TOSHIBA

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SERVICE MANUAL

# Color Television

N4PSP Chassis

**46H84**
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**57H84**

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# CHAPTER 1 GENERAL ADJUSTMENTS

## SAFETY INSTRUCTIONS

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

### X-RAY RADIATION PRECAUTION

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

   Refer to table-1 for high voltage (A), (B).
   (See SETTING & ADJUSTING DATA on page 21)

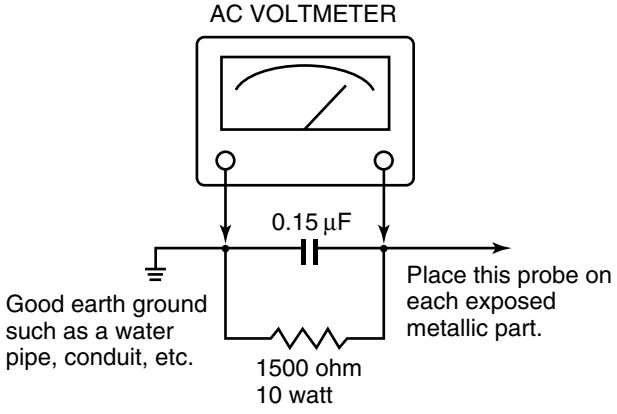
   Each time a receiver requires servicing, the high voltage should be checked following the HIGH VOLTAGE CHECK procedure in this manual. It is recommended that the reading of the high voltage be recorded as a part of the service record. It is important to use an accurate and reliable high voltage meter.
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 0.675 volts rms. This corresponds to 0.45 milliamp. AC. Any value exceeding this limit constitutes a potential shock hazard and must be corrected immediately.

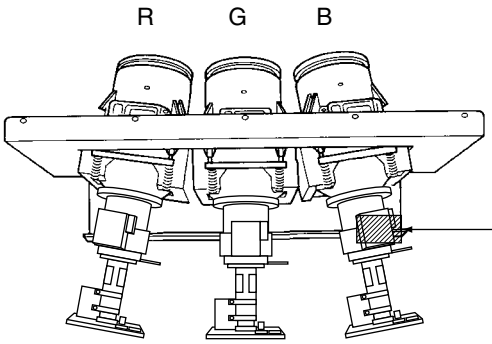



### PRODUCT SAFETY NOTICE

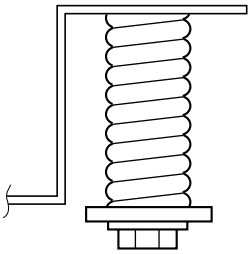
Many electrical and mechanical parts in this chassis have special safety-related characteristics. These characteristics are often passed unnoticed by a visual inspection and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, 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.

# CRT ASSEMBLY REPLACEMENT AND MOUNTING

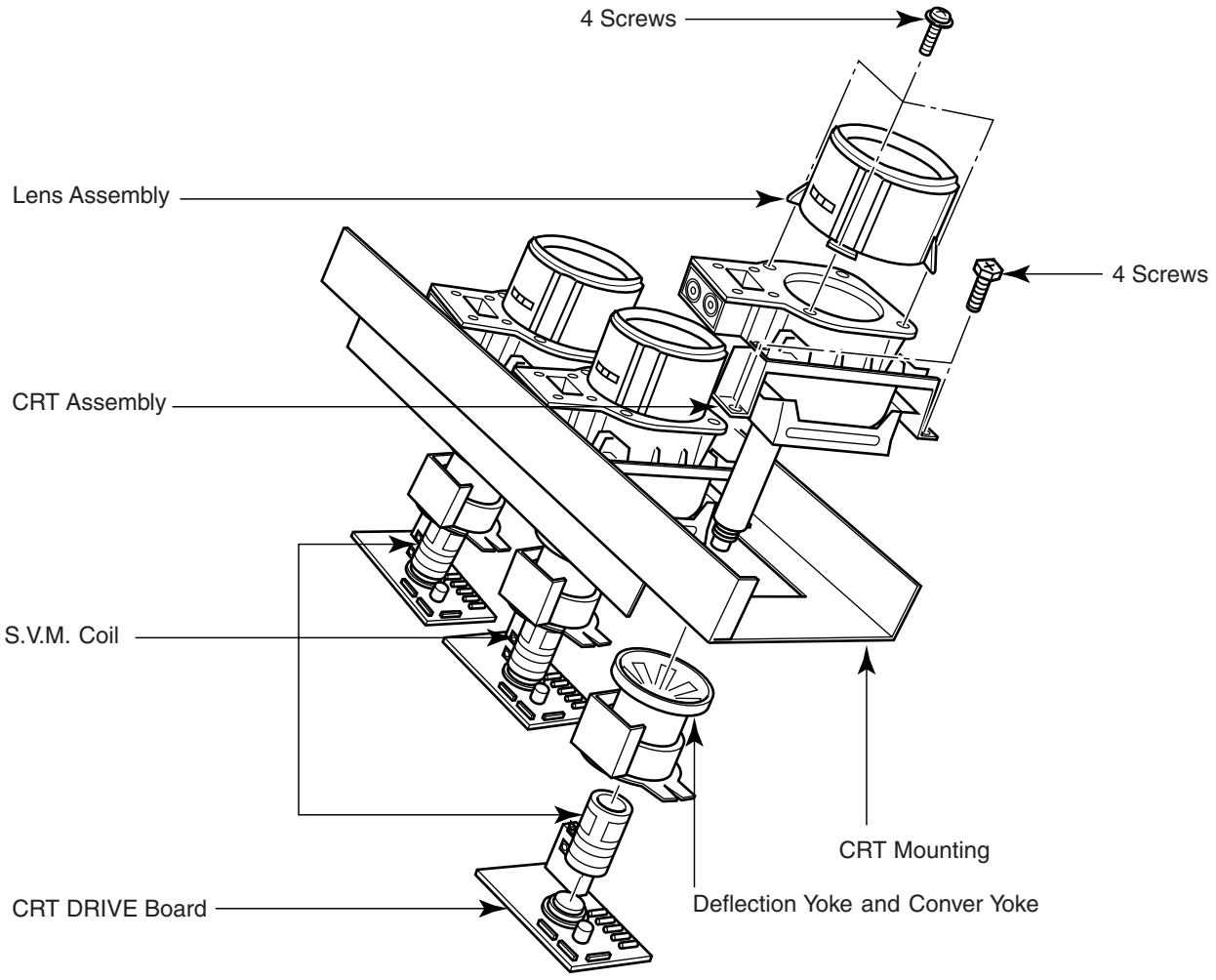
**CAUTION : DO NOT LOOSEN THE HEX HEAD BOLTS WITH SPRINGS (12 PCS), BECAUSE THOSE ARE FOR SEALING OF CRT COOLANT.**




## Attention Serviceman



The Hex Head Bolts with Springs. (see sketch) used on CRT assembly, are NOT Adjustment Screws DO NOT LOOSEN-FLUID LEAKAGE WILL OCCUR.




**Lens and Neck Components View**

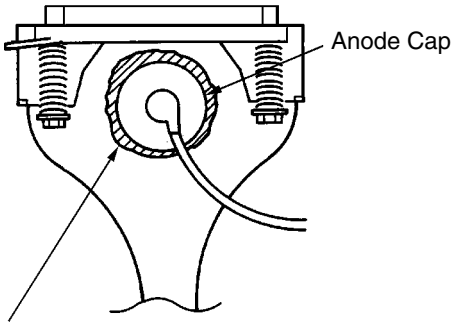
TO REMOVE CRT (Same procedure for R, G, B)

1. Remove CRT DRIVE Board, S. V. M. COIL and DEF. YOKE from CRT.
2. Remove Lens Assembly.
3. Detach CRT Anode Cap from CRT.
4. Remove CRT Assembly from CRT Mounting.

CRT REPLACEMENT (Same procedure for R, G, B)
Reverse the removal procedures except the followings.

1. Anode Cable should be replaced with new one. See “SERVICING PRECAUTIONS” shown below.
2. Install silicon (T461B) to the CRT, replace the Anode cable and put enough silicon again on around the Anode Cap as illustrated.

CAUTION: Align the Anode cable as illustrated on page 4.

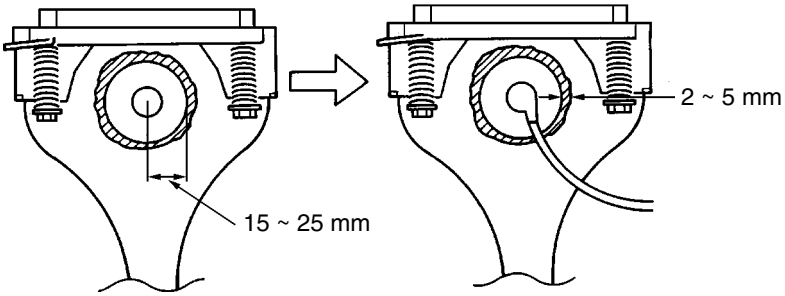



Silicon
(On shaded area)
TSE3843W #23960136

ADJUSTING PROCEDURE IN REPLACING CRT

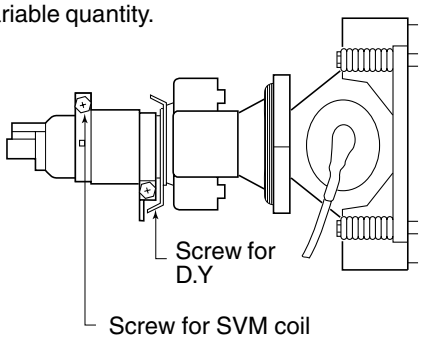
1. R.G.B. FOCUS ADJUSTMENT (page 7.)
2. PICTURE TILT ADJUSTMENT (page 7.)
3. USER CONVERGENCE CENTER CHECK (See owner's manual.)
4. CENTERING ADJUSTMENT (page 7.)
5. CONVERGENCE ADJUSTMENT (page 13.)
6. WHITE BALANCE ADJUSTMENT (page 12.)

Adjustments are complete.



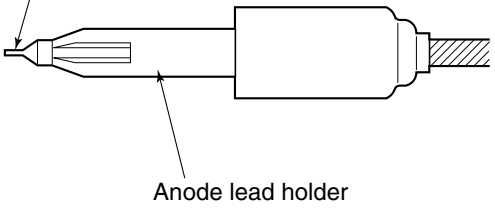

## SERVICING PRECAUTIONS

■ Do not use a magnetized screw driver for screws of Deflection Yoke and Velocity Modulation Coil to avoid magnetization of electron gun. Magnetization of electron gun will degrade basic function and result in unbalance of right and left shift of user static convergence, and result in no variable quantity.




■ When replacing the anode cap assembly (CRT) or anode lead assembly (F.B.T.), remove the anode lead holder from old one and attach the holder again to new anode lead.

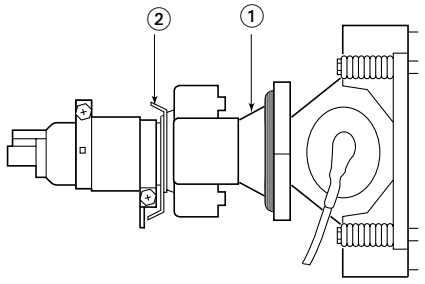
■ Check the point of anode lead in a straight line, if it is winding, please revise it.



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

# PICTURE TUBE COMPONENTS ADJUSTMENT

**DESCRIPTION OF NECK COMPONENTS**




① Deflection yoke and convergence yoke
The position on the neck is required most front (CRT funnel side) and the screw is fastened after rotating yoke adjusting picture tilt.

② Centering magnet
After adjusting picture tilt, picture position is finally fixed by this magnet.
In order to get maximum margin of user convergence control for center of screen, this magnet have to be used for center convergence adjustment.

PREPARATION
Operate the receiver for at least 5 minutes.

**R, G, B FOCUS ADJUSTMENT**

1. Before adjusting the R, G, B FOCUS, remove the 4 screws of Lens Assembly which is fixed on the CRT Assembly. (See page 4.)
   Then turn around the Lens Assembly by 180˚ to adjust the fastening screw (Fig. a) and fasten the 4 screws to secure Lens Assembly.
2. Select the adjustment mode. (See page 10.)
3. Press “7” button to display the built-in cross-hatch.
4. Press “0” and “RTN” buttons to make the picture a single Red color.
   100 button ..... to erase Red color
   0 button ..... to erase Green color
   RTN button ..... to erase Blue color.
5. Loosen the fasten screw and adjust Red lens focus to best focusing point of picture center. Then fasten the screw. (See Fig. a.)

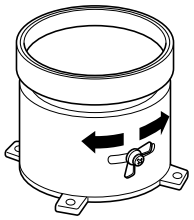


**Fig. a**

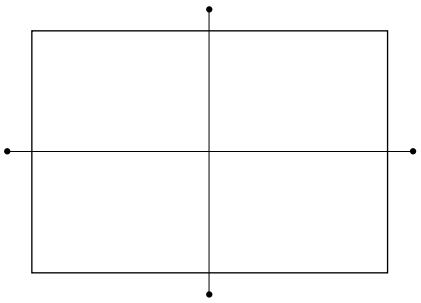
6. Adjust FOCUS VR “R” of FOCUS PACK to find best focusing point of picture center.
7. Repeat steps 3 to 5 for Green and Blue colors.

**TILT ADJUSTMENT**

Rotate R, G, B deflection yoke so that picture becomes horizon, then fasten screw.

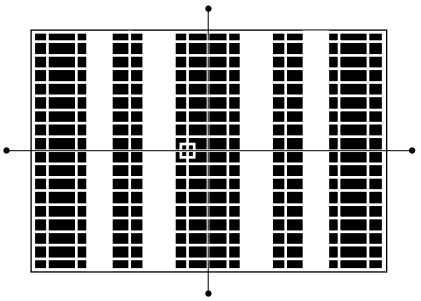
**CENTERING ADJUSTMENT**

1. Stretch a thread between two center of screen edge (top and bottom, left and right).



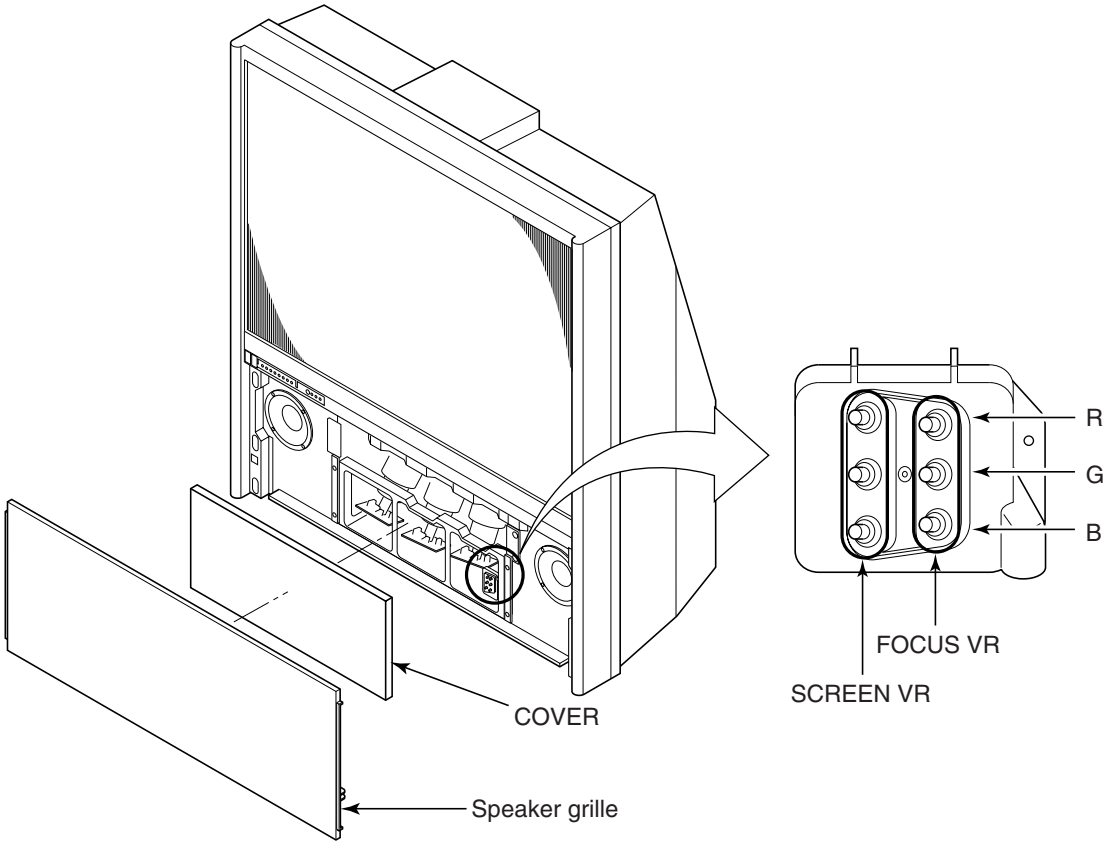
2. Receive NTSC.
   Then select SERVICE MODE. (See Page 10.)

3. Select CONVERGENCE ADJUSTING mode, and press "7" button to display the internal net pattern.
   Move Cursol and recognize horizontal line indicated Y:4. This line is vertical center. Push "9" button to display the vertical stripes, and recognaize horizontal center.



4. Perform VCEN adjustment. (See page 12.)
5. Adjust G centering magnet so that the cross-bar pattern center comes to screen center.
6. Perform HEIGHT adjustment . (See page 13.)
7. Perform VERT. LINEARITY adjustment.
8. Perform WIDTH adjustment. (See page 12.)
9. Check whole quality of green line.
10. Adjust R, B centering magnet so that the cross-bar pattern center comes to screen center.

**LOCATION OF SCREEN AND FOCUS VR'S**



# REPLACEMENT OF THE CRT

Service parts are provided for each R, G and B.
The contents of the parts are as follows.

| | | R | G | B |
|---|---|---|---|---|
| 46H84/57H84 | HOKUTO | 2334118 | 2334119 | 2334120 |
| 51H84 | HITACHI | 2334122 | 2334123 | 2334124 |

**REPLACEMENT OF HIGH VOLTAGE CABLE**

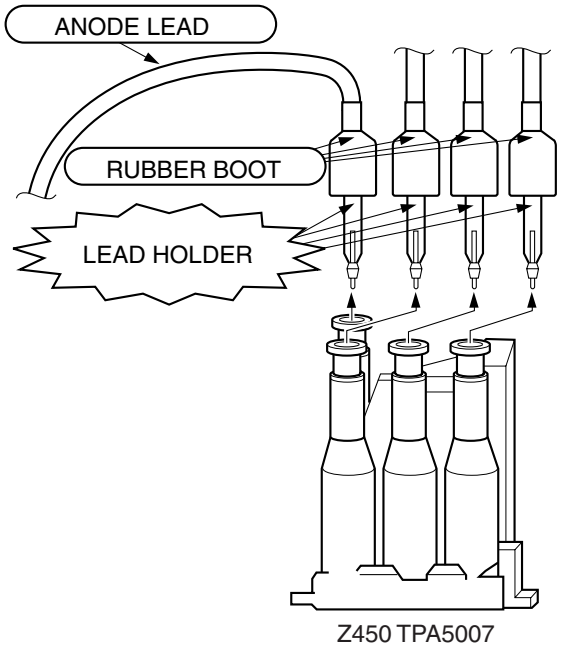



**Fig. a**

1. When replacing Anode Lead or Anode Cap with new one, remove Lead Holder from old lead as shown in figure below, and put it on new lead. Do not throw away Lead Holder.

**NOTE : THE LEAD HOLDER IS ATTACHED TO TPA5007 (Z450), BUT IS NOT ATTACHED TO ANODE LEAD AND ANODE CAP. RUBBER BOOT IS ATTACHED TO ANODE LEAD AND ANODE CAP.**

2. Detaching Lead Holder

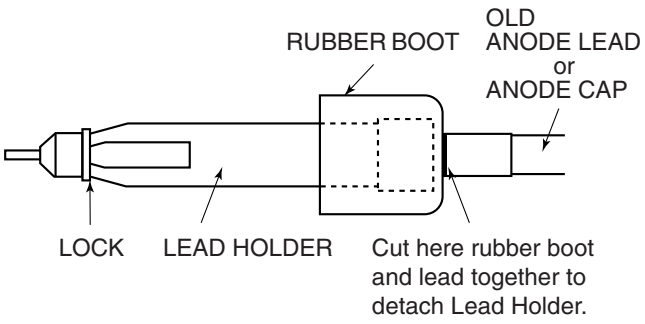



**Fig. b**

# SERVICE MODE

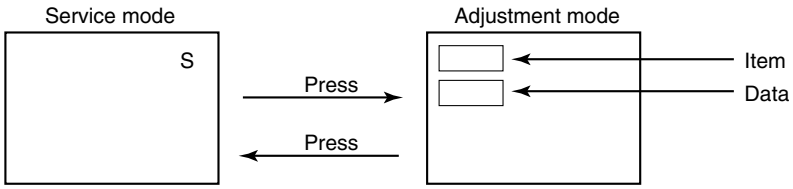
## 1. ENTERING TO SERVICE MODE

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 |
| “SCOL” selection : | 5 button |
| “TNTC” selection : | 6 button |
| Convergence adj : | 7 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 21)

**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.

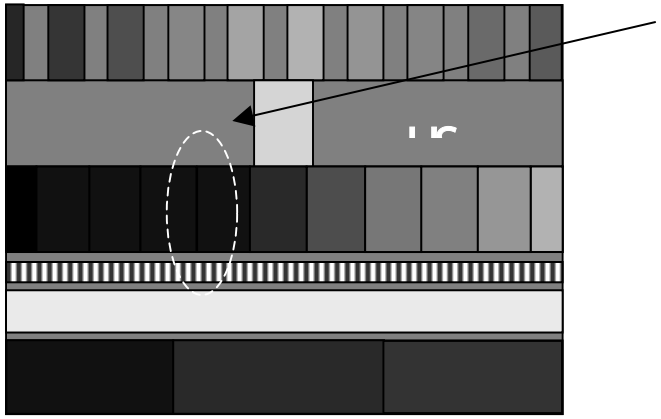
```
   SELF CHECK
①──NO. 23 * * * * * *
②──POWER     : 000
③──BUS LINE  : OK
④──BUS CONT : OK
⑤──BLOCK : MAIN  SUB
⑥──SET ID : 01
⑦──EEP VER : 02
⑧──OPT1 : 05      OPT2 : 70
      DVI
⑨──NO * * * * * * * *
⑩──ERR CODE : ○○○○○○
⑪──IR BLASTER VER : NG
```

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

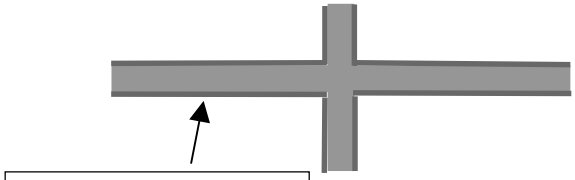
④ BUS line ACK (acknowledge) check
- “OK” ..... Normal
- Display of Location Number . . . . NG
- (Display example)
- “QA02 NG”, “H001 NG”, “Q501 NG” etc.
- Note: The indication of failure place is only one place though failure places are plural. When repair of a failure place finishes, the next failure 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 DVI microprocessor (Q203)
⑩ DVI error code ..... " ○○○○○○ " is normal. (When DVI signal is received)
⑪ Version of IR braster IC ("NG" is displayed for models without TheaterLink.)

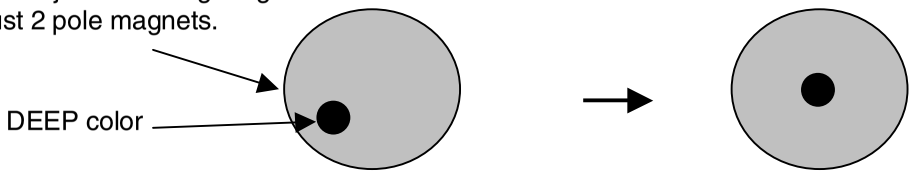
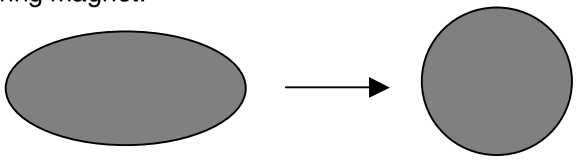
| ADJUSTING ITEM | PROCESS INSTRUCTIONS | SIGNAL | ADJUSTMENT SPECIFICATION |
|---|---|---|---|
| SCREEN ADJUST | 1. Heart run minimum 15minutes.<br>2. Go into screen adjustment mode.<br>Adjust Focus pack Screen VR of Red, Green, and Blue by looking directly into each CRT and adjusting each screen VR until CRT is just lit on left side of CRT. | | |
| WHITE BARANCE ADJUSTMENT | 1. Adjust white luster level to get 4.3cd/m2 on dark area, and get 264.3cd/m2 on bright area.<br>2. Using the data up and down keys, cycle through the adjustments for RED DRIVE, BLUE DRIVE, RED BIAS and BLUE BIAS.<br>Adjust RED DRIVE, BLUE DRIVE for bright area, and adjust RED BIAS and BLUE BIAS for dark area.<br>3. Continue to make adjustments color temperature to spec on each area. | White luster signal (Valuable input level) | 10500k+0UV<br>Same spec is applied on dark area and bright area. |
| SUB-BRIGHT ADJUSTMENT | 1. Receive channel 3 Sub-Bright pattern.<br>2. Go into BRTC of service mode.<br>3. Press DATA UP/DOWN to adjust Sub-Bright level to spec.<br>5th bar sunk<br>  | CHANNEL 3 SUB-BRIGHT SIGNAL | 5TH±1<br>BAR SUNK |

FOCUS ADJUSTMENT (1/2)

| ITEM | ADJUSTMENT METHOD |
|---|---|
| Focus Adjustment | (Condition)<br>• User Adjustment : SPORTS (CONTRAST MAX, BRIGHTNESS CENTER)<br>• Adjust after Centering Magnet adjusts.<br>• Signal : Lens Focus : R Dot cross (NTSC)<br>G Dot cross (NTSC)<br>B Dot cross (NTSC)<br>Electrical Focus : R Dot cross (NTSC)<br>G Dot cross (NTSC)<br>B Dot cross (NTSC)<br><br>(Adjustment)<br>1. Common Items<br>1) Rough Adjust the lens focus and electrical focus of each color(R, G, B).<br>2. Green Adjustment<br>1) Receive green single color by shielding jig.<br>2) Receive the Dot Cross pattern.<br>3) Adjust Green electrical focus.<br>Adjust Green electrical focus VR on focus pack (Z410) for best center focus.<br><br>If the focus blur on screen center and circumference, adjust the electrical focus is best point on all of screen.<br><br>4) Adjust Green lens focus.<br>Receive the Dot Cross pattern. Adjust Green lens for best center focus.<br><br>Green lens focus adjustment target<br>Dot-cross has red flare (red flare width :1mm)<br><br>  <br><br><br>5) Repeat (3)~(4),and adjust best focus point. |

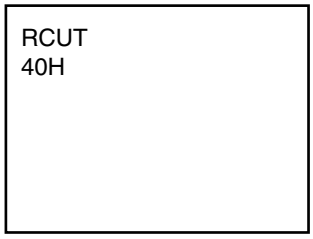
FOCUS ADJUSTMENT (2/2)

| ITEM | ADJUSTMENT METHOD |
|---|---|
| Focus Adjustment | 3. Red Adjustment<br>1) Receive Red single color by shielding jig.<br>2) Receive the Dot Cross pattern.<br>3) Adjust Red electrical focus.<br>Adjust Red electrical focus VR on focus pack (Z410) for best center focus.<br>4) Adjust Red lens focus.<br>Receive the Dot Cross pattern. Adjust Red lens for best center focus.<br><br>5) Repeat (3)~(4),and adjust best focus point.<br><br>4. Blue Adjustment<br>1) Receive Blue single color by shielding jig.<br>2) Receive the Dot Cross pattern.<br>3) Adjust Blue electrical focus.<br>Adjust Blue electrical focus VR on focus pack (Z410) for best center focus.<br>(The Brightness is minimum point of Blue.)<br><br>4) Adjust Blue lens focus.<br>Receive the Dot Cross pattern. Adjust the Blue lens for best center focus.<br><br>After easy lens adjustment, turn to right side lens focus screw,<br>and so dot-cross has flare.<br>Next turn left focus screw, so flare disappears in Dot-Cross and Dot-Cross become blur.<br>This point is blue lens focus adjustment target. (flare disappear and become blur) |

| ITEM | ADJUSTMENT METHOD |
|---|---|
| 2 POLE MAGNETS ADJUSTMENT | PROCESS (Adjust single color by shielding jig. Rough adjust the electrical focus, lens focus and after centering magnets adjustment.)<br><br>1. Set the cancel point for 2 pole , 4 pole and 6 pole magnets.<br>2. Receive the Dot Pattern of signal generator. (white dot, black back)<br>3. Rotate Green focus VR for a low focus. (counter clockwise)<br>4. Adjust 2 pole magnets, if necessary, so that the dot is in the center of the flare.<br>5. Adjust the Green focus.<br>6. Receive RETOMA pattern, and readjust centering magnet.<br>7. Repeat 3~6,if necessary, readjust 2 pole magnets.<br>  |
| 4 POLE MAGNETS ADJUSTMENT | PROCESS (Adjust single color by shielding jig.)<br>1. Receive the Dot Pattern of signal generator. (white dot, black back)<br>2. Rotate Green focus VR for a high focus. (clockwise)<br>3. Adjust the 4 pole magnet, if necessary, to ensure dots are circles not elliptical.<br>4. Adjust Green electrical focus on Dot Cross pattern.<br>5. Receive the RETOMA pattern, and check the centering.<br>6. Repeat 2~5,if necessary, readjust 4 pole magnets and centering magnet.<br>7. Repeat 2 pole and 4 pole adjustment for red and blue.<br>8. Fix the magnets by adhesive.<br>  <br><br>NOTE) Check and Readjust the 4 pole magnets, when adjusted the centering magnets. |

# CONVERGENCE ADJUSTMENT

1. Receive NTSC signal.
2. Enter to the service mode. (See Page 10.)




3. Press "7" button to enter the convergence adjusting mode, and the internal net pattern will be displayed. Then, press "9" button to display veritcal stripes.
4. Select the point and the color by pressing following buttons. (Cursor should be blinking.)
   "2", "8", "4", "6" : To select point
   "3" : To select color
5. Then press "5" button, and adjust the convergence by pressing following buttons. (Cursor should not be blingking.)
   "2", "8", "4", "6" : To adjust convergence
   "3" : To select color
6. Repeat from steps 3 to 4 until the convergence and the geometry become fine. (See Page 14.)
7. Press "7" button to momorize the adjusted data.
8. Message of "PLEASE PUSH TOUCH FOCUS" will be displayed, and press TOUCH FOCUS button which is located on the front panel.
9. TOUCH FOCUS CALIBRATION will start.
10. Soon message of "CALIBRATION FINISHED" will be displayed, and then a normal picture will be displayed.
11. Then push TOUCH FOCUS button again, and confirm that the convergence does not change.

Note: If message of "TOUCH FOCUS ERROR" is displayed,
   1) Check the connection between four sensors and Convergence Unit.
   2) Check the geometry of internal net pattern. (See Page 14.)

   If any problem cannnot be found, hardware might have problem.

EXPLANATION OF KEY-FUNCTION IN THE CONVERGENCE ADJUSTMENT MODE

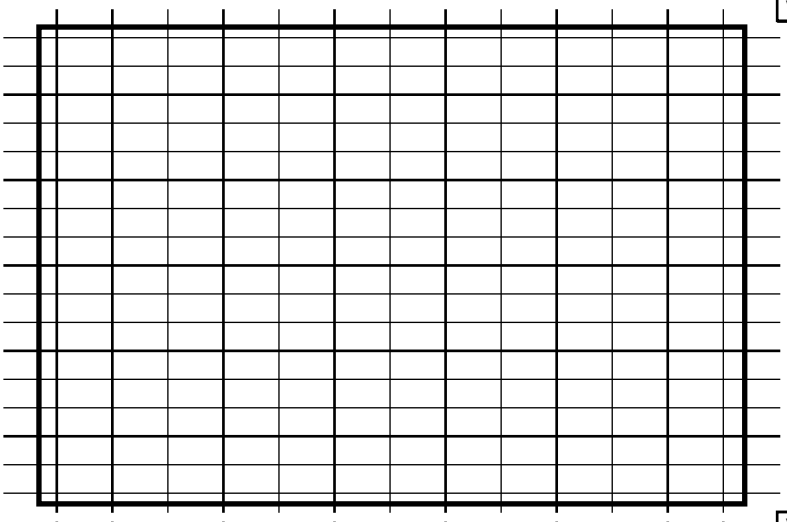
| | |
|---|---|
| Load BACK UP DATA: | 1 button |
| Up : | 2 button |
| Selet Green color: | 3 button |
| Left : | 4 button |
| Blinking of cursor ON/OFF: | 5 button |
| Right: | 6 button |
| Adjust mode ON/OFF: | 7 button |
| Down: | 8 button |
| Vertical stripe ON/OFF | 9 button |
| Erase Green line: | 0 button |
| Erase Red line: | 100 button |
| Erase Blue line: | ENT button |

DEFRECTION and CONVERGENCE

| ITEM | NAME | SETTING | INPUT SIGNAL | TEST POIN | MEASURING INSTRUMENT | ADJUSTMENT METHOD | ADJUSTMENT SPEC |
|---|---|---|---|---|---|---|---|
| VCEN | VERTICAL Raster centeing Adjustment | CONTRAST :MAX<br>BRIGHTNESS:CNT<br>COLOR :CNT<br>TINT :CNT | Retma Signal | Between TP-G to TP-V | Digital Volt Meter | Adjust the vdtagebetwen TP-G and TP-V. | 0±10 mV |
| DY Tilt Adjustment | | CONTRAST: MAX<br>BRIGHTNESS:CNT<br>COLOR :CNT<br>TINT :CNT<br>PIC SIZE :FULL | D-Cross Pattern | Picture Adjustment | Picture Adjustment | After roughly the green centering magnet alignment, adjust the green yoke so that the D-cross is as close as possible to the dummy screen cross. Adjust the Red and Blue in the same manner as Green. | The dummy screen cross and D-cross Gap ± 5mm. |
| Centering magnet Adjustment | | CONTRAST: MAX<br>BRIGHTNESS:CNT<br>COLOR :CNT<br>TINT :CNT<br>PIC SIZE :FULL | Retma Signal | Picture Adjustment | Picture Adjustment | Adjust the green center to the screen center with the centering magnet on Retma signal. And adjust the Red and Blue center to the green center each. | Color gap at the screen center is within ± 3mm. |
| WID | Horizontal Adjustment (FULL) | CONTRAST :MAX<br>BRIGHTNESS:CNT<br>COLOR :CNT<br>TINT :CNT<br>PIC SIZE : FULL<br>C-MUTE :ON | Retma Signal | Picture Adjustment | Picture Adjustment | Adjust the Horizontal width by WID on the green raster only.<br>After finishing Convergence adjustment, make sure that the width is the same as the spec. | 11 ± 1 bar<br>In case of C-MUTE OFF is the same spec as well. |
| HIT (VLIN) | Vertical Adjustment (FULL) | CONTRAST :MAX<br>BRIGHTNESS: CNT<br>COLOR :CNT<br>TINT :CNT<br>PIC SIZE : FULL<br>C-MUTE : ON | Retma Signal | Picture Adjustment | Picture Adjustment | Adjust the Vertical height by HIT(VLIN) on the green raster only.After finishing Convergence adjustment, make sure that the height is the same as the spec with C-MUTE OFF. | In case of Convergence mute.<br>Upper left...5 ± 0.5 bar<br>Bottom right...5 ± 0.5 bar<br>In case of C-MUTE OFF.<br>Upper left...4 ± 0.5 bar<br>Bottom right...4 ± 0.5bar. |
| Convergence | | | Retma Signal | Picture Adjustment | Picture Adjustment | Refer to the following (Convergence Net Geometry) | |

**CONVERGENCE (46 / 51 / 57 WIDE)**

Net Pattern Geometry



| Model | 46WIDE | 51WIDE | 57WIDE |
|---|---|---|---|
| V size | 572.850 | 635.085 | 708.750 |
| | 278.4 | 308.0 | 344.0 |
| | 208.8 | 231.0 | 258.0 |
| | 104.4 | 115.5 | 129.0 |
| | 0.0 | 0.0 | 0.0 |
| | 104.4 | 115.5 | 129.0 |
| | 208.8 | 231.0 | 258.0 |
| | 278.4 | 308.0 | 344.0 |
| V span | 34.8 | 38.5 | 43.0 |

| Model | H size | | | | | | | | | | H span |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 46WIDE | 1018.4 | 485.0 | 404.1 | 242.5 | 80.8 | 0.0 | 80.8 | 242.5 | 404.1 | 485.0 | 80.8 |
| 51WIDE | 1129.0 | 537.6 | 448.0 | 268.8 | 89.6 | 0.0 | 89.6 | 268.8 | 448.0 | 537.6 | 89.6 |
| 57WIDE | 1260.0 | 600.0 | 500.0 | 300.0 | 100.0 | 0.0 | 100.0 | 300.0 | 500.0 | 600.0 | 100.0 |

UNIT: mm

**NOTES**

In many cases, color misconvergence may be corrected by returning HIT and WID data in main deflection side to initial adjusting values. Following cases will surely require readjustment of convergence.

**CRT REPLACEMENT**

When CRT is replaced, main deflection readjustment and color matching are required.
Perform following procedures.

1. Replace two CRT's of blue and red.
2. Perform horizontal adjustment for blue and red yokes on base of green CRT data. Mount yoke and velocity mod. coil alignment, pushing towards CRT without gap.
3. Adjust alignment of blue and red. (Refer Alignment adjustment for details.)
4. Rotating centering magnet, adjust CRT centers of red and blue to CRT center of green.
   (Picture position adjustment)
5. Adjust HIT and WID data of main deflection, and decide data at the most precise screen comparing to green data.
6. Adjust convergence of screen picture for color matching. Do not move green one at this time.
7. After convergence adjustment of screen picture finishes, replace green CRT.
   For green CRT as well, repeat steps 2 to 5 above on bases of red and blue color matching to adjust convergence.
8. Execute TOUCH FOCUS following instructions displayed on the screen after finishing convergence adjustments of all the colors.
   Note: Press button "7" again after "PLEASE PUSH TOUCH FOCUS" has been displayed. Then, TOUCH FOCUS will not be executed, and the current state of convergence will be displayed.

**REPLACING CONVERGENCE UNIT**

1. Confirm that the initial data, which is specified by a model name, is memorized in the new unit.
   (It's not allowed to use the data of other models.)
2. Mount the new unit to the SET, and turn the POWER on.
3. Adjust centering magnets, Hight (HIT) and Width (WID). (See Page 7.)
4. Adjust the convergence. (See Page 13.)

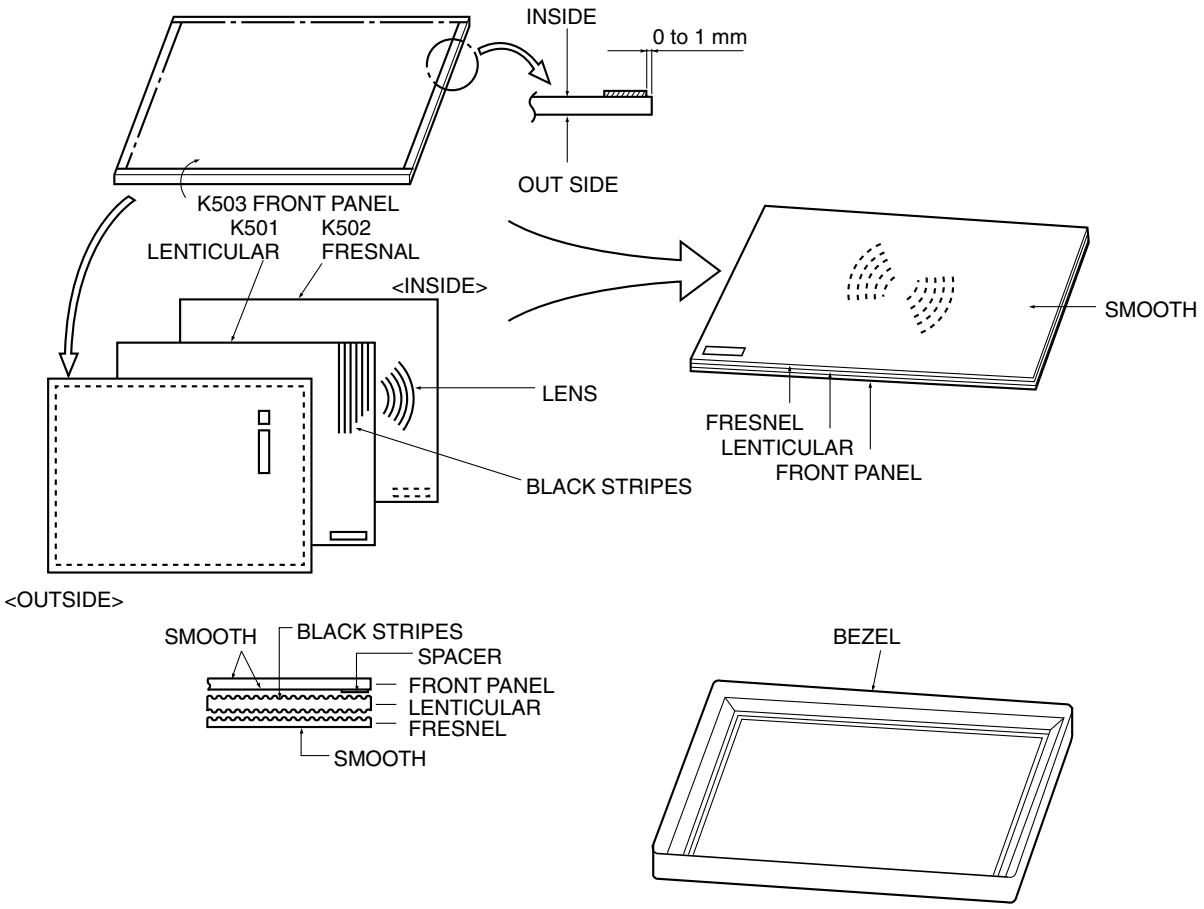
If the memory in the defective module is available, following steps are allowed.

1. Remove the memory (Q173) from the defective unit, and mount it to the new unit.
2. Mount the new unit to the SET, and turn the POWER on.
3. Enter to the convergence adjusting mode, and load BACKUP DATA by pressing "1" button. (See Page 13.)
4. Adjust centering magnets. (See Page 7.)
5. Adjust the convergence. (SeePage 13.)

# SCREEN AND MIRROR ALIGNMENTS

**ASSEMBLING OF FRONT SCREEN**

**MOUNTING OF FRONT SCREEN**




**CAUTION :** Do not hold the optical system parts (lens and mirror) with bare hand to avoid finger-prints on the surface of those parts.

**HOW TO CLEAN LENS AND MIRROR**

1. Be sure to remove sand dust with an air brush, etc.
2. When it is stained slightly, breathe upon it and wipe away with the specified cleaning cloth.
   For other stains than the above, wipe the stains away with the specified cloth into which a cleaning liquid has been soaked.

Cleaning liquid..... **LENS LUSTER** (Manufactured by Edmund Scientific Co.), etc.

**HOW TO CLEAN SCREEN**

When cleaning the screen, use a soft cloth so as not to damage the screen.

1. Wipe the screen with a dry cloth to remove moisture on the screen.

**Note :** Absolutely do not use detergent, water, alcohol, benzine, thinner, etc. for cleaning in order not to wipe away the black print on the surface.

# 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 anode of the picture tube.
2. Turn on the receiver. Set the BRIGHTNESS and CONTRAST 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 21)
4. Vary the BRIGHTNESS to both extremes to be sure the high voltage does not exceed the limit under any conditions.

**CAUTION:**

When the following parts fail, check the High Voltage after replacing.

| Location No. | Name | Descriptions |
|---|---|---|
| | | 46", 51", 57" |
| T461 | Flyback | TFB3092AD |
| C440 | Capacitor | 1000pF, ±3% |
| C443 | Capacitor | 5100pF, ±3% |
| C444 | Capacitor | 3300pF, ±3% |
| C467 | Capacitor | 6800pF, ±5% |
| C468 | Capacitor | 6800pF, ±5% |

**ANODE VOLTAGE MEASURING METHOD**

CAUTION: Take extra precaution when measuring this high voltage. High voltages are also present in surrounding circuit boards (CRT DRIVE assembly, DEFLECTION assembly, and POWER SUPPLY assembly).

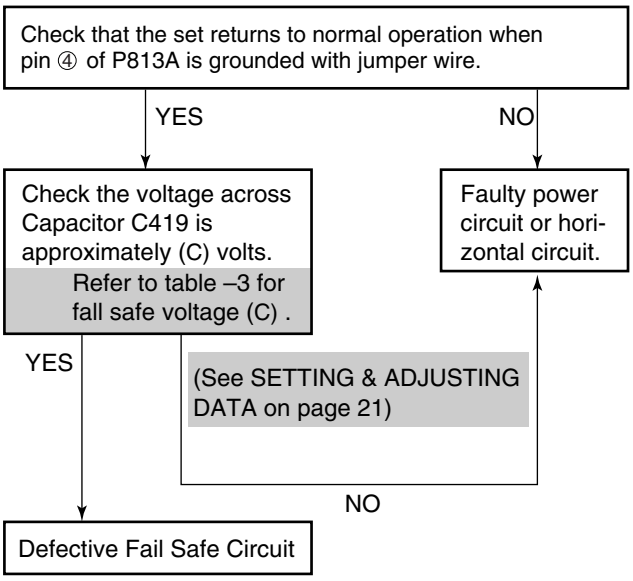
1. Disconnect the FBT anode cable as outlined below. Measure high voltage at the point where the cable enters the FBT.
2. Holding the rubber cover firmly, turn it counterclockwise and check that the lock has been disengaged. (See Fig. b on page 9.)
3. Determine the extent of the rubber cover before disconnecting the cable.
4. Pull straight up the anode cable to disconnect.
5. When reconnecting the cable, proceed in the reverse order. After reconnecting, tug on the cable to check that it is secure.

**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.
2. Temporarily short TP- (R) and TP- (X) on the DEF/CONVER Board 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 receiver on to produce a normal picture.

**Troubleshooting Guide for Fail Safe Circuit**



# CHAPTER 2 SPECIFIC INFORMATIONS

## SETTING & ADJUSTING DATA

### 【SAFETY INSTRUCTIONS】

| | | 46", 51", 57" |
|---|---|---|
| HIGH VOLTAGE AT ZERO BEAM: | (A) | 31.0 kV |
| MAX HIGH VOLTAGE: | (B) | 32.5 kV |

Table-1

### 【SERVICE MODE】

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

| Item | Name of adjustment | Preset | Data |
|---|---|---|---|
| RCUT | R CUT OFF | 80H | ← |
| BCUT | B CUT OFF | 80H | ← |
| GDRV | G DRIVE | 40H | ← |
| BDRV | B DRIVE | 40H | ← |
| BRTC | BRIGHT CENTER | 80H | ← |
| HIT | PICTURE HIT | 30H | ← |
| VLIN | V LINEARITY | 12H | ← |
| VSC | V S CORRECTION | 29H | ← |
| WID | PICTURE WIDTH | 48H | ← |

| Item | Name of adjustment | Preset | Data |
|---|---|---|---|
| COLC | COLOR CENTER | 5DH | ← |
| VCP | V COMPENSATION | 06H | ← |
| PARA | EW PARABOLA | 0FH | ← |
| CNR | EW M CORRECTION | 10H | ← |
| HCP | H COMPENSATION | 00H | ← |
| VFC | V f CORRECTION | 00H | ← |
| VPSI | V CENTERRING | 40H | ← |
| TVOP | TV OPTION | 40H | ← |

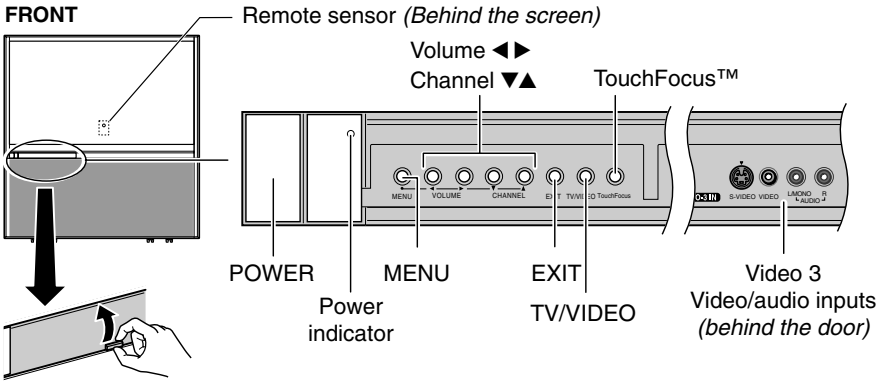
**Table-2**

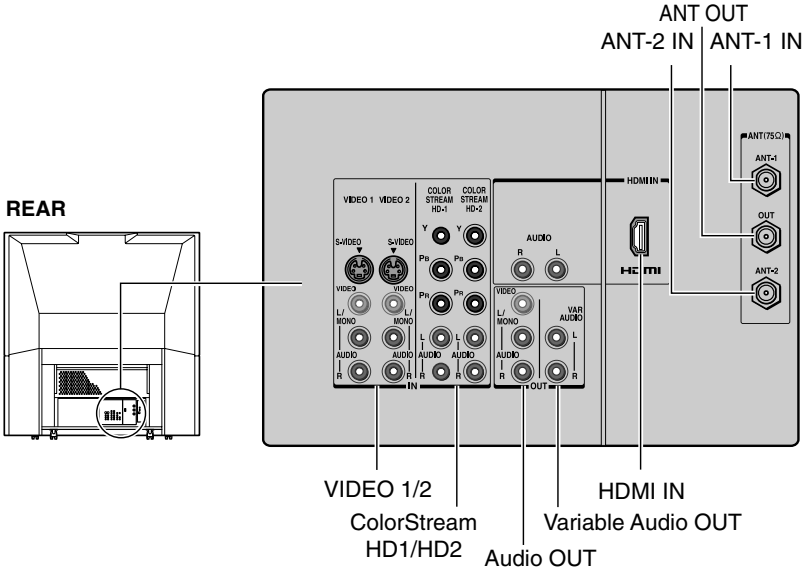
### 【CIRCUIT CHECKS】

| | | |
|---|---|---|
| HIGH VOLTAGE DET | (C) | 8.7 V |

**Table-3**

# LOCATION OF CONROLS (Representative:57H84)



## Learning about the remote control

The buttons used for operating the TV only are described here.

**POWER** turns the TV on and off

**RECALL** displays screen information

**SLEEP** sets the TV to turn off at a specific time

**TV/VIDEO** selects video input source

**MUTE** mutes the sound

**Device Switch** switches between TV, CBL/SAT/VCR, and DVD)
Set to "TV" to control the TV.

**CH (channel) ▲▼** cycles through programmed channels

**Channel Numbers** (0-9, 100) allow direct access to channel

**VOL (volume) ▲▼** adjusts the volume level

**CH RTN** returns to the memorized channel

**MENU** allows access to on-screen programming menus

**ENTER** activates the function settings in the menu

**▲▼◄►** select or adjust programming menus

**POP CH ▲▼** selects the POP (picture-out-picture) channel

**FAV ▲▼** cycles through favorite channels

**FAVORITE** allows access to the favorite channel search function

**PIC SIZE** cycles through the five picture sizes: Natural, Theater Wide 1, 2, 3, and Full

**EXIT** exits programming menus

**SPLIT** turns the POP feature on and off

**SOURCE** selects the POP picture source

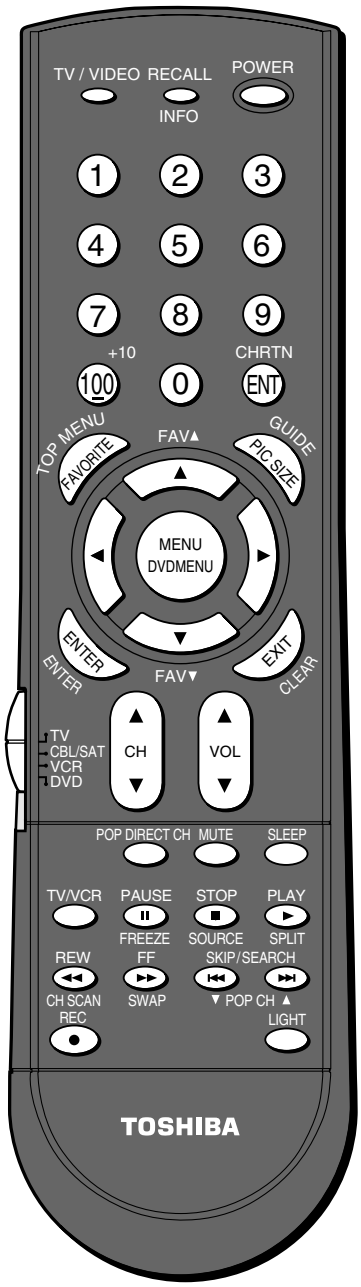
**FREEZE** freezes the picture. Press again to restore the picture.

**SWAP** switches the main and POP pictures

**POP DIRECT CH** allows direct access to POP channels

**CH SCAN** allows access to the programmed channel search function

**LIGHT** illuminates the keypad for five seconds




***Note:***
*The error message "Not Available" will appear if you press a key for a function that is not available.*

# ADDING CHANNELS TO THE TV'S MEMORY

When you 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.Channel

## 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.

Note:
To tune the TV to a channel not programmed in the channel memory, you must use the Channel Number buttons on the remote control.

## 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.

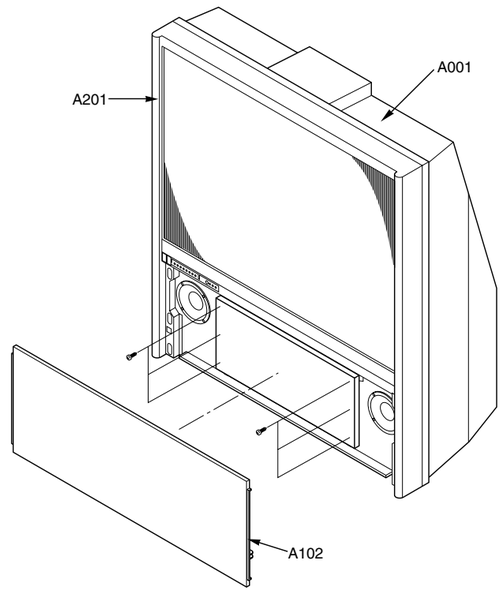
**3** Press ▲or▼ to highlight ADD/ERASE, and then press ENTER to display the pull-down menu.

**4** Press▲or▼to select ADD or ERASE, depending on the function you want to perform.

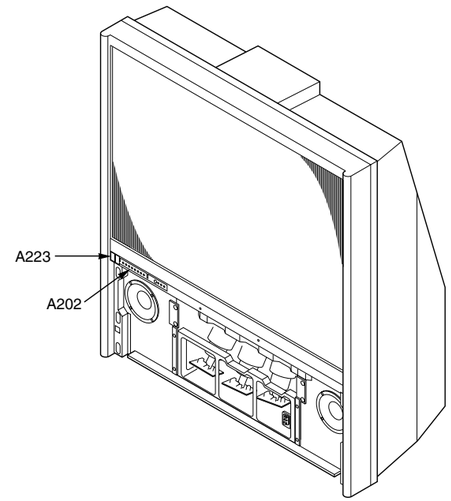
**5** Repeat steps 1-4 for other channels you want to add or erase.

# MECHANICAL DISASSEMBLY

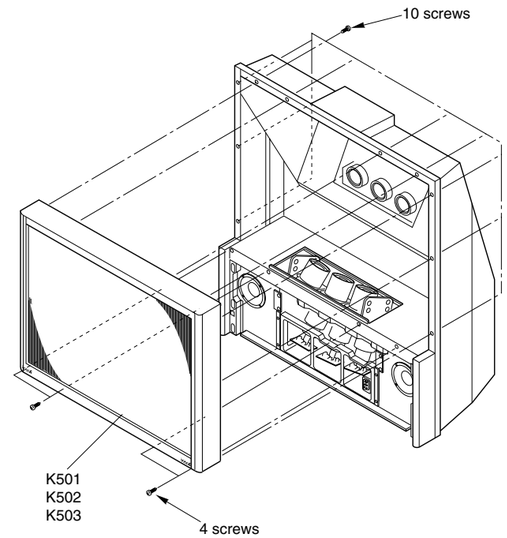
**1 Speaker Grille Removal**



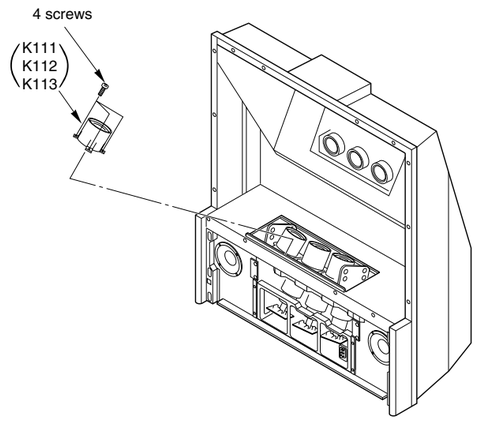

**2 Control Panel Removal**



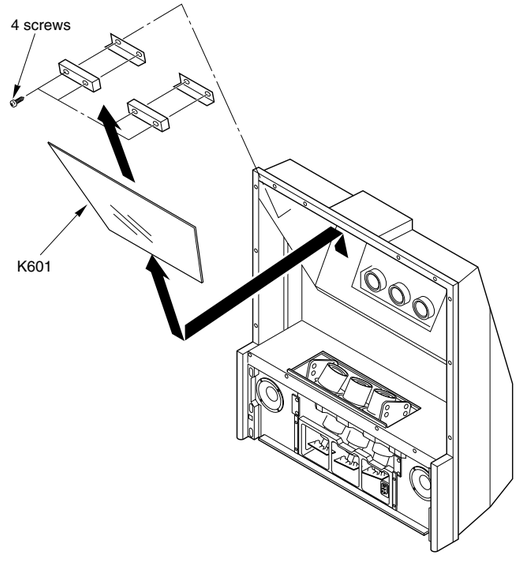

**3 Front Mask Removal**



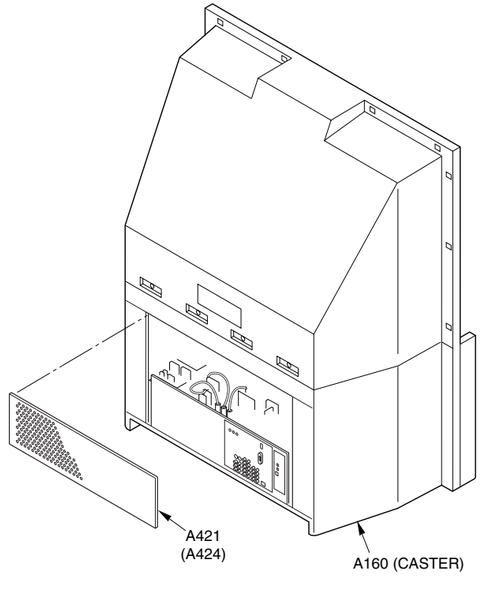

**4 Shield Plate, Lens Removal**




**5 Mirror Removal**




**6 Back Board Removal**



# 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 : 46H84/51H84/57H84**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 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 |
|---|---|---|
| **#1:[46H84]** | | |
| **#2:[51H84]** | | |
| **#3:[57H84]** | | |
| **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 |
| C221 | 24503041 | PLASTIC FILM , 63V 0.1UF J |
| C301 | 24503053 | PLASTIC FILM, 63V 1UF J |
| C302 | 24669010 | ELECTROLYTIC, 50V 1UF M 3A |
| C303 | 24503053 | PLASTIC FILM, 63V 1UF J |
| C308 | 24567223 | PLASTIC FILM, 50V 0.022UF J |
| C309 | 24109102 | CERAMIC CHIP, 50V B 1000PF K |
| C310 | 24073053 | ELECTROLYTIC, 25V 100UF M 3A |
| C311 | 24109103 | CERAMIC CHIP, 50V B 0.01UF K |
| C312 | 24109332 | CERAMIC CHIP, 50V B 3300PF K |
| C314 | 24503037 | MT PLA CAP 63V 0.047UF J |
| C315 | 24073020 | ELECTROLYTIC, 10V 1000UF M 3A |
| C320 | 24669101 | ELECTROLYTIC, 50V 100UF M 3A |
| C321 | 24669101 | ELECTROLYTIC, 50V 100UF M 3A |
| C323 | 24109473 | CERAMIC CHIP, 25V B 0.047UF K |
| C324 | 24503053 | PLASTIC FILM, 63V 1UF J |
| C325 | 24082057 | PLASTIC FILM, 100V 0.22UF J |
| C327 | 24092730 | CERAMIC CHIP, 16V B 0.1UF K |
| C328 | 24082256 | PLASTIC FILM, 100V 2200PF J |
| C330 | 24073034 | ELECTROLYTIC, 16V 10UF M 3A |
| C332 | 24669101 | ELECTROLYTIC, 50V 100UF M 3A |
| C333 | 24082272 | PLASTIC FILM, 100V 0.047UF J |
| C334 | 24109471 | CERAMIC CHIP, 50V B 470PF K |
| C338 | 24666100 | ELECTROLYTIC, 10V 10UF M 3A |
| C340 | 24073037 | ELECTROLYTIC, 16V 47UF M 3A |
| C361 | 24092730 | CERAMIC CHIP, 16V B 0.1UF K |
| C362 | 24109473 | CERAMIC CHIP, 25V B 0.047UF K |
| C370 | 24669229 | ELECTROLYTIC, 50V 2.2UF M 3A |
| C371 | 24092730 | CERAMIC CHIP, 16V B 0.1UF K |

| Location No. | Parts No. | Description |
|---|---|---|
| C401 | 24214332 | CERAMIC DISC, 500V B 3300PF K |
| C402 | 24214391 | CERAMIC DISC, 500V B 390PF K |
| C405 | 24503041 | PLASTIC FILM , 63V 0.1UF J |
| C412 | 24828124 | PLASTIC FILM, 200V 0.12UF J |
| C415 | 24092484 | CERAMIC DISC, 2KV B 1500PF K |
| C416 | 24676220 | ELECTROLYTIC, 04Q 100V 22UF M 3A |
| C417 | 24503334 | PLASTIC FILM CF92 T 250V 1R5UF J |
| C419 | 24105331 | CERAMIC CHIP, 50V CH 330PF J |
| C420 | 24503041 | PLASTIC FILM , 63V 0.1UF J |
| C422 | 24109102 | CERAMIC CHIP, 50V B 1000PF K |
| C423 | 24503252 | PLASTIC FILM, 400V 0.3UF J |
| C425 | 24503142 | PLASTIC FILM, 400V 0.27UF J |
| C426 | 24211222 | CERAMIC DISC, 2KV B 2200PFK |
| C432 | 24567333 | PLASTIC FILM, 50V 33000PF J |
| C440 | 24503059 | PLASTIC FILM, 1800VH 1000PF H |
| C443 | 24503099 | PLASTIC FILM, 1800VH 4700PF H |
| C444 | 24503347 | PLASTIC FILM, 1800VH 3600PF H |
| C445 | 24828473 | PLASTIC FILM, 200V 0.047UF J |
| C446 | 24073120 | ELECTRPLYTIC, 250V 33UF, 250YXF33M |
| C448 | 24073118 | ELECTROLYTIC, 160V 33UF M |
| C449 | 24214221 | CERAMIC DISC, 500V B 220PF K |
| C450 | 24073057 | ELECTROLYTIC, 25V 1000UF M 3A |
| C460 | 24678220 | ELECTROLYTIC, 200V 22UF M |
| C463 | 24109682 | CERAMIC CHIP, 50V B 6800PF K |
| C464 | 24503149 | PLASTIC FILM, 250V 3.3UF |
| C467 | 24820562 | PLASTIC FILM, 630V 5600PF J |
| C468 | 24820682 | PLASTIC FILM, 630V 6800PF J |
| C473 | 24092730 | CERAMIC CHIP, 16V B 0.1UF K |
| C481 | 24092784 | CERAMIC CHIP CK83B 10V 0.33UF K |
| C482 | 24109822 | CERAMIC CHIP, 50V B 8200PF K |
| C483 | 24105470 | CERAMIC CHIP, 50V CH 47PF J |
| C491 | 24666100 | ELECTROLYTIC, 10V 10UF M 3A |
| C496 | 24503049 | PLASTIC FILM, 63V 0.47UF J |
| C497 | 24085022 | ELEC. NONPOLAR CE04R 16V 100UF M NP 3A |
| C499 | 24666220 | ELECTROLYTIC, 16V 22UF M 3A |
| C601 | 24109681 | CERAMIC CHIP, 50V B 680PF K |
| C602 | 24109681 | CERAMIC CHIP, 50V B 680PF K |
| C603 | 24073084 | ELECTROLYTIC, 50V 4.7UF M 3A |
| C604 | 24073084 | ELECTROLYTIC, 50V 4.7UF M 3A |
| C605 | 24073084 | ELECTROLYTIC, 50V 4.7UF M 3A |
| C606 | 24073084 | ELECTROLYTIC, 50V 4.7UF M 3A |

| Location No. | Parts No. | Description |
|---|---|---|
| C607 | 24073053 | ELECTROLYTIC, 25V 100UF M 3A |
| C608 | 24073086 | ELECTROLYTIC, 50V 10UF M 3A |
| C612 | 24073039 | ELECTROLYTIC, 16V 220UF M 3A |
| C661 | 24073084 | ELECTROLYTIC, 50V 4.7UF M 3A |
| C662 | 24073086 | ELECTROLYTIC, 50V 10UF M 3A |
| C663 | 24073086 | ELECTROLYTIC, 50V 10UF M 3A |
| C665 | 24109103 | CERAMIC CHIP, 50V B 0.01UF K |
| C666 | 24073084 | ELECTROLYTIC, 50V 4.7UF M 3A |
| C667 | 24794100 | ELECTROLYTIC, 16V 10UF M |
| C680 | 24073073 | ELECTROLYTIC, 35V 2200UF M 3A |
| C681 | 24109103 | CERAMIC CHIP, 50V B 0.01UF K |
| C682 | 24073082 | ELECTROLYTIC, 50V 2.2UF M 3A |
| C683 | 24795101 | ELECTROLYTIC, 25V 100UF M |
| C684 | 24795470 | ELECTROLYTIC 04G, 25V 47UF M |
| C801 | 24503004 | PLASTIC FILM, AC275V 0.47UF M |
| C805 | 24092281 | CERAMIC DISC, AC250V E 4700PF |
| C809 | 24086067 | ELECTROLYTIC 692Q 200V 1000UF M 3F |
| C810 | 24086067 | ELECTROLYTIC 692Q 200V 1000UF M 3F |
| C811 | 24092595 | CERAMIC DISC, AC250V E 2200PF M |
| C812 | 24092595 | CERAMIC DISC, AC250V E 2200PF M |
| C814 | 24092579 | CERAMIC DISC, AC250V 470PF K |
| C840 | 24679220 | ELECTROLYTIC, 250V 22UF M 3A |
| C841 | 24073097 | ELECTROLYTIC CE04P 10V 2200UF M 3A |
| C842 | 24503041 | PLASTIC FILM , 63V 0.1UF J |
| C843 | 24092333 | CERAMIC DISC, 2KV 100PF K |
| C845 | 24669229 | ELECTROLYTIC, 50V 2.2UF M 3A |
| C849 | 24073038 | ELECTROLYTIC, 16V 100UF M 3A |
| C850 | 24073187 | ELECTROLYTIC CE04P 35V 560UF M 3A |
| C851 | 24073187 | ELECTROLYTIC CE04P 35V 560UF M 3A |
| C852 | 24073169 | ELECTROLYTIC CE04P 25V 470UF M 3A |
| C853 | 24073169 | ELECTROLYTIC CE04P 25V 470UF M 3A |
| C854 | 24667470 | ELECTROLYTIC CE04Q, 25V 47UF M 3A |
| C860 | 24214103 | CERAMIC DISC, 500V B 0.01UF K |
| C862 | 24092341 | CERAMIC DISC, 2KV R 470PF K |
| C863 | 24503045 | PLASTIC FILM, 63V 0.22UF J |
| C866 | 24503053 | PLASTIC FILM, 63V 1UF J |
| C867 | 24591472 | PLASTIC FILM, 50V 4700PF J |
| C868 | 24669470 | ELECTROLYTIC, 50V 47UF M 3A |
| C869 | 24678229 | ELECTROLYTIC, 200V 2.2UF M 3A |
| C870 | 24503565 | PLASTIC FILM CQ32 T 800V 100000PF H |
| C871 | 24092343 | CERAMIC DISC, 2KV 680PF K |
| C873 | 24503045 | PLASTIC FILM, 63V 0.22UF J |
| C874 | 24092337 | CERAMIC DISC, 2KV 220PF K |
| C876 | 24503049 | PLASTIC FILM, 63V 0.47UF J |
| C877 | 24092344 | CERAMIC DISC, 2KV 820PF K |
| C879 | 24214102 | CERAMIC DISC, 500V B 1000PF K |
| C880 | 24092339 | CERAMIC DISC, 2KV 330PF K |
| C881 | 24092339 | CERAMIC DISC, 2KV 330PF K |
| C884 | 24086916 | ELECTROLYTIC, 160V 330UF M 3D |
| C885 | 24668102 | ELECTROLYTIC, 35V 1000UF M 3A |
| C888 | 24503045 | PLASTIC FILM, 63V 0.22UF J |
| C891 | 24073155 | ELECTROLYTIC CE04P 16V 1000UF M 3A |
| C892 | 24073155 | ELECTROLYTIC CE04P 16V 1000UF M 3A |
| C893 | 24073141 | ELECTROLYTIC CE04P 10V 1000UF M 3A |
| C898 | 24092730 | CERAMIC CHIP, 16V B 0.1UF K |
| C901 | 24211102 | CERAMIC DISC, 2KV B 1000PF K |
| C902 | 24794101 | ELECTROLYTIC, 16V 100UF M |
| C903 | 24232103 | CERAMIC DISC, 50V F 0.01UF Z |
| C904 | 24109471 | CERAMIC CHIP, 50V B 470PF K |
| C906 | 24679220 | ELECTROLYTIC, 250V 22UF M 3A |
| C907 | 24214101 | CERAMIC DISC, 500V B 100PF K |
| C911 | 24211102 | CERAMIC DISC, 2KV B 1000PF K |
| C912 | 24794101 | ELECTROLYTIC, 16V 100UF M |
| C913 | 24232103 | CERAMIC DISC, 50V F 0.01UF Z |
| C914 | 24109471 | CERAMIC CHIP, 50V B 470PF K |
| C915 | 24679220 | ELECTROLYTIC, 250V 22UF M 3A |

| Location No. | Parts No. | Description |
|---|---|---|
| C917 | 24214101 | CERAMIC DISC, 500V B 100PF K |
| C921 | 24211102 | CERAMIC DISC, 2KV B 1000PF K |
| C922 | 24794101 | ELECTROLYTIC, 16V 100UF M |
| C923 | 24109471 | CERAMIC CHIP, 50V B 470PF K |
| C924 | 24232103 | CERAMIC DISC, 50V F 0.01UF Z |
| C925 | 24679220 | ELECTROLYTIC, 250V 22UF M 3A |
| C926 | 24214101 | CERAMIC DISC, 500V B 100PF K |
| C934 | 24092731 | CERAMIC CHIP, 16V B 1UF K |
| C944 | 24092731 | CERAMIC CHIP, 16V B 1UF K |
| C954 | 24092731 | CERAMIC CHIP, 16V B 1UF K |
| C961 | 24763101 | ELECTROLYTIC, 16V 100UF M |
| C962 | 24203100 | ELECTORLYTIC, 16V 10UF M 7L 3A |
| C4430 | 24073034 | ELECTROLYTIC, 16V 10UF M 3A |
| C7101 | 24797470 | ELECTROLYTIC 04G, 50V 47UF M |
| C7102 | 24109103 | CERAMIC CHIP, 50V B 0.01UF K |
| C7103 | 24206479 | ELECTROLYTIC, 50V 4.7UF M 7L 3A |
| C7104 | 24108330 | CERAMIC CHIP, 50V SL 33PF J |
| C7105 | 24092730 | CERAMIC CHIP, 16V B 0.1UF K |
| C7106 | 24797470 | ELECTROLYTIC 04G, 50V 47UF M |
| C7107 | 24790470 | ELECTROLYTIC, 160V 47UF M |
| C7108 | 24214472 | CERAMIC DISC, 500V B 4700PF K |
| C7109 | 24214472 | CERAMIC DISC, 500V B 4700PF K |
| C7110 | 24666470 | ELECTORLYTIC CE04Q, 16V 47UF M 3A |
| C7111 | 24666470 | ELECTORLYTIC CE04Q, 16V 47UF M 3A |
| C7112 | 24435560 | CERAMIC DISC, 500V SL 56PF J |
| C7113 | 24790100 | ELECTROLYTIC, 160V 10UF M |
| C7114 | 24092730 | CERAMIC CHIP, 16V B 0.1UF K |
| C7701 | 24503047 | PLASTIC FILM, 63V 0.33UF J |
| C7704 | 24073053 | ELECTROLYTIC, 25V 100UF M 3A |
| C7705 | 24073037 | ELECTROLYTIC, 16V 47UF M 3A |
| C7706 | 24503047 | PLASTIC FILM, 63V 0.33UF J |
| C7722 | 24105331 | CERAMIC CHIP, 50V CH 330PF J |
| C7724 | 24073091 | ELECTROLYTIC, 50V 220UF M 3A |
| C7725 | 24073091 | ELECTROLYTIC, 50V 220UF M 3A |
| C7727 | 24105331 | CERAMIC CHIP, 50V CH 330PF J |
| C7730 | 24105331 | CERAMIC CHIP, 50V CH 330PF J |
| C7733 | 24105331 | CERAMIC CHIP, 50V CH 330PF J |
| C7735 | 24073091 | ELECTROLYTIC, 50V 220UF M 3A |
| C7736 | 24073091 | ELECTROLYTIC, 50V 220UF M 3A |
| C7738 | 24105331 | CERAMIC CHIP, 50V CH 330PF J |
| C7741 | 24105331 | CERAMIC CHIP, 50V CH 330PF J |
| C7750 | 24073015 | ELECTROLYTIC, 10V 47UF M 3A |
| C7751 | 24073089 | ELECTROLYTIC, 50V 47UF M 3A |
| C7752 | 24073089 | ELECTROLYTIC, 50V 47UF M 3A |
| C7753 | 24073093 | ELECTROLYTIC, 50V 470UF M 3A |
| C7761 | 24073015 | ELECTROLYTIC, 10V 47UF M 3A |
| C7762 | 24073015 | ELECTROLYTIC, 10V 47UF M 3A |
| C7765 | 24667220 | ELECTROLYTIC, 25V 22UF M 3A |
| C7784 | 24667220 | ELECTROLYTIC, 25V 22UF M 3A |
| C7785 | 24092730 | CERAMIC CHIP, 16V B 0.1UF K |
| C7786 | 24092730 | CERAMIC CHIP, 16V B 0.1UF K |
| C7800 | 24666220 | ELECTROLYTIC, 16V 22UF M 3A |
| CB01 | 24794470 | ELECTROLYTIC, 16V 47UF M |
| CV14 | 24212102 | CERAMIC DISC, 50V B 1000PF K |
| CV27 | 24762471 | ELECTROLYTIC, 04G 10V 470UF M |
| CV29 | 24763101 | ELECTROLYTIC, 16V 100UF M |
| CV30 | 24232103 | CERAMIC DISC, 50V F 0.01UF Z |
| CV38 | 24212102 | CERAMIC DISC, 50V B 1000PF K |
| CV39 | 24212102 | CERAMIC DISC, 50V B 1000PF K |
| CY102 | 24665221 | ELECTROLYTIC CE04Q, 10V 220UF M 3A |
| CY105 | 24100102 | CERAMIC CHIP, 50V F 1000PF Z |
| CY160 | 24815393 | CERAMIC CHIP, 50V B 39000PF K |

| Location No. | Parts No. | Description |
|---|---|---|
| **RESISTORS** | | |
| R101 | 24382223 | 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, METAL FILM, 1/20W 27K OHM J |
| #1 | 24011273 | CHIP, 1/20W 27K OHM J |
| R240 | 24367153 | CARBON FILM, 1/6W 15K OHM G |
| R241 | 24367183 | CARBON FILM, 1/6W 18K OHM G |
| R242 | 24367183 | CARBON FILM, 1/6W 18K OHM G |
| R243 | 24367273 | CARBON FILM, 1/6W 27K OHM G |
| R244 | 24366124 | CARBON FILM, 1/6W 120K OHM J |
| R245 | 24366472 | CARBON FILM, 1/6W 4.7K OHM J |
| R246 | 24366472 | CARBON FILM, 1/6W 4.7K OHM J |
| R247 | 24366102 | CARBON FILM, 1/6W 1K OHM J |
| R249 | 24366104 | CARBON FILM, 1/6W 100K OHM J |
| R264 | 24366750 | CARBON FILM, 1/6W 75 OHM J |
| R265 | 24366750 | CARBON FILM, 1/6W 75 OHM J |
| R266 | 24366750 | CARBON FILM, 1/6W 75 OHM J |
| R286 | 24366750 | CARBON FILM, 1/6W 75 OHM J |
| R287 | 24366750 | CARBON FILM, 1/6W 75 OHM J |
| R288 | 24366750 | CARBON FILM, 1/6W 75 OHM J |
| R302 | 24366101 | CARBON FILM, 1/6W 100 OHM J |
| R305 | 24322109 | OXIDE METAL FILM, 1W 1 OHM J |
| R306 | 24011822 | CHIP, METAL FILM, 1/20W 8.2K OHM J |
| R307 | 24011101 | CHIP, METAL FILM, 1/20W 100 OHM J |
| R308 | 24011101 | CHIP, METAL FILM, 1/20W 100 OHM J |
| R311 | 24366563 | CARBON FILM, 1/6W 56K OHM J |
| R312 | 24011123 | CHIP, METAL FILM, 1/20W 12K OHM J |
| R313 | 24011102 | CHIP, METAL FILM, 1/20W 1K OHM J |
| R314 | 24011473 | CHIP, METAL FILM, 1/20W 47K OHM J |
| R315 | 24011681 | CHIP, METAL FILM, 1/20W 680 OHM J |
| R321 | 24011472 | CHIP, METAL FILM, 1/20W 4.7K OHM J |
| R322 | 24011101 | CHIP, METAL FILM, 1/20W 100 OHM J |
| R325 | 24011472 | CHIP, METAL FILM, 1/20W 4.7K OHM J |
| R330 | 24000633 | METAL FILM, 1/4W 10K OHM F |
| R331 | 24000633 | METAL FILM, 1/4W 10K OHM F |
| R334 | 24011102 | CHIP, METAL FILM, 1/20W 1K OHM J |
| R335 | 24011102 | CHIP, METAL FILM, 1/20W 1K OHM J |
| R336 | 24011102 | CHIP, METAL FILM, 1/20W 1K OHM J |
| R337 | 24321129 | OXIDE METAL FILM, 1/2W 1.2 OHM J |
| R338 | 24011153 | CHIP, METAL FILM, 1/2OW 15K OHM J |
| R340 | 24366103 | CARBON FILM, 1/6W 10K OHM J |
| R341 | 24011183 | CHIP, METAL FILM, 1/20W 18K OHM J |
| R343 | 24011102 | CHIP, METAL FILM, 1/20W 1K OHM J |
| R344 | 24382151 | OXIDE METAL FILM, 1W 150 OHM J |
| R345 | 24000445 | CHIP JUMPER, 1608TYPE |
| R346 | 24382391 | OXIDE METAL FILM, 1W 390 OHM J |
| R348 | 24011473 | CHIP, METAL FILM, 1/20W 47K OHM J |
| R349 | 24011392 | CHIP, METAL FILM, 1/20W 3.9K OHM J |
| #1 | 24011392 | CHIP, 1/20W 3.9K OHM J |
| R350 | 24011123 | CHIP, METAL FILM, 1/20W 12K OHM J |
| R355 | 24366103 | CARBON FILM, 1/6W 10K OHM J |
| R360 | 24011562 | CHIP, METAL FILM, 1/20W 5.6K OHM J |
| R361 | 24011104 | CHIP, METAL FILM, 1/20W 100K OHM J |
| R362 | 24011473 | CHIP, METAL FILM, 1/20W 47K OHM J |
| R363 | 24011103 | CHIP, METAL FILM, 1/20W 10K OHM J |
| R364 | 24011331 | CHIP, METAL FILM, 1/20W 330 OHM J |
| R365 | 24011682 | CHIP, METAL FILM, 1/20W 6.8K OHM J |
| R366 | 24366222 | CARBON FILM, 1/6W 2.2K OHM J |
| R367 | 24011392 | CHIP, METAL FILM, 1/20W 3.9K OHM J |
| #1 | 24011392 | CHIP, 1/20W 3.9K OHM J |
| R369 | 24366103 | CARBON FILM, 1/6W 10K OHM J |
| R370 | 24366102 | CARBON FILM, 1/6W 1K OHM J |
| R371 | 24011823 | CHIP, METAL FILM, 1/20W 82K OHM J |

| Location No. | Parts No. | Description |
|---|---|---|
| R372 | 24011332 | CHIP, METAL FILM, 1/20W 3.3K OHM J |
| R373 | 24011823 | CHIP, METAL FILM, 1/20W 82K OHM J |
| R374 | 24011104 | CHIP, METAL FILM, 1/20W 100K OHM J |
| R375 | 24011153 | CHIP, METAL FILM, 1/2OW 15K OHM J |
| R376 | 24011333 | CHIP, METAL FILM, 1/20W 33K OHM J |
| R378 | 24011103 | CHIP, METAL FILM, 1/20W 10K OHM J |
| R390 | 24382561 | OXIDE METAL FILM, 1W 560 OHM J |
| R391 | 24382561 | OXIDE METAL FILM, 1W 560 OHM J |
| R392 | 24382561 | OXIDE METAL FILM, 1W 560 OHM J |
| R403 | 24553101 | OXIDE METAL FILM, 1W 100 OHM J |
| R404 | 24011182 | CHIP, METAL FILM, 1/20W 1.8K OHM J |
| R405 | 24366101 | CARBON FILM, 1/6W 100 OHM J |
| R406 | 24382682 | OXIDE METAL FILM, 1W 6.8K OHM J |
| R407 | 24381100 | OXIDE METAL FILM, 1/2W 10 OHM J |
| R409 | 24555220 | OXIDE METAL FILM, 3W 22 OHM J |
| R410 | 24555220 | OXIDE METAL FILM, 3W 22 OHM J |
| R411 | 24323229 | OXIDE METAL FILM, 2W 2.2 OHM J |
| R412 | 24383153 | OXIDE METAL FILM, 2W 15K OHM J |
| R413 | 24366101 | CARBON FILM, 1/6W 100 OHM J |
| R414 | 24019259 | FUSIBLE, 1/4W 27 OHM G |
| R415 | 24011102 | CHIP, METAL FILM, 1/20W 1K OHM J |
| R416 | 24383151 | OXIDE METAL FILM, 2W 150 OHM J |
| R417 | 24366222 | CARBON FILM, 1/6W 2.2K OHM J |
| R418 | 24011103 | CHIP, METAL FILM, 1/20W 10K OHM J |
| R419 | 24011103 | CHIP, METAL FILM, 1/20W 10K OHM J |
| R420 | 24366103 | CARBON FILM, 1/6W 10K OHM J |
| R421 | 24366223 | CARBON FILM, 1/6W 22K OHM J |
| R422 | 24011223 | CHIP, METAL FILM, 1/20W 22K OHM J |
| R423 | 24942102 | CARBON COMPOSITION, 1/2W 1K OHM J |
| R424 | 24376104 | CARBON FILM, 1/2W 10OK OHM J |
| R425 | 24376104 | CARBON FILM, 1/2W 10OK OHM J |
| R426 | 24366101 | CARBON FILM, 1/6W 100 OHM J |
| R427 | 24011101 | CHIP, METAL FILM, 1/20W 100 OHM J |
| R428 | 24377224 | CARBON FILM, 1W 220K OHM J |
| R429 | 24942102 | CARBON COMPOSITION, 1/2W 1K OHM J |
| R431 | 24383102 | OXIDE METAL FILM, 2W 1K OHM J |
| R432 | 24376274 | CARBON FILM, 1/2W 270K OHM J |
| R433 | 24376274 | CARBON FILM, 1/2W 270K OHM J |
| R434 | 24376274 | CARBON FILM, 1/2W 270K OHM J |
| R435 | 24366332 | CARBON FILM, 1/6W 3.3K OHM J |
| R436 | 24366473 | CARBON FILM, 1/6W 47K OHM J |
| R437 | 24011223 | CHIP, METAL FILM, 1/20W 22K OHM J |
| R438 | 24011102 | CHIP, METAL FILM, 1/20W 1K OHM J |
| R439 | 24011103 | CHIP, METAL FILM, 1/20W 10K OHM J |
| R440 | 24011103 | CHIP, METAL FILM, 1/20W 10K OHM J |
| R441 | 24533331 | FUSIBLE, 2W 330 OHM J |
| R443 | 24310109 | OXIDE METAL FILM, 1/2W 1 OHM J |
| R444 | 24322398 | OXIDE METAL FILM, 1W 0.39 OHM J |
| R446 | 24011103 | CHIP, METAL FILM, 1/20W 10K OHM J |
| R447 | 24382473 | OXIDE METAL FILM, 1W 47K OHM J |
| R448 | 24366562 | CARBON FILM, 1/6W 5.6K OHM J |
| R449 | 24366152 | CARBON FILM, 1/6W 1.5K OHM J |
| R466 | 24366433 | CARBON FILM, 1/6W 43K OHM J |
| R467 | 24011221 | CHIP, METAL FILM, 1/20W 220 OHM J |
| R469 | 24011101 | CHIP, METAL FILM, 1/20W 100 OHM J |
| R470 | 24322478 | OXIDE METAL FILM, 1W 0.47 OHM J |
| R471 | 24366224 | CARBON FILM, 1/6W 220K OHM J |
| R472 | 24011101 | CHIP, METAL FILM, 1/20W 100 OHM J |
| R473 | 24011223 | CHIP, METAL FILM, 1/20W 22K OHM J |
| R474 | 24376393 | CARBON FILM, 1/2W 39K OHM J |
| R475 | 24366101 | CARBON FILM, 1/6W 100 OHM J |
| R476 | 24011471 | CHIP, METAL FILM, 1/20W 470 OHM J |
| R477 | 24998331 | CHIP, METAL FILM, 1/16W 330 OHM D |
| R478 | 24011102 | CHIP, METAL FILM, 1/20W 1K OHM J |
| R480 | 24011473 | CHIP, METAL FILM, 1/20W 47K OHM J |
| R481 | 24366103 | CARBON FILM, 1/6W 10K OHM J |

| Location No. | Parts No. | Description |
|---|---|---|
| R482 | 24011103 | CHIP, METAL FILM, 1/20W 10K OHM J |
| R483 | 24000445 | CHIP JUMPER, 1608TYPE |
| R485 | 24011681 | CHIP, METAL FILM, 1/20W 680 OHM J |
| R486 | 24011472 | CHIP, METAL FILM, 1/20W 4.7K OHM J |
| R487 | 24552271 | OXIDE METAL FILM, 1/2W 270 OHM J |
| R488 | 24552151 | OXIDE METAL FILM, 1/2W 150 OHM J |
| R489 | 24011102 | CHIP, METAL FILM, 1/20W 1K OHM J |
| R490 | 24552331 | OXIDE METAL FILM, 1/2W 330 OHM J |
| R491 | 24011222 | CHIP, METAL FILM, 1/20W 2.2K OHM J |
| R492 | 24998102 | CHIP, 1/16W 1K OHM |
| R493 | 24998391 | CHIP, 1/16W 390 OHM |
| R494 | 24998471 | CHIP, 1/16W 470 OHM |
| R495 | 24011333 | CHIP, METAL FILM, 1/20W 33K OHM J |
| R496 | 24011103 | CHIP, METAL FILM, 1/20W 10K OHM J |
| R497 | 24011100 | CHIP, METAL FILM, 1/20W 10 OHM J |
| R498 | 24011103 | CHIP, METAL FILM, 1/20W 10K OHM J |
| R499 | 24011102 | CHIP, METAL FILM, 1/20W 1K OHM J |
| R513 | 24366101 | CARBON FILM, 1/6W 100 OHM J |
| R515 | 24366103 | CARBON FILM, 1/6W 10K OHM J |
| R601 | 24011822 | CHIP, METAL FILM, 1/20W 8.2K OHM J |
| R602 | 24011822 | CHIP, METAL FILM, 1/20W 8.2K OHM J |
| R603 | 24011102 | CHIP, METAL FILM, 1/20W 1K OHM J |
| R604 | 24011102 | CHIP, METAL FILM, 1/20W 1K OHM J |
| R609 | 24011563 | CHIP, METAL FILM, 1/20W 56K OHM J |
| R610 | 24011273 | CHIP, METAL FILM, 1/20W 27K OHM J |
| #1 | 24011273 | CHIP, 1/20W 27K OHM J |
| R611 | 24011103 | CHIP, METAL FILM, 1/20W 10K OHM J |
| R612 | 24011222 | CHIP, METAL FILM, 1/20W 2.2K OHM J |
| R613 | 24011223 | CHIP, METAL FILM, 1/20W 22K OHM J |
| R614 | 24011103 | CHIP, METAL FILM, 1/20W 10K OHM J |
| R615 | 24011104 | CHIP, METAL FILM, 1/20W 100K OHM J |
| R616 | 24011822 | CHIP, METAL FILM, 1/20W 8.2K OHM J |
| R626 | 24011223 | CHIP, METAL FILM, 1/20W 22K OHM J |
| R627 | 24011223 | CHIP, METAL FILM, 1/20W 22K OHM J |
| R661 | 24011102 | CHIP, METAL FILM, 1/20W 1K OHM J |
| R662 | 24011333 | CHIP, METAL FILM, 1/20W 33K OHM J |
| R663 | 24011822 | CHIP, METAL FILM, 1/20W 8.2K OHM J |
| R665 | 24011223 | CHIP, METAL FILM, 1/20W 22K OHM J |
| R666 | 24011473 | CHIP, METAL FILM, 1/20W 47K OHM J |
| R667 | 24011223 | CHIP, METAL FILM, 1/20W 22K OHM J |
| R668 | 24011473 | CHIP, METAL FILM, 1/20W 47K OHM J |
| R671 | 24011102 | CHIP, METAL FILM, 1/20W 1K OHM J |
| R672 | 24011333 | CHIP, METAL FILM, 1/20W 33K OHM J |
| R673 | 24011822 | CHIP, METAL FILM, 1/20W 8.2K OHM J |
| R674 | 24011472 | CHIP, METAL FILM, 1/20W 4.7K OHM J |
| R676 | 24011104 | CHIP, METAL FILM, 1/20W 100K OHM J |
| R677 | 24011104 | CHIP, METAL FILM, 1/20W 100K OHM J |
| R681 | 24011222 | CHIP, METAL FILM, 1/20W 2.2K OHM J |
| R682 | 24011473 | CHIP, METAL FILM, 1/20W 47K OHM J |
| R683 | 24011223 | CHIP, METAL FILM, 1/20W 22K OHM J |
| R684 | 24011223 | CHIP, METAL FILM, 1/20W 22K OHM J |
| R687 | 24011103 | CHIP, METAL FILM, 1/20W 10K OHM J |
| R688 | 24011224 | CHIP, METAL FILM, 1/20W 220K OHM J |
| R693 | 24000445 | CHIP JUMPER, 1608TYPE |
| R697 | 24553221 | OXIDE METAL FILM, 1W 220 OHM J |
| R698 | 24011103 | CHIP, METAL FILM, 1/20W 10K OHM J |
| R699 | 24011103 | CHIP, METAL FILM, 1/20W 10K OHM J |
| R810 | 24007061 | CERAMIC COVERED, 2W 1.8 OHM K |
| R818 | 24011471 | CHIP, METAL FILM, 1/20W 470 OHM J |
| R819 | 24011103 | CHIP, METAL FILM, 1/20W 10K OHM J |
| R840 | 24552562 | OXIDE METAL FILM, 1/2W 5.6K OHM J |
| R841 | 24011102 | CHIP, METAL FILM, 1/20W 1K OHM J |
| R842 | 24376563 | CARB0N FILM, 1/2W 56K OHM J |
| R843 | 24376563 | CARB0N FILM, 1/2W 56K OHM J |
| R844 | 24011103 | CHIP, METAL FILM, 1/20W 10K OHM J |
| R845 | 24366102 | CARBON FILM, 1/6W 1K OHM J |

| Location No. | Parts No. | Description |
|---|---|---|
| R849 | 24011101 | CHIP, METAL FILM, 1/20W 100 OHM J |
| R854 | 24381150 | OXIDE METAL FILM, 1/2W 15 OHM J |
| R860 | 24383473 | OXIDE METAL FILM, 2W 47K OHM J |
| R862 | 24321689 | OXIDE METAL FILM, 1/2W 6.8 OHM J |
| R864 | 24552102 | OXIDE METAL FILM, 1/2W 1K OHM J |
| R865 | 24552390 | OXIDE METAL FILM, 1/2W 39 OHM J |
| R866 | 24366472 | CARBON FILM, 1/6W 4.7K OHM J |
| R867 | 24366223 | CARBON FILM, 1/6W 22K OHM J |
| R868 | 24552470 | OXIDE METAL FILM, 1/2W 47 OHM J |
| R870 | 24381151 | OXIDE METAL FILM, 1/2W 150 OHM J |
| R871 | 24382680 | OXIDE METAL FILM, 1W 68 OHM J |
| R873 | 24552100 | OXIDE METAL FILM, 1/2W 10 OHM J |
| R874 | 24366150 | CARBON FILM, 1/6W 15 OHM J |
| R881 | 24011102 | CHIP, METAL FILM, 1/20W 1K OHM J |
| R883 | 24381102 | OXIDE METAL FILM, 1/2W 1K OHM J |
| R885 | 24366471 | CARBON FILM, 1/6W 470 OHM J |
| R893 | 24011472 | CHIP, METAL FILM, 1/20W 4.7K OHM J |
| R894 | 24011103 | CHIP, METAL FILM, 1/20W 10K OHM J |
| R899 | 24010001 | CARBON FILM, 1/2W 3.9M OHM J |
| R900 | 24000892 | FUSIBLE, 1W 1.2 OHM J |
| R901 | 24366331 | CARBON FILM, 1/6W 330 OHM J |
| R903 | 24552101 | OXIDE METAL FILM, 1/2W 100 OHM J |
| R905 | 24872180 | CHIP, 1/16W 18 OHM J |
| R906 | 24872271 | CHIP, 1/16W 270 OHM J |
| R908 | 24872560 | CHIP, 1/16W 56 OHM J |
| R909 | 24872270 | CHIP, 1/16W 27 OHM J |
| R910 | 24322568 | OXIDE METAL FILM, 1W 0.56 OHM J |
| R911 | 24366331 | CARBON FILM, 1/6W 330 OHM J |
| R913 | 24552101 | OXIDE METAL FILM, 1/2W 100 OHM J |
| R915 | 24872270 | CHIP, 1/16W 27 OHM J |
| R916 | 24872271 | CHIP, 1/16W 270 OHM J |
| R918 | 24872560 | CHIP, 1/16W 56 OHM J |
| R919 | 24872180 | CHIP, 1/16W 18 OHM J |
| R920 | 24366222 | CARBON FILM, 1/6W 2.2K OHM J |
| R921 | 24366331 | CARBON FILM, 1/6W 330 OHM J |
| R923 | 24552101 | OXIDE METAL FILM, 1/2W 100 OHM J |
| R925 | 24872270 | CHIP, 1/16W 27 OHM J |
| R926 | 24872271 | CHIP, 1/16W 270 OHM J |
| R928 | 24872680 | CHIP, 1/16W 68 OHM J |
| R929 | 24872180 | CHIP, 1/16W 18 OHM J |
| R930 | 24366222 | CARBON FILM, 1/6W 2.2K OHM J |
| R931 | 24568272 | CERAMIC COVERED G 7W 2.7K J |
| R938 | 24366150 | CARBON FILM, 1/6W 15 OHM J |
| R944 | 24568272 | CERAMIC COVERED G 7W 2.7K J |
| R945 | 24366150 | CARBON FILM, 1/6W 15 OHM J |
| R948 | 24366222 | CARBON FILM, 1/6W 2.2K OHM J |
| R950 | 24366222 | CARBON FILM, 1/6W 2.2K OHM J |
| R951 | 24568272 | CERAMIC COVERED G 7W 2.7K J |
| R958 | 24366150 | CARBON FILM, 1/6W 15 OHM J |
| R961 | 24872222 | CHIP, 1/16W 2.2K OHM J |
| R962 | 24872182 | CHIP, 1/16W 1.8K OHM J |
| R963 | 24872100 | CHIP, 1/16W 10 OHM J |
| R964 | 24872332 | CHIP, 1/16W 3.3K OHM J |
| R965 | 24872101 | CHIP, 1/16W 100 OHM J |
| R966 | 24872122 | CHIP, 1/16W 1.2K OHM J |
| R967 | 24872122 | CHIP, 1/16W 1.2K OHM J |
| R968 | 24366222 | CARBON FILM, 1/6W 2.2K OHM J |
| R969 | 24872122 | CHIP, 1/16W 1.2K OHM J |
| R970 | 24872122 | CHIP, 1/16W 1.2K OHM J |
| R971 | 24872152 | CHIP, 1/16W 1.5K OHM J |
| R978 | 24366222 | CARBON FILM, 1/6W 2.2K OHM J |
| R987 | 24872101 | CHIP, 1/16W 100 OHM J |
| R988 | 24366222 | CARBON FILM, 1/6W 2.2K OHM J |
| R991 | 24366222 | CARBON FILM, 1/6W 2.2K OHM J |
| R992 | 24366222 | CARBON FILM, 1/6W 2.2K OHM J |
| R4430 | 24381150 | OXIDE METAL FILM, 1/2W 15 OHM J |

| Location No. | Parts No. | Description |
|---|---|---|
| R4431 | 24366102 | CARBON FILM, 1/6W 1K OHM J |
| R7102 | 24872681 | CHIP, 1/16W 680 OHM J |
| R7103 | 24872102 | CHIP, 1/16W 1K OHM J |
| R7104 | 24872102 | CHIP, 1/16W 1K OHM J |
| R7105 | 24871221 | CHIP, 1/8W 220 OHM J |
| R7106 | 24871221 | CHIP, 1/8W 220 OHM J |
| R7107 | 24872101 | CHIP, 1/16W 100 OHM J |
| R7108 | 24872332 | CHIP, 1/16W 3.3K OHM J |
| R7109 | 24872333 | CHIP, 1/16W 33K OHM J |
| R7110 | 24872273 | CHIP, 1/16W 27K OHM J |
| R7111 | 24872333 | CHIP, 1/16W 33K OHM J |
| R7112 | 24872151 | CHIP, 1/16W 150 OHM J |
| R7113 | 24872751 | CHIP, 1/16W 750 OHM J |
| R7114 | 24872681 | CHIP, 1/16W 680 OHM J |
| R7115 | 24871471 | CHIP, 1/8W 470 OHM J |
| R7116 | 24871471 | CHIP, 1/8W 470 OHM J |
| R7117 | 24872101 | CHIP, 1/16W 100 OHM J |
| R7118 | 24872101 | CHIP, 1/16W 100 OHM J |
| R7119 | 24871100 | CHIP, 1/8W 10 OHM J |
| R7120 | 24871100 | CHIP, 1/8W 10 OHM J |
| R7121 | 24871100 | CHIP, 1/8W 10 OHM J |
| R7122 | 24871100 | CHIP, 1/8W 10 OHM J |
| R7123 | 24871100 | CHIP, 1/8W 10 OHM J |
| R7124 | 24871100 | CHIP, 1/8W 10 OHM J |
| R7125 | 24871100 | CHIP, 1/8W 10 OHM J |
| R7126 | 24871100 | CHIP, 1/8W 10 OHM J |
| R7127 | 24552331 | OXIDE METAL FILM, 1/2W 330 OHM J |
| R7128 | 24872751 | CHIP, 1/16W 750 OHM J |
| R7129 | 24872122 | CHIP, 1/16W 1.2K OHM J |
| R7130 | 24872683 | CHIP, 1/16W 68K OHM J |
| R7131 | 24872683 | CHIP, 1/16W 68K OHM J |
| R7132 | 24872751 | CHIP, 1/16W 750 OHM J |
| R7133 | 24872122 | CHIP, 1/16W 1.2K OHM J |
| R7134 | 24872102 | CHIP, 1/16W 1K OHM J |
| R7135 | 24553100 | OXIDE METAL FILM, 1W 10 OHM J |
| R7136 | 24321229 | OXIDE METAL FILM, 1/2W 2.2 OHM J |
| R7137 | 24553100 | OXIDE METAL FILM, 1W 10 OHM J |
| R7138 | 24322229 | OXIDE METAL FILM, 1W 2.2 OHM J |
| R7139 | 24554221 | OXIDE METAL FILM, 2W 220 OHM J |
| R7140 | 24872220 | CHIP, 1/16W 22 OHM J |
| R7141 | 24872220 | CHIP, 1/16W 22 OHM J |
| R7701 | 24011392 | CHIP, METAL FILM, 1/20W 3.9K OHM J |
| #1 | 24011392 | CHIP, 1/20W 3.9K OHM J |
| R7702 | 24000445 | CHIP JUMPER, 1608TYPE |
| R7707 | 24011472 | CHIP, METAL FILM, 1/20W 4.7K OHM J |
| R7708 | 24011472 | CHIP, METAL FILM, 1/20W 4.7K OHM J |
| R7710 | 24383221 | OXIDE METAL FILM, 2W 220 OHM J |
| R7711 | 24339189 | METAL FILM 2W 1R8 J |
| R7712 | 24011472 | CHIP, METAL FILM, 1/20W 4.7K OHM J |
| R7713 | 24011472 | CHIP, METAL FILM, 1/20W 4.7K OHM J |
| R7715 | 24383221 | OXIDE METAL FILM, 2W 220 OHM J |
| R7716 | 24339189 | METAL FILM 2W 1R8 J |
| R7717 | 24011472 | CHIP, METAL FILM, 1/20W 4.7K OHM J |
| R7718 | 24011472 | CHIP, METAL FILM, 1/20W 4.7K OHM J |
| R7720 | 24383221 | OXIDE METAL FILM, 2W 220 OHM J |
| R7721 | 24339189 | METAL FILM 2W 1R8 J |
| R7722 | 24011472 | CHIP, METAL FILM, 1/20W 4.7K OHM J |
| R7723 | 24011472 | CHIP, METAL FILM, 1/20W 4.7K OHM J |
| R7725 | 24383221 | OXIDE METAL FILM, 2W 220 OHM J |
| R7726 | 24339189 | METAL FILM 2W 1R8 J |
| R7727 | 24011472 | CHIP, METAL FILM, 1/20W 4.7K OHM J |
| R7728 | 24011472 | CHIP, METAL FILM, 1/20W 4.7K OHM J |
| R7730 | 24383221 | OXIDE METAL FILM, 2W 220 OHM J |
| R7731 | 24339189 | METAL FILM 2W 1R8 J |
| R7732 | 24011472 | CHIP, METAL FILM, 1/20W 4.7K OHM J |
| R7733 | 24011472 | CHIP, METAL FILM, 1/20W 4.7K OHM J |

| Location No. | Parts No. | Description |
|---|---|---|
| R7735 | 24383221 | OXIDE METAL FILM, 2W 220 OHM J |
| R7736 | 24339189 | METAL FILM 2W 1R8 J |
| R7743 | 24322338 | OXIDE METAL FILM, 1W 0.33 OHM J |
| R7744 | 24322338 | OXIDE METAL FILM, 1W 0.33 OHM J |
| R7745 | 24011101 | CHIP, METAL FILM, 1/20W 100 OHM J |
| R7746 | 24011101 | CHIP, METAL FILM, 1/20W 100 OHM J |
| R7747 | 24011221 | CHIP, METAL FILM, 1/20W 220 OHM J |
| R7748 | 24011221 | CHIP, METAL FILM, 1/20W 220 OHM J |
| R7749 | 24011102 | CHIP, METAL FILM, 1/20W 1K OHM J |
| R7750 | 24011332 | CHIP, METAL FILM, 1/20W 3.3K OHM J |
| R7751 | 24011153 | CHIP, METAL FILM, 1/2OW 15K OHM J |
| R7752 | 24011822 | CHIP, METAL FILM, 1/20W 8.2K OHM J |
| R7753 | 24011101 | CHIP, METAL FILM, 1/20W 100 OHM J |
| R7754 | 24011333 | CHIP, METAL FILM, 1/20W 33K OHM J |
| R7755 | 24011153 | CHIP, METAL FILM, 1/2OW 15K OHM J |
| R7756 | 24011153 | CHIP, METAL FILM, 1/2OW 15K OHM J |
| R7757 | 24011681 | CHIP, METAL FILM, 1/20W 680 OHM J |
| R7758 | 24011332 | CHIP, METAL FILM, 1/20W 3.3K OHM J |
| R7760 | 24011682 | CHIP, METAL FILM, 1/20W 6.8K OHM J |
| R7761 | 24011123 | CHIP, METAL FILM, 1/20W 12K OHM J |
| R7762 | 24011682 | CHIP, METAL FILM, 1/20W 6.8K OHM J |
| R7763 | 24011123 | CHIP, METAL FILM, 1/20W 12K OHM J |
| R7765 | 24011103 | CHIP, METAL FILM, 1/20W 10K OHM J |
| R7766 | 24366103 | CARBON FILM, 1/6W 10K OHM J |
| R7767 | 24011103 | CHIP, METAL FILM, 1/20W 10K OHM J |
| R7768 | 24011103 | CHIP, METAL FILM, 1/20W 10K OHM J |
| R7769 | 24011103 | CHIP, METAL FILM, 1/20W 10K OHM J |
| R7770 | 24011103 | CHIP, METAL FILM, 1/20W 10K OHM J |
| R7771 | 24011103 | CHIP, METAL FILM, 1/20W 10K OHM J |
| R7772 | 24011473 | CHIP, METAL FILM, 1/20W 47K OHM J |
| R7773 | 24011103 | CHIP, METAL FILM, 1/20W 10K OHM J |
| R7774 | 24011103 | CHIP, METAL FILM, 1/20W 10K OHM J |
| R7801 | 24383471 | OXIDE METAL FILM, 2W 470 OHM J |
| R7802 | 24383681 | OXIDE METAL FILM, 2W 680 OHM J |
| R7880 | 24011221 | CHIP, METAL FILM, 1/20W 220 OHM J |
| R7881 | 24011472 | CHIP, METAL FILM, 1/20W 4.7K OHM J |
| R7882 | 24011103 | CHIP, METAL FILM, 1/20W 10K OHM J |
| R7883 | 24011103 | CHIP, METAL FILM, 1/20W 10K OHM J |
| R7884 | 24011103 | CHIP, METAL FILM, 1/20W 10K OHM J |
| R7885 | 24366472 | CARBON FILM, 1/6W 4.7K OHM J |
| R7886 | 24011104 | CHIP, METAL FILM, 1/20W 100K OHM J |
| R7887 | 24366103 | CARBON FILM, 1/6W 10K OHM J |
| R7890 | 24011331 | CHIP, METAL FILM, 1/20W 330 OHM J |
| R7891 | 24011331 | CHIP, METAL FILM, 1/20W 330 OHM J |
| R7892 | 24366472 | CARBON FILM, 1/6W 4.7K OHM J |
| R7893 | 24011472 | CHIP, METAL FILM, 1/20W 4.7K OHM J |
| R7910 | 24011221 | CHIP, METAL FILM, 1/20W 220 OHM J |
| R7911 | 24011221 | CHIP, METAL FILM, 1/20W 220 OHM J |
| R7912 | 24011101 | CHIP, METAL FILM, 1/20W 100 OHM J |
| R7913 | 24011101 | CHIP, METAL FILM, 1/20W 100 OHM J |
| R7931 | 24000445 | CHIP JUMPER, 1608TYPE |
| R9501 | 24872101 | CHIP, 1/16W 100 OHM J |
| R9503 | 24872122 | CHIP, 1/16W 1.2K OHM J |
| R9504 | 24872122 | CHIP, 1/16W 1.2K OHM J |
| R9607 | 24872101 | CHIP, 1/16W 100 OHM J |
| R9608 | 24872122 | CHIP, 1/16W 1.2K OHM J |
| R9609 | 24872122 | CHIP, 1/16W 1.2K 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 |
| RA78 | 24366273 | CARBON FILM, 1/6W 27K OHM J |
| RA79 | 24366823 | CARBON FILM, 1/6W 82K OHM J |
| RB01 | 24366391 | CARBON FILM, 1/6W 390 OHM J |
| RB04 | 24366473 | CARBON FILM, 1/6W 47K OHM J |

| Location No. | Parts No. | Description |
|---|---|---|
| RB05 | 24366102 | CARBON FILM, 1/6W 1K OHM J |
| RB15 | 24366471 | CARBON FILM, 1/6W 470 OHM J |
| RB19 | 24366470 | CARBON FILM, 1/6W 47 OHM J |
| RV20 | 24366750 | CARBON FILM, 1/6W 75 OHM J |
| RV21 | 24366750 | CARBON FILM, 1/6W 75 OHM J |
| RV22 | 24366750 | CARBON FILM, 1/6W 75 OHM J |
| RV23 | 24366101 | CARBON FILM, 1/6W 100 OHM J |
| RV33 | 24366750 | CARBON FILM, 1/6W 75 OHM J |
| RV34 | 24366750 | CARBON FILM, 1/6W 75 OHM J |
| RV35 | 24366750 | CARBON FILM, 1/6W 75 OHM J |
| RV36 | 24366750 | CARBON FILM, 1/6W 75 OHM J |
| RV37 | 24366750 | CARBON FILM, 1/6W 75 OHM J |
| RV40 | 24366750 | CARBON FILM, 1/6W 75 OHM J |
| RV61 | 24366101 | CARBON FILM, 1/6W 100 OHM J |
| RV85 | 24366471 | CARBON FILM, 1/6W 470 OHM J |
| RV86 | 24366471 | CARBON FILM, 1/6W 470 OHM J |
| RV89 | 24366680 | CARBON FILM, 1/6W 68 OHM J |
| RY160 | 24011471 | CHIP, METAL FILM, 1/20W 470 OHM J |
| **COIL & TRANSFORMERS** | | |
| L101 | 23289845 | COIL, PEAKING, TRF4680AT |
| L103 | 23289844 | COIL, PEAKING, TRF4470AT |
| L302 | 23248073 | COIL, CHOKE, TLN3299D |
| L303 | 23248073 | COIL, CHOKE, TLN3299D |
| L304 | 23103145 | FERRITE CHOKE, TEM2011AA |
| L305 | 23103248 | FERRITR CHOKE, TEM2014AA |
| L310 | 23289846 | COIL, PEAKING, TRF4101AT |
| L401 | 23289560 | COIL, PEAKING, TRF4560AF |
| L402 | 23248345 | COIL, CHOKE EI24 120MMH TLN3534AH |
| L403 | 23103145 | FERRITE CHOKE, TEM2011AA |
| L406 | 23248191 | COIL, CHOKE, TLN3351AD |
| L407 | 23103248 | FERRITR CHOKE, TEM2014AA |
| L408 | 23103248 | FERRITR CHOKE, TEM2014AA |
| L441 | 23233116 | COIL, LIN X22H37 5.6MMH TLN2222AH |
| L462 | 23231390 | DEFLECTION YOKE, TDY707RD TDY707RD |
| L463 | 23231390 | DEFLECTION YOKE, TDY707RD TDY707RD |
| L464 | 23231390 | DEFLECTION YOKE, TDY707RD TDY707RD |
| L472 | 23102543 | COIL, CPM29.1VM6T MAG-1136 |
| L473 | 23102543 | COIL, CPM29.1VM6T MAG-1136 |
| L474 | 23102543 | COIL, CPM29.1VM6T MAG-1136 |
| L840 | 23280019 | COIL, PEAKING, TRF4330AZ |
| L841 | 23103145 | FERRITE CHOKE, TEM2011AA |
| L850 | 23103145 | FERRITE CHOKE, TEM2011AA |
| L851 | 23103145 | FERRITE CHOKE, TEM2011AA |
| L852 | 23103145 | FERRITE CHOKE, TEM2011AA |
| L854 | 23103145 | FERRITE CHOKE, TEM2011AA |
| L861 | 23103145 | FERRITE CHOKE, TEM2011AA |
| L862 | 23103145 | FERRITE CHOKE, TEM2011AA |
| L864 | 23103145 | FERRITE CHOKE, TEM2011AA |
| L880 | 23103145 | FERRITE CHOKE, TEM2011AA |
| L881 | 23103145 | FERRITE CHOKE, TEM2011AA |
| L885 | 23248073 | COIL, CHOKE, TLN3299D |
| L886 | 23103145 | FERRITE CHOKE, TEM2011AA |
| L887 | 23103145 | FERRITE CHOKE, TEM2011AA |
| L888 | 23248321 | COIL, CHOKE 15X23H 22MMH 4.2A TLN3462AH |
| L891 | 23103145 | FERRITE CHOKE, TEM2011AA |
| L892 | 23103145 | FERRITE CHOKE, TEM2011AA |
| L893 | 23103145 | FERRITE CHOKE, TEM2011AA |
| L894 | 23248247 | COIL, CHOKE, TLN3499AH |
| L895 | 23248247 | COIL, CHOKE, TLN3499AH |
| L896 | 23248247 | COIL, CHOKE, TLN3499AH |
| L902 | 23289159 | COIL, PEAKING, TRF41R5AF |
| L904 | 23289120 | COIL, PEAKING, TRF4120AF |
| L905 | 23289689 | COIL, PEAKING, TRF46R8AF |
| L907 | 23238506 | COIL, PEAKING, TRF4229AJ |
| L911 | 23289220 | COIL, PEAKING, TRF4220AF |

| Location No. | Parts No. | Description |
|---|---|---|
| L913 | 23289159 | COIL, PEAKING, TRF41R5AF |
| L915 | 23289689 | COIL, PEAKING, TRF46R8AF |
| L916 | 23289120 | COIL, PEAKING, TRF4120AF |
| L917 | 23238506 | COIL, PEAKING, TRF4229AJ |
| L923 | 23289159 | COIL, PEAKING, TRF41R5AF |
| L924 | 23289120 | COIL, PEAKING, TRF4120AF |
| L925 | 23289689 | COIL, PEAKING, TRF46R8AF |
| L927 | 23238506 | COIL, PEAKING, TRF4229AJ |
| L7101 | 23289840 | COIL, PEAKING, TRF4100AT |
| L7102 | 23103894 | FILTER, FERRITE BEAD, TEM2011AW |
| L7103 | 23103894 | FILTER, FERRITE BEAD, TEM2011AW |
| L7104 | 23261974 | COIL, FERRITE BEAD, HC5-035 |
| L7710 | 23248073 | COIL, CHOKE, TLN3299D |
| L7711 | 23248073 | COIL, CHOKE, TLN3299D |
| LV13 | 23289100 | COIL, PEAKING, TRF4100AF |
| LV20 | 23238705 | COIL, PEAKING, TRF4560AJ |
| LV36 | 23289560 | COIL, PEAKING, TRF4560AF |
| LV37 | 23289560 | COIL, PEAKING, TRF4560AF |
| LY101 | 23248296 | COIL, CHOKE |
| LY102 | 23238506 | COIL, PEAKING, TRF4229AJ |
| LY103 | 23238506 | COIL, PEAKING, TRF4229AJ |
| T400 | 23224386 | TRANSFORMER, FOCUS, TLN2220AH |
| T401 | 23224371 | TRANSFORMER, HORIZ DRIVE, TLN1080AH |
| T461A | 23192972 | ANODE CAP ASSY, TCC5609AT |
| T801 | 23211776 | COIL, LINE FILTER 37X44H 6.8MH TRF3197AH |
| T840 | 23217431 | TRANSFORMER, CONVERTER, TPW3425AH |
| T862 | 23217669 | TRANSFORMER, CONVERTER TPW3549AS |
| T865 | 23224392 | TRANSFORMER, PULSE TLN2229AH |
| **SEMICONDUCTORS** | | |
| Q151 | 23205005 | TRANSISTOR, KTA2014Y |
| Q152 | 23205006 | TRANSISTOR, KTC4075Y |
| Q172 | 23205006 | TRANSISTOR, KTC4075Y |
| Q241 | 23114756 | TRANSISTOR, 2SC2482 |
| Q301 | 23319787 | IC, LA7833S |
| Q302 | 23000711 | IC, TA1317AN |
| Q305 | 23205005 | TRANSISTOR, KTA2014Y |
| Q306 | 70119059 | IC, OP AMP, TA75902P(J) |
| Q370 | 23205006 | TRANSISTOR, KTC4075Y |
| Q371 | 23205005 | TRANSISTOR, KTA2014Y |
| Q372 | 23205006 | TRANSISTOR, KTC4075Y |
| Q400 | 23205079 | TRANSISTOR, 2SC4686A |
| Q402 | 23205166 | TRANSISTOR, FET, 2SK2962 |
| Q404 | 23205149 | TRANSISTOR, 2SC5859(FA) |
| Q405 | 23205005 | TRANSISTOR, KTA2014Y |
| Q406 | 23205006 | TRANSISTOR, KTC4075Y |
| Q408 | 23205005 | TRANSISTOR, KTA2014Y |
| Q409 | 23205006 | TRANSISTOR, KTC4075Y |
| Q410 | 23205006 | TRANSISTOR, KTC4075Y |
| Q411 | 23205006 | TRANSISTOR, KTC4075Y |
| Q420 | 23114756 | TRANSISTOR, 2SC2482 |
| Q425 | 23205031 | TRANSISTOR, FET, 2SK2920 |
| Q428 | 23205006 | TRANSISTOR, KTC4075Y |
| Q470 | 23114541 | TRANSISTOR, 2SA1320 |
| Q471 | 23205006 | TRANSISTOR, KTC4075Y |
| Q472 | 23205006 | TRANSISTOR, KTC4075Y |
| Q473 | 23205005 | TRANSISTOR, KTA2014Y |
| Q601 | 23009603 | IC, BTL AUDIO AMP AN7580 |
| Q612 | 23205005 | TRANSISTOR, KTA2014Y |
| Q613 | 23205006 | TRANSISTOR, KTC4075Y |
| Q614 | 23114497 | TRANSISTOR, RN1406 |
| Q661 | 23205204 | TRANSISTOR, NPN VEBO=25V KTC2875B-RTK |
| Q662 | 23205204 | TRANSISTOR, NPN VEBO=25V KTC2875B-RTK |
| Q663 | 23906596 | IC, BA4558 |
| Q664 | 23114493 | TRANSISTOR, RN2404 |
| Q681 | 23205204 | TRANSISTOR, NPN VEBO=25V KTC2875B-RTK |

| Location No. | Parts No. | Description |
|---|---|---|
| Q682 | 23205204 | TRANSISTOR, NPN VEBO=25V KTC2875B-RTK |
| Q711 | 23205269 | TRANSISTOR, VCBO-160V IC-1.5A 2SA2005 |
| Q712 | 23205270 | TRANSISTOR, VCBO 160V 1.5A 2SC5511 |
| Q751 | 23135048 | IC, CONVERGENCE OUT STK394-250A |
| Q752 | 23135048 | IC, CONVERGENCE OUT STK394-250A |
| Q765 | 23205006 | TRANSISTOR, KTC4075Y |
| Q766 | 23205006 | TRANSISTOR, KTC4075Y |
| Q767 | 23205006 | TRANSISTOR, KTC4075Y |
| Q768 | 23205006 | TRANSISTOR, KTC4075Y |
| Q769 | 23906164 | IC, TA75S393F |
| Q782 | 23319894 | IC, NJM79M05FA |
| Q784 | 23009188 | IC, KIA7805API |
| Q785 | 70129444 | IC, PST994D |
| Q794 | 23906164 | IC, TA75S393F |
| Q795 | 23000044 | IC, TC4066BP(N) |
| Q796 | 23205006 | TRANSISTOR, KTC4075Y |
| Q801 | 23135028 | IC, STR-Z4479 |
| Q840 | 23906133 | IC, MIP280 |
| Q841 | 23009270 | IC, PHOTO COUPLER, PS2581L1(D) |
| Q842 | 23009270 | IC, PHOTO COUPLER, PS2581L1(D) |
| Q843 | 23205006 | TRANSISTOR, KTC4075Y |
| Q844 | 23205006 | TRANSISTOR, KTC4075Y |
| Q862 | 23009270 | IC, PHOTO COUPLER, PS2581L1(D) |
| Q881 | 23319693 | IC, SE116N, LF4 |
| Q894 | 23205006 | TRANSISTOR, KTC4075Y |
| Q901 | 23205159 | TRANSISTOR, 2SC3942 |
| Q902 | 23205165 | TRANSISTOR, 2SC3950E |
| Q911 | 23205159 | TRANSISTOR, 2SC3942 |
| Q912 | 23205165 | TRANSISTOR, 2SC3950E |
| Q913 | 23205054 | TRANSISTOR, KTA1504Y |
| Q921 | 23205159 | TRANSISTOR, 2SC3942 |
| Q922 | 23205165 | TRANSISTOR, 2SC3950E |
| Q961 | 23205057 | TRANSISTOR, KTC3875Y |
| Q962 | 23205054 | TRANSISTOR, KTA1504Y |
| Q973 | 23205054 | TRANSISTOR, KTA1504Y |
| Q4430 | 23314164 | TRANSISTOR, 2SC2236-Y(C)) |
| Q7101 | 23205057 | TRANSISTOR, KTC3875Y |
| Q7102 | 23205057 | TRANSISTOR, KTC3875Y |
| Q7103 | 70114402 | TRANSISTOR, 2SC3437-Y |
| Q7104 | 23114432 | TRANSISTOR, 2SC1815-GR |
| Q7105 | 23205057 | TRANSISTOR, KTC3875Y |
| Q7106 | 23205057 | TRANSISTOR, KTC3875Y |
| Q7107 | 23205054 | TRANSISTOR, KTA1504Y |
| Q7108 | 23205057 | TRANSISTOR, KTC3875Y |
| Q7109 | 23205054 | TRANSISTOR, KTA1504Y |
| Q7761 | 23205005 | TRANSISTOR, KTA2014Y |
| Q7762 | 23205006 | TRANSISTOR, KTC4075Y |
| Q7763 | 23205006 | TRANSISTOR, KTC4075Y |
| Q7764 | 23205005 | TRANSISTOR, KTA2014Y |
| QB01 | 23114528 | TRANSISTOR, 2SC1740S |
| QH301 | 23900003 | SENSOR, PHOTOSENOR SS-2109Y @E051Z |
| QH301 | 23900003 | SENSOR, PHOTOSENOR SS-2109Y @E052Z |
| QH301 | 23900003 | SENSOR, PHOTOSENOR SS-2109Y @E053Z |
| QH301 | 23900003 | SENSOR, PHOTOSENOR SS-2109Y @E054Z |
| QV48 | 23114528 | TRANSISTOR, 2SC1740S |
| QY160 | 23205006 | TRANSISTOR, KTC4075Y |
| D101 | 23316755 | DIODE, ZENER, MTZJ33C |
| D301 | 23316581 | DIODE, ZENER 7.51-7.89 MA8075-H, TX |
| D302 | 23357366 | DIODE, FR105-B5 |
| D303 | 23316726 | DIODE, ZENER, MTZJ15C |
| D304 | 23316794 | DIODE, SC570A |
| D305 | 23357365 | DIODE, 1N4004A-B5 |
| D306 | 23357365 | DIODE, 1N4004A-B5 |
| D327 | 23316715 | DIODE, ZENER, MTZJ11A |
| D333 | 23316715 | DIODE, ZENER, MTZJ11A |
| D334 | 23316715 | DIODE, ZENER, MTZJ11A |

| Location No. | Parts No. | Description |
|---|---|---|
| D336 | 23316571 | DIODE, ZENER, MA8056-M |
| D337 | 23316571 | DIODE, ZENER, MA8056-M |
| D365 | 23316581 | DIODE, ZENER 7.51-7.89 MA8075-H, TX |
| D370 | 23316231 | DIODE, 1SS355 |
| D401 | 23118056 | DIODE, AG01 |
| D402 | 23357366 | DIODE, FR105-B5 |
| D404 | 23316254 | DIODE, ERC06-15 |
| D406 | 23357366 | DIODE, FR105-B5 |
| D411 | 23316610 | DIODE, ZENER CHIP 17.55-18.45V MA8180-M |
| D412 | 23118707 | DIODE, RP-1H |
| D413 | 23118707 | DIODE, RP-1H |
| D414 | 23357366 | DIODE, FR105-B5 |
| D415 | 23357366 | DIODE, FR105-B5 |
| D418 | 23316755 | DIODE, ZENER, MTZJ33C |
| D419 | 23316231 | DIODE, 1SS355 |
| D420 | 23118859 | DIODE, 1SS133 |
| D421 | 23357366 | DIODE, FR105-B5 |
| D425 | 23357366 | DIODE, FR105-B5 |
| D426 | 23316610 | DIODE, ZENER CHIP 17.55-18.45V MA8180-M |
| D450 | 23357365 | DIODE, 1N4004A-B5 |
| D461 | 23224366 | DIODE, FMQ-3GU |
| D470 | 23316596 | DIODE, ZENER CHIP 11.40-11.96V MA8120-L, TX |
| D490 | 23316574 | DIODE, ZENER CHIP VZ6.05-6.36V MA8062-M |
| D491 | 23316231 | DIODE, 1SS355 |
| D492 | 23316591 | DIODE, ZENER, MA8100-M |
| D505 | 23316747 | DIODE, ZENER, MTZJ27C |
| D601 | 23316231 | DIODE, 1SS355 |
| D602 | 23316231 | DIODE, 1SS355 |
| D603 | 23316231 | DIODE, 1SS355 |
| D604 | 23316231 | DIODE, 1SS355 |
| D605 | 23316231 | DIODE, 1SS355 |
| D606 | 23316231 | DIODE, 1SS355 |
| D607 | 23316231 | DIODE, 1SS355 |
| D608 | 23316231 | DIODE, 1SS355 |
| D609 | 23316231 | DIODE, 1SS355 |
| D611 | 23316231 | DIODE, 1SS355 |
| D612 | 23316231 | DIODE, 1SS355 |
| D613 | 23316231 | DIODE, 1SS355 |
| D614 | 23316231 | DIODE, 1SS355 |
| D615 | 23316231 | DIODE, 1SS355 |
| D616 | 23316231 | DIODE, 1SS355 |
| D617 | 23316231 | DIODE, 1SS355 |
| D628 | 23316597 | DIODE, ZENER, MA8120-M |
| D751 | 23357012 | DIODE, 1SS244 |
| D752 | 23357012 | DIODE, 1SS244 |
| D801 | 23316393 | DIODE, VRM=600V IO=6A SIP D5SB60, 4009 F05 |
| D840 | 23357207 | DIODE, LN1WBA60 |
| D841 | 23316572 | DIODE, ZENER CHIP VZ5.66-5.95V MA8056-H |
| D842 | 23316564 | DIODE, ZENER 4.45-4.69 MA8047-L, TX |
| D843 | 23357366 | DIODE, FR105-B5 |
| D844 | 23316571 | DIODE, ZENER, MA8056-M |
| D845 | 23316231 | DIODE, 1SS355 |
| D846 | 23118633 | DIODE, ZENER, RD3.0ES B2 |
| D847 | 23118633 | DIODE, ZENER, RD3.0ES B2 |
| D848 | 23316231 | DIODE, 1SS355 |
| D851 | 23357216 | DIODE, D4SBL20U |
| D852 | 23316714 | DIODE, RL2Z |
| D853 | 23316714 | DIODE, RL2Z |
| D854 | 23357366 | DIODE, FR105-B5 |
| D862 | 23357366 | DIODE, FR105-B5 |
| D864 | 23357366 | DIODE, FR105-B5 |
| D873 | 23316747 | DIODE, ZENER, MTZJ27C |
| D875 | 23316688 | DIODE, ZENER, MTZJ9.1C |
| D876 | 23316759 | DIODE, ZENER, MTZJ36C |
| D878 | 23316686 | DIODE, ZENER, MTZJ9.1A |
| D879 | 23316747 | DIODE, ZENER, MTZJ27C |

| Location No. | Parts No. | Description |
|---|---|---|
| D880 | 23316663 | DIODE, ZENER, MTZJ4.3B |
| D881 | 23316231 | DIODE, 1SS355 |
| D883 | 23357018 | DIODE, RL2 |
| D884 | 23357018 | DIODE, RL2 |
| D885 | 23357214 | DIODE, D4SBS4 |
| D891 | 23357434 | DIODE, VRRM=40V IO=5A TO-220F15 YG801C04RF119 |
| D892 | 23357042 | DIODE, FMX-12S(023-108) |
| D893 | 23357042 | DIODE, FMX-12S(023-108) |
| D894 | 23316231 | DIODE, 1SS355 |
| D895 | 23316574 | DIODE, ZENER CHIP VZ6.05-6.36V MA8062-M |
| D899 | 24019485 | VARISTOR, TNR10V431K |
| D901 | 23118859 | DIODE, 1SS133 |
| D906 | 23357012 | DIODE, 1SS244 |
| D907 | 23357012 | DIODE, 1SS244 |
| D908 | 23357012 | DIODE, 1SS244 |
| D909 | 23357012 | DIODE, 1SS244 |
| D912 | 23118859 | DIODE, 1SS133 |
| D913 | 23115337 | DIODE, 1S1834 |
| D916 | 23357012 | DIODE, 1SS244 |
| D917 | 23357012 | DIODE, 1SS244 |
| D918 | 23357012 | DIODE, 1SS244 |
| D919 | 23357012 | DIODE, 1SS244 |
| D921 | 23118859 | DIODE, 1SS133 |
| D926 | 23357012 | DIODE, 1SS244 |
| D927 | 23357012 | DIODE, 1SS244 |
| D928 | 23357012 | DIODE, 1SS244 |
| D929 | 23357012 | DIODE, 1SS244 |
| D936 | 23115337 | DIODE, 1S1834 |
| D940 | 23118859 | DIODE, 1SS133 |
| D941 | 23118859 | DIODE, 1SS133 |
| D942 | 23118859 | DIODE, 1SS133 |
| D943 | 23118859 | DIODE, 1SS133 |
| D944 | 23118859 | DIODE, 1SS133 |
| D945 | 23118859 | DIODE, 1SS133 |
| D962 | 23316574 | DIODE, ZENER CHIP VZ6.05-6.36V MA8062-M |
| D967 | 23115337 | DIODE, 1S1834 |
| D4430 | 23357365 | DIODE, 1N4004A-B5 |
| D4431 | 23316593 | DIODE, ZENER CHIP 10.40-10.94V MA8110-L |
| D7101 | 23118859 | DIODE, 1SS133 |
| D7102 | 23118859 | DIODE, 1SS133 |
| D7730 | 23118538 | DIODE, ZENER, RD6.2ESA B2 |
| D7731 | 23118538 | DIODE, ZENER, RD6.2ESA B2 |
| D7760 | 23316231 | DIODE, 1SS355 |
| D7761 | 23118520 | DIODE, ZENER, RD8.2ES B2 |
| D7762 | 23118520 | DIODE, ZENER, RD8.2ES B2 |
| D7763 | 23316231 | DIODE, 1SS355 |
| D7764 | 23316231 | DIODE, 1SS355 |
| D7766 | 23316231 | DIODE, 1SS355 |
| D7790 | 23316231 | DIODE, 1SS355 |
| D7791 | 23316231 | DIODE, 1SS355 |
| D7792 | 23316231 | DIODE, 1SS355 |
| D7793 | 23316585 | DIODE, ZENER, MA8082-M |
| D7806 | 23316231 | DIODE, 1SS355 |
| DB01 | 23358564 | DIODE, LED, SLR-56VC3FPQ |
| DB03 | 23358522 | DIODE, LED, SIR-56SB3F |
| DH301 | 23316672 | DIODE, ZENER, MTZJ5.6B @E051Z |
| DH301 | 23316672 | DIODE, ZENER, MTZJ5.6B @E052Z |
| DH301 | 23316672 | DIODE, ZENER, MTZJ5.6B @E053Z |
| DH301 | 23316672 | DIODE, ZENER, MTZJ5.6B @E054Z |
| KB01 | 23000852 | IC, REMOTE PHOTO RECEIVER, PIC-37043TE2 |

**MISCELLANEOUS**

| | | |
|---|---|---|
| BB10 | 23903022 | CONNECTOR, BASE B-B 8P 2.5 JST |
| BB100 | 23368627 | CONNECTOR, BRIDGE B-B 8P 2.5JST 08TM-2.5FJ-E |
| BB11 | 23903022 | CONNECTOR, BASE B-B 8P 2.5 JST |
| BB20 | 23903022 | CONNECTOR, BASE B-B 8P 2.5 JST |

| Location No. | Parts No. | Description |
|---|---|---|
| BB200 | 23368627 | CONNECTOR, BRIDGE B-B 8P 2.5JST 08TM-2.5FJ-E |
| BB21 | 23903022 | CONNECTOR, BASE B-B 8P 2.5 JST |
| BB60 | 23713014 | CONNECTOR, BRIDGE PLUG 16P 1.5 |
| BB70 | 23713309 | PLUG , TAC-A46P-B1 |
| D461B | 72471082 | SCREW, 3X10MM |
| E918 #1 | 23737007 | BOLT, BOLT ASSY 50A60 |
| #3 | 23737007 | BOLT, BOLT ASSY 50A60 |
| E929 | 23969684 | TAPE, GLASS-CLOTH, W/ADHESIVE W=90 T=0.18 |
| E948 #1 | 23737007 | BOLT, BOLT ASSY 50A60 |
| #3 | 23737007 | BOLT, BOLT ASSY 50A60 |
| E959 | 23969684 | TAPE, GLASS-CLOTH, W/ADHESIVE W=90 T=0.18 |
| E978 #1 | 23737007 | BOLT, BOLT ASSY 50A60 |
| #3 | 23737007 | BOLT, BOLT ASSY 50A60 |
| E989 | 23969684 | TAPE, GLASS-CLOTH, W/ADHESIVE W=90 T=0.18 |
| F470 | 23144624 | FUSE, AXIAL 125V 2.0A |
| F801 | 23144684 | FUSE, CARTRIDGE 5X20 125V 8.0A |
| F801A | 23165433 | FUSE HOLDER, 5.2 SOC |
| F801B | 23165433 | FUSE HOLDER, 5.2 SOC |
| F840 | 23144704 | FUSE, AXIAL 125V 200MA |
| F850 | 23144712 | FUSE, AXIAL 125V 3.0A |
| F851 | 23144714 | FUSE, AXIAL 125V 4.0A |
| F852 | 23144714 | FUSE, AXIAL 125V 4.0A |
| F860 | 23144626 | FUSE, AXIAL 125V 4.0A |
| F885 | 23144715 | FUSE, AXIAL 125V 5.0A |
| F891 | 23144714 | FUSE, AXIAL 125V 4.0A |
| F892 | 23144710 | FUSE, AXIAL 125V 2.0A |
| G101 | 24011151 | CHIP, METAL FILM, 1/20W 150 OHM J |
| G102 | 24011151 | CHIP, METAL FILM, 1/20W 150 OHM J |
| GJ101 | 24000445 | CHIP JUMPER, 1608TYPE |
| GJ102 | 24000445 | CHIP JUMPER, 1608TYPE |
| GJ105 | 24000445 | CHIP JUMPER, 1608TYPE |
| GJ107 | 24000445 | CHIP JUMPER, 1608TYPE |
| GJ108 | 24000445 | CHIP JUMPER, 1608TYPE |
| GJ170 | 24000445 | CHIP JUMPER, 1608TYPE |
| GJ911 | 24000445 | CHIP JUMPER, 1608TYPE |
| GR103 | 24000445 | CHIP JUMPER, 1608TYPE |
| GR31 | 24000445 | CHIP JUMPER, 1608TYPE |
| GR32 | 24000445 | CHIP JUMPER, 1608TYPE |
| GR601 | 24000445 | CHIP JUMPER, 1608TYPE |
| H002 | 23148082 | IF MODULE, US BUFFER 6M_TRAP MVUS51A |
| H003 | 23124087 | ANTENNA SWITCH, RSU135X1, 2I3O BUNPAI US |
| H003A | 23740989 | NUT, F-CONNECTOR 2H BS |
| MF01 | 23389209 | CABLE, FFC P1.25-16-200 P1.25-16-200 |
| MF03 | 23389208 | CABLE, FFC P1.25-29-70 P1.25-29-70 |
| P105 | 23368578 | CONNECTOR, PLUG 4P, 2.5MM G JST-EH, B4B-EH-F1-TV4 |
| P404 | 23367069 | CONNECTOR, PLUG, NP 2.5MM G JST-EH, B9B-EH-F1A |
| P710 | 23368578 | CONNECTOR, PLUG 4P, 2.5MM G JST-EH, B4B-EH-F1-TV4 |
| P711 | 23368578 | CONNECTOR, PLUG 4P, 2.5MM G JST-EH, B4B-EH-F1-TV4 |
| P712 | 23368578 | CONNECTOR, PLUG 4P, 2.5MM G JST-EH, B4B-EH-F1-TV4 |
| P800 | 23368013 | CONNECTOR, PLUG, 2P 11.88MM W VT-JST |
| P801 | 23372209 | POWER CORD, U/C FL 125V7A CMC042P JST |
| P880A | 23367068 | CONNECTOR, PLUG 8P, 2.5MM G JST-EH B8B-EH-F1-TV4 |
| P880B | 23367068 | CONNECTOR, PLUG 8P, 2.5MM G JST-EH B8B-EH-F1-TV4 |
| P900 | 23164563 | CONNECTOR, PLUG 3P @E051Z |
| P900 | 23164563 | CONNECTOR, PLUG 3P @E052Z |
| P900 | 23164563 | CONNECTOR, PLUG 3P @E053Z |
| P900 | 23164563 | CONNECTOR, PLUG 3P @E054Z |
| P913 | 23368578 | CONNECTOR, PLUG 4P, 2.5MM G JST-EH, B4B-EH-F1-TV4 |
| P915A | 23367069 | CONNECTOR, PLUG, NP 2.5MM G JST-EH, B9B-EH-F1A |
| P915B | 23367069 | CONNECTOR, PLUG, NP 2.5MM G JST-EH, B9B-EH-F1A |
| P917 | 23367069 | CONNECTOR, PLUG, NP 2.5MM G JST-EH, B9B-EH-F1A |
| P918 | 23368578 | CONNECTOR, PLUG 4P, 2.5MM G JST-EH, B4B-EH-F1-TV4 |
| P919 | 23368577 | CONNECTOR, PLUG, 3P 2.5MM G JST-EH, B3B-EH-F1-TV4 |
| P920 | 23164965 | CONNECTOR, PLUG 4P, W-P3504-#02 |
| PB22 | 23368578 | CONNECTOR, PLUG 4P, 2.5MM G JST-EH, B4B-EH-F1-TV4 |
| PV01 | 23023132 | JACK, PIN 2S6P SMK LAP5030-0111GC |

| Location No. | Parts No. | Description |
|---|---|---|
| PV02 | 23023205 | JACK, PIN 10P SMK KARI2 |
| PV03 | 23023211 | JACK, PIN 7P SMK KARI04 |
| PV05 | 23365819 | JACK, 1S3P |
| PV60 | 23367070 | PLUG , NP 2.5MM G JST-EH B10B-EH-F1A |
| Q404B | 72471082 | SCREW, 3X10MM |
| SA01 | 23145226 | SWITCH, 1C1P, PUSH |
| SA02 | 23145226 | SWITCH, 1C1P, PUSH |
| SA03 | 23145226 | SWITCH, 1C1P, PUSH |
| SA04 | 23145226 | SWITCH, 1C1P, PUSH |
| SA05 | 23145226 | SWITCH, 1C1P, PUSH |
| SA06 | 23145226 | SWITCH, 1C1P, PUSH |
| SA07 | 23145226 | SWITCH, 1C1P, PUSH |
| SA08 | 23145226 | SWITCH, 1C1P, PUSH |
| SA09 | 23145226 | SWITCH, 1C1P, PUSH |
| SR81 | 23146577 | RELAY, DLS5D1-O(M)0.25W DLS5D1-O(M)0. |
| SR82 | 23146564 | RELAY, DC12V, TV5, DG-3 |
| V901A | 23903180 | SOCKET, ISHM62S-WE ICE ISHM62S-WE |
| V902A | 23903180 | SOCKET, ISHM62S-WE ICE ISHM62S-WE |
| V903A | 23903180 | SOCKET, ISHM62S-WE ICE ISHM62S-WE |
| W661 | 23351242 | SPEAKER, 160X160 8-OHM 20W SPK-1424AW |
| #1 | 23351167 | SPEAKER, SPK1390AE |
| W662 | 23351242 | SPEAKER, 160X160 8-OHM 20W SPK-1424AW |
| #1 | 23351167 | SPEAKER, SPK1390AE |
| Z101 | 23103840 | FERRITE CORE, TFE1013 |
| Z401 | 23140203 | SPARK GAP, 2.0-3.0KV C-010, AG20PC152F-L3N |
| Z410 | 23110841 | FOCUS PACK, TPA6030 |
| Z450 | 24083014 | COMPOSITE PARTS, CR-BLOCK TPA5011AH |
| Z450A | 23501755 | ANODE CABLE, 400LD FBT-C |
| Z801 | 23103840 | FERRITE CORE, TFE1013 |
| ZH04 | 23103778 | FERRITE CORE, TFE1008 |
| ZH05 | 23103840 | FERRITE CORE, TFE1013 |

**PC BOARD ASSEMBLIES**

| | | | |
|---|---|---|---|
| ✻ E021Z | | 23761995 | PC BOARD ASSY, BACK/AV 51H84 PU PD1735A1 |
| ✻ | #1 | 23762482 | PC BOARD ASSY, BACK/AV 46H84 PU PD1876A1 |
| ✻ E022Z | | 23761996 | PC BOARD ASSY, FRONT-CON 51H84 PU PD1735A2 |
| ✻ | #1 | 23762483 | PC BOARD ASSY, FRONT-CON 46H84 PU PD1876A2 |
| ✻ E023Z | | 23761997 | PC BOARD ASSY, FRONT-IN 51H84 PU PD1735A3 |
| ✻ | #1 | 23762484 | PC BOARD ASSY, FRONT-IN 46H84 PU PD1876A3 |
| ✻ E024Z | | 23761998 | PC BOARD ASSY, REMOTE 51H84 PU PD1735A4✻ |
| | #1 | 23762485 | PC BOARD ASSY, REMOTE 46H84 PU PD1876A4 |
| ✻ E031Z | | 23761984 | PC BOARD ASSY, CRT/SVM/R 51H84 PU PD1733A1 |
| ✻ E032Z | | 23761985 | PC BOARD ASSY, CRT/SVM/G 51H84 PU PD1733A2 |
| ✻ E033Z | | 23761986 | PC BOARD ASSY, CRT/SVM/B 51H84 PU PD1733A3 |
| ✻ E034Z | | 23762013 | PC BOARD ASSY, SVM/DIV 51H84 PU PD1733A4 |
| ✻ E051Z | | 23762004 | PC BOARD ASSY, CONV-SEN 51H84 PU PD0079B |
| ✻ E052Z | | 23762005 | PC BOARD ASSY, CONV-SEN2 51H84 PU PD0079B2 |
| ✻ E053Z | | 23762006 | PC BOARD ASSY, CONV-SEN3 51H84 PU PD0079B3 |
| ✻ E054Z | | 23762007 | PC BOARD ASSY, CONV-SEN4 51H84 PU PD0079B4 |
| ✻ U001 | | 23148103 | SCAN CONVERTER MODUL, MHSU11 MHSU11 |
| ✻ U401 | #1 | 23762135 | PC BOARD ASSY, DEFPOWER 46H84 PU PD1730C |
| ✻ | #2 | 23761973 | PC BOARD ASSY, DEFPOWER 51H84 PU PD1730A |
| ✻ | #3 | 23762134 | PC BOARD ASSY, DEFPOWER 57H84 PU PD1730B |
| ✻ U601 | | 23761975 | PC BOARD ASSY, IF/AUDIO 51H84 PU PD1731A2 |
| ✻ U711 | | 23761974 | PC BOARD ASSY, CONVER 51H84 PU PD1731A1 |
| ✻ UV02 | | 23148055 | SCAN CONVERTER MODUL, 03DVI MHDM01 |

**PICTURE TUBE**

| | | | |
|---|---|---|---|
| V901R | #1 | 23078432 | OTHER BLOCK, COUPLING R |
| | #2 | 23078357 | OTHER, COUPLING R |
| | #3 | 23078433 | OTHER BLOCK, COUPLING R |
| V902G | #1 | 23078430 | OTHER BLOCK, COUPLING GX |
| | #2 | 23078358 | OTHER, COUPLING G |
| | #3 | 23078430 | OTHER BLOCK, COUPLING G |
| V903B | #1 | 23078431 | OTHER BLOCK, COUPLING B |
| | #2 | 23078359 | OTHER, COUPLING B |
| | #3 | 23078434 | OTHER BLOCK, COUPLING B |

**TUNER**

| | | | |
|---|---|---|---|
| H001 | | 23321482 | TUNER, US181CH IIC PH 5V PANA ELA52LX5 |
| HY01 | | 23321480 | TUNER, TIF US IIC PH 181CH 5V ENG36A18GF |

**ACCESSORIES**

| | | | |
|---|---|---|---|
| A701 | #1 | 23067159 | CARTON, CARTON |
| | #2 | 23067099 | CARTON, CARTON |
| | #3 | 23067100 | CARTON, CARTON |
| A703 | #1 | 23946513 | PACKING, TOP PACKING |
| | #2 | 23946479 | PACKING, TOP PACKING |
| | #3 | 23946481 | PACKING, TOP PACKING |
| A707 | #1 | 23946510 | PACKING, BTM TRAY ASSY |
| A708 | | 23946478 | PACKING, BOTTOM PACKING |
| | #3 | 23946480 | PACKING, BOTTOM PACKING |
| A709 | | 23946483 | PACKING, BOTTOM TRAY |
| | #3 | 23946187 | PACKING, BASE TRAY |
| K912 | | 23306497 | REMOCON HAND UNIT IR, CTVUSA CT-90159 |
| Y101 | | 23566304 | OWNERS MANUAL, ENGLISH/FRENCH 51H84 |

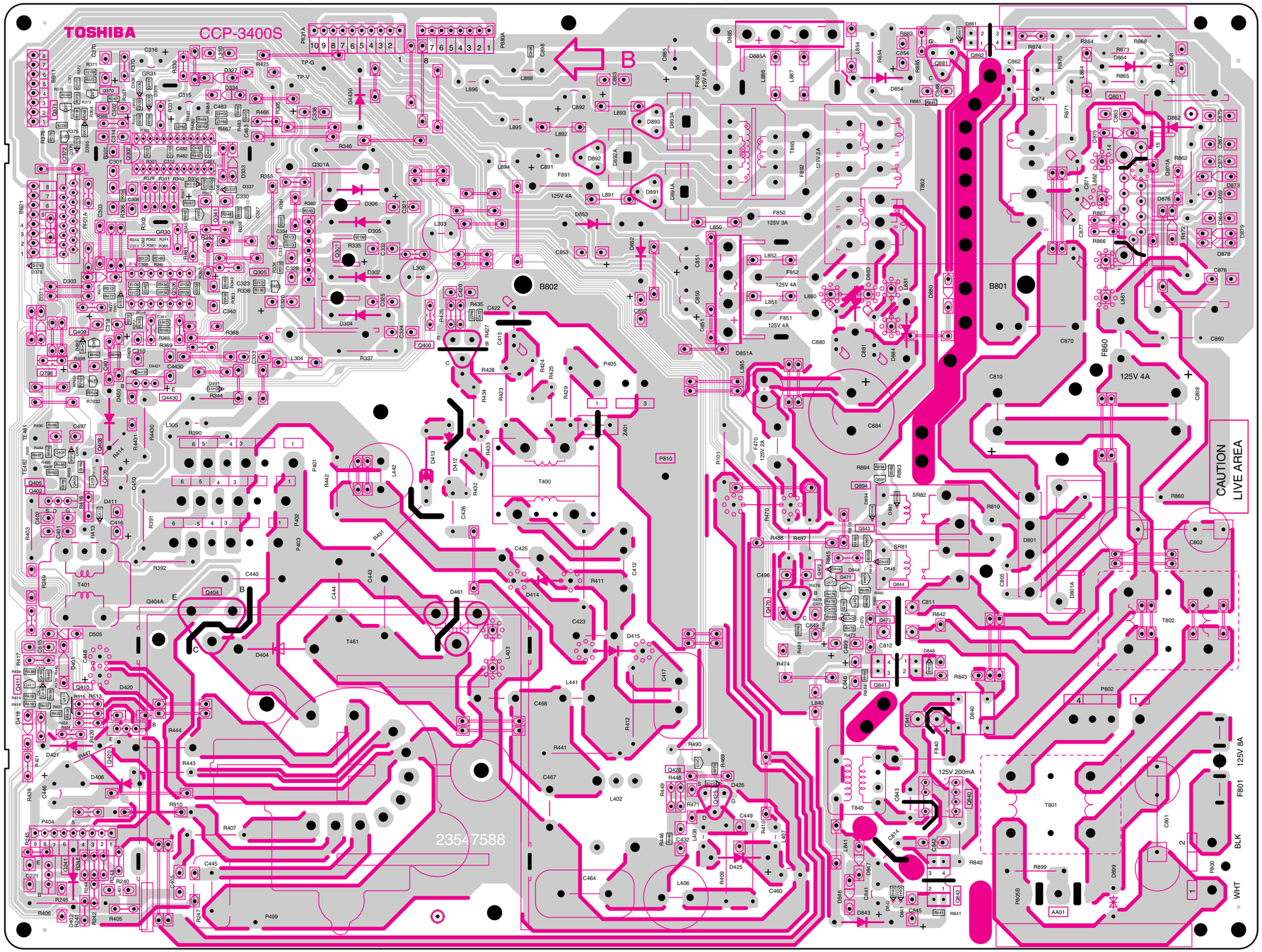
**CABINET PARTS**

| | | | |
|---|---|---|---|
| A001 | #1 | 23429060 | CABINET, WD CAB ASSY, 46H84 |
| | #2 | 23429055 | CABINET, WOOD CABI SHIP 51H84 |
| | #3 | 23429091 | CABINET, WOOD CABINET SHIP 57H84 |
| A102 | #1 | 23527274 | GRILLE, SPK GRILLE ASSY |
| | #2 | 23527268 | GRILLE, SPEAKER GRILLE 51 REG |
| | #3 | 23527269 | GRILLE, SPEAKER GRILLE 57 REG |
| A160 | | 23469228 | CASTER, TP50H60 |
| A201 | #1 | 23530960 | COVER, BEZEL |
| | #1 | 23532713 | COVER, BEZEL ASSEMBLY 46H84 |
| | #2 | 23530779 | COVER, BEZEL |
| | #3 | 23532728 | COVER, BEZEL ASSEY 57H84 |
| A202 | #1 | 23450682 | PANEL, CONTROL PANEL ASSEMBLY |
| | | 23450649 | PANEL, CONTROL ASSY |
| A213 | | 23428187 | DOOR |
| | #1 | 23428212 | DOOR |
| A215 | | 23929911 | PIECE, SNAP-IN GEAR DAMPER CONNON |
| A222 | | 23929910 | PIECE, FILTER |
| A223 | | 23445705 | BUTTON, POWER BUTTON |
| | #1 | 23445733 | BUTTON, POWER BUTTON |
| A268 | #1 | 23530997 | COVER, BEZEL,SPEAKER |
| | #2 | 23530772 | COVER, FRONT COVER |
| | #3 | 23530770 | COVER, FRONT COVER |
| A329 | | 23433231 | DECORATIVE, PIECE |
| | #3 | 23433230 | DECORATIVE, PIECE |
| A331 | | 23929897 | PIECE, POLE BOTTOM LEFT |
| | #3 | 23929899 | PIECE, POLE BOTTOM LEFT |
| A332 | | 23929898 | PIECE, POLE BOTTOM RIGHT |
| | #3 | 23929900 | PIECE, POLE BOTTOM RIGHT |
| A401 | #1 | 23530962 | COVER, BACK COVER |
| | #2 | 23530781 | COVER, BACK COVER |
| | #3 | 23429132 | CABINET, BACK COVER ASSEY |
| A421 | | 23530812 | COVER, REAR BOARD |
| A424 | | 23429059 | CABINET, BACK BOARD 51H84 |
| A510 | | 23030815 | SCREW, WOOD, PTD #6 X 3/4 |
| A721 | | 23943628 | PLYETHLENE COVERING 46GM88T |
| K501 | #1 | 23311087 | SCREEN, 46KP LENTICULAR SHEET SCREEN46KP-L |
| | #2 | 23311088 | SCREEN, 51KP LENTICULAR SHEET SCREEN51KP-L |
| | #3 | 23311013 | SCREEN, 57KNH LENTICULAR SHEET SCREEN57KNHL |
| K502 | #1 | 23311018 | SCREEN, 46KN FRESNEL SHEET SCREEN46KN-F |
| | #2 | 23311016 | SCREEN, 51KN FRESNEL SHEET SCREEN51KN-F |
| | #3 | 23311014 | SCREEN, 57KN FRESNEL SHEET SCREEN57KN-F |
| K503 | #1 | 23311094 | SCREEN, PROTECTOR 46RP SCR-PRO46RP |
| | #2 | 23311019 | SCREEN, PROTECTOR 51RN SCR-PRO51RN |
| | #3 | 23311862 | SCREEN, PROTECTOR 57RL SCR-PRO57RL |

| Location No. | | Parts No. | Description |
|---|---|---|---|
| K601 | #1 | 23405273 | MIRROR, 46W MIRROR46L |
| | #2 | 23405249 | MIRROR, 51WL |
| | #3 | 23405409 | MIRROR, 57WL MIRROR57WL |

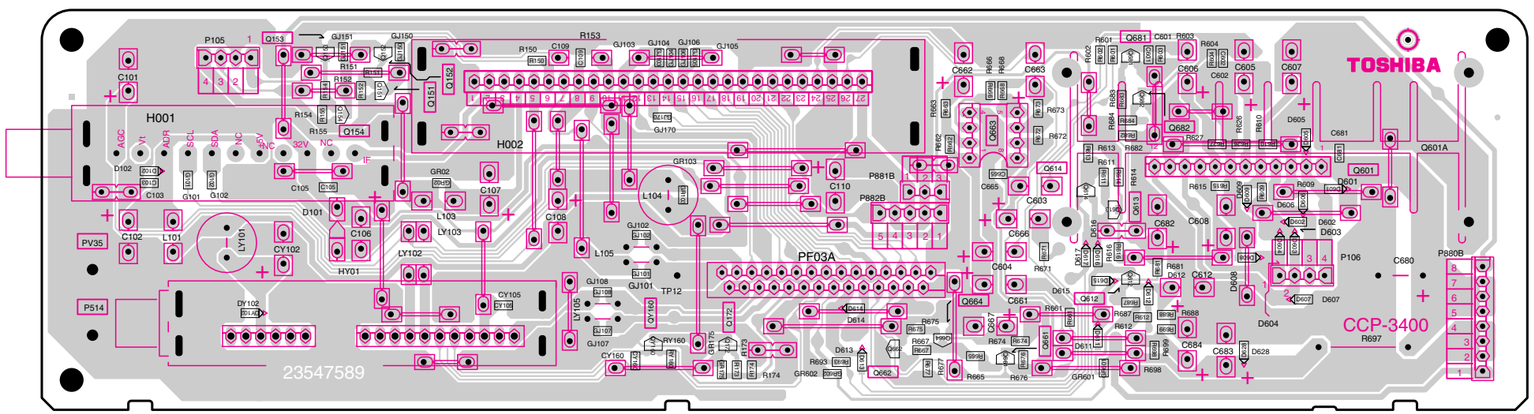
# DEFPOWER BOARD PD1730A (U411 )

**BOTTOM (FOIL) SIDE**



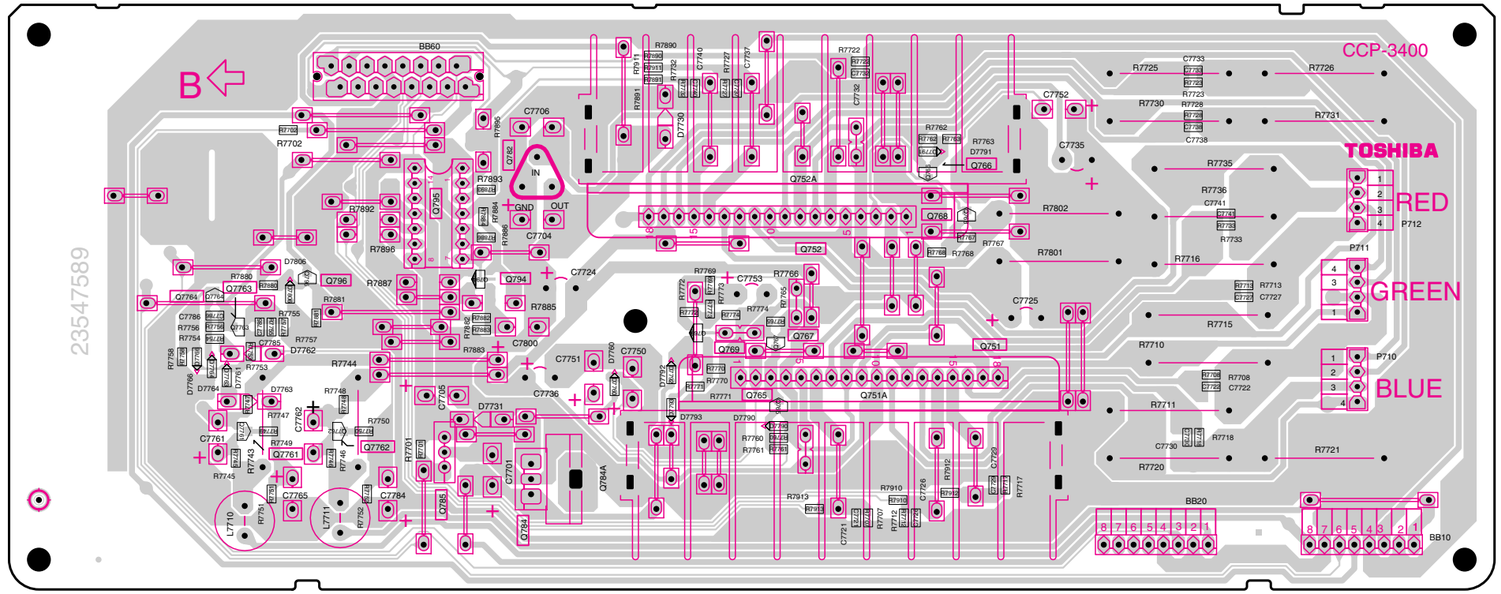
# CONV/ IF/AUDIO BOARD PD1731A (U701)

**BOTTOM (FOIL) SIDE**



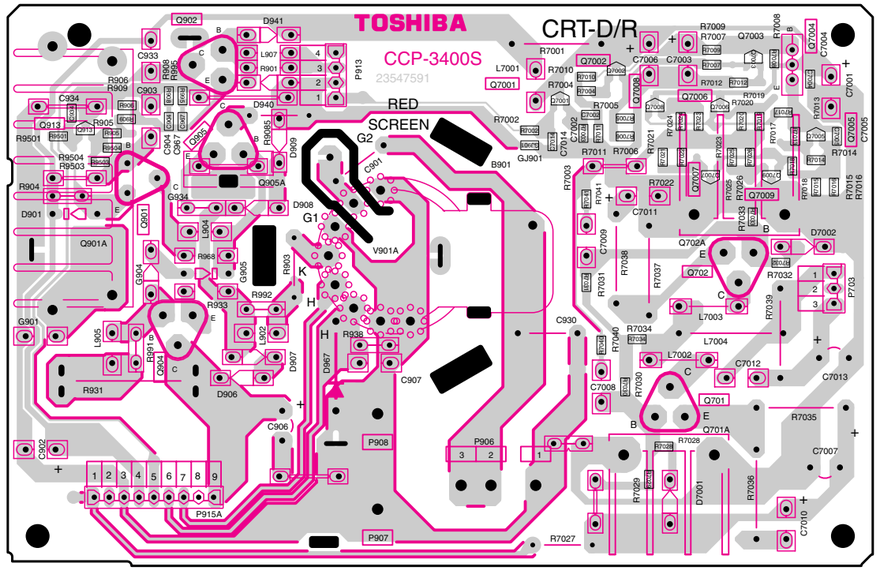

# CONVER OUT BOARD PD1731A1 (U711)

**BOTTOM (FOIL) SIDE**



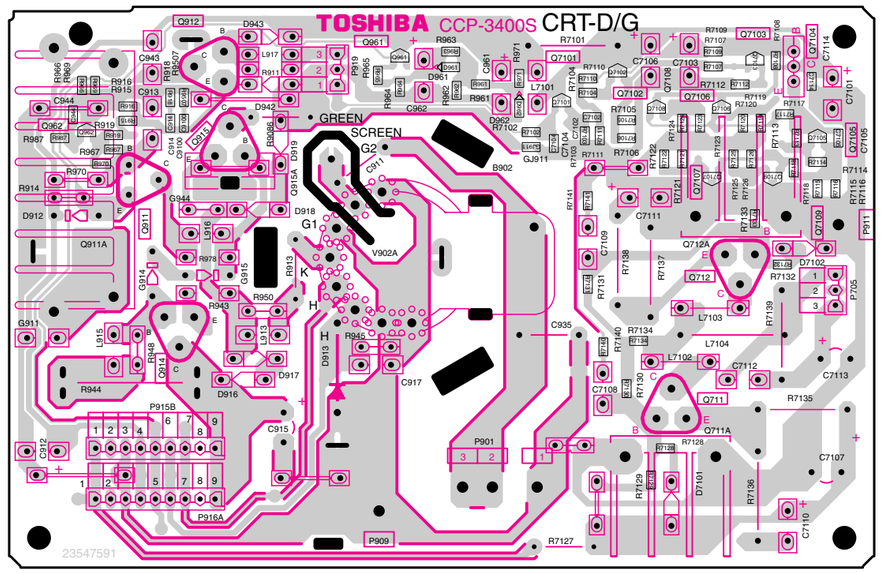
# CRT/SVM BOARD PD1733A (UA11)

**BOTTOM (FOIL) SIDE**



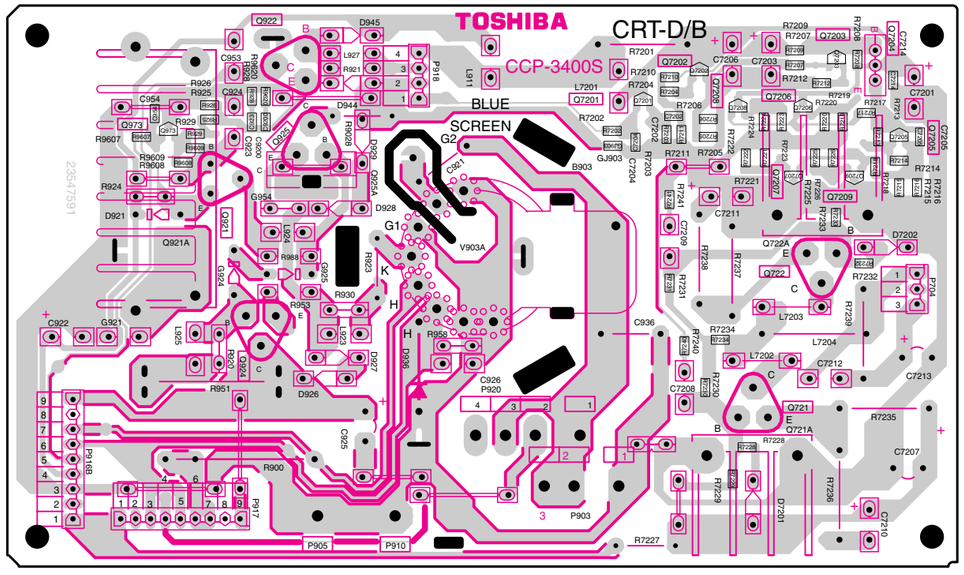

# CRT/SVM BOARD PD1733A (UA12)

**BOTTOM (FOIL) SIDE**



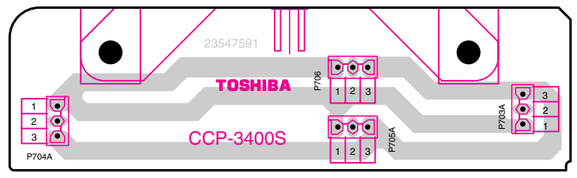

# CRT/SVM BOARD PD1733A (UA13)

**BOTTOM (FOIL) SIDE**




# CRT/SVM BOARD PD1733A (UA14)

**BOTTOM (FOIL) SIDE**

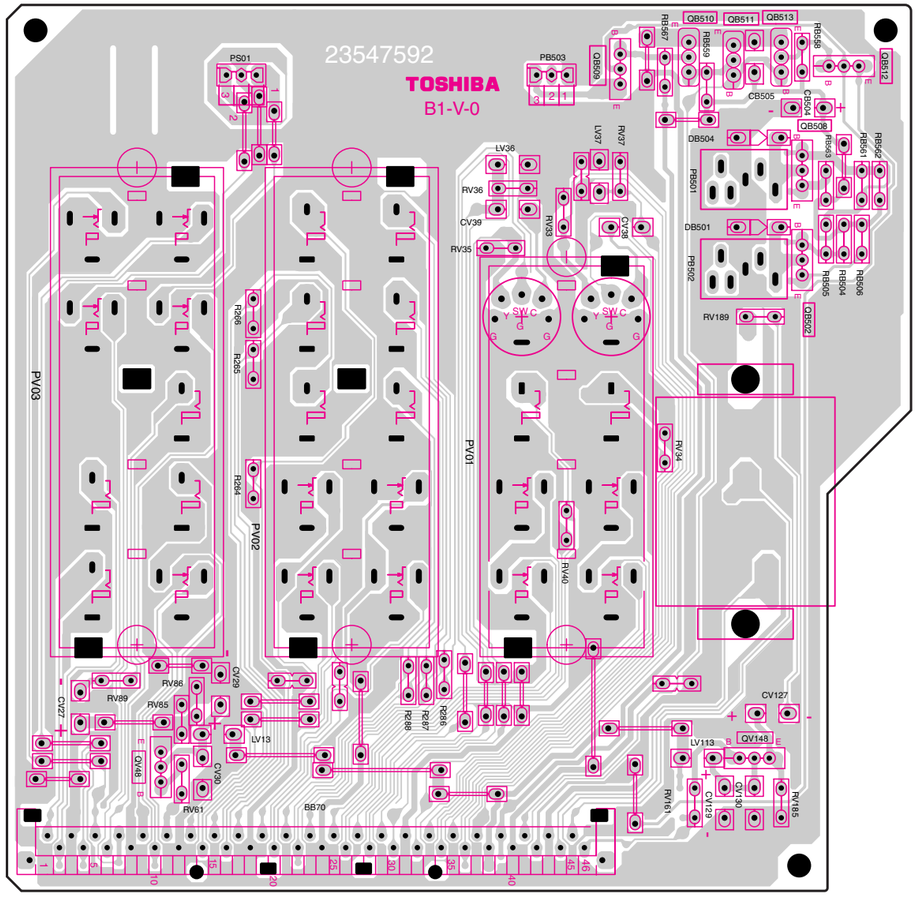



# CONV-SEN BOARD PD0079 (UH21)

**BOTTOM (FOIL) SIDE**

## BACK/AV BOARD PD1735A1 (UV11:51H84/57H84)

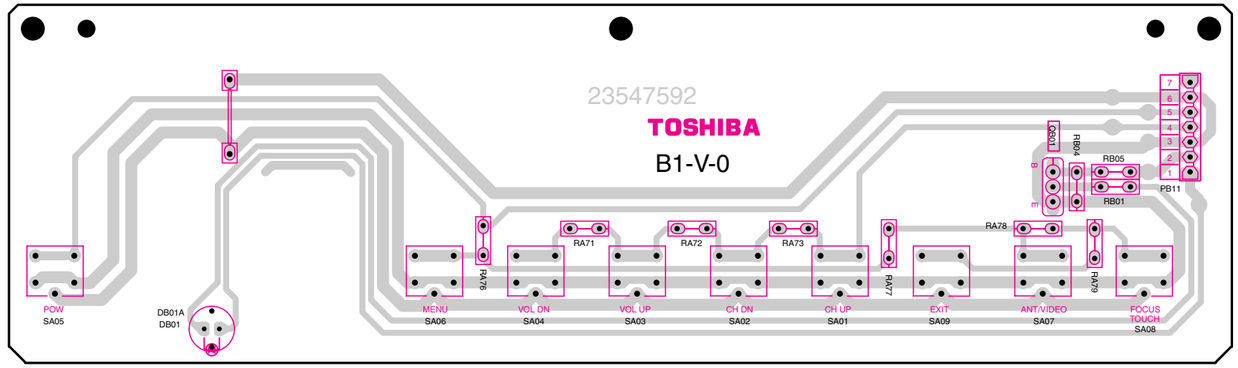
**BOTTOM (FOIL) SIDE**





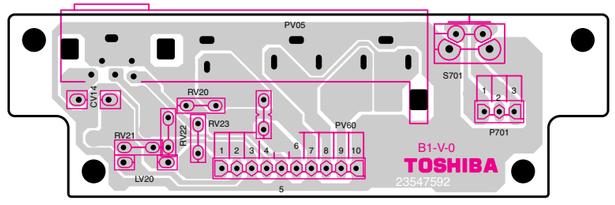

## FRONT-CON BOARD PD1735A2 (UV12:51H84/57H84)

**BOTTOM (FOIL) SIDE**



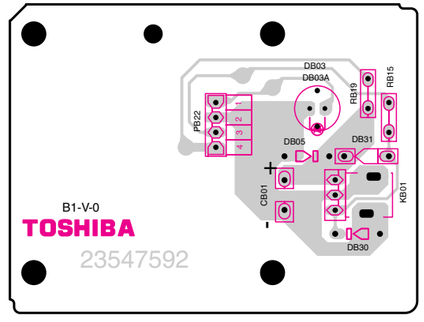

## AV/FRONT IN BOARD PD1735A3 (UV13:51H84/57H84)

**BOTTOM (FOIL) SIDE**



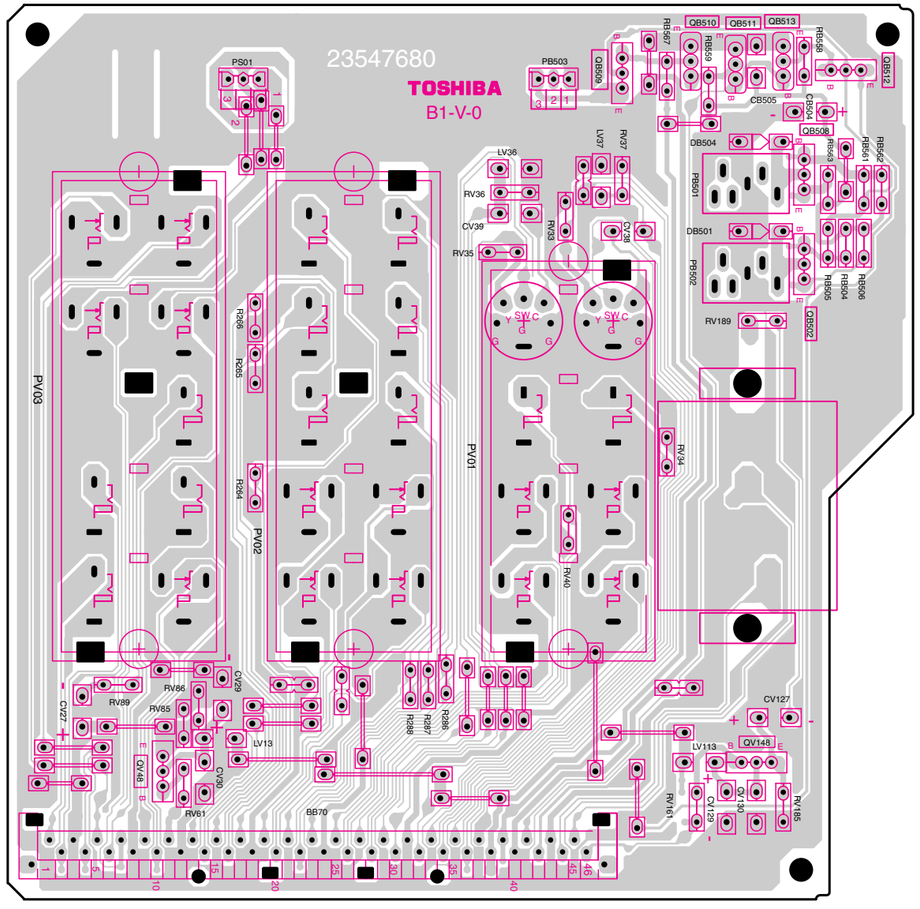

## REMOTE BOARD PD1735A4 (UV14:51H84/57H84)

**BOTTOM (FOIL) SIDE**



## BACK/AV BOARD PD1876A1 (UV11:46H84)

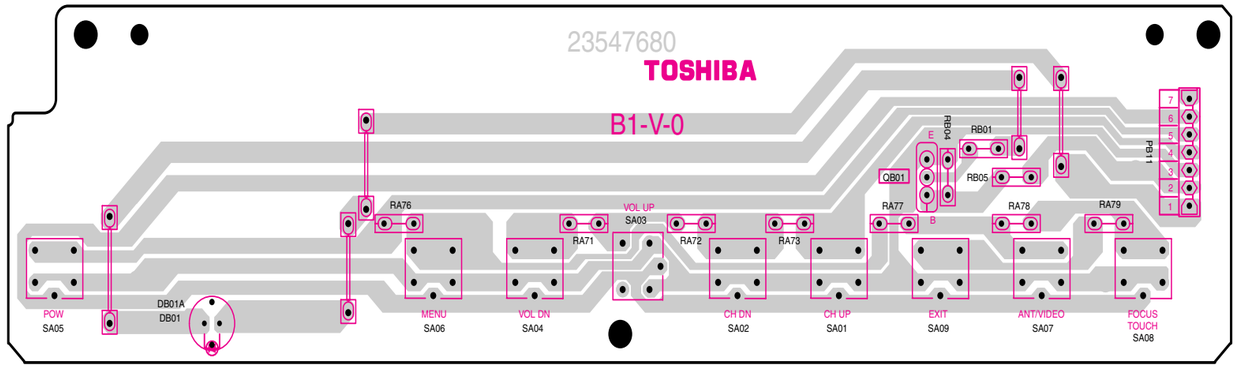
**BOTTOM (FOIL) SIDE**





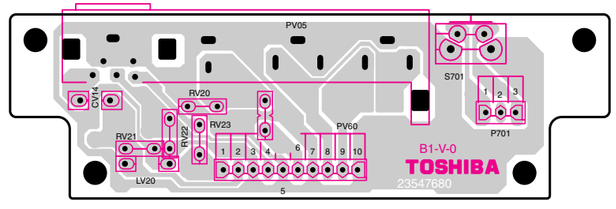

## FRONT-CON BOARD PD1876A2 (UV12:46H84)

**BOTTOM (FOIL) SIDE**



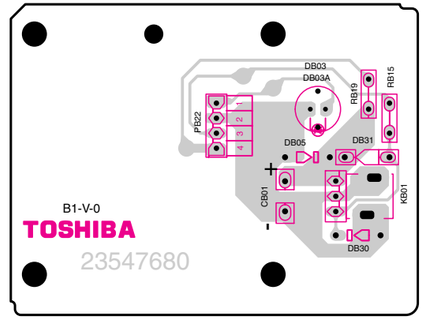

## AV/FRONT IN BOARD PD1876A3 (UV13:46H84)

**BOTTOM (FOIL) SIDE**



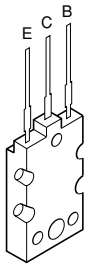

## REMOTE BOARD PD1876A4 (UV14:46H84)

**BOTTOM (FOIL) SIDE**

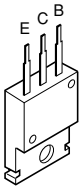


# TERMINAL VIEW OF TRANSISTORS

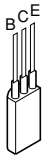
① 2SC5144
2SC5859



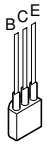

② 2SC3852
2SD1763A
2SC1569
2SC4544
2SA1788
2SA1306
2SA1186A



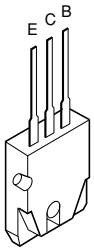

③ 2SC752GTM
2SC2482
2SC2655
2SC4721P



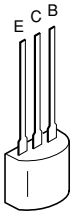

④ 2SC752
2SA562TM
2SA1015
2SC1815
2SC2878
2SC1740S
2SC2120
2SA9335



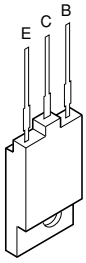

⑤ 2SA1788



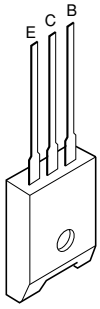

⑥ RN2203
RN2201
RN2004
RN1203
RN1204
RN2204
RN1205
RN1202
RN1201




⑦ 2SD1554
2SD2253
2SD1556
2SD2553
2SC5143




⑧ ON4409



# SCHEMATIC DIAGRAM

## MODEL : 46H84/51H84/57H84

**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.

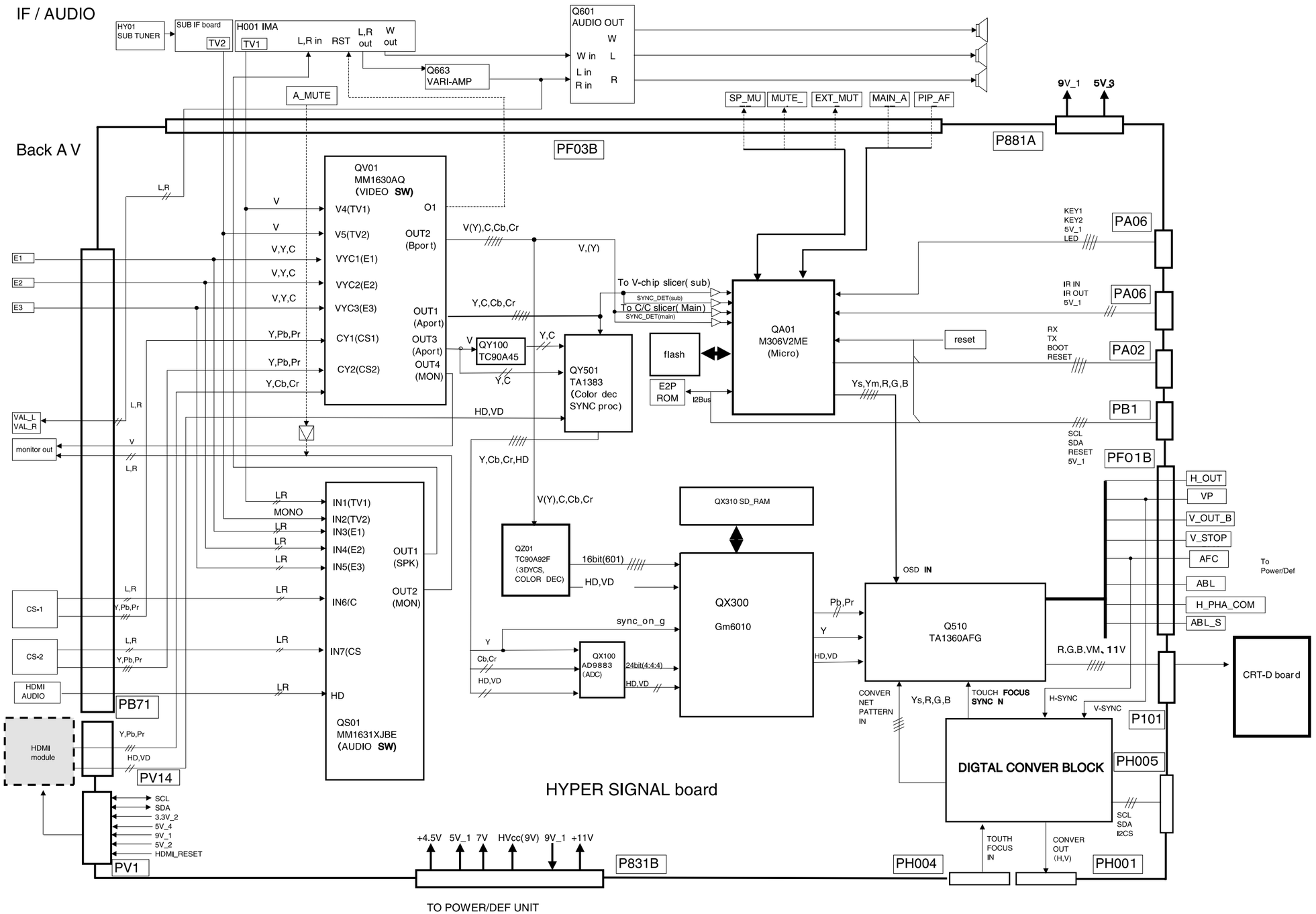
**NOTE:**

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:**


- DEF POWER Circuit
  - (1/3) [ SHEET - 1/3] ..... 1/61
  - (2/3) [ SHEET - 2/3] ..... 2/61
  - (3/3) [ SHEET - 3/3] ..... 3/61
- BACK/AV (51H84, 57H84) Circuit ..... 4/61
- BACK/AV (46H84) Circuit ..... 5/61
- CONV/IF/AUDIO
  - (1/3) [ SHEET - 1/3] ..... 6/61
  - (2/3) [ SHEET - 2/3] ..... 7/61
  - (3/3) [ SHEET - 3/3] ..... 8/61
- CONVER OUT Circuit ..... 9/61
- FRONT IN/CONT/REMOVE Circuit ..... 10/61
- CRT-D Circuit
  - (1/2) [ SHEET - 1/2] .....11/61
  - (2/2) [ SHEET - 2/2] .....12/61
- AV Circuit
  - (1/10) [ SHEET - 1/10] .....13/61
  - (2/10) [ SHEET - 2/10] .....14/61
  - (3/10) [ SHEET - 3/10] .....15/61
  - (4/10) [ SHEET - 4/10] .....16/61
  - (5/10) [ SHEET - 5/10] .....17/61
  - (6/10) [ SHEET - 6/10] .....18/61
  - (7/10) [ SHEET - 7/10] .....19/61
  - (8/10) [ SHEET - 8/10] .....20/61
  - (9/10) [ SHEET - 9/10] .....21/61
  - (10/10) [ SHEET - 10/10] .....22/61
- MICON Circuit
  - (1/10) [ SHEET - 1/10] .....23/61
  - (2/10) [ SHEET - 2/10] .....24/61
  - (3/10) [ SHEET - 3/10] .....25/61
  - (4/10) [ SHEET - 4/10] .....26/61
  - (5/10) [ SHEET - 5/10] .....27/61
  - (6/10) [ SHEET - 6/10] .....28/61
  - (7/10) [ SHEET - 7/10] .....29/61
  - (8/10) [ SHEET - 8/10] .....30/61
  - (9/10) [ SHEET - 9/10] .....31/61
  - (10/10) [ SHEET - 10/10] ..... 32/61
- G-HYPER Circuit
  - (1/3) [ SHEET - 1/3] .....33/61
  - (2/3) [ SHEET - 2/3] .....34/61
  - (3/3) [ SHEET - 3/3] .....35/61
- AD-CONVERTER Circuit
  - (A) [ SHEET - 1/3] .....36/61
  - (B) [ SHEET - 2/3] .....37/61
  - (C) [ SHEET - 3/3] .....38/61
- GC-TC90A92A Circuit
  - (1/3) [ SHEET - 1/3] .....39/61
  - (2/3) [ SHEET - 2/3] .....40/61
- GC-REG Circuit ..... 41/61
- GC-TC90A92A Circuit
  - (3/3) [ SHEET - 3/3] .....42/61
- GNESIS Circuit
  - (1/3) [ SHEET - 1/3] .....43/61
  - (2/3) [ SHEET - 2/3] .....44/61
  - (3/3) [ SHEET - 3/3] .....45/61
- SDRAM Circuit ..... 46/61
- GNESIS OUT Circuit ..... 47/61
- GNESIS REG Circuit ..... 48/61
- CPU Circuit ..... 49/61
- DIGITAL CONVER Circuit
  - (1/8) [ SHEET - 1/8] .....50/61
  - (2/8) [ SHEET - 2/8] .....51/61
  - (3/8) [ SHEET - 3/8] .....52/61
  - (4/8) [ SHEET - 4/8] .....53/61
  - (5/8) [ SHEET - 5/8] .....54/61
  - (6/8) [ SHEET - 6/8] .....55/61
  - (7/8) [ SHEET - 7/8] .....56/61
  - (8/8) [ SHEET - 8/8] .....57/61
- CONVER-REG Circuit
  - (1/4) [ SHEET - 1/4] .....58/61
  - (2/4) [ SHEET - 2/4] .....59/61
  - (3/4) [ SHEET - 3/4] .....60/61
  - (4/4) [ SHEET - 4/4] .....61/61

# CIRCUIT BLOCK DIAGRAM



## SPECIFICATIONS

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
185 W (average)

Audio Power
15 W + 15W

Speaker Type
46H84: Two 4-3/4 inches (12 cm) round
51H84: Two 6-5/16 inches (16 cm) round
57H84: Two 6-5/16 inches (16 cm) round

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)
HDMI INPUT
HDMI typeA
Suggested scan rates: 1080i, 720p, 480p, 480i

Dimensions
46H84: Width 43-3/8 inches (1,100 mm)
Height 40-1/2 inches (1,026 mm)
Depth 21-7/8 inches (555 mm)
51H84: Width 47-9/16 inches (1,206 mm)
Height 50-1/2 inches (1,280 mm)
Depth 22-1/2 inches (570 mm)
57H84: Width 52-3/4 inches (1,340 mm)
Height 55-3/4 inches (1,415 mm)
Depth 23-7/8 inches (606 mm)

Mass
46H84: 143 lbs (65.0 kg)
51H84: 169 lbs (76.0 kg)
57H84: 204 lbs (92.0 kg)

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

Optional TV Stand
46H84: ST4663

*1 E-EDID = Enhanced-Extended Display Identification
*2 Design and specifications are subject to change without notice.
*3 Please refer to owner's manual in detail.

– END –

**TOSHIBA CORPORATION**
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