

**TOSHIBA**

FILE NO. 020-200406

SERVICE MANUAL

# Color Television

N4WS Chassis

**34HF84**

(TAC0404)

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## CHAPTER 1 GENERAL ADJUSTMENTS

### SAFETY INSTRUCTIONS

**WARNING:** BEFORE SERVICING THIS CHASSIS, READ THE “X-RAY RADIATION PRECAUTION”, “SAFETY PRECAUTION” AND “PRODUCT SAFETY NOTICE” INSTRUCTIONS BELOW.

#### X-RAY RADIATION PRECAUTION

1. Excessive high voltage can produce potentially hazardous X-RAY RADIATION. To avoid such hazards, the high voltage must not be above the specified limit. The nominal value of the high voltage of this receiver is (A) kV at zero beam current (minimum brightness) under a 120V AC power source. The high voltage must not, under any circumstances, exceed (B) kV.  

Refer to table-1 for high voltage (A), (B).  
(See SETTING & ADJUSTING DATA on page 11)

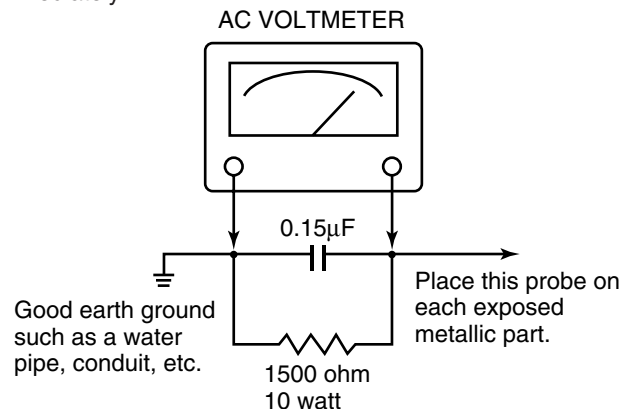
Each time a receiver requires servicing, the high voltage should be checked following the HIGH VOLTAGE CHECK procedure in this manual. It is recommended that the reading of the high voltage be recorded as a part of the service record. It is important to use an accurate and reliable high voltage meter.
2. This receiver is equipped with a Fail Safe (FS) circuit which prevents the receiver from producing an excessively high voltage even if the B+ voltage increases abnormally. Each time the receiver is serviced, the FS circuit must be checked to determine that the circuit is properly functioning, following the FS CIRCUIT CHECK procedure in this manual.
3. The only source of X-RAY RADIATION in this TV receiver is the picture tube. For continued X-RAY RADIATION protection, the replacement tube must be exactly the same type tube as specified in the parts list.
4. Some part in this receiver have special safety-related characteristics for X-RAY RADIATION protection. For continued safety, parts replacement should be undertaken only after referring to the PRODUCT SAFETY NOTICE below.

#### SAFETY PRECAUTION

**WARNING :** Service should not be attempted by anyone unfamiliar with the necessary precautions on this receiver. The following are the necessary precautions to be observed before servicing this chassis.

1. An isolation Transformer should be connected in the power line between the receiver and the AC line before any service is performed on the receiver.
2. Always discharge the picture tube anode to the CRT conductive coating before handling the picture tube. The picture tube is highly evacuated and if broken, glass fragments will be violently expelled. Use shatter proof goggles and keep picture tube away from the unprotected body while handling.
3. When replacing a chassis in the cabinet, always be certain that all the protective devices are put back in place, such as; non-metallic control knobs, insulating covers, shields, isolation resistor-capacitor network etc.
4. Before returning the set to the customer, always perform an AC leakage current check on the exposed metallic parts of the cabinet, such as antennas, terminals, screwheads, metal overlays, control shafts etc. to be sure the set is safe to operate without danger of electrical shock. Plug the AC line cord directly into a 120V AC outlet (do not use a line isolation transformer during this check). Use an AC voltmeter having 5000 ohms per volt or more sensitivity in the following manner:

Connect a 1500 ohm 10 watt resistor, paralleled by a 0.15  $\mu$ F, AC type capacitor, between a known good earth ground (water pipe, conduit, etc.) and the exposed metallic parts, one at a time. Measure the AC voltage across the combination of 1500 ohm resistor and 0.15  $\mu$ F capacitor. Reverse the AC plug at the AC outlet and repeat AC voltage measurements for each exposed metallic part. Voltage measured must not exceed 0.3 volts rms. This corresponds to 0.2 milliamp. AC. Any value exceeding this limit constitutes a potential shock hazard and must be corrected immediately.



#### PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in this chassis have special safety-related characteristics. These characteristics are often passed unnoticed by a visual inspection and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this manual and its supplements; electrical components having such features are identified by the international hazard symbols on the schematic diagram and the parts list.

Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts which do not have the same safety characteristics as specified in the parts list may create shock, fire, X-ray radiation or other hazards.

**WARNING:** BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION", "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" ON PAGE 3 OF SERVICE MANUAL.

## SET-UP ADJUSTMENT FOR FLAT TUBE

■ The following adjustments should be made when a complete realignment is required or a new picture tube is installed. Perform the adjustments in order as follows :

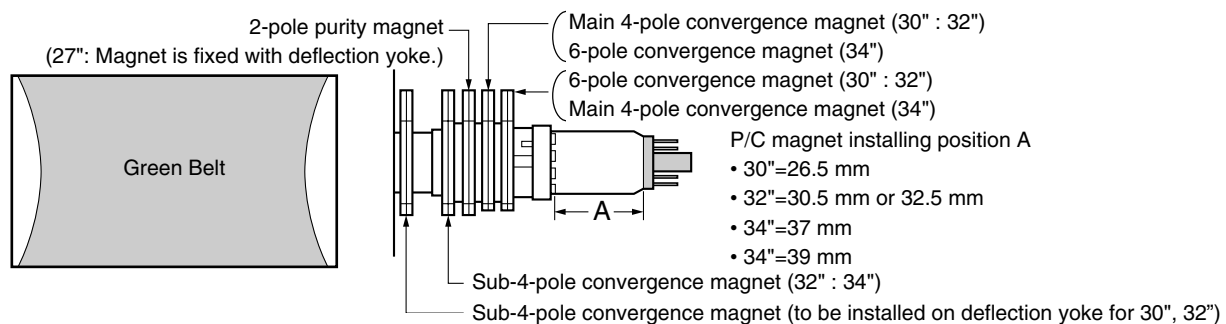
1. Color Purity
2. Convergence
3. White Balance

**Note:** The PURITY/CONVERGENCE MAGNET assembly and rubber wedges need mechanical positioning. Refer to figure 1.

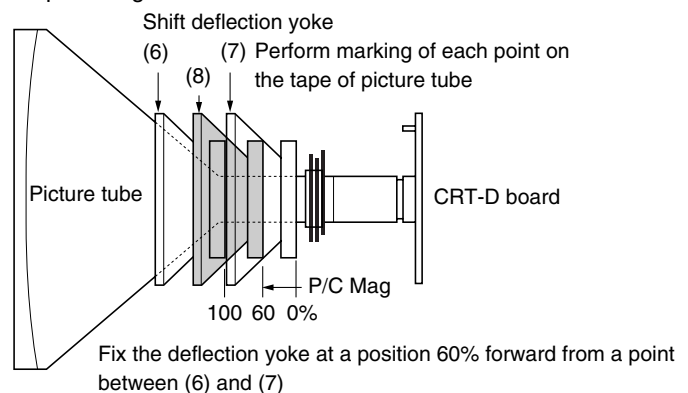
### COLOR PURITY ADJUSTMENT

- (1) Let the screen face in the installing direction or toward the east (when it is to be moved), bring up the service mode screen after demagnetizing (front, left, right, and top) with the degaussing coil, receive white signals by pressing the [TV/VIDEO] button, and then the receiver should be operated for more than 40 minutes.
- (2) Perform rough adjustment of the central convergence with the P/C magnet according to the adjustment item.
- (3) Receive built-in green signals, loosen set screws on the deflection yoke, remove rubber wedges, and shift the deflection yoke toward front.
- (4) Move alternately the two 2-pole magnets of the P/C magnets so that the green raster can come to the center of the screen.

Figure 1.



- (5) Receive built-in red and blue signals, check that there is no inclination of the single color raster toward one side, and if each color tilts to a great extent, make adjustment with the 2-pole magnet so that the 3 colors will come to the center evenly.
- (6) Receive the green raster, shift the deflection yoke from a foremost position (hitting against the picture tube) to a backward position horizontally, stop the deflection yoke at a position where it begins to become a green raster, and perform accurate marking on the picture tube.
- (7) Shift the deflection yoke further backward, and perform accurate marking at a position where the green raster begins to being luck.
- (8) Fix the deflection yoke at a position 60% forward within the range marked in items (6) and (7) above.



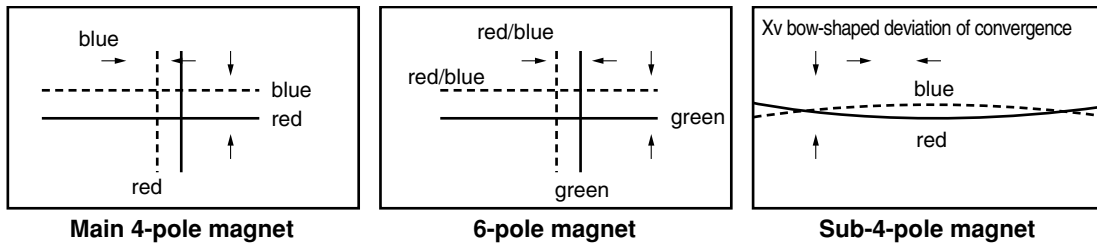
### CONVERGENCE ADJUSTMENTS

\* Adjust the convergence magnet to get vest convergence in the the order to (1) ~ (5).

#### ■ CENTER CONVERGENCE:

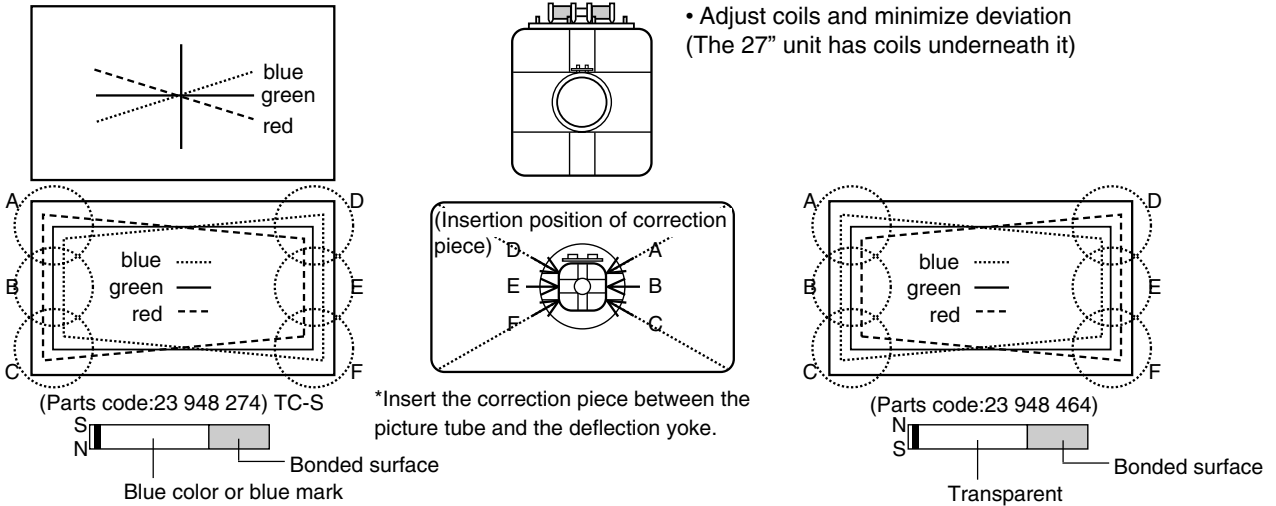
- (1) Receive the white crosshatch or dot pattern from the service signal generator.
- (2) Use the 2 pieces of main 4-pole magnets of P/C magnets, change the open angle, and align the red and blue vertical lines on the screen center.
- (3) Freeze the open angle of the main 4-pole magnets, turn them simultaneously, and align the horizontal lines.
- (4) Take the same steps for items (2) and (3) above and align red/blue with green on the screen center using two 6-pole magnets.

(5) Adjust the sub-4-pole magnets only in case there is any deviation of Xv bow-shaped convergence. (To be usually set at the initial position)  
Align both sides with the sub-4-pole magnets and minimize the deviation of blue and red with the main 4-pole magnets.



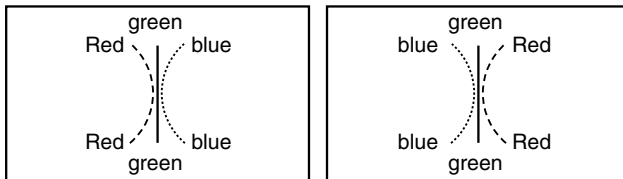
■ **CIRCUMFERENCE CONVERGENCE:**

\* Perform correction in the following manner.

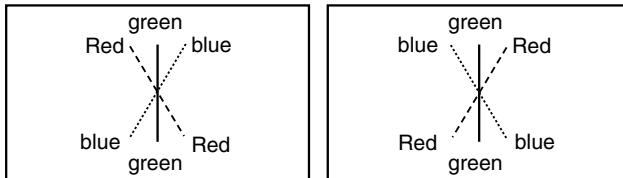


• Adjust coils and minimize deviation (The 27" unit has coils underneath it)

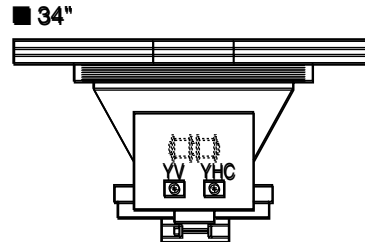
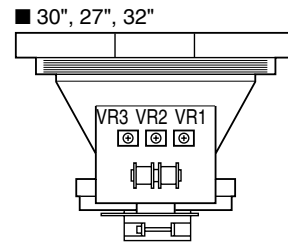
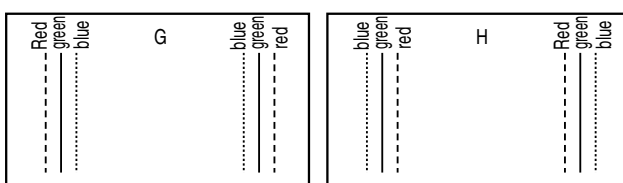
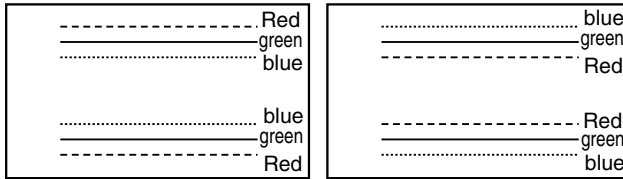
**Adjust VR 1 and minimize the deviation of YH. \*Only 27", 30" and 32".**



**Adjust VR 2 (YHC) and minimize the deviation of YH.**



**Adjust VR 3 (YV) and minimize the deviation of YV.**



27" (Part No. 23 947 371)  
32", 30" (Part No. 23 947 121)  
34" (Part No. 23 993 080)

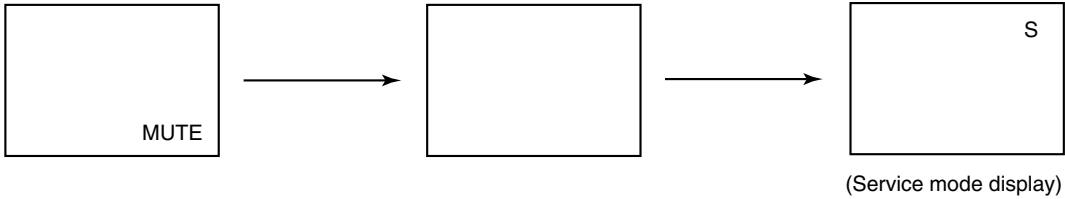
Perform correction by inserting the correction piece into the clearance of terminal board coils of the deflection yoke.

**Note:**  
Perform insertion by turning the metal side to the terminal board side of the deflection yoke.

# SERVICE MODE

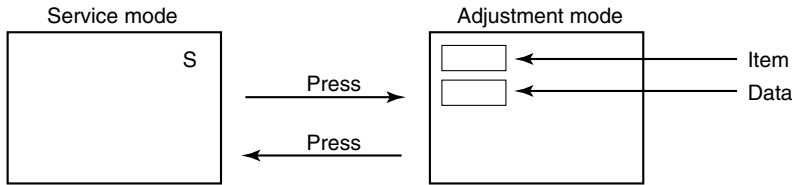
## 1. ENTERING TO SERVICE MODE

- 1) Press MUTE button twice on Remote Control.
- 2) Press MUTE button again to keep pressing.
- 3) While pressing the MUTE button, press MENU button on TV set.



## 2. DISPLAYING THE ADJUSTMENT MENU

- 1) Press MENU button on TV.



## 3. KEY FUNCTION IN THE SERVICE MODE

The following key entry during display of adjustment menu provides special functions.

Screen adjustment mode ON/OFF:	TV (ANT)/VIDEO button (on TV)
Selection of the adjustment items :	Channel ▲/▼ (on TV or Remote)
Change of the data value :	Volume ▲/▼ (on TV or Remote)
Adjustment menu mode ON/OFF :	MENU button (on TV)
Initialization of the memory (QA02) :	RECALL+Channel button on TV (▲)
Initialization of the self diagnostic data:	RECALL+Channel button on TV (▼)

"RCUT" selection :	1 button
"GCUT" selection :	2 button
"BCUT" selection :	3 button
"SCNT" selection :	4 button
"COLC" selection :	5 button
Self diagnostic display :	9 button

**4. SELECTING THE ADJUSTING ITEMS**

- 1) Every pressing of CHANNEL ▲ button in the service mode changes the adjustment items in the order of table-2. (▼ button for reverse order)

Refer to table-2 for preset data of adjustment mode.  
(See SETTING & ADJUSTING DATA on page 11)

**5. ADJUSTING THE DATA**

- 1) Pressing of VOLUME ▲ or ▼ button will change the value of data in the range from 00H to FFH. The variable range depends on the adjusting item.

**6. EXIT FROM SERVICE MODE**

- 1) Pressing POWER button to turn off the TV once.

**■ INITIALIZATION OF MEMORY DATA OF QA02**

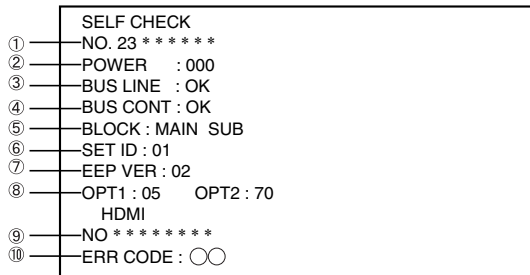
After replacing QA02, the following initialization is required.

- 1. Enter the service mode, then select any register item.
- 2. Press and hold the RECALL button on the Remote, then press the CHANNEL ▲ button on the TV. The initialization of QA02 has been completed.
- 3. Check the picture carefully. If necessary, adjust any adjustment item above.  
Perform “Programming Channel Memory” on the owner’s manual.

CAUTION: Never attempt to initialize the data unless QA02 has been replaced.

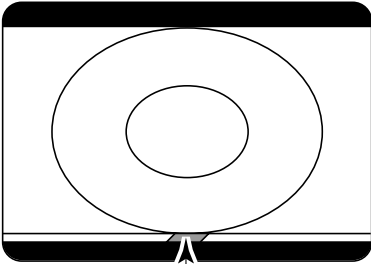
**7. SELF DIAGNOSTIC FUNCTION**

- 1) Press “9” button on Remote Control during display of adjustment menu in the service mode.  
The diagnosis will begin to check if interface among IC’s are executed properly.
- 2) During diagnosis, the following displays are shown.

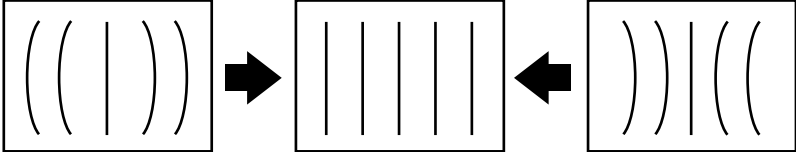
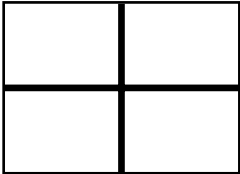
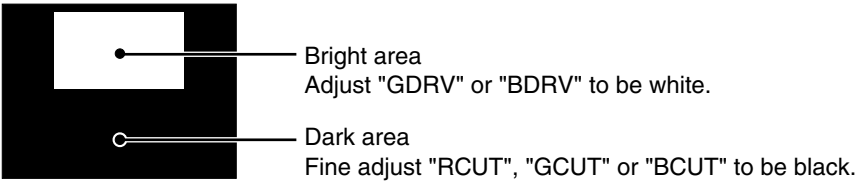


- ① Part number of microprocessor (QA01)
- ② Operation number of protection circuit (current limiter) . . . . “000” is normal.
- ③ BUS line check — “OK” ..... Normal  
                          — “SCL-GND” or “NG” ..... SCL-GND short circuit  
                          — “SDA-GND” or “NG” ..... SDA-GND short circuit  
                          — “SCL-SDA” or “NG” ..... SCL-SDA short circuit
- ④ BUS line ACK (acknowledge) check  
                          “OK” ..... Normal  
                          Display of Location Number . . . . NG  
                          (Display example)  
                          “QA02 NG”, “H001 NG”, “Q501 NG” etc.  
                          Note: The indication of failure place is only one place though failure places are plural. When repair of a failure place finishes, the next failure place is indicated. (The order of priority of indication is left side.)
- ⑤ Sync. signal check — Green display ..... Normal  
                                  Red display ..... NG  
                                  MAIN ..... Main sync  
                                  SUB ..... Sub sync (when turn on the PIP)
- ⑥ ID code for TV Set
- ⑦ Version of “EEP”
- ⑧ Data for “OPT”
- ⑨ Part number of HDMI microprocessor
- ⑩ HDMI error code

## ELECTRICAL ADJUSTMENTS

ITEM	ADJUSTMENT PROCEDURE
FOCUS VR ADJ	<ol style="list-style-type: none"> <li>1. Enter the service mode, then select any register item.</li> <li>2. Press the TV/VIDEO button on the Remote until the black cross-bar pattern appears on the screen.</li> <li>3. Adjust the FOCUS control (on T461) for well defined scanning lines on the picture screen.</li> </ol>
SUB-BRIGHTNESS (BRTC)	<ol style="list-style-type: none"> <li>1. Constrict the picture height until the vertical retrace line appears adjusting the item HIT (HEIGHT).</li> <li>2. Adjust the CONTRAST control to the minimum.</li> <li>3. Call up the adjustment mode display, then select the item <b>BRTC</b>.</li> <li>4. Press the VOLUME ▲ or ▼ button so the belt of vertical retrace line just disappear.</li> <li>5. Adjust the CONTRAST control for the desired contrast.</li> <li>6. Perform the HEIGHT adjustment.</li> </ol> <div style="text-align: center; margin-top: 10px;">  <p style="text-align: center;">Vertical retrace line</p> </div>
WIDTH (WID)	<ol style="list-style-type: none"> <li>1. Call up the adjustment mode display, then select the item <b>WID</b>.</li> <li>2. Press the VOLUME ▲ or ▼ button to get the picture so the left and right edges of raster begins to lack.</li> <li>3. Press the VOLUME ▲ or ▼ button to advance the data by 7 steps.</li> </ol> <p>Note : Check the horizontal picture position is correct.</p>



ITEM	ADJUSTMENT PROCEDURE												
E-W PARABOLA (DPC) (PARA)	<ol style="list-style-type: none"> <li>1. Call up the adjustment mode display, then select the item <b>PARA</b>.</li> <li>2. Press the TV/VIDEO button on Remote until the cross-hatch pattern appears on the screen.</li> <li>3. Press the VOLUME ▲ or ▼ button to make vertical lines straight as shown below.</li> </ol> 												
HORIZONTAL POSITION (HPOS) VERTICAL POSITION (VPOS)	<ol style="list-style-type: none"> <li>1. Call up the adjustment mode display, then select the item <b>HPOS</b> or <b>VPOS</b>.</li> <li>2. Press the TV/VIDEO button on Remote until the white cross-bar or black cross-bar pattern appears on the screen.</li> <li>3. Adjust the HORIZONTAL and VERTICAL position alternately by pressing the VOLUME ▲ or ▼ button for proper picture position.</li> <li>4. Check the picture with off-air signal.</li> </ol> 												
HEIGHT (HIT)	<ol style="list-style-type: none"> <li>1. Call up the adjustment mode display, then select the item <b>HIT</b>.</li> <li>2. Press the VOLUME ▲ or ▼ button to get the picture so the top of raster begins to lack.</li> <li>3. Press the VOLUME ▲ button to advance the data by 9 steps.</li> </ol> <p>Note : Check the vertical picture position is correct.</p>												
WHITE BALANCE (RCUT) (GCUT) (BCUT) (GDRV) (BDRV)	<ol style="list-style-type: none"> <li>1. Adjust the CONTRAST control to the center, and BRIGHTNESS control to the maximum.</li> <li>2. Call up the adjustment mode display, and press the TV/VIDEO button on Remote until the white and black pattern appears on the screen.</li> <li>3. Adjust the following items with the CHANNEL ▲/▼ and VOLUME ▲/▼ buttons.             <table border="0" data-bbox="618 1146 1409 1234"> <tr> <td>Item : RCUT</td> <td>→ Data : 40H</td> <td>Item : GDRV</td> <td>→ Data : 40H</td> </tr> <tr> <td>Item : GCUT</td> <td>→ Data : 40H</td> <td>Item : BDRV</td> <td>→ Data : 40H</td> </tr> <tr> <td>Item : BCUT</td> <td>→ Data : 40H</td> <td></td> <td></td> </tr> </table> </li> <li>4. Press the TV/VIDEO button on TV to display a single horizontal line on the screen.</li> <li>5. Turn the SCREEN control (FBT) fully counterclockwise and gradually rotate clockwise until the first horizontal line appears slightly on the screen.</li> <li>6. Press the TV/VIDEO button to display the normal picture.</li> <li>7. Adjust the remaining two "?CUT" items (CHANNEL ▲/▼ → TV/VIDEO → VOLUME ▲/▼ in order) to obtain the slightly lighted horizontal line in the same levels of three (red, green, blue) colors. The line should be white if the adjustments are proper.</li> </ol> 	Item : RCUT	→ Data : 40H	Item : GDRV	→ Data : 40H	Item : GCUT	→ Data : 40H	Item : BDRV	→ Data : 40H	Item : BCUT	→ Data : 40H		
Item : RCUT	→ Data : 40H	Item : GDRV	→ Data : 40H										
Item : GCUT	→ Data : 40H	Item : BDRV	→ Data : 40H										
Item : BCUT	→ Data : 40H												

# CIRCUIT CHECKS

## HIGH VOLTAGE CHECK

**CAUTION:** There is no HIGH VOLTAGE ADJUSTMENT on this chassis. Checking should be done following the steps below.

1. Connect an accurate high voltage meter to the second anode of the picture tube.
2. Turn on the receiver. Set the BRIGHTNESS and CONTRAST controls to minimum (zero beam current).
3. High voltage must be measured below (B) kV.

Refer to table-1 for high voltage (B).  
(See SETTING & ADJUSTING DATA on page 11)

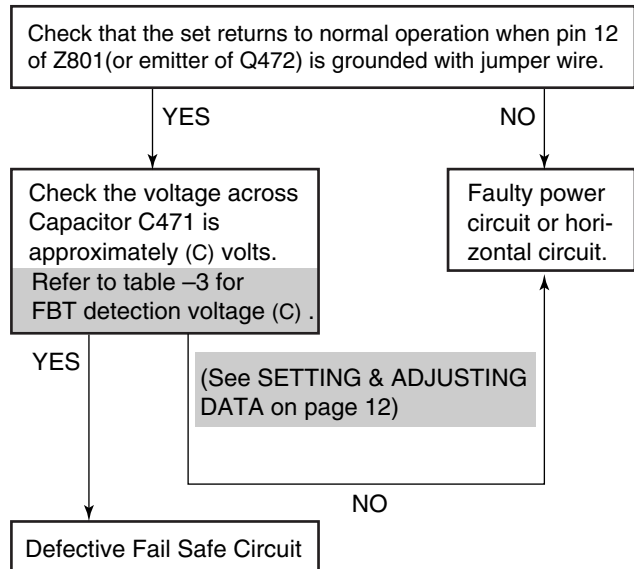
4. Vary the BRIGHTNESS control to both extremes to be sure the high voltage does not exceed the limit under any conditions.

## FS CIRCUIT CHECK

The Fail Safe (FS) circuit check is indispensable for the final check in servicing. Checking should be done following the steps below.

1. Turn the receiver on and press the RESET button.
2. Temporarily short TP-(R) and TP-(X) with a jumper wire. Raster and sound will disappear.
3. The receiver must remain in this state even after removing the jumper wire. This is the evidence that the FS circuit is functioning properly.
4. To obtain a picture again, temporarily turn the receiver off and allow the FS circuit more than 5 seconds to reset. Then turn the power switch on to produce a normal picture.

## Troubleshooting Guide for Fail Safe Circuit



## CHAPTER 2 SPECIFIC INFORMATIONS

### SETTING & ADJUSTING DATA

#### 【 SAFETY INSTRUCTIONS 】

		34"
HIGH VOLTAGE AT ZERO BEAM:	(A)	30.0 kV
MAX HIGH VOLTAGE:	(B)	35.0 kV

Table-1

#### 【 SERVICE MODE 】

##### ADJUSTING ITEMS AND DATA IN THE SERVICE MODE:

Item	Name of adjustment	Preset	NORMAL & FULL	Item	Name of adjustment	Preset	NORMAL & FULL
RCUT	R CUT OFF	40H	←	LIN	V-LINEARITY	12H	←
GCUT	G CUT OFF	40H	←	WID	PICTURE WIDTH	3DH	←
BCUT	B CUT OFF	40H	←	PARA	E-W PARABOLA	15H	←
GDRV	G DRIVE	40H	←	CNR	EW M CORRECTION	17H	←
BDRV	B DRIVE	40H	←	TRAP	EW TRAPEZIUM	3CH	←
BRTC	BRIGHT CENTER	80H	←	HPOS	H-POSITION	4CH	←
UVTT	TINT CENTTER	46H	←	TCNR	EW TOP CORNER	10H	←
HIT	PICTURE HIT	2FH	←	BTNR	EW BOTTOM COR	10H	←

Table-2

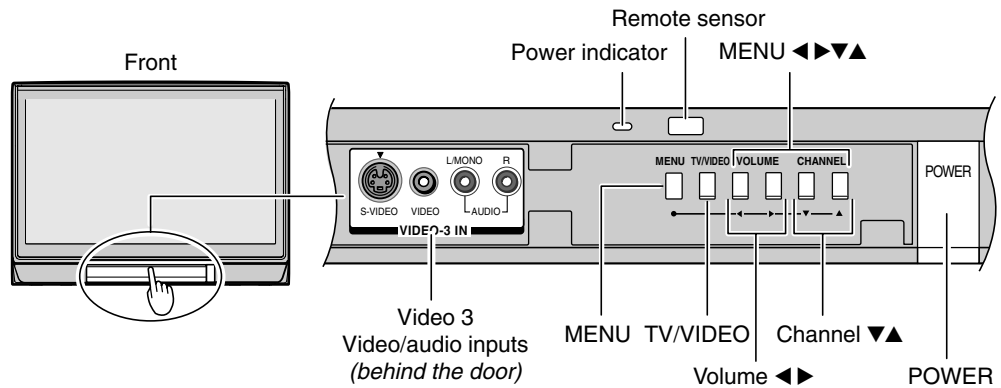
#### 【 CIRCUIT CHECKS 】

FBT DETECTION VOLTAGE	(C)	20.1 V
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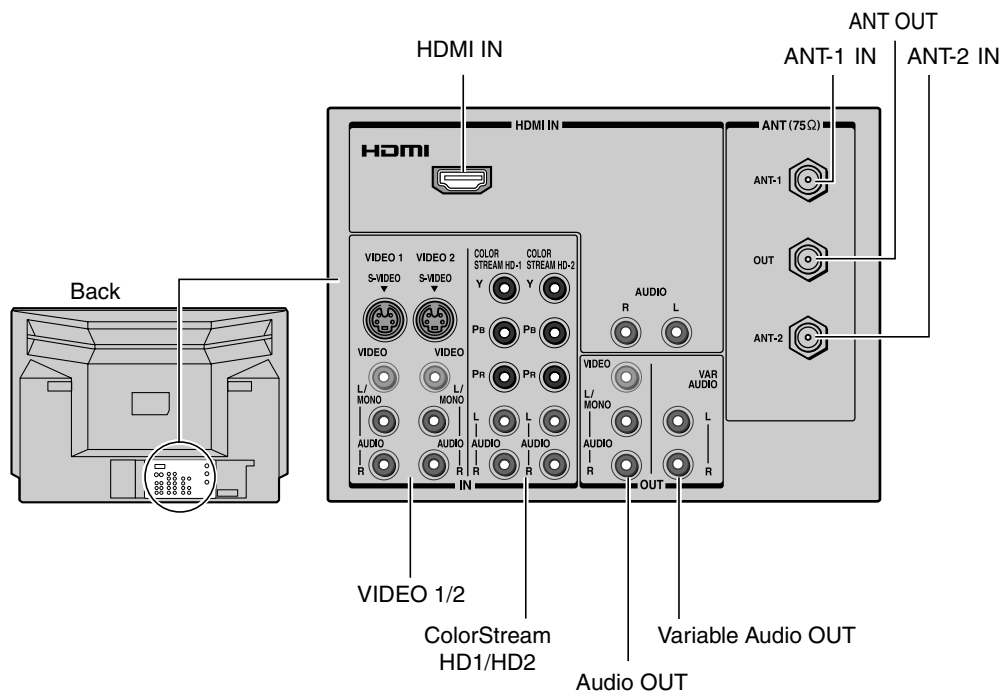
Table-3

# LOCATION OF CONTROLS

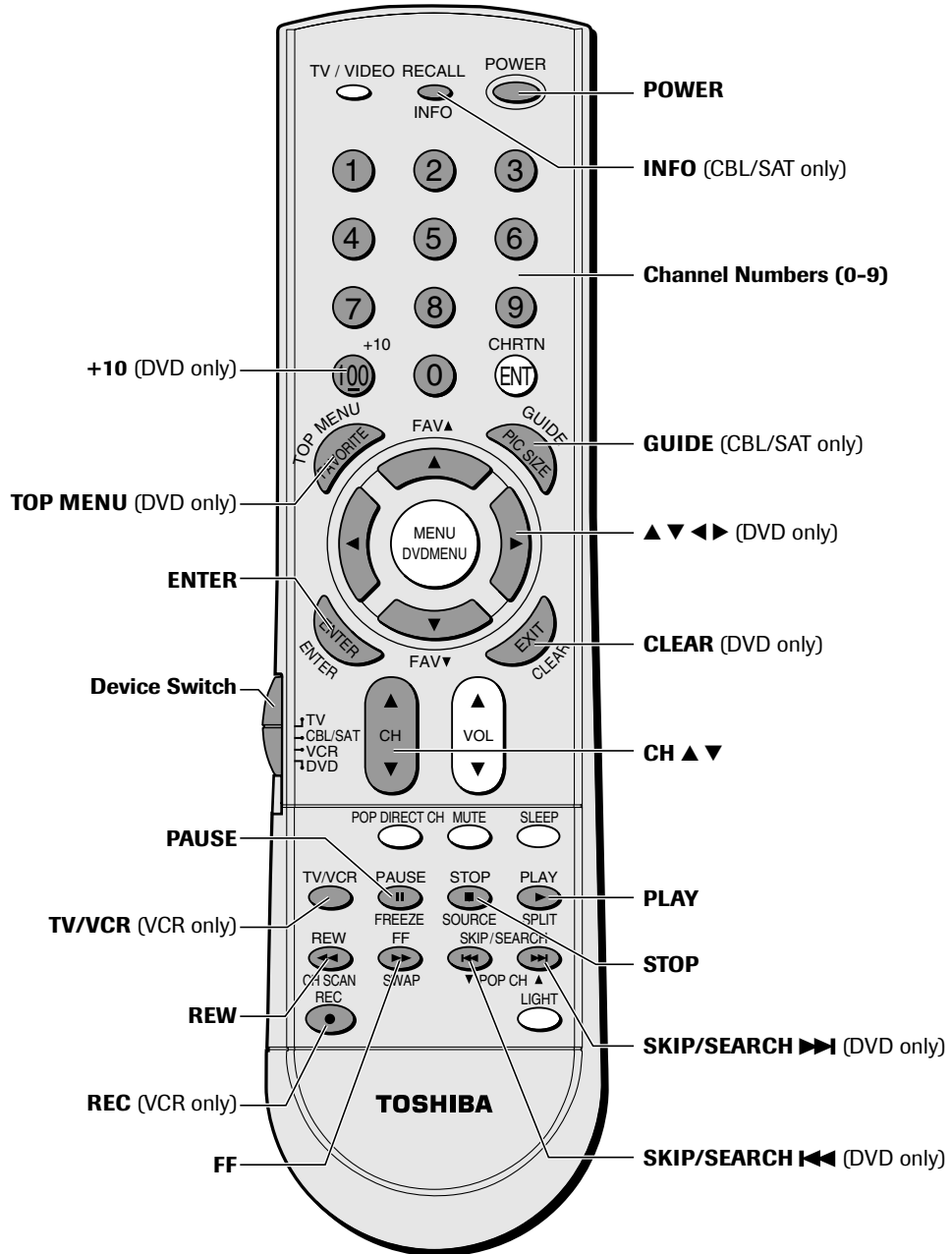
## TV Front



## TV Rear



# Remote Control



## ADDING CHANNELS TO THE TV'S MEMORY

When you press Channel ▲ or ▼, your TV will stop only on the channels stored in the TV's channel memory. Follow the steps below and on the next page to program all active channels into the TV's memory.

### Programming channels automatically

Your TV can automatically detect all active channels in your area and store them in its memory. After the channels are stored automatically, you can manually add or erase individual channels .

To program channels automatically:

- 1** Press MENU, and then press ◀ or ▶ until the SET UP menu appears.
- 2** Press ▲ or ▼ until the TV/CABLE is highlighted, and then press ENTER to display the pull-down menu.
- 3** Press ▲ or ▼ to highlight either TV or CABLE, depending on which you use. If you use an antenna, highlight TV; if you use cable, highlight CABLE.
- 4** Press ENTER.
- 5** Press ▼ to select CH PROGRAM.
- 6** Press ENTER to start channel programming. The TV will automatically cycle through all the TV or Cable channels (depending on which you selected), and store all active channels in the channel memory.  
While the TV is cycling through the channels, the message "Programming Now"—Please Wait" appears.
- 7** When channel programming is complete, the message "Completed" appears.
- 8** Press Channel ▲ or ▼ to view the programmed channels.

### Adding and erasing channels manually

After you have programmed the channels automatically, you can manually add or erase specific channels.

To add or erase channels:

- 1** Select the channel you want to add or erase. If you are adding a channel, you must select the channel using the Channel Number buttons.
- 2** Press MENU, and then press ◀ or ▶ until the SET UP menu appears.
- 3** Press ▲ or ▼ to highlight ADD/ERASE, and then press ENTER to display the pull-down menu.
- 4** Press ▲ or ▼ to select ADD or ERASE, depending on the function you want to perform.
- 5** Repeat steps 1-4 for other channels you want to add or erase.

## CHASSIS AND CABINET REPLACEMENT PARTS LIST

**WARNING:** BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION", "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" ON PAGE 3 OF THIS MANUAL.

**CAUTION:** The international hazard symbols "⚠" in the schematic diagram and the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list. The mounting position of replacements is to be identical with originals. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE. Do not degrade the safety of the receiver through improper servicing.

**NOTICE:**

- The part number must be used when ordering parts, in order to assist in processing, be sure to include the Model number and Description.
- The PC board assembly with \* mark is no longer available after the end of the production.

**Model : 34HF84**

Capacitors .....	CD : Ceramic Disk	PF : Plastic Film	EL : Electrolytic
Resistors .....	CF : Carbon Film	CC : Carbon Composition	MF : Metal Film
	OMF : Oxide Metal Film	VR : Variable Resistor	FR : Fusible Resistor

(All CD and PF capacitors are ±5%, 50V and all resistors, ±5%, 1/6W unless otherwise noted.)

Location No.	Parts No.	Description
<b>CAPACITORS</b>		
C101	24797339	ELECTROLYTIC CE04G, 50V 3.3UF M
C102	24665221	ELECTROLYTIC CE04Q, 10V 220UF M 3A
C105	24100102	CERAMIC CHIP, 50V F 1000PF Z
C106	24669479	ELECTROLYTIC, 50V 4.7UF M 3A
C107	24666221	ELECTROLYTIC 04Q, 16V 220UF M 3A
C108	24665221	ELECTROLYTIC CE04Q, 10V 220UF M 3A
C109	24100104	CERAMIC CHIP, 25V F 0.1UF Z
C110	24794101	ELECTROLYTIC, 16V 100UF M
C301	24567104	PLASTIC FILM, 50V 0.1UF J
C302	24567224	PLASTIC FILM, 50V 0.22UF J
C304	24082991	PLASTIC FILM, 250V 0.22 UF J
C305	24109822	CERAMIC CHIP, 50V B 8200PF K
C306	24669101	ELECTROLYTIC, 50V 100UF M 3A
C307	24666471	ELECTROLYTIC 04Q, 16V 470UF M 3A
C308	24109472	CERAMIC CHIP, 50V B 4700PF K
C309	24109471	CERAMIC CHIP, 50V B 470PF K
C310	24667102	ELECTROLYTIC, 25V 1000UF M 3A
C311	24109102	CERAMIC CHIP, 50V B 1000PF K
C313	24214561	CERAMIC DISC, 500V B 560PF K
C314	24667101	ELECTROLYTIC CE04Q, 25V 100UF M 3A
C315	24092883	CERAMIC CHIP CK73B 50V 0.1UF K
C317	24567104	PLASTIC FILM, 50V 0.1UF J
C319	24092883	CERAMIC CHIP CK73B 50V 0.1UF K
C320	24667101	ELECTROLYTIC CE04Q, 25V 100UF M 3A
C322	24539105	PLASTIC FILM, 50V 1UF J
C323	24539684	PLASTIC FILM, 50V 0.68UF J
C325	24591203	PLASTIC FILM, 50V 0.02UF J
C326	24669010	ELECTROLYTIC, 50V 1UF M 3A
C327	24073041	ELECTROLYTIC, 16V 470UF M 3A
C329	24503334	PLASTIC FILM CF92 T 250V 1R5UF J
C330	24539105	PLASTIC FILM, 50V 1UF J
C332	24109473	CERAMIC CHIP, 25V B 0.047UF K
C333	24108330	CERAMIC CHIP, 50V SL 33PF J
C334	24109471	CERAMIC CHIP, 50V B 470PF K
C336	24108101	CERAMIC CHIP, 50V SL 100PF J
C337	24092614	CERAMIC CHIP CK732B 16V 150000PF K
C341	24214101	CERAMIC DISC, 500V B 100PF K
C342	24214101	CERAMIC DISC, 500V B 100PF K
C362	24591682	PLASTIC FILM, 50V 6800PF J
C370	24666100	ELECTROLYTIC, 10V 10UF M 3A

Location No.	Parts No.	Description
C413	24214392	CERAMIC DISC, 500V B 3900PF K
C416	24676330	ELECTROLYTIC, 100V 33UF M 3A
C417	24214391	CERAMIC DISC, 500V B 390PF K
C418	24667221	ELECTROLYTIC CE04Q, 25V 220UF M 3A
C419	24590102	PLASTIC FILM, 50V 1000PF J
⚠ C428	24503192	PLASTIC FILM, 400V 0.15UF J
C430	24539334	PLASTIC FILM, 50V 0.33UF J
C431	24539104	PLASTIC FILM, 50V 0.1UF J
C432	24666100	ELECTROLYTIC, 10V 10UF M 3A
C439	24503457	PLASTIC FILM CQ92 T 400V 56000PF J
⚠ C442	24503190	PLASTIC FILM, 400V 0.12UF J
⚠ C443	24503348	PLASTIC FILM 1800VH 3900PF H
⚠ C444	24503195	PLASTIC FILM, 1800VH 5100PF H
C445	24095804	PLASTIC FILM, 400V 0.056UF J
C446	24073120	ELECTROLYTIC, 250V 33UF, 250YXF33M
C448	24073118	ELECTROLYTIC, 160V 33UF M
C450	24214222	CERAMIC DISC, 500V B 2200PF K
C451	24214222	CERAMIC DISC, 500V B 2200PF K
C452	24820103	PLASTIC FILM, 630V 0.01UF J
⚠ C461	24820123	PLASTIC FILM, 630V 0.012UF J
C464	24503149	PLASTIC FILM, 250V 3.3UF
C465	24591183	PLASTIC FILM, 50V 0.018UF J
C466	24679220	ELECTROLYTIC, 250V 22UF M 3A
⚠ C467	24820123	PLASTIC FILM, 630V 0.012UF J
C468	24591823	PLASTIC FILM, 50V 0.082UF J
C469	24591821	PLASTIC FILM, 50V 820PF J
C470	24766220	ELECTROLYTIC 04G, 50V 22UF M
C471	24766479	ELECTROLYTIC, 50V 4.7UF M
C472	24539474	PLASTIC FILM, 50V 0.47UF J
C476	24214471	CERAMIC DISC, 500V B 470PF K
C477	24666220	ELECTROLYTIC, 16V 22UF M 3A
C488	24666100	ELECTROLYTIC, 10V 10UF M 3A
C489	24212103	CERAMIC DISC, 50V B 10000PF K
C499	24829333	PLASTIC FILM, 400V 0.033UF J
C603	24669101	ELECTROLYTIC, 50V 100UF M 3A
C605	24109103	CERAMIC CHIP, 50V B 0.01UF K
C607	24797470	ELECTROLYTIC 04G, 50V 47UF M
C613	24666471	ELECTROLYTIC 04Q, 16V 470UF M 3A
C615	24666220	ELECTROLYTIC, 10V 22UF M 3A
C661	24073083	ELECTROLYTIC CE04P 50V 3.3UF M 3A
C662	24073083	ELECTROLYTIC CE04P 50V 3.3UF M 3A





Location No.	Parts No.	Description
CS50	24092538	CERAMIC CHIP, 10V F 1UF Z
CS51	24092538	CERAMIC CHIP, 10V F 1UF Z
CS54	24092538	CERAMIC CHIP, 10V F 1UF Z
CS55	24092538	CERAMIC CHIP, 10V F 1UF Z
CS56	24092538	CERAMIC CHIP, 10V F 1UF Z
CS57	24794470	ELECTROLYTIC, 16V 47UF M
CS64	24794220	ELECTROLYTIC, 16V 22UF M
CV01	24100104	CERAMIC CHIP, 25V F 0.1UF Z
CV15	24092538	CERAMIC CHIP, 10V F 1UF Z
CV16	24794220	ELECTROLYTIC, 16V 22UF M
CV17	24092538	CERAMIC CHIP, 10V F 1UF Z
CV21	24092538	CERAMIC CHIP, 10V F 1UF Z
CV23	24092538	CERAMIC CHIP, 10V F 1UF Z
CV25	24092538	CERAMIC CHIP, 10V F 1UF Z
CV27	24092538	CERAMIC CHIP, 10V F 1UF Z
CV29	24092538	CERAMIC CHIP, 10V F 1UF Z
CV31	24092538	CERAMIC CHIP, 10V F 1UF Z
CV33	24092538	CERAMIC CHIP, 10V F 1UF Z
CV35	24092538	CERAMIC CHIP, 10V F 1UF Z
CV37	24092538	CERAMIC CHIP, 10V F 1UF Z
CV53	24092621	CERAMIC CHIP, 10V B 1UF K
CV57	24794101	ELECTROLYTIC, 16V 100UF M
CV65	24092538	CERAMIC CHIP, 10V F 1UF Z
CV67	24092538	CERAMIC CHIP, 10V F 1UF Z
CV69	24100104	CERAMIC CHIP, 25V F 0.1UF Z
CV70	24794101	ELECTROLYTIC, 16V 100UF M
CV71	24092538	CERAMIC CHIP, 10V F 1UF Z
CV73	24092538	CERAMIC CHIP, 10V F 1UF Z
CV75	24100104	CERAMIC CHIP, 25V F 0.1UF Z
CV76	24092538	CERAMIC CHIP, 10V F 1UF Z
CV79	24092538	CERAMIC CHIP, 10V F 1UF Z
CV81	24109102	CERAMIC CHIP, 50V B 1000PF K
CV82	24109102	CERAMIC CHIP, 50V B 1000PF K
CV100	24794100	ELECTROLYTIC, 16V 10UF M
CV101	24232103	CERAMIC DISC, 50V F 0.01UF Z
CV481	24100104	CERAMIC CHIP, 25V F 0.1UF Z
CV482	24794101	ELECTROLYTIC, 16V 100UF M
CV483	24794471	ELECTROLYTIC, 16V 470UF M
CV701	24100104	CERAMIC CHIP, 25V F 0.1UF Z
CY102	24665221	ELECTROLYTIC CE04Q, 10V 220UF M 3A
CY105	24100102	CERAMIC CHIP, 50V F 1000PF Z
CY160	24815393	CERAMIC CHIP, 50V B 39000PF K
<b>RESISTORS</b>		
R101	24553223	OXIDE METAL FILM, 1W 22K OHM J
R150	24011332	CHIP, METAL FILM, 1/20W 3.3K OHM J
R151	24011562	CHIP, METAL FILM, 1/20W 5.6K OHM J
R152	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
R173	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
R174	24011273	CHIP, 1/20W 27K OHM J
R201	24011750	CHIP, METAL FILM, 1/20W 75 OHM J
R202	24011750	CHIP, METAL FILM, 1/20W 75 OHM J
R203	24011750	CHIP, METAL FILM, 1/20W 75 OHM J
R204	24011750	CHIP, METAL FILM, 1/20W 75 OHM J
R205	24011750	CHIP, METAL FILM, 1/20W 75 OHM J
R206	24011750	CHIP, METAL FILM, 1/20W 75 OHM J
R217	24366103	CARBON FILM, 1/6W 10K OHM J
R218	24366333	CARBON FILM, 1/6W 33K OHM J
R219	24366563	CARBON FILM, 1/6W 56K OHM J
R227	24366273	CARBON FILM, 1/6W 27K OHM J
R228	24366562	CARBON FILM, 1/6W 5.6K OHM J
R303	24552151	OXIDE METAL FILM, 1/2W 150 OHM J
R305	24322109	OXIDE METAL FILM, 1W 1 OHM J
R315	24011274	CHIP, 1/20W 270K OHM J
R316	24011823	CHIP, METAL FILM, 1/20W 82K OHM J
R318	24011101	CHIP, METAL FILM, 1/20W 100 OHM J

Location No.	Parts No.	Description
R319	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
R320	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
R321	24011224	CHIP, METAL FILM, 1/20W 220K OHM J
R322	24011274	CHIP, 1/20W 270K OHM J
R324	24011394	CHIP, 1/20W 390K OHM J
△ R327	24338159	OXIDE METAL FILM, 1W 1.5 OHM J
△ R328	24338159	OXIDE METAL FILM, 1W 1.5 OHM J
R329	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
R330	24011104	CHIP, METAL FILM, 1/20W 100K OHM J
R331	24872823	CHIP, 1/16W 82K OHM J
R332	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
R333	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
R334	24998132	CHIP, 1/16W 1.3K OHM
R335	24011331	CHIP, METAL FILM, 1/20W 330 OHM J
R336	24383151	OXIDE METAL FILM, 2W 150 OHM J
R337	24011223	CHIP, METAL FILM, 1/20W 22K OHM J
R339	24366163	CARBON FILM, 1/6W 16K OHM J
R340	24553820	OXIDE METAL FILM, 1W 82 OHM J
R341	24998152	CHIP, METAL FILM, 1/16W 1.5K OHM
R342	24998153	CHIP, 1/16W 15K OHM
R346	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
R348	24998682	CHIP, 1/16W 6.8K OHM D
R349	24011472	CHIP, METAL FILM, 1/20W 4.7K OHM J
R365	24552122	OXIDE METAL FILM, 1/2W 1.2K OHM J
R366	24011911	CHIP, METAL FILM, 1/20W 910 OHM J
R367	24011682	CHIP, METAL FILM, 1/20W 6.8K OHM J
R368	24003898	METAL FILM, 1/4W 3.3K OHM J
R370	24872103	CHIP, 1/16W 10K OHM J
R371	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
R372	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
R373	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
R374	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
R376	24011471	CHIP, METAL FILM, 1/20W 470 OHM J
R377	24366220	CARBON FILM, 1/6W 22 OHM J
R405	24553682	OXIDE METAL FILM, 1W 6.8K OHM J
R411	24366101	CARBON FILM, 1/6W 100 OHM J
R412	24323228	OXIDE METAL FILM, 2W 0.22 OHM J
R415	24383271	OXIDE METAL FILM, 2W 270 OHM J
R421	24531220	FUSIBLE, 1/2W 22 OHM J
R426	24366222	CARBON FILM, 1/6W 2.2K OHM J
R429	24553100	OXIDE METAL FILM, 1W 10 OHM J
R431	24531220	FUSIBLE, 1/2W 22 OHM J
R435	24367184	CARBON FILM, 1/6W 180K OHM G
R441	24383181	OXIDE METAL FILM, 2W 180 OHM J
R460	24366103	CARBON FILM, 1/6W 10K OHM J
R461	24366102	CARBON FILM, 1/6W 1K OHM J
R462	24366562	CARBON FILM, 1/6W 5.6K OHM J
R463	24366473	CARBON FILM, 1/6W 47K OHM J
R464	24366101	CARBON FILM, 1/6W 100 OHM J
△ R465	24011391	CHIP, 1/20W 390 OHM J
R466	24383220	OXIDE METAL FILM, 2W 22 OHM J
R467	24383220	OXIDE METAL FILM, 2W 22 OHM J
△ R468	24998113	CHIP, 1/16W 11K OHM
R469	24366823	CARBON FILM, 1/6W 82K OHM J
△ R470	24339518	OXIDE METAL FILM, 2W 0.51 OHM J
R471	24381271	OXIDE METAL FILM, 1/2W 270 OHM J
R472	24381270	OXIDE METAL FILM, 1/2W 27 OHM J
R473	24000247	METAL FILM, 1/4W 39K OHM F
R474	24872472	CHIP, 1/16W 4.7K OHM J
R475	24872912	CHIP, 1/16W 9.1K OHM J
R476	24000221	METAL FILM, 1/4W 20K OHM F
R477	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
△ R478	24338109	OXIDE METAL FILM, 1W 1 OHM J
R479	24381131	OXIDE METAL FILM, 1/2W 130 OHM J
R481	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
R482	24011182	CHIP, METAL FILM, 1/20W 1.8K OHM J

Location No.	Parts No.	Description
R489	24011563	CHIP, METAL FILM, 1/20W 56K OHM J
R494	24367224	CARBON FILM, 1/6W 220K OHM G
R604	24000445	CHIP JUMPER, 1608TYPE
R605	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
R606	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
R607	24366561	CARBON FILM, 1/6W 560 OHM J
R609	24000445	CHIP JUMPER, 1608TYPE
R610	24000445	CHIP JUMPER, 1608TYPE
R612	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
R613	24011224	CHIP, METAL FILM, 1/20W 220K OHM J
R614	24011222	CHIP, METAL FILM, 1/20W 2.2K OHM J
R615	24011472	CHIP, METAL FILM, 1/20W 4.7K OHM J
R616	24011472	CHIP, METAL FILM, 1/20W 4.7K OHM J
R650	24011822	CHIP, METAL FILM, 1/20W 8.2K OHM J
R651	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
R653	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
R661	24011562	CHIP, METAL FILM, 1/20W 5.6K OHM J
R662	24011562	CHIP, METAL FILM, 1/20W 5.6K OHM J
R663	24011122	CHIP, METAL FILM, 1/20W 1.2K OHM J
R664	24011122	CHIP, METAL FILM, 1/20W 1.2K OHM J
R671	24366229	CARBON FILM, 1/6W 2.2 OHM J
R672	24366229	CARBON FILM, 1/6W 2.2 OHM J
R680	24011104	CHIP, METAL FILM, 1/20W 100K OHM J
R681	24011104	CHIP, METAL FILM, 1/20W 100K OHM J
R685	24011473	CHIP, METAL FILM, 1/20W 47K OHM J
R687	24011113	CHIP, METAL FILM, 1/20W 11K OHM J
R688	24000445	CHIP JUMPER, 1608TYPE
R693	24011333	CHIP, METAL FILM, 1/20W 33K OHM J
R694	24011333	CHIP, METAL FILM, 1/20W 33K OHM J
R697	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
R702	24552221	OXIDE METAL FILM, 1/2W 220 OHM J
R709	24366563	CARBON FILM, 1/6W 56K OHM J
R713	24366393	CARBON FILM, 1/6W 39K OHM J
R715	24366273	CARBON FILM, 1/6W 27K OHM J
R716	24366273	CARBON FILM, 1/6W 27K OHM J
R717	24366333	CARBON FILM, 1/6W 33K OHM J
R718	24366222	CARBON FILM, 1/6W 2.2K OHM J
R719	24366101	CARBON FILM, 1/6W 100 OHM J
R720	24366102	CARBON FILM, 1/6W 1K OHM J
R721	24366101	CARBON FILM, 1/6W 100 OHM J
R722	24552471	OXIDE METAL FILM, 1/2W 470 OHM J
R723	24366101	CARBON FILM, 1/6W 100 OHM J
R724	24366101	CARBON FILM, 1/6W 100 OHM J
R725	24366182	CARBON FILM, 1/6W 1.8K OHM J
R730	24552100	OXIDE METAL FILM, 1/2W 10 OHM J
R731	24552331	OXIDE METAL FILM, 1/2W 330 OHM J
R732	24366330	CARBON FILM, 1/6W 33 OHM J
R733	24366683	CARBON FILM, 1/6W 68K OHM J
R734	24366330	CARBON FILM, 1/6W 33 OHM J
R735	24366683	CARBON FILM, 1/6W 68K OHM J
R736	24553470	OXIDE METAL FILM, 1W 47 OHM J
R737	24366681	CARBON FILM, 1/6W 680 OHM J
R738	24366102	CARBON FILM, 1/6W 1K OHM J
R739	24366681	CARBON FILM, 1/6W 680 OHM J
R740	24553470	OXIDE METAL FILM, 1W 47 OHM J
R741	24322229	OXIDE METAL FILM, 1W 2.2 OHM J
R742	24322229	OXIDE METAL FILM, 1W 2.2 OHM J
R743	24554181	OXIDE METAL FILM, 2W 180 OHM J
R744	24366122	CARBON FILM, 1/6W 1.2K OHM J
R745	24366122	CARBON FILM, 1/6W 1.2K OHM J
△ R808	24019493	THERMISTOR, PTC, AC140V 1.5 OHM M
△ R810	24045007	CEMENT 20W 1.2 J
R814	24366102	CARBON FILM, 1/6W 1K OHM J
R818	24007723	CEMENT 15W 27 J
R820	24004942	METAL FILM, 1W 0.1 OHM J
R821	24381330	OXIDE FILM 1/2W 33 J

Location No.	Parts No.	Description
R823	24366102	CARBON FILM, 1/6W 1K OHM J
R829	24004942	METAL FILM, 1W 0.1 OHM J
R832	24339568	OXIDE METAL FILM, 2W 0.56 OHM J
R834	24011222	CHIP, METAL FILM, 1/20W 2.2K OHM J
R835	24552471	OXIDE METAL FILM, 1/2W 470 OHM J
R840	24552562	OXIDE METAL FILM, 1/2W 5.6K OHM J
R841	24366102	CARBON FILM, 1/6W 1K OHM J
R842	24376563	CARBON FILM, 1/2W 56K OHM J
R843	24011473	CHIP, METAL FILM, 1/20W 47K OHM J
R844	24366103	CARBON FILM, 1/6W 10K OHM J
R845	24376563	CARBON FILM, 1/2W 56K OHM J
R861	24553153	OXIDE METAL FILM, 1W 15K OHM J
R883	24011331	CHIP, METAL FILM, 1/20W 330 OHM J
R884	24011471	CHIP, METAL FILM, 1/20W 470 OHM J
R885	24011222	CHIP, METAL FILM, 1/20W 2.2K OHM J
R886	24011331	CHIP, METAL FILM, 1/20W 330 OHM J
R899	24004717	METAL GLAZE, 1/2W 3.9M OHM J
R901	24946561	CARBON COMPOSITION, 1/2W 560 OHM K
R902	24946561	CARBON COMPOSITION, 1/2W 560 OHM K
R903	24946561	CARBON COMPOSITION, 1/2W 560 OHM K
R904	24366472	CARBON FILM, 1/6W 4.7K OHM J
R905	24366150	CARBON FILM, 1/6W 15 OHM J
R912	24366102	CARBON FILM, 1/6W 1K OHM J
R914	24366151	CARBON FILM, 1/6W 150 OHM J
R915	24366470	CARBON FILM, 1/6W 47 OHM J
R916	24366180	CARBON FILM, 1/6W 18 OHM J
R917	24366431	CARBON FILM, 1/6W 430 OHM J
R918	24366240	CARBON FILM, 1/6W 24 OHM J
R919	24366102	CARBON FILM, 1/6W 1K OHM J
R920	24000883	FUSIBLE, 1W 3.6 OHM J
R921	24366151	CARBON FILM, 1/6W 150 OHM J
R922	24366470	CARBON FILM, 1/6W 47 OHM J
R924	24366220	CARBON FILM, 1/6W 22 OHM J
R925	24366431	CARBON FILM, 1/6W 430 OHM J
R926	24366102	CARBON FILM, 1/6W 1K OHM J
R928	24366151	CARBON FILM, 1/6W 150 OHM J
R929	24366470	CARBON FILM, 1/6W 47 OHM J
R930	24366180	CARBON FILM, 1/6W 18 OHM J
R932	24366332	CARBON FILM, 1/6W 3.3K OHM J
R933	24545829	FUSIBLE, 1/4W 8.2 OHM J
R934	24366391	CARBON FILM, 1/6W 390 OHM J
R935	24366122	CARBON FILM, 1/6W 1.2K OHM J
R937	24366431	CARBON FILM, 1/6W 430 OHM J
R939	24366100	CARBON FILM, 1/6W 10 OHM J
R942	24366392	CARBON FILM, 1/6W 3.9K OHM J
R943	24366392	CARBON FILM, 1/6W 3.9K OHM J
R944	24366392	CARBON FILM, 1/6W 3.9K OHM J
R945	24366180	CARBON FILM, 1/6W 18 OHM J
R946	24366180	CARBON FILM, 1/6W 18 OHM J
R952	24366622	CARBON FILM, 1/6W 6.2K OHM J
R953	24366622	CARBON FILM, 1/6W 6.2K OHM J
R954	24366622	CARBON FILM, 1/6W 6.2K OHM J
R960	24383153	OXIDE METAL FILM, 2W 15K OHM J
R961	24383153	OXIDE METAL FILM, 2W 15K OHM J
R962	24383153	OXIDE METAL FILM, 2W 15K OHM J
R963	24383153	OXIDE METAL FILM, 2W 15K OHM J
R964	24383153	OXIDE METAL FILM, 2W 15K OHM J
R965	24383153	OXIDE METAL FILM, 2W 15K OHM J
R977	24366561	CARBON FILM, 1/6W 560 OHM J
R978	24383153	OXIDE METAL FILM, 2W 15K OHM J
R979	24383153	OXIDE METAL FILM, 2W 15K OHM J
R980	24366471	CARBON FILM, 1/6W 470 OHM J
R981	24366471	CARBON FILM, 1/6W 470 OHM J
R982	24366682	CARBON FILM, 1/6W 6.8K OHM J
R983	24366222	CARBON FILM, 1/6W 2.2K OHM J
R984	24367821	CARBON FILM, 1/6W 820 OHM G

Location No.	Parts No.	Description
R985	24367471	CARBON FILM, 1/6W 470 OHM G
R986	24367681	CARBON FILM, 1/6W 680 OHM G
R987	24367681	CARBON FILM, 1/6W 680 OHM G
R988	24367472	CARBON FILM, 1/6W 4.7K OHM G
R989	24367472	CARBON FILM, 1/6W 4.7K OHM G
R990	24366561	CARBON FILM, 1/6W 560 OHM J
R991	24367391	CARBON FILM, 1/6W 390 OHM G
R992	24366150	CARBON FILM, 1/6W 15 OHM J
R993	24383153	OXIDE METAL FILM, 2W 15K OHM J
R994	24383153	OXIDE METAL FILM, 2W 15K OHM J
R995	24383153	OXIDE METAL FILM, 2W 15K OHM J
R996	24383153	OXIDE METAL FILM, 2W 15K OHM J
R3330	24011222	CHIP, METAL FILM, 1/20W 2.2K OHM J
R3340	24011222	CHIP, METAL FILM, 1/20W 2.2K OHM J
R3901	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
R3902	24011133	CHIP, METAL FILM, 1/20W 13K OHM J
R3903	24011682	CHIP, METAL FILM, 1/20W 6.8K OHM J
R3904	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
R4111	24019259	FUSIBLE, 1/4W 27 OHM G
R4310	24011183	CHIP, METAL FILM, 1/20W 18K OHM J
R4461	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
R4500	24321229	OXIDE METAL FILM, 1/2W 2.2 OHM J
R4501	24553470	OXIDE METAL FILM, 1W 47 OHM J
R4504	24553470	OXIDE METAL FILM, 1W 47 OHM J
R4560	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
R4562	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
R4563	24011752	CHIP, METAL FILM, 1/20W 7.5K OHM J
R4564	24011183	CHIP, METAL FILM, 1/20W 18K OHM J
R4620	24998333	CHIP, 1/16W 33K OHM
R4630	24011183	CHIP, METAL FILM, 1/20W 18K OHM J
△ R4670	24998472	CHIP, 1/16W 4.7K OHM
R4690	24872103	CHIP, 1/16W 10K OHM J
R4691	24872242	CHIP, 1/16W 2.4K OHM J
R4692	24872471	CHIP, 1/16W 470 OHM J
R4693	24552331	OXIDE METAL FILM, 1/2W 330 OHM J
R4700	24011274	CHIP, 1/20W 270K OHM J
R4701	24011474	CHIP, METAL FILM, 1/20W 470K OHM J
R4702	24011271	CHIP, 1/20W 270 OHM J
R4703	24011473	CHIP, METAL FILM, 1/20W 47K OHM J
R4710	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
R4711	24011471	CHIP, METAL FILM, 1/20W 470 OHM J
R4712	24011471	CHIP, METAL FILM, 1/20W 470 OHM J
R4713	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
R4714	24011471	CHIP, METAL FILM, 1/20W 470 OHM J
R4715	24011471	CHIP, METAL FILM, 1/20W 470 OHM J
R4717	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
R4718	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
R4799	24872103	CHIP, 1/16W 10K OHM J
RA71	24366273	CARBON FILM, 1/6W 27K OHM J
RA72	24366153	CARBON FILM, 1/6W 15K OHM J
RA73	24366822	CARBON FILM, 1/6W 8.2K OHM J
RA76	24366822	CARBON FILM, 1/6W 8.2K OHM J
RA77	24366153	CARBON FILM, 1/6W 15K OHM J
RB11	24366271	CARBON FILM, 1/6W 270 OHM J
RB12	24366103	CARBON FILM, 1/6W 10K OHM J
RB13	24366470	CARBON FILM, 1/6W 47 OHM J
RB20	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
RB21	24366104	CARBON FILM, 1/6W 100K OHM J
RB31	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
RC01	24000445	CHIP JUMPER, 1608TYPE
RC02	24000445	CHIP JUMPER, 1608TYPE
RC03	24000445	CHIP JUMPER, 1608TYPE
RC04	24000445	CHIP JUMPER, 1608TYPE
RC05	24000445	CHIP JUMPER, 1608TYPE
RC06	24000445	CHIP JUMPER, 1608TYPE
RC07	24011102	CHIP, METAL FILM, 1/20W 1K OHM J

Location No.	Parts No.	Description
RC08	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RC09	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RC10	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RC11	24000445	CHIP JUMPER, 1608TYPE
RC12	24000445	CHIP JUMPER, 1608TYPE
RJ01	24000633	METAL FILM, 1/4W 10K OHM F
RJ02	24000356	METAL FILM, 1/4W 820 OHM F
RJ03	24366512	CARBON FILM, 1/6W 5.1K OHM J
RJ05	24310159	OXIDE METAL FILM, 1/2W 1.5 OHM J
RJ06	24382471	OXIDE METAL FILM, 1W 470 OHM J
RJ07	24310109	OXIDE METAL FILM, 1/2W 1 OHM J
RJ08	24366102	CARBON FILM, 1/6W 1K OHM J
RJ09	24366102	CARBON FILM, 1/6W 1K OHM J
RJ10	24366102	CARBON FILM, 1/6W 1K OHM J
RS01	24011333	CHIP, METAL FILM, 1/20W 33K OHM J
RS02	24011333	CHIP, METAL FILM, 1/20W 33K OHM J
RS03	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RS04	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RS05	24011822	CHIP, METAL FILM, 1/20W 8.2K OHM J
RS06	24011822	CHIP, METAL FILM, 1/20W 8.2K OHM J
RS07	24011333	CHIP, METAL FILM, 1/20W 33K OHM J
RS08	24011333	CHIP, METAL FILM, 1/20W 33K OHM J
RS13	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RS14	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RS21	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
RS25	24011104	CHIP, METAL FILM, 1/20W 100K OHM J
RS26	24011104	CHIP, METAL FILM, 1/20W 100K OHM J
RS31	24011104	CHIP, METAL FILM, 1/20W 100K OHM J
RS32	24011104	CHIP, METAL FILM, 1/20W 100K OHM J
RS33	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
RS34	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
RS40	24011562	CHIP, METAL FILM, 1/20W 5.6K OHM J
RS41	24011562	CHIP, METAL FILM, 1/20W 5.6K OHM J
RS42	24011562	CHIP, METAL FILM, 1/20W 5.6K OHM J
RS43	24011562	CHIP, METAL FILM, 1/20W 5.6K OHM J
RS44	24011562	CHIP, METAL FILM, 1/20W 5.6K OHM J
RS45	24011562	CHIP, METAL FILM, 1/20W 5.6K OHM J
RS46	24011562	CHIP, METAL FILM, 1/20W 5.6K OHM J
RS47	24011562	CHIP, METAL FILM, 1/20W 5.6K OHM J
RS48	24011562	CHIP, METAL FILM, 1/20W 5.6K OHM J
RS49	24011562	CHIP, METAL FILM, 1/20W 5.6K OHM J
RS50	24011562	CHIP, METAL FILM, 1/20W 5.6K OHM J
RS51	24011562	CHIP, METAL FILM, 1/20W 5.6K OHM J
RS54	24000445	CHIP JUMPER, 1608TYPE
RS55	24011562	CHIP, METAL FILM, 1/20W 5.6K OHM J
RS56	24011562	CHIP, METAL FILM, 1/20W 5.6K OHM J
RS57	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
RS58	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RS59	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RS64	24011682	CHIP, METAL FILM, 1/20W 6.8K OHM J
RS65	24011182	CHIP, METAL FILM, 1/20W 1.8K OHM J
RS66	24011100	CHIP, METAL FILM, 1/20W 10 OHM J
RS67	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RS68	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RS69	24011222	CHIP, METAL FILM, 1/20W 2.2K OHM J
RS70	24011222	CHIP, METAL FILM, 1/20W 2.2K OHM J
RS71	24092795	CERAMIC CHIP CK73B 6.3V 2.2UP K
RS72	24092795	CERAMIC CHIP CK73B 6.3V 2.2UP K
RS73	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
RS74	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
RS76	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RS77	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RV01	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RV02	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
RV021	24011104	CHIP, METAL FILM, 1/20W 100K OHM J
RV022	24011104	CHIP, METAL FILM, 1/20W 100K OHM J





Location No.	Parts No.	Description
D475	23118510	DIODE, ZENER, RD12ES
D476	23118859	DIODE, 1SS133
D481	23118859	DIODE, 1SS133
△D484	23115774	DIODE, ZENER, RD6.2E(FA-1)
D485	23118516	DIODE, ZENER, RD9.1ES B3
D490	23118859	DIODE, 1SS133
D601	23316740	DIODE, ZENER, MTZ J 22D
D612	23118041	DIODE, MA111
D613	23118041	DIODE, MA111
D614	23118041	DIODE, MA111
D660	23118041	DIODE, MA111
D661	23118041	DIODE, MA111
D662	23118041	DIODE, MA111
D670	23118041	DIODE, MA111
D671	23118041	DIODE, MA111
D674	23118041	DIODE, MA111
D675	23118041	DIODE, MA111
D698	23118041	DIODE, MA111
D704	23118859	DIODE, 1SS133
D705	23118859	DIODE, 1SS133
D715	23118859	DIODE, 1SS133
D721	23118859	DIODE, 1SS133
△D801	23316393	DIODE, VRM=600V IO=6A SIP D5SB60, 4009 F05
D805	23118859	DIODE, 1SS133
D806	23357366	DIODE, FR105-B5
D807	23118859	DIODE, 1SS133
D809	23316746	DIODE, ZENER, MTZJ27B
△D811	23357365	DIODE, 1N4004A-B5
△D812	23357365	DIODE, 1N4004A-B5
△D813	23357365	DIODE, 1N4004A-B5
△D814	23357365	DIODE, 1N4004A-B5
D841	23316673	DIODE, ZENER, MTZJ5.6C
D842	23316665	DIODE, ZENER, MTZJ4.7A
D843	23118094	DIODE, EU2A
D845	23118859	DIODE, 1SS133
D846	23118633	DIODE, ZENER, RD3.0ES B2
D847	23118633	DIODE, ZENER, RD3.0ES B2
D848	23118859	DIODE, 1SS133
D855	23118859	DIODE, 1SS133
D883	23316803	DIODE, FMU-G16S
D885	23316714	DIODE, RL2Z
D891	23316768	DIODE, FMB-26L
D892	23357042	DIODE, FMX-12S(023-108)
△D899	24019485	VARIATOR, TNR10V431K
D901	23118859	DIODE, 1SS133
D904	23118859	DIODE, 1SS133
D905	23118859	DIODE, 1SS133
D906	23118859	DIODE, 1SS133
D907	23118859	DIODE, 1SS133
D908	23118859	DIODE, 1SS133
D909	23118859	DIODE, 1SS133
D911	23357366	DIODE, FR105-B5
D931	23118859	DIODE, 1SS133
D932	23118859	DIODE, 1SS133
D933	23118859	DIODE, 1SS133
D934	23118859	DIODE, 1SS133
D941	23118859	DIODE, 1SS133
D942	23118859	DIODE, 1SS133
D943	23118859	DIODE, 1SS133
D946	23118859	DIODE, 1SS133
D963	23118859	DIODE, 1SS133
D964	23118859	DIODE, 1SS133
D965	23118859	DIODE, 1SS133
D966	23118859	DIODE, 1SS133
D4466	23316753	DIODE, ZENER, MTZJ33A
D8851	23316714	DIODE, RL2Z

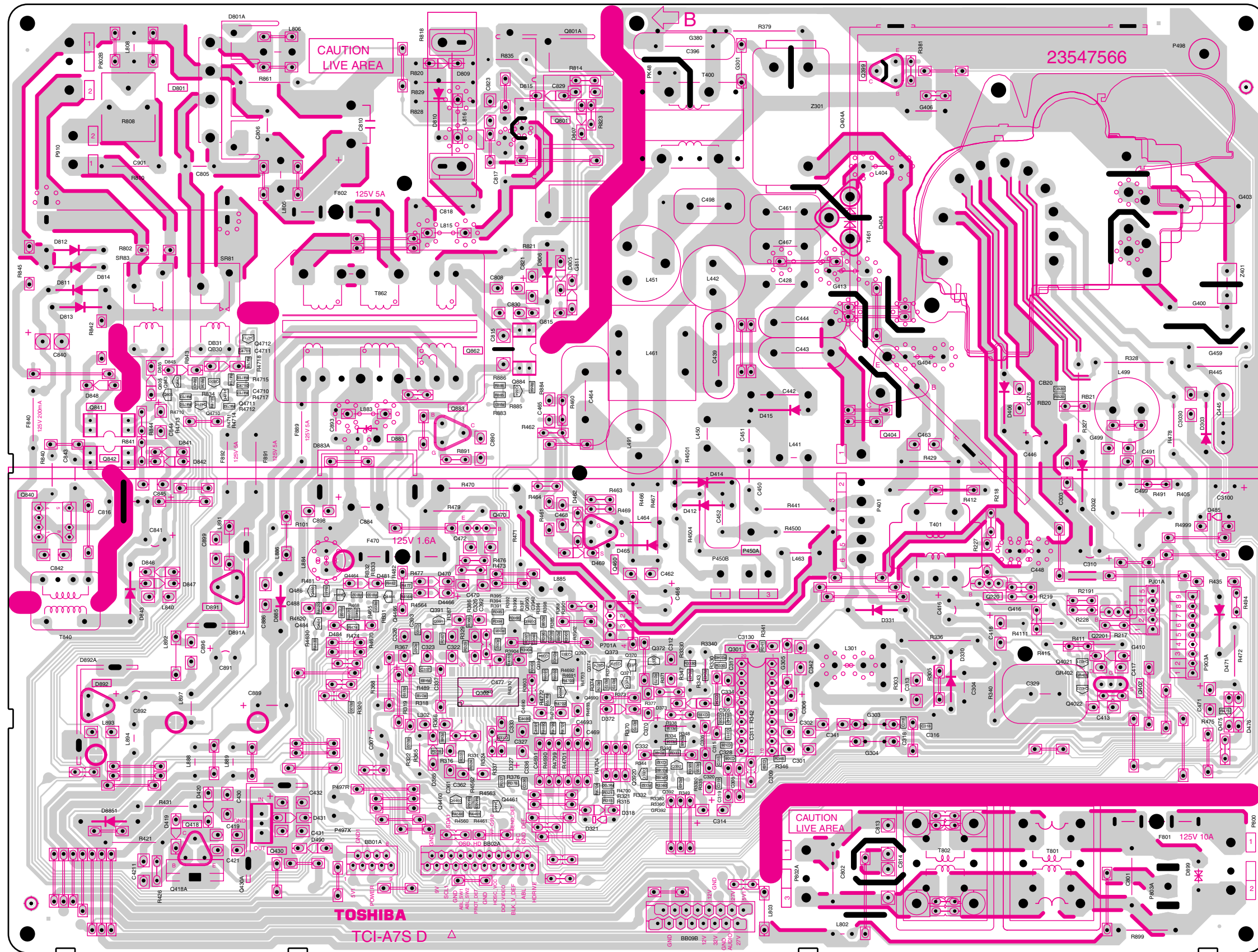
Location No.	Parts No.	Description
D8852	23316714	DIODE, RL2Z
DB01	23358564	DIODE, LED, SLR-56VC3FPQ
DB03	23358522	DIODE, LED, SIR-56SB3F
DB05	23118538	DIODE, ZENER, RD6.2ESA B2
DB30	23316792	DIODE, SC215
DB31	23118859	DIODE, 1SS133 @U002
	23118859	DIODE, 1SS133 @UA02
DB36	23118529	DIODE, ZENER, RD5.6ES B2
DB37	23118529	DIODE, ZENER, RD5.6ES B2
DV70	23316591	DIODE, ZENER, MA8100-M
DV76	23316591	DIODE, ZENER, MA8100-M
KB01	23000852	IC, REMOTE PHOTO RECEIVER, PIC-37043TE2
<b>MISCELLANEOUS</b>		
B110	23940020	PIECE, BACK TERMINAL BOARD 34H 34HF84
B112	23940059	PIECE, COVER(BTB) 34HF84
B251	23845859	HOLDER, WIRE, PVC-C0AT, L=70MM
BB03A	23713201	CONNECTOR, PLUG B-B 16P
BB04A	23713201	CONNECTOR, PLUG B-B 16P
BB05A	23713201	CONNECTOR, PLUG B-B 16P
BB06A	23713201	CONNECTOR, PLUG B-B 16P
BB07A	23713201	CONNECTOR, PLUG B-B 16P
BB08A	23713201	CONNECTOR, PLUG B-B 16P
BB09A	23713201	CONNECTOR, PLUG B-B 16P
BB09B	23713202	CONNECTOR, SOCKET B-B 16P
D404B	70391355	SCREW, BIND HEAD TAP-TITE B, BITTB 3X8 SZN
D404E	23960136	ADHESIVE, SILICONE, TSE3843-W
D801B	70391355	SCREW, BIND HEAD TAP-TITE B, BITTB 3X8 SZN
D883B	70391355	SCREW, BIND HEAD TAP-TITE B, BITTB 3X8 SZN
D891B	70391355	SCREW, BIND HEAD TAP-TITE B, BITTB 3X8 SZN
D892B	70391355	SCREW, BIND HEAD TAP-TITE B, BITTB 3X8 SZN
E931	23974994	BAND, KESSOKU
△F470	23144854	FUSE
F470A	23165433	FUSE HOLDER, 5.2 SOC
F470B	23165433	FUSE HOLDER, 5.2 SOC
△F801	23144518	FUSE, CARTRIDGE, 125V 10A
F801A	23165433	FUSE HOLDER, 5.2 SOC
F801B	23165433	FUSE HOLDER, 5.2 SOC
△F802	23144682	FUSE, 125V 5.0A, CARTRIDGE 5X20
F802A	23165433	FUSE HOLDER, 5.2 SOC
F802B	23165433	FUSE HOLDER, 5.2 SOC
△F840	23144581	FUSE, AXIAL, 125V 200MA
△F889	23144715	FUSE, AXIAL 125V 5.0A
△F891	23144715	FUSE, AXIAL 125V 5.0A
△F892	23144715	FUSE, AXIAL 125V 5.0A
G101	24011151	CHIP, METAL FILM, 1/20W 150 OHM J
G102	24011151	CHIP, METAL FILM, 1/20W 150 OHM J
G303	23103248	FERRITR CHOKE, TEM2014AA
G304	23103248	FERRITR CHOKE, TEM2014AA
G305	23103145	FERRITE CHOKE, TEM2011AA
G400	24946561	CARBON COMPOSITION, 1/2W 560 OHM K
G403	24946223	CARBON COMPOSITION GF 1/2W 22K K
G404	23103145	FERRITE CHOKE, TEM2011AA
G410	23316731	DIODE, ZENER, MTZJ18B
G416	24382820	OXIDE METAL FILM, 1W 82 OHM J
G499	24503361	PLASTIC FILM CQ921 M 100V 1200PF J
G811	23118859	DIODE, 1SS133
G815	24366332	CARBON FILM, 1/6W 3.3K OHM J
GJ105	24000445	CHIP JUMPER, 1608TYPE
GJ107	24000445	CHIP JUMPER, 1608TYPE
GJ108	24000445	CHIP JUMPER, 1608TYPE
GJ170	24000445	CHIP JUMPER, 1608TYPE
GR103	24000445	CHIP JUMPER, 1608TYPE
GR392	24000445	CHIP JUMPER, 1608TYPE
GR650	24000445	CHIP JUMPER, 1608TYPE
GRS06	24000445	CHIP JUMPER, 1608TYPE

Location No.	Parts No.	Description
△ H002	23148082	IF MODULE, US BUFFER 6M_TRAP MVUS51A
H003	23124087	ANTENNA SWITCH, RSU135X1, 2I3O BUNPAI US
H003A	23740989	NUT, F-CONNECTOR 2H BS
J401A	23960136	ADHESIVE, SILICONE, TSE3843-W
M461A	23192957	ANODE CAP ASSY, TCC5602AT
M461B	23505090	CABLE, CABLE FOCUS
M461C	23505089	CABLE, FOCUS
M461D	23504719	CABLE, SCREEN
P105	23368578	CONNECTOR, PLUG 4P, 2.5MM G JST-EH, B4B-EH-F1-TV4
P602	23368578	CONNECTOR, PLUG 4P, 2.5MM G JST-EH, B4B-EH-F1-TV4
P701A	23368578	CONNECTOR, PLUG 4P, 2.5MM G JST-EH, B4B-EH-F1-TV4
P701B	23368578	CONNECTOR, PLUG 4P, 2.5MM G JST-EH, B4B-EH-F1-TV4
P703B	23368577	CONNECTOR, PLUG, 3P 2.5MM G JST-EH, B3B-EH-F1-TV4
△ P801	23372115	POWER CORD, U/C 125V10A HSV 4 CMC-02P 3
P801A	23103778	FERRITE CORE, TFE1008
P902B	23367068	CONNECTOR, PLUG 8P, 2.5MM G JST-EH B8B-EH-F1-TV4
P903A	23367069	CONNECTOR, PLUG, NP 2.5MM G JST-EH, B9B-EH-F1A
P903B	23367069	CONNECTOR, PLUG, NP 2.5MM G JST-EH, B9B-EH-F1A
P910	23164725	CONNECTOR, PLUG 2P @U002
	23845834	LEAD CLAMPER
PB01A	23368580	CONNECTOR, PLUG 6P, 2.5MM G JST-EH B6B-EH-F1-TV4
PJ01A	23368579	CONNECTOR, PLUG 5P, 2.5MM G JST-EH, B5B-EH-F1-TV4
PJ01B	23368579	CONNECTOR, PLUG 5P, 2.5MM G JST-EH, B5B-EH-F1-TV4
PJ901	23368577	CONNECTOR, PLUG, 3P 2.5MM G JST-EH, B3B-EH-F1-TV4
PV01	23023094	JACK, PIN 1S6P SMK LAP5120-0205FC
PV02	23365819	JACK, 1S3P @UA01
	23023096	JACK, PIN 10P SMK LAP5120-0401FC @U005
PV05	23023229	JACK, PIN 7P SMK LAP5120-0421F
PV12	23368578	CONNECTOR, PLUG 4P, 2.5MM G JST-EH, B4B-EH-F1-TV4
PV13	23367069	CONNECTOR, PLUG, NP 2.5MM G JST-EH, B9B-EH-F1A
PV14	23367068	CONNECTOR, PLUG 8P, 2.5MM G JST-EH B8B-EH-F1-TV4
PV15	23368577	CONNECTOR, PLUG, 3P 2.5MM G JST-EH, B3B-EH-F1-TV4
Q404D	70391355	SCREW, BIND HEAD TAP-TITE B, BITTB 3X8 SZN
Q418B	70391355	SCREW, BIND HEAD TAP-TITE B, BITTB 3X8 SZN
Q430B	70391355	SCREW, BIND HEAD TAP-TITE B, BITTB 3X8 SZN
Q670B	70391355	SCREW, BIND HEAD TAP-TITE B, BITTB 3X8 SZN
Q831B	70391355	SCREW, BIND HEAD TAP-TITE B, BITTB 3X8 SZN
Q832B	70391355	SCREW, BIND HEAD TAP-TITE B, BITTB 3X8 SZN
Q833B	70391355	SCREW, BIND HEAD TAP-TITE B, BITTB 3X8 SZN
Q834B	70391355	SCREW, BIND HEAD TAP-TITE B, BITTB 3X8 SZN
QJ02B	70391355	SCREW, BIND HEAD TAP-TITE B, BITTB 3X8 SZN
SA01	23145227	SWITCH, PUSH, 1C1P
SA02	23145227	SWITCH, PUSH, 1C1P
SA03	23145227	SWITCH, PUSH, 1C1P
SA04	23145227	SWITCH, PUSH, 1C1P
SA05	23344335	SWITCH
SA06	23145227	SWITCH, PUSH, 1C1P
SA07	23145227	SWITCH, PUSH, 1C1P
△ SR81	23146574	RELAY, DLS5D1-O(M) 0.15W
△ SR83	23146564	RELAY, DC12V, TV5, DG-3
△ V901A	23903145	SOCKET, CRT, WFOCUS ISD35SE INCHANG ISD-35S-E
W661	23351156	SPEAKER, SPK1410AM, 60X120 8-OHM 10W
W662	23351156	SPEAKER, SPK1410AM, 60X120 8-OHM 10W
Z401	23140203	SPARK GAP, 2.0-3.0KV C-010, AG20PC152F-L3N
<b>PC BOARD ASSEMBLIES</b>		
* U001	23148104	HYPER SIGNAL MODUL, MHSU01
* U002	23761894	PC BOARD ASSY, POW/DEF PD1706A
* U004	23761895	PC BOARD ASSY, CRT-D/S PD1707A
* U005	23761896	PC BOARD ASSY, AV TERMINAL PD1708A
* UA01	23761897	PC BOARD ASSY, CONT PD1709-1
* UA02	23761898	PC BOARD ASSY, LED PD1709-2
* UV02	23148055	SCAN CONVERTER MODUL, 03DVI MHDM01
<b>PICTURE TUBE</b>		
△ V901	23324106	PICTURE TUBE, 34VPF MTPD ITC W86MAG183X30

Location No.	Parts No.	Description
<b>TUNER</b>		
△ H001	23321470	TUNER, US181CH IIC PH 5V SANYO ELA52LX4
△ HY01	23321480	TUNER, TIF US IIC PH 181CH 5V ENG36A18GF
<b>ACCESSORIES</b>		
A701	23067637	CARTON, CARTON TNP 34HF84
A703	23946748	PACKING, TOP PACKING 34HF84
A708	23946749	PACKING, BOTTOM PACKING 34HF84
△ K912	23306497	REMOCON HAND UNIT IR, CTVUSA CT-90159
△ Y101	23566340	OWNERS MANUAL, ENGLISH/FRENCH 34HF84
<b>CABINET PARTS</b>		
△ A201	23532718	COVER, F.CVR.ASSY 34HF84
A286	23845834	LEAD CLAMPER
A302	23538478	MARK, TOSHIBA MARK W=56 36DX100
A303	23929741	PIECE, HOLDER BUTTON 32D3000
A401	23532912	COVER, BACK COVER ASSY 34HF84
A902	23428287	DOOR, 34HF84
A903	23451976	PUSH CATCH, CLICK
A904	23445824	BUTTON, BUTTON POWER FACE 34HF84
A904B	23445721	BUTTON, BUTTON POWER REAR 32D4000

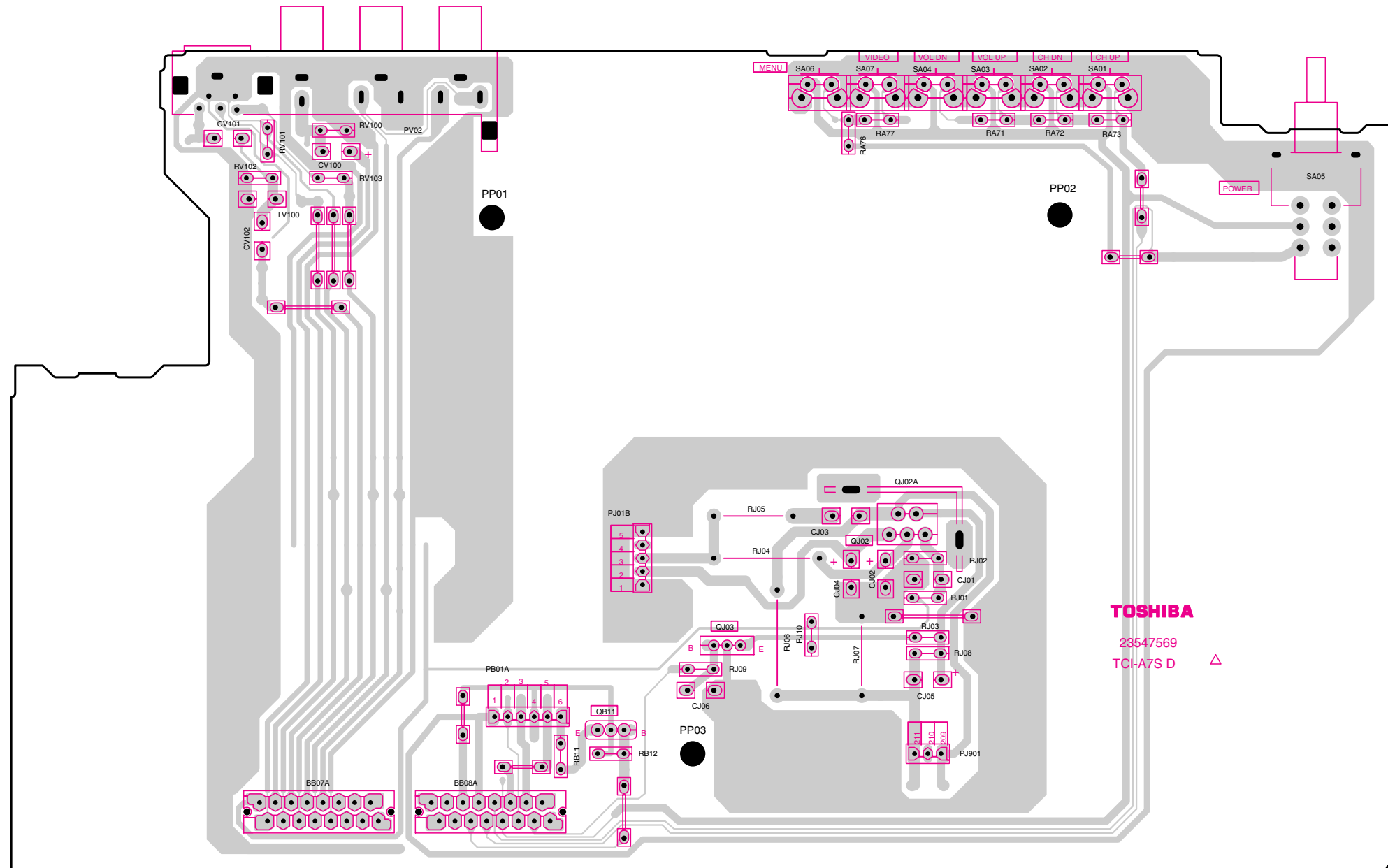
# POWER/DEF BOARD PD1706A (U002)

BOTTOM (FOIL SIDE)



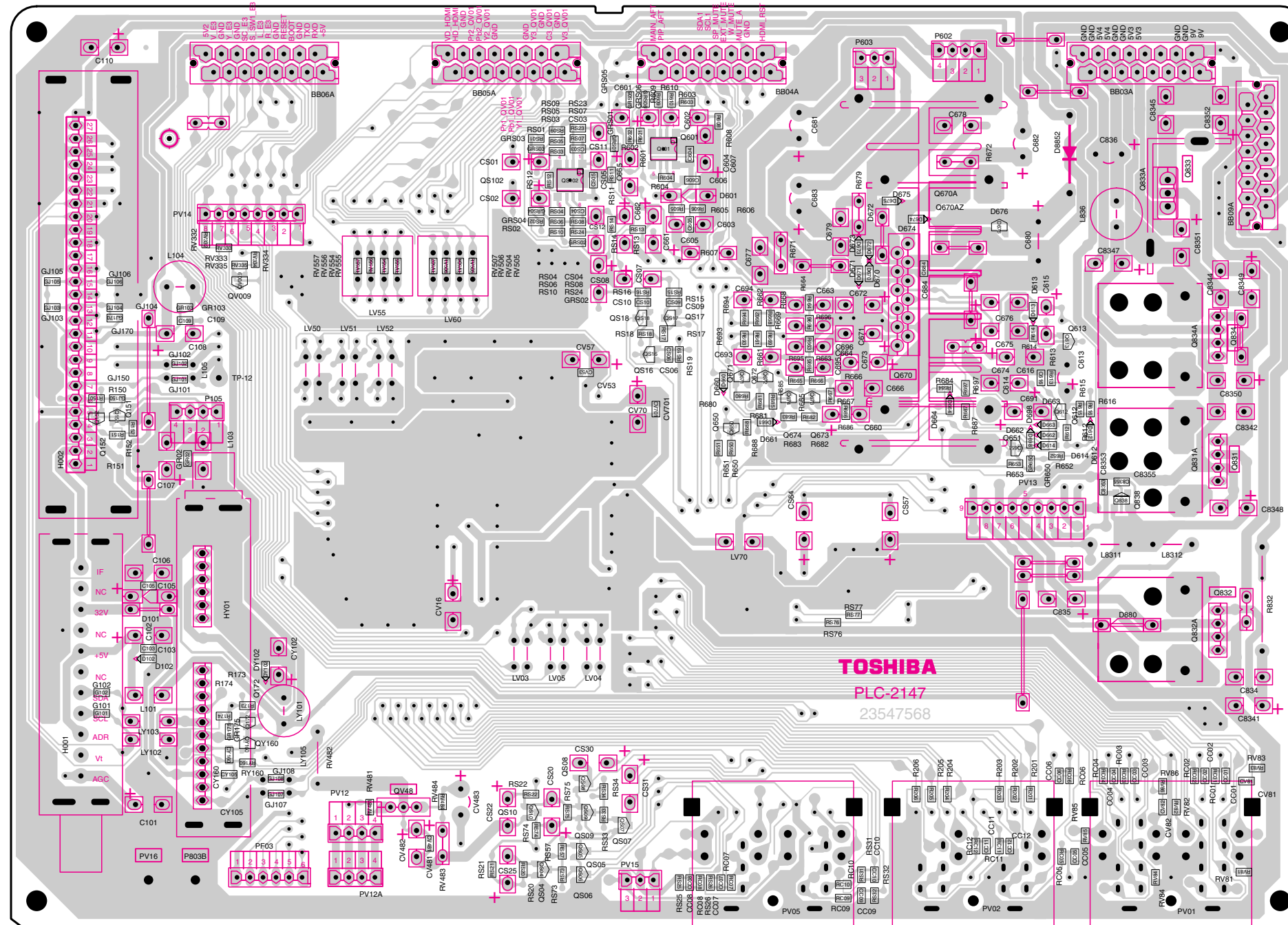


**CONT BOARD PD1709-1 (UA01)**  
**BOTTOM (FOIL) SIDE**



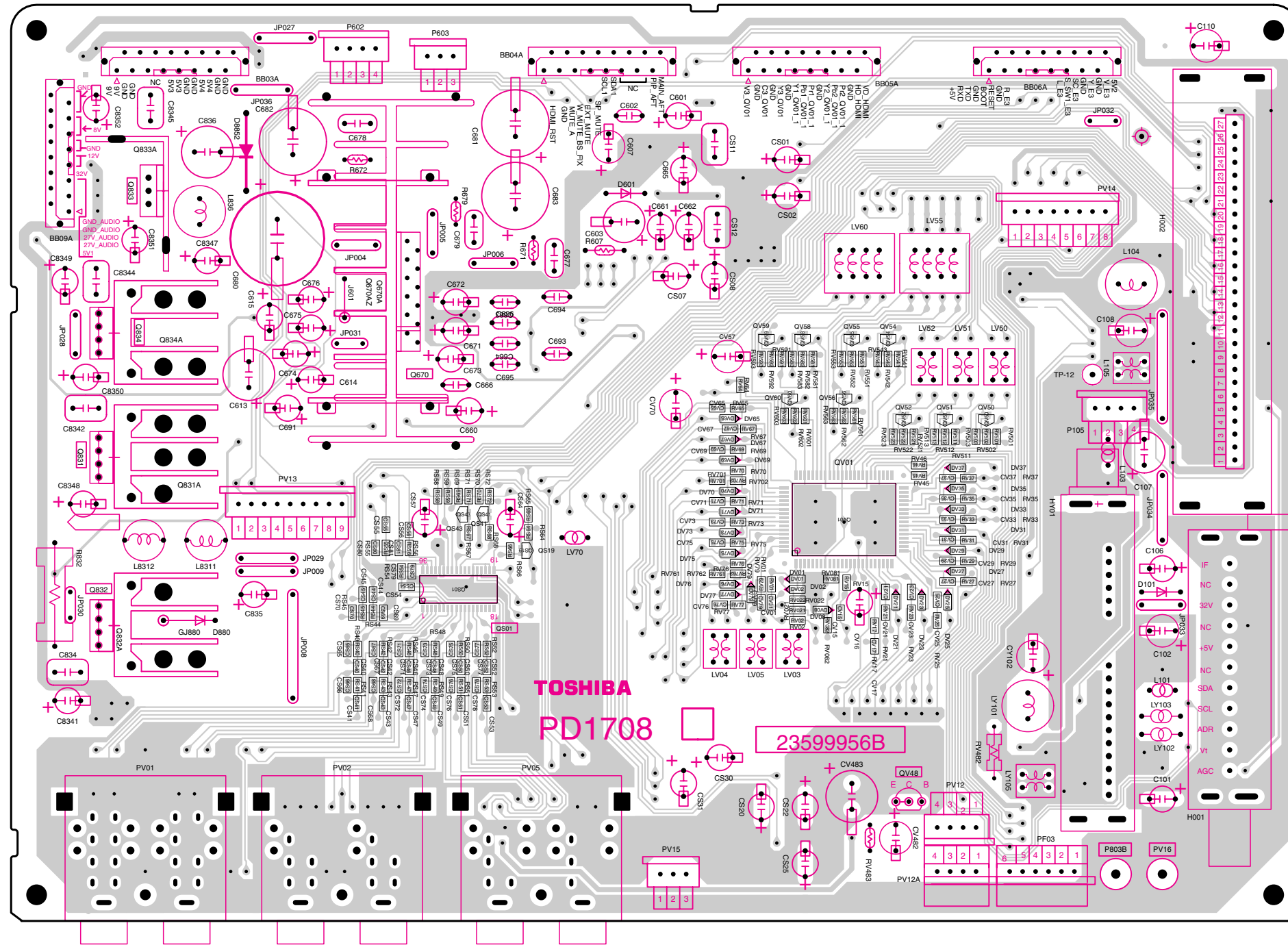
# AV TERMINAL BOARD PD1708A (U005)

BOTTOM (FOIL SIDE)

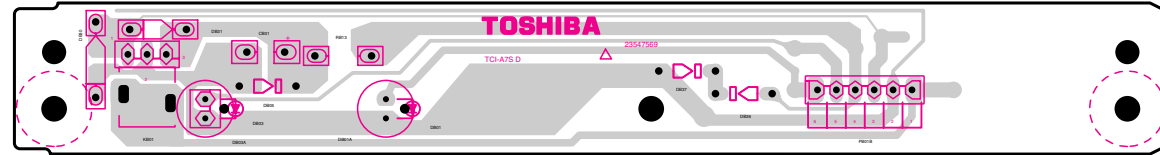


# AV TERMINAL BOARD PD1708A (U005)

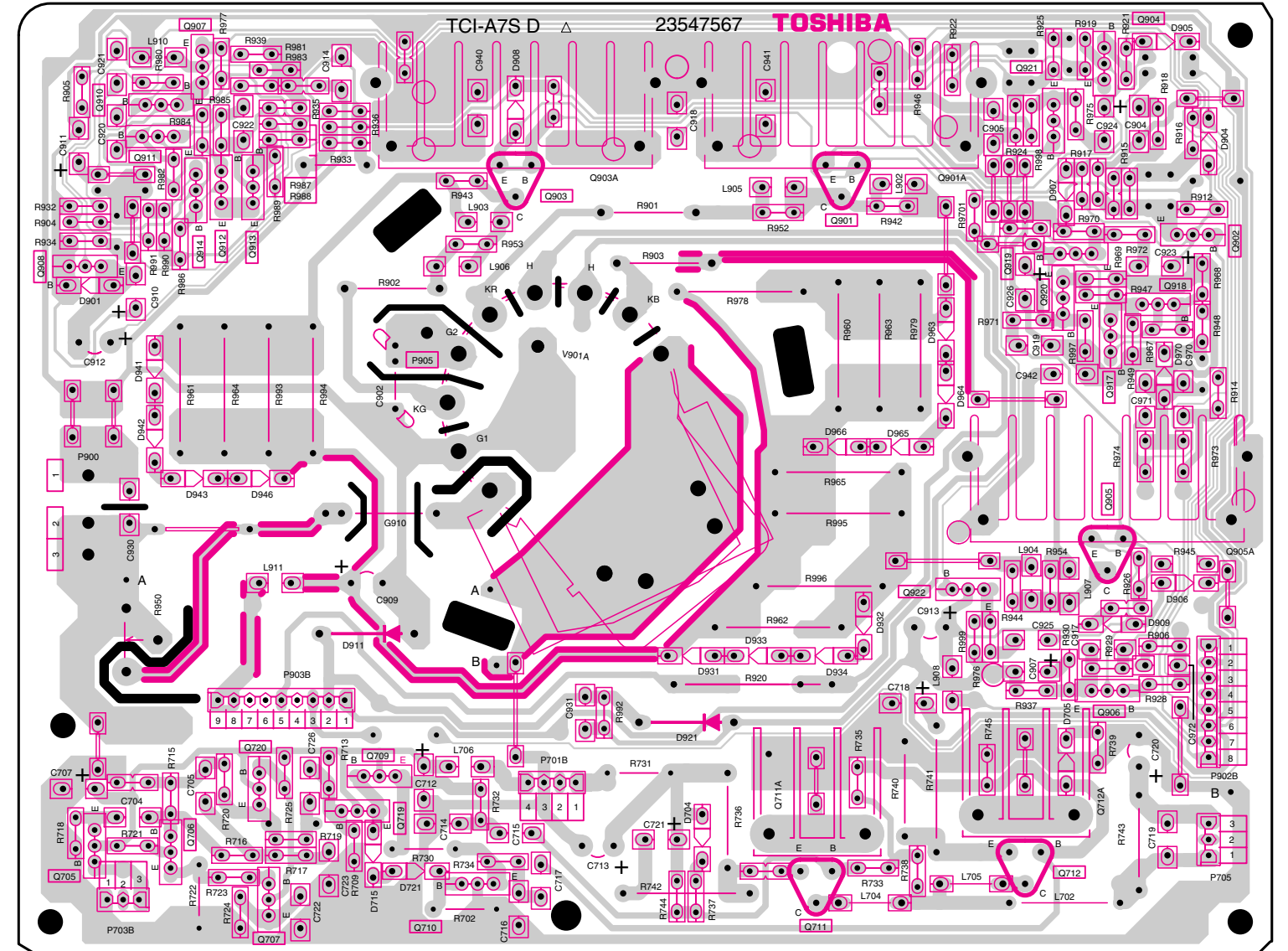
TOP (COMPONENT) SIDE



**LED BOARD PD1709-2 (UA02)**  
**BOTTOM (FOIL) SIDE**

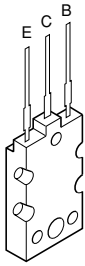


**CRT-D/SVM BOARD PD1707A (U004)**  
**BOTTOM (FOIL) SIDE**

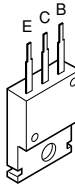


# TERMINAL VIEW OF TRANSISTORS

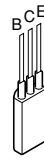
- ① 2SD2253  
(old)  
2SC5243



- ② 2SC3852  
2SD1763A  
2SC1569  
2SC4544  
2SA1788  
2SA1306  
2SA1186A



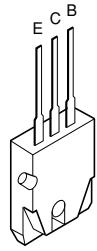
- ③ 2SC752GTM  
2SC2482  
2SC2655  
2SC4721P



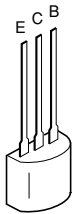
- ④ 2SC752  
2SA562TM  
2SA1015  
2SC1815  
2SC2878  
2SC1740S  
2SC2120  
2SA9335



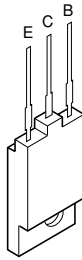
- ⑤ 2SA1788



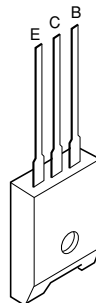
- ⑥ RN2203  
RN2201  
RN2004  
RN1203  
RN1204  
RN2204  
RN1205  
RN1202  
RN1201



- ⑦ 2SD1554  
2SD2253  
2SD1556  
2SC5143  
2SC5570  
2SD2553



- ⑧ ON4409



# SCHEMATIC DIAGRAM

## MODEL : 34HF84

**WARNING:** BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION", "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" ON THE MANUAL FOR THIS MODEL.

**CAUTION:** The international hazard symbols " $\triangle$ " in the schematic diagram and the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list. The mounting position of replacements is to be identical with originals. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE on the MANUAL for this model. Do not degrade the safety of the receiver through improper servicing.

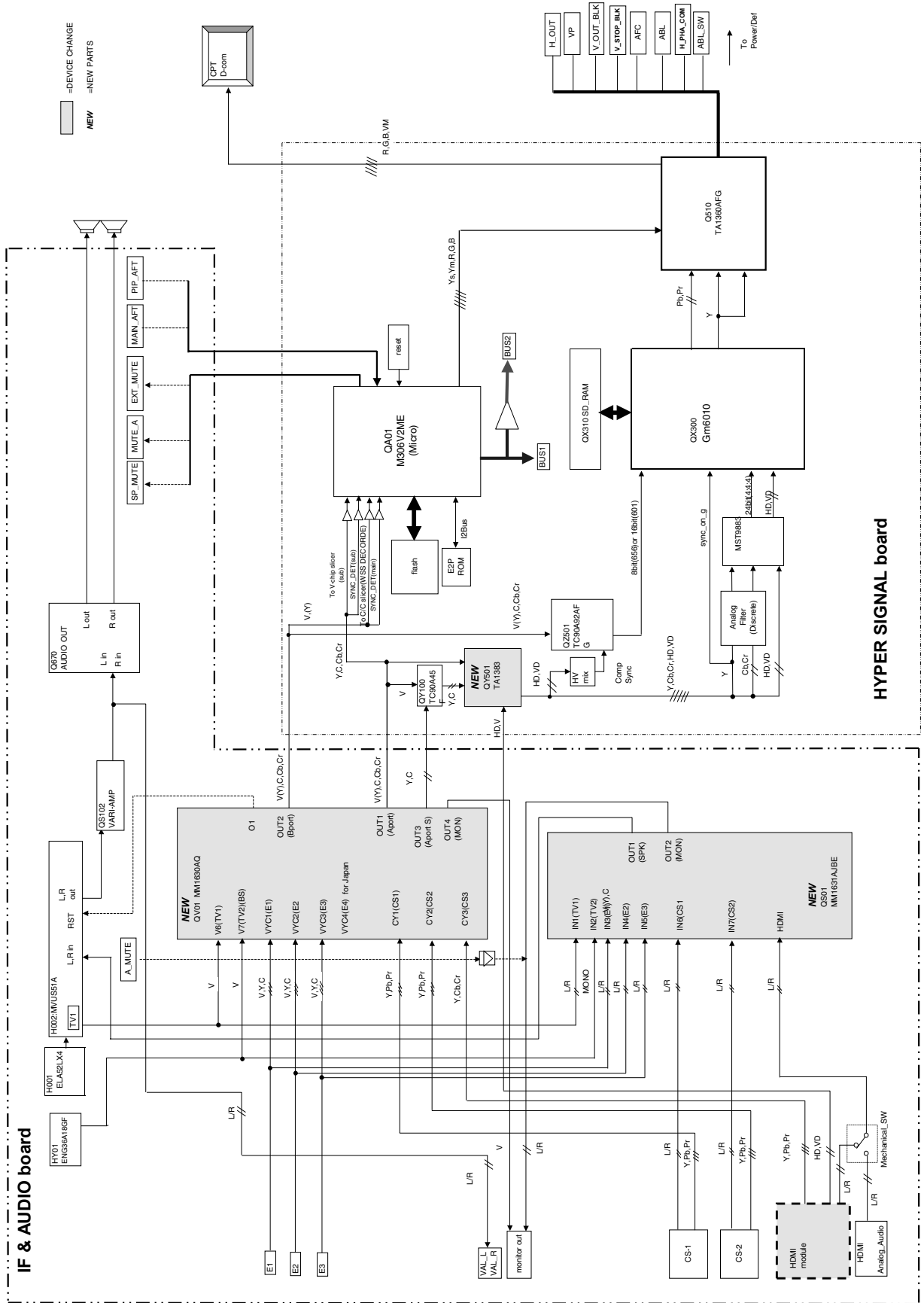
### NOTE:

- RESISTOR** Resistance is shown in ohm [K = 1.000, M = 1.000.000]. All resistors are 1/6W and 5% tolerance carbon resistor, unless otherwise noted as the following marks.  
 1/2R = Metal or Metal oxide of 1/2 watt  
 1RF = Fuse resistor of 1 watt  
 K =  $\pm 10\%$  G =  $\pm 2\%$  F =  $\pm 1\%$   
 1/2S = Carbon composition of 1/2 watt  
 10W = Cement of 10 watt
- CAPACITOR** Unless otherwise noted in schematic, all capacitor values less than 1 are expressed in  $\mu\text{F}$ , and the values more than 1 in pF.  
 All capacitors are ceramic 50V, unless otherwise noted as the following marks.  
 $\begin{matrix} + \\ | \\ - \end{matrix}$  || — Electrolytic capacitor       $\text{\textcircled{O}}$  || — Mylar capacitor
- The parts indicated with " $\triangle$ " have special characteristics, and should be replaced with identical parts only.
- Voltages read with DIGITAL MULTI-METER from point indicated to chassing ground, using a color bar signal with all controls at normal, line voltage at 220 volts.
- Waveforms are taken receiving color bar signal with enough sensitivity.
- Voltage reading shown are nominal values and may vary  $\pm 20\%$  except H.V.

■ SCHEMATIC DIAGRAM STRUCTURE:

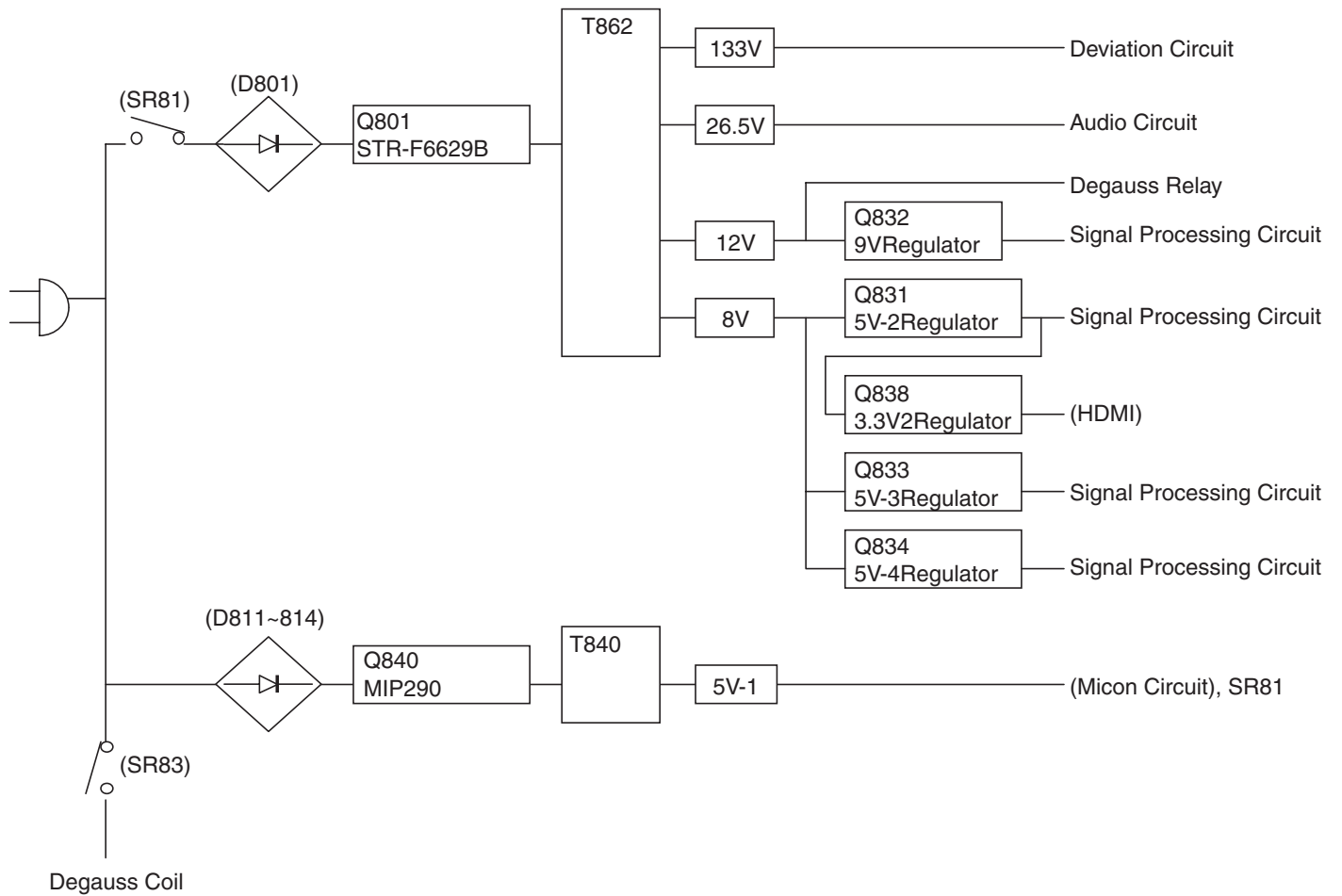
AV.....		1/52
BEP	(1/3)	[SHEET-1/3].....2/52
	(2/3)	[SHEET-2/3].....3/52
	(3/3)	[SHEET-3/3].....4/52
MICON	(1/8)	[SHEET-1/8].....5/52
	(2/8)	[SHEET-2/8].....6/52
	(3/8)	[SHEET-3/8].....7/52
	(4/8)	[SHEET-4/8].....8/52
	(5/8)	[SHEET-5/8].....9/52
	(6/8)	[SHEET-6/8].....10/52
	(7/8)	[SHEET-7/8].....11/52
	(8/8)	[SHEET-8/8].....12/52
G-Hyper	(1/3)	[SHEET-1/3].....13/52
	(2/3)	[SHEET-2/3].....14/52
	(3/3)	[SHEET-3/3].....15/52
AD-CONVERTER	(A)	[SHEET-1/3].....16/52
	(B)	[SHEET-2/3].....17/52
	(C)	[SHEET-3/3].....18/52
TC90A92A-1 .....		19/52
TC90A92A-2 .....		20/52
GC-REG .....		21/52
TC90A92A-3 .....		22/52
GNESIS	(1/3)	[SHEET-1/3].....23/52
	(2/3)	[SHEET-2/3].....24/52
	(3/3)	[SHEET-3/3].....25/52
SDRAM (Gm6010).....		26/52
GNESIS OUT.....		27/52
GNESIS REG.....		28/52
CPU .....		29/52
PIP.....		30/52
Color Dec.	(1/3)	[SHEET-1/3].....31/52
	(2/3)	[SHEET-2/3].....32/52
	(3/3)	[SHEET-3/3].....33/52
Connector	(1/3)	[SHEET-1/3].....34/52
	(2/3)	[SHEET-2/3].....35/52
	(3/3)	[SHEET-3/3].....36/52
AV_Terminal	(BANKAN)	[SHEET-1/7].....37/52
	(Tuner/IF_TIF)	[SHEET-2/7].....38/52
	(JACK)	[SHEET-3/7].....39/52
	(V_SW)	[SHEET-4/7].....40/52
	(A_SW)	[SHEET-5/7].....41/52
	(AUDIO_OUT)	[SHEET-6/7].....42/52
	(REG)	[SHEET-7/7].....43/52
POWER/DEF	(CONNECTOR)	[SHEET-1/6].....44/52
	(EW&VERTICAL)	[SHEET-2/6].....45/52
	(HORIZONTAL)	[SHEET-3/6].....46/52
	(PROTECTOR)	[SHEET-4/6].....47/52
	(MAIN POWER)	[SHEET-5/6].....48/52
	(SUB POWER)	[SHEET-6/6].....49/52
CRT-D .....		50/52
CONTROL .....		51/52
LED .....		52/52

# CIRCUIT BLOCK DIAGRAM (MAIN)





# CIRCUIT BLOCK DIAGRAM (POWER SUPPLY)



## Specifications

- Design and specifications are subject to change without notice.

Television System  
NTSC standard

Channel Coverage  
VHF: 2 through 13  
UHF: 14 through 69  
Cable TV: Mid band (A-8 through A-1, A through I)  
Super band (J through W)  
Hyper band (AA through ZZ, AAA, BBB)  
Ultra band (65 through 94, 100 through 125)

Power Source  
120 V AC, 60 Hz

Power Consumption  
144 W (average)

Audio Power  
10 W + 10 W

Speaker Type  
Two 6 × 12 cm

Video/Audio Terminals  
S-VIDEO INPUT  
Y : 1 V(p-p), 75 ohms, negative sync.  
C : 0.286 V(p-p) (burst signal), 75 ohms  
VIDEO/AUDIO INPUT  
VIDEO: 1 V(p-p), 75 ohms, negative sync.  
AUDIO: 150 mV(rms) (30% modulation equivalent,  
22 k ohms or more)  
ColorStream® (component video) INPUT  
Y : 1V(p-p), 75 ohms  
PR: 0.7 V(p-p), 75 ohms  
PB: 0.7 V(p-p), 75 ohms  
AUDIO: 150 mV(rms), 22 k ohms or more  
VIDEO/AUDIO OUTPUT  
VIDEO: 1 V(p-p), 75 ohms, negative sync.  
AUDIO: 150 mV(rms) (30% modulation equivalent,  
2.2 k ohms or less)  
VARIABLE AUDIO OUTPUT  
0–300 mV(rms) (30% modulation equivalent,  
2.2 k ohms or less)

Video/Audio Terminals (cont.)  
HDMI INPUT:  
HDMI 1.1 (type A) compliant  
HDCP 1.1 compliant  
E-EDID\* 1.3 compliant  
Supports DVI-D uncompressed, high-speed, digital  
single-link input  
Suggested scan rates: 1080i, 480p, 480i, 720p  
HDMI Audio: 2-channel PCM; 32/44.1/48 kHz  
sampling frequency; 16/20/24 bits per sample

Dimensions  
Width 33-5/8 inches (854 mm)  
Height 24-3/8 inches (619 mm)  
Depth 23-3/4 inches (603 mm)

Mass  
156 lbs (70.7 kg)

Supplied Accessories  
Remote Control with 2 size “AA” alkaline batteries

Optional TV Stand  
ST34W64

# **TOSHIBA CORPORATION**

1-1, SHIBAURA 1-CHOME, MINATO-KU, TOKYO 105-8001, JAPAN