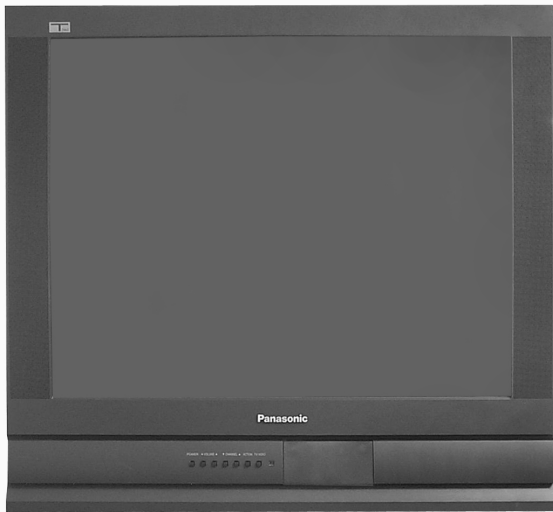


Service Manual

Color Television

Simplified

Simplified Manual
(NA8MS)



Panasonic

| Models | Chassis |
|-------------|---------|
| CT-24SX12F | BP367 |
| CT-24SX12UF | BP367 |
| CT-27SX12F | AP390 |
| CT-27SX12UF | AP390 |
| CT-27SX32F | BP390 |
| CT-27SX32UF | BP390 |

This simplified service manual is issued to **add** listed models CT-27SX12F/UF and CT-27SX32F/UF to the main service manual order No. **MTNC010527C1** (CT-27SX31E) and CT-24SX12F/UF models to simplified service manual order number **MTNC010837A1** (CT-24SX11E). A set of unique schematics, unique settings and a complete parts list are included in this manual.

Please file and use this simplified service manual together with main service manual, order No. MTNC010527C1 (CT-27SX31E) and simplified service manual order number MTNC010837A1 (CT-24SX11E).


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

The service technician is required to read and follow the "Safety Precautions" and "Important Safety Notice" in the Main Manual.

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Important Safety Notice

Special components are used in this television set which are important for safety. These parts are identified on the schematic diagram by the symbol  and printed in **BOLD TYPE** on the replacement part list. It is essential that these critical parts are replaced with the manufacturer's specified replacement part to prevent X-ray radiation, shock, fire or other hazards. Do not modify the original design without the manufacturer's permission.

Safety Precautions

General Guidelines

An **Isolation Transformer** should always be used during the servicing of a receiver whose chassis is not isolated from AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personal injury from electrical shocks. It will also protect the Receiver from being damaged by accidental shorting that may occur during servicing.

When servicing, observe the original lead dress, especially in the high voltage circuit. Replace all damaged parts (also parts that show signs of overheating.)

Always Replace Protective Devices, such as fishpaper, isolation resistors and capacitors, and shields after servicing the Receiver. Use only manufacturer's recommended rating for fuses, circuits breakers, etc.

High potentials are present when this Receiver is operating. Operation of the Receiver without the rear cover introduces danger for electrical shock. Servicing should not be performed by anyone who is not thoroughly familiar with the necessary precautions when servicing high-voltage equipment.

Extreme care should be practiced when **Handling the Picture Tube**. Rough handling may cause it to implode due to atmospheric pressure. (14.7 lbs per sq. in.). Do not nick or scratch the glass or subject it to any undue pressure. When handling, use safety goggles and heavy gloves for protection. **Discharge the picture tube** by shorting the anode to chassis ground (not to the cabinet or to other mounting hardware). When discharging connect cold ground (i.e. dag ground lead) to the anode with a well insulated wire or use a grounding probe.

Avoid prolonged exposure at close range to unshielded areas of the picture tube to prevent exposure to X-ray radiation.

The **Test Picture Tube** used for servicing the chassis at the bench should incorporate safety glass and magnetic shielding. The safety glass provide shielding for the tube viewing area against X-ray radiation as well as implosion. The magnetic shield limits the X-ray radiation around the bell of the picture tube in addition to the restricting magnetic effects. When using a picture tube test jig for service, ensure that the jig is capable of handling **50kV** without causing X-ray radiation.

Before returning a serviced receiver to the owner, the service technician must thoroughly test the unit to ensure that is completely safe to operate. **Do not use a line isolation transformer when testing.**

Leakage Current Cold Check

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

Measure the resistance between the jumpered AC plug and expose metallic parts such as screwheads, antenna terminals, control shafts, etc. If the exposed

metallic part has a return path to the chassis, the reading should be between 240k Ω and 5.2M Ω . If the exposed metallic part does not have a return path to the chassis, the reading should be infinite.

Leakage Current Hot Check (Fig. 1)

Plug the AC cord directly into the AC outlet. Do not use an isolation transformer during the check.

Connect a 1.5k Ω 10 watt resistor in parallel with a 0.15 μ F capacitor between an exposed metallic part and ground. Use earth ground, for example a water pipe.

Using a DVM with a 1000 ohms/volt sensitivity or higher, measure the AC potential across the resistor.

Repeat the procedure and measure the voltage present with all other exposed metallic parts.

Verify that any potential does not exceed 0.75 volt RMS. A leakage current tester (such a Simpson Model 229, Sencore Model PR57 or equivalent) may be used in the above procedure, in which case any current measure must not exceed 0.5 milliamp. If any measurement is out of the specified limits, there is a possibility of a shock hazard and the Receiver must be repaired and rechecked before it is returned to the customer.

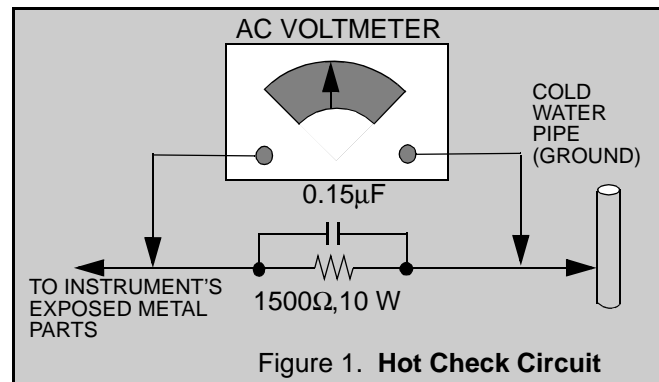


Figure 1. Hot Check Circuit

X-ray Radiation

WARNING: The potential source of X-ray radiation in the TV set is in the High Voltage section and the picture tube.

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


Set the **brightness, picture, sharpness** and **color** controls to Minimum. Measure the High Voltage. The high voltage should be **30.55 \pm 1.25kV**. If the upper limit is out of tolerance, immediate service and correction is required to insure safe operation and to prevent the possibility of premature component failure.

About lead free solder (PbF)

Note: Lead is listed as (Pb) in the periodic table of elements.

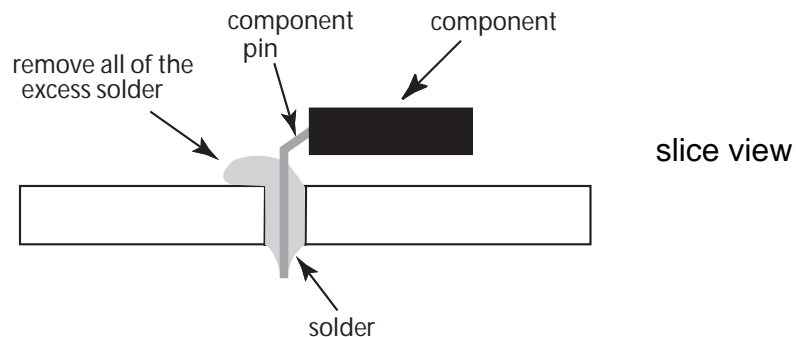
In the information below, Pb will refer to Lead solder, and PbF will refer to Lead Free Solder. The Lead Free Solder used in our manufacturing process and discussed below is (Sn+Ag+Cu). That is Tin (Sn), Silver (Ag) and (Cu) although other types are available.

This model uses Pb Free solder in it's manufacture due to environmental conservation issues. For service and repair work, we'd suggest the use of Pb free solder as well, although Pb solder may be used.

PCBs manufactured using lead free solder will have the PbF within a leaf Symbol  stamped on the back of PCB.

Caution

- Pb free solder has a higher melting point than standard solder. Typically the melting point is 50 ~ 70 °F (30 ~ 40 °C) higher. Please use a high temperature soldering iron and set it to 700 ± 20 °F (370 ± 10 °C).
- Pb free solder will tend to splash when heated too high (about 1100 °F or 600 °C). If you must use Pb solder, please completely remove all of the Pb free solder on the pins or solder area before applying Pb solder. If this is not practical, be sure to heat the Pb free solder until it melts, before applying Pb solder.
- After applying PbF solder to double layered boards, please check the component side for excess solder which may flow onto the opposite side. (see figure below)



Suggested Pb free solder

There are several kinds of Pb free solder available for purchase. This product uses Sn+Ag+Cu (tin, silver, copper) solder. However, Sn+Cu (tin, copper), Sn+Zn+Bi (tin, zinc, bismuth) solder can also be used.

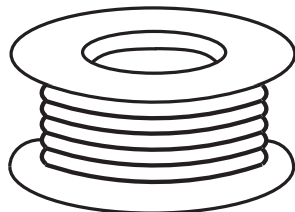
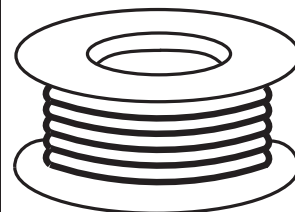
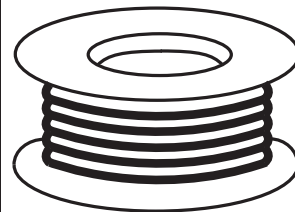
| 0.3mm X 100g | 0.6mm X 100g | 1.0mm X 100g |
|---|---|---|
|  |  |  |

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Service Notes

Note: These components are affixed with glue. Be careful not to break or damage any foil under the component or at the pins of the ICs when removing. Usually applying heat to the component for a short time while twisting with tweezers will break the component loose.

Leadless Chip Component (surface mount)

Chip components must be replaced with identical chips due to critical foil track spacing. There are no holes in the board to mount standard transistors or diodes. Some chips capacitor or resistor board solder pads may have holes through the board, however the hole diameter limits standard resistor replacement to 1/8 watt. Standard capacitor may also be limited for the same reason. It is recommended that identical components be used.

Chip resistor have a three digit numerical resistance code - 1st and 2nd significant digits and a multiplier. Example: 162 = 1600 or 1.6kΩ resistor, 0 = 0Ω (jumper). Chip capacitors generally do not have the value indicated on the capacitor. The color of the component indicates the general range of the capacitance.

Chip transistors are identified by a two letter code. The first letter indicates the type and the second letter, the grade of transistor.

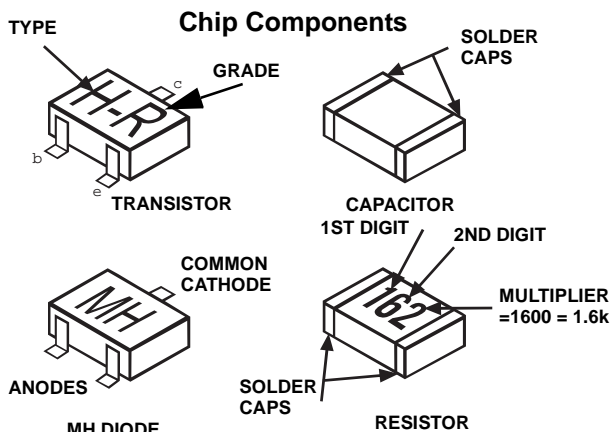
Chip diodes have a two letter identification code as per the code chart and are a dual diode pack with either common anode or common cathode. Check the parts list for correct diode number.

Component Removal

1. Use solder wick to remove solder from component end caps or terminal.
2. Without pulling up, carefully twist the component with tweezers to break the adhesive.
3. Do not reuse removed leadless or chip components since they are subject to stress fracture during removal.

Chip Component Installation

1. Put a small amount of solder on the board soldering pads.
2. Hold the chip component against the soldering pads with tweezers or with a miniature alligator clip and apply heat to the pad area with a 30 watt iron until solder flows. Do not apply heat for more than 3 seconds.

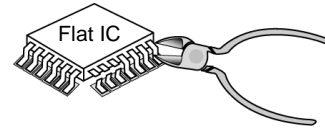


How to Replace Flat-IC

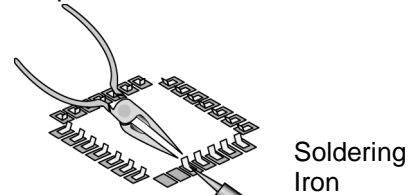
- Required Tools -

- Soldering iron
- Needle nose pliers
- Wire cutters (sharp & small)
- De-solder braids
- Magnifier

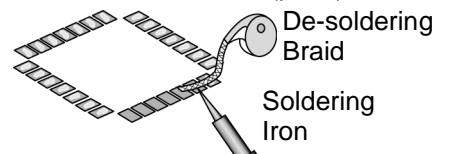
1. Cut the pins of a defective IC with wire cutters. Remove IC from board. If IC is glued to the board, heat the IC and release the IC. See Note above.



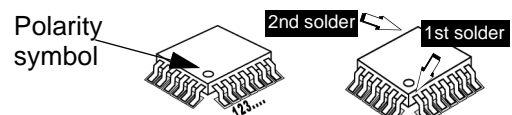
2. Using soldering iron and needle nose pliers remove the IC pins from the board.



3. Using de-soldering braid and soldering iron remove solder from affected area on board (pads).

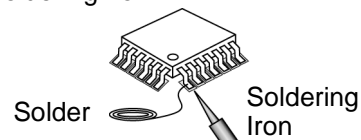


4. Position the new Flat-IC in place (apply the pins of the Flat-IC to the soldering pads where the pins need to be soldered). Determine the positions of the soldering pads and pins by correctly aligning the polarity symbol. Solder pin #1 first, align the IC.

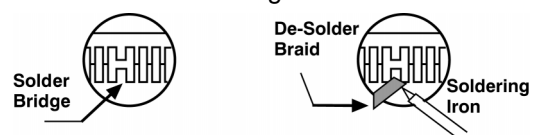


Solder the pin opposite to pin #1. This will assist positioning the IC.

5. Solder all pins to the soldering pads using a fine tipped soldering iron.



6. Check with a magnifier for solder bridge between the pins or for dry joint between pins and soldering pads. To remove a solder bridge, use a de-solder braid as shown in the figure below.




Service Notes (Continued)

IMPORTANT: To protect against possible damage to the solid state devices due to arcing or static discharge, make certain that all ground wires and CTR DAG wire are securely connected.

CAUTION: The power supply circuit is above earth ground and the chassis cannot be polarized. Use an isolation transformer when servicing the Receiver to avoid damage to the test equipment or to the chassis. Connect the test equipment to the proper ground (⊕) or (↗) when servicing, or incorrect voltages will be measured.

WARNING: This Receiver has been designed to meet or exceed applicable safety and X-ray radiation protection as specified by government agencies and independent testing laboratories.

To maintain original product safety design standards relative to X-ray radiation and shock and fire hazard, parts indicated with the symbol  on the schematic must be replaced with identical parts. Order parts from the manufacturer's parts center using the parts numbers shown in this service manual, or provide the chassis number and the part reference number.

For optimum performance and reliability, all other parts should be replaced with components of identical specification.

Board Table Description

| BOARD | CT-24SX12F CT-24SX12UF | CT-27SX12F CT-27SX12UF | CT-27SX32F CT-27SX32UF | DESCRIPTION |
|-------------------|---------------------------|---------------------------|---------------------------|--------------|
| A-Board TNP2AH025 | CD* | AB* | BC* | MAIN CHASSIS |
| C-Board TNP2AA068 | AF* | AD* | AD* | CRT BOARD |
| P-Board TNP2AA078 | BAM* | ADM* | ADM* | POWER SUPPLY |
| S-Board TNPA10190 | ---* | ---* | AMM* | SECOND TUNER |
| Y-Board TNPA1059 | ---* | ---* | BC* | PIP BOARD |

* Note: When ordering a replacement board assembly, append an "S" to the board number.

Example: To order the A-Board for CT-27SX32DF, the replacement board is TNP2AH025BCS.

To order the A-Board for CT-27SX12SF, the replacement board is TNP2AH025ABS.

Receiver Feature Table

| FEATURE/MODEL | CT-24SX12F/UF | CT-27SX12F/UF | CT-27SX32F/UF |
|----------------------------|-----------------------------------|---------------------------------|---------------|
| Chassis | NA8MS | | |
| No. of channels | 181 | | |
| Menu language | ENG/SPAN/FR | | |
| Closed Caption | X | | |
| V-Chip (USA/CANADA) | X | | |
| Picture in Picture | --- | | X |
| 2RF | --- | | X |
| 75Ω input | X | | |
| Remote Model No. | EUR7613Z10 | EUR7613Z10 | EUR7613Z30 |
| Picture tube | A60LUQ085X | A68QCP893XU | M68LUQ085X |
| Picture tube Supplier | MMEC | SAMSUNG | MDDA |
| Comb Filter | 3 DIG | | |
| HEC/VEC | VEC | | |
| VM | VM | | |
| V/A norm (X=BOTH) | X | | |
| Color Temp | X | | |
| MTS/SAP/DBX | X | | |
| BASS/BL/TRE Control | X | | |
| AI Sound | X | | |
| Surround | X | | |
| SPATIALIZER/BBE | BBE | | |
| Built-in audio power | 7W X 2 | | |
| No. of speakers | 2 | | |
| A/V in (rear/front) | 3 (2/1) | | |
| S-VHS Input (rear/front) | 1/1 | | |
| Component Input (Y,Pb,Pr) | 1 | | |
| Audio Out (FAO: F, VAO: V) | F, V | | |
| EPJ/HPJ/MISC | HPJ | | |
| Dimensions mm in (WxDxH) | 626x596x733.5 27.1x19.8x23.8 | 772x596x733.5 27.1x19.8x23.8 | |
| Weight (kg/lbs) | 35/77.16 | 44.5/98.1 | |
| Power source (V/Hz) | 120/60 | | |
| Anode voltage | 30.55kV ± 1.25kV | | |
| Video input jack | 1V _{p-p} 75Ω, phono jack | | |
| Audio input jack | 500mV RMS 47kΩ | | |

CT-27SX12F/UF and CT-27SX32F/UF use different picture tubes. Please confirm the model name before placing orders.

Specifications are subject to change without notice or obligation. Dimensions and weights are approximate.

Table 1. Receiver Features

Location of Controls (Remote)

| |
|---|
| POWER Button |
| Press to turn ON and OFF. |
| MUTE Button |
| Press to mute sound. A second press resumes sound. Press also to access and delete Closed Caption display. |
| VCR, DVD, LD/CD, AUX, TV, CBL, DBS, RCVR |
| Component function buttons |
| VOL (volume) Buttons |
| Press to adjust TV sound level. Use with Channel buttons to navigate in menus. |
| R-TUNE (Rapid Tune) Button. |
| Press to switch to the previous channel. |
| ACTION Button |
| Press to display Main Menu and access or exit On Screen features and Adjustment Menus. |
| REW, PLAY, FF, TV/VCR, STOP, PAUSE, REC, VCR CHANNEL |
| Component function buttons. |
| TV/VIDEO Button |
| Press to select TV or Video input. |
| CH (channel) Buttons |
| Press to select channels. Use with volume buttons to navigate in menus. |



EUR7613Z10
CT-24SX12F/UF
CT-27SX12F/UF



EUR7613Z30
CT-27SX32F/UF

Figure 2. Location of Controls (Remote).

REPLACEMENT PARTS LIST

Models:CT-24SX12F/UF, CT-27SX12F/UF, CT-27SX32F/UF

Important Safety Notice: Components printed in **BOLD TYPE** have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

| REF NO. | PART NO. | DESCRIPTION |
|-------------------|-------------------|--|
| CAPRISTORS | | |
| CRA801 | TP00842-51 | TAPING GAP TERMINAL |
| CRA802 | TP00842-51 | TAPING GAP TERMINAL |
| CAPACITORS | | |
| C001 | ECA1CM470B | CAP,E 47UF/16V |
| C002 | TCJ2VF1H103Z | CAP,C .01UF-Z-50V |
| C003 | ECEA1HKA4R7B | CAP,E 4.7UF-50V |
| C005 | ECA1CM471B | CAP,E 470UF-16V |
| C006 | TCJ2VF1H103Z | CAP,C .01UF-Z-50V |
| C008 | TCJ2VF1H103Z | CAP,C .01UF-Z-50V |
| C010 | TCJ2VF1H103Z | CAP,C .01UF-Z-50V |
| C013 | ECA0JM101B | CAP,E 100UF-6.3V |
| C014 | TCJ2VC1H390J | CAP,C 39PF-J-50V |
| C015 | TCJ2VC1H120J | CAP,C 12PF-J-50V |
| C017 | TCJ2VC1H270J | CAP,C 27PF-J-50V |
| C018 | TCJ2VC1H270J | CAP,C 27PF-J-50V |
| C020 | ECA0JM331B | CAP,E 330UF-6.3V |
| C021 | TCJ2VF1H103Z | CAP,C .01UF-Z-50V |
| C025 | ECA1HM010B | CAP,E 1UF-50V |
| C026 | ECA1HM010B | CAP,E 1UF-50V |
| C032 | ECA1CM331B | CAP,E 330UF-16V |
| C033 | TCJ2VC1H680J | CAP,C 68PF-J-50V |
| C034 | TCJ2VC1H680J | CAP,C 68PF-J-50V |
| C043 | ECA1HM2R2B | CAP,E 2.2UF-50V |
| C044 | TCJ2VF1H103Z | CAP,C .01UF-Z-50V |
| C047 | ECA0JM102B | CAP,E 1000UF-6.3V |
| C048 | TCJ2VF1H103Z | CAP,C .01UF-Z-50V |
| C052 | TCJ2VC1H101J | CAP,C 100PF-J-50V <i>CT-27SX12F/UF, CT-27SX32F/UF</i> |
| C053 | ECA1HM010B | CAP,E 1UF-50V <i>CT-27SX12F/UF, CT-27SX32F/UF</i> |
| C201 | TCJ2VB1C104K | CAP,C .1UF-K-16V |
| C224 | TCJ2VB1C104K | CAP,C .1UF-K-16V |
| C225 | TCJ2VB1C104K | CAP,C .1UF-K-16V |
| C226 | TCJ2VB1C104K | CAP,C .1UF-K-16V |
| C301 | TCJ2VB1C104K | CAP,C .1UF-K-16V |
| C302 | TCJ2VB1C104K | CAP,C .1UF-K-16V |
| C303 | TCJ2VB1C104K | CAP,C .1UF-K-16V |
| C307 | ECA1HM0R1B | CAP,E 0.1UF/50V |
| C309 | TCJ2VC1H390J | CAP,C 39PF-J-50V <i>CT-27SX32F/UF</i> |
| C310 | TCJ2VC1H390J | CAP,C 39PF-J-50V |
| C314 | EEANA1E1R0B | CAP,E 1.0UF-25V <i>CT-27SX32F/UF</i> |
| C315 | EEANA1E1R0B | CAP,E 1.0UF-25V |
| C320 | TCJ2VF1H104Z | CAP,C .1UF-Z-50V |
| C321 | TCJ2VB1H103K | CAP,C .01UF-K-50V |
| C322 | TCJ2VB1H103K | CAP,C .01UF-K-50V |
| C323 | TCJ2VB1H103K | CAP,C .01UF-K-50V |
| C324 | TCJ2VF1H104Z | CAP,C .1UF-Z-50V |
| C330 | ECA1AM101B | CAP,E 100UF-10V |
| C331 | TCJ2VF1H103Z | CAP,C .01UF-Z-50V |

| REF NO. | PART NO. | DESCRIPTION |
|-------------|---------------------|---|
| C337 | ECA1HM2R2B | CAP,E 2.2UF-50V |
| C342 | ECA1HM010B | CAP,E 1UF-50V |
| C351 | TACCV470T50V | CAP,C 47PF/50V |
| C352 | TACCV330T50V | CAP,C 33PF/50V |
| C353 | TACCV330T50V | CAP,C 33PF/50V |
| C358 | ECQB1H473JF3 | CAP,P .047UF-J-50V |
| C359 | ECQM4104KZB | CAP,P .10UF-K-400V |
| C368 | ECQV1H224JL3 | CAP,P .22UF-J-50V |
| C370 | ECKW3D102KBN | CAP,C .001UF-K-2KVDC |
| C371 | ECEA1HN010UB | CAP,E 1UF/50V <i>CT-27SX12F/UF CT-27SX32F/UF</i> |
| C373 | ECA2EHG100B | CAP,E 10UF-250V |
| C377 | ECA1CM221B | CAP,E 10UF-16V |
| C401 | TCJ2VB1C104K | CAP,C .1UF-K-16V |
| C402 | TCJ2VB1H102K | CAP,C 1000PF-K-50V |
| C403 | ECA1HM010B | CAP,E 1UF-50V |
| C404 | ECA1HM010B | CAP,E 1UF-50V |
| C405 | ECSF1EE105VB | CAP,E 1.0UF-25V |
| C407 | ECA1HM220B | CAP,E 22UF-50V |
| C409 | TCJ2VC1H101J | CAP,C 100PF-J-50V |
| C410 | TCJ2VB1C104K | CAP,C .1UF-K-16V |
| C415 | TCJ2VF1H104Z | CAP,C .1UF-Z-50V |
| C453 | EEUNA1E220B | CAP,E 22UF-25V |
| C454 | ECA1HHG221B | CAP,E 220UF-50V |
| C456 | ECQB1104JF3 | CAP,P .10UF-J-100V |
| C458 | ECKR1H221KB5 | CAP,C 220PF-K-50V |
| C459 | ECQB1224KF3 | CAP,P .22UF-K-100V |
| C460 | ECA1VM221B | CAP,E 220UF-35V |
| C461 | ECA1VM470B | CAP,E 47UF/35V |
| C462 | ECA1VM221B | CAP,E 220UF-35V |
| C463 | ECQB1H103JF3 | CAP,P .01UF-J-50V |
| C465 | ECA1CM101B | CAP,E 100UF/16V |
| C470 | ECQB1H104JF3 | CAP,P .10UF-J-50V |
| C471 | ECQB1H104JF3 | CAP,P .10UF-J-50V |
| C495 | ECQB1H683JF3 | CAP,P .068UF-J-50V |
| C504 | ECQB1H222JF3 | CAP,P 2200PF-J-50V |
| C505 | TCJ2VC1H180J | CAP,C 18PF-J-50V |
| C506 | ECA1CM471B | CAP,E 470UF-16V |
| C507 | TCJ2VF1H103Z | CAP,C .01UF-Z-50V |
| C511 | ECKR2H271KB5 | CAP,C 270PF-K-500W |
| C512 | ECKR2H152KB5 | CAP,C .0015UF-K-500V |
| C514 | ECA1HMR22B | CAP,E .22UF-50V |
| C519 | TCJ2VF1H104Z | CAP,C .1UF-Z-50V |
| C535 | TCJ2VC1H120J | CAP,C 12PF-J-50V |
| C548 | ECWH16103JVB | CAP,P .01UF-J-1.5KV |
| C549 | ECQM4473JZW | CAP,P .047UF-J-400V <i>CT-24SX12F/UF</i> |
| C549 | ECQM6333JZW | CAP,P .063UF-J-100V <i>CT-27SX12F/UF, CT-27SX32F/UF</i> |
| C550 | ECA160V33UE | CAP,E 33UF/160V |
| C551 | ECKW3D102JBR | CAP,C 1000PF-J-2KV <i>CT-27SX12F/UF, CT-27SX32F/UF</i> |

REPLACEMENT PARTS LIST

Models:CT-24SX12F/UF, CT-27SX12F/UF, CT-27SX32F/UF

Important Safety Notice: Components printed in **BOLD TYPE** have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

| REF NO. | PART NO. | DESCRIPTION |
|---------|---------------------|--|
| C552 | ECQM6332JZW | CAP,P .63UF-J-100V <i>CT-24SX12F/UF, CT-27SX12UF</i> |
| C552 | ECQM6472JZW | CAP,C 4700PF-K-600V <i>CT-27SX12F, CT-27SX32F/UF</i> |
| C553 | ECWF2105JBB | CAP,M 1UF-J-200V <i>CT-27SX12F/UF, CT-27SX32F/UF</i> |
| C553 | ECWF2754JBB | CAP,M .27UF-J-200V <i>CT-24SX12F/UF</i> |
| C554 | ECKW3D102JBR | CAP,C 1000PF-J-2KV <i>CT-27SX12F/UF, CT-27SX32F/UF</i> |
| C554 | ECKW3D102KBR | CAP,C 1000PF-K-2KV <i>CT-24SX12F/UF</i> |
| C555 | ECA160V33UE | CAP,E 33UF/160V |
| C556 | ECWH20102JVY | CAP,P 1000PF-J-2KV <i>CT-24SX12F/UF</i> |
| C556 | ECWH20152JVY | CAP,P 1500PF-J-2KV <i>CT-27SX12F/UF, CT-27SX32F/UF</i> |
| C557 | ECA1CM100B | CAP,E 10UF-16V |
| C558 | ECKW3D561JBR | CAP,C 560PF-J-2KV |
| C559 | ECKW3D681KBP | CAP,C 680PF-K-2KV |
| C560 | ECKR2H102KB5 | CAP,C 1000PF-K-500V |
| C561 | ECQB1H273JF3 | CAP,P .027UF-J-50V |
| C562 | ECKR2H471KB5 | CAP,C 470PF-K-500W |
| C563 | ECA1EM102E | CAP,E 1000UF-25V |
| C564 | ECKR2H471KB5 | CAP,C 470PF-K-500W |
| C565 | ECA1EM102E | CAP,E 1000UF-25V |
| C566 | ECKR2H471KB5 | CAP,C 470PF-K-500W |
| C567 | ECA1CM471B | CAP,E 470UF-16V |
| C569 | ECWF2274JBB | CAP,M .27UF-J-200V <i>CT-27SX12F/UF, CT-27SX32F/UF</i> |
| C569 | ECWF2304JBB | CAP,M .3UF-J-200V <i>CT-24SX12F/UF</i> |
| C570 | ECA2EM220E | CAP,E 22UF-250V |
| C571 | ECKR2H102KB5 | CAP,C 1000PF-K-500V |
| C572 | ECWF2334JBB | CAP,P .33UF-J-200V |
| C573 | ECQE2474KFW | CAP,P .47UF-K-200V |
| C580 | ECA1HM4R7B | CAP,E 4.7UF-50V |
| C581 | ECA1CM471B | CAP,E 470UF-16V |
| C582 | ECA1CM101B | CAP,E 100UF/16V |
| C583 | ECA1CM100B | CAP,E 10UF-16V |
| C593 | ECEA1HNR47UB | CAP,E .47UF-50V |
| C595 | ECA1HM100B | CAP,E 10UF/50V |
| C601 | TCJ2VF1H103Z | CAP,C .01UF-Z-50V |
| C603 | ECQB1H223JF3 | CAP,P .022UF-J-50V |
| C616 | TCJ2VB1C104K | CAP,C .1UF-K-16V |
| C619 | TCJ2VF1H103Z | CAP,C .01UF-Z-50V |
| C628 | TCJ2VC1H151J | CAP,C 150PF-J-50V |
| C632 | TCJ2VB1H103K | CAP,C .01UF-K-50V |
| C641 | ECA1CM100B | CAP,E 10UF-16V |
| C701 | TCJ2VF1H103Z | CAP,C .01UF-Z-50V |
| C750 | TCJ2VC1H181J | CAP,C 180PF-J-50V |
| C751 | ECQE1335KFB | CAP,P 3.3UF-K-100V |
| C752 | ECA1VM470B | CAP,E 47UF/35V |

| REF NO. | PART NO. | DESCRIPTION |
|---------|---------------------|---|
| C753 | ECQB1H222JF3 | CAP,P 2200PF-J-50V |
| C754 | TCJ2VB1H332K | CAP,C .0033UF-K-50V |
| C755 | TCJ2VB1H273K | CAP,C .027UF-K-50V |
| C756 | ECKR2H332KB5 | CAP,C 3300PF-K-550V |
| C757 | TCJ2VB1H223K | CAP,C .022UF-K-50V <i>CT-27SX12F, CT-27SX32F/UF</i> |
| C757 | TCJ2VB1H682K | CAP,C 6800PF-K-50V <i>CT-24SX12F/UF, CT-27SX12UF</i> |
| C763 | ECKR3A121KBP | CAP,C 120PF-K-1KV |
| C801 | ECKWAE472ZED | CAP,C 4700PF-Z-500V |
| C802 | ECKWAE472ZED | CAP,C 4700PF-Z-500V |
| C803 | ECKWAE472ZED | CAP,C 4700PF-Z-500V |
| C804 | ECKWAE472ZED | CAP,C 4700PF-Z-500V |
| C805 | EC0S2DA561BB | CAP,E 560PF-200V |
| C806 | ECQB1H104JF3 | CAP,P .10UF-J-50V |
| C807 | ECQB1H103JF3 | CAP,P .01UF-J-50V |
| C809 | ECKR3A222KBP | CAP,C .0022UF-K-1KV |
| C812 | ECQU2A224MVA | CAP,P .22UF-M-250VAC |
| C813 | ECQU2A153MVA | CAP,P .015UF-M-250VAC |
| C814 | ECQU2A153MVA | CAP,P .015UF-M-250VAC |
| C815 | ECQB1H104JF3 | CAP,P .10UF-J-50V |
| C816 | ECQB1H473JF3 | CAP,P .047UF-J-50V |
| C817 | ECQU2A224MVA | CAP,P .22UF-M-250VAC |
| C818 | ECQB1H103JF3 | CAP,P .01UF-J-50V |
| C819 | ECKCNB102MB | CAP,C 1000PF-M-250V |
| C820 | ECKCNB102MB | CAP,C 1000PF-M-250V |
| C821 | ECA1HM471E | CAP,E 470UF-50V |
| C822 | ECKR3A471KBP | CAP,C 470PF-K-1KV <i>CT-24SX12F/UF</i> |
| C822 | ECKR3A821KBP | CAP,C 820PF-K-1KV <i>CT-27SX12F/UF, CT-27SX32F/UF</i> |
| C823 | ECA1CHG101B | CAP,E 100UF-16V |
| C824 | ECKR3A152KBP | CAP,C 1500PF-K-1KVDC <i>CT-27SX12F/UF, CT-27SX32F/UF</i> |
| C824 | ECKR3A821KBP | CAP,C 820PF-K-1KV, <i>CT-24SX12F/UF</i> |
| C825 | EEUMG2C221S | CAP,E 220UF-160V |
| C826 | ECKR3A821KBP | CAP,C 820PF-K-1KV |
| C827 | ECA1CM102B | CAP,E 1000UF/16V |
| C828 | ECKR1H471KB5 | CAP,C 470PF-K-50V |
| C831 | ECKR3A221KBP | CAP,C 220PF-K-1KV |
| C832 | ECKR3A471KBP | CAP,C 470PF-K-1KV |
| C833 | ECA1HM4R7B | CAP,E 4.7UF-50V |
| C835 | ECA1EM101B | CAP,E 100UF-25V |
| C901 | TCJ2VF1H103Z | CAP,C .01UF-Z-50V |
| C902 | TCJ2VC1H561J | CAP,C 560PF-J-50V |
| C904 | ECKR1H103ZF5 | CAP,C .01UF-Z-50V |
| C952 | ECA1HM100B | CAP,E 10UF/50V |
| C953 | ECKR1H103ZF5 | CAP,C .01UF-Z-50V |
| C958 | ECA2CM470E | CAP,E 47UF-160V |
| C959 | ECKW2H103ZF7 | CAP,C .01UF-Z-500V |
| C960 | ECCR2H151J5 | CAP,C 150-500V |

REPLACEMENT PARTS LIST

Models:CT-24SX12F/UF, CT-27SX12F/UF, CT-27SX32F/UF

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| REF NO. | PART NO. | DESCRIPTION |
|---------|--------------|--|
| C961 | ECA2AM100B | CAP,E 10UF-100V |
| C962 | ECKW2H103ZF7 | CAP,C .01UF-Z-500V |
| C963 | ECCR1H151J5 | CAP DISC 150-5-50V |
| C964 | ECA1CHG101B | CAP,E 100UF-16V |
| C966 | ECA1CHG101B | CAP,E 100UF-16V |
| C967 | ECA1CM221B | CAP,E 10UF-16V |
| C968 | ECKR1H103ZF5 | CAP,C .01UF-Z-50V |
| C969 | ECKR1H103ZF5 | CAP,C .01UF-Z-50V |
| C971 | TACCW222T50V | CAP,C 2200PF/50V |
| C1801 | TCJ2VF1H103Z | CAP,C .01UF-Z-50V <i>CT-27SX32F/UF</i> |
| C1802 | ECQV1H154JL3 | CAP,P.15UF-J-50V <i>CT-27SX32F/UF</i> |
| C1803 | ECA1HMR22B | CAP,E .22UF-50V <i>CT-27SX32F/UF</i> |
| C1804 | ECEA1HKAR22B | CAP,E .22UF-50V <i>CT-27SX32F/UF</i> |
| C1805 | TCJ2VF1H333Z | CAP,C .033UF-Z-50V <i>CT-27SX32F/UF</i> |
| C1806 | TCJ2VF1H103Z | CAP,C .01UF-Z-50V <i>CT-27SX32F/UF</i> |
| C1807 | ECA1CM470B | CAP,E 47UF/16V <i>CT-27SX32F/UF</i> |
| C1808 | TCJ2VF1H103Z | CAP,C .01UF-Z-50V <i>CT-27SX32F/UF</i> |
| C1809 | ECA1CM470B | CAP,E 47UF/16V, <i>CT-27SX32F/UF</i> |
| C1810 | TCJ2VF1H104Z | CAP,C .1UF-Z-50V <i>CT-27SX32F/UF</i> |
| C1811 | TCJ2VF1H103Z | CAP,C .01UF-Z-50V <i>CT-27SX32F/UF</i> |
| C1812 | TCJ2VF1H103Z | CAP,C .01UF-Z-50V <i>CT-27SX32F/UF</i> |
| C1813 | TCJ2VF1H103Z | CAP,C .01UF-Z-50V <i>CT-27SX32F/UF</i> |
| C1814 | ECA1CM470B | CAP,E 47UF/16V <i>CT-27SX32F/UF</i> |
| C1815 | TCJ2VF1H104Z | CAP,C .1UF-Z-50V <i>CT-27SX32F/UF</i> |
| C1816 | TCJ2VF1H103Z | CAP,C .01UF-Z-50V <i>CT-27SX32F/UF</i> |
| C1817 | TCJ2VF1H103Z | CAP,C .01UF-Z-50V <i>CT-27SX32F/UF</i> |
| C1818 | ECA1CM100B | CAP,E 10UF-16V <i>CT-27SX32F/UF</i> |
| C1819 | TCJ2VF1H104Z | CAP,C .1UF-Z-50V <i>CT-27SX32F/UF</i> |
| C1820 | ECA1CM470B | CAP,E 47UF/16V <i>CT-27SX32F/UF</i> |
| C1821 | TCJ2VC1H150J | CAP,C 15PF-J-50V <i>CT-27SX32F/UF</i> |
| C1822 | TCJ2VC1H120J | CAP,C 12PF-J-50V <i>CT-27SX32F/UF</i> |
| C1823 | TCJ2VC1H680J | CAP,C 68PF-J-50V <i>CT-27SX32F/UF</i> |
| C1826 | TCJ2VF1H103Z | CAP,C .01UF-Z-50V <i>CT-27SX32F/UF</i> |
| C1827 | TCJ2VF1H103Z | CAP,C .01UF-Z-50V <i>CT-27SX32F/UF</i> |
| C1828 | TCJ2VF1H103Z | CAP,C .01UF-Z-50V <i>CT-27SX32F/UF</i> |
| C1829 | TCJ2VF1H104Z | CAP,C .1UF-Z-50V <i>CT-27SX32F/UF</i> |

| REF NO. | PART NO. | DESCRIPTION |
|---------|--------------|---|
| C1830 | TCJ2VC1H560J | CAP,C 56PF-J-50V, <i>CT-27SX32F/UF</i> |
| C1831 | TCJ2VF1H104Z | CAP,C .1UF-Z-50V <i>CT-27SX32F/UF</i> |
| C1832 | TCJ2VF1H104Z | CAP,C .1UF-Z-50V <i>CT-27SX32F/UF</i> |
| C1833 | TCJ2VF1H104Z | CAP,C .1UF-Z-50V <i>CT-27SX32F/UF</i> |
| C1835 | ECA1CM100B | CAP,E 10UF-16V, <i>CT-27SX32F/UF</i> |
| C1836 | TCJ2VC1H680J | CAP,C 68PF-J-50V <i>CT-27SX32F/UF</i> |
| C1837 | TCJ2VF1H104Z | CAP,C .1UF-Z-50V <i>CT-27SX32F/UF</i> |
| C1839 | TCJ2VC1H680J | CAP,C 68PF-J-50V <i>CT-27SX32F/UF</i> |
| C1840 | TCJ2VC1H680J | CAP,C 68PF-J-50V <i>CT-27SX32F/UF</i> |
| C2105 | ECA0JM101B | CAP,E 100UF-6.3V <i>CT-27SX32F/UF</i> |
| C2106 | ECA1HMR47B | CAP,E .47UF-50V <i>CT-27SX32F/UF</i> |
| C2108 | ECA1CM330B | CAP,E 33UF-16V <i>CT-27SX32F/UF</i> |
| C2109 | TCJ2VF1H103Z | CAP,C .01UF-Z-50V <i>CT-27SX32F/UF</i> |
| C2111 | ECEA1HFSR22B | CAP,E .22UF-50V, <i>CT-27SX32F/UF</i> |
| C2114 | TCJ2VF1H103Z | CAP,C .01UF-Z-50V <i>CT-27SX32F/UF</i> |
| C2115 | ECA1HM100B | CAP,E 10UF/50V, <i>CT-27SX32F/UF</i> |
| C2116 | TCJ2VF1H103Z | CAP,C .01UF-Z-50V <i>CT-27SX32F/UF</i> |
| C2118 | TCJ2VC1H270J | CAP,C 27PF-J-50V <i>CT-27SX32F/UF</i> |
| C2119 | TCJ2VF1H103Z | CAP,C .01UF-Z-50V <i>CT-27SX32F/UF</i> |
| C2120 | ECEA1HFSR47B | CAP,E .47UF-50V, <i>CT-27SX32F/UF</i> |
| C2121 | TCJ2VF1H103Z | CAP,C .01UF-Z-50V <i>CT-27SX32F/UF</i> |
| C2123 | TCJ2VC1H270J | CAP,C 27PF-J-50V <i>CT-27SX32F/UF</i> |
| C2124 | TCJ2VF1H103Z | CAP,C .01UF-Z-50V <i>CT-27SX32F/UF</i> |
| C2125 | ECA1CM100B | CAP,E 10UF-16V <i>CT-27SX32F/UF</i> |
| C2126 | ECA1HMR22B | CAP,E .22UF-50V <i>CT-27SX32F/UF</i> |
| C2202 | ECA1HM2R2B | CAP,E 2.2UF-50V |
| C2203 | ECA1HM4R7B | CAP,E 4.7UF-50V |
| C2204 | AP106K016CAE | CAP,T 10UF/16V |
| C2205 | ECA1HM010B | CAP,E 1UF-50V |
| C2206 | ECQB1H223JF3 | CAP,P .022UF-J-50V |
| C2207 | AP335K016CAE | CAP,T 3.3UF/16V |
| C2208 | TCJ2VB1C104K | CAP,C .1UF-K-16V |
| C2209 | TCJ2VB1C104K | CAP,C .1UF-K-16V |
| C2210 | TCJ2VB1C104K | CAP,C .1UF-K-16V |
| C2211 | ECA1CM100B | CAP,E 10UF-16V |
| C2212 | ECQB1H473JF3 | CAP,P .047UF-J-50V |
| C2215 | ECA0JM101B | CAP,E 100UF-6.3V |
| C2218 | ECA1HMR47B | CAP,E .47UF-50V |
| C2220 | TCJ2VC1H100D | CAP,C 10PF-J-50V |

REPLACEMENT PARTS LIST

Models:CT-24SX12F/UF, CT-27SX12F/UF, CT-27SX32F/UF

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| REF NO. | PART NO. | DESCRIPTION |
|---------|--------------|--------------------------------------|
| C2302 | ECA1HM010B | CAP,E 1UF-50V |
| C2305 | ECA1HM010B | CAP,E 1UF-50V |
| C2307 | ECA1EM102E | CAP,E 1000UF-25V |
| C2308 | ECA1HM101B | CAP,E 100UF-50V |
| C2311 | ECA1HM010B | CAP,E 1UF-50V |
| C2312 | ECA1EM102E | CAP,E 1000UF-25V |
| C2313 | ECA1VM102E | CAP,E 1000UF-35V |
| C2314 | ECA1CM101B | CAP,E 100UF/16V |
| C2331 | ECA1HM010B | CAP,E 1UF-50V |
| C2332 | ECA1HM010B | CAP,E 1UF-50V |
| C2333 | ECA1EM100B | CAP,E 10UF-25V |
| C2334 | ECA1EM100B | CAP,E 10UF-25V |
| C2335 | ECA1HM010B | CAP,E 1UF-50V |
| C2336 | ECA1HM010B | CAP,E 1UF-50V |
| C2337 | ECA1CM470B | CAP,E 47UF/16V |
| C2431 | ECA1HM010B | CAP,E 1UF-50V |
| C2432 | ECA1HM010B | CAP,E 1UF-50V |
| C2433 | TCJ2YC1H222J | CAP,C .022UF-J-50V |
| C2437 | TCJ2VB1H333K | CAP,C .033UF-K-50V |
| C2438 | TCJ2VB1H102K | CAP,C 1000PF-K-50V |
| C2444 | TCJ2VB1C104K | CAP,C .1UF-K-16V |
| C2445 | TCJ2VB1C104K | CAP,C .1UF-K-16V |
| C2449 | TCJ2VB1H333K | CAP,C .033UF-K-50V |
| C2450 | TCJ2VB1H102K | CAP,C 1000PF-K-50V |
| C2451 | ECEA1CN100UB | CAP,E 10UF-16V |
| C2459 | TCJ2VB1H333K | CAP,C .033UF-K-50V |
| C2460 | TCJ2VB1H333K | CAP,C .033UF-K-50V |
| C2461 | ECA1HM4R7B | CAP,E 4.7UF-50V |
| C2462 | ECA1HM4R7B | CAP,E 4.7UF-50V |
| C2463 | ECEA1CN100UB | CAP,E 10UF-16V |
| C2464 | TCJ2VB1H333K | CAP,C .033UF-K-50V |
| C2465 | TCJ2VB1H333K | CAP,C .033UF-K-50V |
| C2468 | ECA1AM101B | CAP,E 100UF-10V |
| C2473 | ECA1HM4R7B | CAP,E 4.7UF-50V |
| C2474 | ECA1AM101B | CAP,E 100UF-10V |
| C2475 | ECA1HM4R7B | CAP,E 4.7UF-50V |
| C3001 | TCJ2VF1H103Z | CAP,C .01UF-Z-50V |
| C3002 | ECA1AM101B | CAP,E 100UF-10V |
| C3003 | ECA1CM100B | CAP,E 10UF-16V |
| C3004 | ECA1HM010B | CAP,E 1UF-50V |
| C3006 | ECA1HM010B | CAP,E 1UF-50V |
| C3007 | ECA1CM100B | CAP,E 10UF-16V |
| C3008 | ECA1CM100B | CAP,E 10UF-16V |
| C3009 | ECA1HM010B | CAP,E 1UF-50V |
| C3010 | TCJ2VF1H103Z | CAP,C .01UF-Z-50V |
| C3011 | ECA1HM010B | CAP,E 1UF-50V |
| C3012 | ECA1CM100B | CAP,E 10UF-16V |
| C3013 | ECA1CM100B | CAP,E 10UF-16V |
| C3014 | ECA1HM010B | CAP,E 1UF-50V |
| C3016 | ECA1HM010B | CAP,E 1UF-50V |
| C3017 | ECEA1CKA100B | CAP,E 10UF-16V, <i>CT-27SX32F/UF</i> |

| REF NO. | PART NO. | DESCRIPTION |
|---------|--------------|--|
| C3018 | ECA1CM100B | CAP,E 10UF-16V |
| C3019 | ECA1CM100B | CAP,E 10UF-16V |
| C3020 | ECA1HM010B | CAP,E 1UF-50V |
| C3021 | TCJ2VF1H103Z | CAP,C .01UF-Z-50V |
| C3022 | ECA1HM010B | CAP,E 1UF-50V |
| C3023 | ECA1CM100B | CAP,E 10UF-16V |
| C3024 | ECA1CM100B | CAP,E 10UF-16V <i>CT-24SX12F/UF</i> |
| C3024 | ECQB1H104JF3 | CAP,P .10UF-J-50V <i>CT-27SX12F/UF, CT-27SX32F/UF</i> |
| C3025 | TCJ2VF1H103Z | CAP,C .01UF-Z-50V |
| C3026 | TCJ2VC1H820J | CAP,C 82PF-J-50V <i>CT-27SX32F/UF</i> |
| C4301 | ECA0JM331B | CAP,E 330UF-6.3V <i>CT-27SX32F/UF</i> |
| C4304 | ECEA1CKA100B | CAP,E 10UF-16V <i>CT-27SX32F/UF</i> |
| C4307 | ECEA1CKN100B | CAP,E 10UF-16V <i>CT-27SX32F/UF</i> |
| C4313 | TCJ2VB1H561K | CAP,C 560PF-K-50V <i>CT-27SX32F/UF</i> |
| C4314 | ECA1HMR47B | CAP,E .47UF-50V <i>CT-27SX32F/UF</i> |
| C4315 | TCJ2VB1H152K | CAP,C 1500PF-K-50V <i>CT-27SX32F/UF</i> |
| C4316 | ECA0JM331B | CAP,E 330UF-6.3V <i>CT-27SX32F/UF</i> |
| C4317 | TCJ2VF1H103Z | CAP,C .01UF-Z-50V <i>CT-27SX32F/UF</i> |
| C4319 | TCJ2VC1H391J | CAP,C 390PF-J-50V <i>CT-27SX32F/UF</i> |
| C4320 | TCJ2VB1H681K | CAP,C 680PF-K-50V <i>CT-27SX32F/UF</i> |
| C4801 | ECA1HM4R7B | CAP,E 4.7UF-50V <i>CT-27SX12F/UF, CT-27SX32F/UF</i> |
| C4803 | ECQV1H334JL3 | CAP,P .33UF-J-50V <i>CT-27SX12F/UF, CT-27SX32F/UF</i> |
| C4804 | ECQV1H334JL3 | CAP,P .33UF-J-50V <i>CT-27SX12F/UF, CT-27SX32F/UF</i> |
| C4805 | ECA1VM470B | CAP,E 47UF/35V <i>CT-27SX12F/UF, CT-27SX32F/UF</i> |
| C4806 | ECA1HM4R7B | CAP,E 4.7UF-50V <i>CT-27SX12F/UF, CT-27SX32F/UF</i> |
| C4808 | ECA1HM330B | CAP,E 33UF-50V <i>CT-27SX12F/UF, CT-27SX32F/UF</i> |
| C6501 | ECA0JM101B | CAP,E 100UF-6.3V |
| C6502 | TCJ2VF1H103Z | CAP,C .01UF-Z-50V |
| C6503 | TCJ2VF1H104Z | CAP,C .1UF-Z-50V |
| C6504 | ECA1AM470B | CAP,E 47UF-10V |
| C6505 | TCJ2VF1H103Z | CAP,C .01UF-Z-50V |
| C6506 | TCJ2VF1H103Z | CAP,C .01UF-Z-50V |
| C6507 | ECA1HMR47B | CAP,E .47UF-50V |
| C6508 | TCJ2VF1H103Z | CAP,C .01UF-Z-50V |
| C6509 | ECA1CM470B | CAP,E 47UF/16V |
| C6510 | TCJ2VF1H104Z | CAP,C .1UF-Z-50V |
| C6511 | TCJ2VF1H104Z | CAP,C .1UF-Z-50V |
| C6512 | ECA1CM470B | CAP,E 47UF/16V |
| C6513 | TCJ2VF1H103Z | CAP,C .01UF-Z-50V |
| C6514 | TCJ2VF1H103Z | CAP,C .01UF-Z-50V |

REPLACEMENT PARTS LIST

Models:CT-24SX12F/UF, CT-27SX12F/UF, CT-27SX32F/UF

Important Safety Notice: Components printed in **BOLD TYPE** have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

| REF NO. | PART NO. | DESCRIPTION |
|---------------|--------------------|---|
| C6515 | TCJ2VF1H104Z | CAP,C .1UF-Z-50V |
| C6516 | ECA1CM470B | CAP,E 47UF/16V |
| C6517 | TCJ2VC1H181J | CAP,C 180PF-J-50V |
| C6518 | TCJ2VF1H103Z | CAP,C .01UF-Z-50V |
| C6519 | TCJ2VF1H103Z | CAP,C .01UF-Z-50V |
| C6520 | ECA1CM470B | CAP,E 47UF/16V |
| C6525 | TCJ2VC1H120J | CAP,C 12PF-J-50V |
| C6526 | TCJ2VC1H270J | CAP,C 27PF-J-50V |
| C6532 | TCJ2VF1H103Z | CAP,C .01UF-Z-50V |
| C6569 | TCJ2VC1H180J | CAP,C 18PF-J-50V |
| C6570 | ECA1HM010B | CAP,E 1UF-50V |
| C6572 | ECEA1CN470UB | CAP,E 47UF-16V |
| DIODES | | |
| D001 | MA165TA5VT | DIODE, SWITCHING |
| D002 | MA165TA5VT | DIODE, SWITCHING |
| D003 | MA4056MTA | DIODE |
| D006 | MA4330HTA | DIODE |
| D010 | MA4100LTA | DIODE |
| D014 | MA165TA5VT | DIODE, SWITCHING |
| D015 | MA700ATA | DIODE |
| D051 | MA4056MTA | DIODE |
| D052 | MA165TA5VT | DIODE, SWITCHING <i>CT-27SX12F/UF, CT-27SX32F/UF</i> |
| D240 | MA165TA5VT | DIODE, SWITCHING |
| D354 | MA165TA5VT | DIODE, SWITCHING |
| D355 | MA165TA5VT | DIODE, SWITCHING |
| D356 | MA165TA5VT | DIODE, SWITCHING |
| D360 | ERA22-04V3 | DIODE, SILICONE |
| D361 | ERA22-04V3 | DIODE, SILICONE |
| D362 | ERA22-04V3 | DIODE, SILICONE |
| D363 | MA165TA5VT | DIODE, SWITCHING |
| D375 | MA165TA5VT | DIODE, SWITCHING |
| D451 | ERA15-02V3 | DIODE |
| D455 | MA165TA5VT | DIODE, SWITCHING |
| D456 | MA165TA5VT | DIODE, SWITCHING |
| D457 | MA165TA5VT | DIODE, SWITCHING |
| D459 | MA165TA5VT | DIODE, SWITCHING |
| D551 | ERD07-15E | DIODE |
| D552 | RU3NLF A1 | DIODE |
| D553 | MA4062LTVTA | DIODE, ZENER |
| D554 | MA4270MTA | DIODE |
| D556 | MA4360HTA | DIODE, ZENER |
| D561 | MA165TA5VT | DIODE, SWITCHING |
| D562 | D1NL40V70 | DIODE |
| D563 | TVSRU2NV1 | DIODE, SILICONE |
| D564 | TVSRU2NV1 | DIODE, SILICONE |
| D570 | D1NL40V70 | DIODE |
| D575 | MA165TA5VT | DIODE, SWITCHING |
| D580 | D1NL40V70 | DIODE |
| D753 | AU01ZV0 | DIODE |
| D754 | MA165TA5VT | DIODE, SWITCHING |

| REF NO. | PART NO. | DESCRIPTION |
|----------------------------|---------------------|--|
| D801 | GP15KL-042 | DIODE |
| D802 | GP15KL-042 | DIODE |
| D803 | GP15KL-042 | DIODE |
| D804 | GP15KL-042 | DIODE |
| D806 | TAP2AA0001 | PTC 5-OHM |
| D807 | D1NL20UV70 | DIODE |
| D808 | D1NL20UV70 | DIODE |
| D809 | MA4036MTA | DIODE |
| D810 | MA4150MTA | DIODE |
| D811 | MA4270MTA | DIODE |
| D812 | D1NL20UV70 | DIODE |
| D813 | TMPG10G3 | DIODE |
| D814 | TMPG10G3 | DIODE |
| D822 | RU3YX-MV1 | DIODE, RECTIFIER |
| D823 | S3L60P154004 | DIODE |
| D824 | D1NL20UV70 | DIODE |
| D825 | MA165TA5VT | DIODE, SWITCHING |
| D826 | MA4180HTA | DIODE |
| D837 | MA4068MTA | DIODE, ZENER |
| D838 | MA4150MTA | DIODE |
| D839 | MA165TA5VT | DIODE, SWITCHING |
| D840 | D1NL20UV70 | DIODE |
| D845 | MA165TA5VT | DIODE, SWITCHING |
| D2101 | MA3330MTX | DIODE <i>CT-27SX32F/UF</i> |
| D2302 | MA165TA5VT | DIODE, SWITCHING |
| D2303 | MA165TA5VT | DIODE, SWITCHING |
| D2318 | MA165TA5VT | DIODE, SWITCHING |
| D3007 | MA4110MTA | DIODE, ZENER |
| D3008 | MA4110MTA | DIODE, ZENER |
| D3018 | ERDS2TJ750T | RES,C 75-J-1/4W <i>CT-27SX12F/UF</i> <i>CT-27SX32F/UF</i> |
| D3023 | MA4110MTA | DIODE, ZENER |
| D3024 | MA4110MTA | DIODE, ZENER |
| D3025 | MA4110MTA | DIODE, ZENER |
| D3026 | MA4110MTA | DIODE, ZENER |
| D3027 | MA4110MTA | DIODE, ZENER |
| D3028 | MA4110MTA | DIODE, ZENER |
| D3029 | MA4110MTA | DIODE, ZENER |
| D3030 | MA4110MTA | DIODE, ZENER |
| D4301 | MA3036HTX | DIODE <i>CT-27SX32F/UF</i> |
| FUSES | | |
| F801 | XBA2A00101 | FUSE 6.3A 125V |
| INTEGRATED CIRCUITS | | |
| IC001 | MN101C46FTG | MPU |
| IC002 | C3EAF C000011 | EEPROM |
| IC003 | PIC-37042SR | REMOTE SENSOR |
| IC005 | PQ1R33 | STNDBY REG. |
| IC006 | PST9128NR | RESET |
| IC101 | TA1310BN | VCJ |
| IC351 | TDA6103Q-N3 | RGB OUT AMP. |
| IC451 | LA78045 | VERTICAL OUT |

REPLACEMENT PARTS LIST

Models:CT-24SX12F/UF, CT-27SX12F/UF, CT-27SX32F/UF

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| REF NO. | PART NO. | DESCRIPTION |
|--------------|-------------------|--|
| IC551 | AN78M09LB | 9V REG. |
| IC552 | AN7805LB | 5V REG. |
| IC750 | NJM4565L | HORIZONTAL |
| IC801 | PC123FY2 | OPHTO COUPLER |
| IC802 | PC123FY2 | OPHTO COUPLER |
| IC820 | UPC1093J-T | ZENER REG. |
| IC1801 | M65617SP | INT CKT <i>CT-27SX32F/UF</i> |
| IC2101 | AN5170K | MTS <i>CT-27SX32F/UF</i> |
| IC2201 | AN5849S-E1V | AUDIO AMP. |
| IC2301 | AN5277 | VAO AMP. |
| IC2331 | NJM4565L | SOUND PROCESSOR |
| IC2451 | BH3868CFS-E2 | A/V SWITCH |
| IC3001 | M52790SP | A/V SWITCH |
| IC3002 | MM1502XNRE | PIP SWITCH <i>CT-27SX32F/UF</i> |
| IC4801 | PUB4301 | GEOMAGNETIC CIRCUIT <i>CT-27SX12F/UF, CT-27SX32F/UF</i> |
| IC4802 | AN6564 | GEOMAGNETIC CIRCUIT <i>CT-27SX12F/UF, CT-27SX32F/UF</i> |
| IC6501 | TC90A49P | 3L COMB FILTER |
| COILS | | |
| J41 | EXCELDR35V | FERRITE BEAD |
| J143 | TLTABT2R2K | COIL, PEAKING 2.2UH <i>CT-27SX32F/UF</i> |
| J146 | EXCELSA35T | FERRITE BEAD |
| J152 | EXCELSA39V | FERRITE BEAD |
| J159 | TLTABT470K | COIL, PEAKING 47UH |
| J329 | EXCELSA39V | FERRITE BEAD |
| J338 | EXCELSA39V | FERRITE BEAD |
| L002 | ELESN180JA | COIL, PEAKING 18UH |
| L003 | TLTABT2R2K | COIL, PEAKING 2.2UH |
| L004 | TLTABT2R2K | COIL, PEAKING 2.2UH |
| L005 | ELESN330JA | COIL, PEAKING 33UH |
| L006 | EXCELSA35T | FERRITE BEAD |
| L008 | TLTABT101K | COIL, PEAKING |
| L010 | TLTABT2R2K | COIL, PEAKING 2.2UH |
| L011 | TLTABT2R2K | COIL, PEAKING 2.2UH |
| L012 | TLTABT2R2K | COIL, PEAKING 2.2UH |
| L013 | TLTABT2R2K | COIL, PEAKING 2.2UH |
| L100 | TLTABT2R2K | COIL, PEAKING 2.2UH <i>CT-27SX12F/UF, CT-27SX32F/UF</i> |
| L157 | TLTABT101K | COIL, PEAKING |
| L301 | TLTABT470K | COIL, PEAKING 47UH |
| L302 | ELESN120JA | COIL, PEAKING 12UH |
| L319 | TLTABT101K | COIL, PEAKING |
| L519 | ELESN101JA | COIL, PEAKING 100UH |
| L551 | ELH5L6118 | COIL <i>CT-27SX12F/UF</i> <i>CT-27SX32F/UF</i> |
| L551 | ELH5L6120 | COIL <i>CT-24SX12F/UF</i> |
| L553 | EXCELSA39V | FERRITE BEAD |
| L556 | ELC18B801E | COIL |
| L559 | TLUADNB682K | COIL |
| L601 | TLUABTA560K | COIL, PEAKING 56UH |

| REF NO. | PART NO. | DESCRIPTION |
|--------------------|---------------------|---|
| L706 | EXCELSA35T | FERRITE BEAD |
| L751 | ELC18B681E | COIL <i>CT-27SX12F/UF</i> <i>CT-27SX32F/UF</i> |
| L751 | ELC18B801E | COIL, CT-24SX12F CT-24SX12UF |
| L752 | TALL13N103JB | COIL |
| L801 | ELF20N020A | COIL, 2UH |
| L802 | G0C681Z00001 | COIL |
| L803 | EXCELSA26T | FERRITE BEAD |
| L805 | TALL08T220KA | TRANSFORMER, LINE FILTER |
| L807 | EXCELSA39V | FERRITE BEAD |
| L808 | ELF20N020A | COIL, 2UH |
| L809 | EXCELSA39V | FERRITE BEAD |
| L951 | EXCELSA24T | FERRITE BEAD |
| L953 | EXCELSA24T | FERRITE BEAD |
| L954 | EXCELSA24T | FERRITE BEAD |
| L955 | EXCELSA24T | FERRITE BEAD |
| L1801 | ELESN1R5KA | COIL, PEAKING 1.5UH <i>CT-27SX32F/UF</i> |
| L1803 | ELESN2R2KA | COIL, PEAKING 2.2UH <i>CT-27SX32F/UF</i> |
| L1804 | ELESN150JA | COIL, PEAKING 15UH <i>CT-27SX32F/UF</i> |
| L1806 | ELESN1R0KA | COIL, PEAKING 1.0UH <i>CT-27SX32F/UF</i> |
| L1807 | ELESN1R0KA | COIL, PEAKING 1.0UH <i>CT-27SX32F/UF</i> |
| L1808 | EXCELDR25V | FERRITE BEAD <i>CT-27SX32F/UF</i> |
| L2103 | ELESN150KA | COIL, PEAKING 15UH <i>CT-27SX32F/UF</i> |
| L2106 | ELESN560KA | COIL, PEAKING 56UH <i>CT-27SX32F/UF</i> |
| L2109 | EIV7EN053B | COIL, VCO <i>CT-27SX32F/UF</i> |
| L4301 | ELESN3R9KA | COIL, PEAKING 3.9UH <i>CT-27SX32F/UF</i> |
| L6503 | ELESN330JA | COIL, PEAKING 33UH |
| L6504 | EXCELSA35V | FERRITE BEAD |
| L6505 | EXCELSA35V | FERRITE BEAD |
| L6507 | ELESN150JA | COIL, PEAKING 15UH |
| L6509 | EXCELSA35V | FERRITE BEAD |
| TRANSISTORS | | |
| Q001 | 2SC1685QRSTA | TRANSISTOR |
| Q002 | 2SC1685QRSTA | TRANSISTOR |
| Q003 | 2SD601ARTX | TRANSISTOR |
| Q004 | 2SC1685QRSTA | TRANSISTOR |
| Q005 | 2SD601ARTX | TRANSISTOR |
| Q006 | 2SD601ARTX | TRANSISTOR <i>CT-27SX12F/UF</i> <i>CT-27SX32F/UF</i> |
| Q007 | 2SC1685QRSTA | TRANSISTOR |
| Q201 | 2SD601ARTX | TRANSISTOR |
| Q302 | 2SB709ARTX | TRANSISTOR <i>CT-27SX32F/UF</i> |
| Q303 | 2SD601ARTX | TRANSISTOR |
| Q369 | 2SA1309ATA | TRANSISTOR |
| Q402 | 2SD601ARTX | TRANSISTOR |

REPLACEMENT PARTS LIST

Models:CT-24SX12F/UF, CT-27SX12F/UF, CT-27SX32F/UF

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| REF NO. | PART NO. | DESCRIPTION |
|-------------|---------------------|---------------------------------|
| Q453 | 2SD601ARTX | TRANSISTOR |
| Q480 | 2SA1309ATA | TRANSISTOR |
| Q501 | 2SC3941HTA | TRANSISTOR |
| Q515 | 2SD601ARTX | TRANSISTOR |
| Q551 | 2SC5339LBMA1 | TRANSISTOR |
| Q603 | 2SD601ARTX | TRANSISTOR |
| Q611 | 2SB709ARTX | TRANSISTOR |
| Q701 | 2SD601ARTX | TRANSISTOR |
| Q751 | 2SK2146LB | TRANSISTOR |
| Q754 | 2SD601ARTX | TRANSISTOR |
| Q755 | 2SB709ARTX | TRANSISTOR <i>CT-24SX12F/UF</i> |
| Q801 | B1DEGQ000013 | TRANSISTOR |
| Q803 | 2SC1318STA | TRANSISTOR |
| Q804 | 2SC1318STA | TRANSISTOR |
| Q805 | 2SC1318STA | TRANSISTOR |
| Q821 | 2SC3311ASTA | TRANSISTOR |
| Q822 | 2SC3311ASTA | TRANSISTOR |
| Q861 | 2SB1011QRL | TRANSISTOR |
| Q862 | 2SC1473ATA | TRANSISTOR |
| Q901 | 2SD601ARTX | TRANSISTOR |
| Q951 | 2SC3311ATA | TRANSISTOR |
| Q952 | 2SC3311ATA | TRANSISTOR |
| Q953 | 2SC1741ASTP | TRANSISTOR |
| Q954 | 2SB1030ATA | TRANSISTOR |
| Q955 | 2SB1569AF51E | TRANSISTOR |
| Q956 | 2SD2400AF51E | TRANSISTOR |
| Q957 | 2SA1309ATA | TRANSISTOR |
| Q958 | 2SC3311ATA | TRANSISTOR |
| Q961 | 2SC3311ATA | TRANSISTOR |
| Q962 | 2SC3311ATA | TRANSISTOR |
| Q1801 | 2SD601ARTX | TRANSISTOR <i>CT-27SX32F/UF</i> |
| Q1802 | 2SD601ARTX | TRANSISTOR <i>CT-27SX32F/UF</i> |
| Q1803 | 2SD601ARTX | TRANSISTOR <i>CT-27SX32F/UF</i> |
| Q1804 | 2SB709ARTX | TRANSISTOR <i>CT-27SX32F/UF</i> |
| Q1805 | 2SB709ARTX | TRANSISTOR <i>CT-27SX32F/UF</i> |
| Q2101 | 2SD601ARTX | TRANSISTOR <i>CT-27SX32F/UF</i> |
| Q2301 | 2SD601ARTX | TRANSISTOR |
| Q2302 | 2SD601ARTX | TRANSISTOR |
| Q2303 | 2SD601ARTX | TRANSISTOR |
| Q2331 | 2SD601ARTX | TRANSISTOR |
| Q2332 | 2SB709ARTX | TRANSISTOR |
| Q2333 | 2SD601ARTX | TRANSISTOR |
| Q2334 | 2SD601ARTX | TRANSISTOR |
| Q2335 | 2SB709ARTX | TRANSISTOR |
| Q2336 | 2SD601ARTX | TRANSISTOR |
| Q4309 | 2SB709ARTX | TRANSISTOR <i>CT-27SX32F/UF</i> |
| Q4310 | 2SD601ARTX | TRANSISTOR <i>CT-27SX32F/UF</i> |
| Q4311 | 2SB709ARTX | TRANSISTOR <i>CT-27SX32F/UF</i> |
| Q4312 | 2SD601ARTX | TRANSISTOR <i>CT-27SX32F/UF</i> |
| Q4313 | 2SD601ARTX | TRANSISTOR <i>CT-27SX32F/UF</i> |
| Q4315 | 2SC1384QR | TRANSISTOR <i>CT-27SX32F/UF</i> |

| REF NO. | PART NO. | DESCRIPTION |
|------------------|-----------------|--|
| Q6501 | 2SD601ARTX | TRANSISTOR |
| Q6502 | 2SB709ARTX | TRANSISTOR |
| Q6506 | 2SD601ARTX | TRANSISTOR |
| Q6510 | 2SD601ARTX | TRANSISTOR |
| Q6511 | 2SD601ARTX | TRANSISTOR |
| Q6512 | 2SD601ARTX | TRANSISTOR |
| Q6519 | 2SD601ARTX | TRANSISTOR |
| RELAYS | | |
| RL801 | TSEH0005 | RELAY |
| RL802 | TSEH0005 | RELAY |
| RESISTORS | | |
| R001 | ERJ6GEYJ103V | RES,M 10K-J-1/10W |
| R002 | ERJ6GEYJ182V | RES,M 1.8K-J-1/10W |
| R004 | ERDS1TJ122T | RES,C 1.2K-J-1/2W |
| R005 | ERDS2TJ470T | RES,C 47-J-1/4W |
| R006 | ERJ6ENF1372V | RES,M 13.7K-F-1/10W |
| R007 | ERJ6GEYJ103V | RES,M 10K-J-1/10W |
| R009 | ERJ6GEYJ221V | RES,M 220-J-1/10W |
| R010 | ERJ6GEYJ223V | RES,M 22K-J-1/10W |
| R011 | ERJ6GEYJ102V | RES,M 1K-J-1/10W |
| R012 | ERJ6GEYJ223V | RES,M 22K-J-1/10W |
| R013 | ERJ6ENF1002V | RES,M 10K-F-1/10W |
| R014 | ERJ6GEYJ392V | RES,M 3.9K-J-1/10W |
| R015 | ERJ6GEYJ472V | RES,M 4.7K-J-1/10W |
| R016 | ERJ6GEYJ472V | RES,M 4.7K-J-1/10W |
| R017 | ERJ6GEYJ472V | RES,M 4.7K-J-1/10W |
| R020 | ERJ6GEYJ682V | RES,M 6.8K-J-1/10W |
| R021 | ERJ6GEYJ101V | RES,M 100-J-1/10W |
| R022 | ERJ6GEYJ101V | RES,M 100-J-1/10W |
| R023 | ERJ6GEYJ102V | RES,M 1K-J-1/10W |
| R024 | ERJ6ENF2322V | RES,M 23.2K-F-1/10W |
| R025 | ERJ6GEYJ223V | RES,M 22K-J-1/10W |
| R026 | ERJ6GEYJ223V | RES,M 22K-J-1/10W <i>CT-27SX32F/UF</i> |
| R026 | ERJ6GEYJ473V | RES,M 47K-J-1/10W <i>CT-27SX12F/UF</i> |
| R027 | ERJ6GEYJ103V | RES,M 10K-J-1/10W <i>CT-24SX12F/UF, CT-27SX12F/UF</i> |
| R027 | ERJ6GEYJ183V | RES,M 18K-J-1/10W <i>CT-27SX32F/UF</i> |
| R029 | ERJ6GEYJ103V | RES,M 10K-J-1/10W <i>CT-27SX32F/UF</i> |
| R030 | ERJ6GEYJ103V | RES,M 10K-J-1/10W |
| R032 | ERJ6ENF1002V | RES,M 10K-F-1/10W |
| R033 | ERJ6GEYJ272V | RES,M 2.7K-J-1/10W |
| R034 | ERJ6GEYJ222V | RES,M 2.2K-J-1/10W |
| R035 | ERJ6GEYJ362V | RES,M 3.6K-J-1/10W |
| R036 | ERJ6GEYJ562V | RES,M 5.6K-J-1/10W |
| R037 | ERJ6GEYJ103V | RES,M 10K-J-1/10W |
| R038 | ERJ6GEYJ223V | RES,M 22K-J-1/10W |
| R039 | ERJ6GEYJ102V | RES,M 1K-J-1/10W |
| R040 | ERJ6GEYJ472V | RES,M 4.7K-J-1/10W |

REPLACEMENT PARTS LIST

Models:CT-24SX12F/UF, CT-27SX12F/UF, CT-27SX32F/UF

Important Safety Notice: Components printed in **BOLD TYPE** have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

| REF NO. | PART NO. | DESCRIPTION |
|---------|--------------|--|
| R041 | ERJ6GEYJ472V | RES,M 4.7K-J-1/10W |
| R042 | ERJ6GEYJ102V | RES,M 1K-J-1/10W |
| R043 | ERJ6GEYJ223V | RES,M 22K-J-1/10W <i>CT-27SX32F/UF</i> |
| R044 | ERJ6GEYJ273V | RES,M 27K-J-1/10W |
| R045 | ERJ6GEYJ223V | RES,M 22K-J-1/10W |
| R046 | ERJ6GEYJ333V | RES,M 33K-J-1/10W |
| R047 | ERJ6GEYJ562V | RES,M 5.6K-J-1/10W |
| R048 | ERJ6GEYJ333V | RES,M 33K-J-1/10W |
| R049 | ERJ6GEYJ101V | RES,M 100-J-1/10W |
| R051 | ERJ6GEYJ103V | RES,M 10K-J-1/10W <i>CT-27SX12F/UF, CT-27SX32F/UF</i> |
| R052 | ERJ6GEYJ102V | RES,M 1K-J-1/10W <i>CT-27SX12F/UF, CT-27SX32F/UF</i> |
| R053 | ERJ6GEYJ103V | RES,M 10K-J-1/10W <i>CT-27SX12F/UF, CT-27SX32F/UF</i> |
| R054 | ERJ6GEYJ123V | RES,M 12K-J-1/10W <i>CT-27SX12F/UF, CT-27SX32F/UF</i> |
| R057 | ERDS2TJ472T | RES,C 4.7K-J-1/4 |
| R059 | ERJ6GEYJ223V | RES,M 22K-J-1/10W <i>CT-27SX32F/UF</i> |
| R060 | ERJ6GEYJ471V | RES,M 470-J-1/10W |
| R061 | ERJ6GEYJ471V | RES,M 470-J-1/10W |
| R062 | ERDS2TJ101T | RES,C 100-J-1/4W |
| R066 | ERJ6GEYJ752V | RES,M 7.5K-J-1/10W |
| R067 | ERJ6GEYJ752V | RES,M 7.5K-J-1/10W |
| R068 | ERJ6GEYJ752V | RES,M 7.5K-J-1/10W |
| R072 | ERJ6GEYJ562V | RES,M 5.6K-J-1/10W |
| R073 | ERJ6GEYJ562V | RES,M 5.6K-J-1/10W |
| R074 | ERJ6GEYJ562V | RES,M 5.6K-J-1/10W |
| R075 | ERJ6GEYJ102V | RES,M 1K-J-1/10W |
| R076 | ERJ6GEYJ102V | RES,M 1K-J-1/10W |
| R077 | ERJ6GEYJ102V | RES,M 1K-J-1/10W |
| R078 | ERJ6GEYJ101V | RES,M 100-J-1/10W |
| R079 | ERJ6GEYJ101V | RES,M 100-J-1/10W |
| R122 | ERJ6GEYJ102V | RES,M 1K-J-1/10W |
| R123 | ERJ6GEYJ562V | RES,M 5.6K-J-1/10W |
| R201 | ERJ6GEYJ331V | RES,M 330-J-1/10W |
| R223 | ERJ6GEYJ561V | RES,M 560-J-1/10W |
| R225 | ERJ6GEYJ331V | RES,M 330-J-1/10W |
| R226 | ERJ6GEYJ331V | RES,M 330-J-1/10W |
| R245 | ERJ6GEYJ224V | RES,M 220K-J-1/10W |
| R246 | ERJ6GEYJ102V | RES,M 1K-J-1/10W |
| R301 | ERJ6GEYJ101V | RES,M 100-J-1/10W |
| R302 | ERJ6GEYJ101V | RES,M 100-J-1/10W |
| R303 | ERJ6GEYJ101V | RES,M 100-J-1/10W |
| R305 | ERJ6GEYJ103V | RES,M 10K-J-1/10W <i>CT-27SX32F/UF</i> |
| R306 | ERJ6GEYJ103V | RES,M 10K-J-1/10W |
| R309 | ERJ6GEYJ102V | RES,M 1K-J-1/10W <i>CT-27SX32F/UF</i> |
| R310 | ERJ6GEYJ332V | RES,M 3.3K-J-1/10W |
| R328 | ERJ6GEYJ105V | RES,M 1M-J-1/10W |
| R329 | ERJ6GEYJ304V | RES,M 300K-J-1/10W |

| REF NO. | PART NO. | DESCRIPTION |
|---------|--------------|--|
| R341 | ERJ6GEYJ474V | RES,M 470K-J-1/10W |
| R351 | ER0S2THF9100 | RES,M 910-F-1/4W |
| R352 | ER0S2THF9100 | RES,M 910-F-1/4W |
| R353 | ER0S2THF9100 | RES,M 910-F-1/4W |
| R354 | ERDS2TJ621T | RES,C 620-J-1/4W |
| R355 | ERDS2TJ621T | RES,C 620-J-1/4W |
| R356 | ERDS2TJ621T | RES,C 620-J-1/4W |
| R357 | ERDS2TJ102T | RES,C 1K-J-1/4W |
| R358 | ERDS1TJ124T | RES,C 120K-J-1/2W <i>CT-24SX12F/UF</i> |
| R358 | ERDS1TJ134T | RES,C 130K-J-1/2W <i>CT-27SX12F/UF, CT-27SX32F/UF</i> |
| R359 | ERDS1TJ124T | RES,C 120K-J-1/2W <i>CT-24SX12F/UF</i> |
| R359 | ERDS1TJ134T | RES,C 130K-J-1/2W <i>CT-27SX12F/UF, CT-27SX32F/UF</i> |
| R360 | ERDS1TJ124T | RES,C 120K-J-1/2W <i>CT-24SX12F/UF</i> |
| R360 | ERDS1TJ134T | RES,C 130K-J-1/2W <i>CT-27SX12F/UF, CT-27SX32F/UF</i> |
| R361 | ER0S2THF8451 | RES,M 8.45K-F-1/4W |
| R362 | ER0S2THF2001 | RES,M 2K-F-1/4W <i>CT-27SX12F/UF, CT-27SX32F/UF</i> |
| R362 | ER0S2THF2201 | RES,M 2.2K-F-1/4W <i>CT-24SX12F/UF</i> |
| R363 | ERC12GK102D | RES,C 1K-K-1/2W |
| R364 | ERC12GK102D | RES,C 1K-K-1/2W |
| R365 | ERC12GK102D | RES,C 1K-K-1/2W |
| R369 | ERDS2TJ393T | RES,C 39K-J-1/4W |
| R371 | ERDS2TJ102T | RES,C 1K-J-1/4W |
| R372 | ERDS2TJ102T | RES,C 1K-J-1/4W |
| R374 | ERQ12AJ121P | RES,F 120-J-1/2W |
| R375 | ERDS2TJ222T | RES,C 2.2K-J-1/4W |
| R401 | ERJ6GEYJ102V | RES,M 1K-J-1/10W |
| R402 | ERJ6GEYJ471V | RES,M 470-J-1/10W |
| R403 | ERJ6GEYJ622V | RES,M 6.2K-J-1/10W |
| R404 | ERJ6GEYJ101V | RES,M 100-J-1/10W |
| R405 | ERJ6GEYJ102V | RES,M 1K-J-1/10W |
| R410 | ERJ6ENF2492V | RES,M 24.9K-F-1/10W |
| R412 | ERJ6ENF1003V | RES,M 100K-F-1/10W <i>CT-24SX12F/UF</i> |
| R412 | ERJ6ENF6202V | RES,M 62K-F-1/10W <i>CT-27SX12F/UF, CT-27SX32F/UF</i> |
| R450 | ERJ6GEYJ821V | RES,M 820-J-1/10W |
| R451 | ERG2FJ221H | RES,M 220-J-2W |
| R452 | ERDS1FJ6R8T | RES,C 6.8-J-1/2W |
| R453 | ER0S2THF1202 | RES,M 12K-F-1/4W |
| R454 | ERDS2TJ102T | RES,C 1K-J-1/4W <i>CT-24SX12F/UF</i> |
| R454 | ERDS2TJ182T | RES,C 1.8K-J-1/4W <i>CT-27SX12F/UF, CT-27SX32F/UF</i> |
| R455 | ERDS2TJ222T | RES,C 2.2K-J-1/4W <i>CT-24SX12F/UF</i> |
| R455 | ERDS2TJ512T | RES,C 5.1K-J-1/4W <i>CT-27SX12F/UF, CT-27SX32F/UF</i> |

REPLACEMENT PARTS LIST

Models:CT-24SX12F/UF, CT-27SX12F/UF, CT-27SX32F/UF

Important Safety Notice: Components printed in **BOLD TYPE** have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

| REF NO. | PART NO. | DESCRIPTION |
|-------------|--------------------|--|
| R456 | ERDS2TJ182T | RES,C 1.8K-J-1/4W <i>CT-27SX12F/UF, CT-27SX32F/UF</i> |
| R456 | ERDS2TJ821T | RES,C 820-J-1/4W, <i>CT-24SX12F/UF</i> |
| R457 | ERDS2TJ112T | RES,C 1.1K-J-1/4W <i>CT-27SX12F/UF CT-27SX32F/UF</i> |
| R457 | ERDS2TJ361T | RES,C 360-J-1/4W <i>CT-24SX12F/UF</i> |
| R458 | ERJ6GEYJ562V | RES,M 5.6K-J-1/10W |
| R459 | ERX1SJ1R2P | RES,M 1.2-J-1W <i>CT-27SX12F/UF</i> <i>CT-27SX32F/UF</i> |
| R459 | ERX1SJ1R5P | RES,M 1.5-J-1W, <i>CT-24SX12F/UF</i> |
| R460 | ER0S2THF1002 | RES,M 10K-F-1/4W <i>CT-27SX12F/UF, CT-27SX32F/UF</i> |
| R460 | ER0S2THF1402 | RES,M 14K-F-1/4W <i>CT-24SX12F/UF</i> |
| R461 | ER0S2THF1501 | RES,M 1.5K-F-1/4W <i>CT-27SX12F/UF, CT-27SX32F/UF</i> |
| R461 | ER0S2THF2001 | RES,M 2K-F-1/4W, <i>CT-24SX12F/UF</i> |
| R465 | ERJ6GEYJ104V | RES,M 100K-J-1/10W |
| R468 | ERJ6GEYJ104V | RES,M 100K-J-1/10W |
| R469 | ERJ6GEYJ101V | RES,M 100-J-1/10W |
| R470 | ERJ6GEYJ562V | RES,M 5.6K-J-1/10W |
| R471 | ERJ6GEYJ224V | RES,M 220K-J-1/10W |
| R472 | ERJ6GEYJ123V | RES,M 12K-J-1/10W |
| R476 | ERJ6GEYJ272V | RES,M 2.7K-J-1/10W |
| R480 | ERDS2TJ392T | RES,C 3.9K-J-1/4W |
| R481 | ERDS1FJ1R0T | RES,C 1.0-J-1/2W |
| R482 | ERDS1FJ1R0T | RES,C 1.0-J-1/2W |
| R485 | ERJ6GEYJ152V | RES,M 1.5K-J-1/10W |
| R486 | ERJ6GEYJ473V | RES,M 47K-J-1/10W |
| R487 | ERJ6GEYJ822V | RES,M 8.2K-J-1/10W |
| R489 | ER0S2THF1202 | RES,M 12K-F-1/4W |
| R490 | ER0S2THF5101 | RES,M 5.1K-F-1/4W |
| R491 | ER0S2THF1052 | RES,M 10.5K-F-1/4W |
| R504 | ERJ6GEYJ333V | RES,M 33K-J-1/10W |
| R505 | ERDS1TJ561T | RES,C 560-J-1/2W |
| R510 | ERG2FJ332H | RES,M 3.30K-J-2W |
| R512 | ERG3FJ152H | RES,M 1.5K-J-3W |
| R513 | ERG3FJ152H | RES,M 1.5K-J-3W |
| R515 | ERJ6GEYJ102V | RES,M 1K-J-1/10W |
| R516 | ERJ6GEYJ102V | RES,M 1K-J-1/10W |
| R517 | ERJ6GEYJ103V | RES,M 10K-J-1/10W |
| R524 | ERG1FJS122D | RES,M 1200-J-1W |
| R542 | ERJ6GEYJ272V | RES,M 2.7K-J-1/10W |
| R547 | ERQ1CJPR82S | RES,F .82-J-1W <i>CT-27SX12F/UF</i> <i>CT-27SX32F/UF</i> |
| R547 | ERQ1CKPR56S | RES,F .56-K-1W, CT-24SX12F/UF |
| R550 | ERJ6GEYJ682V | RES,M 6.8K-J-1/10W |
| R553 | ERG3FJ470H | RES,M 47-J-3W, <i>CT-24SX12F/UF</i> |
| R553 | ERG3FJ680H | RES,M 68-J-3W <i>CT-27SX12F/UF</i> <i>CT-27SX32F/UF</i> |
| R554 | ERG3FJ680H | RES,M 68-J-3W <i>CT-27SX12F/UF</i> <i>CT-27SX32F/UF</i> |

| REF NO. | PART NO. | DESCRIPTION |
|-------------|---------------------|--|
| R556 | ERDS1FJ1R0T | RES,C 1.0-J-1/2W |
| R557 | ERF10ZK2R7 | RES,W 2.7-K-10W |
| R559 | ERG2FJ683H | RES,M 12K-J-2W |
| R560 | ERDS1FJ1R0T | RES,C 1.0-J-1/2W |
| R561 | ERDS2TJ103T | RES,C 10K-J-1/4W |
| R562 | ERDS2TJ272T | RES,C 2.7K-J-1/4W <i>CT-27SX12F/UF, CT-27SX32F/UF</i> |
| R562 | ERDS2TJ332T | RES,C 3.3K-J-1/4W <i>CT-24SX12F/UF</i> |
| R565 | ERDS1FJ1R0T | RES,C 1.0-J-1/2W |
| R567 | ERDS1FJ1R0T | RES,C 1.0-J-1/2W CT-24SX12F/UF |
| R567 | ERX12SJR47P | RES,M .47-J-1/2W CT-27SX12F/UF, CT-27SX32F/UF |
| R569 | ERG3FJ473H | RES,M 47K-J-3W, <i>CT-27SX32F/UF</i> |
| R571 | ERDS1FJ1R0T | RES,C 1.0-J-1/2W |
| R574 | ERG2FJ270H | RES,M 27-J-2W <i>CT-27SX32F/UF</i> |
| R576 | ERQ12AJ101P | RES,F 100-J-1/2W |
| R580 | ERD25FJ4R7P | RES,C 4.7-J-1/4W |
| R581 | ERJ6ENF1692V | RES,M 16.9K-F-1/10W |
| R582 | ERJ6ENF4992V | RES,M 49.9K-F-1/10W |
| R590 | ERDS2TJ473T | RES,C 47K-J-1/4W <i>CT-27SX12F/UF, CT-27SX32F/UF</i> |
| R590 | ERDS2TJ563T | RES,C 56K-J-1/4W, <i>CT-24SX12F/UF</i> |
| R597 | ER0S2THF2202 | RES,M 22K-F-1/4W |
| R601 | ERJ6GEYJ391V | RES,M 390-J-1/10W |
| R606 | ERJ6GEYJ222V | RES,M 2.2K-J-1/10W |
| R613 | ERJ6GEYJ471V | RES,M 470-J-1/10W |
| R614 | ERJ6GEYJ102V | RES,M 1K-J-1/10W |
| R618 | ERJ6GEYJ474V | RES,M 470K-J-1/10W |
| R619 | ERJ6GEYJ563V | RES,M 56K-J-1/10W |
| R620 | ERJ6GEYJ333V | RES,M 33K-J-1/10W |
| R701 | ERJ6GEYJ102V | RES,M 1K-J-1/10W <i>CT-24SX12F/UF</i> |
| R701 | ERJ6GEYJ562V | RES,M 5.6K-J-1/10W <i>CT-27SX12F/UF, CT-27SX32F/UF</i> |
| R702 | ERJ6GEYJ102V | RES,M 1K-J-1/10W |
| R704 | ERJ6GEYJ102V | RES,M 1K-J-1/10W |
| R705 | ERJ6GEYJ332V | RES,M 3.3K-J-1/10W <i>CT-27SX12F/UF, CT-27SX32F/UF</i> |
| R705 | ERJ6GEYJ472V | RES,M 4.7K-J-1/10W <i>CT-24SX12F/UF</i> |
| R706 | ERJ6GEYJ161V | RES,M 160-J-1/10W |
| R707 | ERJ6GEYJ561V | RES,M 560-J-1/10W |
| R708 | ERJ6GEYJ101V | RES,M 100-J-1/10W |
| R709 | ERJ6GEYJ103V | RES,M 10K-J-1/10W |
| R710 | ERJ6GEYJ103V | RES,M 10K-J-1/10W <i>CT-24SX12F/UF</i> |
| R710 | ERJ6GEYJ562V | RES,M 5.6K-J-1/10W <i>CT-27SX12F/UF, CT-27SX32F/UF</i> |
| R711 | ERJ6GEYJ103V | RES,M 10K-J-1/10W |
| R712 | ERJ6GEYJ222V | RES,M 2.2K-J-1/10W |
| R713 | ERJ6GEYJ822V | RES,M 8.2K-J-1/10W |
| R714 | ERDS1FJ102T | RES,C 1K-J-1/2W |

REPLACEMENT PARTS LIST

Models:CT-24SX12F/UF, CT-27SX12F/UF, CT-27SX32F/UF

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| REF NO. | PART NO. | DESCRIPTION |
|-------------|---------------------|---|
| R716 | ERJ6GEYJ101V | RES,M 100-J-1/10W |
| R717 | ERJ6GEYJ101V | RES,M 100-J-1/10W |
| R718 | ERJ6GEYJ223V | RES,M 22K-J-1/10W <i>CT-24SX12F/UF</i> |
| R719 | ERJ6GEYJ225V | RES,M 2.2M-J-1/10W <i>, CT-27SX12F/UF, CT-27SX32F/UF</i> |
| R719 | ERJ6GEYJ274V | RES,M 270K-J-1/10W <i>CT-24SX12F/UF</i> |
| R720 | ERJ6GEYJ204V | RES,M 200K-J-1/10W <i>CT-27SX12F/UF, CT-27SX32F/UF</i> |
| R720 | ERJ6GEYJ274V | RES,M 270K-J-1/10W <i>, CT-24SX12F/UF</i> |
| R752 | ERJ6GEYJ103V | RES,M 10K-J-1/10W |
| R753 | ERDS1FJ102T | RES,C 1K-J-1/2W |
| R754 | ERDS1TJ751T | RES,C 750-J-1/2W |
| R756 | ERG2FJ820H | RES,M 82-J-2W |
| R757 | ERJ6GEYJ103V | RES,M 10K-J-1/10W <i>CT-24SX12F/UF</i> |
| R758 | ERJ6GEYJ331V | RES,M 330-J-1/10W <i>CT-24SX12F/UF</i> |
| R801 | ERF7ZK1R5 | RES,W 1.5-K-7W |
| R804 | ERDS2TJ182T | RES,C 1.8K-J-1/4W |
| R805 | ERG2FJ331H | RES,M 330-J-2W |
| R806 | ERDS2TJ473T | RES,C 47K-J-1/4W |
| R807 | ERD50FJ474P | RES,C 470K-J-1/2W |
| R808 | ERD50FJ474P | RES,C 470K-J-1/2W |
| R809 | ERDS2TJ561T | RES,C 560-J-1/4W |
| R811 | ER0S2THF2611 | RES,M 2.61K-F-1/4W |
| R812 | ERDS2TJ331T | RES,C 330-J-1/4W |
| R813 | ERDS2TJ223T | RES,C 22K-J-1/4W |
| R815 | ERC12ZGM825D | RES,S 8.2MEG-M-1/2 |
| R820 | ERJ6GEYJ273V | RES,M 27K-J-1/10W |
| R821 | ERJ6GEYJ272V | RES,M 2.7K-J-1/10W |
| R822 | ERDS1FJ102T | RES,C 1K-J-1/2W |
| R823 | ERJ6GEYJ103V | RES,M 10K-J-1/10W |
| R826 | ERDS2TJ104T | RES,C 100K-J-1/4W |
| R827 | ERDS2TJ183T | RES,C 18K-J-1/4W |
| R828 | ERDS2TJ104T | RES,C 100K-J-1/4W |
| R829 | ERX12SJR47P | RES,M .47-J-1/2W |
| R830 | ERDS2TJ103T | RES,C 10K-J-1/4W |
| R832 | ERDS2TJ104T | RES,C 100K-J-1/4W |
| R833 | ERDS2TJ474T | RES,C 470K-J-1/4W |
| R836 | ERDS2TJ222T | RES,C 2.2K-J-1/4W |
| R837 | ERDS2TJ102T | RES,C 1K-J-1/4W |
| R838 | ER0S2THF2201 | RES,M 2.2K-F-1/4W |
| R839 | ER0S2THF1003 | RES,M 100K-F-1/4W |
| R843 | ERDS2TJ271T | RES,C 270-J-1/4W |
| R844 | ERDS2TJ222T | RES,C 2.2K-J-1/4W |
| R845 | ERDS2TJ334T | RES,C 330K-J-1/4W |
| R849 | ER0S2THF2002 | RES,M 20K-F-1/4W |
| R850 | ERQ12HJR56P | RES,F .56-J-1/2W |
| R851 | ERX12SJR47P | RES,M .47-J-1/2W |
| R853 | ERX12SZJR12P | RES,M .12-J-1/2W |

| REF NO. | PART NO. | DESCRIPTION |
|---------|--------------|--|
| R854 | ERX12SJR22P | RES,M .22-J-1/2W |
| R855 | ERDS2TJ473T | RES,C 47K-J-1/4W |
| R856 | ERQ3CJ3R9 | RES,F 3.9-J-3W |
| R857 | ERJ6GEYJ223V | RES,M 22K-J-1/10W |
| R858 | ERJ6GEYJ272V | RES,M 2.7K-J-1/10W |
| R861 | ERDS2TJ103T | RES,C 10K-J-1/4W |
| R862 | ERDS2TJ104T | RES,C 100K-J-1/4W |
| R863 | ERJ6GEYJ393V | RES,M 39K-J-1/10W |
| R864 | ERDS2TJ104T | RES,C 100K-J-1/4W |
| R901 | ERJ6GEYJ473V | RES,M 47K-J-1/10W |
| R902 | ERJ6GEYJ473V | RES,M 47K-J-1/10W |
| R903 | ERJ6GEYJ561V | RES,M 560-J-1/10W |
| R904 | ERJ6GEYJ152V | RES,M 1.5K-J-1/10W |
| R905 | ERJ6GEYJ391V | RES,M 390-J-1/10W |
| R951 | ERDS2TJ821T | RES,C 820-J-1/4W |
| R952 | ERDS2TJ153T | RES,C 15K-J-1/4W |
| R953 | ERDS2TJ332T | RES,C 3.3K-J-1/4W |
| R954 | ERDS2TJ431T | RES,C 430-J-1/4W |
| R956 | ERDS2TJ121T | RES,C 120-J-1/4W |
| R958 | ERDS2TJ391T | RES,C 390-J-1/4W |
| R959 | ERDS2TJ101T | RES,C 100-J-1/4W |
| R960 | ERQ14AJ100E | RES,F 10-J-1/4W |
| R961 | ERQ1CJP331S | RES,F 330-J-1W |
| R962 | ERDS2TJ330T | RES,C 33-J-1/4W |
| R963 | ERDS2TJ330T | RES,C 33-J-1/4W |
| R964 | ERDS2TJ471T | RES,C 470-J-1/4W |
| R965 | ERDS2TJ563T | RES,C 56K-J-1/4W |
| R966 | ERDS1FVJ471T | RES,C 470-J-1/4W |
| R967 | ERDS2TJ563T | RES,C 56K-J-1/4W |
| R968 | ERDS2TJ471T | RES,C 470-J-1/4W |
| R969 | ERDS2TJ390T | RES,C 39-J-1/2W |
| R970 | ERDS2TJ2R2T | RES,C 2.2-J-1/4W |
| R971 | ERDS2TJ2R2T | RES,C 2.2-J-1/4W |
| R972 | ERDS2TJ390T | RES,C 39-J-1/2W |
| R973 | ERDS2TJ101T | RES,C 100-J-1/4W |
| R974 | ERDS2TJ333T | RES,C 33K-J-1/4W |
| R975 | ERDS2TJ101T | RES,C 100-J-1/4W |
| R976 | ERDS2TJ101T | RES,C 100-J-1/4W |
| R977 | ERDS2TJ561T | RES,C 560-J-1/4W |
| R978 | ERDS2TJ101T | RES,C 100-J-1/4W |
| R987 | ERDS2TJ472T | RES,C 4.7K-J-1/4 |
| R988 | ERDS2TJ331T | RES,C 330-J-1/4W |
| R989 | ERDS2TJ682T | RES,C 6.8K-J-1/4W |
| R990 | ERDS2TJ471T | RES,C 470-J-1/4W |
| R993 | ERDS2TJ471T | RES,C 470-J-1/4W |
| R1801 | ERJ6GEYJ301V | RES,M 300-J-1/10W <i>CT-27SX32F/UF</i> |
| R1802 | ERJ6GEYJ104V | RES,M 100K-J-1/10W <i>CT-27SX32F/UF</i> |
| R1803 | ERJ6GEYJ474V | RES,M 470K-J-1/10W <i>CT-27SX32F/UF</i> |

REPLACEMENT PARTS LIST

Models:CT-24SX12F/UF, CT-27SX12F/UF, CT-27SX32F/UF

Important Safety Notice: Components printed in **BOLD TYPE** have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

| REF NO. | PART NO. | DESCRIPTION |
|---------|--------------|--|
| R1804 | ERJ6GEYJ202V | RES,M 2K-J-1/10W <i>CT-27SX32F/UF</i> |
| R1805 | ERJ6GEYJ102V | RES,M 1K-J-1/10W <i>CT-27SX32F/UF</i> |
| R1807 | ERJ6GEYJ103V | RES,M 10K-J-1/10W <i>CT-27SX32F/UF</i> |
| R1808 | ERJ6GEYJ103V | RES,M 10K-J-1/10W <i>CT-27SX32F/UF</i> |
| R1809 | ERJ6GEYJ473V | RES,M 47K-J-1/10W <i>CT-27SX32F/UF</i> |
| R1810 | ERJ6GEYJ103V | RES,M 10K-J-1/10W <i>CT-27SX32F/UF</i> |
| R1811 | ERJ6GEYJ682V | RES,M 6.8K-J-1/10W <i>CT-27SX32F/UF</i> |
| R1812 | ERJ6GEYJ153V | RES,M 15K-J-1/10W <i>CT-27SX32F/UF</i> |
| R1813 | ERJ6GEYJ153V | RES,M 15K-J-1/10W <i>CT-27SX32F/UF</i> |
| R1814 | ERJ6GEYJ271V | RES,M 270-J-1/10W <i>CT-27SX32F/UF</i> |
| R1815 | ERJ6GEYJ361V | RES,M 360-J-1/10W <i>CT-27SX32F/UF</i> |
| R1818 | ERJ6GEYJ101V | RES,M 100-J-1/10W <i>CT-27SX32F/UF</i> |
| R1819 | ERJ6GEYJ101V | RES,M 100-J-1/10W <i>CT-27SX32F/UF</i> |
| R1822 | ERJ6GEYJ682V | RES,M 6.8K-J-1/10W <i>CT-27SX32F/UF</i> |
| R1823 | ERJ6GEYJ473V | RES,M 47K-J-1/10W <i>CT-27SX32F/UF</i> |
| R1825 | ERJ6GEYJ471V | RES,M 470-J-1/10W <i>CT-27SX32F/UF</i> |
| R1827 | ERJ6GEYJ102V | RES,M 1K-J-1/10W <i>CT-27SX32F/UF</i> |
| R1828 | ERJ6GEYJ471V | RES,M 470-J-1/10W <i>CT-27SX32F/UF</i> |
| R1830 | ERJ6GEYJ102V | RES,M 1K-J-1/10W <i>CT-27SX32F/UF</i> |
| R1856 | ERJ6GEYJ153V | RES,M 15K-J-1/10W <i>CT-27SX32F/UF</i> |
| R2106 | ERJ6GEYJ183V | RES,M 18K-J-1/10W <i>CT-27SX32F/UF</i> |
| R2109 | ERJ6GEYJ683V | RES,M 68K-J-1/10W <i>CT-27SX32F/UF</i> |
| R2110 | ERJ6GEYJ331V | RES,M 330-J-1/10W <i>CT-27SX32F/UF</i> |
| R2111 | ERJ6GEYJ152V | RES,M 1.5K-J-1/10W <i>CT-27SX32F/UF</i> |
| R2112 | ERJ6GEYJ331V | RES,M 330-J-1/10W <i>CT-27SX32F/UF</i> |
| R2113 | ERJ6GEYJ102V | RES,M 1K-J-1/10W <i>CT-27SX32F/UF</i> |
| R2114 | ERJ6GEYJ681V | RES,M 680-J-1/10W <i>CT-27SX32F/UF</i> |
| R2116 | ERJ6GEYJ102V | RES,M 1K-J-1/10W <i>CT-27SX32F/UF</i> |
| R2117 | ERJ6GEYJ121V | RES,M 120-J-1/10W <i>CT-27SX32F/UF</i> |

| REF NO. | PART NO. | DESCRIPTION |
|---------|--------------|--|
| R2118 | EVND8AA03B14 | CONTROL 10K <i>CT-27SX32F/UF</i> |
| R2119 | ERJ6GEYJ392V | RES,M 3.9K-J-1/10W <i>CT-27SX32F/UF</i> |
| R2121 | ERJ6GEYJ221V | RES,M 220-J-1/10W <i>CT-27SX32F/UF</i> |
| R2122 | ERJ6GEYJ473V | RES,M 47K-J-1/10W <i>CT-27SX32F/UF</i> |
| R2123 | ERJ6GEYJ473V | RES,M 47K-J-1/10W <i>CT-27SX32F/UF</i> |
| R2124 | ERJ6GEYJ332V | RES,M 3.3K-J-1/10W <i>CT-27SX32F/UF</i> |
| R2127 | ERJ6GEYJ101V | RES,M 100-J-1/10W <i>CT-27SX32F/UF</i> |
| R2203 | ERJ6GEYJ751V | RES,M 750-J-1/10W |
| R2206 | ERJ6GEYJ102V | RES,M 1K-J-1/10W |
| R2207 | ERJ6GEYJ102V | RES,M 1K-J-1/10W |
| R2221 | ERJ6GEYJ273V | RES,M 27K-J-1/10W |
| R2303 | ERJ6GEYJ822V | RES,M 8.2K-J-1/10W |
| R2304 | ERJ6GEYJ822V | RES,M 8.2K-J-1/10W |
| R2307 | ERJ6GEYJ822V | RES,M 8.2K-J-1/10W |
| R2309 | ERJ6GEYJ223V | RES,M 22K-J-1/10W |
| R2310 | ERJ6GEYJ223V | RES,M 22K-J-1/10W |
| R2311 | ERJ6GEYJ271V | RES,M 270-J-1/10W |
| R2312 | ERJ6GEYJ153V | RES,M 15K-J-1/10W |
| R2313 | ERJ6GEYJ153V | RES,M 15K-J-1/10W |
| R2316 | ERJ6GEYJ103V | RES,M 10K-J-1/10W |
| R2317 | ERJ6GEYJ103V | RES,M 10K-J-1/10W |
| R2318 | ERDS1TJ332T | RES,C 3.3K-J-1/2W |
| R2319 | ERDS1TJ332T | RES,C 3.3K-J-1/2W |
| R2321 | ERDS2TJ181T | RES,C 180-J-1/4W |
| R2322 | ERDS2TJ181T | RES,C 180-J-1/4W |
| R2323 | ERJ6GEYJ223V | RES,M 22K-J-1/10W |
| R2324 | ERJ6GEYJ102V | RES,M 1K-J-1/10W |
| R2325 | ERJ6GEYJ102V | RES,M 1K-J-1/10W |
| R2326 | ERJ6GEYJ102V | RES,M 1K-J-1/10W |
| R2332 | ERJ6GEYJ105V | RES,M 1M-J-1/10W |
| R2333 | ERJ6GEYJ102V | RES,M 1K-J-1/10W |
| R2334 | ERJ6GEYJ103V | RES,M 10K-J-1/10W |
| R2335 | ERJ6GEYJ183V | RES,M 18K-J-1/10W |
| R2336 | ERJ6GEYJ392V | RES,M 3.9K-J-1/10W |
| R2337 | ERJ6GEYJ332V | RES,M 3.3K-J-1/10W |
| R2338 | ERJ6GEYJ332V | RES,M 3.3K-J-1/10W |
| R2339 | ERJ6GEYJ183V | RES,M 18K-J-1/10W |
| R2340 | ERJ6GEYJ392V | RES,M 3.9K-J-1/10W |
| R2345 | ERJ6GEYJ103V | RES,M 10K-J-1/10W |
| R2346 | ERJ6GEYJ102V | RES,M 1K-J-1/10W |
| R2347 | ERJ6GEYJ105V | RES,M 1M-J-1/10W |
| R2349 | ERJ6GEYJ472V | RES,M 4.7K-J-1/10W |
| R2351 | ERJ6GEYJ103V | RES,M 10K-J-1/10W |
| R2352 | ERJ6GEYJ562V | RES,M 5.6K-J-1/10W |
| R2353 | ERJ6GEYJ563V | RES,M 56K-J-1/10W |
| R2354 | ERJ6GEYJ103V | RES,M 10K-J-1/10W |

REPLACEMENT PARTS LIST

Models:CT-24SX12F/UF, CT-27SX12F/UF, CT-27SX32F/UF

Important Safety Notice: Components printed in **BOLD TYPE** have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

| REF NO. | PART NO. | DESCRIPTION |
|---------|--------------|---|
| R2356 | ERJ6GEYJ103V | RES,M 10K-J-1/10W |
| R2366 | ERJ6GEYJ222V | RES,M 2.2K-J-1/10W |
| R2367 | ERJ6GEYJ222V | RES,M 2.2K-J-1/10W |
| R2431 | ERJ6GEYJ105V | RES,M 1M-J-1/10W |
| R2432 | ERJ6GEYJ105V | RES,M 1M-J-1/10W |
| R2433 | ERJ6ENF4701V | RES,M 4.7K-F-1/10W |
| R2434 | ERJ6GEYJ681V | RES,M 680-J-1/10W |
| R2435 | ERJ6ENF3902V | RES,M 39K-F-1/10W |
| R2436 | ERJ6ENF6202V | RES,M 62K-F-1/10W |
| R2437 | ERJ6GEYJ681V | RES,M 680-J-1/10W |
| R2438 | ERJ6GEYJ271V | RES,M 270-J-1/10W |
| R2439 | ERJ6GEYJ271V | RES,M 270-J-1/10W |
| R3001 | ERJ6GEYJ101V | RES,M 100-J-1/10W |
| R3003 | ERJ6GEYJ102V | RES,M 1K-J-1/10W |
| R3004 | ERJ6GEYJ102V | RES,M 1K-J-1/10W |
| R3005 | ERJ6GEYJ471V | RES,M 470-J-1/10W <i>CT-27SX12F/UF, CT-27SX32F/UF</i> |
| R3006 | ERJ6ENF75R0V | RES,M 75.0-F-1/10W <i>CT-24SX12F/UF</i> |
| R3007 | ERJ6ENF75R0V | RES,M 75.0-F-1/10W |
| R3008 | ERJ6GEYJ750V | RES,M 75-J-1/10W |
| R3009 | ERJ6ENF75R0V | RES,M 75.0-F-1/10W |
| R3010 | ERJ6ENF75R0V | RES,M 75.0-F-1/10W |
| R3011 | ERJ6ENF75R0V | RES,M 75.0-F-1/10W |
| R3012 | ERJ6ENF75R0V | RES,M 75.0-F-1/10W |
| R3013 | ERJ6GEYJ330V | RES,M 33-J-1/10W |
| R3014 | ERJ6GEYJ330V | RES,M 33-J-1/10W |
| R3015 | ERJ6GEYJ102V | RES,M 1K-J-1/10W |
| R3016 | ERJ6GEYJ102V | RES,M 1K-J-1/10W |
| R3018 | ERJ6GEYJ102V | RES,M 1K-J-1/10W |
| R3019 | ERJ6GEYJ102V | RES,M 1K-J-1/10W |
| R3021 | ERJ6GEYJ471V | RES,M 470-J-1/10W <i>CT-27SX32F/UF</i> |
| R3022 | ERJ6GEYJ471V | RES,M 470-J-1/10W <i>CT-27SX32F/UF</i> |
| R3024 | ERJ6ENF75R0V | RES,M 75.0-F-1/10W <i>CT-24SX12F/UF</i> |
| R3025 | ERJ6ENF75R0V | RES,M 75.0-F-1/10W |
| R3027 | ERJ6ENF75R0V | RES,M 75.0-F-1/10W <i>CT-27SX12F/UF, CT-27SX32F/UF</i> |
| R3028 | ERJ6ENF75R0V | RES,M 75.0-F-1/10W <i>CT-27SX12F/UF, CT-27SX32F/UF</i> |
| R4310 | ERJ6GEYJ472V | RES,M 4.7K-J-1/10W <i>CT-27SX32F/UF</i> |
| R4311 | ERJ6GEYJ472V | RES,M 4.7K-J-1/10W <i>CT-27SX32F/UF</i> |
| R4326 | ERD25VJ221T | RES,C 220-J-1/4 <i>CT-27SX32F/UF</i> |
| R4327 | ERJ6GEYJ331V | RES,M 330-J-1/10W <i>CT-27SX32F/UF</i> |
| R4328 | ERJ6GEYJ560V | RES,M 56-J-1/10W <i>CT-27SX32F/UF</i> |
| R4329 | ERJ6GEYJ182V | RES,M 1.8K-J-1/10W <i>CT-27SX32F/UF</i> |

| REF NO. | PART NO. | DESCRIPTION |
|---------|--------------|---|
| R4330 | ERJ6GEYJ561V | RES,M 560-J-1/10W <i>CT-27SX32F/UF</i> |
| R4331 | ERJ6GEYJ391V | RES,M 390-J-1/10W <i>CT-27SX32F/UF</i> |
| R4332 | ERJ6GEYJ393V | RES,M 39K-J-1/10W <i>CT-27SX32F/UF</i> |
| R4333 | ERJ6GEYJ304V | RES,M 300K-J-1/10W <i>CT-27SX32F/UF</i> |
| R4334 | ERJ6GEYJ152V | RES,M 1.5K-J-1/10W <i>CT-27SX32F/UF</i> |
| R4336 | ERJ6GEYJ680V | RES,M 68-J-1/10W <i>CT-27SX32F/UF</i> |
| R4338 | ERJ6GEYJ222V | RES,M 2.2K-J-1/10W <i>CT-27SX32F/UF</i> |
| R4339 | ERJ6GEYJ102V | RES,M 1K-J-1/10W <i>CT-27SX32F/UF</i> |
| R4340 | ERJ6GEYJ682V | RES,M 6.8K-J-1/10W <i>CT-27SX32F/UF</i> |
| R4341 | ERJ6GEYJ222V | RES,M 2.2K-J-1/10W <i>CT-27SX32F/UF</i> |
| R4342 | ERJ6GEYJ223V | RES,M 22K-J-1/10W <i>CT-27SX32F/UF</i> |
| R4344 | ERJ6GEYJ682V | RES,M 6.8K-J-1/10W <i>CT-27SX32F/UF</i> |
| R4345 | ERJ6GEYJ103V | RES,M 10K-J-1/10W <i>CT-27SX32F/UF</i> |
| R4801 | ERDS2TJ472T | RES,C 4.7K-J-1/4 <i>CT-27SX12F/UF</i> <i>CT-27SX32F/UF</i> |
| R4803 | ERX12SJ1R0P | RES,M 1.0-J-1/2W <i>CT-27SX12F/UF</i> <i>CT-27SX32F/UF</i> |
| R4804 | ER0S2THF2201 | RES,M 2.2K-F-1/4W <i>CT-27SX12F/UF, CT-27SX32F/UF</i> |
| R4805 | ER0S2THF2201 | RES,M 2.2K-F-1/4W <i>CT-27SX12F/UF, CT-27SX32F/UF</i> |
| R4806 | ER0S2THF2201 | RES,M 2.2K-F-1/4W <i>CT-27SX12F/UF, CT-27SX32F/UF</i> |
| R4807 | ER0S2THF2201 | RES,M 2.2K-F-1/4W <i>CT-27SX12F/UF, CT-27SX32F/UF</i> |
| R4808 | ER0S2THF3003 | RES,M 300K-F-1/4W <i>CT-27SX12F/UF, CT-27SX32F/UF</i> |
| R4809 | ER0S2THF1002 | RES,M 10K-F-1/4W <i>CT-27SX12F/UF</i> <i>CT-27SX32F/UF</i> |
| R4810 | ER0S2THF1502 | RES,M 15.0K-F-1/4W <i>CT-27SX12F/UF, CT-27SX32F/UF</i> |
| R4811 | ER0S2THF1002 | RES,M 10K-F-1/4W <i>CT-27SX12F/UF</i> <i>CT-27SX32F/UF</i> |
| R4812 | ER0S2THF3301 | RES,M 3.3K-F-1/4W <i>CT-27SX12F/UF, CT-27SX32F/UF</i> |
| R4815 | ERDS1FJ100T | RES,C 10-J-1/2W <i>CT-27SX12F/UF, CT-27SX32F/UF</i> |
| R6501 | ERJ6GEYJ273V | RES,M 27K-J-1/10W |
| R6502 | ERJ6GEYJ473V | RES,M 47K-J-1/10W |
| R6503 | ERJ6GEYJ102V | RES,M 1K-J-1/10W |
| R6504 | ERJ6GEYJ102V | RES,M 1K-J-1/10W |
| R6505 | ERJ6GEYJ102V | RES,M 1K-J-1/10W |
| R6506 | ERJ6GEYJ102V | RES,M 1K-J-1/10W |
| R6509 | ERJ6GEYJ471V | RES,M 470-J-1/10W |

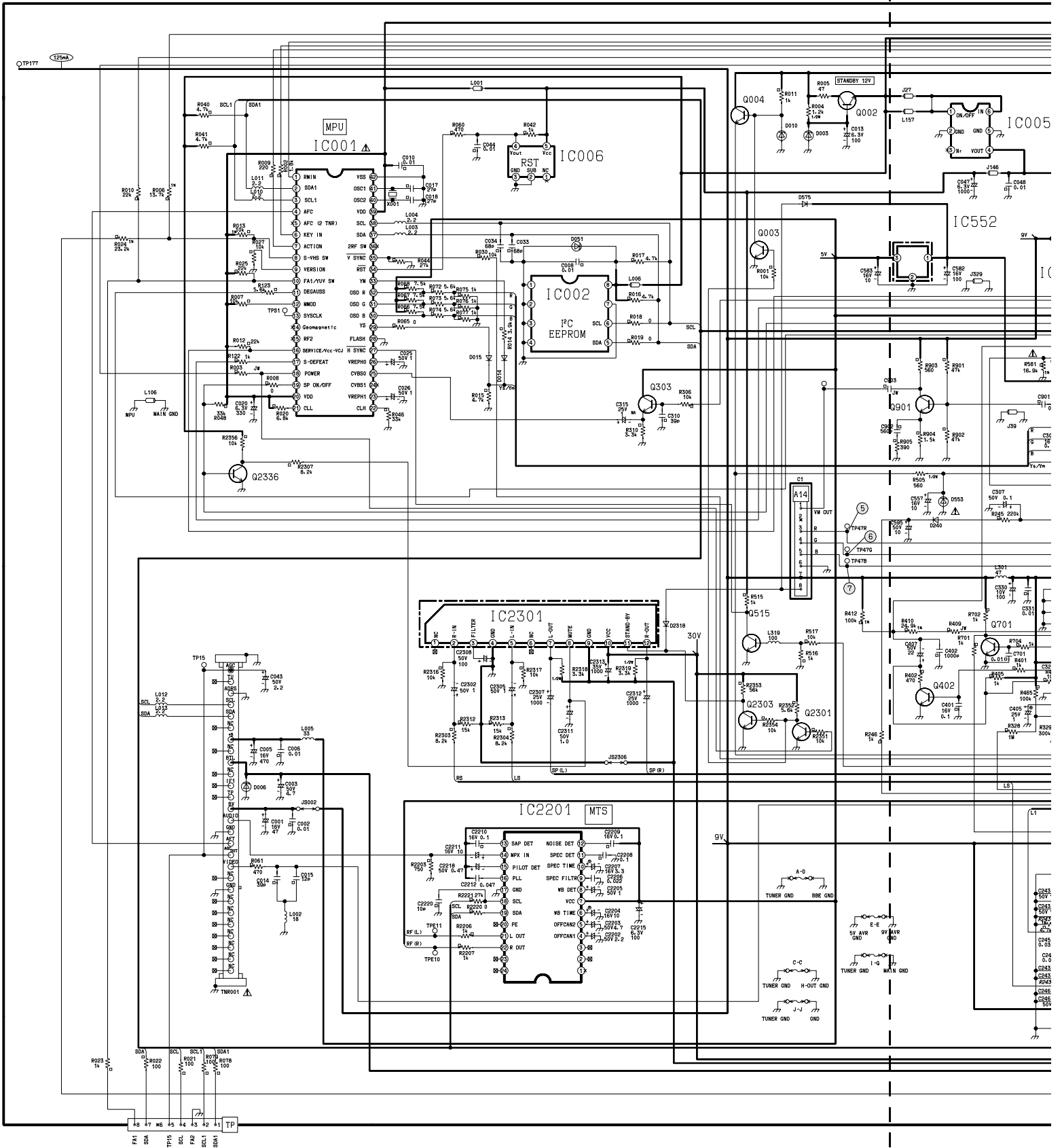
REPLACEMENT PARTS LIST

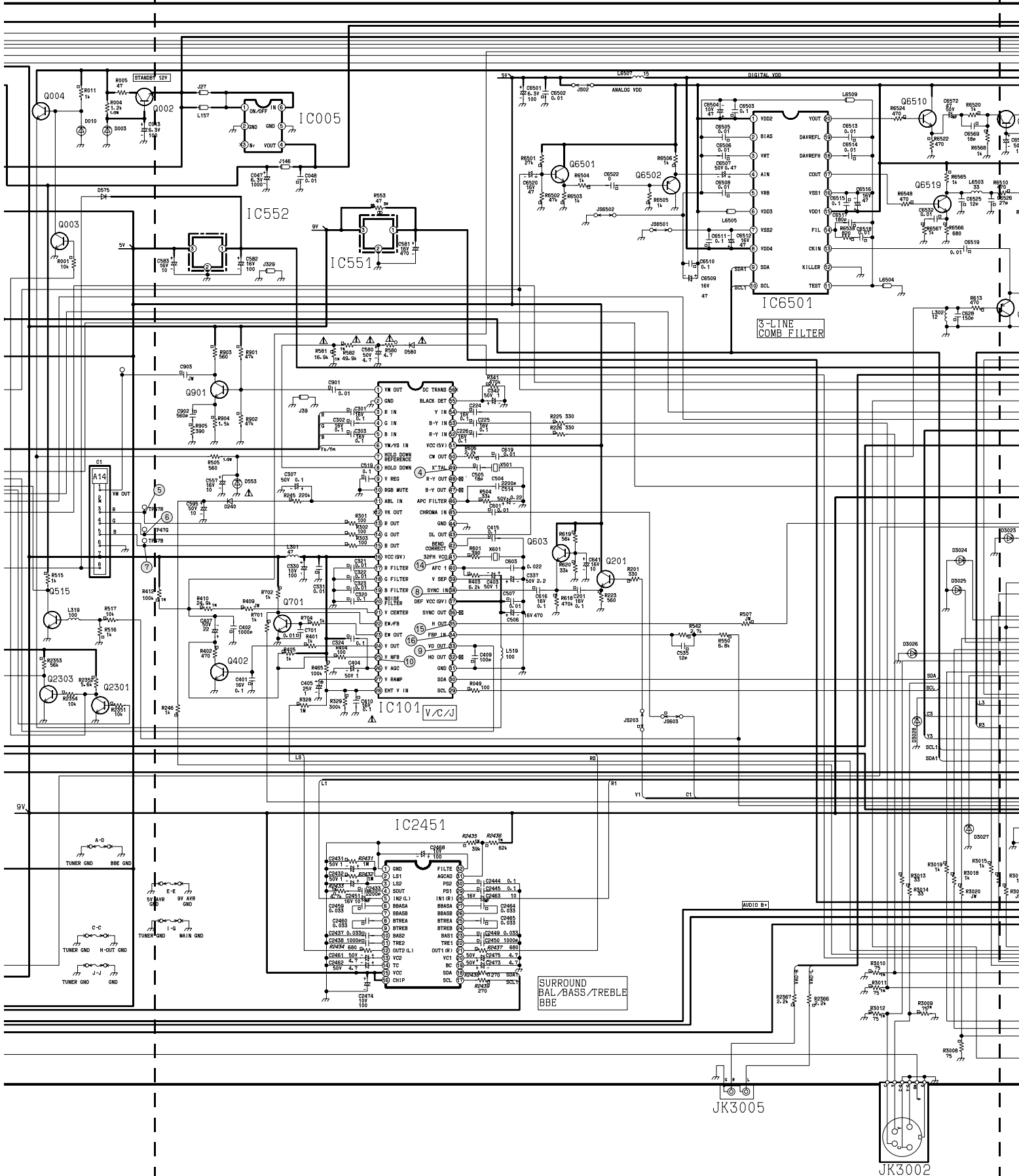
Models:CT-24SX12F/UF, CT-27SX12F/UF, CT-27SX32F/UF

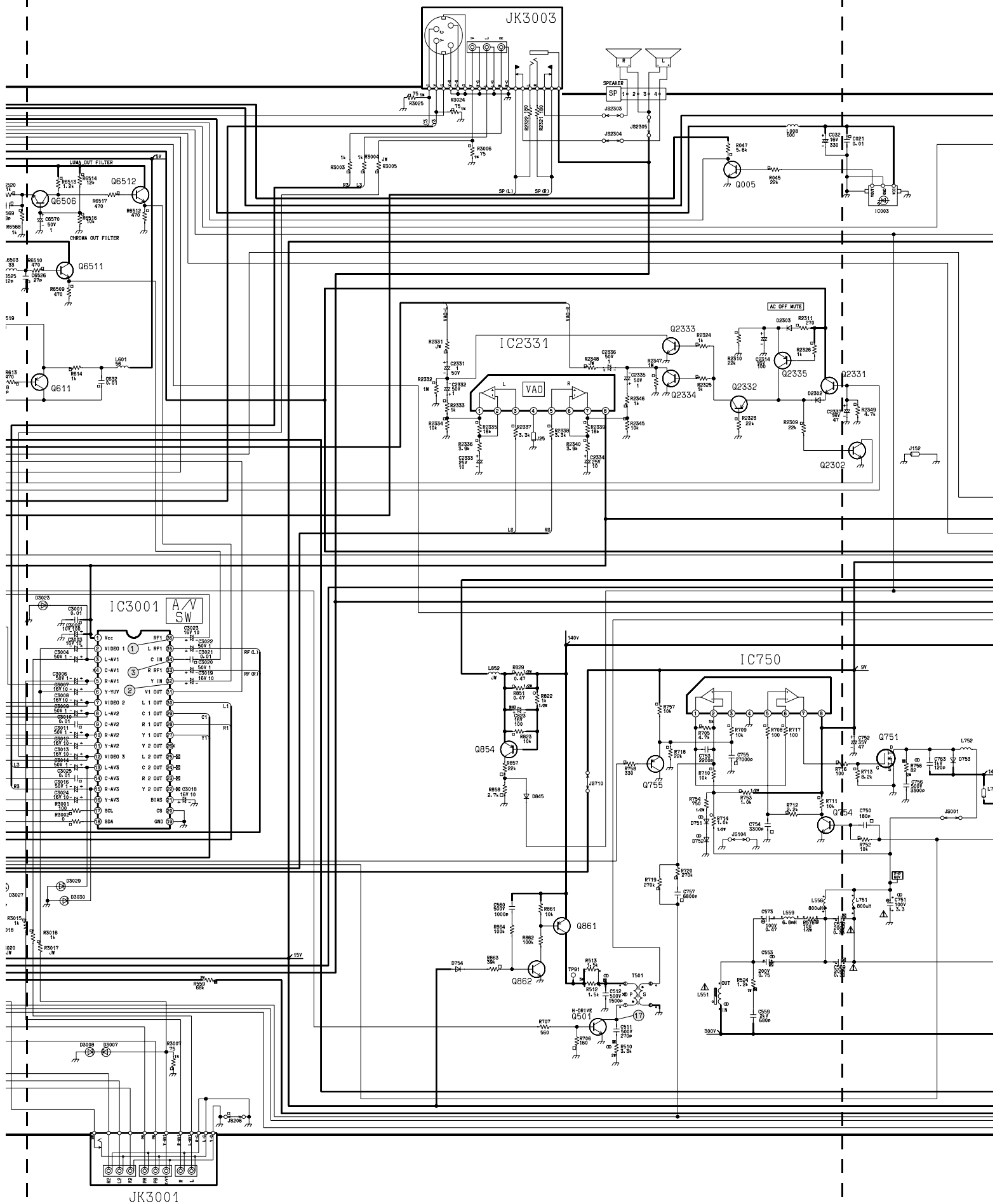
Important Safety Notice: Components printed in **BOLD TYPE** have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

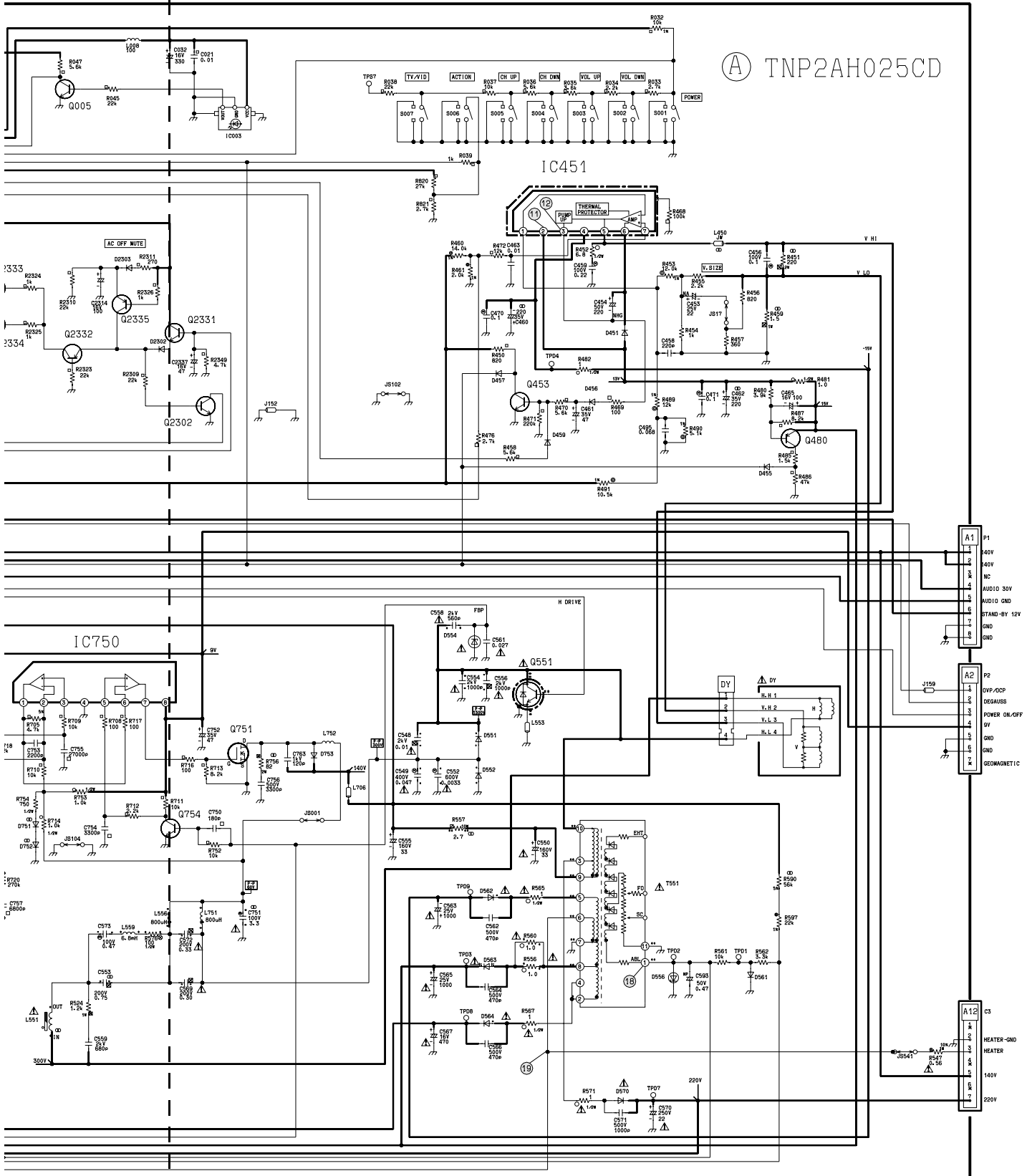
| REF NO. | PART NO. | DESCRIPTION |
|--|---------------------|--|
| R6510 | ERJ6GEYJ471V | RES,M 470-J-1/10W |
| R6512 | ERJ6GEYJ471V | RES,M 470-J-1/10W |
| R6513 | ERJ6GEYJ122V | RES,M 1.2K-J-1/10W |
| R6514 | ERJ6GEYJ123V | RES,M 12K-J-1/10W |
| R6516 | ERJ6GEYJ103V | RES,M 10K-J-1/10W |
| R6517 | ERJ6GEYJ471V | RES,M 470-J-1/10W |
| R6520 | ERJ6GEYJ102V | RES,M 1K-J-1/10W |
| R6522 | ERJ6GEYJ471V | RES,M 470-J-1/10W |
| R6524 | ERJ6GEYJ471V | RES,M 470-J-1/10W |
| R6538 | ERJ6GEYJ821V | RES,M 820-J-1/10W |
| R6548 | ERJ6GEYJ471V | RES,M 470-J-1/10W |
| R6565 | ERJ6GEYJ102V | RES,M 1K-J-1/10W |
| R6566 | ERJ6GEYJ681V | RES,M 680-J-1/10W |
| R6567 | ERJ6GEYJ102V | RES,M 1K-J-1/10W |
| R6568 | ERJ6GEYJ102V | RES,M 1K-J-1/10W |
| SWITCHES | | |
| S001 | EVQPC105K | SWITCH |
| S002 | EVQPC105K | SWITCH |
| S003 | EVQPC105K | SWITCH |
| S004 | EVQPC105K | SWITCH |
| S005 | EVQPC105K | SWITCH |
| S006 | EVQPC105K | SWITCH |
| S007 | EVQPC105K | SWITCH |
| TRANSFORMERS | | |
| T501 | ETH19Y70AY | TRANSFORMER, HORIZONTAL DRIVER |
| T551 | KFT4AA390F | TRANSFORMER, FLYBACK |
| T801 | ETS39AG375NC | TRANSFORMER |
| CRYSTALS&FILTERS | | |
| X001 | TSSA092 | CRYSTAL OSCILLATOR |
| X501 | TSS2AA001 | CRYSTAL, 3.58MHZ |
| X601 | TAFC5B503F30 | CRYSTAL |
| X1801 | TSSA092 | CRYSTAL OSCILLATOR <i>CT-27SX32F, CT-27SX32UF</i> |
| X2102 | EFCS4R5MW5BA | FILTER, BANDPASS <i>CT-27SX32F/UF</i> |
| X2103 | M1972M | FILTER <i>CT-27SX32F/UF</i> |
| OTHERS | | |
| TNR001 | ENGF6101G | TUNER <i>CT-27SX32F/UF</i> |
| TNR001 | ENG36604GR | TUNER <i>CT-24SX12F/UF, CT-27SX12F/UF</i> |
| TNR002 | ENV56D61G3S | TUNER <i>CT-27SX32F/UF</i> |
| M001 | TSX2AA0111-1 | A/C LINE CORD |
| M002 | A60LUQ085X | CRT 25" <i>CT-24SX12F/UF</i> |
| M003 | A68QCP893XU | CRT 27" <i>CT-27SX12F/UF</i> |
| NOTE: CT-27SX12F/UF and CT-27SX32F/UF use different CRT. Please confirm the model name before placing orders. | | |
| M004 | M68LUQ085X | CRT 27" <i>CT-27SX32F/UF</i> |
| M005 | TJSC01200 | CRT SOCKET |
| DY | KDY4QHA31F | YOKE, DEFLECTION <i>CT-24SX12F/UF</i> |
| DY | TLY2AA016 | YOKE, DEFLECTION <i>CT-27SX12F/UF</i> |

| REF NO. | PART NO. | DESCRIPTION |
|-------------------|------------------|---|
| DY | TLY2AA022 | YOKE, DEFLECTION <i>CT-27SX32F/UF</i> |
| DEG | TSP2AA014 | COIL, DEGAUSSING 27" <i>CT-24SX12F/UF</i> |
| DEG | TSP2AA026 | COIL, DEGAUSSING <i>CT-27SX12F/UF CT-27SX32F/UF</i> |
| M006 | TSP2AF005 | COIL, GEOMAGNETIC <i>CT-27SX12F/UF, CT-27SX32F/UF</i> |
| M007 | 0FMK014ZZ | CONVERGENCE CORRECTOR STRIP |
| M008 | TXF3A01ZERA | ASSY., DAG GND <i>CT-27SX12F/UF CT-27SX32F/UF</i> |
| M009 | TXF3A011DD | ASSY., DAG GND <i>CT-24SX12F/UF</i> |
| M010 | TAS2AA0023 | SPEAKER 8-OHM <i>CT-24SX12F/UF</i> |
| M011 | TBM2A30843 | BADGE, PANASONIC |
| M012 | TBX2AA0151G | BUTTON, 7-KEY |
| M013 | TEK6940 | DOOR CATCH <i>CT-27SX32F/UF</i> |
| M014 | TKP2AA0613S | DOOR <i>CT-27SX32F/UF</i> |
| M015 | TKX2AA0131 | GUIDE, IR |
| M016 | TMW2A97121 | STRAIN RELIEF: AC LINE CORD |
| M017 | TXFEA0041DBS | SPEAKER BRACKETS |
| M018 | TXFKU22ESER | ASSY, CABINET BACK, <i>CT-27SX12F/UF, CT-27SX32F/UF</i> (Cabinet Back, Ruber Sheet, Overlay Model Nameplate, Felt, Instruccion Sheet, (3) Model Nameplate, Label X-Ray (Frn&Sp), Label BBE Patent, (2) Label X-Ray) |
| M019 | TXFKU30ESER | ASSY, CABINET BACK, <i>CT-24SX12F/UF</i> (Cabinet Back, Overlay Model Nameplate, (3) Model Nameplate, Felt, Instruccion Sheet Label, Label X-Ray (Frn&Sp), Label FCC, Label BBE Patent, (2) Label X-Ray Warning) |
| M020 | TXFKY05FSER | ASSY, CABINET FRONT, <i>CT-27SX12F/UF, CT-27SX32F/UF</i> (Cabinet Front, Ruber Sheet, Badge Panasonic, Guide IR, Felt, Label SVC Info Ref.) |
| M021 | TXFKY 06FSER | ASSY, CABINET FRONT <i>CT-24SX12F/UF</i> (Cabinet Front, Ruber Sheet, Badge Panasonic, Guide IR, Felt, Label SVC Info. Ref.) |
| JK3001 | TJB2AA0221 | TERMINAL, A/V 8P |
| JK3002 | TJB2AA0171 | TERMINAL, S-VHS |
| JK3003 | TJB2AA0371 | TERMINAL, FRONT A/V |
| JK3005 | TJB2AA0211-1 | TERMINAL, A/V 2P |
| ACCESORIES | | |
| M022 | EUR7613Z10 | REMOTE CONTROL <i>CT-24SX12F/UF, CT-27SX12F/UF</i> |
| M023 | EUR7613Z30 | XMTR, REMOTE CONTROL <i>CT-27SX32F/UF</i> |
| M024 | UR76EC0303A | BATTERY COVER, REMOTE |
| M025 | TQB2AA0417 | MANUAL, OWNERS <i>CT-24SX12F/UF, CT-27SX12F/UF</i> |
| M026 | TQB2AA0419 | MANUAL, OWNERS <i>CT-27SX32F/UF</i> |

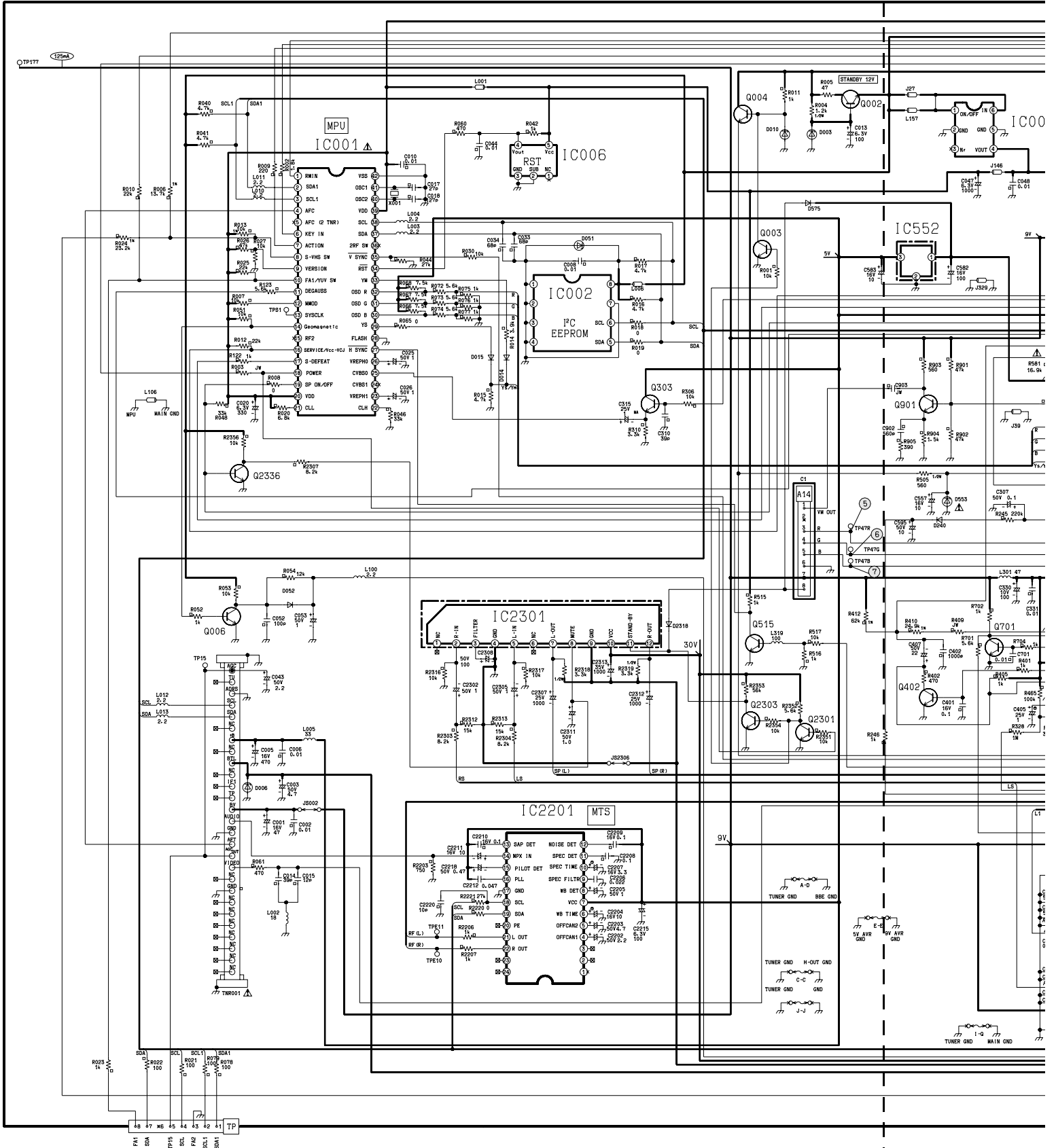


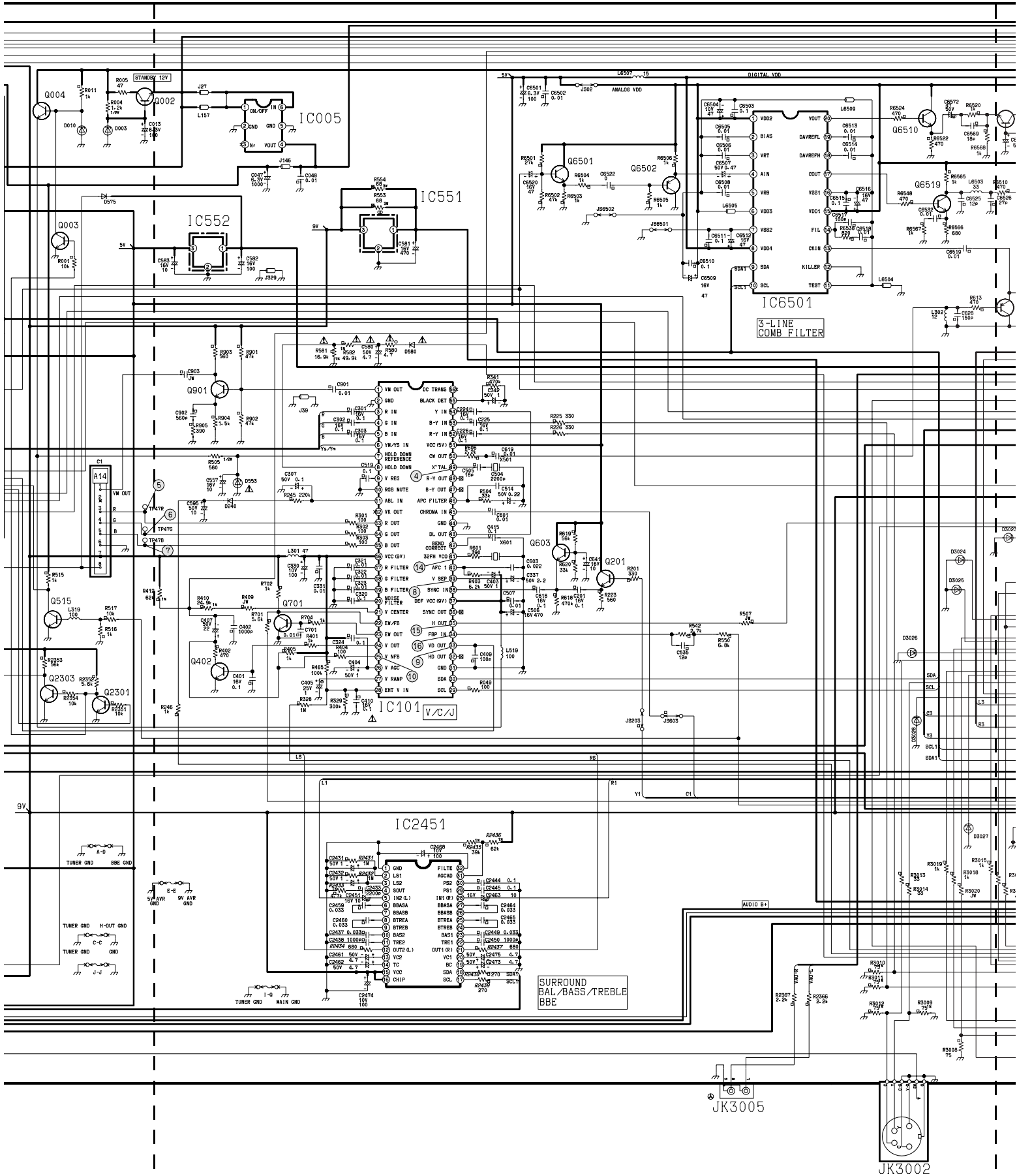


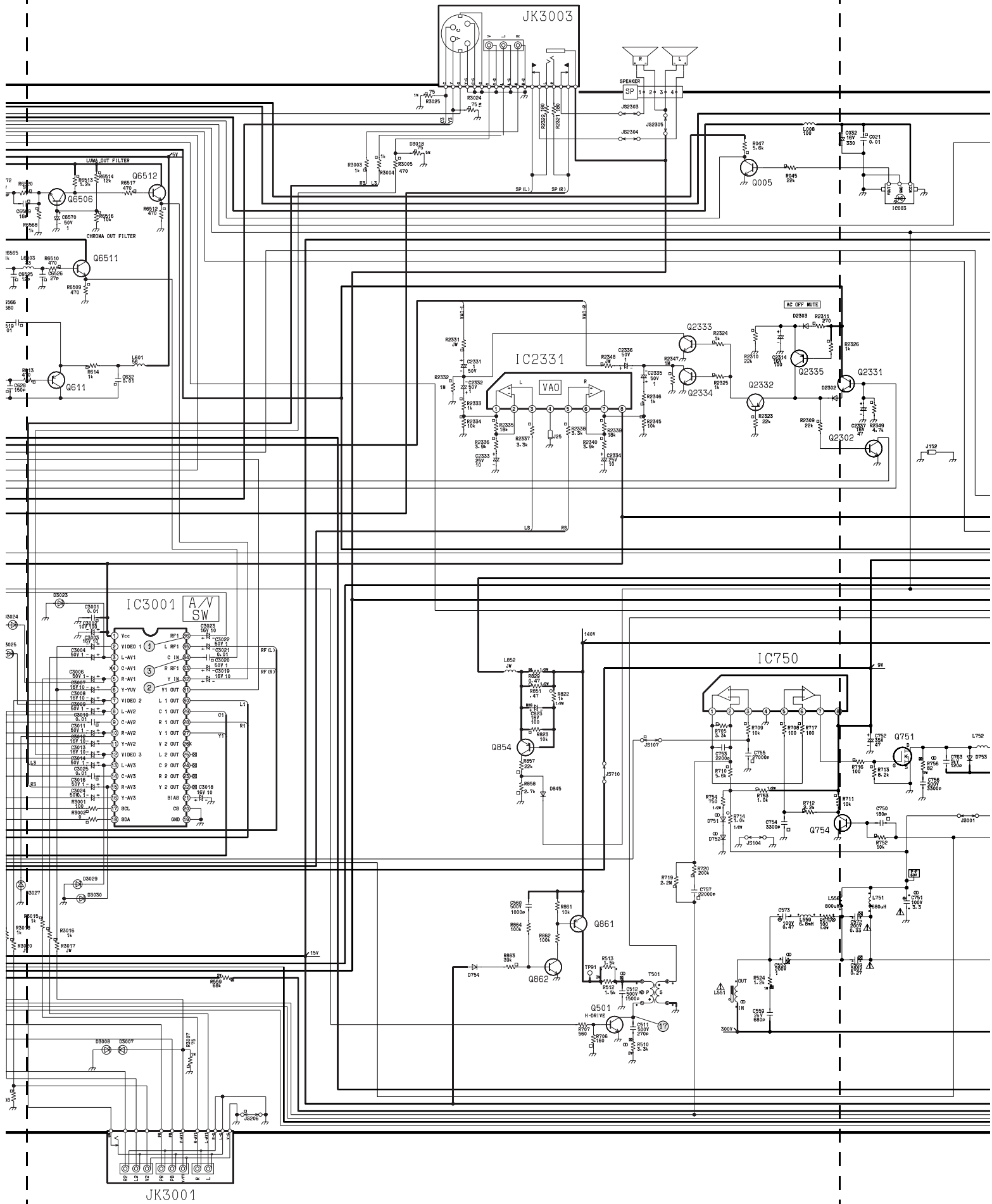


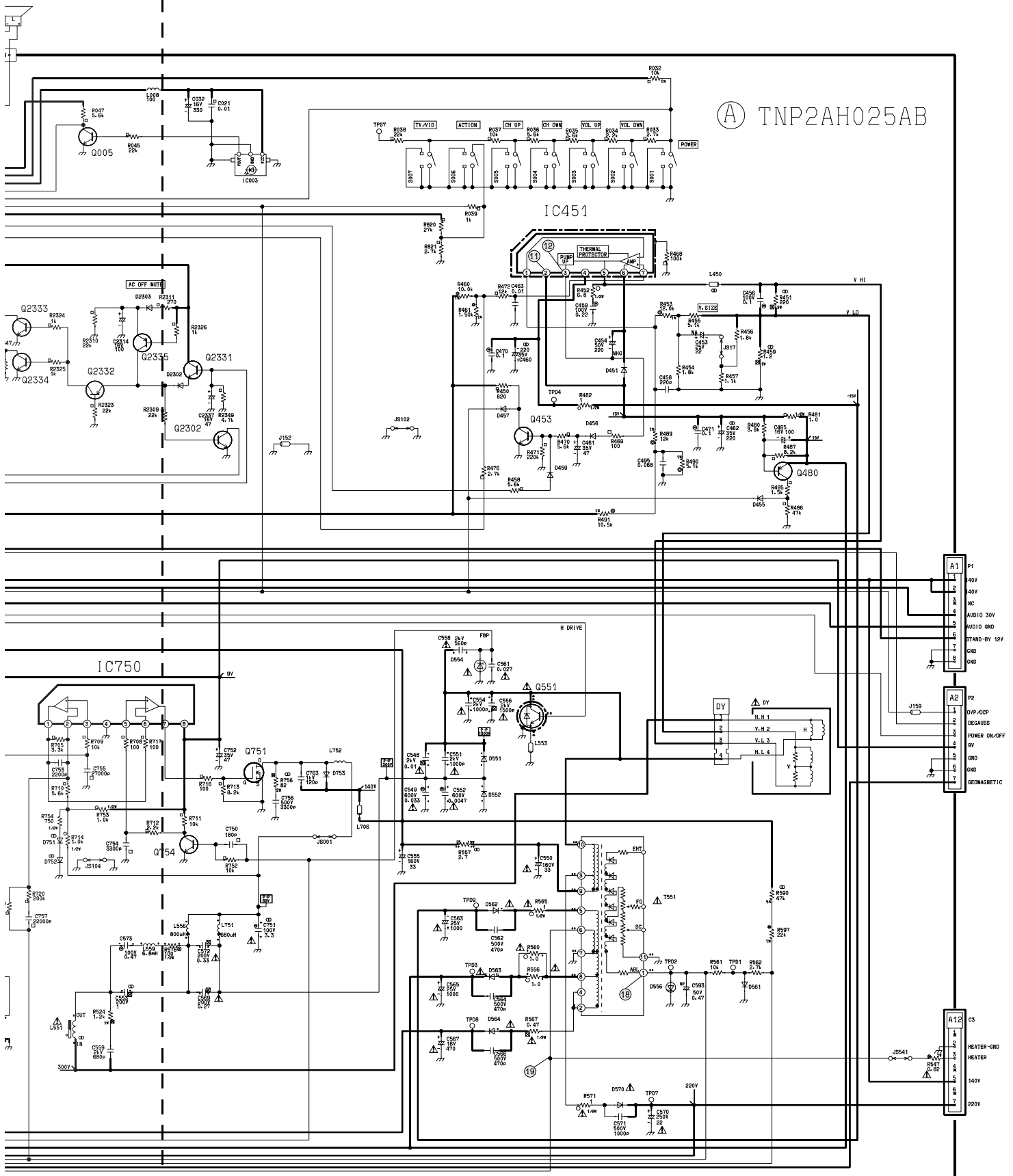


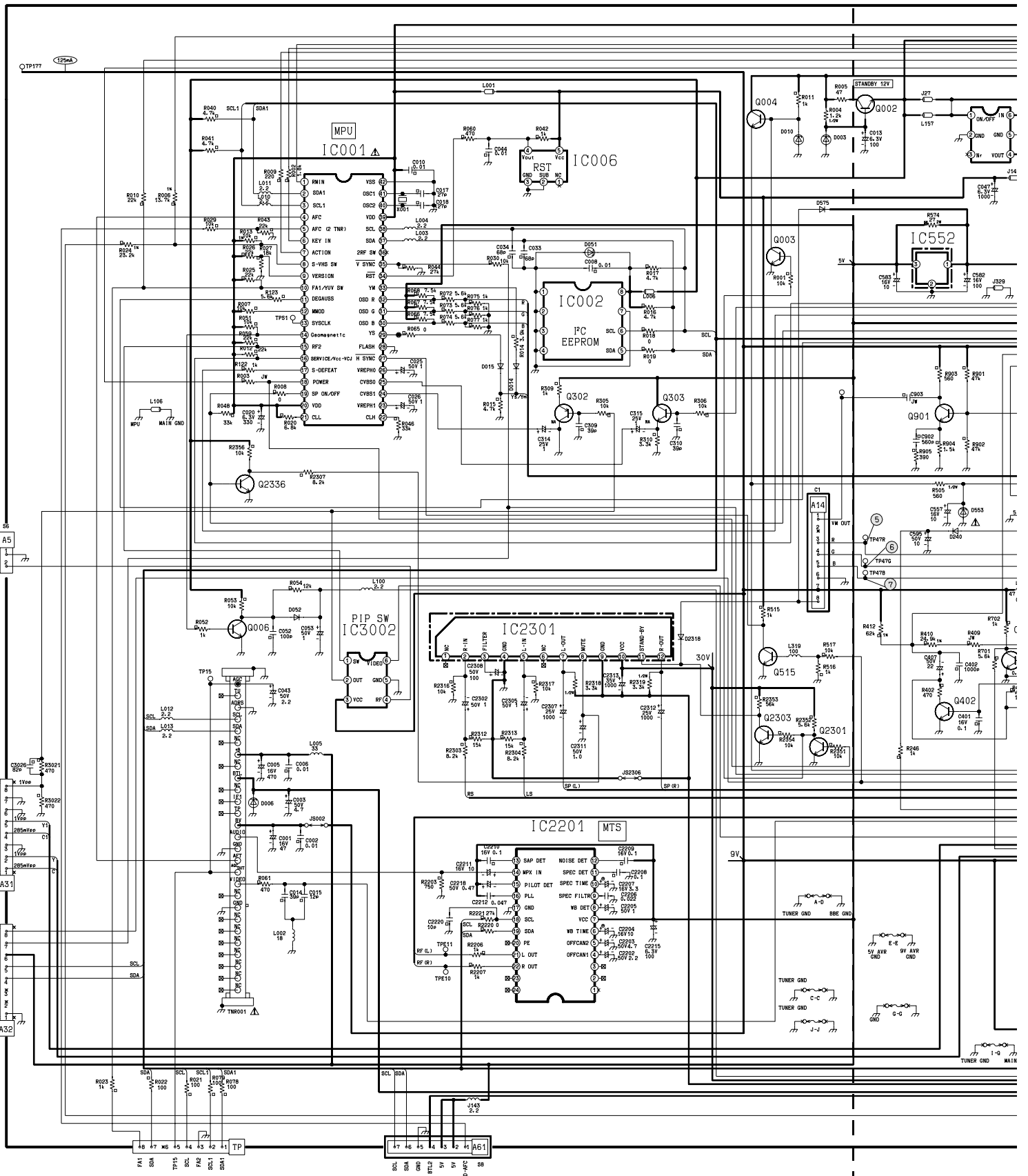
Ⓐ TNP2AH025CD

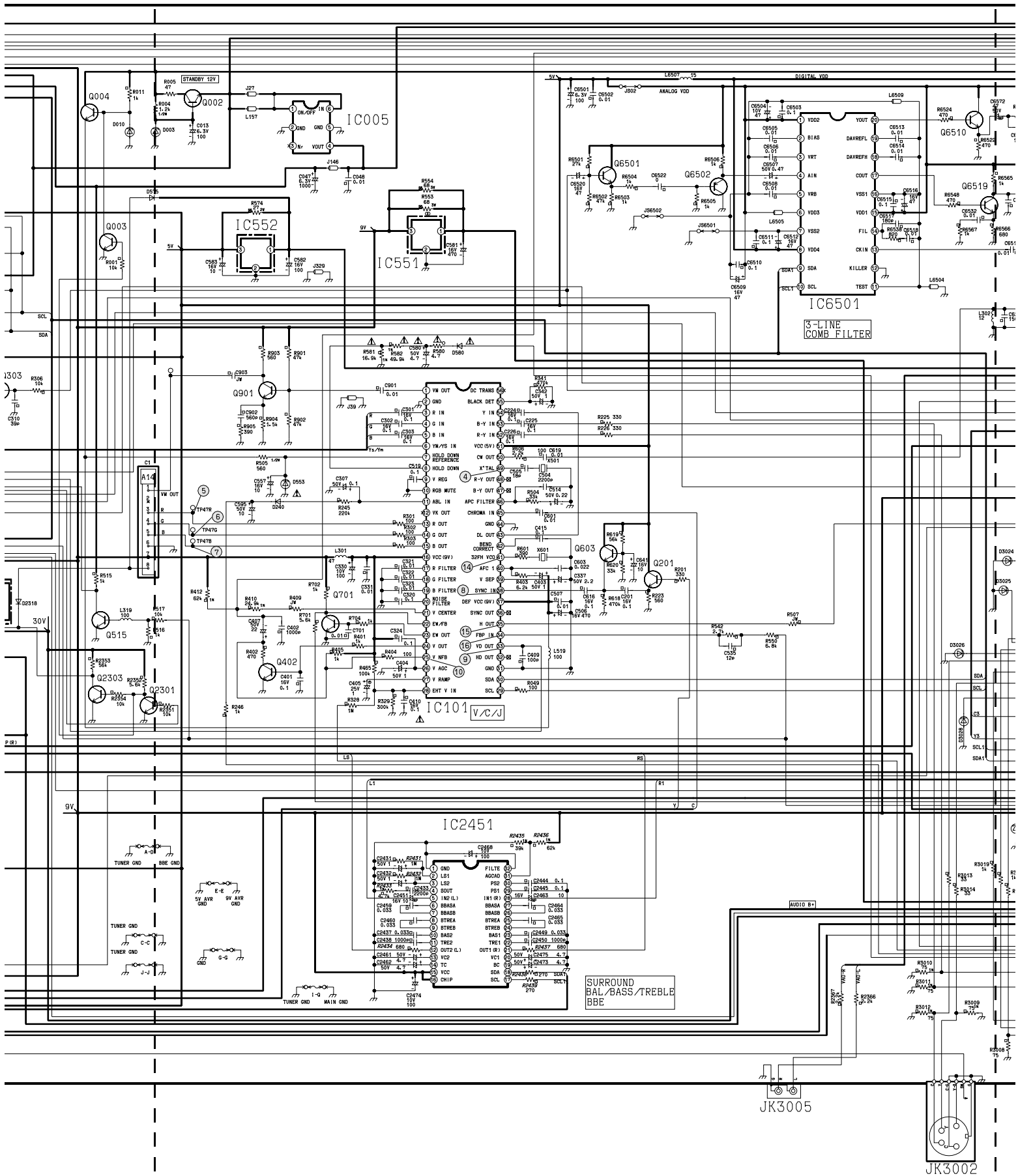


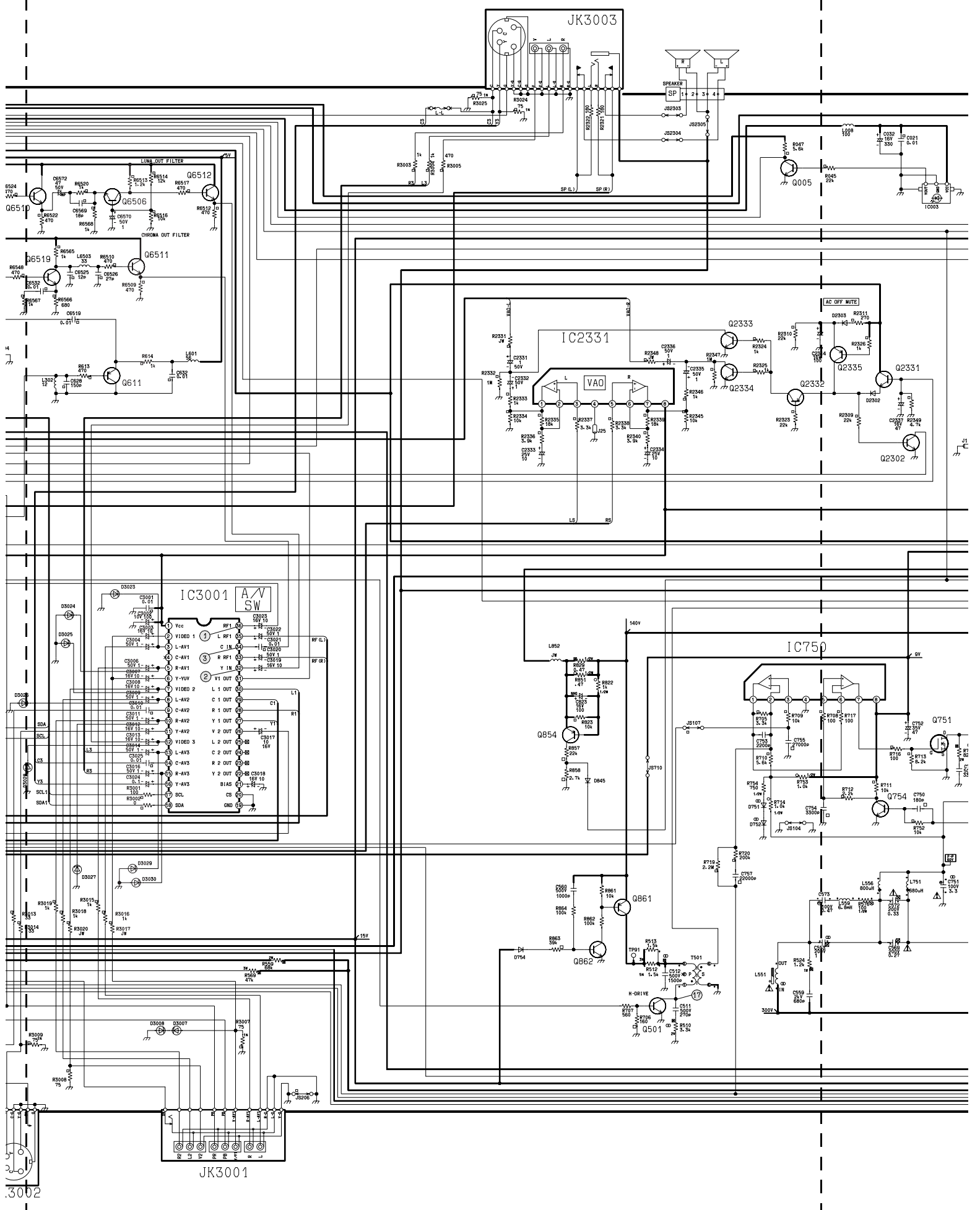


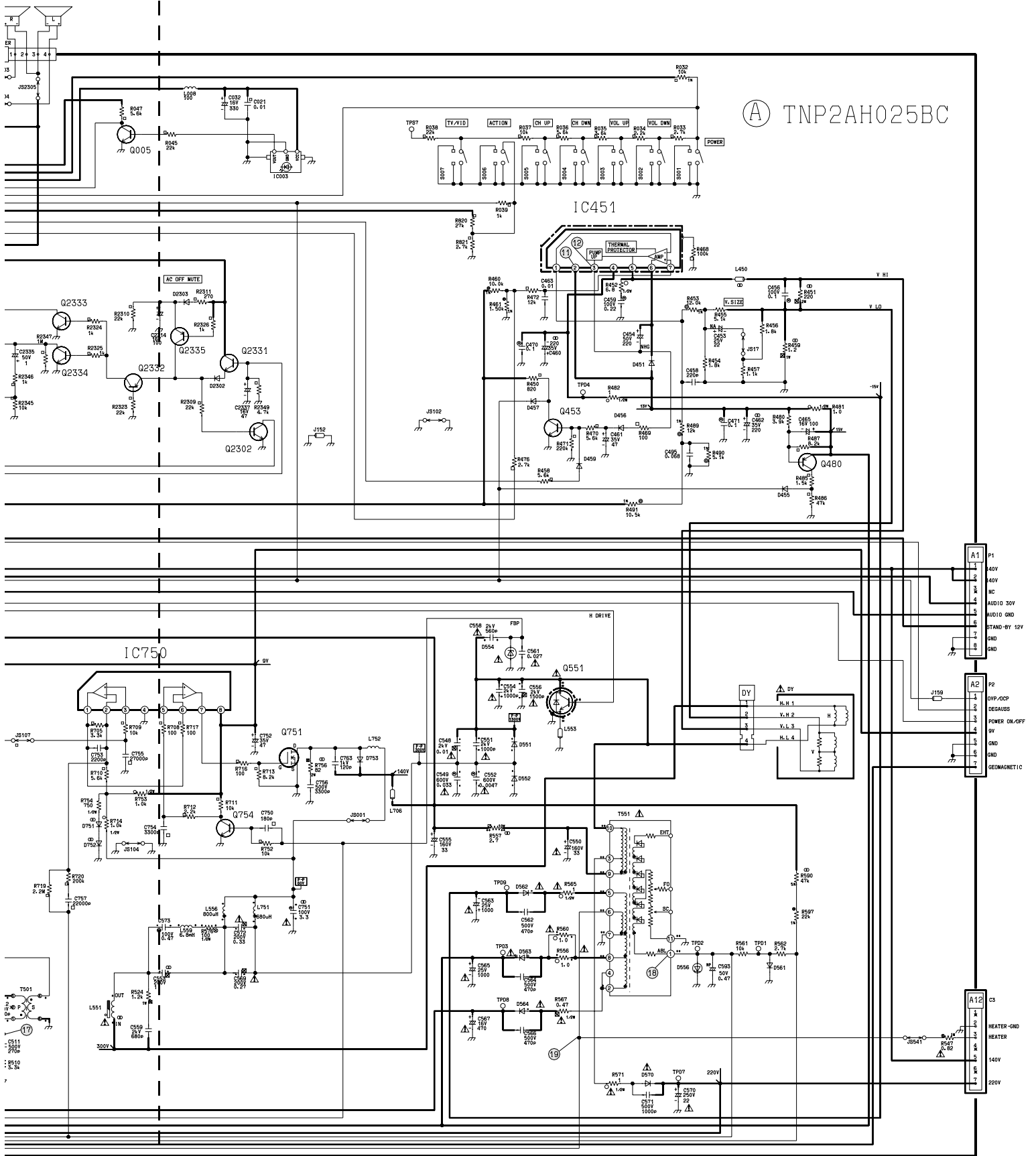




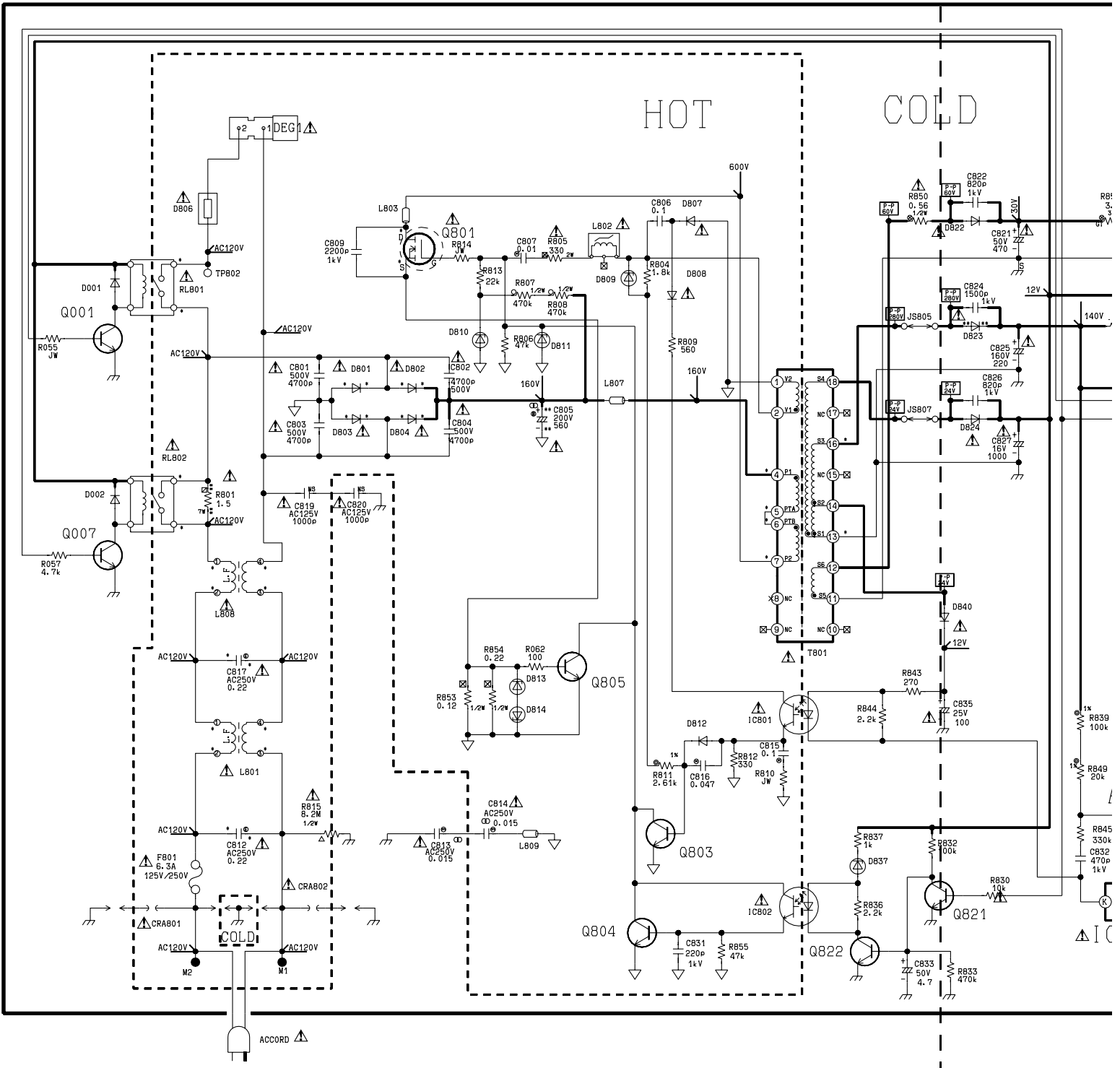




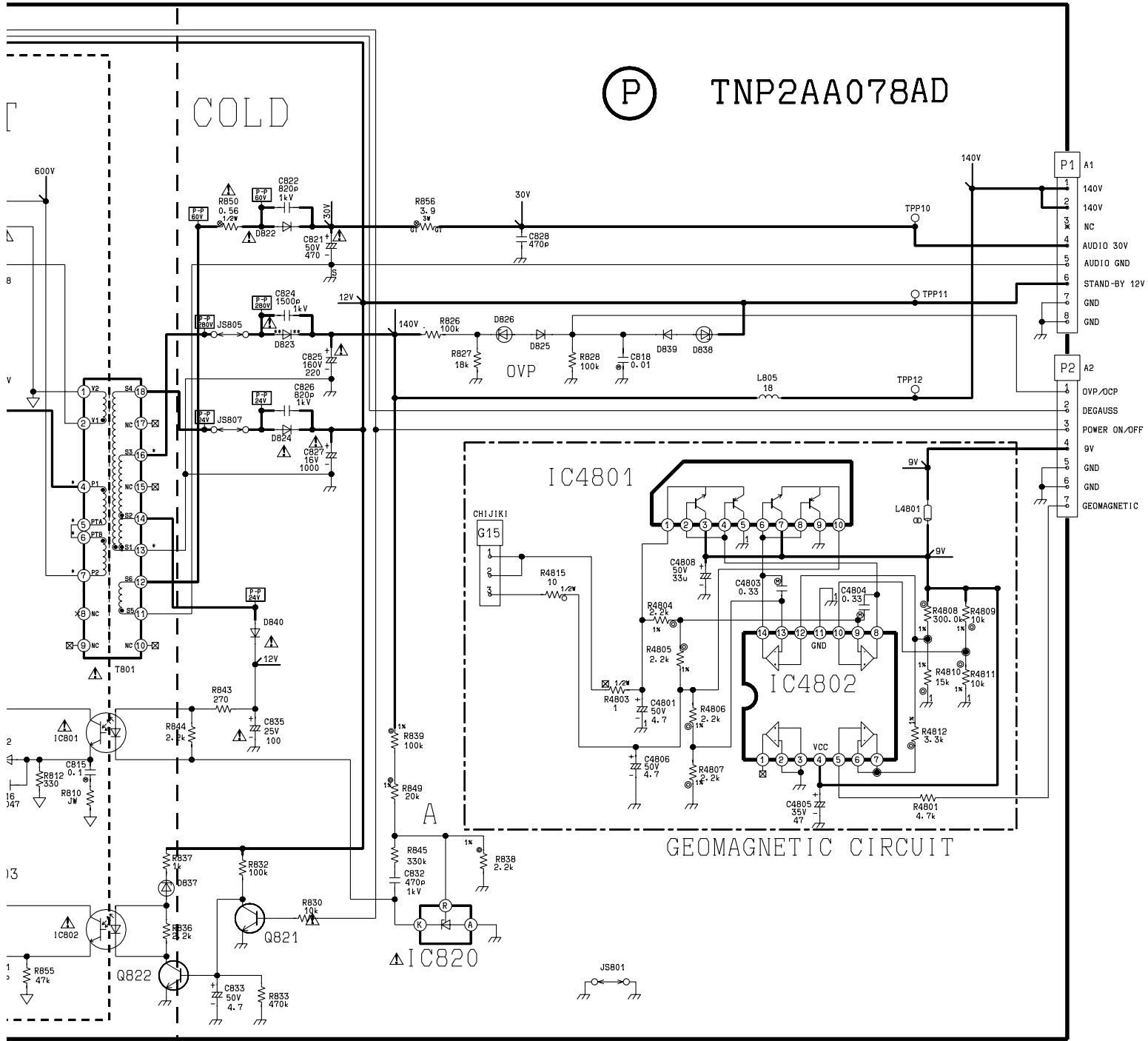




Ⓐ TNP2AH025BC



(P) TNP2AA078AD



P-BOARD - TNP2AA078ADM

| IC801 | |
|-------|-------|
| 1 | 12.88 |
| 2 | 11.81 |

| IC802 | |
|-------|------|
| 1 | 7.89 |
| 2 | 7.88 |

| IC820 | |
|-------|-------|
| A | 11.81 |
| K | -0.03 |
| R | 2.44 |

| Q751 _F | |
|-------------------|-------|
| G | 7.04 |
| S | GND |
| D | 20.57 |

F=FET Transistor

| IC4801 | | | |
|--------|------|----|------|
| 1 | 4.45 | 6 | 5.15 |
| 2 | 4.02 | 7 | 9.10 |
| 3 | 9.10 | 8 | 5.16 |
| 4 | 4.02 | 9 | 0.03 |
| 5 | 0.03 | 10 | 4.62 |

| IC4802 | | | |
|--------|-------|----|-------|
| 1 | -0.03 | 8 | 4.02 |
| 2 | -0.02 | 9 | 4.54 |
| 3 | -0.02 | 10 | 4.54 |
| 4 | 9.10 | 11 | -0.02 |
| 5 | 2.73 | 12 | 2.29 |
| 6 | 2.73 | 13 | 2.29 |
| 7 | 2.73 | 14 | 5.16 |

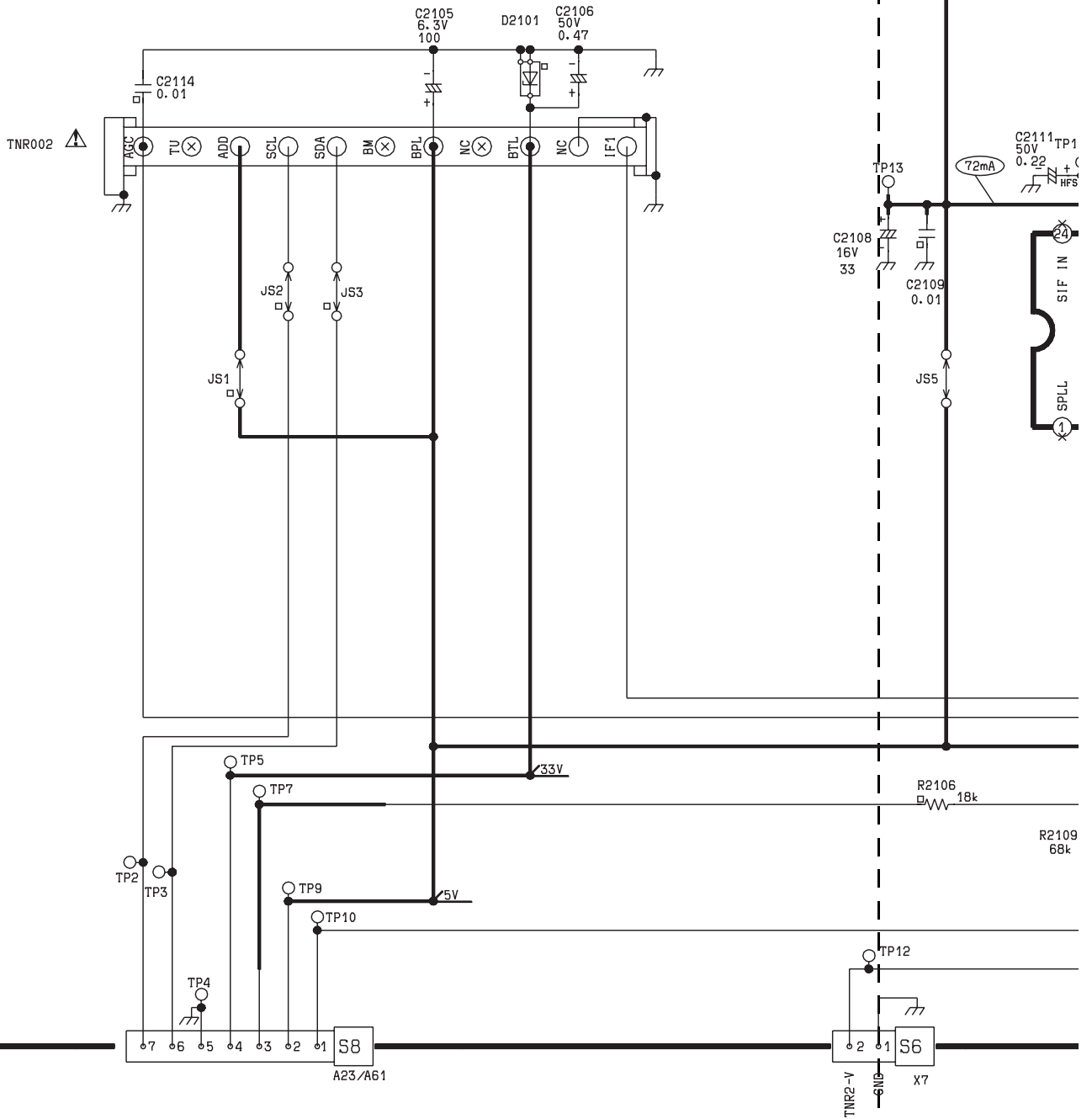
| | Q001 | Q007 | Q821 | Q822 |
|---|-------|-------|-------|-------|
| B | 0.05 | 0.71 | 0.59 | -0.02 |
| C | 13.47 | 0.10 | -0.02 | 7.88 |
| E | -0.02 | -0.03 | -0.03 | -0.03 |

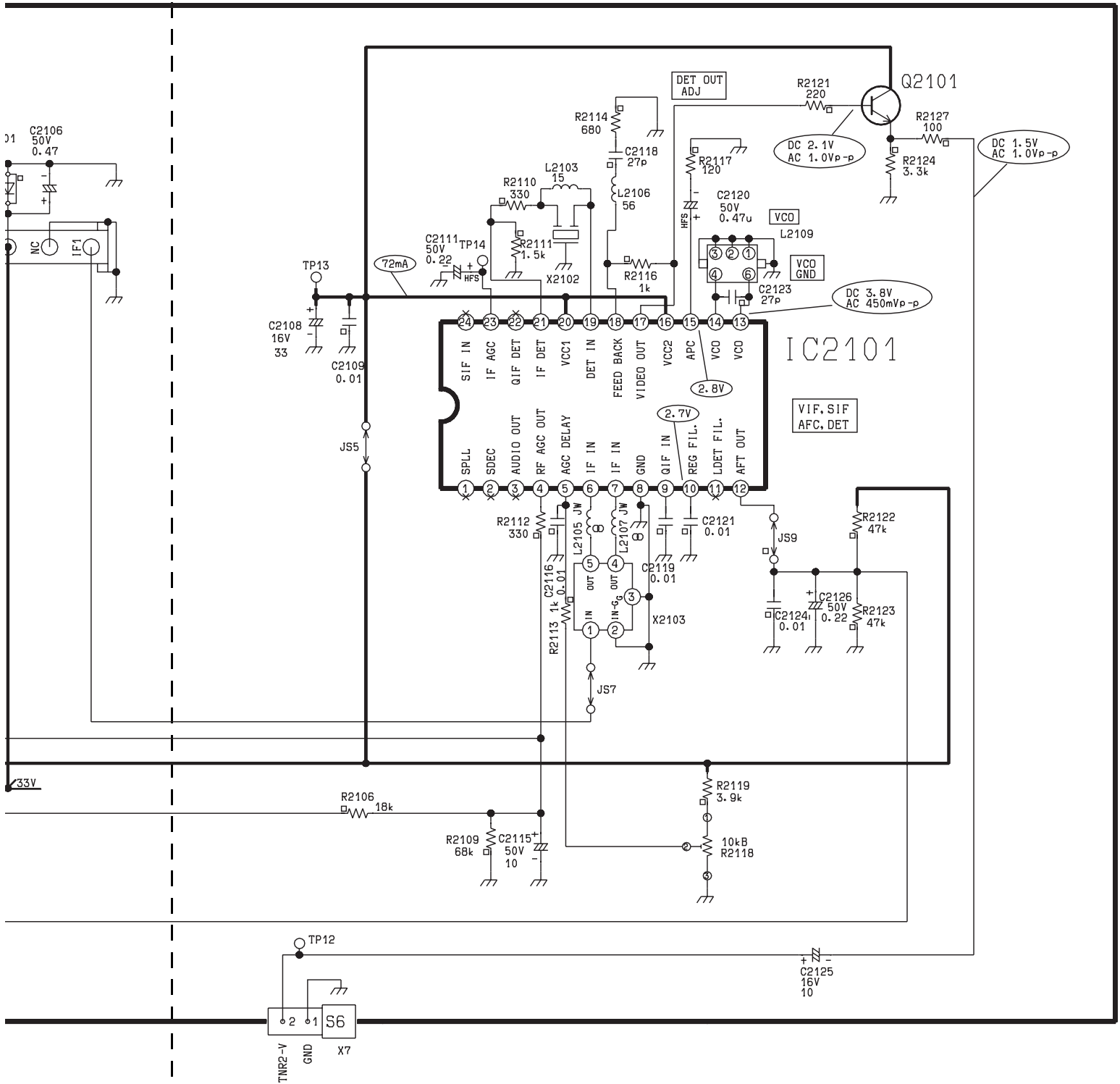
| | Q803 | Q804 | Q805 |
|---|------|-------|------|
| B | 0.17 | -0.07 | 0.04 |
| C | 3.04 | 3.04 | 3.02 |
| E | 0.00 | 0.00 | 0.00 |

NOTES:

(S) TNPA0190AM

SLAVE ADDRESS = C6





S-BOARD - TNPA1090AMM

| IC2101 | | | | | | | |
|--------|-----------|----|-----------|----|------------|----|------------|
| 1 |1.63 | 7 |2.52 | 13 | 3.43 | 19 | 1.73 |
| 2 |1.91 | 8 |0.00 | 14 | 3.43 | 20 | 4.77 |
| 3 |2.46 | 9 |2.51 | 15 | 2.75 | 21 | 1.73 |
| 4 |1.66 | 10 |1.20 | 16 | 4.77 | 22 | 2.14 |
| 5 |2.38 | 11 |2.56 | 17 | 1.82 | 23 | 2.37 |
| 6 |2.52 | 12 |2.44 | 18 | 1.87 | 24 | 2.06 |

| | Q2101 |
|---|-------|
| B | 4.77 |
| C | 1.82 |
| E | 1.23 |

NOTES:

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