TOSHIBA

FILE NO. 020-200406

SERVICE MANUAL

# Color Television

N4WS Chassis

**34HF84**

*(TAC0404)*

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# TABLE OF CONTENTS


CHAPTER 1 **GENERAL ADJUSTMENTS**

SAFETY INSTRUCTIONS ..... 3

SET-UP ADJUSTMENT ..... 4

SERVICE MODE ..... 6

ELECTRICAL ADJUSTMENTS ..... 8

CIRCUIT CHECKS ..... 10

CHAPTER 2 **SPECIFIC INFORMATIONS**

SETTING & ADJUSTING DATA ..... 11

LOCATION OF CONTROLS ..... 12

ADDING CHANNELS TO THE TV'S MEMORY ..... 14

CHASSIS AND CABINET REPLACEMENT PARTS LIST ..... 15

PC BOARDS BOTTOM VIEW ..... 24

TERMINAL VIEW OF TRANSISTORS ..... 34

CIRCUIT BLOCK DIAGRAM ..... 37

SPECIFICATIONS ..... END

APPENDIX:

CIRCUIT DIAGRAM

# 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)

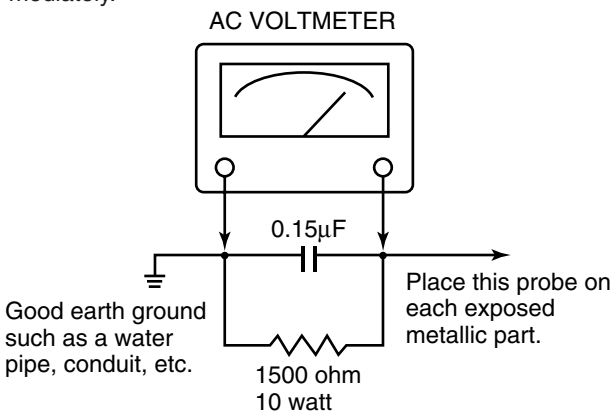
   Each time a receiver requires servicing, the high voltage should be checked following the HIGH VOLTAGE CHECK procedure in this manual. It is recommended that the reading of the high voltage be recorded as a part of the service record. It is important to use an accurate and reliable high voltage meter.
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 µF, 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 µF 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 ADUSTMENT**

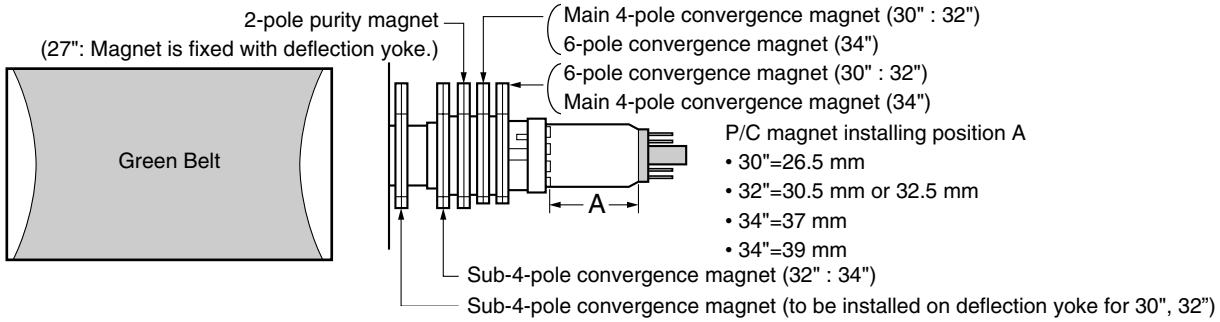
(1)Let the screen face in the installing direction or toward the east (when it is to be moved), bring up the service mode screen after demagnetizing (front, left, right, and top) with the degaussing coil, receive white signals by pressing the [TV/VIDEO] button, and then the receiver should be operated 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 to 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.**

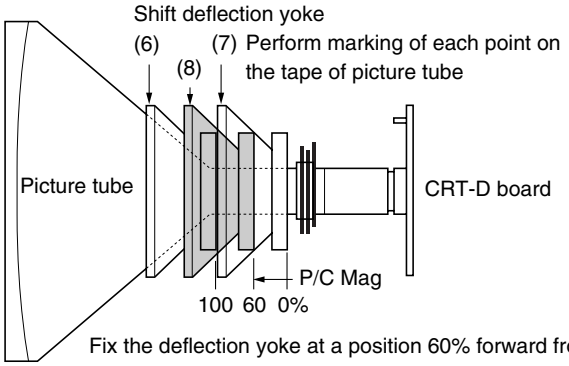



(5)Receive built-in red and blue signals, check that there is no inclination of the single color raster toward one side, and if each color tilts to a great extent, make adjustment with the 2-pole magnet so that the 3 colors will come to the center evenly.

(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.




Fix the deflection yoke at a position 60% forward from a point between (6) and (7)

**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.

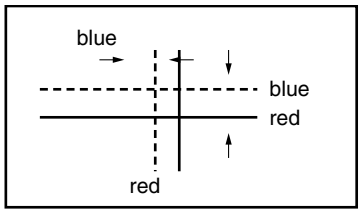
(2)Use the 2 pieces of main 4-pole magnets of P/C magnets, change the open angle, and align the red and blue vertical lines on the screen center.

(3)Freeze the open angle of the main 4-pole magnets, turn them simultaneously, and align the horizontal lines.

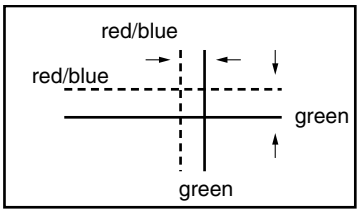
(4)Take the same steps for items (2) and (3) above and align red/blue with green on the screen center using two 6-pole magnets.

(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)

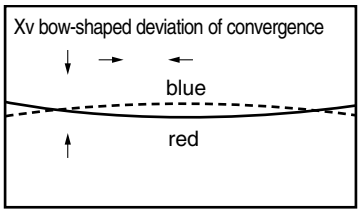
Align both sides with the sub-4-pole magnets and minimize the deviation of blue and red with the main 4-pole magnets.




**Main 4-pole magnet**



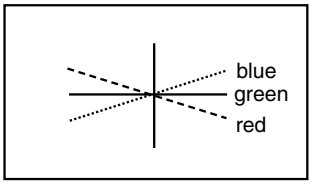

**6-pole magnet**

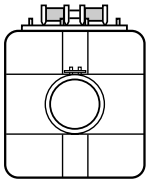



**Sub-4-pole magnet**

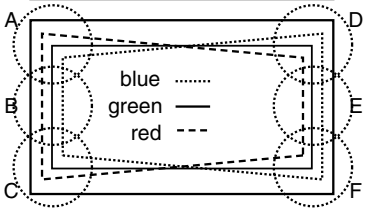
## ■ CIRCUMFERENCE CONVERGENCE:

∗ Perform correction in the following manner.

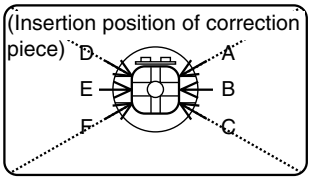


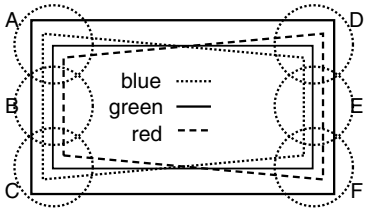
• Adjust coils and minimize deviation
(The 27" unit has coils underneath it)



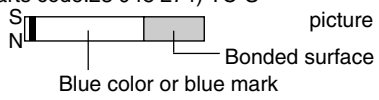

(Parts code:23 948 274) TC-S

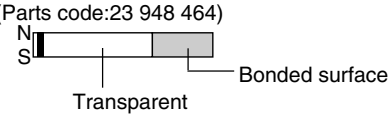



*Insert the correction piece between the picture tube and the deflection yoke.

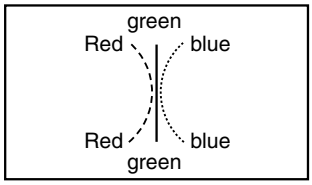


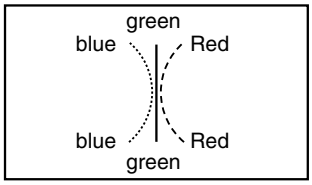

(Parts code:23 948 464)



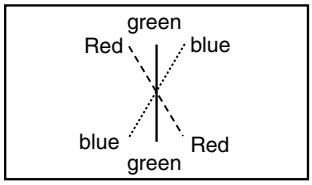



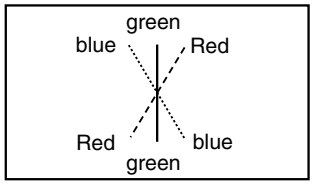

**Adjust VR 1 and minimize the deviation of YH. *Only 27", 30" and 32".**



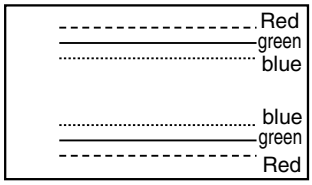



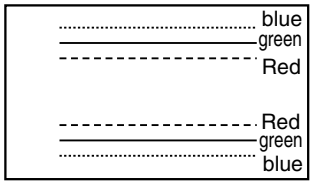

**Adjust VR 2 (YHC) and minimize the deviation of YH.**

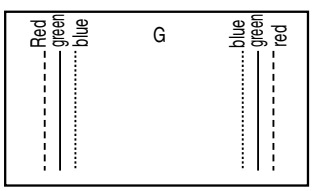


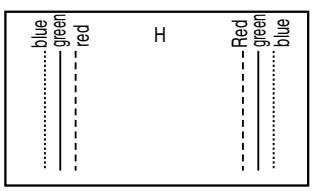




**Adjust VR 3 (YV) and minimize the deviation of YV.**

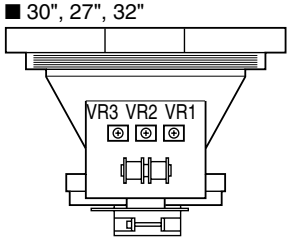


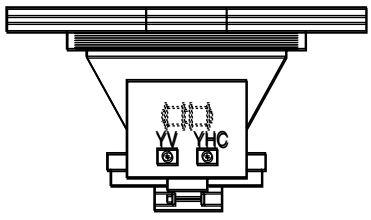



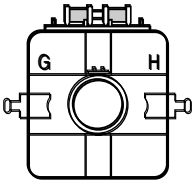

■ 30", 27", 32"




■ 34"




**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

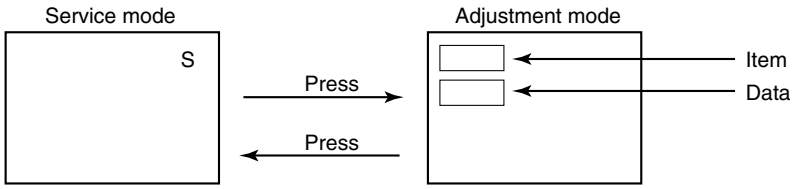
1) Press MUTE button twice on Remote Control.
2) Press MUTE button again to keep pressing.
3) While pressing the MUTE button, press MENU button on TV set.




(Service mode display)

## 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**

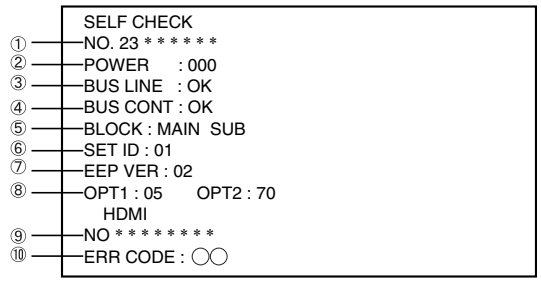
After replacing QA02, the following initialization is required.

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 complated.
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.



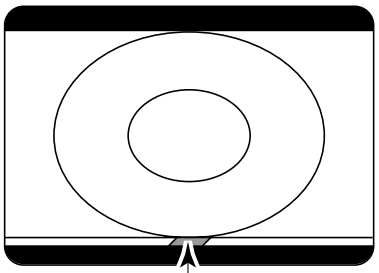

① Part number of microprocessor (QA01)
② Operation number of protection circuit (current limiter) . . . . “000” is normal.
③ BUS line check
- “OK” ..... Normal
- “SCL-GND” or “NG” ..... SCL-GND short circuit
- “SDA-GND” or “NG” ..... SDA-GND short circuit
- “SCL-SDA” or “NG” ..... SCL-SDA short circuit

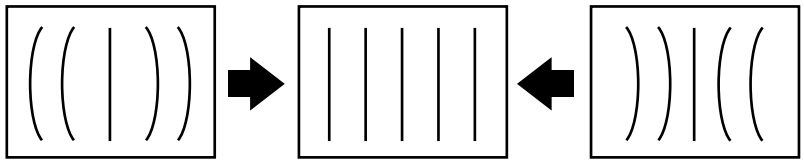
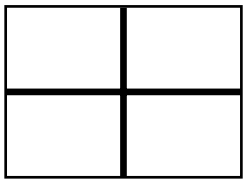
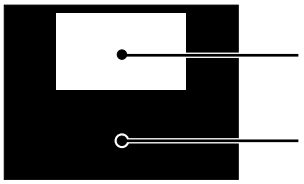
④ BUS line ACK (acknowledge) check
- “OK” ..... Normal
- Display of Location Number . . . . NG
- (Display example)
- “QA02 NG”, “H001 NG”, “Q501 NG” etc.
- Note: The indication of failure place is only one place though failure places are plural. When repair of a failure place finishes, the next failure 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 | 1. Enter the service mode, then select any register item.<br>2. Press the TV/VIDEO button on the Remote until the black cross-bar pattern appears on the screen.<br>3. Adjust the FOCUS control (on T461) for well defined scanning lines on the picture screen. |
| SUB-BRIGHTNESS<br>(BRTC) | 1. Constrict the picture height until the vertical retrace line appears adjusting the item HIT (HEIGHT).<br>2. Adjust the CONTRAST control to the minimum.<br>3. Call up the adjustment mode display, then select the item **BRTC**.<br>4. Press the VOLUME ▲ or ▼ button so the belt of vertical retrace line just disappear.<br>5. Adjust the CONTRAST control for the desired contrast.<br>6. Perform the HEIGHT adjustment.<br><br>Vertical retrace line |
| WIDTH<br>(WID) | 1. Call up the adjustment mode display, then select the item **WID**.<br>2. Press the VOLUME ▲ or ▼ button to get the picture so the left and right edges of raster begins to lack.<br>3. Press the VOLUME ▲ or ▼ button to advance the data by 7 steps.<br>Note : Check the horizontal picture position is correct. |

| ITEM | ADJUSTMENT PROCEDURE |
|---|---|
| E-W PARABOLA (DPC)<br>(PARA) | 1. Call up the adjustment mode display, then select the item **PARA**.<br>2. Press the TV/VIDEO button on Remote until the cross-hatch pattern appears on the screen.<br>3. Press the VOLUME ▲ or ▼ button to make vertical lines straight as shown below.<br> |
| HORIZONTAL POSITION<br>(HPOS)<br>VERTICAL POSITION<br>(VPOS) | 1. Call up the adjustment mode display, then select the item **HPOS** or **VPOS**.<br>2. Press the TV/VIDEO button on Remote until the white cross-bar or black cross-bar pattern appears on the screen.<br>3. Adjust the HORIZONTAL and VERTICAL position alternately by pressing the VOLUME ▲ or ▼ button for proper picture position.<br>4. Check the picture with off-air signal.<br> |
| HEIGHT<br>(HIT) | 1. Call up the adjustment mode display, then select the item **HIT**.<br>2. Press the VOLUME ▲ or ▼ button to get the picture so the top of raster begins to lack.<br>3. Press the VOLUME ▲ button to advance the data by 9 steps.<br>Note : Check the vertical picture position is correct. |
| WHITE BALANCE<br>(RCUT)<br>(GCUT)<br>(BCUT)<br>(GDRV)<br>(BDRV) | 1. Adjust the CONTRAST control to the center, and BRIGHTNESS control to the maximum.<br>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.<br>3. Adjust the following items with the CHANNEL ▲/▼ and VOLUME ▲/▼ buttons.<br>Item : RCUT ⟶ Data : 40H<br>Item : GCUT ⟶ Data : 40H<br>Item : BCUT ⟶ Data : 40H<br>Item : GDRV ⟶ Data : 40H<br>Item : BDRV ⟶ Data : 40H<br>4. Press the TV/VIDEO button on TV to display a single horizontal line on the screen.<br>5. Turn the SCREEN control (FBT) fully counterclockwise and gradually rotate clockwise until the first horizontal line appears slightly on the screen.<br>6. Press the TV/VIDEO button to display the normal picture.<br>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.<br><br>Bright area<br>Adjust "GDRV" or "BDRV" to be white.<br>Dark area<br>Fine adjust "RCUT", "GCUT" or "BCUT" to be black. |

# CIRCUIT CHECKS

**HIGH VOLTAGE CHECK**

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

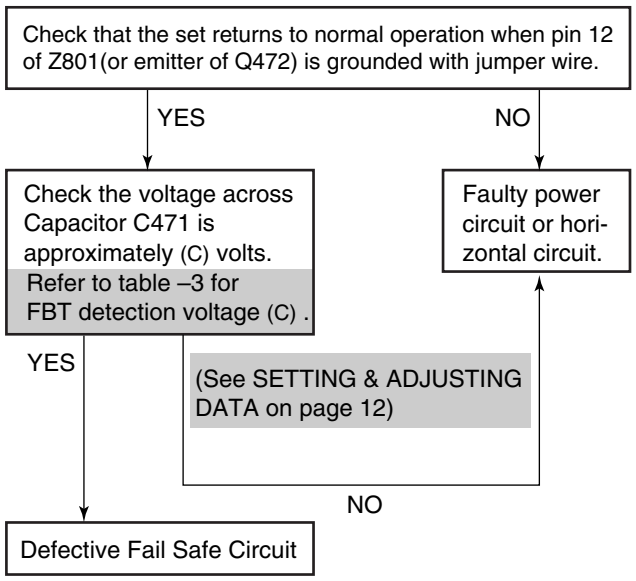
1. Connect an accurate high voltage meter to the second anode of the picture tube.
2. Turn on the receiver. Set the BRIGHTNESS and CONTRAST controls to minimum (zero beam current).
3. High voltage must be measured below (B) kV.
   Refer to table-1 for high voltage (B).
   (See SETTING & ADJUSTING DATA 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 |
|---|---|---|---|
| RCUT | R CUT OFF | 40H | ← |
| GCUT | G CUT OFF | 40H | ← |
| BCUT | B CUT OFF | 40H | ← |
| GDRV | G DRIVE | 40H | ← |
| BDRV | B DRIVE | 40H | ← |
| BRTC | BRIGHT CENTER | 80H | ← |
| UVTT | TINT CENTTER | 46H | ← |
| HIT | PICTURE HIT | 2FH | ← |

| Item | Name of adjustment | Preset | NORMAL & FULL |
|---|---|---|---|
| LIN | V-LINEARITY | 12H | ← |
| WID | PICTURE WIDTH | 3DH | ← |
| PARA | E-W PARABOLA | 15H | ← |
| CNR | EW M CORRECTION | 17H | ← |
| TRAP | EW TRAPEZIUM | 3CH | ← |
| HPOS | H-POSITION | 4CH | ← |
| TCNR | EW TOP CORNER | 10H | ← |
| BTNR | EW BOTTOM COR | 10H | ← |

**Table-2**

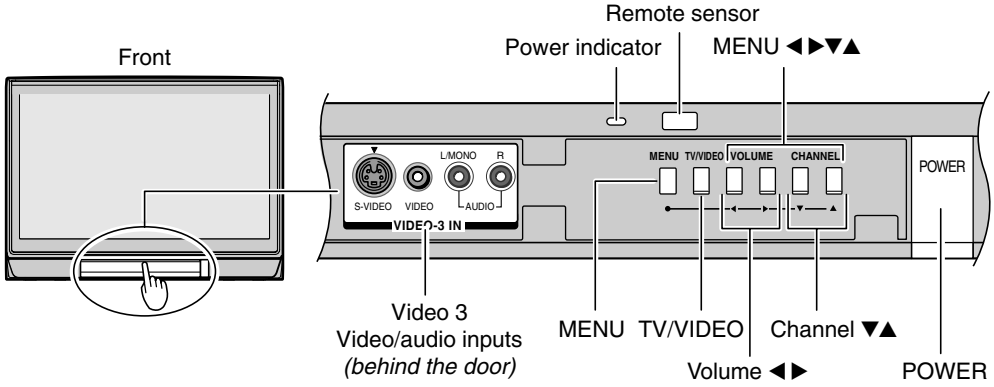
### 【 CIRCUIT CHECKS 】

| | | |
|---|---|---|
| FBT DETECTION VOLTAGE | (C) | 20.1 V |

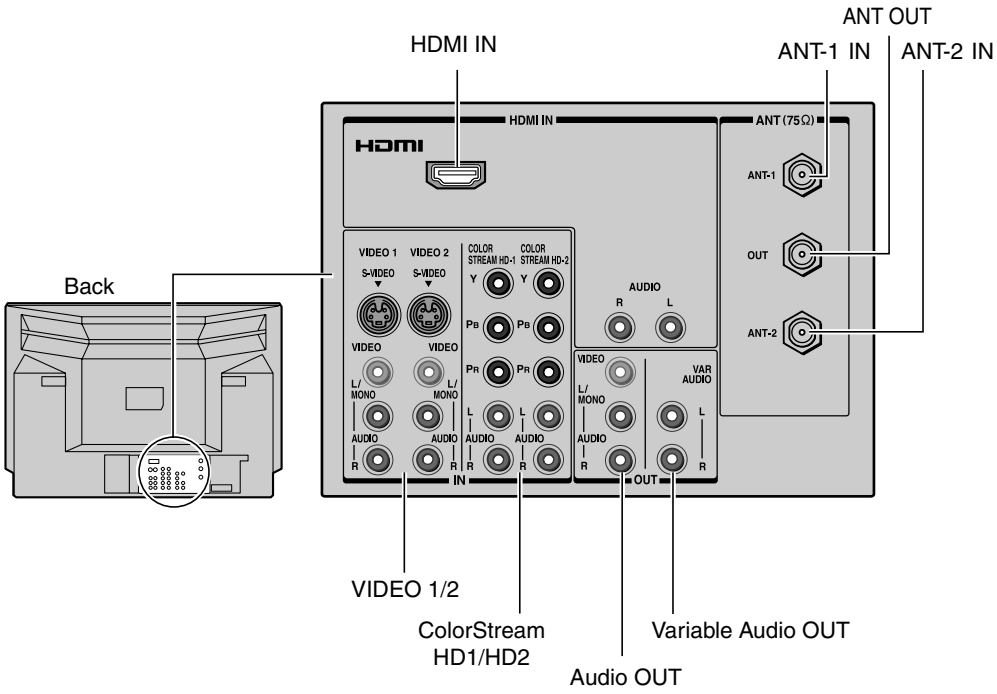
**Table-3**

# LOCATION OF CONTROLS

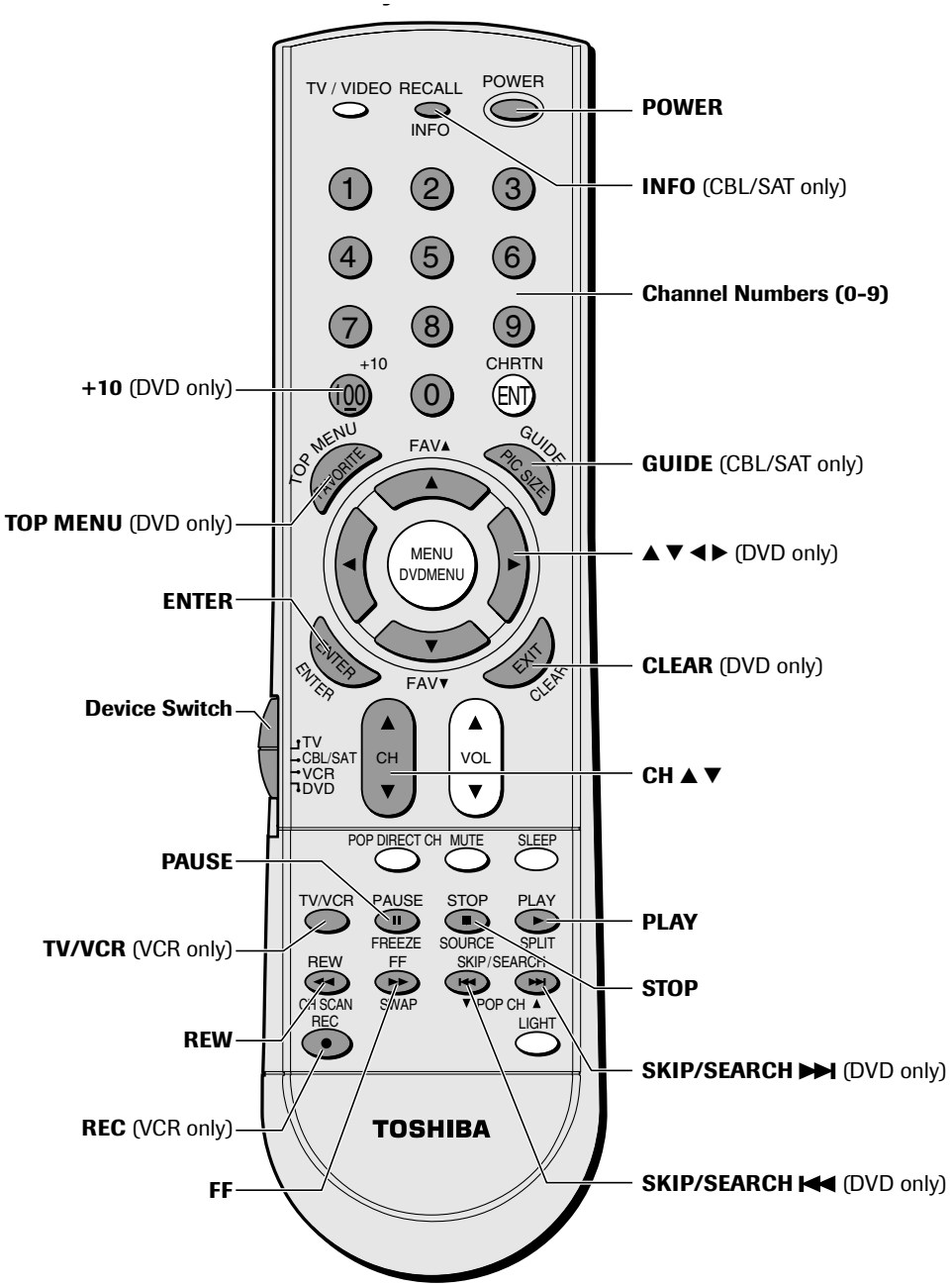
## TV Front




## 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 com-ponents 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 |
|---|---|---|
| **CAPACITORS** | | |
| C101 | 24797339 | ELECTROLYTIO 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 | ELECTRPLYTIC, 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, 16V 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 |
|---|---|---|
| C663 | 24212331 | CERAMIC DISC, 50V B 330PF K |
| C664 | 24212331 | CERAMIC DISC, 50V B 330PF K |
| C671 | 24073084 | ELECTROLYTIC, 50V 4.7UF M 3A |
| C672 | 24073084 | ELECTROLYTIC, 50V 4.7UF M 3A |
| C675 | 24667470 | ELECTROLYTIC CE04Q, 25V 47UF M 3A |
| C676 | 24669479 | ELECTROLYTIC, 50V 4.7UF M 3A |
| C677 | 24503042 | PLASTIC FILM, 63V 0.12UF J |
| C678 | 24503041 | PLASTIC FILM , 63V 0.1UF J |
| C680 | 24669222 | ELECTROLYTIC, 50V 2200UF M 3A |
| C681 | 24668102 | ELECTROLYTIC, 35V 1000UF M 3A |
| C682 | 24668102 | ELECTROLYTIC, 35V 1000UF M 3A |
| C684 | 24109103 | CERAMIC CHIP, 50V B 0.01UF K |
| C691 | 24797479 | ELECTROLYTIC, 50V 4.7UF M |
| C693 | 24590102 | PLASTIC FILM, 50V 1000PF J |
| C694 | 24590102 | PLASTIC FILM, 50V 1000PF J |
| C704 | 24591822 | PLASTIC FILM, 50V 8200PF J |
| C705 | 24232103 | CERAMIC DISC, 50V F 0.01UF Z |
| C707 | 24794470 | ELECTROLYTIC, 16V 47UF M |
| C712 | 24666470 | ELECTORLYTIC CE04Q, 16V 47UF M 3A |
| C713 | 24709100 | ELECTROLYTIC, 200V 10UF M |
| C714 | 24436101 | CERAMIC DISC, 50V SL 100PF J |
| C715 | 24214472 | CERAMIC DISC, 500V B 4700PF K |
| C716 | 24436101 | CERAMIC DISC, 50V SL 100PF J |
| C717 | 24214472 | CERAMIC DISC, 500V B 4700PF K |
| C718 | 24766470 | ELECTROLYTIC, 50V 47UF M |
| C719 | 24435560 | CERAMIC DISC, 500V SL 56PF J |
| C720 | 24709100 | ELECTROLYTIC, 200V 10UF M |
| C721 | 24797470 | ELECTROLYTIC 04G, 50V 47UF M |
| C726 | 24212102 | CERAMIC DISC, 50V B 1000PF K |
| ⚠ C801 | 24503512 | MT PLA PHE840MX6220MB06MR |
| ⚠ C802 | 24503511 | MT PLA PHE840MB6100MB05 |
| C805 | 24092623 | CERAMIC DISC, 250V F 0.01UF Z |
| C806 | 24092623 | CERAMIC DISC, 250V F 0.01UF Z |
| C808 | 24667101 | ELECTROLYTIC CE04Q, 25V 100UF M 3A |
| C810 | 24086062 | ELECTROLYTIC, 200V 1000UF M 3F |
| C813 | 24092593 | CERAMIC DISC, AC250V E 1000PF M |
| C814 | 24092593 | CERAMIC DISC, AC250V E 1000PF M |
| ⚠ C815 | 24092583 | CERAMIC DISC, AC250V E 2200PF M |
| ⚠ C816 | 24092591 | CERAMIC DISC, AC250V B 470PF K |
| C817 | 24092339 | CERAMIC DISC, 2KV 330PF K |
| C818 | 24503237 | PLASTIC FILM CF92 T 1250VH 2200PF H |
| C821 | 24214471 | CERAMIC DISC, 500V B 470PF K |
| C823 | 24212471 | CERAMIC DISC, 50V B 470PF K |
| C829 | 24591222 | PLASTIC FILM, 50V 2200PF J |
| C830 | 24591103 | PLASTIC FILM, 50V 0.01UF J |
| C834 | 24539334 | PLASTIC FILM, 50V 0.33UF J |
| C835 | 24666470 | ELECTORLYTIC CE04Q, 16V 47UF M 3A |
| C836 | 24762222 | ELECTROLYTIC, 10V 2200UF M 3D |
| C840 | 24679220 | ELECTROLYTIC, 250V 22UF M 3A |
| C841 | 24073043 | ELECTROLYTIC, 16V 2200UF M 3A |
| C842 | 24503041 | PLASTIC FILM , 63V 0.1UF J |
| C843 | 24092469 | CERAMIC DISC, 2KV B 100PF K |
| C844 | 24793221 | ELECTROLYTIC, 10V 220UF M |
| C845 | 24073082 | ELECTROLYTIC, 50V 2.2UF M 3A |
| C884 | 24073215 | ELECTROLYTEC CE04Q 160V 220UF M |
| C886 | 24214471 | CERAMIC DISC, 500V B 470PF K |
| C889 | 24797222 | ELECTROLYTIC, 50V 2200UF M |
| C890 | 24503041 | PLASTIC FILM , 63V 0.1UF J |
| C891 | 24073161 | ELECTROLYTIC CE04P 16V 3900UF M 3A |
| C892 | 24073172 | ELECTROLYTIC CE04P 25V 1000UF M 3A |
| C893 | 24092339 | CERAMIC DISC, 2KV 330PF K |
| C896 | 24214471 | CERAMIC DISC, 500V B 470PF K |
| C898 | 24434100 | CERAMIC DISC, 500V SL 10PF D |
| C899 | 24214471 | CERAMIC DISC, 500V B 470PF K |
| C901 | 24503507 | PLASTIC FILM, AC275V 0.22UF K |
| C902 | 24092353 | CERAMIC DISC, 2KV 4700PF K |

| Location No. | Parts No. | Description |
|---|---|---|
| C904 | 24436471 | CERAMIC DISC, 50V SL 470PF J |
| C905 | 24436391 | CERAMIC DISC, 50V SL 390PF J |
| C907 | 24436561 | CERAMIC DISC, 50V SL 560PF J |
| C909 | 24679220 | ELECTROLYTIC, 250V 22UF M 3A |
| C910 | 24669478 | ELECTROLYTIC, 50V 0.47UF M 3A |
| C911 | 24203100 | ELECTORLYTIC, 16V 10UF M 7L 3A |
| C912 | 24073042 | ELECTROLYTIC, 04P 16V 1000UF M 3A |
| C913 | 24666102 | ELECTROLYTIC, 16V 1000UF M 3A |
| C914 | 24232103 | CERAMIC DISC, 50V F 0.01UF Z |
| C918 | 24503041 | PLASTIC FILM , 63V 0.1UF J |
| C919 | 24503041 | PLASTIC FILM , 63V 0.1UF J |
| C920 | 24503041 | PLASTIC FILM , 63V 0.1UF J |
| C921 | 24503041 | PLASTIC FILM , 63V 0.1UF J |
| C922 | 24436390 | CERAMIC DISC, 50V SL 39PFJ |
| C930 | 24214102 | CERAMIC DISC, 500V B 1000PF K |
| C931 | 24214101 | CERAMIC DISC, 500V B 100PF K |
| C941 | 24432100 | CERAMIC DISC, 50V SL 10PF K |
| C942 | 24432100 | CERAMIC DISC, 50V SL 10PF K |
| C943 | 24432100 | CERAMIC DISC, 50V SL 10PF K |
| C3100 | 24667102 | ELECTROLYTIC, 25V 1000UF M 3A |
| C4211 | 24539104 | PLASTIC FILM, 50V 0.1UF J |
| C4690 | 24109103 | CERAMIC CHIP, 50V B 0.01UF K |
| C4691 | 24109822 | CERAMIC CHIP, 50V B 8200PF K |
| C4693 | 24591473 | PLASTIC FILM, 50V 0.047UF J |
| C4710 | 24092538 | CERAMIC CHIP, 10V F 1UF Z |
| C4711 | 24092743 | CERAMIC CHIP, 10V F 0.47UF Z |
| C8341 | 24667100 | ELECTROLYTIC, 16V 10UF M 3A |
| C8342 | 24539334 | PLASTIC FILM, 50V 0.33UF J |
| C8344 | 24539334 | PLASTIC FILM, 50V 0.33UF J |
| C8345 | 24539334 | PLASTIC FILM, 50V 0.33UF J |
| C8347 | 24665220 | ELECTROLYTIC, 10V 22UF M 3A |
| C8348 | 24665220 | ELECTROLYTIC, 10V 22UF M 3A |
| C8349 | 24666100 | ELECTROLYTIC, 10V 10UF M 3A |
| C8350 | 24666100 | ELECTROLYTIC, 10V 10UF M 3A |
| C8351 | 24073150 | ELECTROLYTIC CE04P 16V 56UF M 3A |
| C8352 | 24666100 | ELECTROLYTIC, 10V 10UF M 3A |
| C8353 | 24092795 | CERAMIC CHIP CK73B 6.3V 2.2UP K |
| C8355 | 24092730 | CERAMIC CHIP, 16V B 0.1UF K |
| CB01 | 24794470 | ELECTROLYTIC, 16V 47UF M |
| CC07 | 24109102 | CERAMIC CHIP, 50V B 1000PF K |
| CC08 | 24109102 | CERAMIC CHIP, 50V B 1000PF K |
| CC09 | 24109102 | CERAMIC CHIP, 50V B 1000PF K |
| CC10 | 24109102 | CERAMIC CHIP, 50V B 1000PF K |
| CJ01 | 24567104 | PLASTIC FILM, 50V 0.1UF J |
| CJ02 | 24666470 | ELECTORLYTIC CE04Q, 16V 47UF M 3A |
| CJ03 | 24567104 | PLASTIC FILM, 50V 0.1UF J |
| CJ04 | 24666470 | ELECTORLYTIC CE04Q, 16V 47UF M 3A |
| CJ05 | 24794101 | ELECTROLYTIC, 16V 100UF M |
| CJ06 | 24232103 | CERAMIC DISC, 50V F 0.01UF Z |
| CS01 | 24797100 | ELECTROLYTIC, 50V 10UF M |
| CS02 | 24797100 | ELECTROLYTIC, 50V 10UF M |
| CS05 | 24109103 | CERAMIC CHIP, 50V B 0.01UF K |
| CS07 | 24206479 | ELECTROLYTIC, 50V 4.7UF M 7L 3A |
| CS08 | 24206479 | ELECTROLYTIC, 50V 4.7UF M 7L 3A |
| CS20 | 24797479 | ELECTROLYTIC, 50V 4.7UF M |
| CS25 | 24797479 | ELECTROLYTIC, 50V 4.7UF M |
| CS40 | 24092538 | CERAMIC CHIP, 10V F 1UF Z |
| CS41 | 24092538 | CERAMIC CHIP, 10V F 1UF Z |
| CS42 | 24092538 | CERAMIC CHIP, 10V F 1UF Z |
| CS43 | 24092538 | CERAMIC CHIP, 10V F 1UF Z |
| CS44 | 24092538 | CERAMIC CHIP, 10V F 1UF Z |
| CS45 | 24092538 | CERAMIC CHIP, 10V F 1UF Z |
| CS46 | 24092538 | CERAMIC CHIP, 10V F 1UF Z |
| CS47 | 24092538 | CERAMIC CHIP, 10V F 1UF Z |
| CS48 | 24092538 | CERAMIC CHIP, 10V F 1UF Z |
| CS49 | 24092538 | CERAMIC CHIP, 10V F 1UF Z |

| 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 |
| **RESISTORS** | | |
| 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 | CARB0N 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 | CARB0N 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 |
|---|---|---|
| RV081 | 24000445 | CHIP JUMPER, 1608TYPE |
| RV15 | 24011101 | CHIP, METAL FILM, 1/20W 100 OHM J |
| RV17 | 24011101 | CHIP, METAL FILM, 1/20W 100 OHM J |
| RV21 | 24011101 | CHIP, METAL FILM, 1/20W 100 OHM J |
| RV23 | 24011101 | CHIP, METAL FILM, 1/20W 100 OHM J |
| RV25 | 24011101 | CHIP, METAL FILM, 1/20W 100 OHM J |
| RV27 | 24011101 | CHIP, METAL FILM, 1/20W 100 OHM J |
| RV29 | 24011101 | CHIP, METAL FILM, 1/20W 100 OHM J |
| RV31 | 24011101 | CHIP, METAL FILM, 1/20W 100 OHM J |
| RV33 | 24011101 | CHIP, METAL FILM, 1/20W 100 OHM J |
| RV35 | 24011101 | CHIP, METAL FILM, 1/20W 100 OHM J |
| RV37 | 24011101 | CHIP, METAL FILM, 1/20W 100 OHM J |
| RV45 | 24011101 | CHIP, METAL FILM, 1/20W 100 OHM J |
| RV46 | 24011101 | CHIP, METAL FILM, 1/20W 100 OHM J |
| RV64 | 24011104 | CHIP, METAL FILM, 1/20W 100K OHM J |
| RV65 | 24011101 | CHIP, METAL FILM, 1/20W 100 OHM J |
| RV67 | 24011101 | CHIP, METAL FILM, 1/20W 100 OHM J |
| RV69 | 24011101 | CHIP, METAL FILM, 1/20W 100 OHM J |
| RV70 | 24011103 | CHIP, METAL FILM, 1/20W 10K OHM J |
| RV71 | 24011101 | CHIP, METAL FILM, 1/20W 100 OHM J |
| RV73 | 24011101 | CHIP, METAL FILM, 1/20W 100 OHM J |
| RV75 | 24011101 | CHIP, METAL FILM, 1/20W 100 OHM J |
| RV76 | 24011103 | CHIP, METAL FILM, 1/20W 10K OHM J |
| RV77 | 24011101 | CHIP, METAL FILM, 1/20W 100 OHM J |
| RV79 | 24011101 | CHIP, METAL FILM, 1/20W 100 OHM J |
| RV81 | 24011750 | CHIP, METAL FILM, 1/20W 75 OHM J |
| RV82 | 24011750 | CHIP, METAL FILM, 1/20W 75 OHM J |
| RV83 | 24011750 | CHIP, METAL FILM, 1/20W 75 OHM J |
| RV84 | 24011750 | CHIP, METAL FILM, 1/20W 75 OHM J |
| RV85 | 24011750 | CHIP, METAL FILM, 1/20W 75 OHM J |
| RV86 | 24011750 | CHIP, METAL FILM, 1/20W 75 OHM J |
| RV100 | 24366750 | CARBON FILM, 1/6W 75 OHM J |
| RV101 | 24366750 | CARBON FILM, 1/6W 75 OHM J |
| RV102 | 24366750 | CARBON FILM, 1/6W 75 OHM J |
| RV103 | 24366332 | CARBON FILM, 1/6W 3.3K OHM J |
| RV332 | 24000445 | CHIP JUMPER, 1608TYPE |
| RV333 | 24011181 | CHIP, METAL FILM, 1/20W 180 OHM J |
| RV334 | 24011103 | CHIP, METAL FILM, 1/20W 10K OHM J |
| RV335 | 24011123 | CHIP, METAL FILM, 1/20W 12K OHM J |
| RV481 | 24011101 | CHIP, METAL FILM, 1/20W 100 OHM J |
| RV482 | 24552101 | OXIDE METAL FILM, 1/2W 100 OHM J |
| RV483 | 24366221 | CARBON FILM, 1/6W 220 OHM J |
| RV484 | 24011750 | CHIP, METAL FILM, 1/20W 75 OHM J |
| RV501 | 24011101 | CHIP, METAL FILM, 1/20W 100 OHM J |
| RV503 | 24011222 | CHIP, METAL FILM, 1/20W 2.2K OHM J |
| RV511 | 24011101 | CHIP, METAL FILM, 1/20W 100 OHM J |
| RV513 | 24011222 | CHIP, METAL FILM, 1/20W 2.2K OHM J |
| RV521 | 24011101 | CHIP, METAL FILM, 1/20W 100 OHM J |
| RV523 | 24011222 | CHIP, METAL FILM, 1/20W 2.2K OHM J |
| RV541 | 24011101 | CHIP, METAL FILM, 1/20W 100 OHM J |
| RV543 | 24011222 | CHIP, METAL FILM, 1/20W 2.2K OHM J |
| RV551 | 24011101 | CHIP, METAL FILM, 1/20W 100 OHM J |
| RV553 | 24011222 | CHIP, METAL FILM, 1/20W 2.2K OHM J |
| RV561 | 24011101 | CHIP, METAL FILM, 1/20W 100 OHM J |
| RV563 | 24011222 | CHIP, METAL FILM, 1/20W 2.2K OHM J |
| RV581 | 24011101 | CHIP, METAL FILM, 1/20W 100 OHM J |
| RV583 | 24011471 | CHIP, METAL FILM, 1/20W 470 OHM J |
| RV591 | 24011101 | CHIP, METAL FILM, 1/20W 100 OHM J |
| RV593 | 24011471 | CHIP, METAL FILM, 1/20W 470 OHM J |
| RV601 | 24011101 | CHIP, METAL FILM, 1/20W 100 OHM J |
| RV603 | 24011471 | CHIP, METAL FILM, 1/20W 470 OHM J |
| RV701 | 24011104 | CHIP, METAL FILM, 1/20W 100K OHM J |
| RV702 | 24011104 | CHIP, METAL FILM, 1/20W 100K OHM J |
| RV761 | 24011104 | CHIP, METAL FILM, 1/20W 100K OHM J |
| RV762 | 24011104 | CHIP, METAL FILM, 1/20W 100K OHM J |
| RY160 | 24011471 | CHIP, METAL FILM, 1/20W 470 OHM J |

| Location No. | Parts No. | Description |
|---|---|---|
| **COIL & TRANSFORMERS** | | |
| L101 | 23289845 | COIL, PEAKING, TRF4680AT |
| L103 | 23289844 | COIL, PEAKING, TRF4470AT |
| L105 | 23103159 | FILTER, EMI, TEM2028AA, 7.5X6.4X8 60MMH 0.5A |
| L301 | 23248370 | COIL, CHOKE EI24 1.0MH TLN3543AH |
| L302 | 23289846 | COIL, PEAKING, TRF4101AT |
| ⚠ L441 | 23233110 | COIL, LIN 22X40H 7A 12.5MMH TLN2227AH |
| L442 | 23248302 | COIL, CHOKE, TLN3521GH |
| L450 | 23248305 | COIL, CHOKE, TLN3346GH |
| L451 | 23233119 | COIL, WID-H42-0.45-1.4MH TLN2232AH |
| ⚠ L461 | 23248310 | COIL, CHOKE, TLN3500GH |
| L463 | 23103145 | FERRITE CHOKE, TEM2011AA |
| L464 | 23103145 | FERRITE CHOKE, TEM2011AA |
| L491 | 23248191 | COIL, CHOKE, TLN3351AD |
| L499 | 23248282 | COIL, CHOKE, TLN3458AH |
| L702 | 23261974 | COIL, FERRITE BEAD, HC5-035 |
| L704 | 23103145 | FERRITE CHOKE, TEM2011AA |
| L705 | 23103145 | FERRITE CHOKE, TEM2011AA |
| L706 | 23237987 | COIL, PEAKING, TRF4100AC |
| L803 | 23103145 | FERRITE CHOKE, TEM2011AA |
| L805 | 23248213 | COIL, CHOKE, TLN3481AH |
| L806 | 23248213 | COIL, CHOKE, TLN3481AH |
| L808 | 23248213 | COIL, CHOKE, TLN3481AH |
| L815 | 23103145 | FERRITE CHOKE, TEM2011AA |
| L816 | 23103145 | FERRITE CHOKE, TEM2011AA |
| L836 | 23248288 | COIL, CHOKE, TLN3299GH |
| L840 | 23280019 | COIL, PEAKING, TRF4330AZ |
| L883 | 23103145 | FERRITE CHOKE, TEM2011AA |
| L884 | 23248288 | COIL, CHOKE, TLN3299GH |
| L885 | 23222694 | COIL, HORIZ WIDTH, TLN2026 |
| L886 | 23103145 | FERRITE CHOKE, TEM2011AA |
| L888 | 23248292 | COIL, CHOKE, TLN3499GH |
| L889 | 23248292 | COIL, CHOKE, TLN3499GH |
| L891 | 23103145 | FERRITE CHOKE, TEM2011AA |
| L892 | 23103145 | FERRITE CHOKE, TEM2011AA |
| L893 | 23280016 | COIL, PEAKING, TRF4100AZ |
| L894 | 23248297 | COIL, CHOKE, TLN3481GH |
| L897 | 23248321 | COIL, CHOKE 15X23H 22MMH 4.2A TLN3462AH |
| ⚠ L901 | 23200498 | COIL, DG 0.75CU 50T-2LOOP TSB-2416AH |
| L902 | 23289930 | COIL, PEAKING, TRF4101AU |
| L903 | 23289930 | COIL, PEAKING, TRF4101AU |
| L904 | 23289930 | COIL, PEAKING, TRF4101AU |
| L905 | 23289920 | COIL, PEAKING COIL 15MMH TRF4150AU |
| L906 | 23289920 | COIL, PEAKING COIL 15MMH TRF4150AU |
| L907 | 23289920 | COIL, PEAKING COIL 15MMH TRF4150AU |
| L908 | 23289918 | COIL, PEAKING, TRF4100AU |
| L910 | 23289949 | COIL, PEAKING COIL 1.00MMH J TRF4109AW |
| L8311 | 23248247 | COIL, CHOKE, TLN3499AH |
| L8312 | 23248247 | COIL, CHOKE, TLN3499AH |
| ⚠ LJ901 | 23200448 | COIL, GEOMAGNETIC CORRECTION TSB-2408AG |
| LV03 | 23103159 | FILTER, EMI, TEM2028AA, 7.5X6.4X8 60MMH 0.5A |
| LV04 | 23103159 | FILTER, EMI, TEM2028AA, 7.5X6.4X8 60MMH 0.5A |
| LV05 | 23103159 | FILTER, EMI, TEM2028AA, 7.5X6.4X8 60MMH 0.5A |
| LV50 | 23103159 | FILTER, EMI, TEM2028AA, 7.5X6.4X8 60MMH 0.5A |
| LV51 | 23103159 | FILTER, EMI, TEM2028AA, 7.5X6.4X8 60MMH 0.5A |
| LV52 | 23103159 | FILTER, EMI, TEM2028AA, 7.5X6.4X8 60MMH 0.5A |
| LV55 | 23103146 | EMI FILTER, TEM2030AA |
| LV60 | 23103146 | EMI FILTER, TEM2030AA |
| LV70 | 23289840 | COIL, PEAKING, TRF4100AT |
| LY101 | 23248296 | COIL, CHOKE |
| LY102 | 23238506 | COIL, PEAKING, TRF4229AJ |
| LY103 | 23238506 | COIL, PEAKING, TRF4229AJ |
| T400 | 23224390 | TRANSFORMER, FOCUS, TLN2226AH |
| T401 | 23224381 | TRANSFORMER, HORIZ DRIVE, TLN1080GH |
| ⚠ T461 | 23236835 | TRANSFORMER, FLY-BACK TFB4215AD |
| ⚠ T801 | 23211729 | COIL, LINE FILTER, TRF3232AQ |

| Location No. | Parts No. | Description |
|---|---|---|
| ⚠T802 | 23211713 | COIL, LINE FILTER, TRF3197AQ |
| ⚠T840 | 23217431 | TRANSFORMER, CONVERTER, TPW3425AH |
| ⚠T862 | 23217665 | TRANSFORMER, CONVERTER TPW3548AS |
| **SEMICONDUCTORS** | | |
| Q151 | 23205005 | TRANSISTOR, KTA2014Y |
| Q152 | 23205006 | TRANSISTOR, KTC4075Y |
| Q172 | 23205006 | TRANSISTOR, KTC4075Y |
| Q220 | 23114460 | TRANSISTOR, RN1204 |
| Q301 | 23009931 | IC, VERT.OUT CLASS D 2.5A STV9380A |
| Q302 | 23009930 | IC, E-W CORRECTION IC TA1317AF TA1317AFG(DRY,EL) |
| Q370 | 23114497 | TRANSISTOR, RN1406 |
| Q371 | 23314204 | TRANSISTOR, 2SC2412K,Q |
| Q372 | 23114497 | TRANSISTOR, RN1406 |
| Q373 | 23314204 | TRANSISTOR, 2SC2412K,Q |
| Q374 | 23314204 | TRANSISTOR, 2SC2412K,Q |
| Q392 | 23314204 | TRANSISTOR, 2SC2412K,Q |
| Q393 | 23314204 | TRANSISTOR, 2SC2412K,Q |
| Q394 | 23314204 | TRANSISTOR, 2SC2412K,Q |
| Q402 | 23314862 | TRANSISTOR, FET, 2SK941 |
| Q404 | 23205149 | TRANSISTOR, 2SC5859(FA) |
| Q404B | 23850638 | INSULATOR, TRANSISTOR, AC263 |
| Q418 | 23314141 | TRANSISTOR, 2SC3852 |
| Q430 | 23009187 | IC, REGULATOR +9V 4% KIA7809API |
| Q460 | 23205031 | TRANSISTOR, FET, 2SK2920 |
| Q470 | 23114759 | TRANSISTOR, 2SA949-Y |
| Q484 | 23205045 | TRANSISTOR, 2SA1037AKQ |
| Q486 | 23314204 | TRANSISTOR, 2SC2412K,Q |
| Q601 | 23906597 | IC, BA4558F |
| Q612 | 23314994 | TRANSISTOR, 2SA1576A106 |
| Q613 | 23114499 | TRANSISTOR, RN1404 |
| Q650 | 23314993 | TRANSISTOR, 2SC4081 Q |
| Q670 | 23906880 | IC, TA8246AH |
| Q671 | 23205204 | TRANSISTOR, NPN VEBO=25V KTC2875B-RTK |
| Q672 | 23205204 | TRANSISTOR, NPN VEBO=25V KTC2875B-RTK |
| Q705 | 23114433 | TRANSISTOR, 2SC1815-Y |
| Q706 | 23114433 | TRANSISTOR, 2SC1815-Y |
| Q707 | 23114437 | TRANSISTOR, 2SC752GTM-Y |
| Q709 | 23114433 | TRANSISTOR, 2SC1815-Y |
| Q710 | 23114425 | TRANSISTOR, 2SA1015-Y(TE |
| Q711 | 23205269 | TRANSISTOR, VCBO-160V IC-1.5A 2SA2005 |
| Q712 | 23205270 | TRANSISTOR, VCBO 160V 1.5A 2SC5511 |
| Q719 | 23114433 | TRANSISTOR, 2SC1815-Y |
| Q720 | 23114433 | TRANSISTOR, 2SC1815-Y |
| Q801 | 23135047 | IC, HYBRID IC STR-F6629B |
| Q805 | 23114498 | TRANSISTOR, RN1405 |
| Q831 | 23009546 | IC, REGULATOR +5V 3% NJM2396F05D |
| Q832 | 23009549 | IC, REGULATOR +9V 3% NJM2396F09D |
| Q833 | 23009967 | IC, +5.0V 2% REG. TO220FP-3 BA50BC0T |
| Q834 | 23009546 | IC, REGULATOR +5V 3% NJM2396F05D |
| Q838 | 23009976 | IC, REGULATOR +3.3V 1% SSOP5 BH33FB1WG-TR |
| Q840 | 23135038 | IC, MIP2900MPSCF |
| ⚠Q841 | 23000823 | IC, PHOTO COUPLER, TLP421F(GR) |
| ⚠Q842 | 23000823 | IC, PHOTO COUPLER, TLP421F(GR) |
| Q843 | 23314204 | TRANSISTOR, 2SC2412K,Q |
| ⚠Q862 | 23009270 | IC, PHOTO COUPLER, PS2581L1(D) |
| ⚠Q883 | 23009991 | IC, ERROR AMP VS=133.7V TO220A SE133N, LF4 |
| Q884 | 23314163 | TRANSISTOR, 2SA1162-Y |
| Q901 | 23314780 | TRANSISTOR, 2SC4544 |
| Q902 | 23114433 | TRANSISTOR, 2SC1815-Y |
| Q903 | 23314780 | TRANSISTOR, 2SC4544 |
| Q904 | 23114433 | TRANSISTOR, 2SC1815-Y |
| Q905 | 23314780 | TRANSISTOR, 2SC4544 |
| Q906 | 23114433 | TRANSISTOR, 2SC1815-Y |
| Q907 | 23114735 | TRANSISTOR, 2SA102-Y(C) |
| Q908 | 23114429 | TRANSISTOR, 2SC2120-Y(TE |

| Location No. | Parts No. | Description |
|---|---|---|
| Q910 | 23114433 | TRANSISTOR, 2SC1815-Y |
| Q911 | 23114433 | TRANSISTOR, 2SC1815-Y |
| Q912 | 23114425 | TRANSISTOR, 2SA1015-Y(TE |
| Q913 | 23114425 | TRANSISTOR, 2SA1015-Y(TE |
| Q914 | 23114433 | TRANSISTOR, 2SC1815-Y |
| Q4021 | 23314475 | TRANSISTOR, 2SC2712-Y |
| Q4022 | 23314163 | TRANSISTOR, 2SA1162-Y |
| Q4460 | 23314204 | TRANSISTOR, 2SC2412K,Q |
| Q4461 | 23314204 | TRANSISTOR, 2SC2412K,Q |
| Q4466 | 23114498 | TRANSISTOR, RN1405 |
| Q4690 | 23314204 | TRANSISTOR, 2SC2412K,Q |
| Q4710 | 23314163 | TRANSISTOR, 2SA1162-Y |
| Q4711 | 23314204 | TRANSISTOR, 2SC2412K,Q |
| Q4712 | 23314204 | TRANSISTOR, 2SC2412K,Q |
| QB11 | 23114528 | TRANSISTOR, 2SC1740S |
| QB30 | 23314204 | TRANSISTOR, 2SC2412K,Q |
| QJ02 | 23000808 | IC, LA6500 |
| QJ03 | 23314962 | TRANSISTOR, KTA1266 Y |
| QS01 | 23009916 | IC, A S/W SSOP-36A MM1631AJBE |
| QS04 | 23114493 | TRANSISTOR, RN2404 |
| QS05 | 23205204 | TRANSISTOR, NPN VEBO=25V KTC2875B-RTK |
| QS06 | 23205204 | TRANSISTOR, NPN VEBO=25V KTC2875B-RTK |
| QS07 | 23205204 | TRANSISTOR, NPN VEBO=25V KTC2875B-RTK |
| QS08 | 23205204 | TRANSISTOR, NPN VEBO=25V KTC2875B-RTK |
| QS09 | 23114493 | TRANSISTOR, RN2404 |
| QS19 | 23314993 | TRANSISTOR, 2SC4081 Q |
| QS41 | 23314993 | TRANSISTOR, 2SC4081 Q |
| QS43 | 23314993 | TRANSISTOR, 2SC4081 Q |
| QS102 | 23906597 | IC, BA4558F |
| QV009 | 23205014 | TRANSISTOR, 2SC4667-O |
| QV01 | 23009940 | IC, VIDEO S/W MM1630AQ |
| QV48 | 23314965 | TRANSISTOR, KTC3198 Y |
| QV50 | 23314993 | TRANSISTOR, 2SC4081 Q |
| QV51 | 23314993 | TRANSISTOR, 2SC4081 Q |
| QV52 | 23314993 | TRANSISTOR, 2SC4081 Q |
| QV54 | 23314993 | TRANSISTOR, 2SC4081 Q |
| QV55 | 23314993 | TRANSISTOR, 2SC4081 Q |
| QV56 | 23314993 | TRANSISTOR, 2SC4081 Q |
| QV58 | 23314993 | TRANSISTOR, 2SC4081 Q |
| QV59 | 23314993 | TRANSISTOR, 2SC4081 Q |
| QV60 | 23314993 | TRANSISTOR, 2SC4081 Q |
| QY160 | 23205006 | TRANSISTOR, KTC4075Y |
| D101 | 23316755 | DIODE, ZENER, MTZJ33C |
| D302 | 23357366 | DIODE, FR105-B5 |
| D303 | 23357366 | DIODE, FR105-B5 |
| D318 | 23118859 | DIODE, 1SS133 |
| D321 | 23316753 | DIODE, ZENER, MTZJ33A |
| D327 | 23118515 | DIODE, ZENER, RD11ESA B1 |
| D330 | 23357457 | DIODE, TVS VRWM=64V VBR=74.85V SA64ALF |
| D365 | 23118526 | DIODE, ZENER, RD6.8ES B2 |
| D372 | 23118859 | DIODE, 1SS133 |
| D373 | 23118859 | DIODE, 1SS133 |
| D404 | 23224366 | DIODE, FMQ-3GU |
| D404C | 72131002 | BEAD CORE, BF04RI3.5031.3 |
| D406 | 23357366 | DIODE, FR105-B5 |
| D412 | 23357366 | DIODE, FR105-B5 |
| D414 | 23357366 | DIODE, FR105-B5 |
| D415 | 23357366 | DIODE, FR105-B5 |
| D419 | 23118514 | DIODE, ZENER, RD11ESA B2 |
| D420 | 23118538 | DIODE, ZENER, RD6.2ESA B2 |
| D431 | 23118621 | DIODE, ZENER, RD10ESA B3 |
| D462 | 23316725 | DIODE, ZENER, MTZJ15B |
| D465 | 23357366 | DIODE, FR105-B5 |
| D469 | 23118859 | DIODE, 1SS133 |
| D470 | 23316758 | DIODE, ZENER, MTZJ36B |
| D471 | 23357366 | DIODE, FR105-B5 |

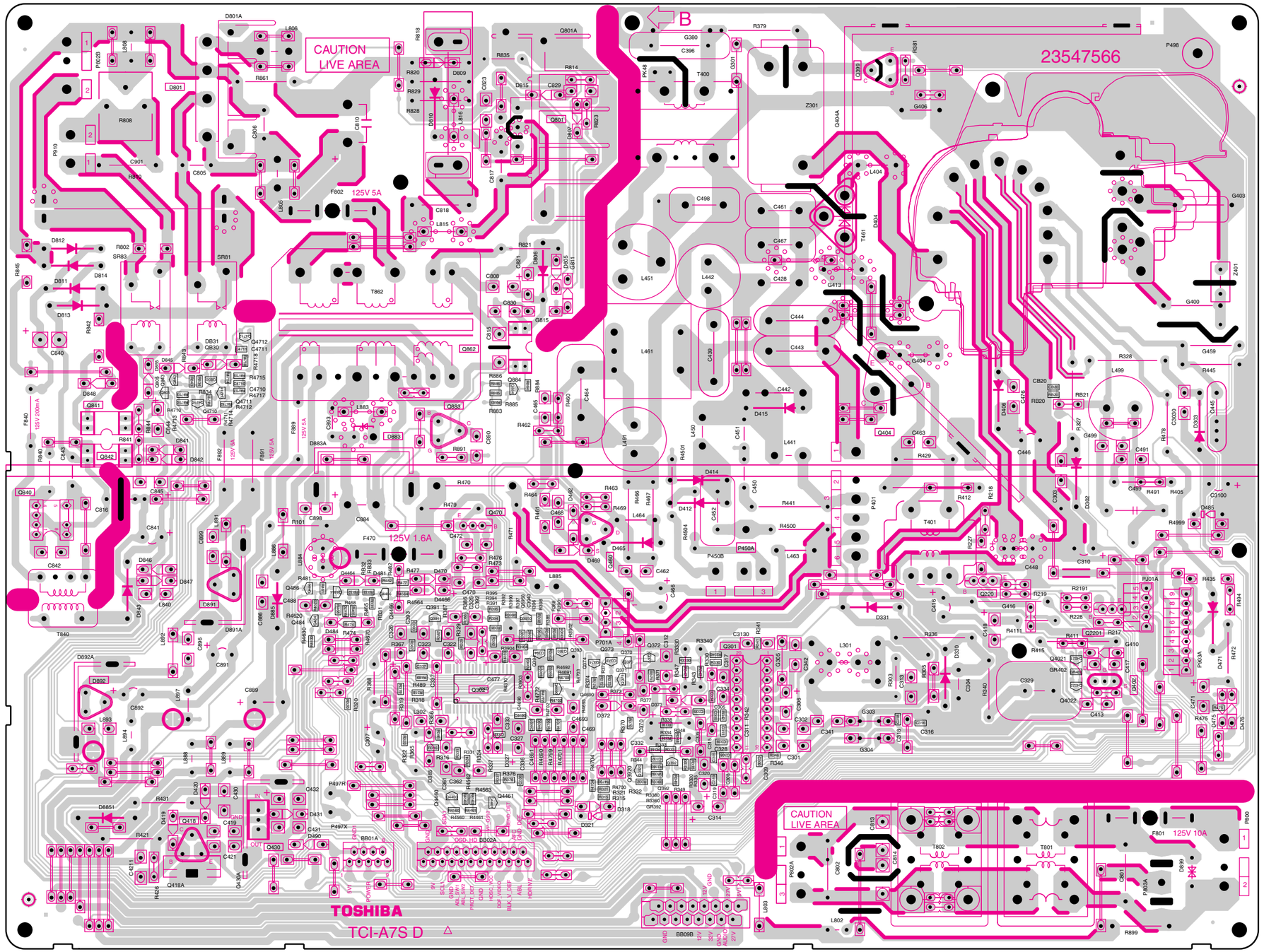
| Location No. | Parts No. | Description |
|---|---|---|
| D475 | 23118510 | DIODE, ZENER, RD12ES |
| D476 | 23118859 | DIODE, 1SS133 |
| D481 | 23118859 | DIODE, 1SS133 |
| ⚠D484 | 23115774 | DIODE, ZENER, RD6.2E(FA-1) |
| D485 | 23118516 | DI0DE, ZENER, RD9.1ES B3 |
| D490 | 23118859 | DIODE, 1SS133 |
| 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 | VARISTOR, 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 |
| 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 |
| **MISCELLANEOUS** | | |
| 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 |
| **PC BOARD ASSEMBLIES** | | |
| ✻ 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 |
| **PICTURE TUBE** | | |
| ⚠V901 | 23324106 | PICTURE TUBE, 34VPF MTPD ITC W86MAG183X30 |

| Location No. | Parts No. | Description |
|---|---|---|
| **TUNER** | | |
| ⚠H001 | 23321470 | TUNER, US181CH IIC PH 5V SANYO ELA52LX4 |
| ⚠HY01 | 23321480 | TUNER, TIF US IIC PH 181CH 5V ENG36A18GF |
| **ACCESSORIES** | | |
| 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 |
| **CABINET PARTS** | | |
| ⚠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 |

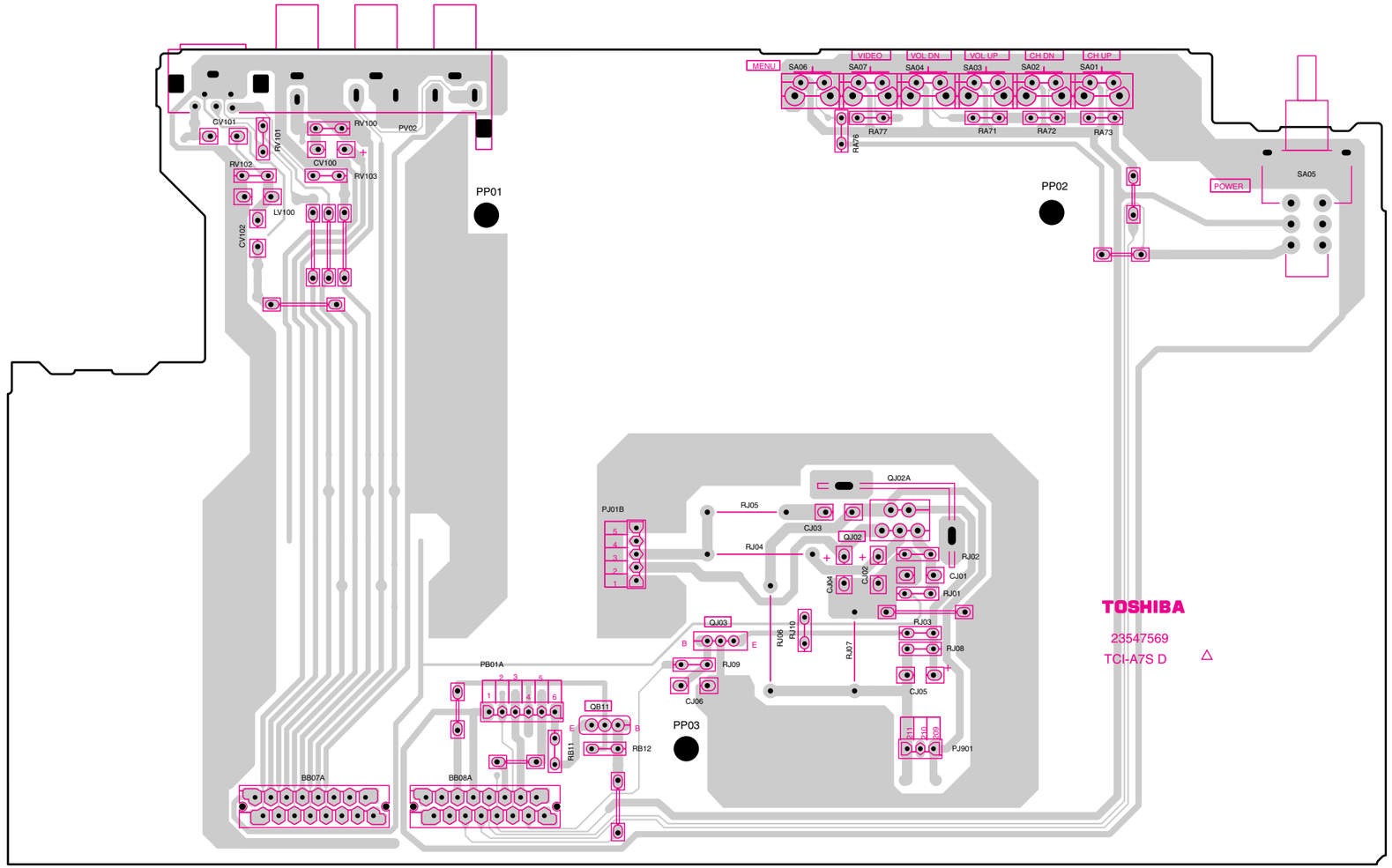
# POWER/DEF BOARD PD1706A (U002)

**BOTTOM (FOIL) SIDE**



# CONT BOARD PD1709-1 (UA01)

## BOTTOM (FOIL) SIDE



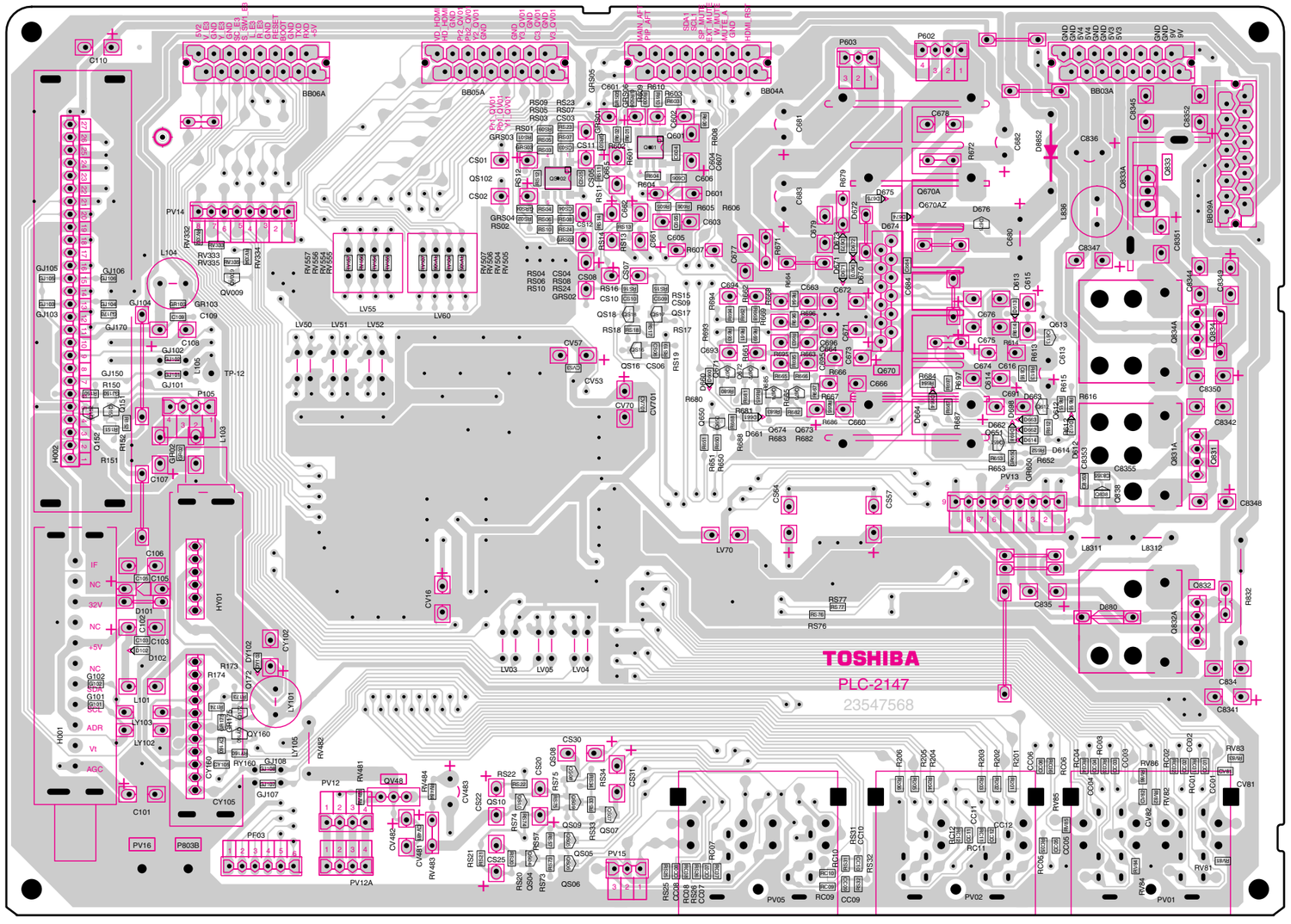

TOSHIBA

23547569

TCI-A7S D △

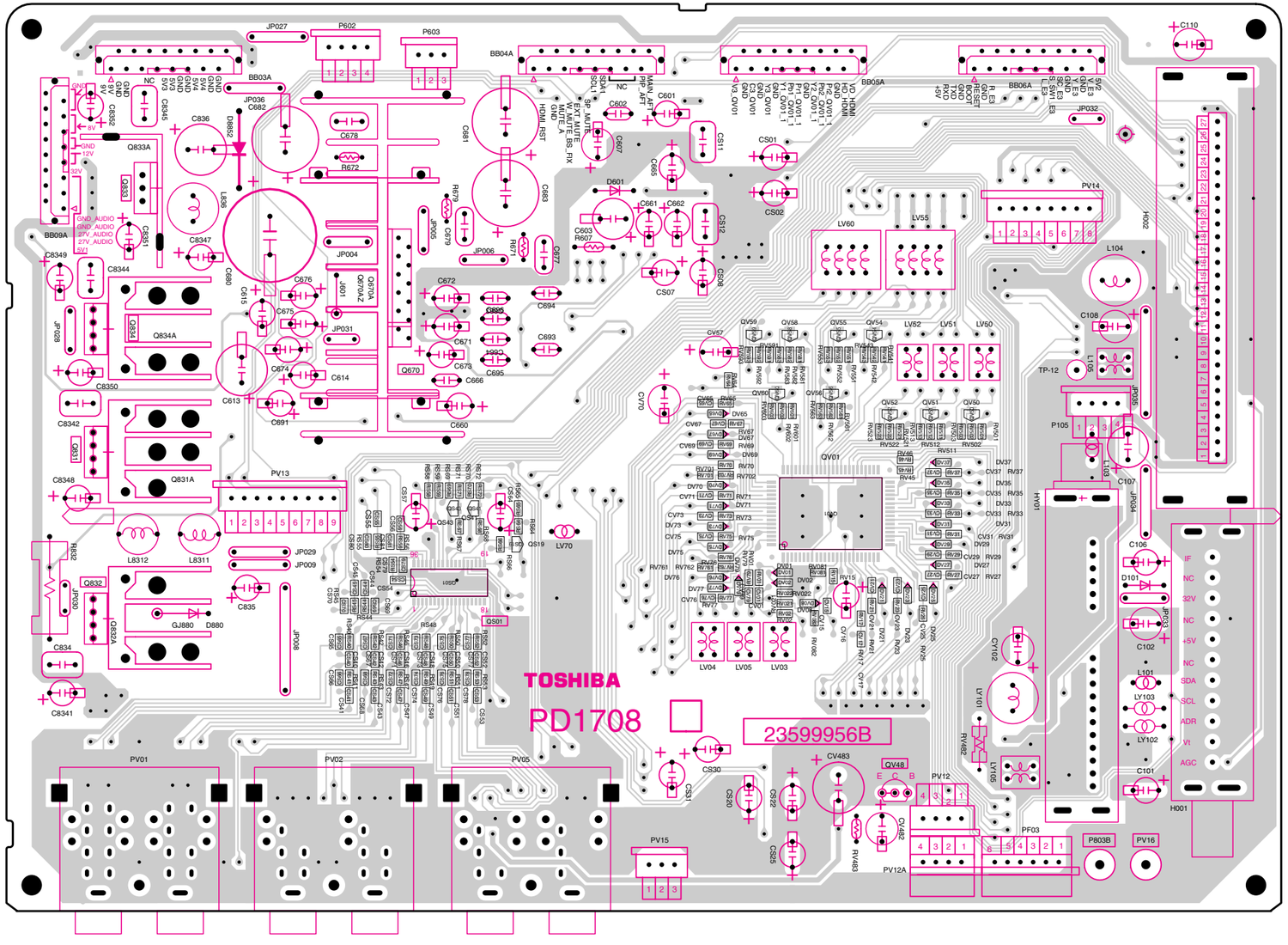
# AV TERMINAL BOARD PD1708A (U005)

**BOTTOM (FOIL) SIDE**



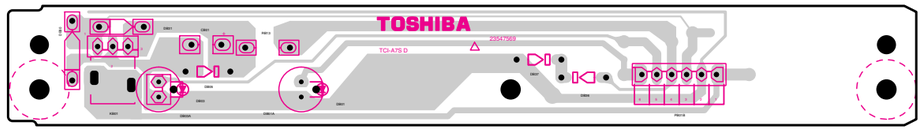
# AV TERMINAL BOARD PD1708A (U005)

## TOP (COMPONENT) SIDE



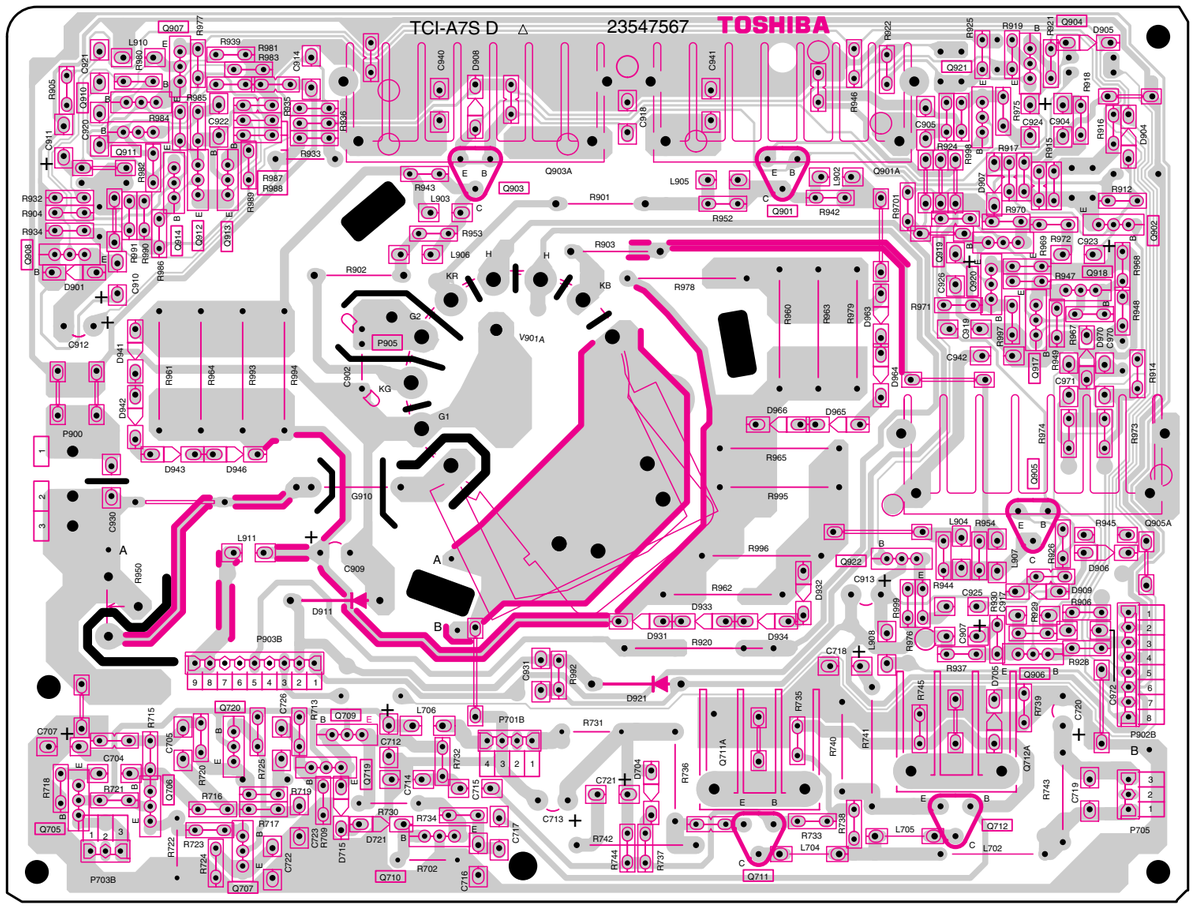
# LED BOARD PD1709-2 (UA02)

**BOTTOM (FOIL) SIDE**



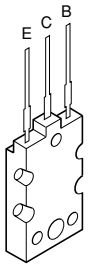

# CRT-D/SVM BOARD PD1707A (U004)

**BOTTOM (FOIL) SIDE**

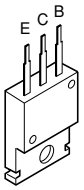

TCI-A7S D
△
23547567
TOSHIBA
Q907
R977
R939
R981
R983
L910
C914
C940
D908
C941
C918
R946
R822
R825
R919
Q904
D905
Q921
C905
C924
C904
R924
R926
R917
R915
R916
D904
C921
Q910
C920
C911
R905
R985
R984
R982
Q911
R932
R904
R934
Q908
D901
C912
R987
R988
R989
Q912
Q913
R991
R990
R986
C910
R933
C922
C923
R903
R902
R901
R943
Q903
Q903A
L903
R953
L906
R952
L905
Q901
Q901A
L902
R942
R9701
R970
R972
R968
R912
Q902
Q919
Q920
C926
R947
Q918
R948
R971
C919
R967
R964
C970
C942
Q917
R946
R914
C971
R974
R973
Q905
R978
R960
R963
R979
D963
D964
D966
D965
R965
R995
R996
R962
D933
D931
R920
D934
C718
L908
R976
R937
R745
D705
Q906
R928
R939
C720
C712
L706
P701B
R731
C721
D704
R736
Q711A
R740
R741
Q712A
R743
C719
P902B
R735
R738
R733
L704
L705
Q712
L702
Q711
R744
R737
C713
C717
R734
R730
D721
R702
Q710
C716
R732
Q709
R726
R713
C726
Q720
C705
R720
R715
C707
C704
R718
R721
Q705
Q706
R716
R719
R717
C708
R709
D715
C722
R722
R723
R724
Q707
P703B
P900
C930
R950
L911
C909
G910
D911
P903B
R922
R923
R944
C925
R930
R929
R927
R926
R928
C907
L907
R954
L904
R945
Q905A
D906
D909
R906
C913
Q922
B
A
G2
P905
KG
G1
V901A
KR
KB
H
L903
R953
L906
R902
R903

# TERMINAL VIEW OF TRANSISTORS

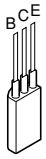
① 2SD2253
(old)
2SC5243



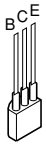

② 2SC3852
2SD1763A
2SC1569
2SC4544
2SA1788
2SA1306
2SA1186A



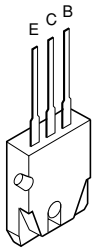

③ 2SC752GTM
2SC2482
2SC2655
2SC4721P



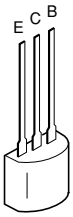

④ 2SC752
2SA562TM
2SA1015
2SC1815
2SC2878
2SC1740S
2SC2120
2SA9335



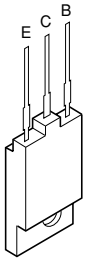

⑤ 2SA1788



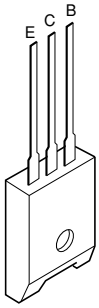

⑥ RN2203
RN2201
RN2004
RN1203
RN1204
RN2204
RN1205
RN1202
RN1201




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 "⚠" 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.

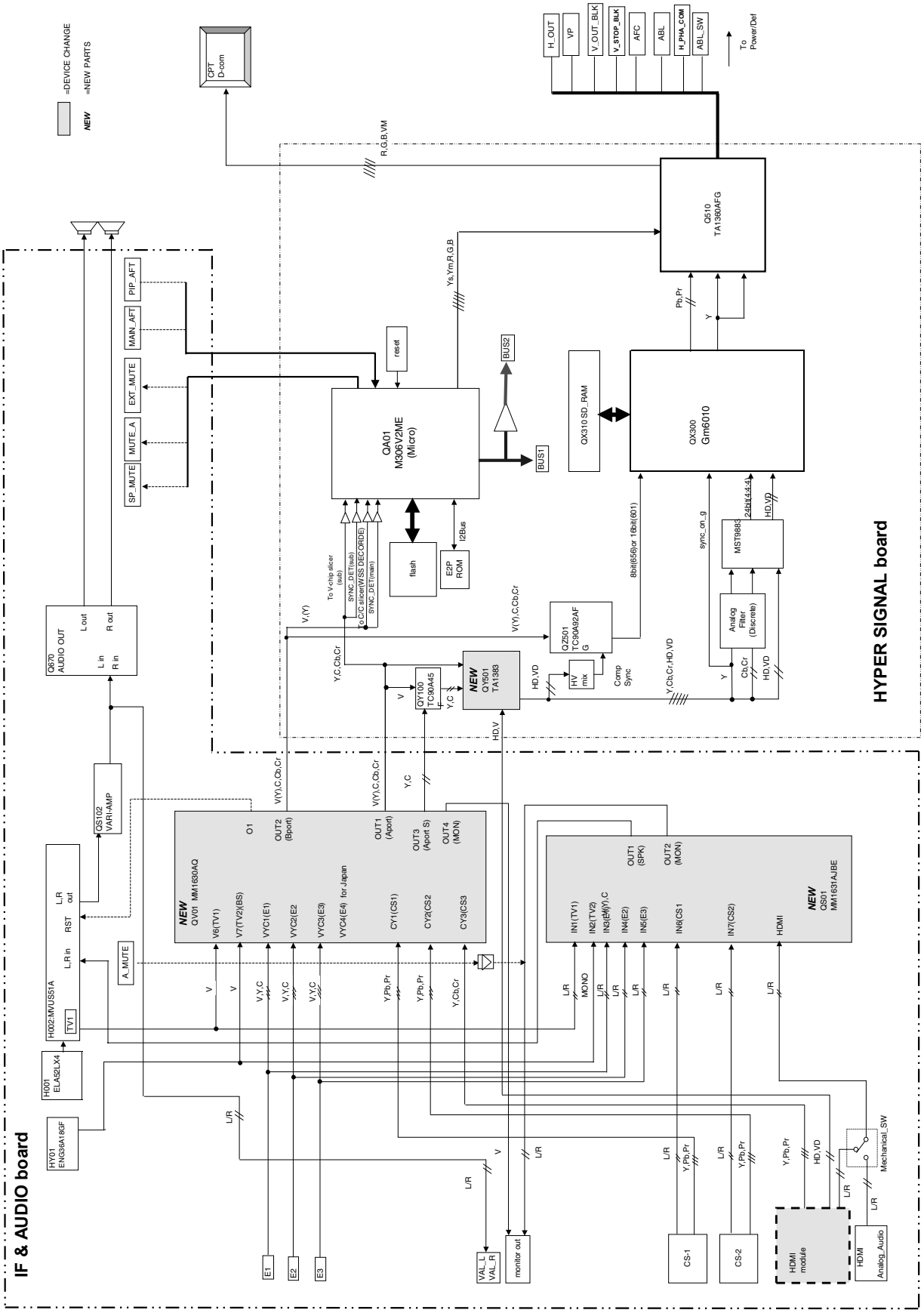
**NOTE:**

1. 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
   1/2S = Carbon compsistion of 1/2 watt
   1RF = Fuse resistor of 1 watt
   10W = Cement of 10 watt
   K = ±10% G = ±2% F = ±1%
2. CAPACITOR Unless otherwise noted in schematic, all capacitor values less than 1 are expressed in μF, and the values more than 1 in pF.
   All capacitors are ceramic 50V, unless otherwise noted as the following marks.
    Electolytic capacitor
    Mylar capacitor
3. The parts indicated with "⚠" have special characteristics, and should be replaced with identical parts only.
4. 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.
5. Waveforms are taken receiving color bar signal with enough sensitivity.
6. Voltage reading shown are nominal values and may vary ±20% except H.V.

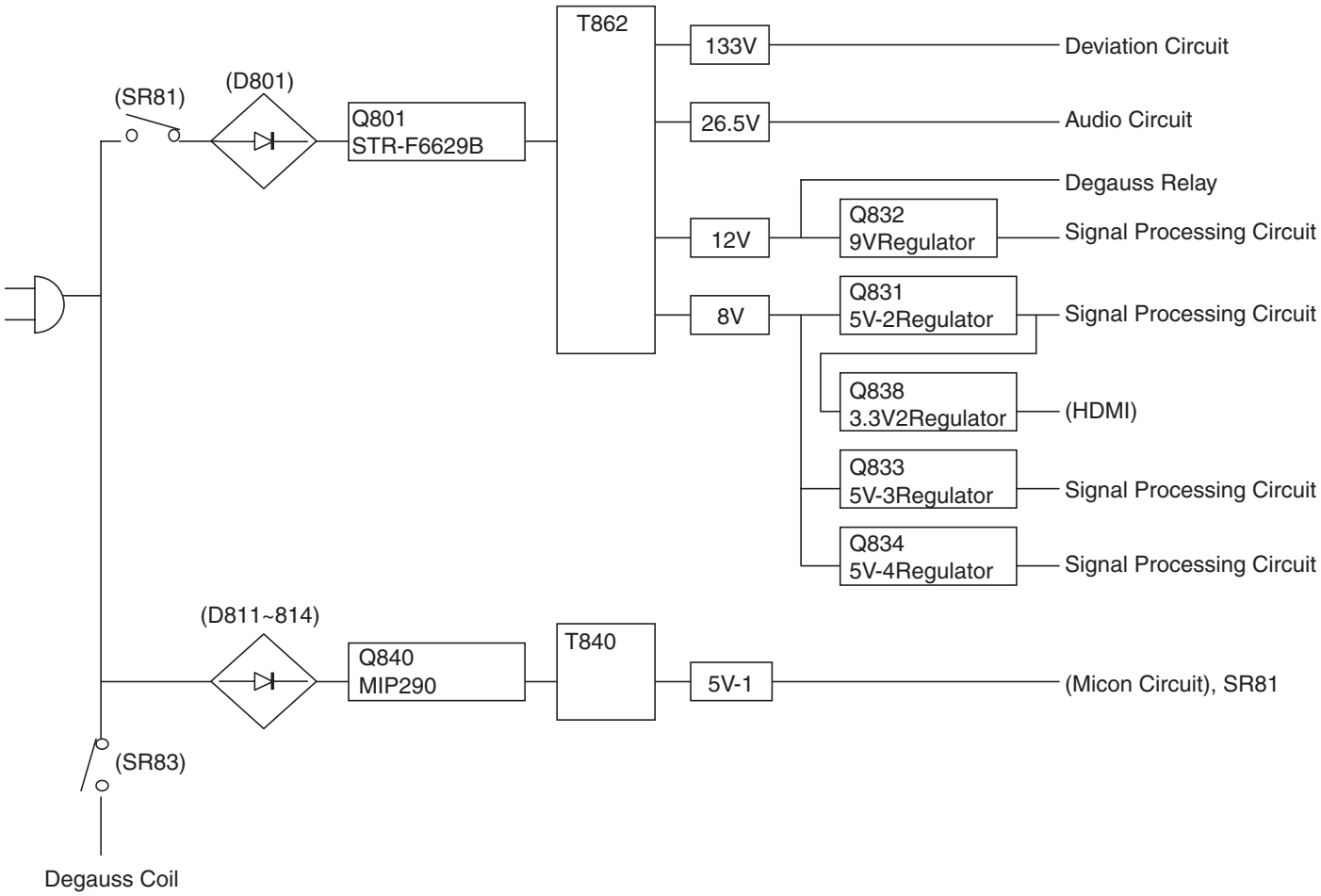
## ■ SCHEMATIC DIAGRAM STRUCTURE:


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

– END –

**TOSHIBA CORPORATION**
1-1, SHIBAURA 1-CHOME, MINATO-KU, TOKYO 105-8001, JAPAN