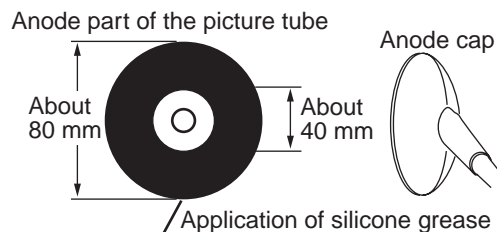
### Display phenomenon and treatment method

Display symbol	Phenomenon, condition	Treatment method
H10	No output of video and audio.	Exchange the tuner (TNR001).
H21	Audio stop. Surround function not effective.	Inspect the main board [A] IC2401 (audio compensation).
H30	No video and audio. Surround function not effective.	Inspect the rear terminal switching board [H] IC3001.
H34	No video. No raster. Color stop. No color synchronization. Wrong colors. Bad on-screen display. No horizontal/vertical synchronization.	Inspect the digital core board [DG] IC6601.
H36	No video. Color stop. Wrong colors. Bad on-screen display. No horizontal/vertical synchronization.	Inspect the video signal processing board [AG] IC301.
H55	The red bar is displayed momentarily and then the power is interrupted. The power signal lamp (red) flashes three times in intervals of 2.8 sec.	Detection of overcurrent (140V line), vertical output. Detection of 25 V line overcurrent, 25V line.
H56	The yellow bar is displayed for 0.5 sec., and then the power is interrupted. The power signal lamp (red) flashes twice in intervals of 3.3 sec.	“Power failure from time to time” because of the overcurrent (140V line), vertical output (+15V line).
H57	The green bar is displayed for 1 sec., and then the power is interrupted. The power signal lamp (red) flashes once in intervals of 3.8 sec.	“Power failure from time to time” because of the overcurrent (140V line), vertical output (+15V line).
H58	Abnormal power circuit. The power does not come up, and it is switched off after a few seconds.	Inspect the main 5V line.
H90	The memory gets lost.	Exchange the main board [A] IC1114 (memory).
H91	One horizontal line is not obtained at the time of servicing.	Inspect the main board [A] IC1201 (expansion DAC).
H99	“No video from time to time” because of causes in the antenna~tuner~video circuit. *This also may be displayed when the antenna plug is disconnected or when a channel without a signal is received.	Inspect the tuner~video circuit.

# Servicing method

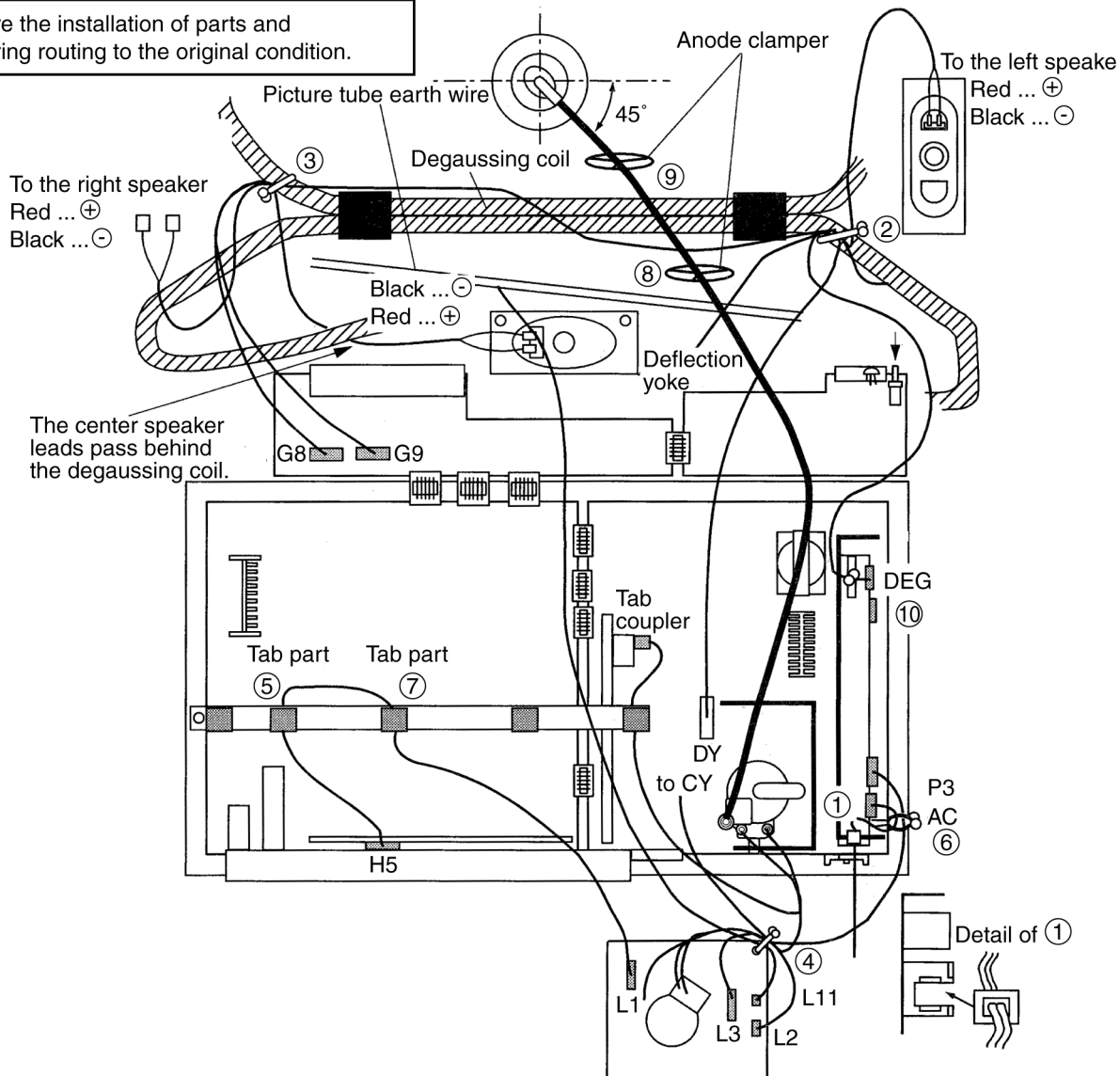
## Application of silicone grease to the anode cap

⚠ Warning	
!	Please apply grease when the anode cap has been removed.
	• Please discharge the high voltage from the anode.
	• Wipe off the applied grease and then apply new grease.
	• Follow the illustration on the right for the application.



## Wiring routing

⚠ Warning	
!	Restore the installation of parts and the wiring routing to the original condition.

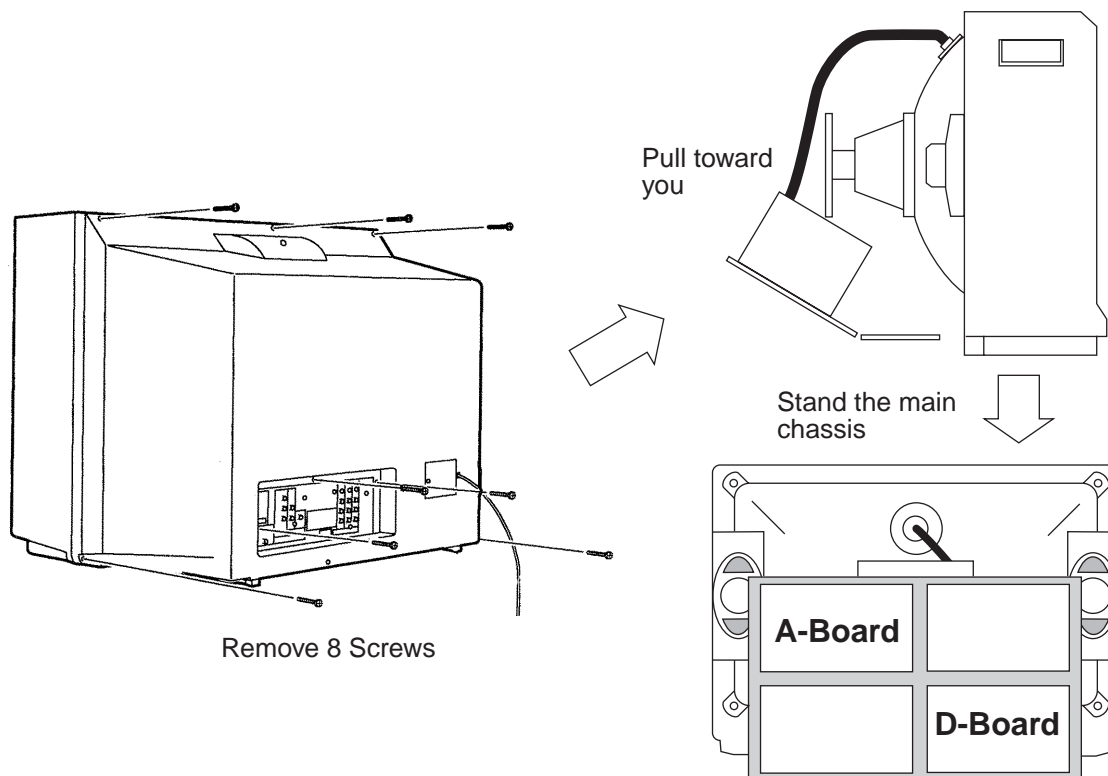


Lead wire \ Clammer	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩
SP (left) lead [G9]		○	○							
Anode lead								○	○	
DY		○								
Focus, screen				○						
Center SP [G8]			○							
CY				○						

Lead wire \ Clammer	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩
AC	○					○				
DEG		○							○	
SP (right) lead [G8]			○							
L11				○						
P3				○		○				
H5					○		○			

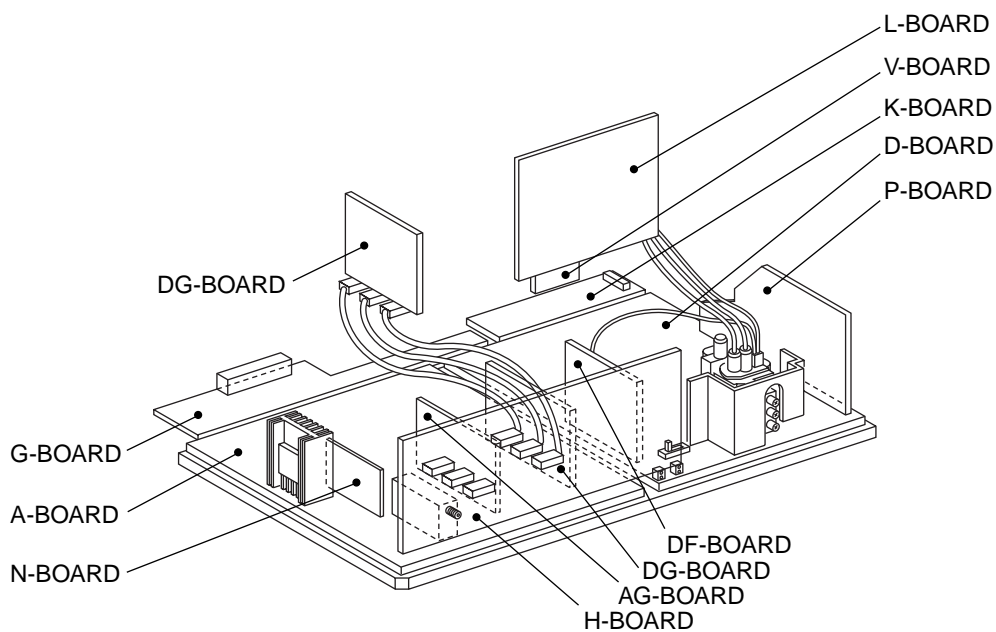
## Service Hint

### How to chassis into service position

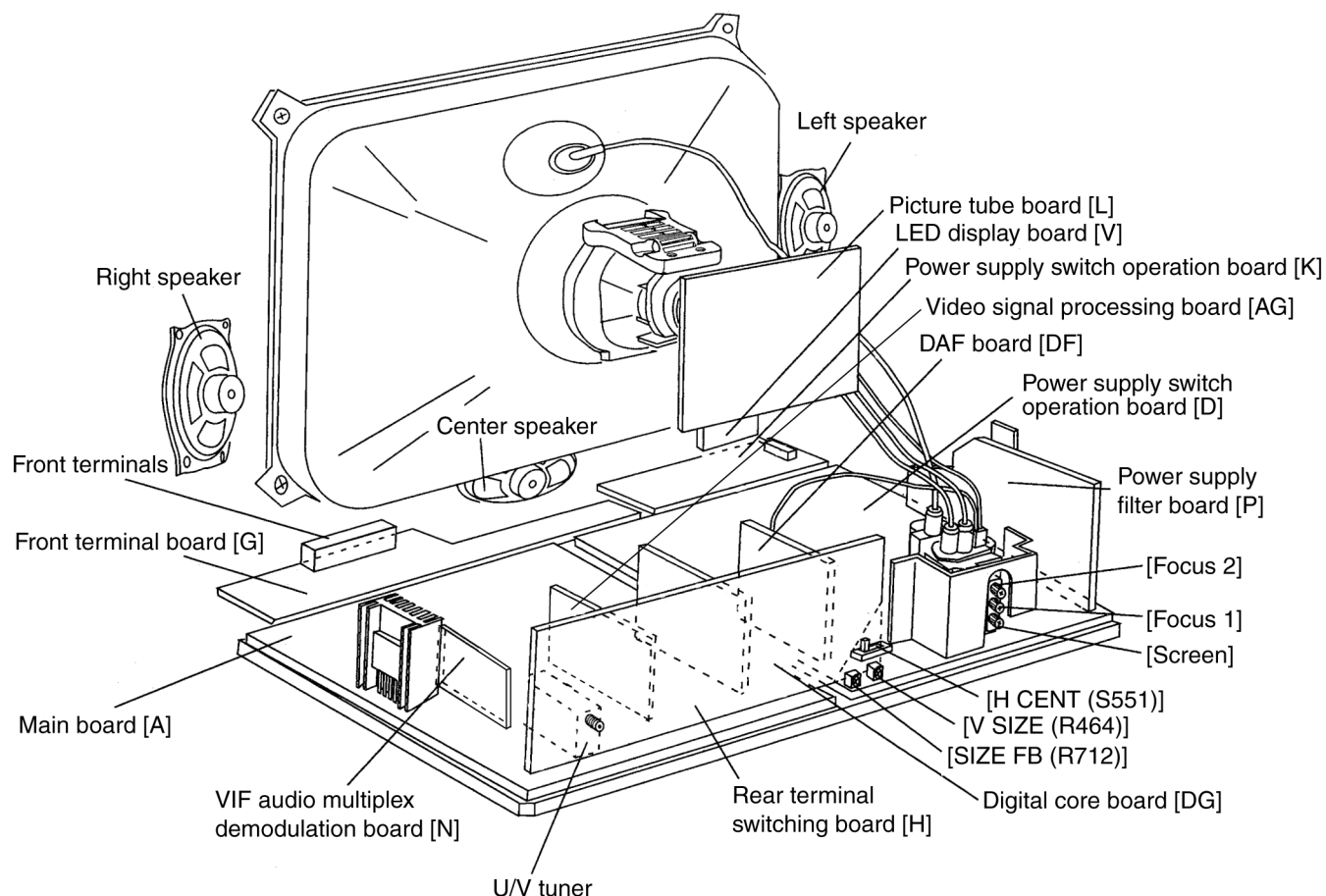


### Service Position for DG-board.

**Note:** Extension cable kit (4 pieces of 8 pin cable) is supplied as service fixtures and tools.  
(Part No. TZS 709010).



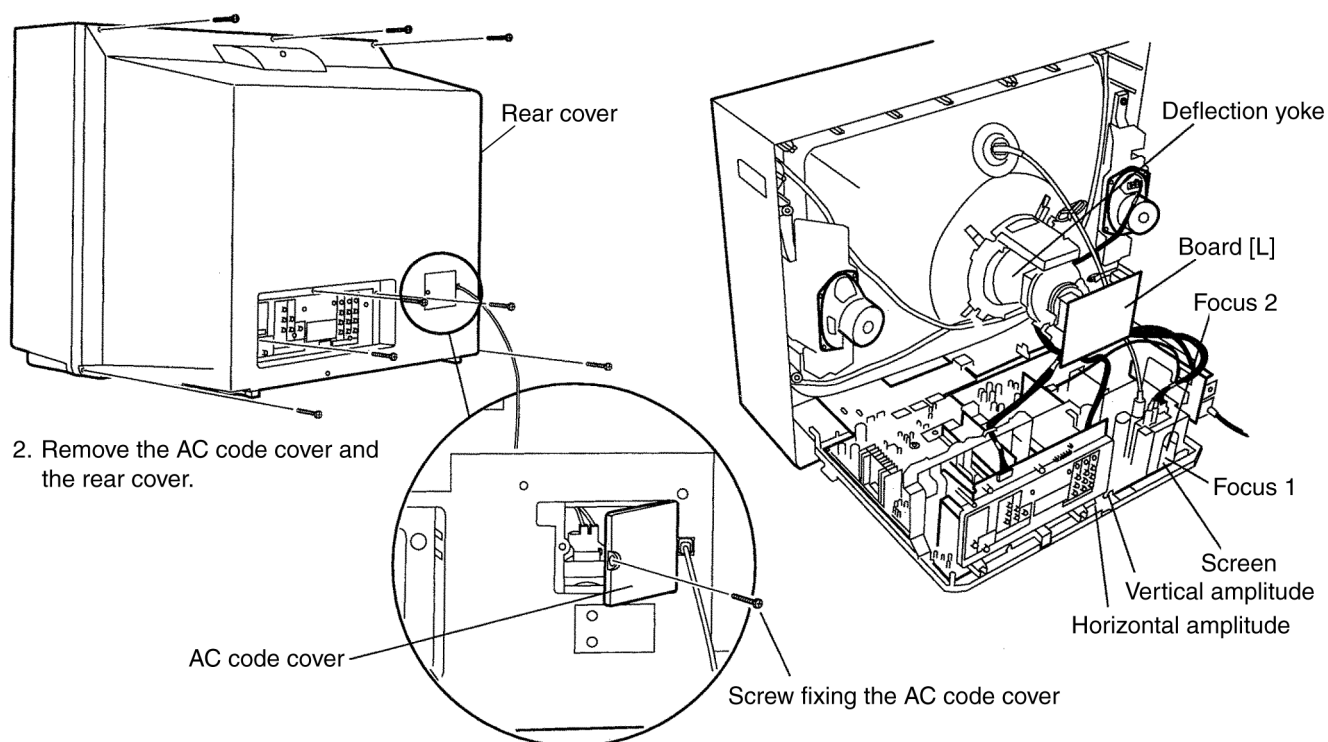
## Board and module layout drawing



## Before inspection

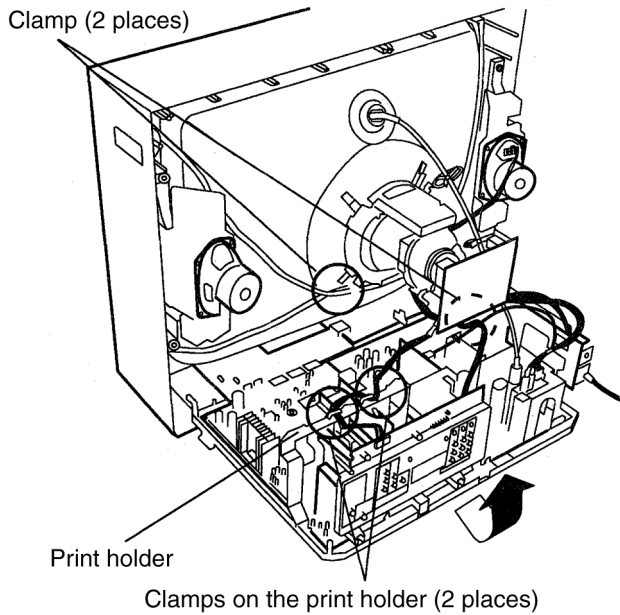
1. Remove the screws fixing the rear cover (8 screws) and the screw fixing the AC code cover.

Inspect the board [L] and adjust the white balance, H-V, etc.



## Inspection of the boards [A] and [D]

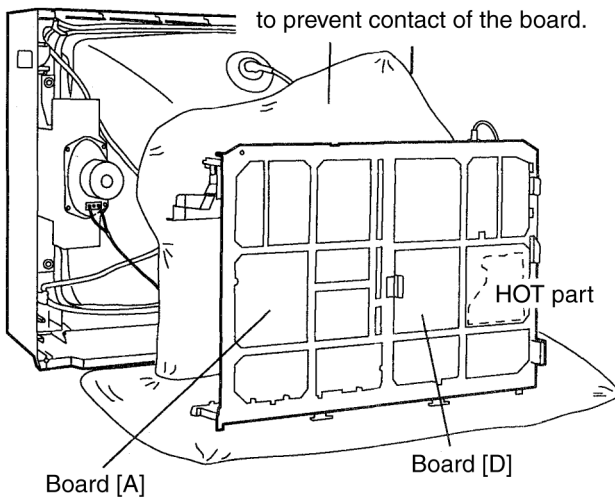
1. Disconnection the degaussing coil cable and the speaker cable clamps (2 places) and the lead clamps on the print holder (2 places), and disconnect the degaussing coil coupler from the board.
2. Pull out the chassis frame to the front.



3. Tilt the pulled-out chassis frame as shown in the following figure and inspect the pattern side.

At this time, use a cloth or similar for insulation.

Use a cloth or similar for insulation to prevent contact of the board.



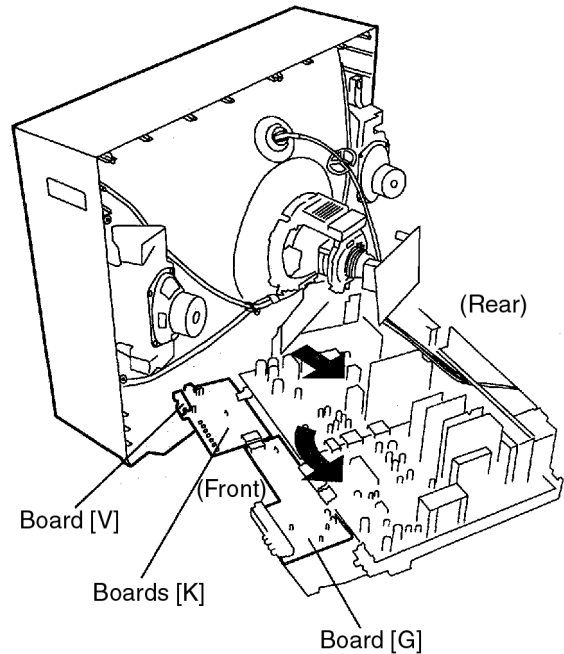
### ⚠ Warning



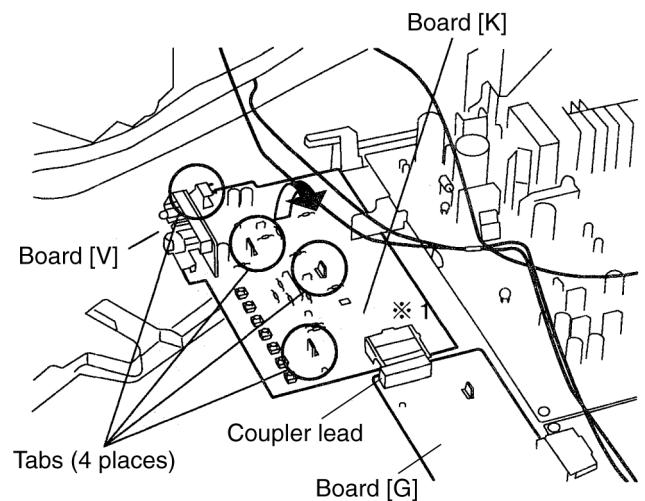
Electric shock may be caused when HOT parts are touched. An electric shock will be caused when the HOT part and the COLD part are touched at the same time.

## Inspection of the boards [G] and [K]

1. Pull out the chassis frame to the front, and rotate the chassis frame as shown in following figure. Now inspection is possible from the parts side of the boards [G] and [K].



2. Disengage the tabs (4 places) tilt up the board [K] in arrow direction, and inspect it with the pattern side on top. At this time, place a cloth underneath for safety (insulation).
3. At the time of installation, match the board and the chassis pins and install.



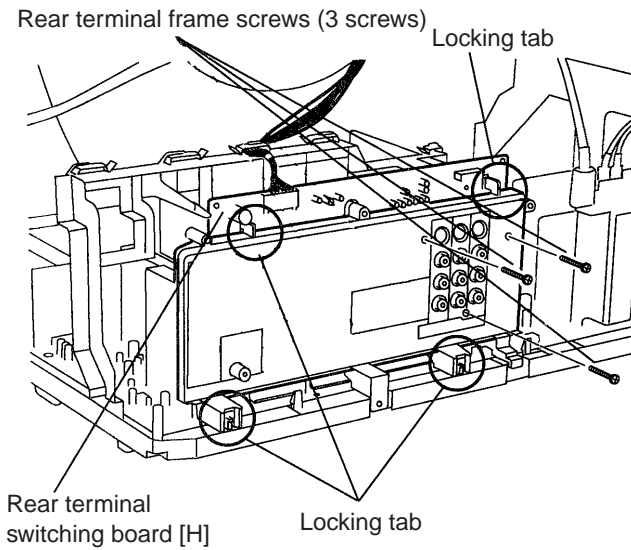
### ⚠ Caution



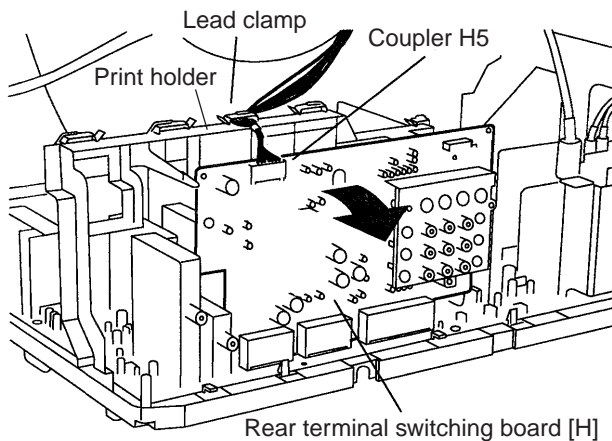
※1 When the board [K] has been removed from the chassis frame, pay attention to prevent the coupler leads of board [K] and board [G] from getting torn.

## Inspection and exchange of the rear terminal switching board [H]

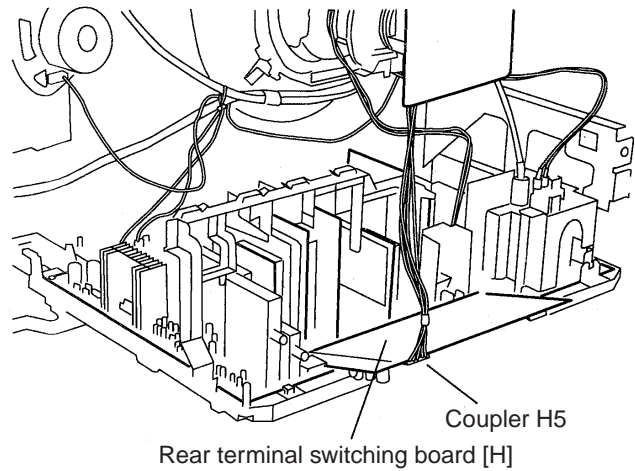
1. Remove the screws fixing the rear terminal cover (3 screws), disengage the locking tabs (4 places), and remove the rear terminal frame.



2. Disengage the cable (between H5 and L1) from the lead clamp on the print holder, and tilt the rear terminal switching board [H] down to the front.



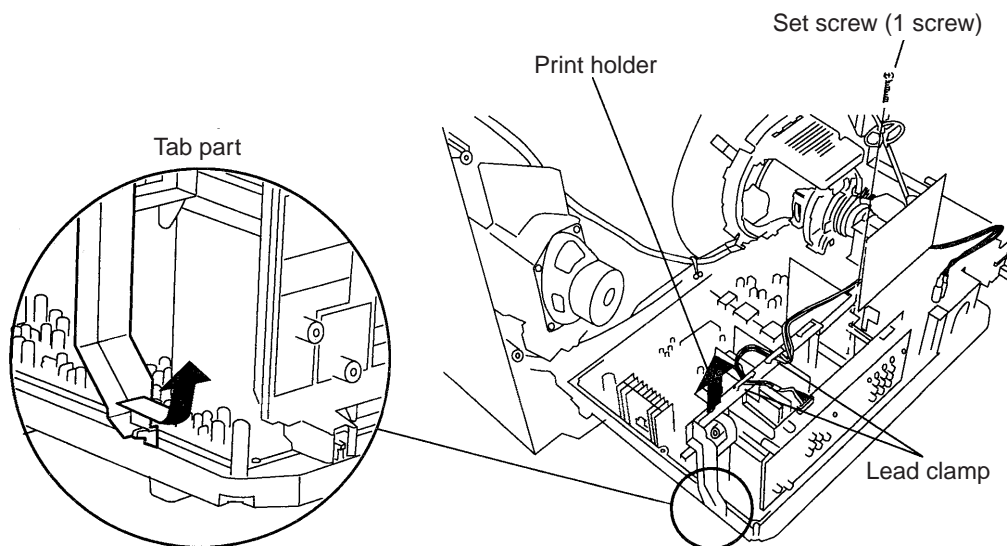
3. Inspection is possible in the following condition.
4. In case of exchange, disconnect the coupler H5 from the rear terminal switching board [H], and disengage the coupler in upward direction either in this condition or with the rear terminal switching board [H] slightly raised.





## Exchange of each board

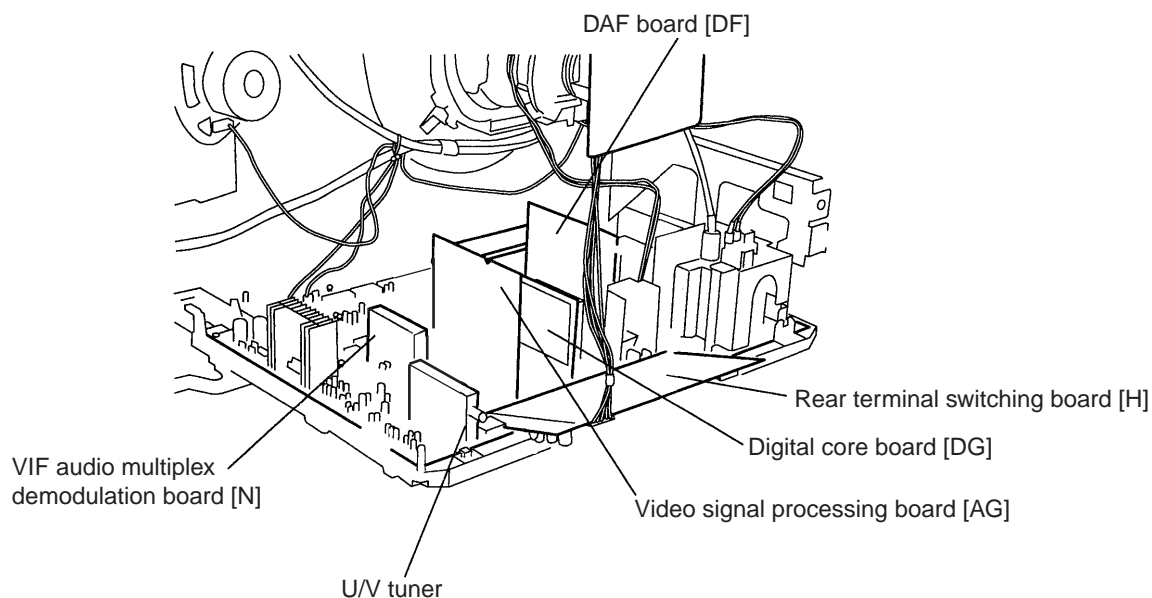
1. Disengage the cable (between H5 and L1) from the lead clamp on the print holder.
2. Remove the print holder set screw, disengage the tab, and remove the print holder.



3. Pull out the board to be exchanged to the top and replace it.
4. For the VIF audio multiplex demodulation board [N], remove the solder on the side of the board [A] and then exchange.

※ When the DAF board [DF] has been exchanged, perform **“DAF Phase Adjustment”** (refer to page 26). When the video signal processing board [AG] has been exchanged, confirm the TV signal, the color bar signal, etc. On the screen and perform **“Contrast Adjustment, Color Output/Color Hue Adjustment”** (refer to page 36 and 27) as required.

(For easier understanding of the explanations, the condition with removed print holder is shown. The rear terminal switching board [H] also has been removed for the explanations.)



# Adjustment


As shown in the following table, adjustment is required when some parts have been exchanged.

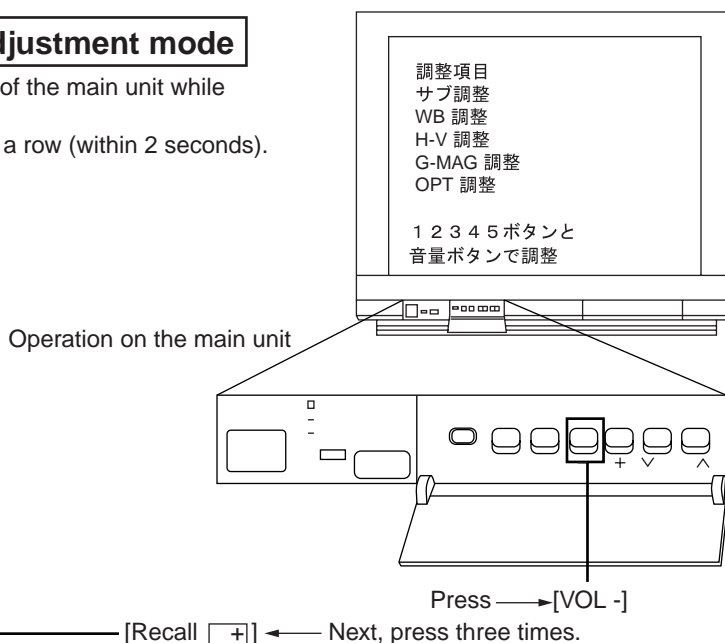
Exchange part Adjustment	Memory IC1114	Digital core board [DG]	Video signal processing board [AG]	Picture tube	Deflection yoke	Flyback transformer T551	DAF board [DF]
White balance adjustment	●	●	○	●	—	—	—
H-V adjustment	●	○	○	○	○	○	—
Amplitude compensation adjustment	—	—	—	○	○	●	—
DAF phase adjustment	—	—	—	—	—	—	●
Focus adjustment	—	—	—	●	○	●	○
Contrast adjustment	—	—	△	—	—	—	—
Color output/hue adjustment	—	—	△	—	—	—	—

● : Always requires adjustment    ○ : Confirmation by pattern, adjustment as required.  
△ : Confirmation by TV signal, color bar signal, etc., adjustment as required.

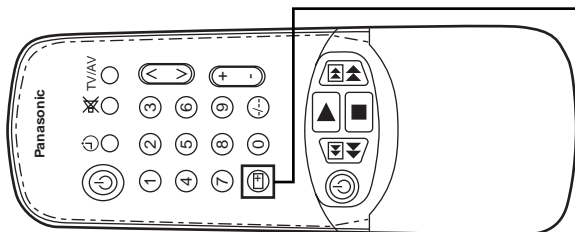
## In regard to service adjustment mode

### How to enter into service adjustment mode

Press the button [VOL -] inside the door of the main unit while pressing the button [Recall +] on the remote control transmitter three times in a row (within 2 seconds).



Remote control buttons



### Cancellation

Switch off the power with the [POWER] button on the main unit or the [POWER] button on the remote control.

	Remote control button		Contents
Adjustment item selection	①	②	Selection of main items
	③	④	Selection of sub-items
Screen for one horizontal line	⑤		For white balance adjustment
Adjustment	Volume +/-		

\*Channel selection is done with the [CHANNEL  ] button.

### • Caution item

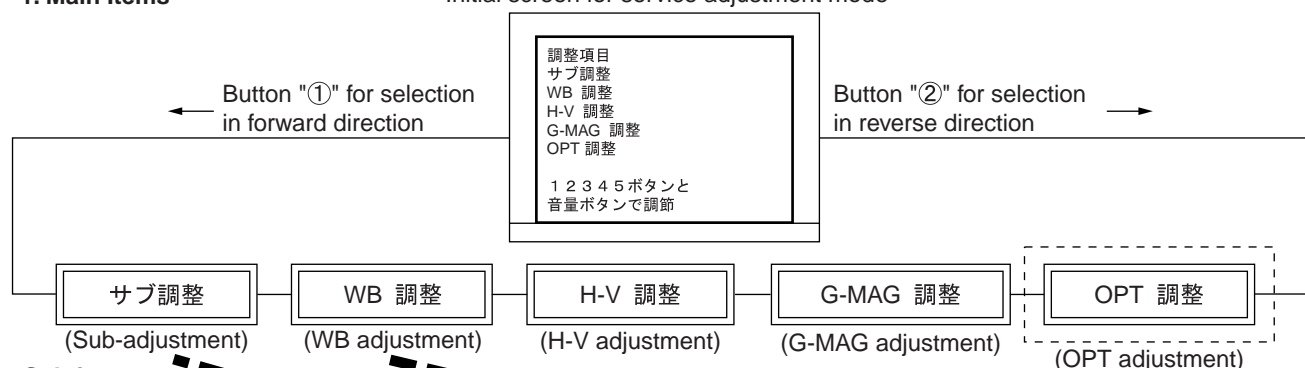
- After entering service adjustment mode, perform adjustment after making notes of the values for each item. The written values (data) differ according to the set. Using the notes value as a reference facilitates adjustment.
- The item [OPT 調整] (OPT adjustment) in the contents for service adjustment mode is for adjustment at the plate. Stay away from this item, as it means adjustment of all items.



## In regard to the adjustment items

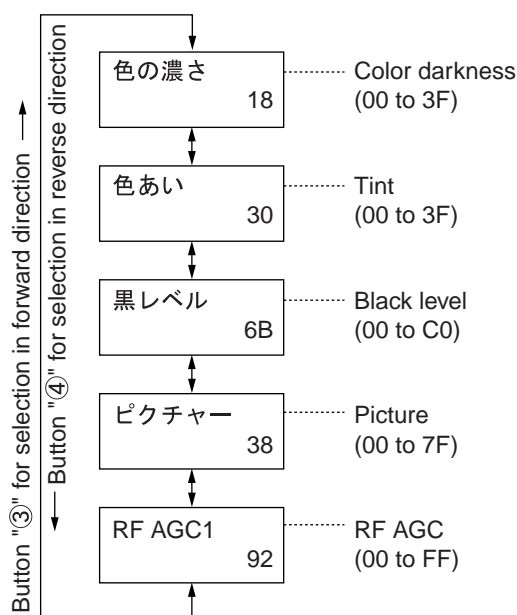
### 1. Main Items

Initial screen for service adjustment mode

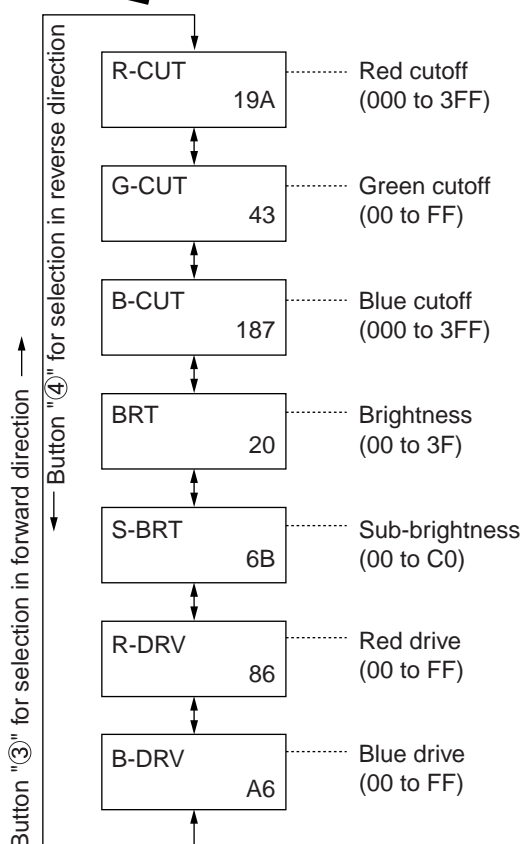


### 2. Sub-items

"Sub-adjustment" and  
"WB adjustment"



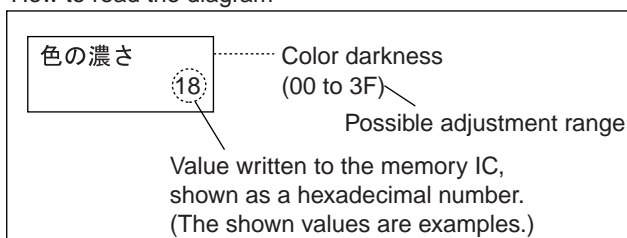
- ※ When R, G, B-CUT, BRT, or S-BRT is selected, the screen becomes one horizontal line when button "5" on the remote control is pressed.
- ※ Even when BRT is adjusted, the value will not be memorized.



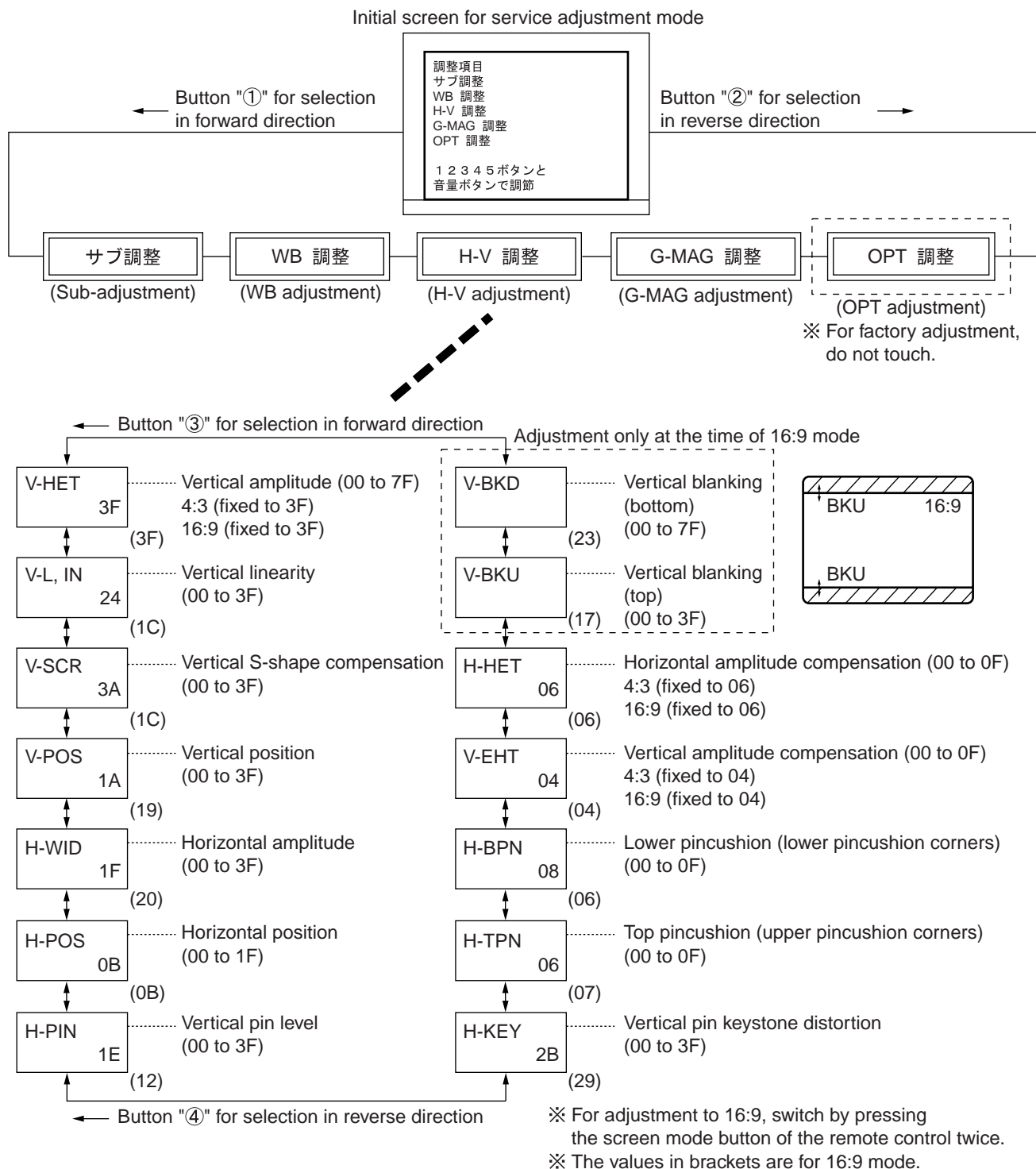
#### • Caution items

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Stay away from this item, as it means adjustment of all items.

#### How to read the diagram



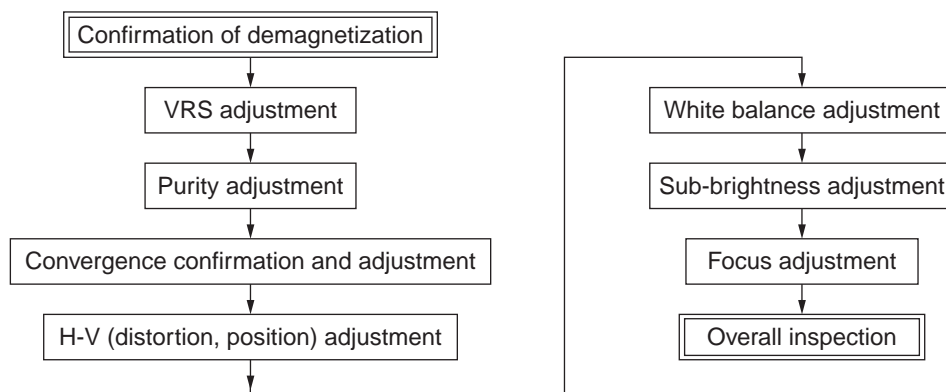
• H-V adjustment



## Adjustment accompanying exchange of the picture tube

- When the picture or the deflection yoke has been exchanged, perform all of the following adjustment in the following order.  
When no part exchange has been done, adjustment still must be performed.

### Procedure

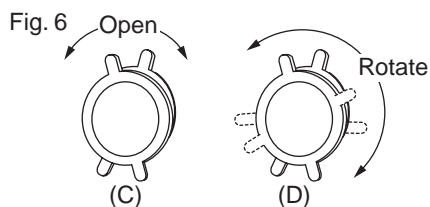


### Adjustment

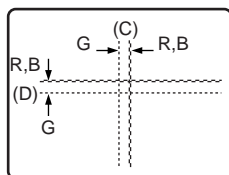
Installation and provisional adjustment method	Purpose: Facilitation of adjustment after installation
	<ol style="list-style-type: none"> <li>1. Push the deflection yoke all the way to the front and fix it provisionally.</li> <li>2. Align the knobs of purity magnet, 4-pole convergence magnet, and 6-pole convergence magnet to minimize the composite magnetic field.</li> <li>3. Demagnetize the front and the rear of the picture tube, the left and the right side of the cabinet, etc. with a demagnetization coil. At this time, keep the demagnetization coil away from the deflection yoke.</li> <li>4. Receive a color pattern and perform aging for at least one hour.</li> </ol>

<b>1. VRS adjustment</b>	Purpose: Adjusting the red, blue, and green electron beams so that they hit the specified fluorescent substance correctly.	
<b>Adjustment jig</b>	Demagnetizer, color bar generator	
<b>Measuring location</b>	TV screen (visual observation)	
<b>Input signal</b>	Crosshatch pattern	
<div data-bbox="194 404 682 872"> <p>Fig. 1</p> </div> <div data-bbox="698 255 1445 553"> <ol style="list-style-type: none"> <li>1. Receive a crosshatch pattern.</li> <li>2. Confirm that the knobs of purity magnet, 4-pole convergence magnet and 6-pole convergence magnet all are aligned.</li> <li>3. Loosen the screws fixing the deflection yoke and provisionally fix the deflection at the very front position with adjusted inclination.</li> <li>4. Adjust the VRS magnet (Fig. 2) so that the horizontal lines of the crosshatch pattern become level (Fig. 3).</li> <li>5. Next, perform purity adjustment.</li> </ol> </div> <div data-bbox="698 574 1023 872"> <p>Fig. 2</p> <p>Magnet for VRS adjustment</p> <p>Open for the same angle from the center.</p> </div> <div data-bbox="1023 574 1445 872"> <p>Fig. 3</p> <p>Center line of the crosshatch pattern</p> <p>Adjust so that the curvature of the center line becomes flat.</p> </div> <div data-bbox="194 915 747 1319"> <p><b>Setting of CY magnets (33 inch models)</b></p> </div> <div data-bbox="860 957 1396 1255"> <p>33 inch models</p> </div> <div data-bbox="194 1383 747 1808"> <p><b>Setting of CY magnets (29 inch models)</b></p> </div> <div data-bbox="990 1276 1299 1808"> <p>29 inch models</p> <p><b>Opening for VRS magnets</b></p> </div>		



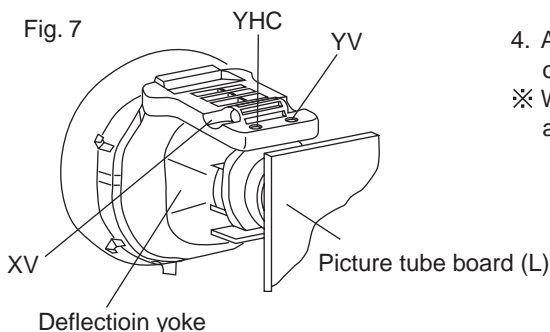


6-pole convergence magnets

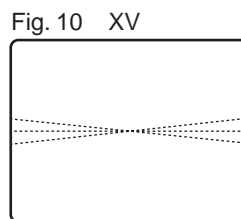
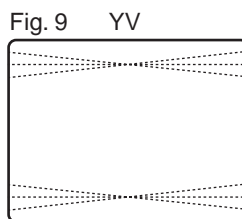
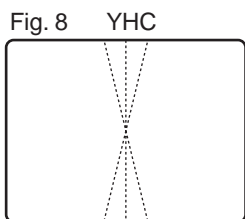


Match red and blue to green

3. Gradually open the knobs of the 6-pole convergence magnets and match the red and blue vertical lines at the center of the screen. (At this time, red and blue will move practically at the same time.) Next, rotate the entire 6-pole magnets to match the red and blue horizontal lines to green. (Fig. 6)



4. Adjust YHC, YV, and XV on the deflection yoke (Fig. 7) so that the overall convergence becomes good. (Fig. 8, 9, 10)  
 ※ When the convergence at the screen center is off, repeat the adjustment from item 2.



• Caution items

- Tilt adjustment with tilting the deflection yoke in up-down or left-right direction is not performed for this unit. Please do not try to do this. Perform YV adjustment for left-right tilt adjustment and YHC adjustment for up-down adjustment.
- As the XV adjustment core can crack easily, use a nonmetallic screwdriver for the adjustment.

5. After the adjustment, apply paint lock to the magnets.
6. When the position without deviation of the three colors has been determined, insert wedges between the deflection yoke and the picture tube as shown (Fig. 11 below) to fix the deflection yoke.

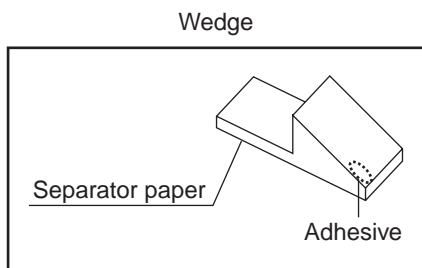
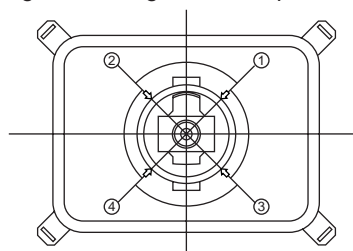


Fig. 11 Wedge insertion positions



Insert the DY wedges at the possible ①~④.

## H-V adjustment

- For this adjustment, receive a crosshatch pattern, check whether adjustment is required or not, and then adjust.  
This unit is equipped with a "16:9 mode" which identifies the input from S-video input and switches automatically to 16:9 screen size for the full mode (squeeze signal) from a video camera or DVD. (Surface broadcasts remain "4:3".)  
16:9 mode also requires adjustment. Please perform adjustment on the following basis.  
The adjustment procedure is the same as for 4:3 mode.

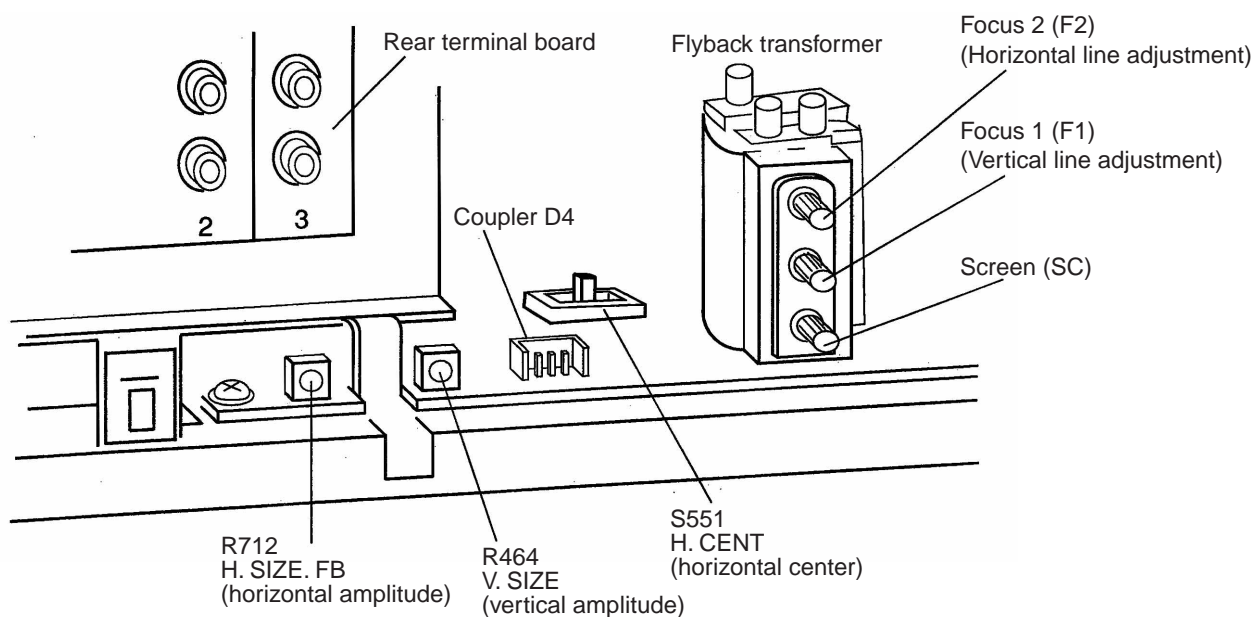
Adjustment	Screen mode	4:3	16:9	Adjustment	Screen mode	4:3	16:9
1. V-HET (vertical amplitude)		[3F]	[3F]	8. H-KEY (vertical pin keystone distortion)		○	●
2. V-LIN (vertical linearity)		○	※2	9. H-TPN (top pincushion)		○	※2
3. V-SCR (vertical S-shape compensation)		○	※2	H-BPN (bottom pincushion)			
4. V-POS (vertical position)		○	●	10. V-EHT (vertical amplitude compensation)		[04]	[04]
5. H-WID (horizontal amplitude)		○	●	11. H-EHT (horizontal amplitude compensation)		[06]	[06]
6. H-POS (horizontal position)		○	※1	12. V-BKU (top vertical blanking)		—	●
7. H-PIN (vertical pin level)		○	●	13. V-BKD (bottom vertical blanking)		—	●

※1 Set to the 4:3 adjustment value.

※2 Confirm and adjust if required.

● Adjust with 16:9.

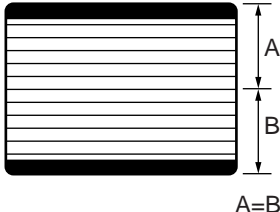
## Adjustment locations other than the remote control



## 4:3 mode adjustment

1. Amplitude compensation adjustment		
Adjustment jig	Digital tester	<ol style="list-style-type: none"> <li>Set the item video in the menu [機能設定] (Function setting) to [オフ] (OFF). (Completely black screen)</li> <li>Connect the pin ① of the coupler D2 with the ⊕ side of the digital tester, and connect the pin ③ with the ⊖ side.</li> <li>Turn R712 (amplitude FB) on the board [D] and adjust to <math>4.0V \pm 0.1V</math>.</li> <li>Set the item video in the menu [機能設定] (Function setting) to [オン] (ON).</li> </ol>
Measuring location	Coupler D2, pin ① +, pin ③ -	
Adjustment location	Restor completely black	
Input signal		

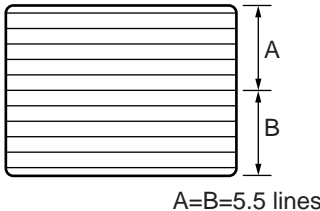
2. Vertical adjustment		Purpose: Adjustment of amplitude and linearity of the image in vertical direction.					
Adjustment jig	Color pattern generator	※ Adjustment conditions <table><tr><td>Image adjustment</td><td>Standard</td></tr><tr><td>Image menu</td><td>Image 4 (dynamic)</td></tr></table>		Image adjustment	Standard	Image menu	Image 4 (dynamic)
Image adjustment	Standard						
Image menu	Image 4 (dynamic)						
Measuring location	TV screen (visual observation)						
Adjustment location	Remote control buttons [VOL +/-]						
Input signal	Crosshatch pattern						



A=B

**Vertical position adjustment**

- Set the item [H-V 調整] (H-V adjustment) (omitted in the following) to [V-HET].
- Adjust with the remote control buttons [VOL +/-] to a narrower vertical amplitude and confirm the vertical center of the image (crosshatch pattern).
- Set to the item [V-POS].
- Adjust with the remote control buttons [VOL +/-] so that the vertical center of the crosshatch pattern comes to the center of the screen.



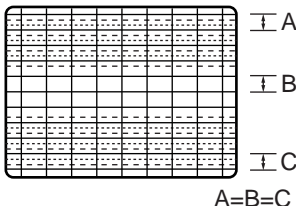
A=B=5.5 lines

**Vertical amplitude adjustment**

- Set to the item [V-HET], set to "3F", and adjust by turning R464 so that the number of horizontal lines of the crosshatch pattern becomes 5.5 lines at the top and at the bottom.

• Caution items

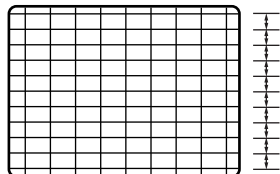
For adjustment of V-HET, keep "3F" fixed and adjust by turning R464. However, when adjustment of the vertical amplitude with R464 is not possible, adjust the value for [V-HET] in the range from 3A to 44 (hexadecimal).



A=B=C

**Vertical linearity adjustment**

- Set to the item [V-LIN].
- Adjust with the remote control buttons [VOL +/-] so that the interval between the lines of the upper half and the lower half of the crosshatch pattern becomes uniform.



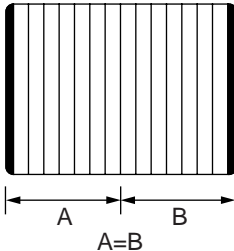
A=B=C

**Vertical S-shape compensation adjustment**

- Set to the item [V-SCR].
- Adjust with the remote control buttons [VOL +/-] so that the grid size of the crosshatch pattern becomes the same at the center and at the top and the bottom.
- Perform the adjustments 6. to 9. alternately until the line interval between the straight lines becomes uniform.

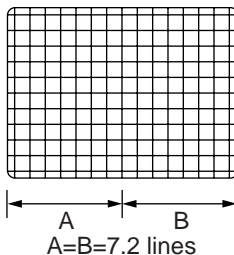


3. Horizontal adjustment		Purpose: Adjustment of amplitude and linearity of the image in horizontal direction.					
Adjustment jig	Color pattern generator	※ Adjustment conditions <table><tr><td>Image adjustment</td><td>Standard</td></tr><tr><td>Image menu</td><td>Image 4 (dynamic)</td></tr></table> Set S551 (H. CENT) to the center.		Image adjustment	Standard	Image menu	Image 4 (dynamic)
Image adjustment	Standard						
Image menu	Image 4 (dynamic)						
Measuring location	TV screen (visual observation)						
Adjustment location	Remote control buttons [VOL +/-]						
Input signal	Crosshatch pattern						



### Horizontal position adjustment

- Set to the item [H-WID], narrow the horizontal amplitude with the remote control buttons [VOL +/-], and confirm the horizontal center.
- Set to the item [H-POS].
- Adjust with remote control buttons [VOL +/-] so that the horizontal center of the crosshatch pattern comes to the center of the screen.



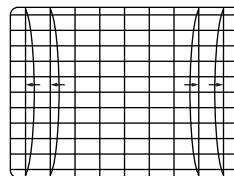
### Horizontal amplitude adjustment

- Return to the item [H-WID].
- Adjust with the remote control buttons [VOL +/-] so that the number of vertical lines of the crosshatch pattern on the left and on the right becomes 7.2 lines each.

• Caution items

Horizontal linearity confirmation and setting

- Confirm that the horizontal linearity is not unbalanced.
- If it is unbalanced, switch S551 (H. CENT) and set to the best position.
  - When the right side of the screen is shrunk, set S551 to the side of the terminal board, and when the left side of the screen is shrunk, set S551 to the side of the flyback transformer.
  - When the balance is not too bad, leave S551 at the center.
  - When S551 is not set at the center, perform horizontal position adjustment for 4:3 mode and for 16:9 mode.

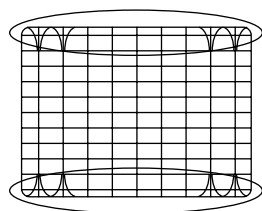


### Horizontal pincushion compensation adjustment

- Set to the item [H-PIN].
- Adjust with the remote control buttons [VOL +/-] so that the vertical lines on the outside of the crosshatch pattern become straight lines.

### H-TPN

(top pincushion compensation) adjustment

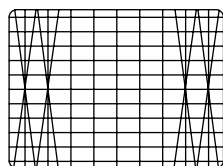


### Upper and lower pincushion compensation adjustment

8. Set to the item [H-TPN].
9. Adjust with the remote control buttons [VOL +/-] so that the lines in the upper part of the crosshatch pattern becomes straight lines.
10. Set to the item [H-BPN].
11. Adjust with the lower part of the crosshatch pattern becomes straight lines.

### H-BPN

(bottom pincushion compensation) adjustment



### Keystone compensation adjustment

12. Set to the item [H-KEY].
13. Adjust with the remote control buttons [VOL +/-] so that the vertical lines on the outside of the crosshatch pattern become straight lines.
- ※ The vertical position changes when [H-KEY] is adjusted. Confirm [V-POS] and adjust if required.
14. Adjust the items 6. to 13. alternately until the vertical lines of the crosshatch pattern become vertical.

## 16:9 mode adjustment

The adjustment procedure is the same as for 4:3 mode.

### 1. H-V adjustment procedure for 16:9 mode

Purpose: Adjustment for 16:9 mode

Adjustment jig	Color pattern generator
Measuring location	TV screen (visual observation)
Adjustment location	Remote control buttons [VOL +/-]
Input signal	Crosshatch pattern

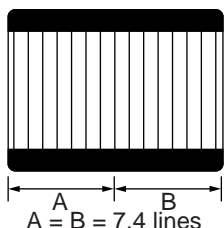


Fig. 1

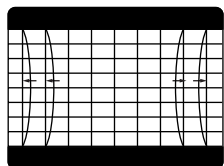
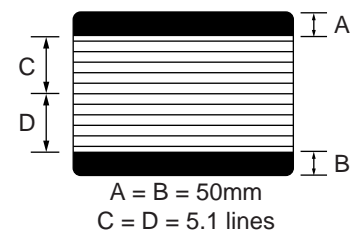
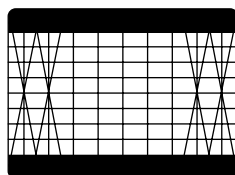


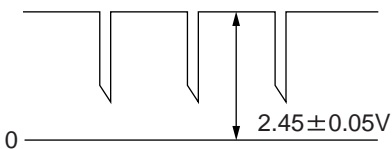
Fig. 2



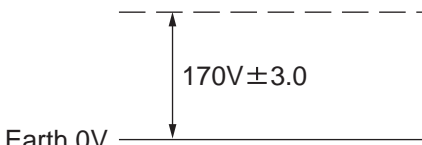
1. Receive a crosshatch pattern, enter into H-V adjustment mode, and press the [ASPECT] button in the remote control operation section twice to set to "16:9" mode.
2. Set to adjustment values for V-HET, H-POS, V-EHT and H-EHT to the same values as for the 4:3 mode.
3. Adjust H-WID.  
Adjust the left and right vertical lines of the crosshatch pattern to 7.4 lines each.
4. Adjust V-POS, H-PIN (Fig. 1) and H-KEY (Fig. 2).
5. Adjust the upper and lower blanking width with V-BKU and V-BKD to 50mm.
6. Confirm V-LIN and V-SCR and adjust if required.

## White balance adjustment

<b>1. Preparatory adjustment</b>		Purpose: Facilitation of white balance adjustment.	
<b>Adjustment jig</b>	Color pattern generator	1. Establish the required conditions for white balance adjustment according to the following table.	
<b>Measuring location</b>	_____		
<b>Input signal</b>	Studio color bar		
※1: At the time of adjustment, the color signal is cut to facilitate white balance adjustment.		Image menu	Image 4 (dynamic) Color temperature (high) Screen mode 4:3 NR OFF Power consumption - Standard
		Image adjustment	Color darkness
			Hue
			Black level
			Picture
		調整 (Service adjustment mode)	Service adjustment item [色の濃さ] (Color darkness) ※1
			[00] Make a note of the value before adjustment
			R-CUT
			[00] Min. value
			G-CUT
			[7F] center value
			B-CUT
			[00] Min. value
			R-DRV
			[00] Min. value
			B-DRV
			[00] Min. value
		Screen volume	
		Min. (left side)	

<b>2. Sub-brightness adjustment</b>			
<b>Adjustment jig</b>	Color pattern generator Oscilloscope		
<b>Measuring location</b>	TP47G (board [A])		
<b>Adjustment location</b>	Remote control buttons [VOL +/-]		
<b>Input signal</b>	Studio color bar		
		<ol style="list-style-type: none"> <li>1. Receive a studio color bar.</li> <li>2. Set to item [S-BRT] of the adjustment mode [HW 調整] (WB adjustment).</li> <li>3. Press the remote control button "5" and make the screen one horizontal line.</li> <li>4. Adjust with the remote control buttons [VOL +/-] so that the waveform fo TP47G (board [A]) becomes DC2.45 ± 0.05V.</li> <li>5. Adjust the upper and lower blanking width with V-BKU and V-BKD to 50mm.</li> <li>6. Press the remote control button "5" to cancel one horizontal line.</li> </ol>	

3. White balance adjustment		Purpose: Optimizing the white balance (back and white) for the image.
Adjustment jig	Color pattern generator	
Measuring location	TV screen (visual observation)	
Input signal	Studio color bar	



※ The items "1. Preparatory adjustment" and "2. Sub-brightness adjustment" must have been executed.

1. Set to the item [G-CUT] of the adjustment mode [WB 調整] (WB adjustment) and switch the input selector to video or similar for no input.  
(In the following, the adjustment mode will be omitted in the explanations.)

2. Press the remote control button "⑤" and make the screen one horizontal line.

※ For selection of a different adjustment item, press the button "⑤" again for cancellation.

3. Connect the oscilloscope probe to TPL7 of the picture tube board [L], and adjust with the remote control buttons [VOL +/-] so that the waveform level against earth becomes DC170V ± 3.0 as shown in the following figure.

4. Turn the screen volume gradually to the right and adjust so that green just starts to shine.

5. Set to the item [R-CUT] of [WB 調整] (WB adjustment).

6. Adjust with the remote control buttons [VOL +/-] so that red becomes as bright as green and yellow is obtained.

7. Set to the item [B-CUT] of [WB 調整] (WB adjustment).

8. Adjust with the remote control buttons [VOL +/-] so that blue becomes as bright as green and white is obtained.

9. Turn the screen volume gradually to the left to where the three color horizontal line disappears.

10. Press the remote control button "⑤" to cancel the horizontal line.

11. Receive a studio color bar and either shift the fine adjustment of the TV or use the chroma cut of the color pattern generator to obtain a block-and-white screen.  
If the screen is greenish, repeat the adjustment 4. to 10..

12. If the black-and-white screen is reddish, select the item [R-DRV] of [WB 調整] (WB adjustment), and if it is bluish, select the item [B-DRV], and then adjust with the remote control buttons [VOL +/-] so that a normal black-and-white screen is obtained.  
Adjust [R-DRV] and [B-DRV] alternately to obtain the best condition.

Confirmation

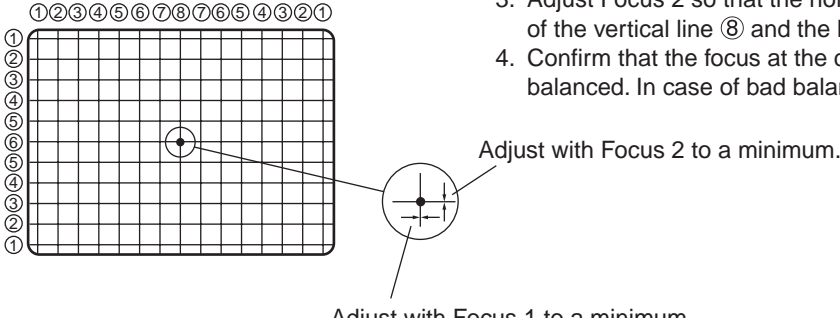
- Cancel the service maintenance mode.
- Select [黒レベル] (Black level) of the menu [映像調整] (Image adjustment), change the level, and confirm that a normal black-and-white screen is obtained. Also confirm the screen brightness for all channels.
  - When the screen is too bright (black floats) or too dark (black is subdued), use the remote control buttons [VOL +/-] to adjust the item [S-BRT] of [WB 調整] (WB adjustment).

※ When a normal screen is not obtained, repeat the adjustments 1. to 12..

13. Return the item [色の濃さ] (Color darkness) of [サブ調整] (Sub-adjustment) to the recorded value.

※ If the TV fine adjustment has been shifted, return it to the original setting.

## Focus adjustment

1. Focus adjustment							
Adjustment jig	Color pattern generator	※ Adjustment conditions					
Measuring location	TV screen (visual observation)						
Input signal	Crosshatch pattern						
		<table> <tr> <td rowspan="2">Image adjustment</td><td>Black level</td><td>"0" Center</td></tr> <tr> <td>Picture</td><td>" +30" Maximum</td></tr> </table>	Image adjustment	Black level	"0" Center	Picture	" +30" Maximum
Image adjustment	Black level	"0" Center					
	Picture	" +30" Maximum					
<p>▪ Set GR to "ON". (Refer to page 10 in the Service Manual.)</p> <ol style="list-style-type: none"> <li>1. Receive a crosshatch pattern.</li> <li>2. Adjust Focus 1 so that the thickness of the vertical line ⑧ in the figure on the left becomes a minimum.</li> <li>3. Adjust Focus 2 so that the horizontal line thickness at the intersection of the vertical line ⑧ and the horizontal line ⑥ becomes a minimum.</li> <li>4. Confirm that the focus at the center and at the outer circumference is balanced. In case of bad balance, repeat the adjustments 2. and 3..</li> </ol>							
							

## Adjustment after board exchange

### Adjustment after [DF] DAF board exchange

1. DAF Phase Adjustment	
Adjustment jig	Color pattern generator
Measuring location	TV screen (visual observation)
Adjustment location	DAF board [DF], R1577
Input signal	Crosshatch pattern

①②③④⑤⑥⑦⑧⑦⑥⑤④③②①

①

②

③

④

⑤

⑥

⑤

④

③

②

①

1. Receive a crosshatch pattern

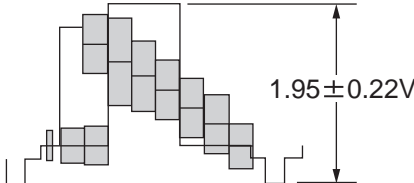
2. Use Focus 2 to adjust the center to underfocussed condition.

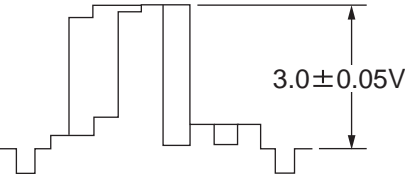
3. Adjust R1577 on the DAF board [DF] so that the left-right balance of the intersection of the horizontal line ⑥ and the vertical lines ① becomes equal.

4. Perform focus adjustment.

## Adjustment after exchange of the video signal processing board [AG]

1. Contrast Adjustment													
Adjustment jig	Color pattern generator Oscilloscope	※ Adjustment conditions <table><tr><td>Image menu</td><td colspan="2">Dynamic</td></tr><tr><td rowspan="3">Image adjustment</td><td>Picture</td><td>Maximum (+30)</td></tr><tr><td>Black level</td><td>Center (0)</td></tr><tr><td>Sharpness</td><td>Center (+10)</td></tr></table>		Image menu	Dynamic		Image adjustment	Picture	Maximum (+30)	Black level	Center (0)	Sharpness	Center (+10)
Image menu	Dynamic												
Image adjustment	Picture			Maximum (+30)									
	Black level			Center (0)									
	Sharpness	Center (+10)											
Meassuring location	TP47G (board [A]) Board [A], coupler [A31], pin 2												
Adjustment location	Remote control buttons [VOL +/-]												
Input signal	Studio color bar												





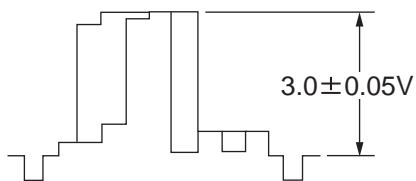
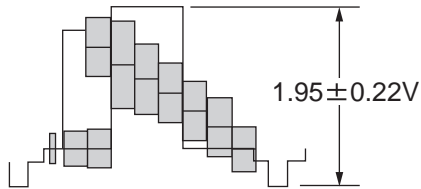
1. Make the following setting in service maintenance mode.  
At this time, record the original values.

サブ調整 (Sub-adjustment)	黒レベル (Black level)	2F
WB 調整 (WB adjustment)	G-CUT	7F

2. Connect TPD2 of board [D] and TP02 of board [A] to earth.  
3. Receive a studio color bar.  
4. Confirm that the video signal at pin ② of the coupler A31 of board [A] is 1.95 ± 0.22V.  
5. Select the item [ピクチャー] (PICTURE) of [サブ調整] (Sub-adjustment) in service maintenance mode (omitted in the following).

6. Adjust with the remote control buttons [VOL +/-] so that the signal at TP47G of board [A] becomes 3.0 ± 0.05V.  
Next, set the value to 35 steps (hexadecimal) below this adjustment value. (Press the remote control button [VOL -] 335 times.)  
7. Confirm that there is no shrinkage of the waveform. If there is, select the item [黒レベル] (Black level) of [サブ調整] (Sub-adjustment) and correct with the remote control buttons [VOL +/-].  
8. Return the adjustment value for [G-CUT] of "WB sub-adjustment" to the original value.  
Next, perform "2. Color Output, Hue Adjustment".  
If "2. Color Output, Hue Adjustment" is not to be performed, go to the following step 9..

9. Remove the earth from TPD2 of board [D] and TP02 of board [A].



2. Color Output, Hue Adjustment													
Adjustment jig	Color pattern generator Oscilloscope												
Measuring location	Board [A], TP47G, TP47R												
Input signal	Rainbow color pattern												
<p>Performed after "1. Contrast Adjustment".</p> <p>※ Adjustment conditions</p> <table border="1"> <thead> <tr> <th>Image menu</th><th colspan="2">Dynamic</th></tr> </thead> <tbody> <tr> <td rowspan="4">Image adjustment</td><td>Color darkness</td><td>Center (0)</td></tr> <tr> <td>Hue</td><td>Center (0)</td></tr> <tr> <td>Picture</td><td>Maximum (+30)</td></tr> <tr> <td>Black level</td><td>Center (0)</td></tr> </tbody> </table>		Image menu	Dynamic		Image adjustment	Color darkness	Center (0)	Hue	Center (0)	Picture	Maximum (+30)	Black level	Center (0)
Image menu	Dynamic												
Image adjustment	Color darkness	Center (0)											
	Hue	Center (0)											
	Picture	Maximum (+30)											
	Black level	Center (0)											
<ol style="list-style-type: none"> <li>Make the following setting in service maintenance mode. At this time, record the original values.</li> </ol> <table border="1"> <tbody> <tr> <td rowspan="3">サブ調整 (Sub-adjustment)</td><td>色の濃さ (Color darkness)</td><td>1F</td></tr> <tr> <td>色あい (Hue)</td><td>1F</td></tr> <tr> <td>黒レベル (Black level)</td><td>1F</td></tr> <tr> <td>WB 調整 (WB adjustment)</td><td>G-CUT</td><td>7F</td></tr> </tbody> </table>		サブ調整 (Sub-adjustment)	色の濃さ (Color darkness)	1F	色あい (Hue)	1F	黒レベル (Black level)	1F	WB 調整 (WB adjustment)	G-CUT	7F		
サブ調整 (Sub-adjustment)	色の濃さ (Color darkness)		1F										
	色あい (Hue)		1F										
	黒レベル (Black level)	1F											
WB 調整 (WB adjustment)	G-CUT	7F											
<ol style="list-style-type: none"> <li>Confirm that TPD2 of board [D] and TP02 of board [A] are connected to earth.</li> <li>Receive a rainbow color bar.</li> <li>Select the item [色あい] (Hue) of [サブ調整] (Sub-adjustment) and adjust the remote control buttons [VOL +/-] so that the signal phase at TP47R of board [A] becomes A:B = 1:3 as shown in the figure on the left. At this time, record the adjustment value.</li> <li>Select the item [色の濃さ] (Color darkness) of [サブ調整] (Sub-adjustment) and adjust the remote control buttons [VOL +/-] so that the signal level at TP47G of board [A] (Fig. 2) becomes <math>1.0 \pm 0.05V</math>. Next, set the value to 20 steps (hexadecimal) below this adjustment value. (Press the remote control button [VOL -] 20 times.)</li> <li>Select the item [色あい] (Hue) of [サブ調整] (Sub-adjustment) and set to a value 20 steps (hexadesimal) below the recorded value. (Press the remote control button [VOL -] 20times.)</li> <li>Disconnect TPD2 of board [D] and TP02 of board [A] from earth.</li> </ol>													

1. Geomagnetic adjustment		
Adjustment jig	Demagnetizer DC voltage meter	<p>3. Connect a DC voltage meter to TPGM1-2pin (GM-Board).</p> <p>4. Adjust the R4863 (GM-Board) so that the Vx Out at TPGM1-2pin becomes <math>4.55 \pm 0.05V</math>.</p> <p>5. Connect a DC voltage meter to TPGM1-1pin (GM-Board).</p> <p>6. Adjust the R4861 (GM-Board) so that the Vy Out at TPG1-1pin becomes <math>4.75 \pm 0.05V</math>.</p>
Measuring location	Board [GM], TPGM1 (Pin 1,2)	
Input signal		
<p>1. Demagnetize the GM-Board around its preimeter with the Demagnetizer.</p> <p>2. Set to control; GEOMAGNETIC SENSOR ..... ON</p>		

**Memo**



# Schematic Diagram

## Important Safety Notice

Components identified by  $\Delta$  mark have special characteristics important for safety.  
When replacing any of these components, use only manufacture's specified parts.

### Notes:

#### 1. Resistor

All resistors are carbon 1/4W resistor, unless marked as follows:

Unit of resistance is OHM [ $\Omega$ ] (K=1,000, M=1,000,000).

$\bigcirc$	: Nonflammable	$\boxtimes$	: Metal Oxide
$\triangle$	: Solid	$\odot$	: Metal Film
$\square$	: Wire Wound	$\otimes$	: Fuse:

#### 2. Capacitor

All capacitors are ceramic 50V capacitor, unless marked as follows:

Unit of capacitance is  $\mu$ F, unless otherwise noted.

$\otimes$	: Temperature Compensation	$\begin{array}{c} + \\ \text{---} \end{array}$	: Electrolytic
$\textcircled{M}$	: Polyester	$\begin{array}{c} NP \\ \text{---} \end{array}$	: Bipolar
$\textcircled{m}$	: Metalized Polyester	$\textcircled{T}$	: Dipped Tantalum
$\boxtimes$	: Polypropylene	$\textcircled{Z}$	: Z-Type

#### 3. Coil

Unit of inductance is  $\mu$ H, unless otherwise noted.

#### 4. Test Point

$\bigcirc$  : Test Point position

#### 5. Earth Symbol

$\perp$  : Chassis Earth (Cold)  $\perp$  : Line Earth (Hot)

#### 6. Voltage Measurement

Voltage is measured by a DC voltmeter.

Conditions of the measurement are the following:

Power Source ..... AC 100V, 60Hz

Receiving Signal ..... Colour Bar signal (RF)

All customer's controls ..... Maximum positions

#### 7. Number in red circle indicates waveform number.

(See waveform pattern table.)

#### 8. When arrow mark ( $\nearrow$ ) is found, connection is easily found from the direction of arrow

#### 9. Indicates the major signal flow. : Video $\Rightarrow$ Audio $\Rightarrow$

#### 10. This schematic diagram is the latest at the time of printing and subject to change without notice.

### Remarks:

- The Power Circuit contains a circuit area which uses a separate power supply to isolate the earth connection.

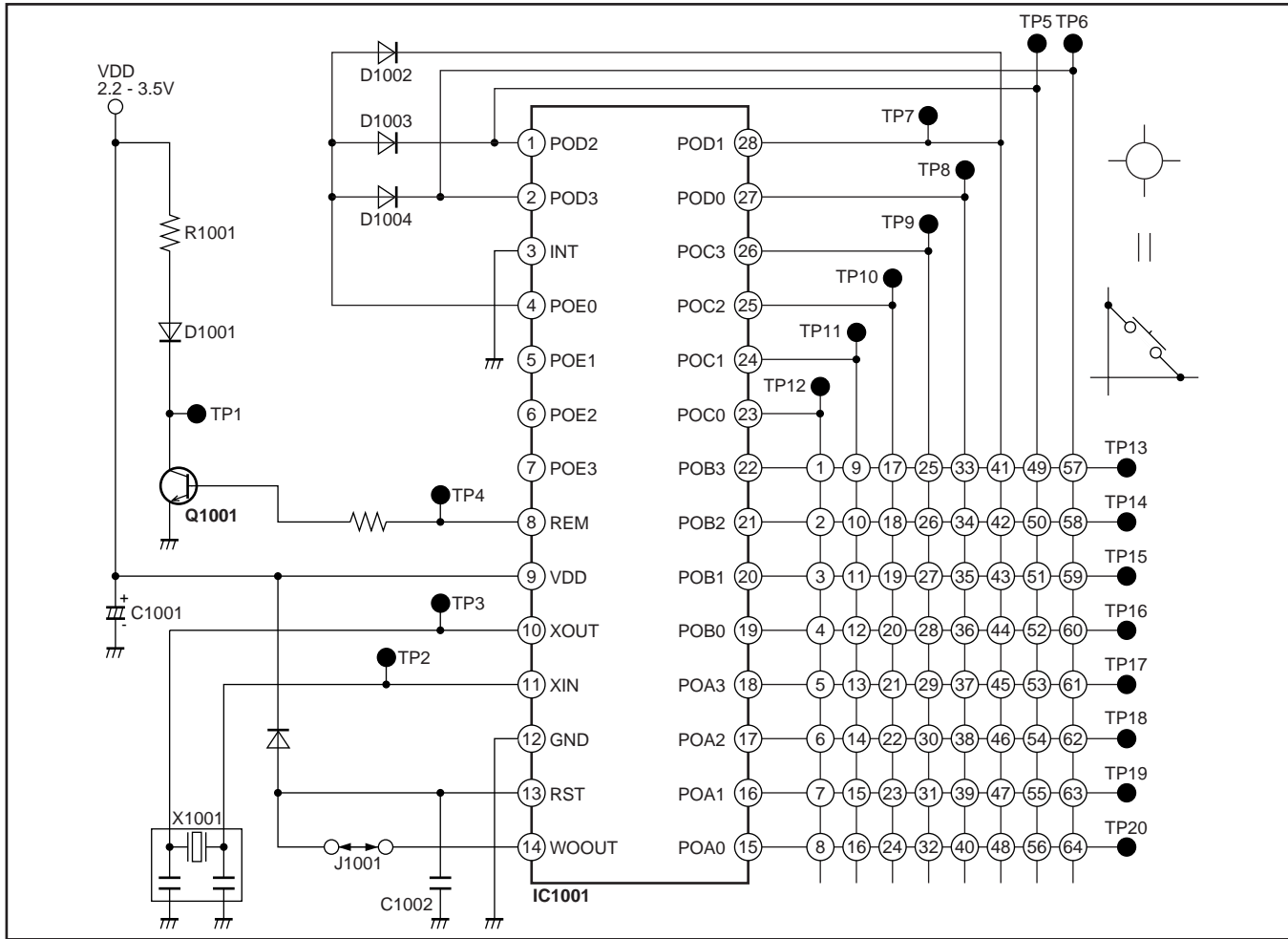
The circuit is defined by HOT and COLD indications in the schematic diagram. Take the following precautions.

All circuits, except the Power Circuit, are cold.

#### Precautions

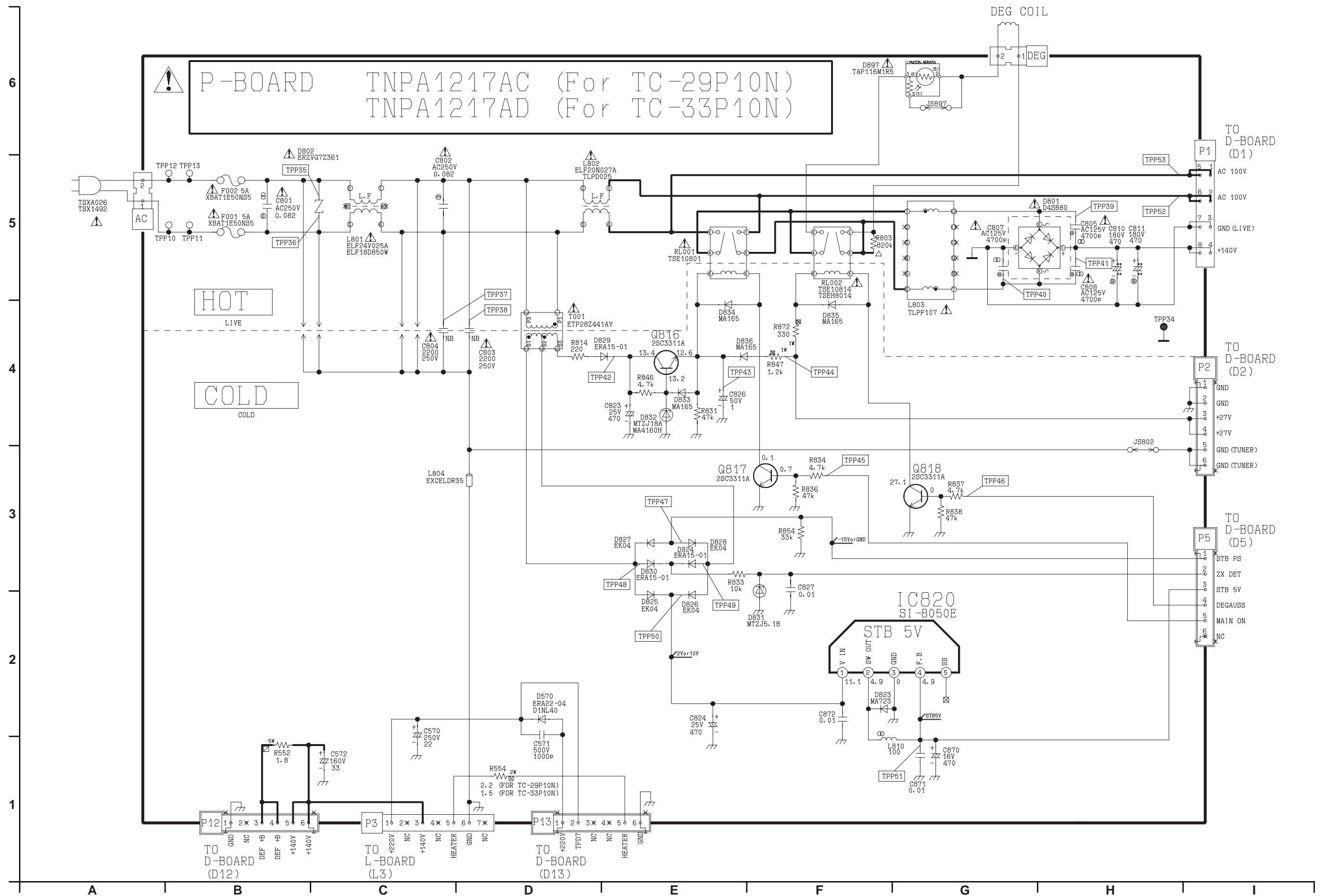
- Do not touch the hot part or the hot and cold parts at the same time or you may be shocked.
  - Do not short- circuit the hot and cold circuits or a fuse may blow and parts may break.
  - Do not connect an instrument, such as an oscilloscope, to the hot and cold circuits simultaneously or a fuse may blow.  
Connect the earth of instruments to the earth connection of the circuit being measured.
  - Make sure to disconnect the power plug before removing the chassis.
- Following diodes are interchangeable.  
MA150- MA162 (Replacement part)

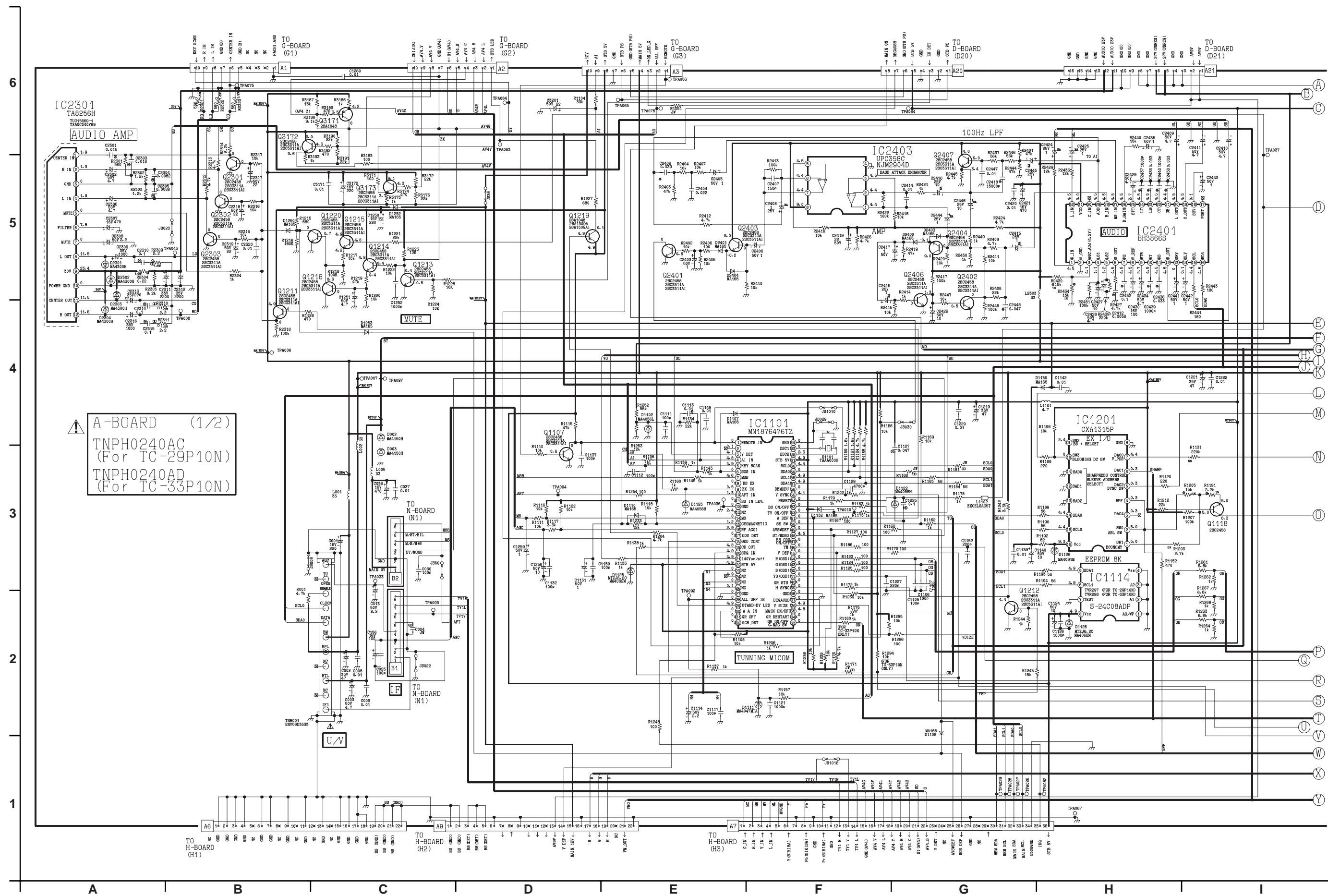
## Remote Control Transmitter TNQE196



## Key Function Table

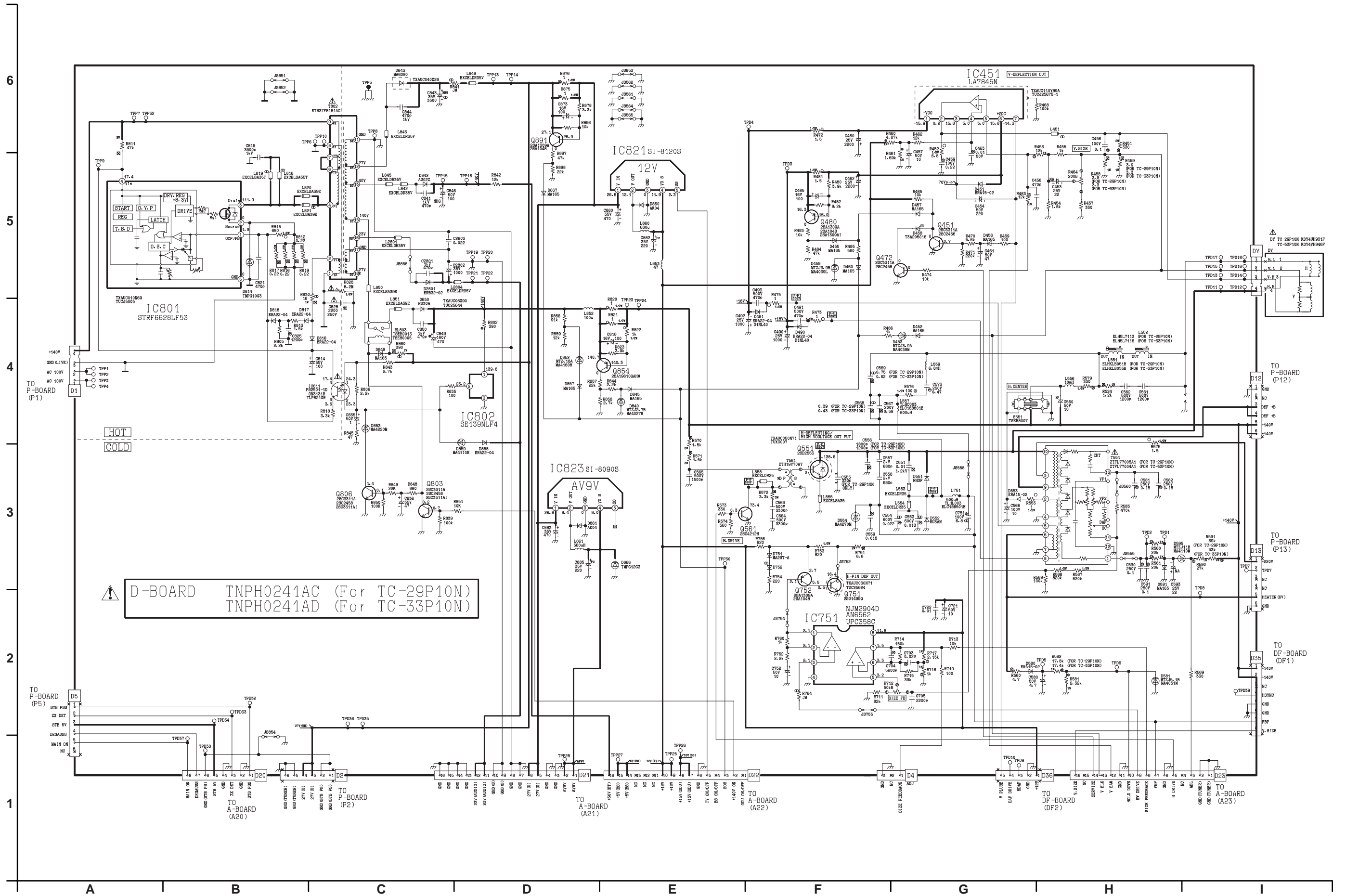
Key No.	Function	Key No.	Function	Key No.	Function
1	MUTE	23	MAIN MENU	45	INDEX
2	SURROUND	24	4	46	HOLD
3	TV/AV	25	9	47	STEREO
4	VCR/LD:REW	26	8	48	D. PNR
5	VCR/LD:STOP	27	VOL. UP	49	CHANGE
6	VCR/LD:FF	28	N (NORMAL)	50	STROBE
7	VCR/LD:PLAY	29	▶	51	PIP ACTION
8	VCR/LD-POWER ON/OFF	30	VCR-CH UP/LD-SKIP +	52	TIME TEXT
9	3	31	◀	53	REVEAL
10	2	32	7	54	F/T/B/
11	POS. UP	33	2 DIGIT	55	E.P.
12	LD FUNCTION	34	0	56	P.AI
13	VCR:ADVANCE/LD:DISC A	35	VOL. DOWN	57	---
14	VCR:REC/LD:DISC B	36	▼	58	---
15	VCR FUNCTION	37	PC	59	---
16	1	38	VCR:CH DOWN/LD:SKIP -	60	GREEN
17	6	39	OFF TIMER	61	YELLOW
18	5	40	RECALL	62	BLUE
19	POS. DOWN	41	STILL	63	RED
20	▲	42	CH SEARCH	64	POWER/OFF
21	VCR/LD:PAUSE	43	PIP		
22	VCR:REC	44	TV/TEXT		













N-BOARD

TNP110553DZ

IC101  
AN5179K

VIF, SIF  
DETECTION

INPUT  
LEVEL  
ADJ.

L-R  
LEVEL  
ADJ.

SEPARATION  
ADJ.

IC2200  
CXA1534S

MTS  
DEMODU

FILTER  
ADJ.

VCO  
ADJ.

MODE SW

TO  
A-BOARD  
(B1)

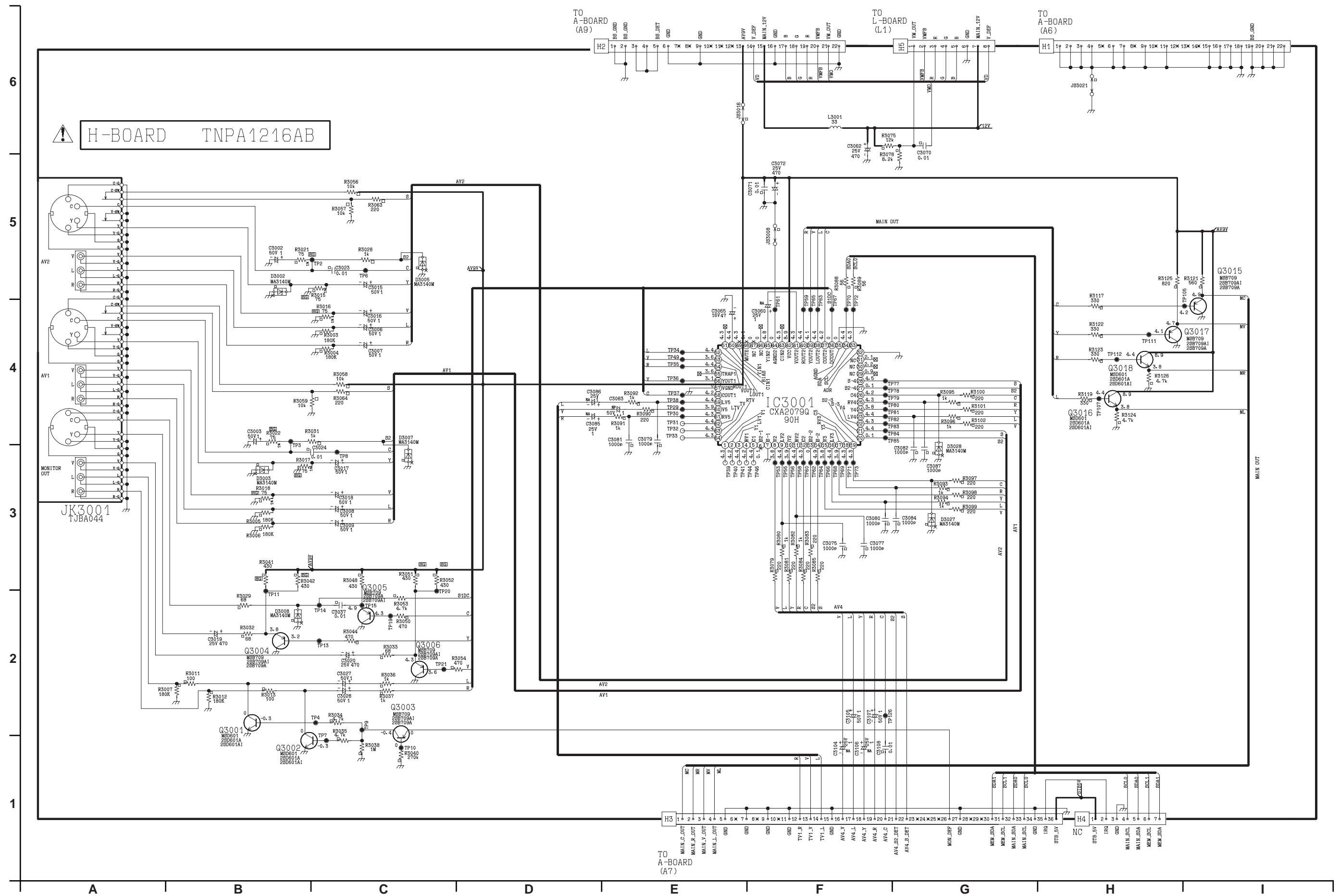
TO  
A-BOARD  
(B2)









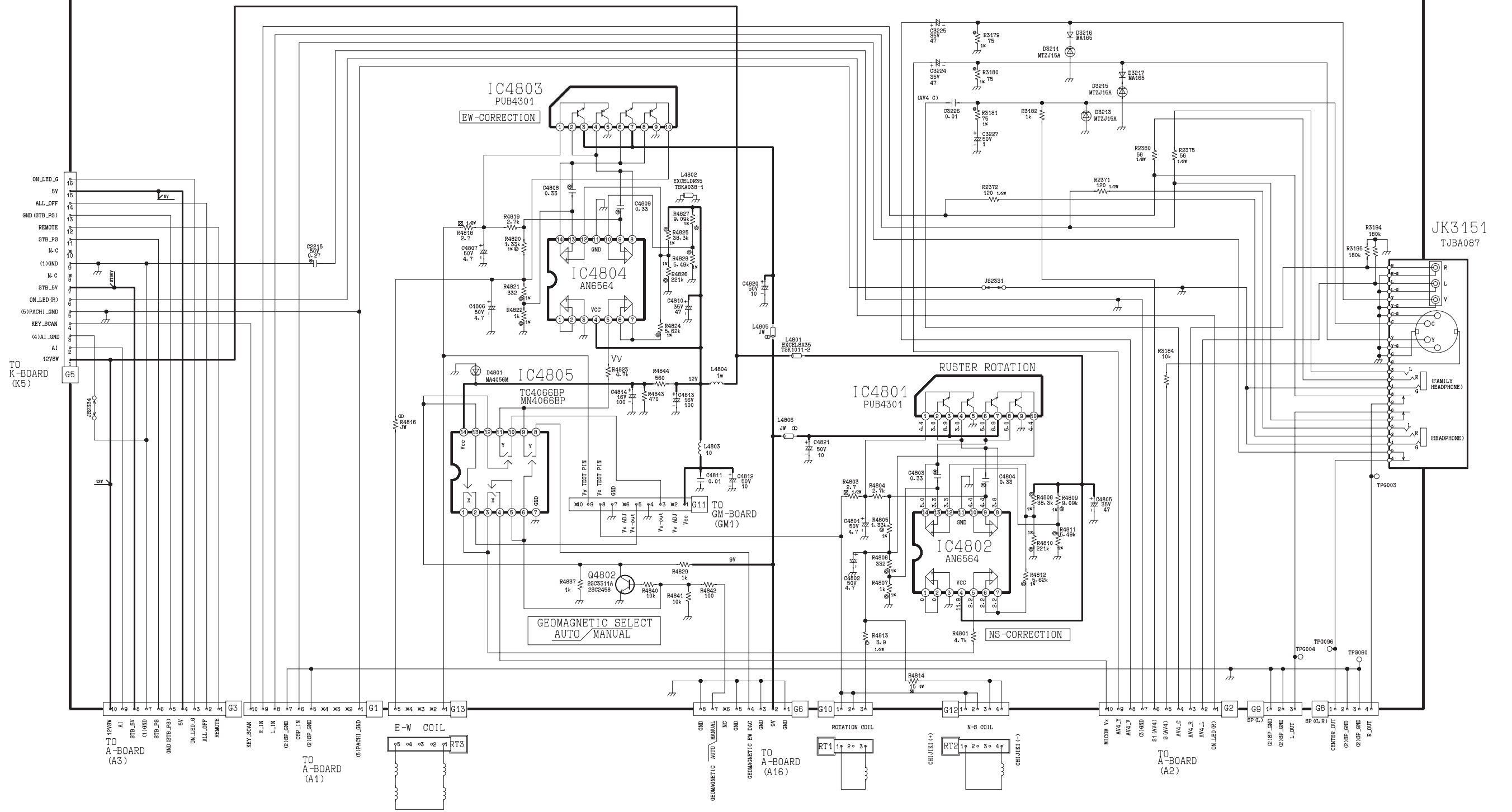








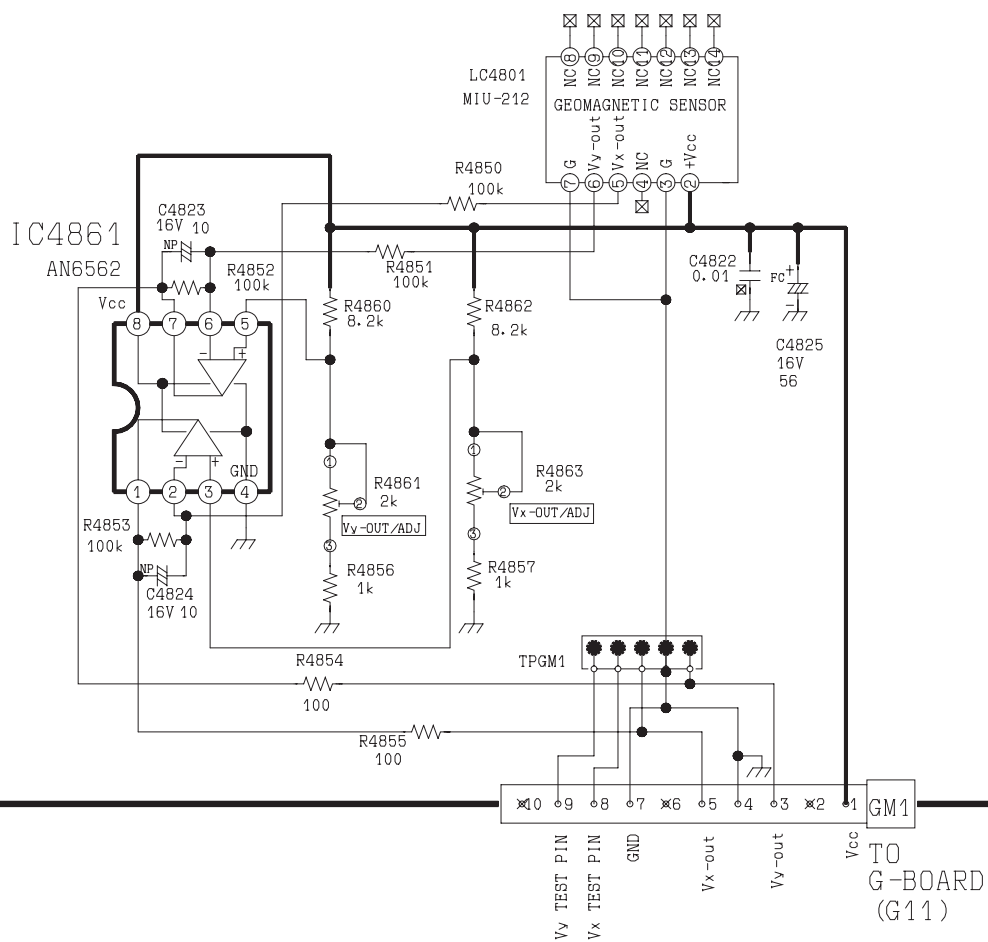
# G-BOARD TNPA1623 (For TC-33P10N)







# GM-BOARD TNPA1587 (For TC-33P10N)

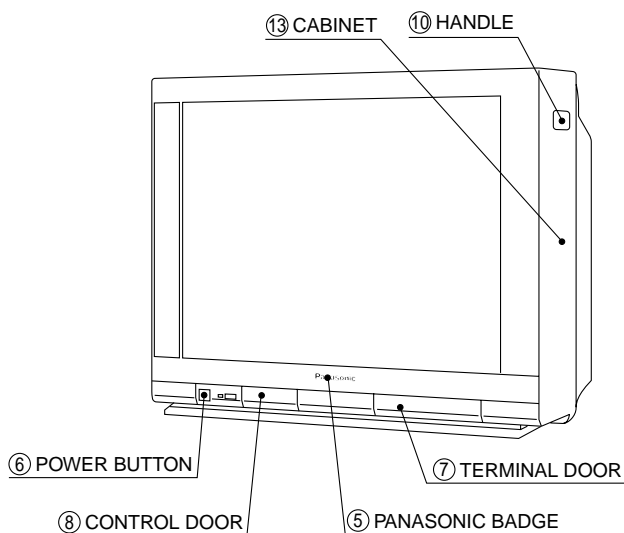




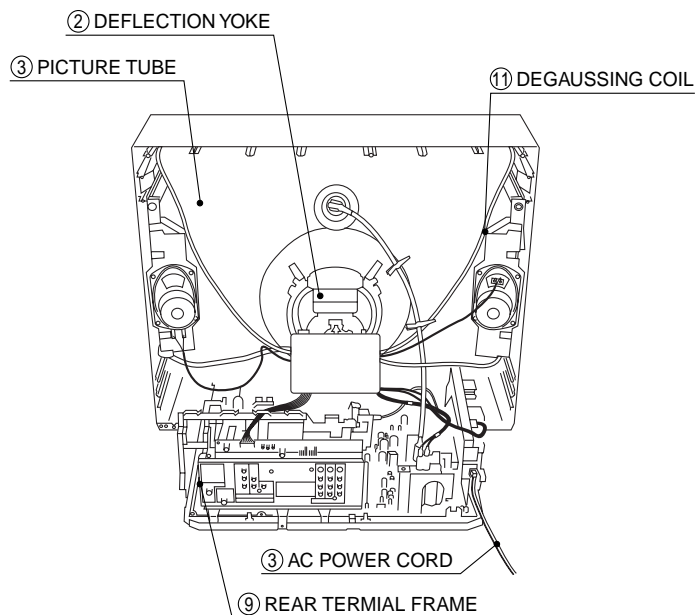
# PARTS LOCATION & MECHANICAL REPLACEMENT PARTS LIST

**Note:** The number on mechanical parts indicates Ref. No. Mechanical Replacement Parts List.

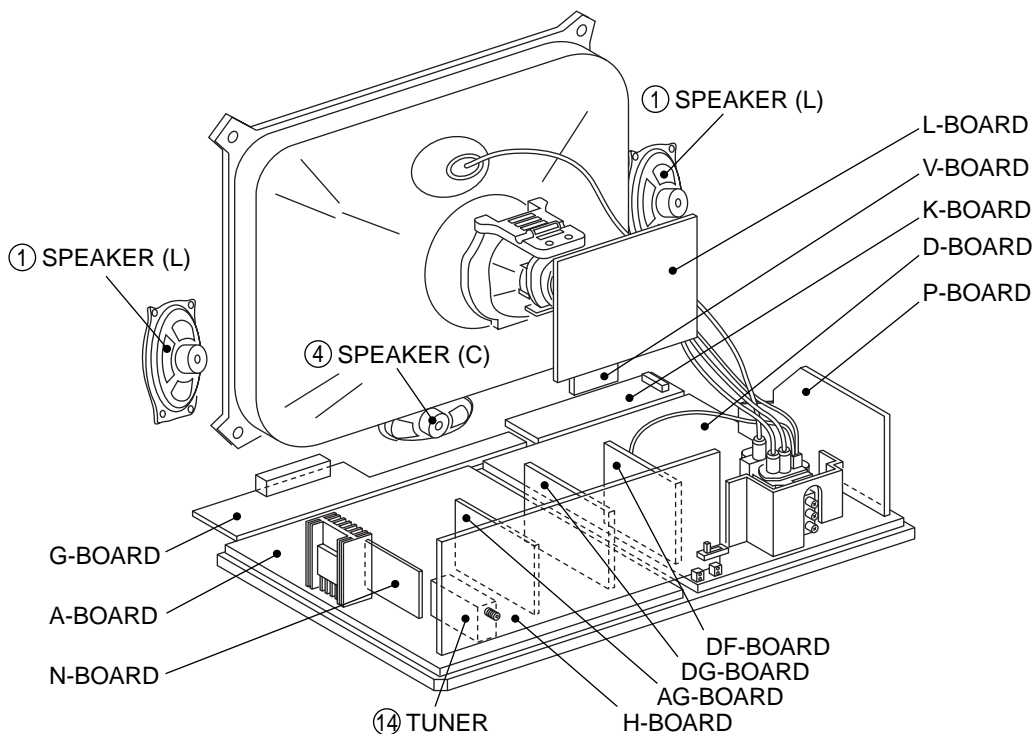
## • Front View



## • Rear View



## • Chassis Board Layout View



Ref. No	Part No.	Description	Ref. No	Part No.	Description		
	MECHANICAL PARTS			TTUA0298	REAR COVER (FOR TC-33P10N)		
	1	EAS12D149B		TTXA0022	SPEAKER HORN (FOR TC-29P10N)		
Δ	2	KDY4VH946F		TTXA0023	SPEAKER HORN (FOR TC-33P10N)		
Δ	3	M68LQL185X		TTXA0025	PRINT BOARD STOPPER (FOR TC-33P10N ONLY)		
Δ	3	M79LQM185X		TTYA0351	CABINET (FOR TC-29P10N)		
	4	TASA0004		13	TTYA0357	CABINET (FOR TC-33P10N)	
		TBLG3019			TUAA02101E	CHASSIS GUIDE	
		TBLG3020			XTB4+15A	SCREW	
Δ	5	TBMA059			XTB4+15AFZ	SCREW	
Δ		TBMD599			XTW3+12T	SCREW	
		TBMD598			XTW4+Z15D	SCREW	
	6	TBXA20002			XZBT6506	POLY BAG	
		TEK6940			RPM-637CBRS1	REMOTE CONTROL RECIVER (RM001)	
		TESA031		Δ	14	ENV56D35G3	TUNER(TNR001)
		TES1603					
		TES2249					
		THTA006Z					
		THTF004Y					
		THT1062					
		TJSX00900					
		TKKL5092					
		TKK169796					
	7	TKPA28403					
	8	TKPA28503					
		TKPA28604					
	9	TKP15A3525					
10		TKRA14103					
		TMK15943					
		TMME015					
		TMME047					
		TMME055					
		TMMJ031					
		TMMJ032					
		TMM25403					
		TMM6428-1					
		TMM6463-1					
		TMWA014					
		TMWA015					
		TMWJ002					
		TMWJ011					
		TMXA026-1					
		TNQE189					
Δ		TPCA67615					
Δ		TPCA68806					
		TPDA0281-1					
		TPDA0282-2					
		TPDA0283-1					
		TPDA0284-1					
		TPDJ0028					
		TPDJ0029					
		TPE114107-1					
		TPE114108-1					
		TPE114123					
		TPE114125					
Δ		TQBC0183					
		TSM10032-3					
		TSN63115-4					
Δ	11	TSPA107					
Δ	11	TSPA108					
		TSPF014					
Δ	12	TSX1492					
		TTUA0297-1					

# Replacement Parts List

## Important Safety Notice

Components identified by  $\Delta$  mark have special characteristics important for safety.  
When replacing any of these components, use only manufacturer's specified parts.

### RTL (Retention Time Limited)

**Note:** The marking (RTL) indicates that the Retention Time is Limited for this item.

After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retention period of availability is dependant on the type of assembly, and in accordance with the laws governing part and product retention. After the end of this period, the assembly will no longer be available.

Abbreviation of part name and description

#### 1. Resistor

Example:

ERD25TJ104     $\Delta$  100KOHM,  $\Delta$  1/4W  
Type                      Allowance

#### 2. Capacitor

Example:

ECKF1H103ZF     $\Delta$  0.01UF,  $\Delta$  50V  
Type                      Allowance

Type	Allowance
C : Carbon	F : $\pm 1\%$
F : Fuse	G : $\pm 2\%$
M : Metal Oxide	J : $\pm 5\%$
Metal Film	K : $\pm 10\%$
S : Solid	M : $\pm 20\%$
W : Wire Wound	

Type	Allowance
C : Ceramic	C : $\pm 0.25\text{pF}$
E : Electrolytic	D : $\pm 0.5\text{pF}$
P : Polyester	F : $\pm 1\text{pF}$
Polyprop	G : $\pm 3\text{pF}$
lene	J : $\pm 5\text{pF}$
T : Tantalum	K : $\pm 10\text{pF}$
	L : $\pm 15\text{pF}$
	M : $\pm 20\text{pF}$
	P : +100%, -0%
	Z : +80%, -20%

Ref. No	Part No.	Description	Ref. No	Part No.	Description
<b>INTEGRATED CIRCUITS</b>					
IC101	AN5179K	LINEAR IC	Q603	2SB709A	TRANSISTOR
IC301	AN5308NK	LINEAR IC	Q751	2SD1499	TRANSISTOR
IC351	TDA6103Q-N3	LINEAR IC	Q752	2SA1309A	TRANSISTOR
IC451	LA7845N	LINEAR IC	Q803	2SC3311A	TRANSISTOR
IC452	UPC358C	LINEAR IC	Q806	2SC3311A	TRANSISTOR
IC751	NJM2904D	LINEAR IC	Q816	2SC3311A	TRANSISTOR
IC801	STRF6628LF53	IC	Q817	2SC3311A	TRANSISTOR
IC802	SE139N	LINEAR IC	Q818	2SC3311A	TRANSISTOR
Δ IC811	0N3131-R	PHOTO COUPLER	Q854	2SA19610Q0HW	TRANSISTOR
IC820	SI-8050E	HYBRID IC	Q891	2SA1309A	TRANSISTOR
IC821	SI-8120S	HYBRID IC	Q901	2SC3311A	TRANSISTOR
IC823	SI-8090S	HYBRID IC	Q951	2SC3311A	TRANSISTOR
IC881	SI-8090S	HYBRID IC	Q952	2SC3311A	TRANSISTOR
IC882	SI-8050S	HYBRID IC	Q953	2SC1741A	TRANSISTOR
IC884	SI-3033C	HYBRID IC	Q954	2SB1030A	TRANSISTOR
IC1050	PNA4603H00LB	PHOTO IC	Q955	2SB1569A	TRANSISTOR
IC1101	MN1876476TZ	MOS IC (8BIT)	Q956	2SD2400A	TRANSISTOR
IC1114	TVRJ297	MOS IS (EEP ROM)	Q957	2SA1309A	TRANSISTOR
IC1114	TVRJ298	(FOR TC-29P10N)	Q958	2SC3311A	TRANSISTOR
IC1114	TVRJ298	MOS IC (EEP ROM)	Q961	2SC3311A	TRANSISTOR
IC1201	CXA1315P	(FOR TC-33P10N)	Q962	2SC3311A	TRANSISTOR
IC1201	CXA1315P	LINEAR IC	Q973	2SB709A	TRANSISTOR
IC1202	MC14066BCP	MOS IC (LOGIC)	Q980	2SC3311A	TRANSISTOR
IC1212	S-80845HLY-Z	IC	Q981	2SC3311A	TRANSISTOR
IC1551	AN5422K	LINEAR IC	Q983	2SA1309A	TRANSISTOR
IC2200	CXA1534S	LINEAR IC	Q984	2SA1309A	TRANSISTOR
IC2301	TA8256H	LINEAR IC	Q985	2SA1309A	TRANSISTOR
IC2401	BH3866S	LINEAR IC	Q986	2SA1309A	TRANSISTOR
IC2403	UPC358C	LINEAR IC	Q1107	2SC3311A	TRANSISTOR
IC3001	CXA2079Q	LINEAR IC	Q1118	2SC3311A	TRANSISTOR
IC3201	NJM4565L	LINEAR IC	Q1120	2SC3311A	TRANSISTOR
IC4801	PUB4301	TRANSISTOR ARRAY	Q1121	2SC3311A	TRANSISTOR
IC4802	AN6564	LINEAR IC	Q1122	2SA1309A	TRANSISTOR
IC4803	PUB4301	TRANSISTOR ARRAY	Q1211	2SC3311A	TRANSISTOR
IC4804	AN6564	(FOR TC-33P10N ONLY)	Q1212	2SC3311A	TRANSISTOR
IC4805	TC4066BP	LINEAR IC (FOR TC-33P10N ONLY)	Q1213	2SC3311A	TRANSISTOR
IC4861	AN6562	MOS IC (CMOS S/LOGIC)	Q1214	2SC3311A	TRANSISTOR
IC6601	MN8283	(FOR TC-33P10N ONLY)	Q1215	2SC3311A	TRANSISTOR
IC6602	TVSA0274	LINEAR IC (FOR TC-33P10N ONLY)	Q1216	2SC3311A	TRANSISTOR
			Q1219	2SA1309A	TRANSISTOR
			Q1220	2SC3311A	TRANSISTOR
			Q1233	2SD601A	TRANSISTOR
			Q1551	2SC3425RLMAT	TRANSISTOR
			Q1552	2SC3311A	TRANSISTOR
			Q1553	2SC3311A	TRANSISTOR
<b>TRANSISTORS</b>			Q1554	2SC3311A	TRANSISTOR
Q022	2SC3311A	TRANSISTOR	Q1555	2SC4572	TRANSISTOR
Q101	2SB709A	TRANSISTOR	Q1556	2SC3311A	TRANSISTOR
Q301	2SB709A	TRANSISTOR	Q1557	2SC3311A	TRANSISTOR
Q303	2SB709A	TRANSISTOR	Q2203	2SD601A	TRANSISTOR
Q304	2SD601A	TRANSISTOR	Q2301	2SC3311A	TRANSISTOR
Q305	2SB709A	TRANSISTOR	Q2302	2SC3311A	TRANSISTOR
Q306	2SD601A	TRANSISTOR	Q2303	2SC3311A	TRANSISTOR
Q315	2SC3311A	TRANSISTOR	Q2401	2SC3311A	TRANSISTOR
Q316	2SC3311A	TRANSISTOR	Q2402	2SC3311A	TRANSISTOR
Q357	2SC3311A	TRANSISTOR	Q2403	2SC3311A	TRANSISTOR
Q369	2SA1309A	TRANSISTOR	Q2404	2SC3311A	TRANSISTOR
Q451	2SC3311A	TRANSISTOR	Q2406	2SC3311A	TRANSISTOR
Q454	2SC3311A	TRANSISTOR	Q2407	2SC3311A	TRANSISTOR
Q472	2SC3311A	TRANSISTOR	Q3001	2SD601A	TRANSISTOR
Q480	2SA1309A	TRANSISTOR	Q3002	2SD601A	TRANSISTOR
Q502	2SB709A	TRANSISTOR	Q3003	2SB709A	TRANSISTOR
Q503	2SD601A	TRANSISTOR	Q3004	2SB709A	TRANSISTOR
Q504	2SB709A	TRANSISTOR	Q3005	2SB709A	TRANSISTOR
Q505	2SD601A	TRANSISTOR	Q3006	2SB709A	TRANSISTOR
Q506	2SB709A	TRANSISTOR	Q3015	2SB709A	TRANSISTOR
Q507	2SD601A	TRANSISTOR	Q3016	2SD601A	TRANSISTOR
Q551	2SD2553LBMA	TRANSISTOR	Q3017	2SB709A	TRANSISTOR
Q561	2SC4212H	TRANSISTOR	Q3018	2SD601A	TRANSISTOR
Q601	2SD601A	TRANSISTOR	Q3171	2SA1309A	TRANSISTOR
Q602	2SB709A	TRANSISTOR			

Ref. No	Part No.	Description	Ref. No	Part No.	Description
Q3172	2SC3311A	TRANSISTOR	D826	EK04	DIODE
Q3173	2SC3311A	TRANSISTOR	D827	EK04	DIODE
Q3201	2SA1309A	TRANSISTOR	D828	EK04	DIODE
Q3202	2SA1309A	TRANSISTOR	D829	ERA15-01	DIODE
Q4802	2SC3311A	TRANSISTOR (FOR TC-33P10N ONLY)	D830	ERA15-01	DIODE
Q6601	2SD601A	TRANSISTOR	D831	MA4051M	ZENER DIODE
Q6605	2SD601A	TRANSISTOR	D832	MA4160H	ZENER DIODE
Q6607	2SD601A	TRANSISTOR	D833	MA165	DIODE
Q6608	2SD601A	TRANSISTOR	D834	MA165	DIODE
Q6609	2SD601A	TRANSISTOR	D835	MA165	DIODE
Q6610	2SD601A	TRANSISTOR	D836	MA165	DIODE
Q6616	2SB709A	TRANSISTOR	D840	MA4027H	ZENER DIODE
Q6617	2SB709A	TRANSISTOR	D842	AU02Z	DIODE
Q6618	2SB709A	TRANSISTOR	D843	MA6D90	DIODE
Q6809	2SD601A	TRANSISTOR	D845	MA165	DIODE
<b>DIODES</b>			D849	MA165	DIODE
D002	MA4150H	ZENER DIODE	D850	RU30A	DIODE
D003	MA4150H	ZENER DIODE	D852	MA4160H	ZENER DIODE
D025	MA165	DIODE	D853	MA4220M	ZENER DIODE
D101	MA1051L	ZENER DIODE	D857	MA165	DIODE
D301	MA152K	DIODE	D858	ERA22-04	DIODE
D354	MA165	DIODE	D859	MA4110H	ZENER DIODE
D355	MA165	DIODE	D860	AK04	DIODE
D356	MA165	DIODE	D861	AK04	DIODE
D357	MA4150M	ZENER DIODE	D862	MA4180M	ZENER DIODE
D358	MA165	DIODE	D863	TMPG12G3	DIODE
D359	MA4150M	ZENER DIODE	D864	MA4180M	ZENER DIODE
D360	ERA22-04	DIODE	D865	TMPG10G3	DIODE
D361	ERA22-04	DIODE	D866	TMPG12G3	DIODE
D362	ERA22-04	DIODE	D867	MA165	DIODE
D363	MA165	DIODE	D872	MA165	DIODE
D375	MA165	DIODE	D881	AK04	DIODE
D451	ERA15-02	DIODE	D882	AK04	DIODE
D452	MA165	DIODE	Δ D897	TAP116M1R5	THERMISTOR
D453	MA4039M	ZENER DIODE	D901	MA165	DIODE
D455	MA165	DIODE	D1052	LNG101WHAAS	LED
D456	MA165	DIODE	D1102	MA4056L	ZENER DIODE
D457	MA165	DIODE	D1107	MA165	DIODE
D459	MA4039L	ZENER DIODE	D1108	MA165	DIODE
D460	MA165	DIODE	D1110	MA165	DIODE
D490	ERA22-04	DIODE	D1111	MA4047M	ZENER DIODE
D491	ERA22-04	DIODE	D1122	MA4056H	ZENER DIODE
D506	MA152K	DIODE	D1123	MA4056H	ZENER DIODE
D514	MA178	DIODE	D1125	MA4062M	ZENER DIODE
D530	MA3039H	ZENER DIODE	D1126	MA4062M	ZENER DIODE
D531	MA704A	DIODE	D1127	MA165	DIODE
D534	MA3039H	ZENER DIODE	D1128	MA4091M	ZENER DIODE
D535	MA3062H	ZENER DIODE	D1130	MA165	DIODE
D551	RH3F	DIODE	D1132	MA165	DIODE
D552	TVSRU3AN	DIODE	D1250	MA165	DIODE
D553	ERA15-02	DIODE	D1252	MA165	DIODE
D554	MA4270M	ZENER DIODE	D1253	MA165	DIODE
D570	ERA22-04	DIODE	D1551	ERA22-06	DIODE
D580	ERA15-02	DIODE	D1552	MA165	DIODE
D581	MA4051M	ZENER DIODE	D1553	RP1H	DIODE
D591	MA165	DIODE	D1554	MA165	DIODE
D595	MA4110M	ZENER DIODE	D1555	MA165	DIODE
D607	MA3056L	ZENER DIODE	D1557	MA165	DIODE
D751	MA29T-A	DIODE	D1558	MA165	DIODE
Δ D801	D4SB80Z	DIODE	D2301	MA4300H	ZENER DIODE
D802	ERZV07D361	VARIATOR	D2302	MA4300H	ZENER DIODE
D814	TMPG10G3	DIODE	D2303	MA4300H	ZENER DIODE
D816	ERA22-04	DIODE	D2304	MA4300H	ZENER DIODE
D817	ERA22-04	DIODE	D2401	MA165	DIODE
D818	ERA22-04	DIODE	D2402	MA165	DIODE
D823	MA723	DIODE	D2403	MA165	DIODE
D824	ERA15-01	DIODE	D2404	MA165	DIODE
D825	EK04	DIODE	D2801	ERB32-02E	DIODE
			D3002	MA3140M	ZENER DIODE
			D3003	MA3140M	ZENER DIODE



Ref. No	Part No.	Description		
R306	ERJ6GEYJ224	M 220KOHM J	1/10W	
R307	ERJ6ENF7872	M 78.7KOHM	1/10W	
R308	ERJ6GEYJ221	M 220 OHM J	1/10W	
R309	ERJ6GEYJ274	M 270KOHM J	1/10W	
R310	ERJ6GEYJ102	M 1KOHM J	1/10W	
R311	ERDS2TJ103	C 10KOHM J	1/4W	
R312	ERJ6GEYJ105	M 1MOHM J	1/10W	
R313	ERJ6GEYJ153	M 15KOHM J	1/10W	
R314	ERJ6ENF1370	M 137 OHM	1/10W	
R318	ERDS2TJ471	C 470 OHM J	1/4W	
R319	ERDS2TJ471	C 470 OHM J	1/4W	
R322	ERDS2TJ101	C 100 OHM J	1/4W	
R325	ERJ6ENF4221	M 4.22KOHM	1/10W	
R326	ERJ6ENF2741	M 2.74KOHM	1/10W	
R327	ERJ6GEY0R00	M 0 OHM J	1/10W	
R331	ERJ6GEYJ102	M 1KOHM J	1/10W	
R332	ERJ6GEYJ222	M 2.2KOHM J	1/10W	
R333	ERJ6GEYJ471	M 470 OHM J	1/10W	
R345	ERJ6GEYJ102	M 1KOHM J	1/10W	
R346	ERJ6GEYJ471	M 470 OHM J	1/10W	
R348	ERJ6ENF1500	M 150 OHM	1/10W	
R350	ERJ6ENF3000	M 300 OHM	1/10W	
R351	ER0S2CKF1201	M 1.2KOHM F	1/4W	
R352	ER0S2CKF1101	M 1100 OHM F	1/4W	
R353	ER0S2CKF9100	M 910 OHM F	1/4W	
R354	ERDS2TJ821	C 820 OHM J	1/4W	
R355	ERDS2TJ821	C 820 OHM J	1/4W	
R356	ERDS2TJ821	C 820 OHM J	1/4W	
R357	ERDS2TJ102	C 1KOHM J	1/4W	
R358	ERG1SJ104P	M 100KOHM J	1W	
R359	ERG1SJ104P	M 100KOHM J	1W	
R360	ERG1SJ104P	M 100KOHM J	1W	
R361	ER0S2CKF7681	M 7.68KOHM F	1/4W	
R362	ER0S2CKF1501	M 1.5KOHM F	1/4W	
R363	ERC12GK102	S 1KOHM K	1/2W	
R364	ERC12GK102	S 1KOHM K	1/2W	
R365	ERC12GK102	S 1KOHM K	1/2W	
R367	ERDS1TJ104	C 100KOHM J	1/2W	
R368	ER0S2CKF1202	M 12KOHM F	1/4W	
R369	ERDS2TJ103	C 10KOHM J	1/4W	
R371	ERDS2TJ102	C 1KOHM J	1/4W	
R372	ERDS2TJ102	C 1KOHM J	1/4W	
Δ R374	ERQ12AJ121P	F 120 OHM J	1/2W	
R383	ERDS2TJ222	C 2.2KOHM J	1/4W	
R384	ERDS2TJ104	C 100KOHM J	1/4W	
R385	ERDS2TJ102	C 1KOHM J	1/4W	
R401	ERJ6GEYJ182	M 1.8KOHM J	1/10W	
R405	ERJ6GEYJ102	M 1KOHM J	1/10W	
R406	ERJ6GEYJ683	M 68KOHM J	1/10W	
R410	ER0S2CKF1801	M 1.8KOHM F	1/4W	
R411	ER0S2CKF3901	M 3.9KOHM F	1/4W	
R412	ER0S2CKF6800	M 680 OHM F	1/4W	
R414	ERDS2TJ470	C 47 OHM J	1/4W	
R415	ER0S2CKF1502	M 15KOHM F	1/4W	
R416	ER0S2CKF1822	M 18.2KOHM F	1/4W	
R417	ERDS2TJ103	C 10KOHM J	1/4W	
R451	ERG2FJS331D	M 330 OHM J	2W	
R452	ERDS1FJ6R8	C 6.8 OHM J	1/2W	
R453	ER0S2CKF1202	M 12KOHM F	1/4W	
R454	ERDS2TJ182	C 1.8KOHM J	1/4W	
R455	ERDS2TJ102	C 1KOHM J	1/4W	
R457	ERDS2TJ331	C 330 OHM J	1/4W	
R458	ERX1SJ3R9	M 3.9 OHM J (FOR TC-29P10N)	1/4W	
R458	ERX1SJ3R3P	M 3.3 OHM J (FOR TC-33P10N)	1W	
R459	ERX1SJ3R9	M 3.9 OHM J (FOR TC-29P10N)	1/4W	
R459	ERX1SJ3R3P	M 3.3 OHM J (FOR TC-33P10N)	1W	
R460	ER0S2CKF4871	M 4.87KOHM F	1/4W	

Ref. No	Part No.	Description		
R461	ER0S2CKF1691	M 1.69KOHM F	1/4W	
R462	ERDS2TJ123	C 12KOHM J	1/4W	
R463	ER0S2CKF1202	M 12KOHM F	1/4W	
R464	EVMEGSA00B22	CONTROL 200 OHMB		
R465	ERDS2TJ103	C 10KOHM J	1/4W	
R468	ERDS2TJ104	C 100KOHM J	1/4W	
R469	ERDS2TJ101	C 100 OHM J	1/4W	
R470	ERDS2TJ562	C 5.6KOHM J	1/4W	
R471	ERDS2TJ224	C 220KOHM J	1/4W	
R472	ERDS1FJ1R5	C 1.5 OHM J	1/2W	
R473	ERDS1FJ1R0	C 1 OHM J	1/2W	
R474	ERDS2TJ103	C 10KOHM J	1/4W	
R475	ERDS1FJ1R0	C 1 OHM J	1/2W	
R480	ERDS2TJ392	C 3.9KOHM J	1/4W	
R481	ERDS1FJ1R5	C 1.5 OHM J	1/2W	
R482	ERDS2TJ822	C 8.2KOHM J	1/4W	
R483	ERDS2TJ103	C 10KOHM J	1/4W	
R484	ERDS2TJ473	C 47KOHM J	1/4W	
R485	ERDS2TJ561	C 560 OHM J	1/4W	
R486	ERDS2TJ102	C 1KOHM J	1/4W	
R501	ERJ6GEYJ222	M 2.2KOHM J	1/10W	
R502	ERJ6GEYJ102	M 1KOHM J	1/10W	
R503	ERJ6GEYJ102	M 1KOHM J	1/10W	
R504	ERJ6GEYJ821	M 820 OHM J	1/10W	
R506	ERJ6GEYJ122	M 1.2KOHM J	1/10W	
R508	ERJ6GEYJ101	M 100 OHM J	1/10W	
R509	ERJ6GEYJ274	M 270KOHM J	1/10W	
R511	ERJ6GEYJ102	M 1KOHM J	1/10W	
R512	ERJ6GEYJ681	M 680 OHM J	1/10W	
R513	ERJ6GEYJ222	M 2.2KOHM J	1/10W	
R514	ERJ6GEYJ102	M 1KOHM J	1/10W	
R515	ERJ6GEYJ331	M 330 OHM J	1/10W	
R516	ERJ6GEYJ222	M 2.2KOHM J	1/10W	
R517	ERJ6GEYJ471	M 470 OHM J	1/10W	
R518	ERJ6GEYJ472	M 4.7KOHM J	1/10W	
R520	ERJ6GEYJ562	M 5.6KOHM J	1/10W	
R523	ERJ6GEYJ681	M 680 OHM J	1/10W	
R524	ERG1FJS122D	M 1.2KOHM J	1W	
R525	ERJ6GEYJ472	M 4.7KOHM J	1/10W	
R526	ERJ6GEYJ332	M 3.3KOHM J	1/10W	
R527	ERJ6GEYJ471	M 470 OHM J	1/10W	
R528	ERJ6GEYJ471	M 470 OHM J	1/10W	
R529	ERJ6GEYJ103	M 10KOHM J	1/10W	
R552	ERF5ZK1R8	W 1.8 OHM	5W	
R553	ERDS1FJ1R0	C 1 OHM J	1/2W	
Δ R554	ERQ2CJ1R2	F 2.2 OHM (FOR TC-29P10N)	2W	
Δ R554	ERQ2CJ1R5	F 1.5 OHM (FOR TC-33P10N)	2W	
R560	ER0S2CKF2002	M 20KOHM F	1/4W	
R561	ER0S2CKF2002	M 20KOHM F	1/4W	
R569	ERDS2TJ331	C 330 OHM J	1/4W	
R570	ERG3FJS152D	M 1.5KOHM J	3W	
R571	ERG3FJS152D	M 1.5KOHM J	3W	
R572	ERG3SJ332H	M 3.3KOHM J	3W	
R573	ERDS2TJ331	C 330 OHM J	1/4W	
R574	ERDS2TJ561	C 560 OHM J	1/4W	
R575	ERDS1FJ1R5	C 1.5 OHM J	1/2W	
Δ R576	ERQ12AJ101	F 100 OHM J	1/2W	
Δ R579	ERQ12HJ331	F 330 OHM J	1/2W	
Δ R580	ERQ14AJ4R7P	F 4.7 OHM J	1/4W	
R581	ER0S2CKF2321	M 2.32KOHM F	1/4W	
R582	ER0S2CKF1782	M 17.4KOHM F (FOR TC-29P10N)	1/4W	
R582	ER0S2CKF1742	M 17.4KOHM F (FOR TC-33P10N)	1/4W	
R583	ERDS2TJ474	C 470KOHM J	1/4W	
R587	ERDS1TJ824	C 820KOHM J	1/2W	
R588	ERDS1TJ824	C 820KOHM J	1/2W	
R589	ERDS2TJ104	C 100KOHM J	1/4W	
R590	ER0S2CKF2702	M 27KOHM F	1/4W	

Ref. No	Part No.	Description			Ref. No	Part No.	Description		
R591	ER0S2CKF3902	M 39KOHM F (FOR TC-29P10N)	1/4W		R822	ERDS1FJ102	C 1KOHM J	1/2W	
					R823	ERDS2TJ392	C 3.9KOHM J	1/4W	
R591	ER0S2CKF3302	M 33KOHM F (FOR TC-33P10N)	1/4W		Δ R828	ERC12ZGK825	S 8.2MOHM K	1/2W	
R602	ERJ6GEYJ101	M 100 OHM J	1/10W		R830	ERG1FJS180D	M 18 OHM J	1W	
R606	ERJ6GEY0R00	M 0 OHM J	1/10W		R831	ERDS2TJ473	C 47KOHM J	1/4W	
R607	ERJ6GEYJ221	M 220 OHM J	1/10W		R833	ERDS2TJ103	C 10KOHM J	1/4W	
R608	ERJ6GEYJ222	M 2.2KOHM J	1/10W		R834	ERDS2TJ472	C 4.7KOHM J	1/4W	
R609	ERJ6GEYJ221	M 220 OHM J	1/10W		R835	ERDS2TJ101	C 100 OHM J	1/4W	
R610	ERJ6GEYJ222	M 2.2KOHM J	1/10W		R836	ERDS2TJ473	C 47KOHM J	1/4W	
R611	ERJ6GEYJ221	M 220 OHM J	1/10W		R837	ERDS2TJ472	C 4.7KOHM J	1/4W	
R612	ERJ6GEYJ222	M 2.2KOHM J	1/10W		R838	ERDS2TJ473	C 47KOHM J	1/4W	
R615	ERJ6GEYJ472	M 4.7KOHM J	1/10W		R839	ERDS2TJ104	C 100KOHM J	1/4W	
R616	ERJ6GEYJ152	M 1.5KOHM J	1/10W		R842	ERDS2TJ123	C 12KOHM J	1/4W	
R620	ERJ6GEYJ105	M 1MOHM J	1/10W		R843	ERDS2TJ272	C 2.7KOHM J	1/4W	
R621	ERJ6GEYJ102	M 1KOHM J	1/10W		R844	ERDS2TJ222	C 2.2KOHM J	1/4W	
R622	ERJ6GEYJ362	M 3.6KOHM J	1/10W		R845	ERDS2TJ470	C 47 OHM J	1/4W	
R623	ERJ6GEYJ152	M 1.5KOHM J	1/10W		R846	ERDS2TJ472	C 4.7KOHM J	1/4W	
R625	ERJ6GEYJ102	M 1KOHM J	1/10W		R847	ERG1FJS122D	M 1.2KOHM J	1W	
R626	ERJ6GEYJ123	M 12KOHM J	1/10W		R848	ERDS2TJ681	C 680 OHM J	1/4W	
R627	ERJ6GEYJ103	M 10KOHM J	1/10W		R849	ERDS2TJ223	C 22KOHM J	1/4W	
R628	ERJ6GEYJ472	M 4.7KOHM J	1/10W		R850	ERDS2TJ104	C 100KOHM J	1/4W	
R631	ERJ6GEYJ151	M 150 OHM J	1/10W		R851	ERDS2TJ103	C 10KOHM J	1/4W	
R633	ERJ6GEYJ151	M 150 OHM J	1/10W		R854	ERDS2TJ333	C 33KOHM J	1/4W	
R634	ERJ6GEYJ102	M 1KOHM J	1/10W		R856	ERDS2TJ913	C 91KOHM J	1/4W	
R635	ERJ6GEYJ151	M 150 OHM J	1/10W		R857	ERDS2TJ223	C 22KOHM J	1/4W	
R637	ERJ6GEYJ151	M 150 OHM J	1/10W		R858	ERDS2TJ272	C 2.7KOHM J	1/4W	
R647	ERJ6GEYJ151	M 150 OHM J	1/10W		R859	ERDS2TJ123	C 12KOHM J	1/4W	
R650	ERJ6GEYJ151	M 150 OHM J	1/10W		R860	ERG2FJS391D	M 390 OHM J	2W	
R651	ERJ6GEYJ151	M 150 OHM J	1/10W		R872	ERG1FJS331D	M 330 OHM J	1W	
R652	ERJ6GEYJ151	M 150 OHM J	1/10W		R875	ERX12SJ1R2	M 1.2 OHM J	1/2W	
R653	ERJ6GEYJ151	M 150 OHM J	1/10W		R876	ERX12SJ1R2	M 1.2 OHM J	1/2W	
R654	ERJ6GEYJ103	M 10KOHM J	1/10W		R878	ERDS2TJ272	C 2.7KOHM J	1/4W	
R656	ERJ6GEYJ151	M 150 OHM J	1/10W		R882	ER0S2CKF61R9	M 61.9 OHM F	1/4W	
R657	ERJ6GEYJ221	M 220 OHM J	1/10W		R883	ER0S2CKF1911	M 1.91KOHM F	1/4W	
R659	ERJ6GEYJ822	M 8.2KOHM J	1/10W		R892	ER0S2CKF23R2	M 23.2 OHM F	1/4W	
R661	ERJ6GEYJ822	M 8.2KOHM J	1/10W		R893	ER0S2CKF2211	M 2.21KOHM F	1/4W	
R674	ERJ6GEYJ471	M 470 OHM J	1/10W		R894	ER0S2CKF30R1	M 30.1 OHM F	1/4W	
R711	ERDS2TJ823	C 82KOHM J (FOR TC-29P10N)	1/4W		R895	ER0S2CKF1241	M 1.2KOHM F	1/4W	
R711	ERDS2TJ333	C 33KOHM J (FOR TC-33P10N)	1/4W		R896	ERDS2TJ103	C 10KOHM J	1/4W	
R712	TAV1027B503	VARIABLE RESISTOR			R897	ERDS2TJ473	C 47KOHM J	1/4W	
R713	ERDS2TJ103	C 10KOHM J	1/4W		R898	ERDS2TJ223	C 22KOHM J	1/4W	
R714	ERDS2TJ154	C 150KOHM J	1/4W		R901	ERDS2TJ272	C 2.7KOHM J	1/4W	
R715	ERDS2TJ393	C 39KOHM J	1/4W		R902	ERDS2TJ103	C 10KOHM J	1/4W	
R716	ER0S2CKF1001	M 1KOHM F	1/4W		R907	ERJ6GEYJ102	M 1KOHM J	1/10W	
R717	ER0S2CKF2151	M 2.15KOHM F	1/4W		R908	ERJ6GEYJ331	M 330 OHM J	1/10W	
R719	ERDS2TJ101	C 100 OHM J	1/4W		R916	ERJ6ENF5600	M 560 OHM	1/10W	
R751	ERX2FJS6R8D	M 6.8 OHM J	2W		R920	ER0S2CKF2700	M 270 OHM F	1/4W	
R753	ERDS1TJ821	C 820 OHM J	1/2W		R921	ER0S2CKF9090	M 909 OHM F (FOR TC-29P10N)	1/4W	
R754	ERDS2TJ221	C 220 OHM J	1/4W		R921	ER0S2CKF1001	M 1KOHM F (FOR TC-33P10N)	1/4W	
R756	ERDS2TJ821	C 820 OHM J	1/4W		R922	ERDS2TJ104	C 100KOHM J	1/4W	
R760	ERDS2TJ102	C 1KOHM J	1/4W		R923	ERDS2TJ561	C 560 OHM J	1/4W	
R762	ERDS2TJ222	C 2.2KOHM J	1/4W		R924	ERDS2TJ104	C 100KOHM J	1/4W	
Δ R802	ERQ14AJ391P	F 390 OHM J	1/4W		R925	ERDS2TJ331	C 330 OHM J	1/4W	
R803	ERC14GK824	S 820KOHM	1/4W		R926	ERDS2TJ822	C 8.2KOHM J	1/4W	
R805	ERDS2TJ222	C 2.2KOHM J	1/4W		R927	ERDS2TJ822	C 8.2KOHM J	1/4W	
R806	ERDS2TJ222	C 2.2KOHM J	1/4W		R928	ERDS2TJ101	C 100 OHM J	1/4W	
R811	ERG2FJS473D	M 47KOHM J	2W		R929	ERDS2TJ101	C 100 OHM J	1/4W	
R812	ERX12SJR22P	M 0.22 OHM J	1/2W		R930	ERDS2TJ561	C 560 OHM J	1/4W	
R813	ERDS2TJ152	C 1.5KOHM J	1/4W		R931	ERDS2TJ104	C 100KOHM J	1/4W	
R814	ERDS2TJ221	C 220 OHM J	1/4W		R933	ERDS2TJ331	C 330 OHM J	1/4W	
R815	ERDS1FJ681	C 680 OHM J	1/2W		R934	ERDS2TJ561	C 560 OHM J	1/4W	
R816	ERX12SJR22P	M 0.22 OHM J	1/2W		R935	ERDS2TJ183	C 18KOHM J	1/4W	
R817	ERX12SJR22P	M 0.22 OHM J	1/2W		R937	ERDS2TJ103	C 10KOHM J	1/4W	
R818	ERDS2TJ332	C 3.3KOHM J	1/4W		R938	ERDS2TJ331	C 330 OHM J	1/4W	
R819	ERX12SJR47	M 0.47 OHM J	1/2W		R951	ERDS2TJ821	C 820 OHM J	1/4W	
R820	ERDS1FJ1R0	C 1 OHM J	1/2W		R952	ERDS2TJ223	C 22KOHM J	1/4W	
R821	ERDS1FJ1R0	C 1 OHM J	1/2W		R953	ERDS2TJ332	C 3.3KOHM J	1/4W	
					R954	ERDS2TJ431	C 430 OHM J	1/4W	



Ref. No	Part No.	Description
R956	ERDS2TJ510	C 51 OHM J1/4W
R958	ERDS2TJ391	C 390 OHM J1/4W
Δ Δ	R959	ERDS2TJ101 C 100 OHM J 1/4W
	R960	ERQ14AJ100P F 10 OHM J 1/4W
	R961	ERQ1CJP331S F 330 OHM J 1W
	R962	ERDS2TJ330 C 33 OHM J 1/4W
	R963	ERDS2TJ330 C 33 OHM J 1/4W
R964	ERDS2TJ471	C 470 OHM J 1/4W
R965	ERDS2TJ563	C 56KOHM J 1/4W
R966	ERDS1FJ471	C 470 OHM J 1/2W
R967	ERDS2TJ563	C 56KOHM J 1/4W
R968	ERDS2TJ471	C 470 OHM J 1/4W
R969	ERDS2TJ390	C 39 OHM J 1/4W
R970	ERDS2TJ2R7	C 2.7 OHM J 1/4W
R971	ERDS2TJ2R7	C 2.7 OHM J 1/4W
R972	ERDS2TJ390	C 39 OHM J 1/4W
R973	ERDS2TJ101	C 100 OHM J 1/4W
R974	ERDS2TJ333	C 33KOHM J 1/4W
R975	ERDS2TJ101	C 100 OHM J 1/4W
R976	ERDS2TJ101	C 100 OHM J 1/4W
R977	ERDS2TJ561	C 560 OHM J 1/4W
R978	ERDS2TJ101	C 100 OHM J 1/4W
R987	ERDS2TJ472	C 4.7KOHM J 1/4W
R988	ERDS2TJ331	C 330 OHM J 1/4W
R989	ERDS2TJ682	C 6.8KOHM J 1/4W
R990	ERDS2TJ471	C 470 OHM J 1/4W
R993	ERDS2TJ471	C 470 OHM J 1/4W
R1050	ERDS2TJ470	C 47 OHM J 1/4W
R1051	ERDS2TC0	C 0 OHM 1/4W
R1052	ERDS2TJ102	C 1KOHM J 1/4W
R1056	ER0S2CKF2102	M 21KOHM F 1/4W
R1057	ER0S2CKF1002	M 10KOHM F 1/4W
R1058	ERDS2TJ222	C 2.2KOHM J 1/4W
R1059	ERDS2TJ222	C 2.2KOHM J 1/4W
R1060	ERDS2TJ332	C 3.3KOHM J 1/4W
R1061	ERDS2TJ512	C 5.1KOHM J 1/4W
R1062	ERDS2TJ912	C 9.1KOHM J 1/4W
R1068	ERDS2TJ473	C 47KOHM J 1/4W
R1069	ERDS2TJ103	C 10KOHM J 1/4W
R1070	ERDS2TJ101	C 100 OHM J 1/4W
R1104	ERDS2TJ393	C 39KOHM J 1/4W
R1106	ER0S2CKF33R0	M 33 OHM F 1/4W
R1107	ERDS2TJ151	C 150 OHM J 1/4W
R1108	ERDS2TJ103	C 10KOHM J 1/4W
R1110	ERDS2TJ103	C 10KOHM J 1/4W
R1111	ERDS2TJ103	C 10KOHM J 1/4W
R1115	ERDS2TJ473	C 47KOHM J 1/4W
R1116	ERDS2TJ103	C 10KOHM J 1/4W
R1117	ERDS2TJ332	C 3.3KOHM J 1/4W
R1118	ERDS2TJ103	C 10KOHM J 1/4W
R1120	ERDS2TJ221	C 220 OHM J 1/4W
R1122	ERDS2TJ103	C 10KOHM J 1/4W
R1123	ERDS2TJ101	C 100 OHM J 1/4W
R1124	ERDS2TJ101	C 100 OHM J 1/4W
R1125	ERDS2TJ101	C 100 OHM J 1/4W
R1126	ERDS1FJ121	C 1.2KOHM J 1/2W
R1127	ERDS2TJ101	C 100 OHM J 1/4W
R1128	ERDS2TJ471	C 470 OHM J 1/4W
R1131	ERDS2TJ224	C 220KOHM J 1/4W
R1133	ERDS2TJ102	C 1KOHM J 1/4W
R1134	ERDS2TJ223	C 22KOHM J 1/4W
R1136	ERDS2TJ103	C 10KOHM J 1/4W
R1137	ERDS2TJ102	C 1KOHM J 1/4W
R1138	ERDS2TJ102	C 1KOHM J 1/4W
R1139	ERDS2TJ102	C 1KOHM J 1/4W
R1143	ERDS2TJ102	C 1KOHM J 1/4W
R1145	ERDS2TJ102	C 1KOHM J 1/4W
R1148	ERDS2TJ102	C 1KOHM J 1/4W
R1149	ERDS2TJ103	C 10KOHM J 1/4W
R1150	ERDS2TJ102	C 1KOHM J 1/4W

Ref. No	Part No.	Description
R1151	ERDS2TJ471	C 470 OHM J 1/4W
R1152	ERDS2TJ471	C 470 OHM J 1/4W
R1154	ERDS2TJ123	C 12KOHM J 1/4W (FOR TC-33P10N ONLY)
R1157	ERDS2TJ103	C 10KOHM J 1/4W
R1159	ERDS2TJ182	C 1.8KOHM J 1/4W
R1160	ERDS2TJ102	C 1KOHM J 1/4W
R1161	ERDS2TJ182	C 1.8KOHM J 1/4W
R1162	ERDS2TJ102	C 1KOHM J 1/4W
R1163	ERDS2TJ102	C 1KOHM J 1/4W
R1164	ERDS2TJ472	C 4.7KOHM J 1/4W
R1165	ERDS2TJ472	C 4.7KOHM J 1/4W
R1166	ERDS2TJ103	C 10KOHM J 1/4W
R1167	ERDS2TJ101	C 100 OHM J 1/4W
R1168	ERDS2TJ101	C 100 OHM J 1/4W
R1169	ERDS2TJ103	C 10KOHM J 1/4W
R1170	ERDS2TJ101	C 100 OHM J 1/4W
R1172	ERDS2TJ102	C 1KOHM J 1/4W
R1173	ERDS2TJ102	C 1KOHM J 1/4W
R1175	ERDS2TJ102	C 1KOHM J 1/4W
R1176	ERDS2TJ472	C 4.7KOHM J 1/4W
R1178	ERDS2TJ102	C 1KOHM J 1/4W
R1179	ERDS2TJ102	C 1KOHM J 1/4W
R1180	ERDS2TJ102	C 1KOHM J 1/4W (TC-33P10N ONLY)
R1183	ERDS2TJ560	C 56 OHM J 1/4W
R1184	ERDS2TJ560	C 56 OHM J 1/4W
R1186	ERDS2TJ101	C 100 OHM J 1/4W
R1188	ERDS2TJ221	C 220 OHM J 1/4W
R1189	ERDS2TJ560	C 56 OHM J 1/4W
R1190	ERDS2TJ560	C 56 OHM J 1/4W
R1191	ER0S2CKF2201	M 2.2KOHM F 1/4W
R1192	ERDS2TJ820	C 82 OHM J 1/4W
R1193	ERDS2TJ560	C 56 OHM J 1/4W
R1194	ERDS2TJ560	C 56 OHM J 1/4W
R1196	ERDS2TJ103	C 10KOHM J 1/4W
R1201	ERDS2TJ331	C 330 OHM J 1/4W
R1202	ERDS2TJ102	C 1KOHM J 1/4W
R1203	ERDS2TJ272	C 2.7KOHM J 1/4W
R1204	ERDS2TJ472	C 4.7KOHM J 1/4W
R1205	ER0S2CKF1502	M 15KOHM F 1/4W
R1206	ERDS2TJ102	C 1KOHM J 1/4W
R1207	ERDS2TJ104	C 100KOHM J 1/4W
R1209	ERDS2TJ151	C 150 OHM J 1/4W
R1212	ERDS2TJ223	C 22KOHM J 1/4W
R1215	ERDS2TJ681	C 680 OHM J 1/4W
R1216	ERDS2TJ184	C 180KOHM J 1/4W
R1217	ERDS2TJ103	C 10KOHM J 1/4W
R1218	ERDS2TJ104	C 100KOHM J 1/4W
R1219	ERDS2TJ473	C 47KOHM J 1/4W
R1220	ERDS2TJ103	C 10KOHM J 1/4W
R1221	ERDS2TJ223	C 22KOHM J 1/4W
R1222	ERDS2TJ103	C 10KOHM J 1/4W
R1223	ERDS2TJ103	C 10KOHM J 1/4W
R1224	ERDS2TJ103	C 10KOHM J 1/4W
R1225	ERDS2TJ103	C 10KOHM J 1/4W
R1227	ERDS2TJ681	C 680 OHM J 1/4W
R1233	ERDS2TJ123	C 12KOHM J 1/4W
R1236	ERDS2TJ103	C 10KOHM J 1/4W
R1238	ERDS2TJ103	C 10KOHM J 1/4W
R1239	ERDS2TJ103	C 10KOHM J 1/4W
R1242	ERDS2TJ332	C 3.3KOHM J 1/4W
R1243	ERDS2TJ153	C 15KOHM J 1/4W
R1244	ERDS2TJ102	C 1KOHM J 1/4W
R1245	ERDS2TJ101	C 100 OHM J 1/4W
R1252	ERDS2TJ563	C 56KOHM J 1/4W
R1253	ERDS2TJ123	C 12KOHM J 1/4W
R1254	ERDS2TJ101	C 100 OHM J 1/4W
R1258	ERJ6GEYJ220	M 22 OHM J 1/10W
R1259	ERJ6GEYJ220	M 22 OHM J 1/10W
R1261	ERDS2TJ682	C 6.8KOHM J 1/4W

Ref. No	Part No.	Description			Ref. No	Part No.	Description		
R1262	ERDS2TJ102	C 1KOHM J	1/4W		R2215	ERJ6GEYJ392	M 3.9KOHM J	1/10W	
R1263	ERDS2TJ682	C 6.8KOHM J	1/4W		R2216	ERJ6GEYJ103	M 10KOHM J	1/10W	
R1264	ERDS2TJ102	C 1KOHM J	1/4W		R2217	ERJ6GEYJ102	M 1KOHM J	1/10W	
R1267	ERDS2TJ682	C 6.8KOHM J	1/4W		R2218	ERJ6GEYJ102	M 1KOHM J	1/10W	
R1268	ERDS2TJ102	C 1KOHM J	1/4W		R2219	ERJ6GEYJ473	M 47KOHM J	1/10W	
R1294	ERDS2TJ103	C 10KOHM J	1/4W		R2220	EVND8AA03B54	CONTROL50KOHMB		
		(FOR TC-33P10N)			R2221	EVND8AA03B24	CONTROL20KOHMB		
R1295	ERDS2TJ103	C 10KOHM J	1/4W		R2222	ERJ6ENF4422	M 44.2KOHM	1/10W	
R1296	ERDS2TJ101	C 100 OHM J	1/4W		R2228	ERJ6GEYJ823	M 82KOHM J	1/10W	
R1297	ERJ6GEYJ103	M 10KOHM J	1/10W		R2229	ERJ6GEYJ103	M 10KOHM J	1/10W	
R1298	ERJ6GEYJ103	M 10KOHM J	1/10W		R2231	ERJ6GEYJ153	M 15KOHM J	1/10W	
R1450	ERDS2TJ103	C 10KOHM J	1/4W		R2232	ERJ6GEYJ153	M 15KOHM J	1/10W	
R1551	ERDS2TJ473	C 47KOHM J	1/4W		R2234	ERJ6GEYJ823	M 82KOHM J	1/10W	
R1552	ERDS2TJ222	C 2.2KOHM J	1/4W		R2235	ERJ6GEYJ562	M 5.6KOHM J	1/10W	
R1553	ERDS2TJ221	C 220 OHM J	1/4W		R2236	ERJ6GEYJ154	M 150KOHM J	1/10W	
R1554	ERDS2TJ103	C 10KOHM J	1/4W		R2238	ERJ6ENF4702	M 47KOHM	1/10W	
R1555	ERDS2TJ822	C 8.2KOHM J	1/4W		R2245	ERJ6GEYJ471	M 470 OHM J	1/10W	
R1556	ERDS2CKF1802	M 18KOHM F	1/4W		R2246	ERJ6GEYJ392	M 3.9KOHM J	1/10W	
R1557	ERDS2TJ472	C 4.7KOHM J	1/4W		R2248	ERJ6GEYJ104	M 100KOHM J	1/10W	
R1558	ERDS2TJ473	C 47KOHM J	1/4W		R2249	ERJ6GEYJ472	M 4.7KOHM J	1/10W	
R1559	ERDS2TJ561	C 560 OHM J	1/4W		R2253	ERJ6GEYJ103	M 10KOHM J	1/10W	
R1560	ERDS2TJ472	C 4.7KOHM J	1/4W		R2301	ERDS2TJ561	C 560 OHM J	1/4W	
R1561	ERDS2TJ564	C 560KOHM J	1/4W		R2302	ERDS2TJ122	C 1.2KOHM J	1/4W	
R1562	ERDS2TJ472	C 4.7KOHM J	1/4W		R2303	ERDS2TJ122	C 1.2KOHM J	1/4W	
R1563	ERDS2CKF7152	M 71.5KOHM F	1/4W		R2304	ERQ12HKR22	F 0.22 OHM K	1/2W	
		(FOR TC-29P10N)			R2305	ERDS2TJ822	C 8.2KOHM J	1/4W	
R1563	ERDS2CKF7872	M 78.7KOHM F	1/4W		R2309	ERDS1FJ2R2	C 2.2 OHM J	1/2W	
		(FOR TC-33P10N)			R2310	ERDS1FJ2R2	C 2.2 OHM J	1/2W	
R1564	ERDS2CKF4641	M 4.64KOHM F	1/4W		R2311	ERDS1FJ2R2	C 2.2 OHM J	1/2W	
		(FOR TC-29P10N)			R2312	ERDS2TJ472	C 4.7KOHM J	1/4W	
R1564	ERDS2CKF5111	M 5.11KOHM F	1/4W		R2313	ERDS2TJ472	C 4.7KOHM J	1/4W	
		(FOR TC-33P10N)			R2314	ERDS2TJ822	C 8.2KOHM J	1/4W	
R1565	ERDS2TJ104	C 100KOHM J	1/4W		R2315	ERDS2TJ103	C 10KOHM J	1/4W	
R1566	ERDS2TJ104	C 100KOHM J	1/4W		R2316	ERDS2TJ103	C 10KOHM J	1/4W	
R1567	ERDS2TJ104	C 100KOHM J	1/4W		R2317	ERDS2TJ103	C 10KOHM J	1/4W	
R1568	ERDS2TJ104	C 100KOHM J	1/4W		R2318	ERDS2TJ104	C 100KOHM J	1/4W	
R1569	ERDS2TJ102	C 1KOHM J	1/4W		R2321	ERDS1FJ561	C 560 OHM J	1/2W	
R1570	ERC12GK104	S 100KOHM K	1/2W		R2322	ERDS1FJ561	C 560 OHM J	1/2W	
Δ R1571	ERQ2CJP821S	F 820 OHM J	2W		R2323	ERDS1FJ561	C 560 OHM J	1/2W	
R1572	ERDS2TJ334	C 330KOHM J	1/4W		R2324	ERDS2TJ102	C 1KOHM J	1/4W	
R1573	ERDS2TJ473	C 47KOHM J	1/4W		R2371	ERDS1TJ121	C 120 OHM J	1/2W	
R1575	ERDS2TJ683	C 68KOHM J	1/4W		R2372	ERDS1TJ121	C 120 OHM J	1/2W	
R1576	ERDS2TJ101	C 100 OHM J	1/4W		R2375	ERDS1TJ560	C 56 OHM J	1/2W	
R1577	EVMEGSA00B53	CONTROL50KOHMB			R2380	ERDS1TJ560	C 56 OHM J	1/2W	
R1578	ERDS2TJ822	C 8.2KOHM J	1/4W		R2401	ERDS2TJ473	C 47KOHM J	1/4W	
R1579	ERDS2CKF1302	M 13KOHM F	1/4W		R2402	ERDS2TJ103	C 10KOHM J	1/4W	
R1580	ERDS2TJ563	C 56KOHM J	1/4W		R2403	ERDS2TJ473	C 47KOHM J	1/4W	
R1581	EVMEGSA00B23	CONTROL20KOHMB			R2404	ERDS2TJ103	C 10KOHM J	1/4W	
R1582	ERDS2TJ752	C 7.5KOHM J	1/4W		R2405	ERDS2TJ103	C 10KOHM J	1/4W	
R1583	ERDS2TJ223	C 22KOHM J	1/4W		R2406	ERDS2TJ101	C 100 OHM J	1/4W	
R1584	ERDS2TJ103	C 10KOHM J	1/4W		R2407	ERDS2TJ103	C 10KOHM J	1/4W	
R1585	ERDS2TJ103	C 10KOHM J	1/4W		R2408	ERDS2TJ223	C 22KOHM J	1/4W	
R1586	ERDS1TJ681	C 680 OHM J	1/2W		R2409	ERDS2TJ472	C 4.7KOHM J	1/4W	
R1587	ERDS2TJ101	C 100 OHM J	1/4W		R2410	ERDS2TJ103	C 10KOHM J	1/4W	
R1588	ERG1FJS472D	M 4.7KOHM J	1W		R2411	ERDS2TJ103	C 10KOHM J	1/4W	
Δ R1589	ERQ2CJP681S	F 680 OHM J	2W		R2412	ERDS2TJ472	C 4.7KOHM J	1/4W	
R1590	ERDS2TJ473	C 47KOHM J	1/4W		R2413	ERDS2TJ104	C 100KOHM J	1/4W	
R1592	ERDS2TJ684	C 680KOHM J	1/4W		R2414	ERDS2TJ102	C 1KOHM J	1/4W	
R1593	ERDS2TJ125	C 1.2MOHM J	1/4W		R2415	ERDS2TJ103	C 10KOHM J	1/4W	
R1594	ERDS2TJ125	C 1.2MOHM J	1/4W		R2416	ERDS2TJ103	C 10KOHM J	1/4W	
R1595	ERDS2TJ103	C 10KOHM J	1/4W		R2417	ERDS2TJ104	C 100KOHM J	1/4W	
R1596	ERDS2TJ124	C 120KOHM J	1/4W		R2418	ERDS2TJ103	C 10KOHM J	1/4W	
R1597	ERDS2TJ472	C 4.7KOHM J	1/4W		R2419	ERDS2TJ473	C 47KOHM J	1/4W	
R2200	EVND2AA03B14	CONTROL10KOHMB			R2420	ERDS2TJ103	C 10KOHM J	1/4W	
R2207	ERJ6GEYJ104	M 100KOHM J	1/10W		R2421	ERDS2TJ102	C 1KOHM J	1/4W	
R2208	ERJ6GEYJ105	M 1MOHM J	1/10W		R2422	ERDS2TJ104	C 100KOHM J	1/4W	
R2209	TAV1034B103	VARIABLE RESISTOR			R2424	ERDS2TJ472	C 4.7KOHM J	1/4W	
R2210	ERJ6ENF4302	M 43KOHM	1/10W		R2426	ERDS2TJ472	C 4.7KOHM J	1/4W	
R2211	ERJ6GEYJ332	M 3.3KOHM J	1/10W		R2427	ERDS2TJ472	C 4.7KOHM J	1/4W	
R2212	ERJ6GEYJ392	M 3.9KOHM J	1/10W						
R2213	EVND8AA03B53	CONTROL50KOHMB							

Ref. No	Part No.	Description					Ref. No	Part No.	Description				
R2429	ERDS2TJ123	C	12KOHM	J	1/4W		R3092	ERJ6GEYJ102	M	1KOHM	J	1/10W	
R2430	ER0S2CKF1802	M	18KOHM	F	1/4W		R3093	ERJ6GEYJ102	M	1KOHM	J	1/10W	
R2433	ERDS2TJ123	C	12KOHM	J	1/4W		R3094	ERJ6GEYJ102	M	1KOHM	J	1/10W	
R2434	ER0S2CKF1502	M	15KOHM	F	1/4W		R3095	ERJ6GEYJ102	M	1KOHM	J	1/10W	
R2437	ERDS2TJ563	C	56KOHM	J	1/4W		R3096	ERJ6GEYJ102	M	1KOHM	J	1/10W	
R2439	ERDS2TJ224	C	220KOHM	J	1/4W		R3097	ERJ6GEYJ221	M	220 OHM	J	1/10W	
R2440	ERDS2TJ153	C	15KOHM	J	1/4W		R3098	ERJ6GEYJ221	M	220 OHM	J	1/10W	
R2441	ERDS2TJ181	C	180 OHM	J	1/4W		R3099	ERJ6GEYJ221	M	220 OHM	J	1/10W	
R2443	ERDS2TJ181	C	180 OHM	J	1/4W		R3100	ERJ6GEYJ221	M	220 OHM	J	1/10W	
R2444	ERDS2TJ473	C	47KOHM	J	1/4W		R3101	ERJ6GEYJ221	M	220 OHM	J	1/10W	
R2445	ERDS2TJ472	C	4.7KOHM	J	1/4W		R3102	ERJ6GEYJ221	M	220 OHM	J	1/10W	
R2446	ERDS2TJ563	C	56KOHM	J	1/4W		R3109	ERDS2TJ471	C	470 OHM	J	1/4W	
R2447	ERDS2TJ103	C	10KOHM	J	1/4W		R3117	ERJ6GEYJ331	M	330 OHM	J	1/10W	
R2448	ERDS2TJ104	C	100KOHM	J	1/4W		R3119	ERJ6GEYJ331	M	330 OHM	J	1/10W	
R2449	ERDS2TJ102	C	1KOHM	J	1/4W		R3121	ERJ6GEYJ561	M	560 OHM	J	1/10W	
R2450	ERDS2TJ102	C	1KOHM	J	1/4W		R3122	ERJ6GEYJ331	M	330 OHM	J	1/10W	
R2451	ERDS2TJ104	C	100KOHM	J	1/4W		R3123	ERJ6GEYJ331	M	330 OHM	J	1/10W	
R3003	ERJ6GEYJ184	M	180KOHM	J	1/10W		R3124	ERJ6GEYJ472	M	4.7KOHM	J	1/10W	
R3004	ERJ6GEYJ184	M	180KOHM	J	1/10W		R3125	ERJ6GEYJ821	M	820 OHM	J	1/10W	
R3005	ERJ6GEYJ184	M	180KOHM	J	1/10W		R3126	ERJ6GEYJ472	M	4.7KOHM	J	1/10W	
R3006	ERJ6GEYJ184	M	180KOHM	J	1/10W		R3171	ERDS2TJ101	C	100 OHM	J	1/4W	
R3007	ERJ6GEYJ184	M	180KOHM	J	1/10W		R3172	ERDS2TJ223	C	22KOHM	J	1/4W	
R3011	ERJ6GEYJ101	M	100 OHM	J	1/10W		R3173	ERDS2TJ223	C	22KOHM	J	1/4W	
R3012	ERJ6GEYJ184	M	180KOHM	J	1/10W		R3174	ERDS2TJ471	C	470 OHM	J	1/4W	
R3013	ERJ6GEYJ101	M	100 OHM	J	1/10W		R3175	ERDS2TJ102	C	1KOHM	J	1/4W	
R3015	ERJ8ENF75R0	M	75OHM		1/8W		R3179	ER0S2CKF75R0	M	75 OHM	F	1/4W	
R3016	ERJ8ENF75R0	M	75OHM		1/8W		R3180	ER0S2CKF75R0	M	75 OHM	F	1/4W	
R3017	ERJ8ENF75R0	M	75OHM		1/8W		R3181	ER0S2CKF75R0	M	75 OHM	F	1/4W	
R3018	ERJ8ENF75R0	M	75OHM		1/8W		R3182	ERDS2TJ102	C	1KOHM	J	1/4W	
R3021	ERJ8ENF75R0	M	75OHM		1/8W		R3183	ERDS2TJ101	C	100 OHM	J	1/4W	
R3022	ERJ8ENF75R0	M	75OHM		1/8W		R3184	ERDS2TJ103	C	10KOHM	J	1/4W	
R3028	ERJ6GEYJ102	M	1KOHM	J	1/10W		R3186	ERDS2TJ102	C	1KOHM	J	1/4W	
R3029	ERJ6GEYJ680	M	68 OHM	J	1/10W		R3187	ERDS2TJ153	C	15KOHM	J	1/4W	
R3031	ERJ6GEYJ102	M	1KOHM	J	1/10W		R3188	ERDS2TJ912	C	9.1KOHM	J	1/4W	
R3032	ERJ6GEYJ680	M	68 OHM	J	1/10W		R3189	ERDS2TJ471	C	470 OHM	J	1/4W	
R3033	ERJ6GEYJ680	M	68 OHM	J	1/10W		R3190	ERDS2TJ223	C	22KOHM	J	1/4W	
R3034	ERJ6GEYJ472	M	4.7KOHM	J	1/10W		R3191	ERDS2TJ223	C	22KOHM	J	1/4W	
R3035	ERJ6GEYJ472	M	4.7KOHM	J	1/10W		R3192	ERDS2TJ471	C	470 OHM	J	1/4W	
R3036	ERJ6GEYJ102	M	1KOHM	J	1/10W		R3193	ERDS2TJ102	C	1KOHM	J	1/4W	
R3037	ERJ6GEYJ102	M	1KOHM	J	1/10W		R3194	ERDS2TJ184	C	180KOHM	J	1/4W	
R3038	ERJ6GEYJ105	M	1MOHM	J	1/10W		R3195	ERDS2TJ184	C	180KOHM	J	1/4W	
R3040	ERJ6GEYJ274	M	270KOHM	J	1/10W		R3201	ERDS2TJ101	C	100 OHM	J	1/4W	
R3041	ERJ8GEYJ431	M	430 OHM	J	1/8W		R3202	ER0S2CKF1911	M	1.91KOHM	F	1/4W	
R3042	ERJ8GEYJ431	M	430 OHM	J	1/8W		R3203	ER0S2CKF4021	M	4.02KOHM	F	1/4W	
R3044	ERJ6GEYJ471	M	470 OHM	J	1/10W		R3204	ER0S2CKF1002	M	10KOHM	F	1/4W	
R3048	ERJ6GEYJ431	M	430 OHM	J	1/10W		R3205	ERDS2TJ103	C	10KOHM	J	1/4W	
R3050	ERJ6GEYJ471	M	470 OHM	J	1/10W		R3206	ER0S2CKF2202	M	22KOHM	F	1/4W	
R3051	ERJ8GEYJ431	M	430 OHM	J	1/8W		R3207	ERDS2TJ682	C	6.8KOHM	J	1/4W	
R3052	ERJ8GEYJ431	M	430 OHM	J	1/8W		R3208	ERDS2TJ433	C	43KOHM	J	1/4W	
R3053	ERJ6GEYJ472	M	4.7KOHM	J	1/10W		R3209	ERDS2TJ103	C	10KOHM	J	1/4W	
R3054	ERJ6GEYJ471	M	470 OHM	J	1/10W		R4801	ERDS2TJ472	C	4.7KOHM	J	1/4W	
R3056	ERJ6GEYJ103	M	10KOHM	J	1/10W		R4803	ERX12SJ2R7	M	2.7 OHM	J	1/2W	
R3057	ERJ6GEYJ103	M	10KOHM	J	1/10W		R4804	ERDS2TJ272	C	2.7KOHM	J	1/4W	
R3058	ERJ6GEYJ103	M	10KOHM	J	1/10W		R4805	ER0S2CKF1331	M	1.33KOHM	F	1/4W	
R3059	ERJ6GEYJ103	M	10KOHM	J	1/10W		R4806	ER0S2CKF3320	M	3.32KOHM	F	1/4W	
R3063	ERJ6GEYJ221	M	220 OHM	J	1/10W		R4807	ER0S2CKF1001	M	1KOHM	F	1/4W	
R3064	ERJ6GEYJ221	M	220 OHM	J	1/10W		R4808	ER0S2CKF3832	M	38.3KOHM	F	1/4W	
R3075	ERJ6GEYJ123	M	12KOHM	J	1/10W		R4809	ER0S2CKF9091	M	9.09KOHM	F	1/4W	
R3078	ERJ6GEYJ822	M	8.2KOHM	J	1/10W		R4810	ER0S2CKF2213	M	221KOHM	F	1/4W	
R3079	ERJ6GEYJ221	M	220 OHM	J	1/10W		R4811	ER0S2CKF5491	M	5.49KOHM	F	1/4W	
R3080	ERJ6GEYJ102	M	1KOHM	J	1/10W		R4812	ER0S2CKF5621	M	5.62KOHM	F	1/4W	
R3081	ERJ6GEYJ221	M	220 OHM	J	1/10W		R4813	ERDS1F220	C	22 OHM	J	1/2W	
R3082	ERJ6GEYJ102	M	1KOHM	J	1/10W								
R3083	ERJ6GEYJ221	M	220 OHM	J	1/10W		R4813	ERDS1FJ3R9	C	3.9 OHM	J	1/2W	
R3084	ERJ6GEYJ221	M	220 OHM	J	1/10W								
R3085	ERJ6GEYJ221	M	220 OHM	J	1/10W								
R3088	ERJ6GEYJ560	M	56 OHM	J	1/10W		R4818	ERX12SJ2R7	M	2.7 OHM	J	1/2W	
R3089	ERJ6GEYJ560	M	56 OHM	J	1/10W								
R3090	ERJ6GEYJ221	M	220 OHM	J	1/10W		R4819	ERDS2TJ272	C	2.7KOHM	J	1/4W	
R3091	ERJ6GEYJ102	M	1KOHM	J	1/10W								
							R4820	ER0S2CKF1331	M	1.33KOHM	F	1/4W	
													(FOR TC-33P10N ONLY)



Ref. No	Part No.	Description				Ref. No	Part No.	Description				
C118	ECUX1H020CCX	C	2PF	C	50V	C503	ECA1HM100	E	10UF		50V	
C121	ECUX1H680JCX	C	68PF	J	50V	C504	ECUX1H221JCX	C	220PF	J	50V	
C135	ECUX1H100CCX	C	10PF	C	50V	C505	ECQV1H563JM	P	0.056UF	J	50V	
C151	ECUX1H820JCX	C	82PF	J	50V	C506	ECUX1H221JCX	C	220PF	J	50V	
C152	ECUX1H120JCX	C	12PF	J	50V	C507	ECQV1H124JM	P	0.12UF	J	50V	
C153	ECJ2VF1H103Z	C	0.01UF	Z	50V	C508	ECUX1H103KBX	C	0.01UF	K	50V	
C154	ECA1HMR22	E	0.22UF		50V	C509	ECA1HM100	E	10UF		50V	
C156	ECA1CM101	E	100UF		16V	C514	ECUX1H331JCX	C	330PF	J	50V	
C161	ECUX1H391JCX	C	390PF	J	50V	C516	ECA1VM471	E	470UF		35V	
C201	ECJ2VF1H103Z	C	0.01UF	Z	50V	C534	ECUX1H103KBX	C	0.01UF	K	50V	
C202	ECA1HM470	E	47UF		50V	C551	ECWH16103JVB	P	0.01UF	J	1.6KV	
C203	ECUX1H680JCX	C	68PF	J	50V	C553	ECQM6183JZ	P	0.018UF	J	600V	
C204	ECJ2VF1H103Z	C	0.01UF	Z	50V	C554	ECQM6223JZ	P	0.022UF	J	600V	
C205	ECJ2VF1H103Z	C	0.01UF	Z	50V	C555	ECKD3D331KBN	C	330PF	K	2KV	
C301	EEUNA1A470	E	47UF		10V						(FOR TC-29P10N ONLY)	
C302	ECA1HMR47	E	0.47UF		50V	C556	ECWH20182JVY	P	1800PF	J	2KV	
C304	ECA1HM010	E	1UF		50V						(FOR TC-29P10N)	
C305	ECUX1H103KBX	C	0.01UF	K	50V	C556	ECWH20122JVY	P	1200PF	J	2KV	
C306	ECA1HM220	E	22UF		50V						(FOR TC-33P10N)	
C307	ECJ2VF1H683Z	C	0.068UF	Z	50V	C557	ECKD3D681KBP	C	680PF	K	2KV	
C308	ECA1HM3R3	E	3.3UF		50V	C558	ECKD3D681KBP	C	680PF	K	2KV	
C309	ECEA1HN010U	E	1UF		50V	C559	ECQB1H183JF	P	0.018UF	J	50V	
C311	ECUX1H103KBX	C	0.01UF	K	50V	C560	ECEA1HN100U	E	10UF		50V	
C312	ECA1HM100	E	10UF		50V	C561	ECKD2H122KB2	C	1200PF	K	500V	
C313	ECA1VM470	E	47UF		35V	C562	ECKD2H122KB2	C	1200PF	K	500V	
C314	ECA1CM101	E	100UF		16V	C563	ECKD2H332KB2	C	3300PF	K	500V	
C316	ECA1HM4R7	E	4.7UF		50V	C564	ECKD2H332KB2	C	3300PF	K	500V	
C317	ECA1HM220	E	22UF		50V	C565	ECKD2H152KB2	C	1500PF	K	500V	
C318	ECUX1H103KBX	C	0.01UF	K	50V	C566	ECA2AM100	E	10UF		100V	
C319	ECA1HM010	E	1UF		50V	C567	ECWF2394JBB	P	0.39UF	J	250V	
C320	ECUX1H103KBX	C	0.01UF	K	50V	C568	ECWF2394JBB	P	0.39UF	J	250V	
C321	ECUX1H103KBX	C	0.01UF	K	50V						(FOR TC-29P10N)	
C322	ECUX1H151JCX	C	150PF	J	50V	C568	ECWF2434JBB	P	0.43UF	J	250V	
C324	ECUX1H101JCX	C	100PF	J	50V						(FOR TC-33P10N)	
C358	ECKF1H101KB	C	100PF	K	50V	C569	ECWF2754JBB	P	0.75UF	J	250V	
C359	ECQM4104KZ	P	0.1UF	K	400V						(FOR TC-29P10N)	
C368	ECQV1H224JM	P	0.22UF	J	50V	C569	ECWF2624JBB	P	0.62UF	J	250V	
C370	ECKD3D332KBN	C	3300PF	K	2KV						(FOR TC-33P10N)	
C373	ECA2EM100	E	10UF		250V	C570	ECA2EM220	E	22UF		250V	
C377	ECA1CM101	E	100UF		16V	C571	ECKD2H102KB2	C	1000PF	K	500V	
C401	ECJ2VB1H333K	C	0.033UF	K	50V	C572	ECA160V33U	E	33UF		160V	
C402	ECSF1EE105V	T	1UF		25V	C573	ECQE2474KF	P	0.47UF	K	250V	
C403	ECSF1VE334V	T	0.33UF		35V	C580	ECA1HM4R7	E	4.7UF		50V	
C404	ECA1HM010	E	1UF		50V	C581	ECQE2154JF	P	0.15UF	J	250V	
C407	ECA1VM470	E	47UF		35V	C582	ECQE2154JF	P	0.15UF	J	250V	
C408	ECEA1CN220U	E	22UF		16V	C590	ECQE2104JF	P	0.1UF	J	250V	
C409	ECA1HM100	E	10UF		50V	C591	ECQE2104JF	P	0.1UF	J	250V	
C410	ECA0JM102	E	1000UF		6.3V	C593	EEUNA1E220	E	22UF		25V	
C411	ECKF1H102KB	C	1000PF	K	50V	C602	ECUX1H103KBX	C	0.01UF	K	50V	
C415	ECA1HM100	E	10UF		50V	C603	EEANA1E1R0	E	1UF		25V	
C416	ECKF1H102KB	C	1000PF	K	50V	C604	ECCF1H090DC	C	9PF	D	50V	
C421	ECA1CM471	E	470UF		16V	C605	ECUX1H103KBX	C	0.01UF	K	50V	
C422	ECKF1H102KB	C	1000PF	K	50V	C610	EEANA1E1R0	E	1UF		25V	
C453	EEUNA1E220	E	22UF		25V	C611	EEANA1E1R0	E	1UF		25V	
C454	ECA1HM221	E	220UF		50V	C612	EEANA1E1R0	E	1UF		25V	
C456	ECQB1104JF	P	0.1UF	J	100V	C613	ECUX1H103KBX	C	0.01UF	K	50V	
C457	ECA1HM100	E	10UF		50V	C614	ECJ2VF1H104Z	C	0.1UF	Z	50V	
C458	ECKF1H471KB	C	470PF	K	50V	C616	ECUX1H103KBX	C	0.01UF	K	50V	
C459	ECQB1224KF	P	0.22UF		100V	C617	ECEA1HNR33U	E	0.33UF		50V	
C460	ECA1EM222	E	2200UF		25V	C618	ECEA1HNR33U	E	0.33UF		50V	
C461	ECA1HM470	E	47UF		50V	C703	ECQB1H223JF	P	0.022UF	J	50V	
C462	ECA1EM222	E	2200UF		25V	C704	ECQB1H562JF	P	5600PF	J	50V	
C463	ECQB1H103JF	P	0.01UF	J	50V	C705	ECKF1H222KB	C	2200PF	K	50V	
C465	ECA1CM101	E	100UF		16V	C721	ECA1HM100	E	10UF		50V	
C490	ECA1EM102	E	1000UF		25V	C722	ECKF1H103ZF	C	0.01UF	Z	50V	
C491	ECKD2H471KB2	C	470PF	K	500V	C751	ECQE1685KN	P	6.8UF	K	100V	
C492	ECA1EM102	E	1000UF		25V	C752	ECA1HM100	E	10UF		50V	
C493	ECKD2H471KB2	C	470PF	K	500V	Δ	C801	ECQU2A823MN	P	0.082UF	M	250V
C501	ECUX1H182JCX	C	1800PF	J	50V	Δ	C802	ECQU2A823MN	P	0.082UF	M	250V
C502	ECQB1H333JF	P	0.033UF	J	50V	Δ	C803	ECKDNB222ME	C	2200PF		
						Δ	C804	ECKDNB222ME	C	2200PF		

Ref. No	Part No.	Description			
Δ C805	ECKD2H472PU	C	4700PF	P	500V
C806	ECA1VM221	E	220UF		35V
Δ C807	ECKD2H472PU	C	4700PF	P	500V
Δ C808	ECKD2H472PU	C	4700PF	P	500V
C809	ECKF1H103ZF	C	0.01UF	Z	50V
C810	EC0S2PA471BB	E	420UF		180V
C811	EC0S2PA471BB	E	420UF		180V
C812	EEUFC1V221	E	220UF		35V
C814	ECA1VHG101	E	100UF		35V
C815	ECKF1H103ZF	C	0.01UF	Z	50V
C816	ECA1CM101	E	100UF		16V
C818	ECA1CM101	E	100UF		16V
C819	ECKD3A332KBP	C	3300PF	K	1KV
C820	ECA1HM100	E	10UF		50V
C821	ECKF1H471KB	C	470PF	K	50V
C822	ECA1VM221	E	220UF		35V
C823	ECA1EM471	E	470UF		25V
C824	ECA1EM471	E	470UF		25V
C825	ECQB1H122JF	P	1200PF	J	50V
C826	ECA1HM010	E	1UF		50V
C827	ECKF1H103ZF	C	0.01UF	Z	50V
C828	ECKDNB222ME	C	2200PF		
C831	ECKF1H103ZF	C	0.01UF	Z	50V
C832	EEUFC1V221	E	220UF		35V
C835	ECA1HM010	E	1UF		50V
C836	ECA1VM470	E	47UF		35V
C841	ECKD3A471KBP	C	470PF	K	1KV
C843	ECA1VHG332	E	3300UF		35V
C844	ECKD3A471KBP	C	470PF	K	1KV
C846	ECA1HHG101	E	100UF		50V
C849	EC0S2CA471BB	E	470UF		160V
C850	ECKD3A471KBP	C	470PF	K	1KV
C851	ECA1CM221	E	220UF		16V
C852	ECA1HM100	E	10UF		50V
C857	ECA1CM101	E	100UF		16V
C865	ECA1CM102	E	1000UF		16V
C870	ECA1CM471	E	470UF		16V
C871	ECKF1H103ZF	C	0.01UF	Z	50V
C872	ECKF1H103ZF	C	0.01UF	Z	50V
C873	ECA1CM101	E	100UF		16V
C880	ECA1VM471	E	470UF		35V
C882	EEUFC1V221	E	220UF		35V
C883	ECA1VM471	E	470UF		35V
C885	EEUFC1V221	E	220UF		35V
C896	ECA1VM470	E	47UF		35V
C897	ECKF1H102KB	C	1000PF	K	50V
C901	ECQV1H104JM	P	0.1UF	J	50V
C904	ECKF1H103ZF	C	0.01UF	Z	50V
C921	ECKF1H103ZF	C	0.01UF	Z	50V
C922	ECKF1H103ZF	C	0.01UF	Z	50V
C923	ECKF1H103ZF	C	0.01UF	Z	50V
C924	ECKF1H103ZF	C	0.01UF	Z	50V
C925	ECKF1H103ZF	C	0.01UF	Z	50V
C952	ECA1HM100	E	10UF		50V
C953	ECKF1H103ZF	C	0.01UF	Z	50V
C958	ECA2CM470	E	47UF		160V
C959	ECKD2H103KB2	C	0.01UF	K	500V
C960	ECCD2H151J	C	150PF	J	500V
C961	ECA2AM100	E	10UF		100V
C962	ECKD2H103KB2	C	0.01UF	K	500V
C963	ECCF1H151J	C	150PF	J	50V
C964	ECA1CHG101	E	100UF		50V
C966	ECA1CHG101	E	100UF		50V
C967	ECA1CM221	E	220UF		16V
C968	ECKF1H103ZF	C	0.01UF	Z	50V
C969	ECKF1H103ZF	C	0.01UF	Z	50V
C971	ECKF1H222KB	C	2200PF	K	50V
C1050	ECA1HM470	E	47UF		50V
C1051	ECKF1H103ZF	C	0.01UF	Z	50V
C1054	ECA1CM221	E	220UF		16V
C1055	ECA1CM221	E	220UF		16V
C1070	ECKF1H103ZF	C	0.01UF	Z	50V
C1105	ECKF1H101KB	C	100PF	K	50V
C1106	ECKF1H101KB	C	100PF	K	50V
C1107	ECKF1H101KB	C	100PF	K	50V
C1111	ECKF1H101KB	C	100PF	K	50V
C1112	ECKF1H101KB	C	100PF	K	50V
C1113	ECQB1H103JF	P	0.01UF	J	50V
C1114	ECA1HM2R2	E	2.2UF		50V
C1117	ECKF1H101KB	C	100PF	K	50V
C1121	ECKF1H102KB	C	1000PF	K	50V
C1124	ECA1HM100	E	10UF		50V
C1126	ECKF1H102KB	C	1000PF	K	50V
C1127	ECQB1H473JF	P	0.047UF	J	50V
C1129	ECKF1H472KB	C	4700PF	K	50V
C1132	ECKF1H101KB	C	100PF	K	50V
C1137	ECKF1H101KB	C	100PF	K	50V
C1139	ECKF1H103ZF	C	0.01UF	Z	50V
C1140	ECA1HM100	E	10UF		50V
C1142	ECKF1H103ZF	C	0.01UF	Z	50V
C1143	ECA1HM010	E	1UF		50V
C1144	ECCF1H101JC	C	100PF	J	50V
C1148	ECKF1H103ZF	C	0.01UF	Z	50V
C1150	ECKF1H101KB	C	100PF	K	50V
C1151	ECA1HM010	E	1UF		50V
C1152	ECKF1H221KB	C	220PF	K	50V
C1219	ECA1VM470	E	47UF		35V
C1220	ECKF1H103ZF	C	0.01UF	Z	50V
C1221	ECA1VM470	E	47UF		35V
C1222	ECKF1H103ZF	C	0.01UF	Z	50V
C1225	ECQV1H104JM	P	0.1UF	J	50V
C1227	ECKF1H221KB	C	220PF	K	50V
C1250	ECA1CM221	E	220UF		16V
C1251	ECA1HM4R7	E	4.7UF		50V
C1252	ECKF1H102KB	C	1000PF	K	50V
C1256	ECA1HM100	E	10UF		50V
C1257	ECA1HM100	E	10UF		50V
C1258	ECKF1H103ZF	C	0.01UF	Z	50V
C1259	ECA1HM010	E	1UF		50V
C1260	ECKF1H103ZF	C	0.01UF	Z	50V
C1551	ECEA2CNR47S	E	0.47UF		160V
C1552	ECKF1H103ZF	C	0.01UF	Z	50V
C1553	ECKF1H103ZF	C	0.01UF	Z	50V
C1554	ECQB1H222JF	P	2200PF	J	50V
C1555	ECQB1H103JF	P	0.01UF	J	50V
C1556	ECSF1CE225V	T	2.2UF		16V
C1557	ECQV1H224JM	P	0.22UF	J	50V
C1558	ECQV1H104JM	P	0.1UF	J	50V
C1559	ECQB1H333JF	P	0.033UF	J	50V
C1560	ECA1HM100	E	10UF		50V
C1561	ECA1HM010	E	1UF		50V
C1562	ECQM4223KZ	P	0.022UF	K	400V
C1563	ECKD3D102KBP	C	1000PF	K	2KV
C1564	ECKD3D102KBP	C	1000PF	K	2KV
C1565	ECQB1H103JF	P	0.01UF	J	50V
C1566	ECQB1H222JF	P	2200PF	J	50V
C1567	ECQB1H103JF	P	0.01UF	J	50V
C1568	ECA1HM010	E	1UF		50V
C1569	ECQK1562JZ	P	5600PF	J	100V
C1570	EEANA1E2R2	E	2.2UF		25V
C1571	ECKD3A101KBP	C	100PF	K	1KV
C1572	ECKD3A332KBP	C	3300PF	K	2KV
C1572	ECKD3D272KBP	C	2700PF	K	2KV
C1573	ECQB1H822JF	P	8200PF	J	50V
C1574	ECQB1H333JF	P	0.033UF	J	50V
C1575	ECA1CM471	E	470UF		16V
C1576	ECEA1HN3R3U	E	3.3UF		50V



Ref. No	Part No.	Description				Ref. No	Part No.	Description			
C1577	ECKD3A471KBP	C	470PF	K	1KV	C2428	ECA1HM4R7	E	4.7UF	50V	
C1578	ECQM4223KZ	P	0.022UF	K	400V	C2429	ECA1HM4R7	E	4.7UF	50V	
						C2430	ECA1CM101	E	100UF	16V	
C1579	ECA1HM100	E	10UF		50V	C2432	ECQV1H104JM	P	0.1UF	J	50V
C1580	ECKD3A271KBP	C	270PF	K	1KV	C2433	ECQB1H333JF	P	0.033UF	J	50V
			(FOR TC-29P10N)			C2434	ECA1HM4R7	E	4.7UF	50V	
C1580	ECKD3A331KBP	C	330PF	K	1KV	C2435	ECA1HM010	E	1UF	50V	
			(FOR TC-33P10N)			C2436	ECQB1H333JF	P	0.033UF	J	50V
C2201	ECEA1CN100U	E	10UF		16V	C2437	ECQB1H102JF	P	1000PF	J	50V
C2202	ECQB1H123JF	P	0.012UF	J	50V	C2438	ECQB1H333JF	P	0.033UF	J	50V
C2203	ECQB1H562JF	P	5600PF	J	50V	C2439	ECQB1H102JF	P	1000PF	J	50V
C2204	ECEA1HNR22U	E	0.22UF		50V	C2440	ECQB1H102JF	P	1000PF	J	50V
C2205	ECA1VM470	E	47UF		35V	C2441	ECA1HM010	E	1UF	50V	
C2206	ECA1CM101	E	100UF		16V	C2442	ECA1HM010	E	1UF	50V	
C2207	ECQB1H272JF	P	2700PF	J	50V	C2443	ECA1HM010	E	1UF	50V	
C2208	ECA1HM4R7	E	4.7UF		50V	C2444	EEANA1E1R0	E	1UF	25V	
C2209	ECSF1CE106	T	10UF		16V	C2445	EEANA1E1R0	E	1UF	25V	
C2210	ECA1HM010	E	1UF		50V	C2446	EEANA1E100	E	10UF	25V	
C2211	ECSF1CE335V	T	3.3UF		16V						
C2212	ECEA1HN4R7U	E	4.7UF		50V	C2447	ECKF1H103ZF	C	0.01UF	Z	50V
C2213	ECEA1HN4R7U	E	4.7UF		50V	C2448	ECQB1H473JF	P	0.047UF	J	50V
C2214	ECQB1H473JF	P	0.047UF	J	50V	C2801	ECKD3A471KBP	C	470PF	K	1KV
C2215	ECA1HM4R7	E	4.7UF		50V	C2802	ECA1VHG102	E	1000UF		35V
C2215	ECQV1H274JM	P	0.27UF	J	50V	C2803	ECKF1H223ZF	C	0.022UF	Z	50V
C2219	ECA1HMR47	E	0.47UF		50V						
C2223	ECA1HM4R7	E	4.7UF		50V	C3002	ECEA1HKA010	E	1UF	50V	
C2301	ECQB1H153JF	P	0.015UF	J	50V	C3003	ECEA1HKA010	E	1UF	50V	
C2302	ECA1HM4R7	E	4.7UF		50V	C3006	ECEA1HKA010	E	1UF	50V	
C2303	ECQB1H183JF	P	0.018UF	J	50V	C3007	ECEA1HKA010	E	1UF	50V	
C2304	ECQB1H822JF	P	8200PF	J	50V	C3008	ECEA1HKA010	E	1UF	50V	
C2305	ECQB1H822JF	P	8200PF	J	50V	C3009	ECEA1HKA010	E	1UF	50V	
C2306	ECA1HM4R7	E	4.7UF		50V	C3015	ECEA1HKA010	E	1UF	50V	
C2307	ECA1CM471	E	470UF		16V	C3016	ECEA1HKA010	E	1UF	50V	
C2308	ECA1HM2R2	E	2.2UF		50V	C3017	ECEA1HKA010	E	1UF	50V	
C2309	ECA1VM102	E	1000UF		35V	C3018	ECEA1HKA010	E	1UF	50V	
C2310	ECQV1H104JM	P	0.1UF	J	50V	C3019	ECA1EM471	E	470UF		25V
C2311	ECA1VM222	E	2200UF		35V	C3020	ECA1EM471	E	470UF		25V
C2312	ECA1VM222	E	2200UF		35V	C3023	ECJ2VF1H103Z	C	0.01UF	Z	50V
C2313	EEUFC1V221	E	220UF		35V	C3024	ECJ2VF1H103Z	C	0.01UF	Z	50V
C2314	ECQV1H104JM	P	0.1UF	J	50V	C3027	ECEA1HKA010	E	1UF	50V	
C2315	ECQV1H104JM	P	0.1UF	J	50V	C3028	ECEA1HKA010	E	1UF	50V	
C2316	ECA1VM102	E	1000UF		35V	C3037	ECJ2VF1H103Z	C	0.01UF	Z	50V
C2317	ECA1HM220	E	22UF		50V	C3060	EEANA1E1R0	E	1UF	25V	
C2318	ECA1HM220	E	22UF		50V	C3062	ECA1EM471	E	470UF		25V
C2319	ECA1HM220	E	22UF		50V	C3065	ECEA1CKA470	E	47UF		16V
C2320	ECKF1H103ZF	C	0.01UF	Z	50V	C3070	ECJ2VF1H103Z	C	0.01UF	Z	50V
C2402	ECQB1H393JF	P	0.039UF	J	50V	C3071	ECJ2VF1H103Z	C	0.01UF	Z	50V
C2403	ECA1HM010	E	1UF		50V	C3072	ECA1EM471	E	470UF		25V
C2404	ECKF1H223ZF	C	0.022UF	Z	50V	C3075	ECUX1H102KBX	C	1000PF	K	50V
C2405	ECA1HM010	E	1UF		50V	C3077	ECUX1H102KBX	C	1000PF	K	50V
C2406	ECA1HM010	E	1UF		50V	C3079	ECUX1H102KBX	C	1000PF	K	50V
C2407	ECKF1H151KB	C	150PF	K	50V	C3080	ECUX1H102KBX	C	1000PF	K	50V
C2408	EEANA1E1R0	E	1UF		25V	C3081	ECUX1H102KBX	C	1000PF	K	50V
C2409	ECA1HM4R7	E	4.7UF		50V	C3082	ECUX1H102KBX	C	1000PF	K	50V
C2410	ECA1HM4R7	E	4.7UF		50V	C3083	ECEA1HKN010	E	1UF	50V	
C2411	ECA1HM4R7	E	4.7UF		50V	C3084	ECUX1H102KBX	C	1000PF	K	50V
C2412	ECQB1H562JF	P	5600PF	J	50V	C3085	EEANA1E1R0	E	1UF	25V	
C2413	EEANA1E1R0	E	1UF		25V	C3086	EEANA1E1R0	E	1UF	25V	
C2414	ECKF1H103ZF	C	0.01UF	Z	50V	C3087	ECUX1H102KBX	C	1000PF	K	50V
C2415	EEANA1E1R0	E	1UF		25V	C3104	EEANA1E1R0	E	1UF	25V	
C2416	EEANA1E100	E	10UF		25V	C3105	ECEA1HKA010	E	1UF	50V	
C2417	ECA1HM010	E	1UF		50V	C3106	EEANA1E1R0	E	1UF	25V	
C2418	ECQB1H153JF	P	0.015UF	J	50V	C3107	ECEA1HKA010	E	1UF	50V	
C2419	ECA1HM220	E	22UF		50V	C3108	ECJ2VF1H103Z	C	0.01UF	Z	50V
C2420	ECKF1H103ZF	C	0.01UF	Z	50V	C3171	ECKF1H103ZF	C	0.01UF	Z	50V
C2421	ECA1CM471	E	470UF		16V	C3172	ECA1CM221	E	220UF		16V
C2424	EEANA1E1R0	E	1UF		25V	C3201	ECA1HM220	E	22UF		50V
C2425	EEANA1E1R0	E	1UF		25V	C3224	ECA1VM470	E	47UF		35V
C2426	ECA1HM100	E	10UF		50V	C3225	ECA1VM470	E	47UF		35V
C2427	ECA1HM100	E	10UF		50V	C3226	ECKF1H103ZF	C	0.01UF	Z	50V
						C3227	ECA1HM010	E	1UF	50V	
						C4801	ECA1HM4R7	E	4.7UF	50V	





Ref. No	Part No.	Description	Ref. No	Part No.	Description
L3	TJS3A9680	7P CONNECTOR	Δ	RTL TNPA1216AB	CIRCUIT BOARD H
N1	TJS6A9680	8P CONNECTOR	Δ	RTL TNPA1217AC	CIRCUIT BOARD P (FOR TC-29P10N)
N2	TJS6A9670	6P CONNECTOR	Δ	RTL TNPA1217AD	CIRCUIT BOARD P (FOR TC-33P10N)
P1	TJS3A8020	AC CONNECTOR	Δ	RTL TNPA1218	CIRCUIT BOARD DF (FOR TC-29P10N)
P2	TJS3A9250	6P CONNECTOR	Δ	RTL TNPA1218AB	CIRCUIT BOARD DF (FOR TC-33P10N)
P3	TJS3A9680	7P CONNECTOR	Δ	RTL TNPA1587	CIRCUIT BOARD GM (FOR TC-33P10N ONLY)
P5	TJS3A9250	6P CONNECTOR	Δ	RTL TNPA1621	CIRCUIT BOARD G (FOR TC-29P10N)
P12	TJS3A9250	6P CONNECTOR	Δ	RTL TNPA1623	CIRCUIT BOARD G (FOR TC-33P10N)
P13	TJS3A9250	6P CONNECTOR	Δ	RTL TNPA1624	CIRCUIT BOARD K (FOR TC-33P10N)
V1	TJS3A9260	5P CONNECTOR	Δ	RTL TNPA1625	CIRCUIT BOARD V (FOR TC-33P10N)
AG12	TJSF17425	25P CONNECTOR	Δ	RTL TNPA1641	CIRCUIT BOARD K (FOR TC-29P10N)
AG13	TJSF17425	25P CONNECTOR	Δ	RTL TNPA1642	CIRCUIT BOARD V (FOR TC-29P10N)
DG1	TJS3A9140	CONNECTOR	Δ	RTL TNPH0240AC	CIRCUIT BOARD A (FOR TC-29P10N)
DG2	TJS3A9140	CONNECTOR	Δ	RTL TNPH0240AD	CIRCUIT BOARD A (FOR TC-33P10N)
DG3	TJS3A9140	CONNECTOR	Δ	RTL TXNDG10N71	CIRCUIT BOARD DG
F001-L	TJC6319-1	FUSE HOLDER	Δ	RTL TXN/D10EAF	CIRCUIT BOARD D (FOR TC-33P10N)
F001-R	TJC6319-1	FUSE HOLDER	Δ	RTL TXN/D10EBF	CIRCUIT BOARD D (FOR TC-29P10N)
Δ F001	XBA1E50NS5	FUSE	S002	EVQ81F05R	SWITCH
F002-L	TJC6319-1	FUSE HOLDER	S003	EVQ81F05R	SWITCH
F002-R	TJC6319-1	FUSE HOLDER	S004	EVQ81F05R	SWITCH
Δ F002	XBA1E50NS5	FUSE	S005	EVQ81F05R	SWITCH
JA1	ERJ6GEY0R00	M 0 OHM J 1/10W	S006	EVQ81F05R	SWITCH
JA2	ERJ6GEY0R00	M 0 OHM J 1/10W	S007	EVQ81F05R	SWITCH
JA3	ERJ6GEY0R00	M 0 OHM J 1/10W	S008	EVQ81F05R	SWITCH
JA4	ERJ6GEY0R00	M 0 OHM J 1/10W	S551	TSEB8007	SLIDE SWITCH
JA5	ERJ6GEY0R00	M 0 OHM J 1/10W	S801	ESB41A1154	SWITCH
JA6	ERJ6GEY0R00	M 0 OHM J 1/10W	X101	EFCH45MGP2N	SAW FILTER
JA7	ERJ6GEY0R00	M 0 OHM J 1/10W	X102	EFCS4R5MW5BA	CERAMIC FILTER
JA8	ERJ6GEY0R00	M 0 OHM J 1/10W	X201	EFCS4R5MS4W	CERAMIC TRAP
JA9	ERJ6GEY0R00	M 0 OHM J 1/10W	X501	EF0A503KS4KT	CERAMIC FILTER
JA10	ERJ6GEY0R00	M 0 OHM J 1/10W	X601	TSS2143-M	CRYSTAL
JA11	ERJ6GEY0R00	M 0 OHM J 1/10W	X1101	TAAA0002	CERAMIC FILTER
JA12	ERJ6GEY0R00	M 0 OHM J 1/10W			
JA13	ERJ6GEY0R00	M 0 OHM J 1/10W			
JA14	ERJ6GEY0R00	M 0 OHM J 1/10W			
JA15	ERJ6GEY0R00	M 0 OHM J 1/10W			
JA16	ERJ6GEY0R00	M 0 OHM J 1/10W			
JA17	ERJ6GEY0R00	M 0 OHM J 1/10W			
JA18	ERJ6GEY0R00	M 0 OHM J 1/10W			
JA19	ERJ6GEY0R00	M 0 OHM J 1/10W			
JA20	ERJ6GEY0R00	M 0 OHM J 1/10W			
JA21	ERJ6GEY0R00	M 0 OHM J 1/10W			
Δ JK351	TJSC01100	CRT SOCKET			
JK3001	TJBA044	REAR TERMINAL			
JK3151	TJBA087	FRONT TERMINAL			
JS2	ERJ6GEY0R00	M 0 OHM J 1/10W			
JS3	ERJ6GEY0R00	M 0 OHM J 1/10W			
JS7	ERJ6GEY0R00	M 0 OHM J 1/10W			
JS01	ERJ6GEY0R00	M 0 OHM J 1/10W			
JS02	ERJ6GEY0R00	M 0 OHM J 1/10W			
JS03	ERJ6GEY0R00	M 0 OHM J 1/10W			
JS04	ERJ6GEY0R00	M 0 OHM J 1/10W			
JS05	ERJ6GEY0R00	M 0 OHM J 1/10W			
JS06	ERJ6GEY0R00	M 0 OHM J 1/10W			
JS07	ERJ6GEY0R00	M 0 OHM J 1/10W			
JS08	ERJ6GEY0R00	M 0 OHM J 1/10W			
S021	ERJ6GEY0R00	M 0 OHM J 1/10W			
JS034	ERJ6GEY0R00	M 0 OHM J 1/10W			
JS1002	ERDS2TJ152	C 1.5KOHM J 1/4W			
JS3008	ERJ6GEY0R00	M 0 OHM J 1/10W			
JS3016	ERJ6GEY0R00	M 0 OHM J 1/10W			
JS3021	ERJ6GEY0R00	M 0 OHM J 1/10W			
JS6601	ERJ6GEY0R00	M 0 OHM J 1/10W			
Δ RL001	TSE10801	RELAY			
Δ RL002	TSEH8014	RELAY			
RL803	TSEH0005	RELAY			
Δ RTL	TNPA1080AM	CIRCUIT BOARD L (FOR TC-29P10N)			
Δ RTL	TNPA1080AN	CIRCUIT BOARD L (FOR TC-33P10N)			
Δ RTL	TNPA1215	CIRCUIT BOARD AG			