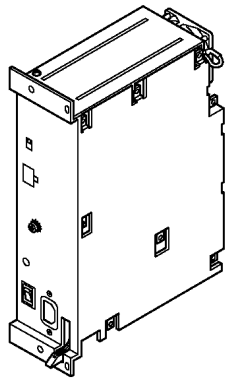
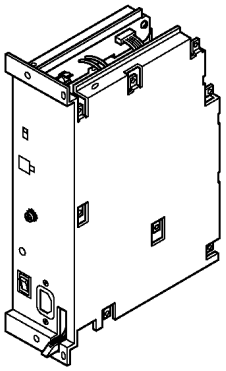
ORDER NO. KMS0303680C8

Service Manual

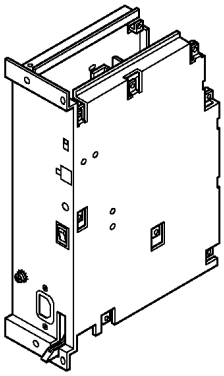
Power Supply Unit



(KX-TDA0103XJ
KX-TDA0103X)



(KX-TDA0104XJ
KX-TDA0104X)



(KX-TDA0108XJ
KX-TDA0108X)

KX-TDA0103XJ
KX-TDA0104XJ
KX-TDA0108XJ
KX-TDA0103X
KX-TDA0104X
KX-TDA0108X

(for Asia, Oceania, Middle Near East, Africa, Latin America and Europe)

⚠ WARNING

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

When you note the serial number, write down all of the 11 digits. The serial number may be found on the unit.

IMPORTANT INFORMATION ABOUT LEAD FREE, (PbF), SOLDERING

If lead free solder was used in the manufacture of this product the printed circuit boards will be marked PbF.

Standard leaded, (Pb), solder can be used as usual on boards without the PbF mark.

When this mark does appear please read and follow the special instructions described in this manual on the use of PbF and how it might be permissible to use Pb solder during service and repair work.

Panasonic

CONTENTS

1 ABOUT LEAD FREE SOLDER (PbF: Pb free)

Note:

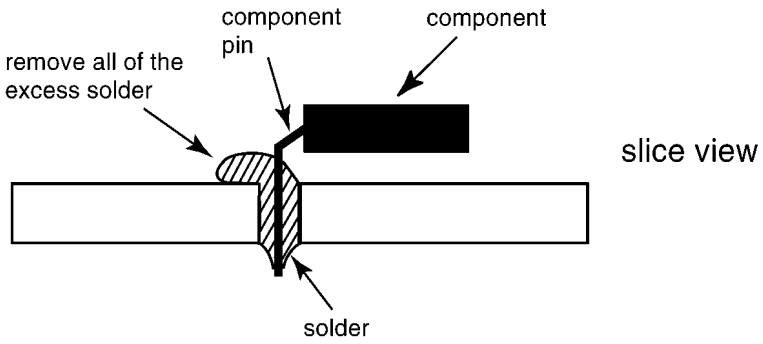
In the information below, Pb, the symbol for lead in the periodic table of elements, will refer to standard solder or solder that contains lead.

We will use PbF when discussing the lead free solder used in our manufacturing process which is made from Tin, (Sn), Silver, (Ag), and Copper, (Cu).

This model, and others like it, manufactured using lead free solder will have PbF stamped on the PCB. For service and repair work we suggest using the same type of solder although, with some precautions, standard Pb solder can also be used.

Caution

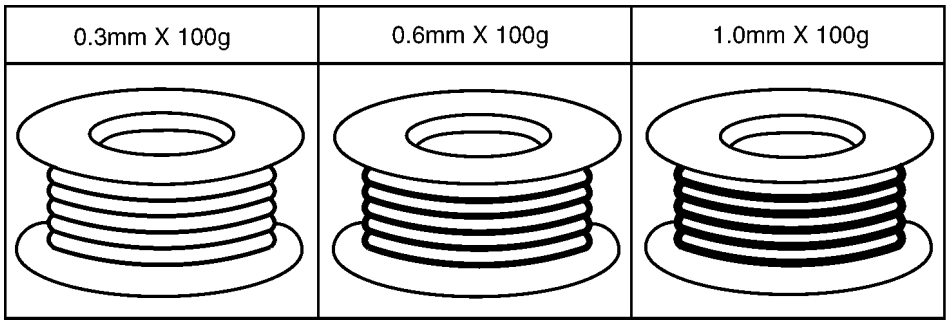
- PbF solder has a melting point that is 50° ~ 70° F, (30° ~ 40°C) higher than Pb solder. Please use a soldering iron with temperature control and adjust it to 700° ± 20° F, (370° ± 10°C). In case of using high temperature soldering iron, please be careful not to heat too long.
- PbF solder will tend to splash if it is heated much higher than its melting point, approximately 1100°F, (600°C).
- If you must use Pb solder on a PCB manufactured using PbF solder, remove as much of the original PbF solder as possible and be sure that any remaining is melted prior to applying the Pb solder.
- When applying PbF solder to double layered boards, please check the component side for excess which may flow onto the opposite side (See figure, below).



1.1. SUGGESTED PbF SOLDER

There are several types of PbF solder available commercially. While this product is manufactured using Tin, Silver, and Copper, (Sn+Ag+Cu), you can also use Tin and Copper, (Sn+Cu), or Tin, Zinc, and Bismuth, (Sn+Zn+Bi). Please check the manufac turer's specific instructions for the melting points of their products and any precautions for using their product with other materials.

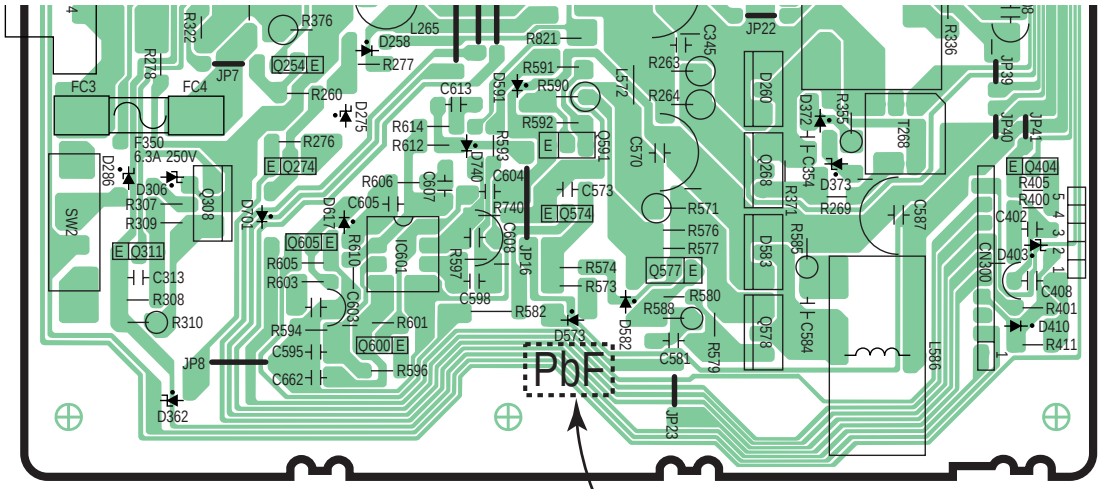
The following lead free (PbF) solder wire sizes are recommended for service of this product: 0.3mm, 0.6mm and 1.0mm.



1.2. HOW TO RECOGNIZE THAT Pb FREE SOLDER IS USED

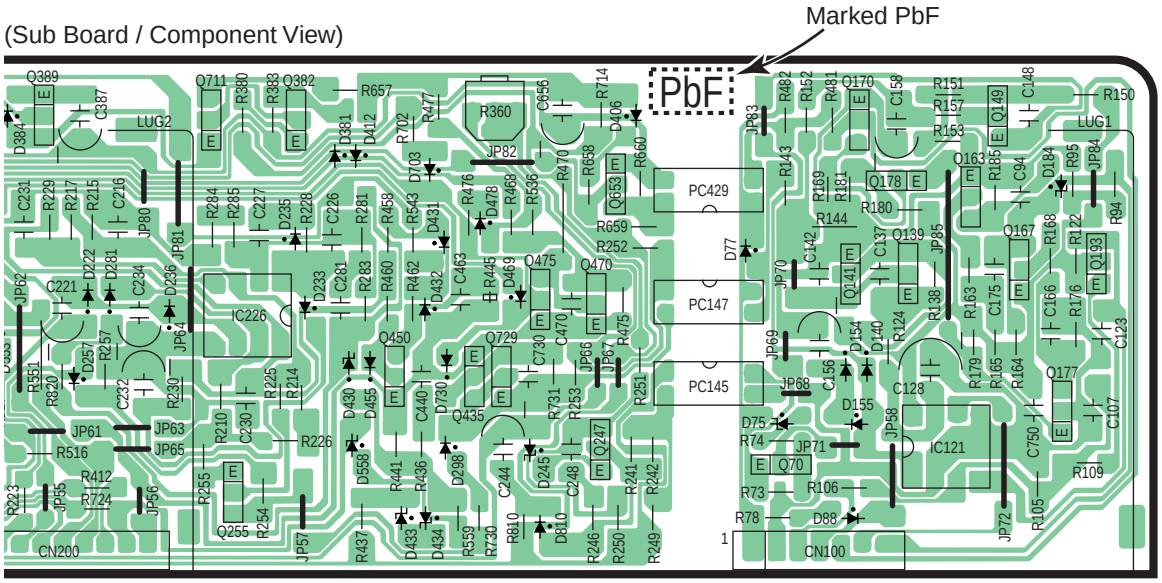
(KX-TDA0108XJ/X)

(Main Board / Component View)



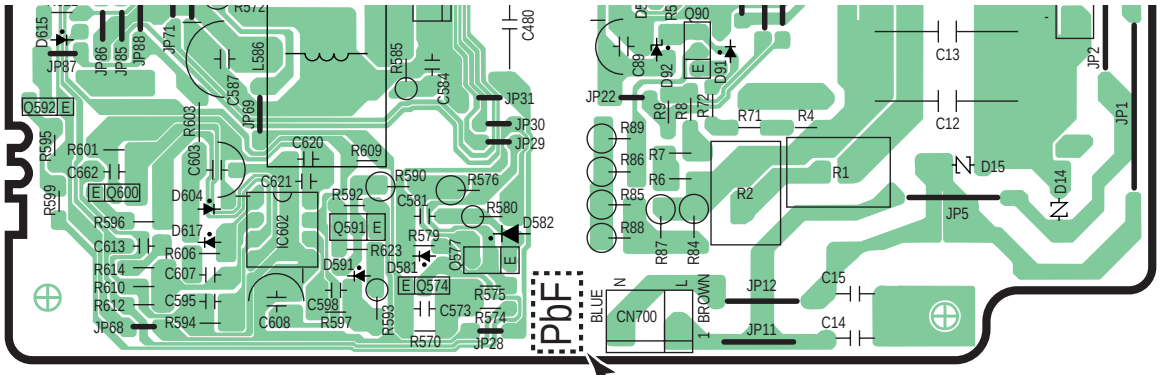
Marked PbF

(Sub Board / Component View)



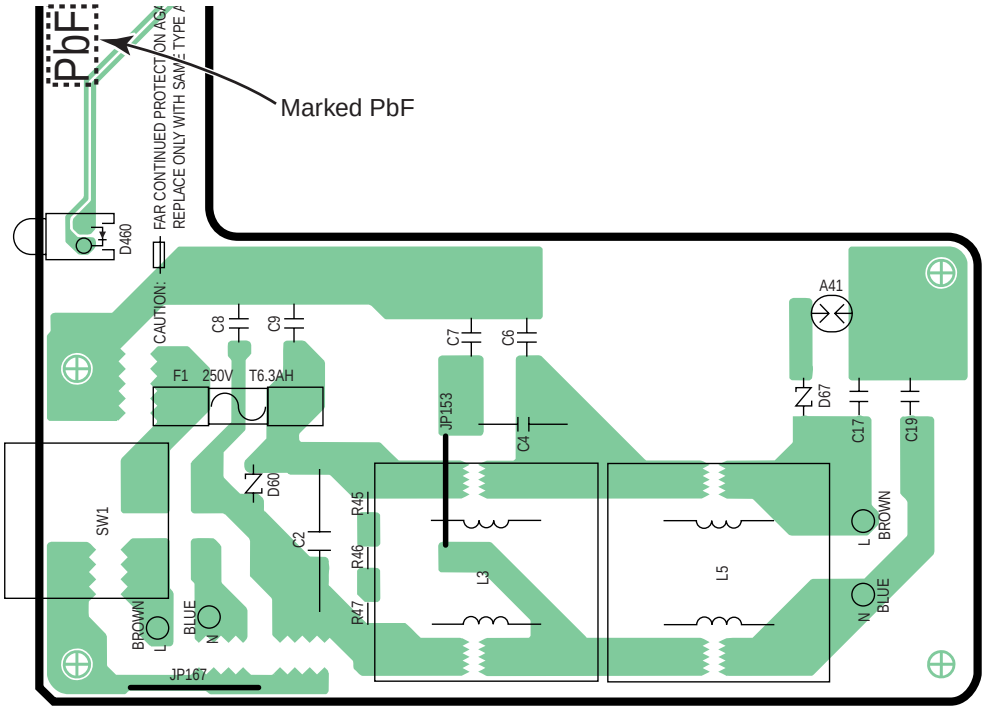
(KX-TDA0104XJ/X)

(Main Board / Component View)

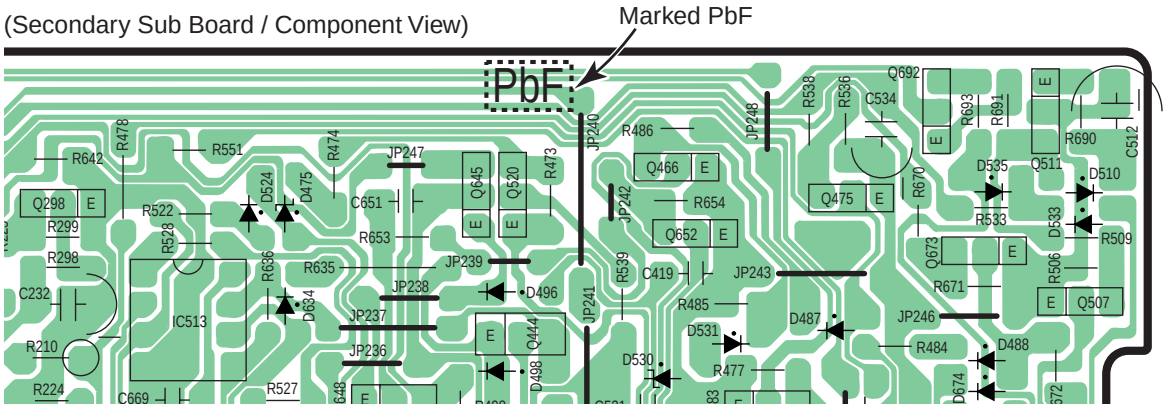


Marked PbF

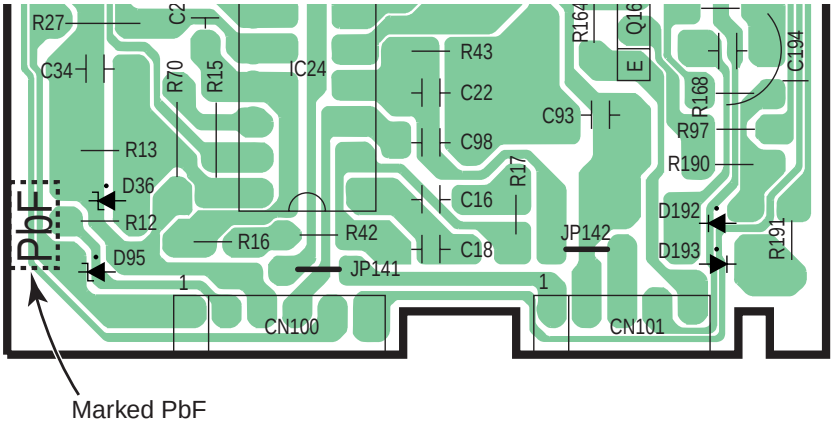
(Filter/Battery Board / Component View)



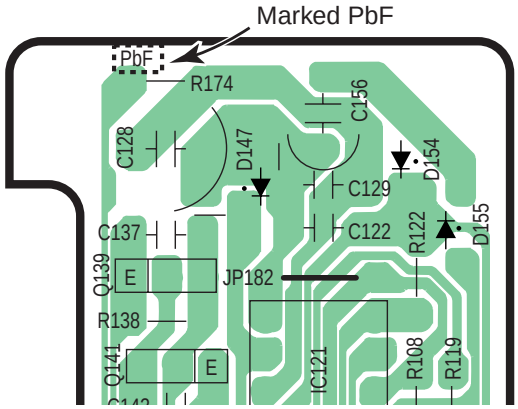
(Secondary Sub Board / Component View)



(Primary Sub Board 1 / Component View)

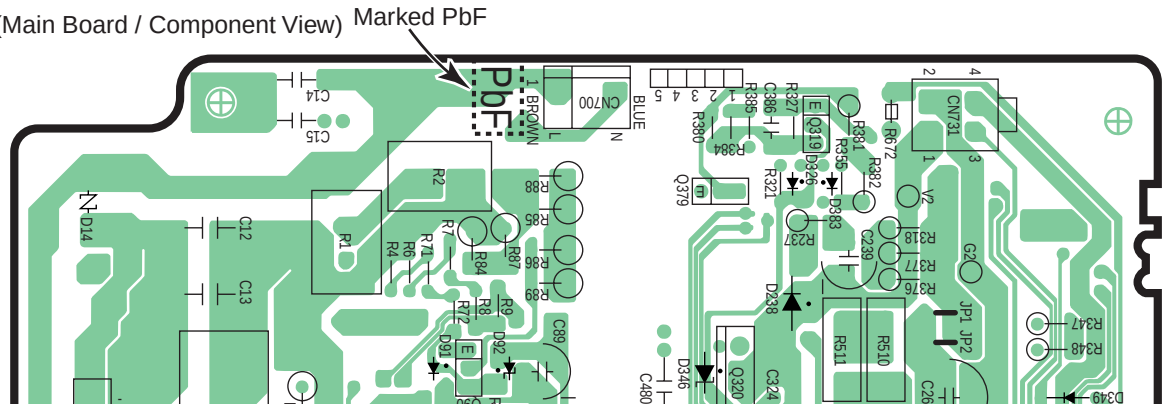


(Primary Sub Board 2 / Component View)

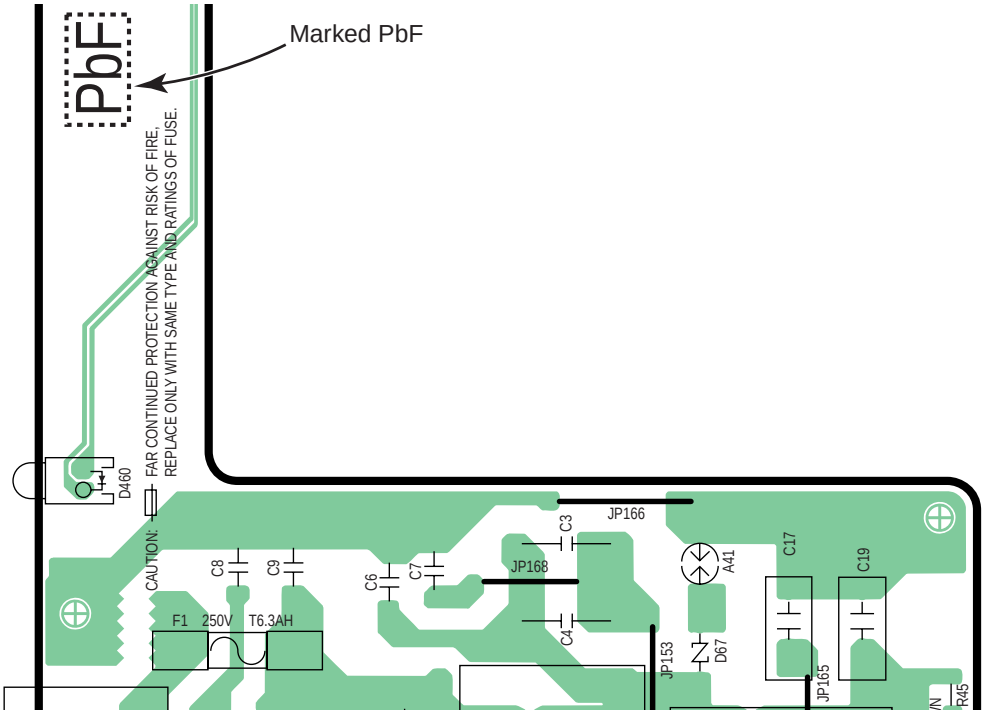


(KX-TDA0103XJ/X)

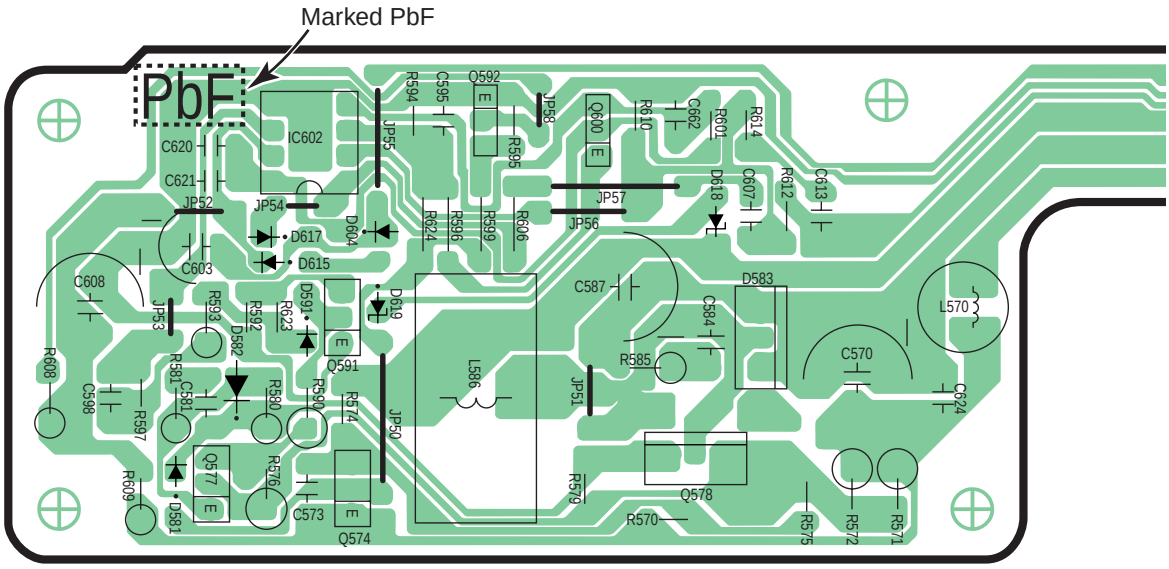
(Main Board / Component View)



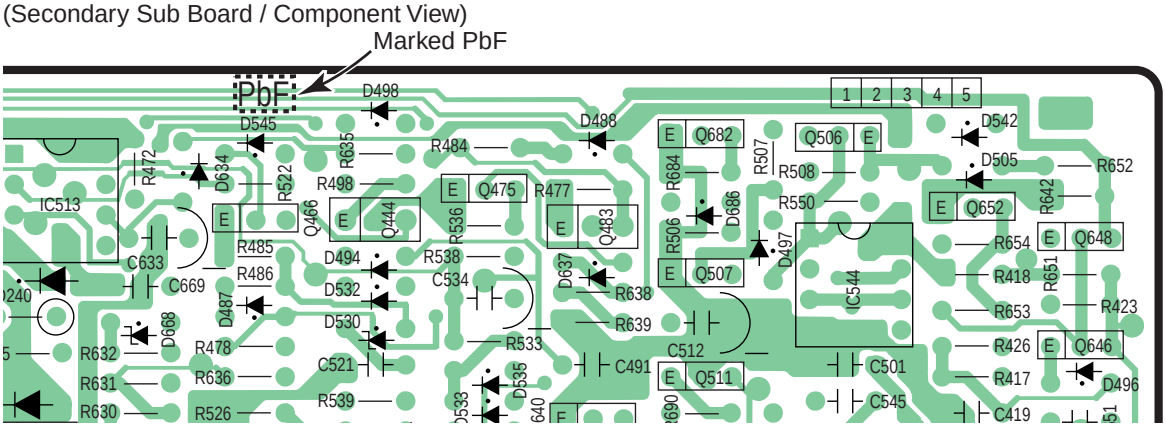
(Filter/Battery Board / Component View)



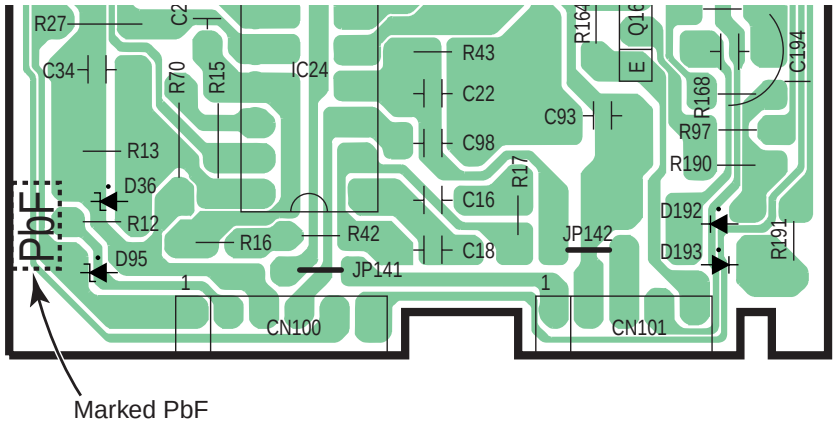
(30V Board / Component View)



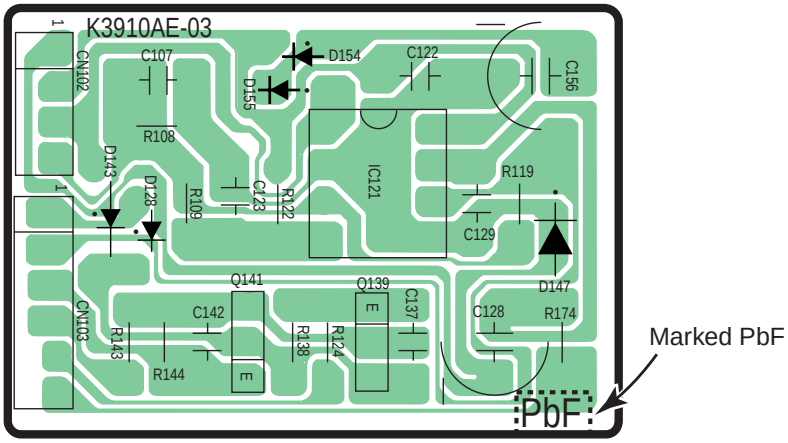
(Secondary Sub Board / Component View)



(Primary Sub Board 1 / Component View)



(Primary Sub Board 2 / Component View)



2 FOR SERVICE TECHNICIANS

ICs and LSIs are vulnerable to static electricity.

When repairing, the following precautions will help prevent recurring malfunctions.

1. Cover the plastic parts boxes with aluminum foil.
2. Ground the soldering irons.
3. Use a conductive mat on the worktable.
4. Do not touch IC or LSI pins with bare fingers.

3 CAUTION

3.1. NOTE

When you note the serial number, write down all of the 11 digits.

The serial number may be found on the label affixed to the front of the unit.

3.2. SAFETY PRECAUTIONS

Refer to Service Manual for KX-TDA100 and KX-TDA200.

3.3. INSULATION RESISTANCE TEST

Refer to Service Manual for KX-TDA100 and KX-TDA200.

3.4. CAUTION

The power socket wall outlet should be located near this equipment and be easily accessible.

4 SPECIFICATIONS

4.1. GENERAL DESCRIPTION

KX-TDA0108XJ/X (PSLP1206)

Input	voltage	AC100-130V/AC200-240V
	current	1.4A/0.8A
	frequency	50/60Hz

Output	ch.	+15V	+15VPT	+30V	+41V
	voltage	15V	15V	30V	41V
	current (rated)	1.86A	1.92A	0.37A	1.13A
	total output power	74.2 W			

Battery I/F section

Input (backup)	voltage	DC32V-41.9V
	current	3.0A
Output (charge)	voltage	DC30V-41.9V
	current	0.4Atyp

KX-TDA0104XJ/X (PSLP1207)

Input	voltage	AC100-130V/AC200-240V
	current	2.5A/1.4A
	frequency	50/60Hz

Output	ch.	+15V	+15VPT	+30V	+41V
	voltage	15V	15V	30V	41V
	current (rated)	3.20A	3.84A	0.73A	2.25A
	total output power	140.4 W			

Battery I/F section

Input (backup)	voltage	DC32V-41.9V
	current	6.0A
Output (charge)	voltage	DC30V-41.9V
	current	0.4Atyp

KX-TDA0103XJ/X (PSLP1208)

Input	voltage	AC100-130V/AC200-240V
	current	1.4A/0.8A
	frequency	50/60Hz

Output	ch.	+15V	+15VPT	+30V	+4s1V
	voltage	15V	15V	30V	41V
	current (rated)	3.20A	15.4A	0.73A	4.50A
	total output power	279 W			

Battery I/F section

Input (backup)	voltage	DC32V-41.9V
	current	11.0A
Output (charge)	voltage	DC30V-41.9V
	current	0.4Atyp

4.2. SYSTEM CAPACITY

4.2.1. Power Supply Unit Selection

Hybrid IP-PBX needs an optional power supply unit (PSU) suitable for its configuration. Calculate the amount of "load figures" from the type and number of equipment to be connected, and determine the type of PSU that will be required.

Load Figure Calculation

Equipment Type		Load Figure
PT	DPT (T76xx series and T7560, T7565)	1
	Other DPT/APT/DSS Console	4
Extension Card *1	DHLC8	8
	SLC8	8
	SLC16	16
	MSLC16	16
CS		4
ISDN Extension		2
Voice Mail		1

*1 Only the extension cards that can support SLTs count for the load figures.

PSU Capability

Each PSU supports a different amount of load figures.

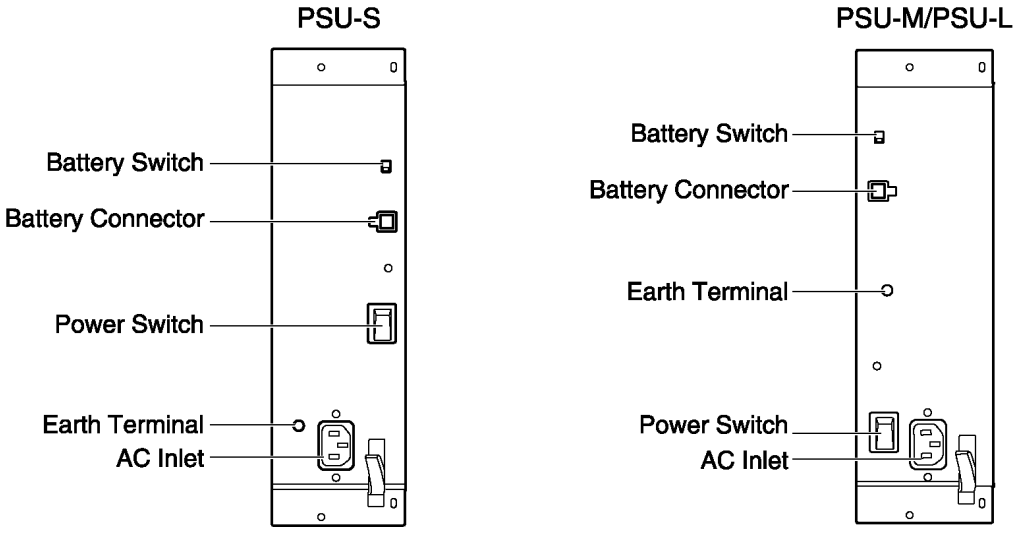
PSU Type	Maximum Load Figures	Available
PSU-S (KX-TDA0108XJ/X)	64	Available for the KX-TDA100
PSU-M (KX-TDA0104XJ/X)	128	Available for the KX-TDA100 and KX-TDA200
PSU-L (KX-TDA0103XJ/X)	512	Available for the KX-TDA200

5 INSTALLATION

5.1. INSTALLING/REPLACING THE POWER SUPPLY UNIT

5.1.1. Function

PSU Type	Lower/Upper Input Voltage Range	Current	Input Frequency
PSU-S (for KX-TDA100)	Lower: 100 V AC to 130 V AC	1.4 A	50 Hz or 60 Hz
	Upper: 200 V AC to 240 V AC	0.8 A	
PSU-M (for KX-TDA100/200)	Lower: 100 V AC to 130 V AC	2.5 A	
	Upper: 200 V AC to 240 V AC	1.4 A	
PSU-L (for KX-TDA200)	Lower: 100 V AC to 130 V AC	5.1 A	
	Upper: 200 V AC to 240 V AC	2.55 A	



Accessory and User-supplied Items

Accessory (included): screws x 4

User-supplied (not included): earthing wire, Back-up Battery Cable (KX-A228 for PSU-S and PSU-M, or KX-A229 for PSU-L)

Note:

- For details about frame earth connection, refer to "Installation Manual".
- For details about backup batteries connection, refer to "Installation Manual".

Safety Instructions

Each PSU complies with Safety Class 1 of IEC60950, EN60950, UL60950, CAN/CSA-C22.2 No.60950, and AS/NZS60950; therefore a protective earth connection exists between the mains outlet ground and the PSU case. To ensure the PBX chassis is safely grounded, it is essential that the PSU case be securely fastened to the PBX chassis with the 4 screws provided with each PSU.

When installing or replacing PSU, basic safety precautions should always be followed to reduce the risk of fire, electric shock and injury to persons, including the following:

1. Never install or replace PSU during a lightning storm.
2. Never install or replace PSU in wet locations.
3. Never install or replace PSU unless the AC supply and backup battery supply are disconnected.
4. To protect the back board from static electricity, do not touch parts on the back board in the main unit and PSU. To discharge static, touch ground or wear an earthing strap.

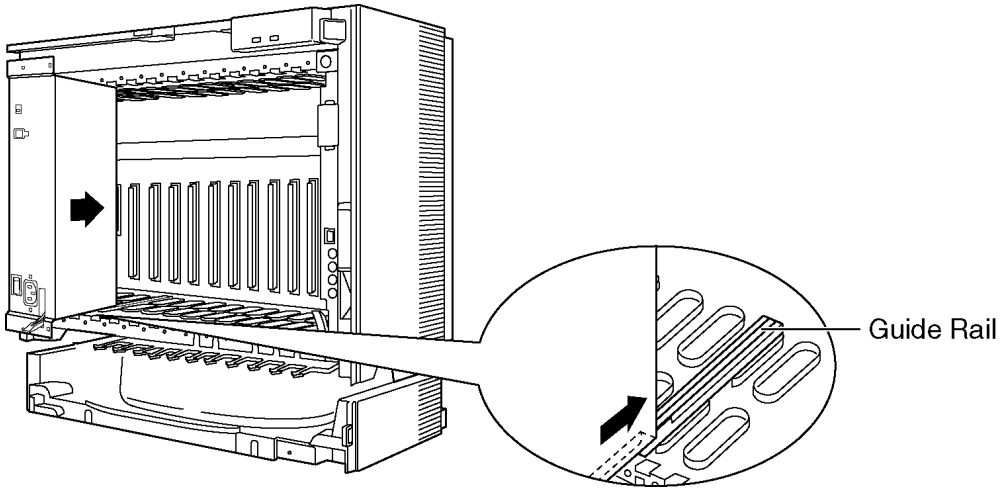
The following procedures are for installing or upgrading a PSU only. Do not replace or remove the PSU for ny other purpose.

5.1.2. Installing the Power Supply Unit

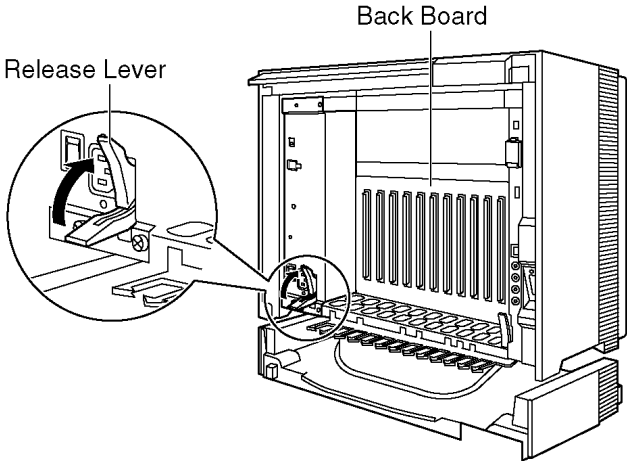
1. Insert the PSU along the guide rails.

Caution:

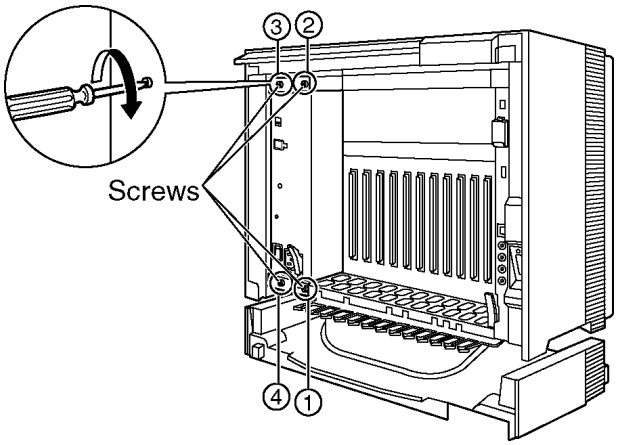
For safety reasons, do not touch parts in the PSU.



2. Push the release lever in the direction of the arrow, so that the PSU is made to engage with the connector on the back board securely.

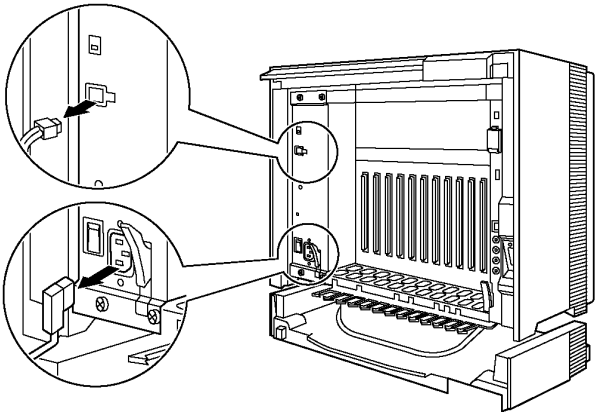


3. Turn the 4 screws clockwise, in the order indicated by the numbers 1 to 4, to fix the PSU.

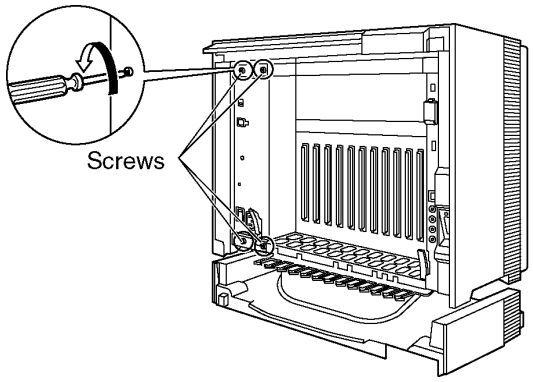


5.1.3. Replacing the Power Supply Unit

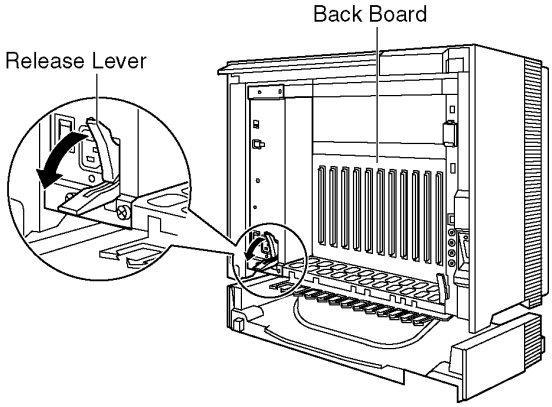
1. Unplug the AC power cord and Back-up Battery Cable.



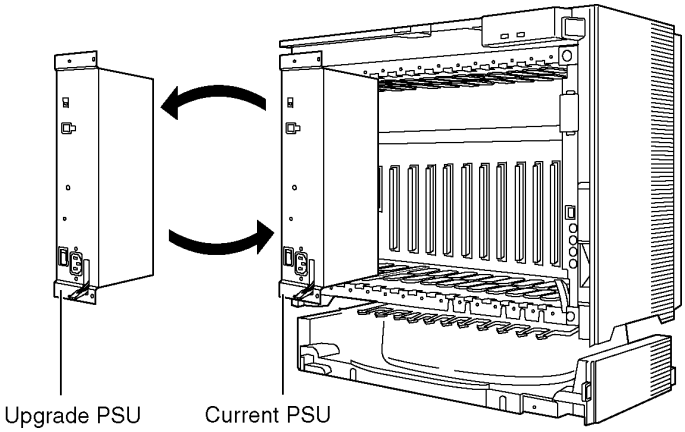
2. Turn the 4 screws anticlockwise to loosen them.



3. Pull the release lever in the direction of the arrow to disconnect the PSU from the back board.



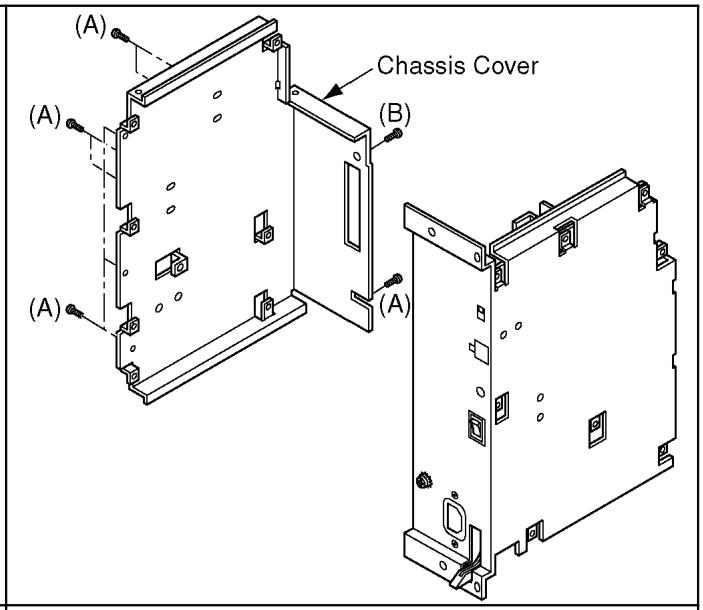
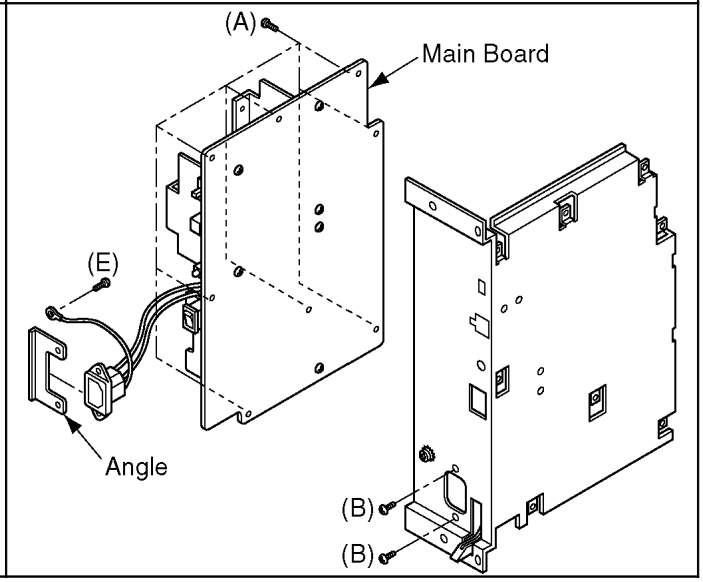
4. Replace the PSU.



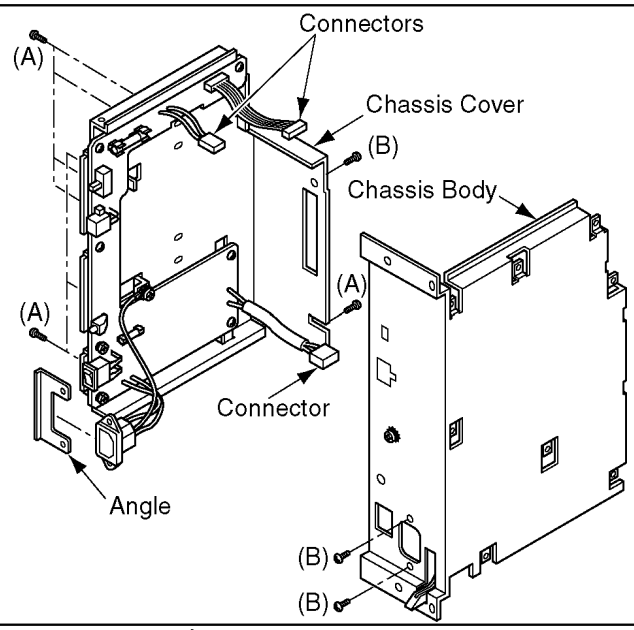
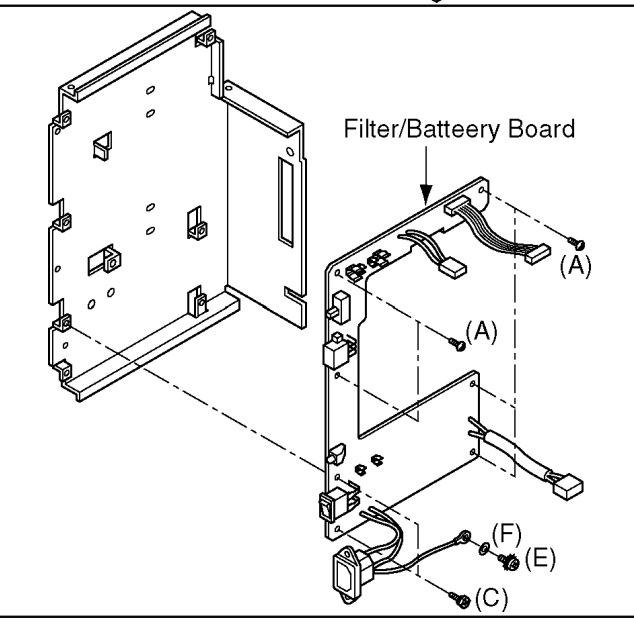
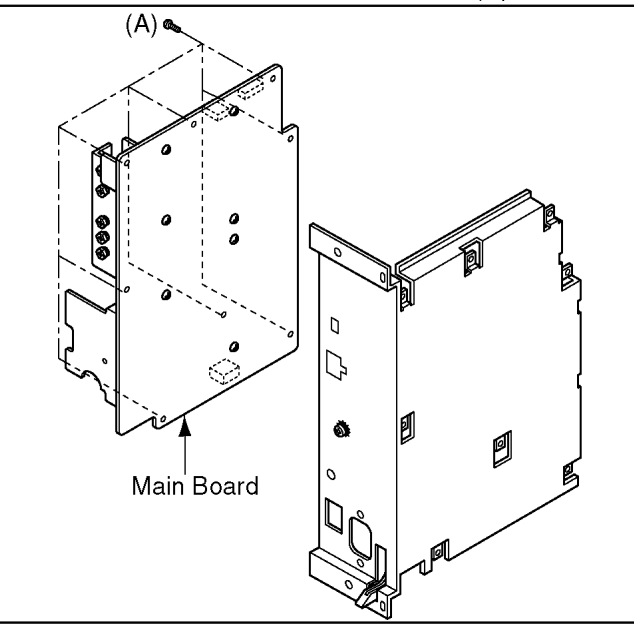
5. Follow the steps in "Installing the Power Supply Unit".

6 DISASSEMBLY INSTRUCTIONS

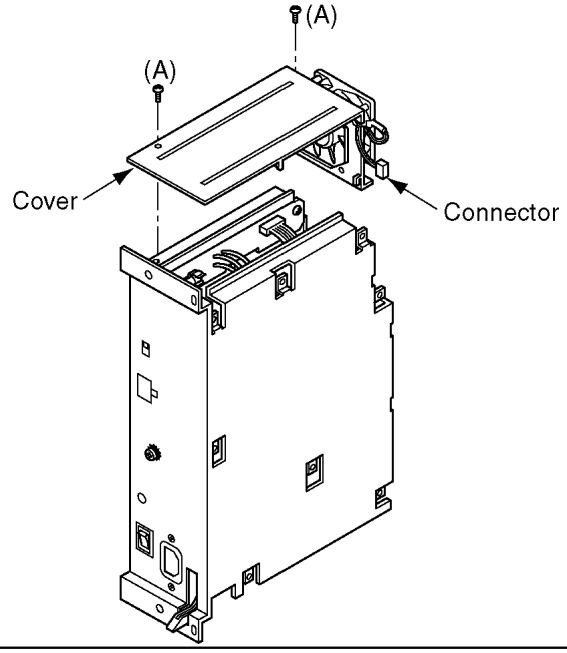
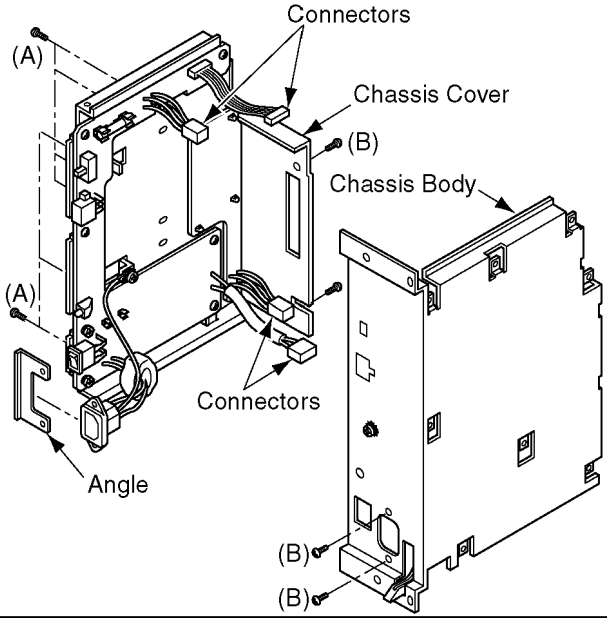
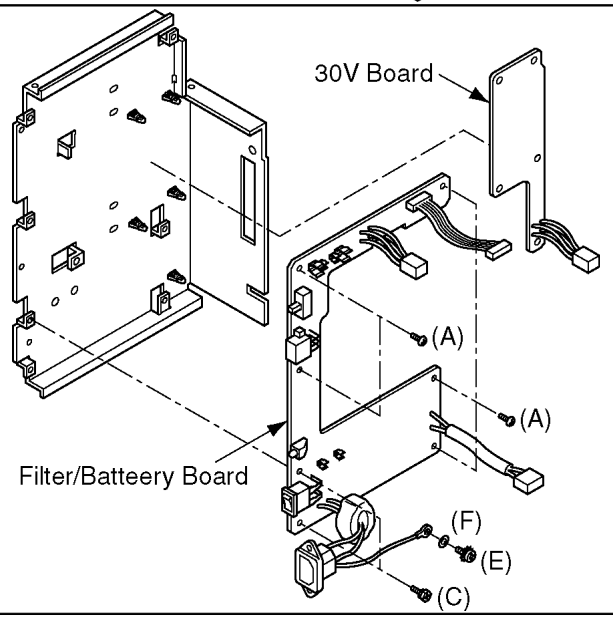
6.1. PSU-S (KX-TDA0108XJ/X)

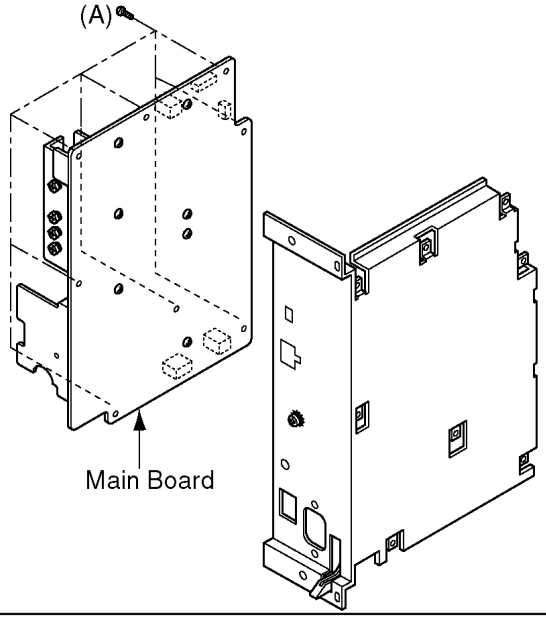
1. Remove the eight screws (A). 2. Remove the screw (B). 3. Remove the chassis cover.	
1. Remove the eight screws (A). 2. Remove the two screws (B). 3. Remove the angle. 4. Remove the screw (E). 5. Remove the main board.	

6.2. PSU-M (KX-TDA0104XJ/X)

1. Remove the eight screws (A). 2. Remove the three screws (B). 3. Pull out the three connectors. 4. Remove the angle. 5. Separate the chassis body and chassis cover.	
1. Remove the five screws (A). 2. Remove the two screws (C). 3. Remove the screw (E) and washer (F). 4. Remove the filter/battery board.	
1. Remove the eight screws (A). 2. Remove the main board.	

6.3. PSU-L (KX-TDA0103XJ/X)

1. Remove the two screws (A). 2. Remove the cover. 3. Pull out the connector.	
1. Remove the eight screws (A). 2. Remove the three screws (B). 3. Pull out the four connectors. 4. Remove the angle. 5. Separate the chassis body and chassis cover.	
(30V Board) 1. Remove the 30V board. (Filter/Battery Board) 1. Remove the five screws (A). 2. Remove the two screws (C). 3. Remove the screw (E) and washer (F). 4. Remove the filter/battery board.	

1. Remove the eight screws (A). 2. Remove the main board.	

7 POWER SUPPLY UNIT CIRCUIT OPERATION

The power unit supplies power to the various cards of the KX-TDA100 and KX-TDA200.

The functions of the power unit are listed below.

Function	Description
DC voltage generation function	This function generates four DC voltages (+40V, +30V, +15VPT, and +15V) from the AC power supply and supplies them to the system.
Backup batteries charge function	This function charges backup batteries connected to the power unit by using +40V output.
AC cutoff detection function	This function detects any cutoff of AC power supply and outputs an AC alarm signal to the MPR card.
DC abnormality detection function	This function detects any abnormality in the DC voltage and outputs a DC alarm signal to the MPR card.
Overheating detection function	This function detects any overheating of the power unit and shuts down the power supply in order to preserve the safety of the system.

Two kinds of power supply unit are provided as an option depending on the card structure and the terminal structure for KX-TDA100 and KX-TDA200.

Available combinations of the main unit and the power supply are as follows.

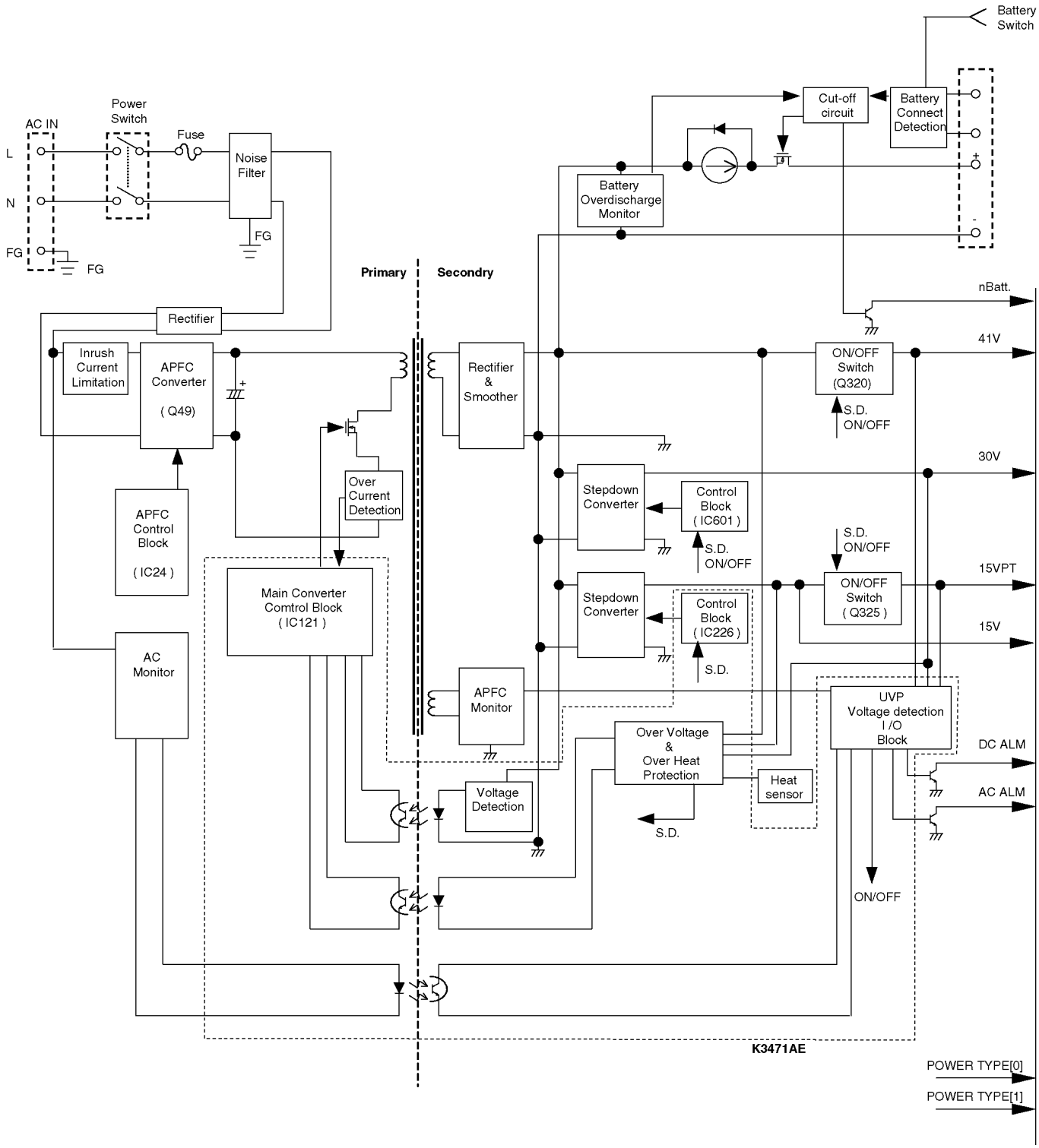
	PSU-S (KX-TDA0108XJ/X)	PSU-M (KX-TDA0104XJ/X)	PSU-L (KX-TDA0103XJ/X)
KX-TDA100	Available	Available	-
KX-TDA200	-	Available	Available

7.1. PSU-S (KX-TDA0108XJ/X)

This power supply unit consists of two boards.

PSU-S — K3461AE (Main board) — K3471AE (Sub board)

7.1.1. Block Diagram of PSU-S



7.2. CIRCUIT DESCRIPTION

7.2.1. APFC Converter

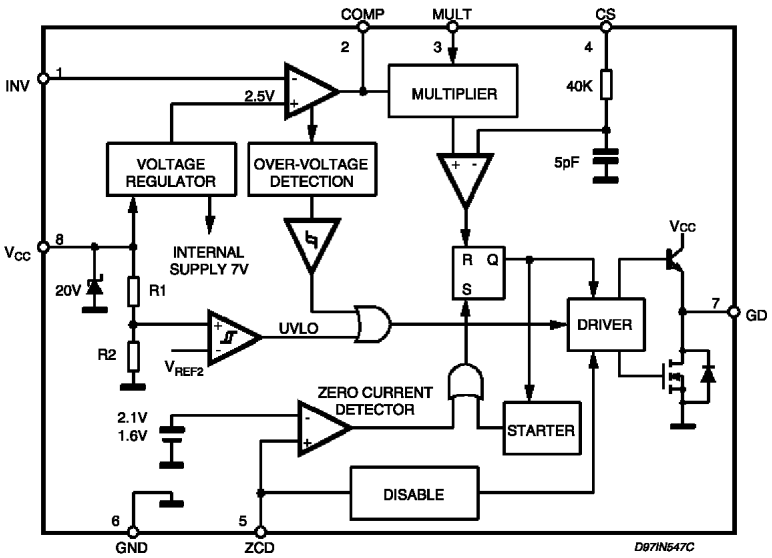
This circuit corrects the input current in order to follow the sine-wave with pressurizing the rectified AC power to about 390V.

1) PFC output voltage is detected by R34-37, R41-R44, R87, R90 and R91 and is input to 1pin of IC24.
This signal also detects over voltage.
Input current is detected by R11, R16 and is input to 4pin of IC24.
This signal also detects over current.
The followed AC sine-wave voltage is detected by R6-8, R33, R38 and R39 and is input to 3pin of IC24.
IC24 operates PWM control of Q49 with those signals in order to control of APFC output voltage and to follow the sine-wave of input current.

2) Over voltage protection
If over voltage is detected, IC24 stops its operation for protection.

3) Over current protection
Current is detected by R10, R11 and R50.
If over voltage is detected, IC24 stops its operation for protection.

4) IC24
Pin1 INV: Error amp inverting input
Pin2 COMP: Error amplifier output
Pin3 MULT: Multiplexer input
Pin4 CS: Current sense input
Pin5 ZCD: Zero current detection input
Pin6 GND: Ground
Pin7 GD: Gate drive pulse output
Pin8 Vcc: Input voltage



7.2.2. Main Converter

This circuit converts the output of APFC converter to the insulated 40V.

1) Q110 is PWM-controlled by IC121 in order to regulate the output voltage.

Secondary voltage detection is performed by R250, R251and R360, and changes in the secondary voltage with respect to the collector voltage of Q247 are isolated by photocoupler PC147 sent to IC121.

Over voltage protection operates as follows:

D433 and D434 detects the voltage.

If over voltage is detected, Q435 and Q729 send out the shutdown signal and all outputs are intercepted.

Over current protection operates as follows:

R112 detects the Q110 drain current.

If over current is detected, IC121 limited the Q110 gate pulse, thus protecting Q110.

2) IC121

Pin1 Compensation: Voltage error amplifier output

Pin2 Voltage feedback: Inverting input of error amplifier

Pin3 Current Sense: Voltage proportional inductor current

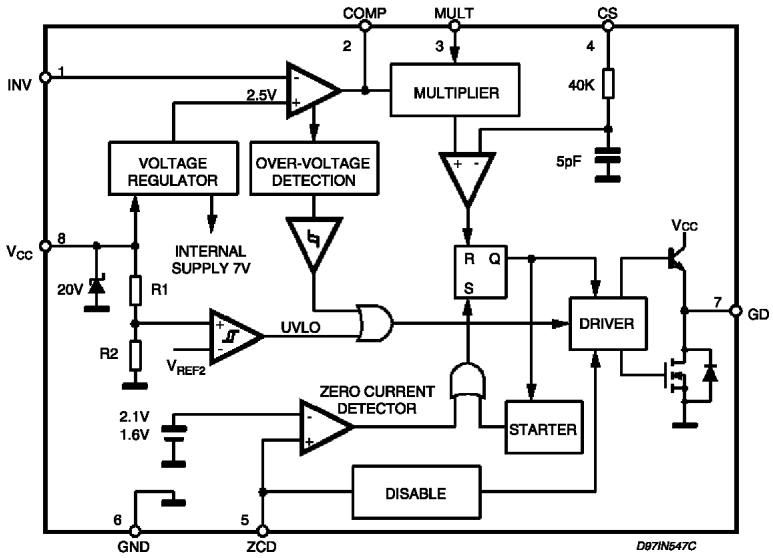
Pin4 Rt/Ct: Timing Resistor and Cap.

Pin5 Gnd: Ground

Pin6 Output: Gate pulse output

Pin7 Vcc: Input Voltage

Pin8 Vref: Reference Voltage

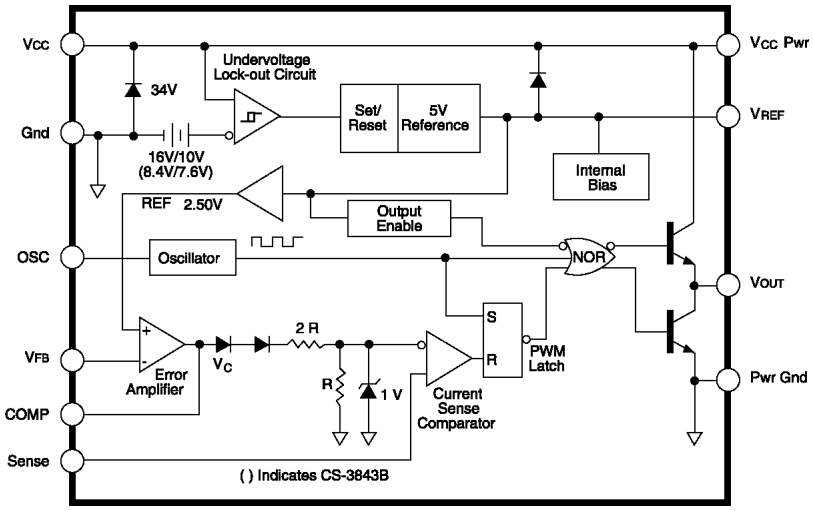


7.2.3. Stepdown Converter (40V → 30V)

This circuit converts the output of Main converter from 40V to 30V.

1) Q578 is PWM-controlled by IC601 in order to regulate the +30V output voltage.
Output voltage is detected by R610, R612 and R614 and sent to IC601.
Over voltage protection operates as follows:
D558 and R559 detects the voltage.
If over voltage is detected, Q435 and Q729 send out the shutdown signal and all outputs are intercepted.
Over current protection operates as follows:
R571 detects the Q578 drain current.
If over current is detected, IC601 limited the Q578 gate pulse, thus protecting Q578.

2) IC602
Pin1 Compensation: Voltage error amplifier output
Pin2 Voltage feedback: Inverting input of error amplifier
Pin3 Current Sense: Voltage proportional inductor current
Pin4 Rt/Ct: Timing Resistor and Cap.
Pin5 Gnd: Ground
Pin6 Output: Gate pulse output
Pin7 Vcc: Input Voltage
Pin8 Vref: Reference Voltage

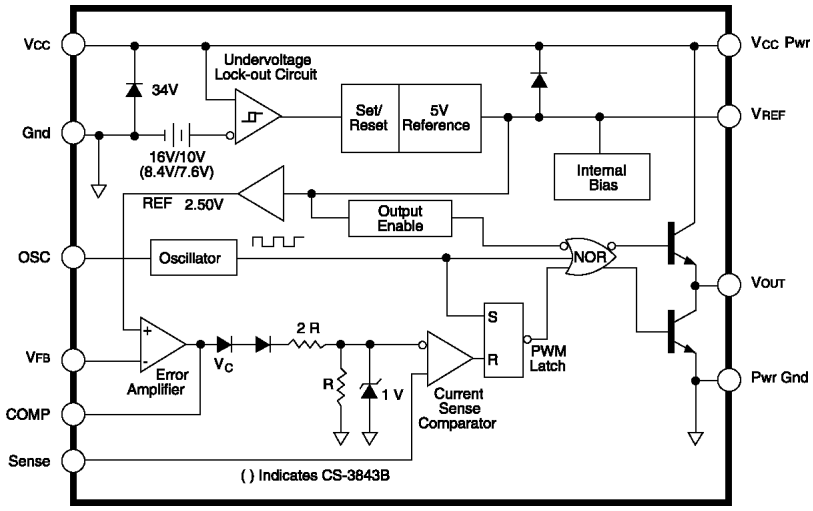


7.2.4. Stepdown Converter (40V → 15V)

This circuit converts the output of Main converter from 40V to 15V.

1) Q268 is PWM-controlled by IC226 in order to regulate the +15V output voltage.
Output voltage is detected by R283, R284, R285 and R286 and sent to IC226.
Over voltage protection operates as follows:
D430 and R437 detects the voltage.
If over voltage is detected, Q660 and Q661 send out the shutdown signal and all outputs are intercepted.
Over current protection operates as follows:
R263, R264 and R265 detects the Q268 drain current.
If over current is detected, IC226 limited the Q268 gate pulse, thus protecting Q268.

4) IC226
Pin1 Compensation: Voltage error amplifier output
Pin2 Voltage feedback: Inverting input of error amplifier
Pin3 Current Sense: Voltage proportional inductor current
Pin4 Rt/Ct: Timing Resistor and Cap.
Pin5 Gnd: Ground
Pin6 Output: Gate pulse output
Pin7 Vcc: Input Voltage
Pin8 Vref: Reference Voltage



7.2.5. 15VPT Control Circuit

This circuit controls +15VPT output voltage separated from +15V output.

Q325 is the output switch controlled by IC513 in order to separate the +15VPT output voltage from +15V output.

Over current protection operates as follows:

R510, R511 detects +15VPT output current.

If over current is detected, IC513 turn off the Q325, thus protecting Q325 and the 15V stepdown converter circuit.

7.2.6. Backup Batteries Charge Function

This function is available when the battery switch (SW2) is ON.

Q287 detects that the dedicated battery cable (KX-A228X) has connected to the battery connector, and outputs the detection signal for battery connection through Q367. This signal is transferred from 20pin of CN2 to MPR card.

When power unit operates normally by AC power, the constant current circuits of Q308 and Q311 charge the batteries.

When AC power shuts off, the power supplied from the battery through D300 generates DC output.

If any abnormalities such as the unusual dropping of voltage occur in the battery, Q303 turns OFF to separate the battery for the battery protection.

7.2.7. AC Cutoff Detection Function

AC power failure is detected by R6-R8,R32,R33,R38,R39, R185, R94,R95, D184 and Q163.

When AC power is normal, PC429 is activated and the corrector of Q404 is ground.

When AC power failure occurs, PC429 is not activated and the corrector of Q404 is open.

This signal is informed to MPR card through pin122 of CN2 as "AC ALM".

7.2.8. DC Abnormality Detection Function

DC power failure is detected by power failure detection circuit of 40V, 30V, 15V and 15VPT.

R421, R423, Q726 are for detection of +40V power failure.

R724, R725, Q728 are for detection of +30V power failure.

R413, R415, Q727 are for detection of +15VPT power failure.

R417, R418, R426, R427 are for detection of +15V power failure.

When all outputs are normal, Q426 is activated and the corrector of Q426 is ground.

If abnormalities occur in any one output, the corrector of Q426 is open.

This signal is informed to MPR card through pin22 of CN2 as "DC ALM".

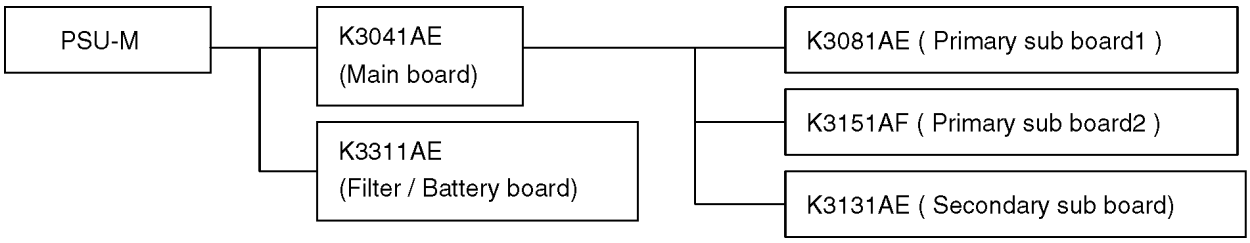
7.2.9. Overheating Detection Function

Overheating is detected in R445 mounted to the point increasing in temperature on board.

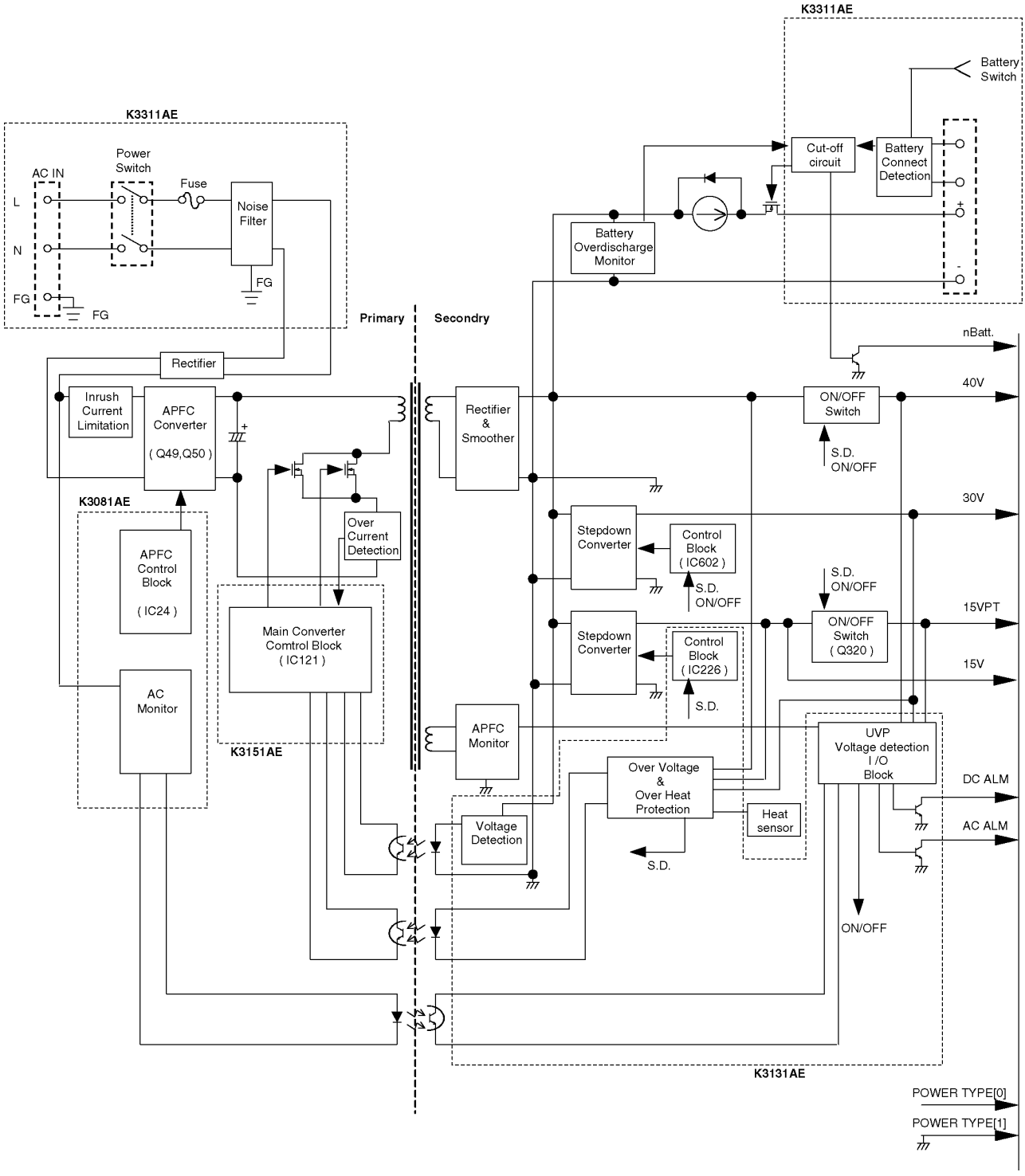
When the temperature inside of power supply goes over 70 °C (158F°), overheating is detected. Then the operation of power supply is stopped by the shut down signals, which are sent out from Q435 and Q729.

7.3. PSU-M (KX-TDA0104XJ/X)

This power supply unit consists of five boards.



7.3.1. Block Diagram of PSU-M



7.4. CIRCUIT DESCRIPTION

7.4.1. APFC Converter

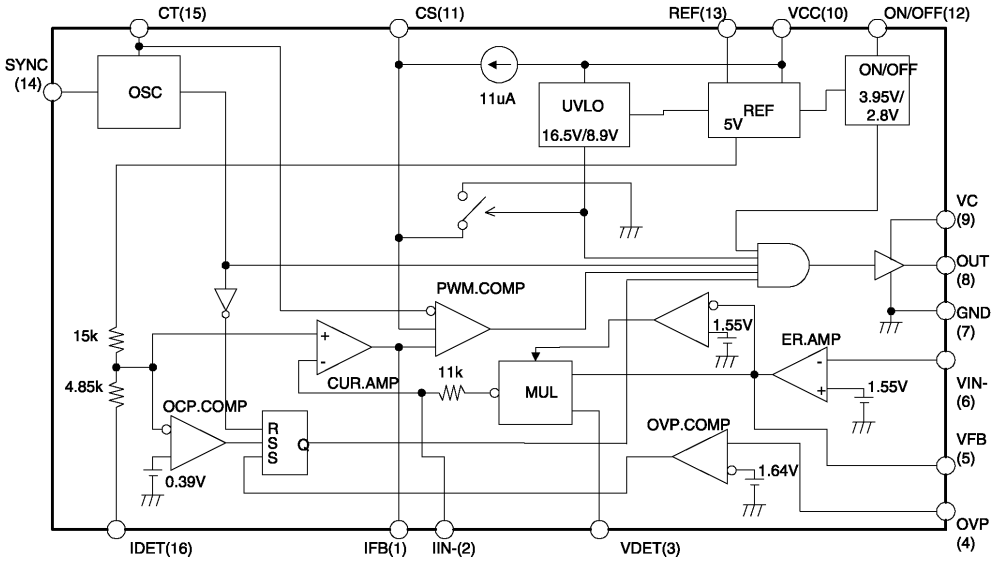
This circuit corrects the input current in order to follow the sine-wave with pressurizing the rectified AC power to about 405V.

1) PFC output voltage is detected by R34, R35, R36, R49, R37, R91 and R90 and is input to 6pin of IC24.
Input current is detected by R10, R11, and R50 and is input to 16pin of IC24.
The followed AC sine-wave voltage is detected by R6, R7, R8, and R9 and is input to 3pin of IC24.
IC24 operates PWM control of Q49, Q50 with those signals in order to control of APFC output voltage and to follow the sine-wave of input current.

2) Over voltage protection
Voltage is detected by R38, R39, R49 and R43.
If over voltage is detected, IC24 stops its operation for protection.

3) Over current protection
Current is detected by R10, R11 and R50.
If over voltage is detected, IC24 stops its operation for protection.

4) IC24
Pin1 IFB: Current error amp output
Pin2 IIN-: Current error amp -input
Pin3 VDET: Multiplexer input
Pin4 OVP: Over Voltage Protection
Pin5 VFB: Voltage error amp output
Pin6 VIN-: Voltage error amp -input
Pin7 GND: Ground
Pin8 OUT: Gate pulse output
Pin9 VC: The collector side of the output transistor
Pin10 VCC: Input Voltage
Pin11 CS: Soft start Cap.
Pin12 ON/OFF: ON/OFF
Pin13 REF: Reference Voltage output
Pin14 SYNC: Synchronous input
Pin15 CT: Timing Resistor/ Capacitor
Pin16 IDET: Current error amp +input



7.4.2. Main Converter

This circuit converts the output of APFC converter to the insulated 40V.

1) Q110, Q111 are PWM-controlled by IC121 in order to regulate the output voltage.

Secondary voltage detection is performed by R243, R251and R360, and changes in the secondary voltage with respect to the collector voltage of Q247 are isolated by photocoupler PC147 sent to IC121.

Over voltage protection operates as follows:

D433 and D434 detects the voltage.

If over voltage is detected, Q660 and Q661 send out the shutdown signal and all outputs are intercepted.

Over current protection operates as follows:

R112 and R113 detects the Q110 and Q111 drain current.

If over current is detected, IC121 limited the Q1 gate pulse, thus protecting Q110 and Q111.

2) IC121

Pin1 Compensation: Voltage error amplifier output

Pin2 Voltage feedback: Inverting input of error amplifier

Pin3 Current Sense: Voltage proportional inductor current

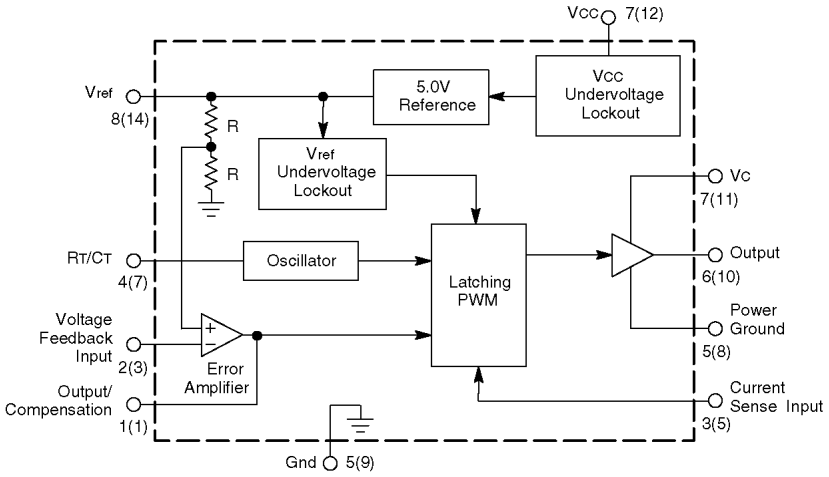
Pin4 Rt/Ct: Timing Resistor and Cap.

Pin5 Gnd: Ground

Pin6 Output: Gate pulse output

Pin7 Vcc: Input Voltage

Pin8 Vref: Reference Voltage

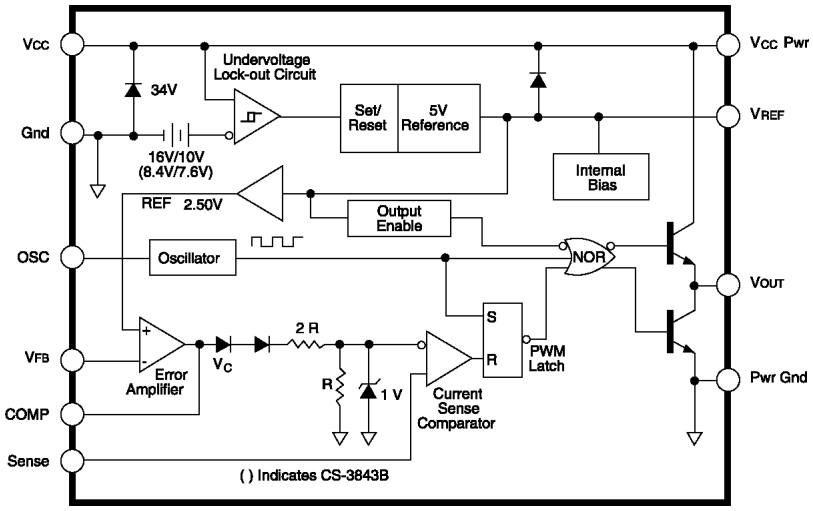


7.4.3. Stepdown Converter (40V → 30V)

This circuit converts the output of Main converter from 40V to 30V.

1) Q578 is PWM-controlled by IC602 in order to regulate the +30V output voltage.
Output voltage is detected by R610, R612 and R614 and sent to IC602.
Over voltage protection operates as follows:
D558 and R559 detects the voltage.
If over voltage is detected, Q660 and Q661 send out the shutdown signal and all outputs are intercepted.
Over current protection operates as follows:
R571 and R572 detects the Q578 drain current.
If over current is detected, IC602 limited the Q578 gate pulse, thus protecting Q578.

2) IC602
Pin1 Compensation: Voltage error amplifier output
Pin2 Voltage feedback: Inverting input of error amplifier
Pin3 Current Sense: Voltage proportional inductor current
Pin4 Rt/Ct: Timing Resistor and Cap.
Pin5 Gnd: Ground
Pin6 Output: Gate pulse output
Pin7 Vcc: Input Voltage
Pin8 Vref: Reference Voltage

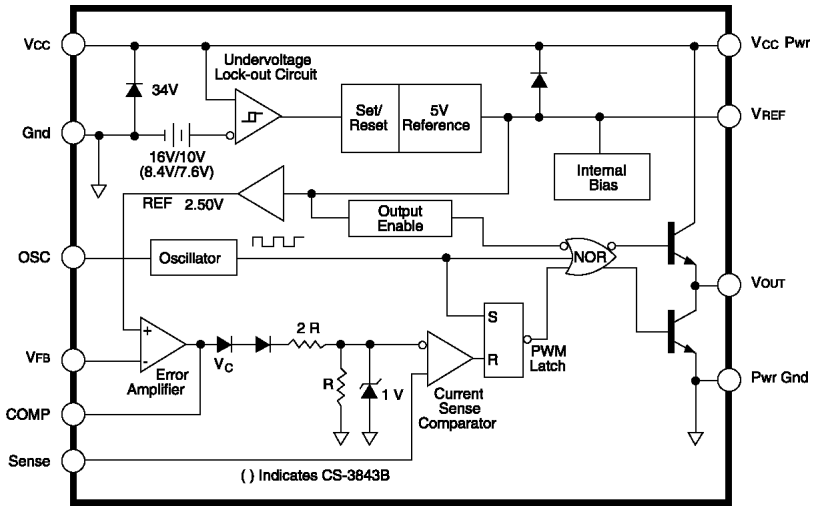


7.4.4. Stepdown Converter (40V → 15V)

This circuit converts the output of Main converter from 40V to 15V.

1) Q268 is PWM-controlled by IC226 in order to regulate the +15V output voltage.
Output voltage is detected by R283, R284, R285 and R286 and sent to IC226.
Over voltage protection operates as follows:
D430 and R437 detects the voltage.
If over voltage is detected, Q660 and Q661 send out the shutdown signal and all outputs are intercepted.
Over current protection operates as follows:
R263, R264 and R265 detects the Q268 drain current.
If overturned is detected, IC226 limited the Q268 gate pulse, thus protecting Q268.

2) IC226
Pin1 Compensation: Voltage error amplifier output
Pin2 Voltage feedback: Inverting input of error amplifier
Pin3 Current Sense: Voltage proportional inductor current
Pin4 Rt/Ct: Timing Resistor and Cap.
Pin5 Gnd: Ground
Pin6 Output: Gate pulse output
Pin7 Vcc: Input Voltage
Pin8 Vref: Reference Voltage



7.4.5. 15VPT Control Circuit

This circuit controls +15VPT output voltage separated from +15V output.

Q325 is the output switch controlled by IC513 in order to separate the +15VPT output voltage from +15V output.

Over current protection operates as follows:

R510, R511 and R512 detects +15VPT output current.

If over current is detected, IC513 turn off the Q325, thus protecting Q325 and the 15V stepdown converter circuit.

7.4.6. Backup Batteries Charge Function

This function is available when the battery switch (SW2) is ON.

Q287 detects that the dedicated battery cable (KX-A228X) has connected to the battery connector, and outputs the detection signal for battery connection through Q367. This signal is transferred from 20pin of CN2 to MPR card.

When power unit operates normally by AC power, the constant current circuits of Q308 and Q311 charge the batteries.

When AC power shuts off, the power supplied from the battery through D300 generates DC output.

If any abnormalities such as the unusual dropping of voltage occur in the battery, Q303 turns OFF to separate the battery for the battery protection.

7.4.7. AC Cutoff Detection Function

AC power failure is detected by R180-R182, R93-R95, D184 and Q163.

When AC power is normal, PC429 is activated and the corrector of Q404 is ground.

When AC power failure occurs, PC429 is not activated and the corrector of Q404 is open.

This signal is informed to MPR card through pin122 of CN2 as "AC ALM".

7.4.8. DC Abnormality Detection Function

DC power failure is detected by power failure detection circuit of 40V, 30V, 15V and 15VPT.

R421, R423, Q646 are for detection of +40V power failure.

R641, R642, Q648 are for detection of +30V power failure.

R413, R415, Q647 are for detection of +15VPT power failure.

R417, R418, R426, R427 are for detection of +15V power failure.

When all outputs are normal, Q426 is activated and the corrector of Q426 is ground.

If abnormalities occur in any one output, the corrector of Q426 is open.

This signal is informed to MPR card through pin22 of CN2 as "DC ALM".

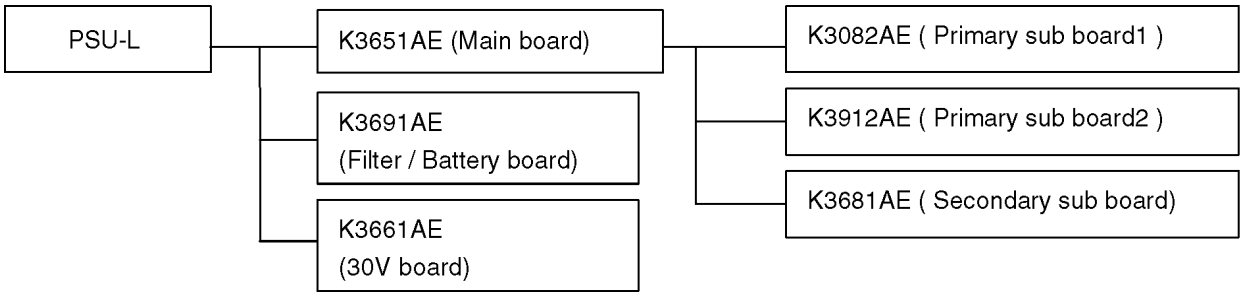
7.4.9. Overheating Detection Function

Overheating is detected in R445 and R682 mounted to the point increasing in temperature on board.

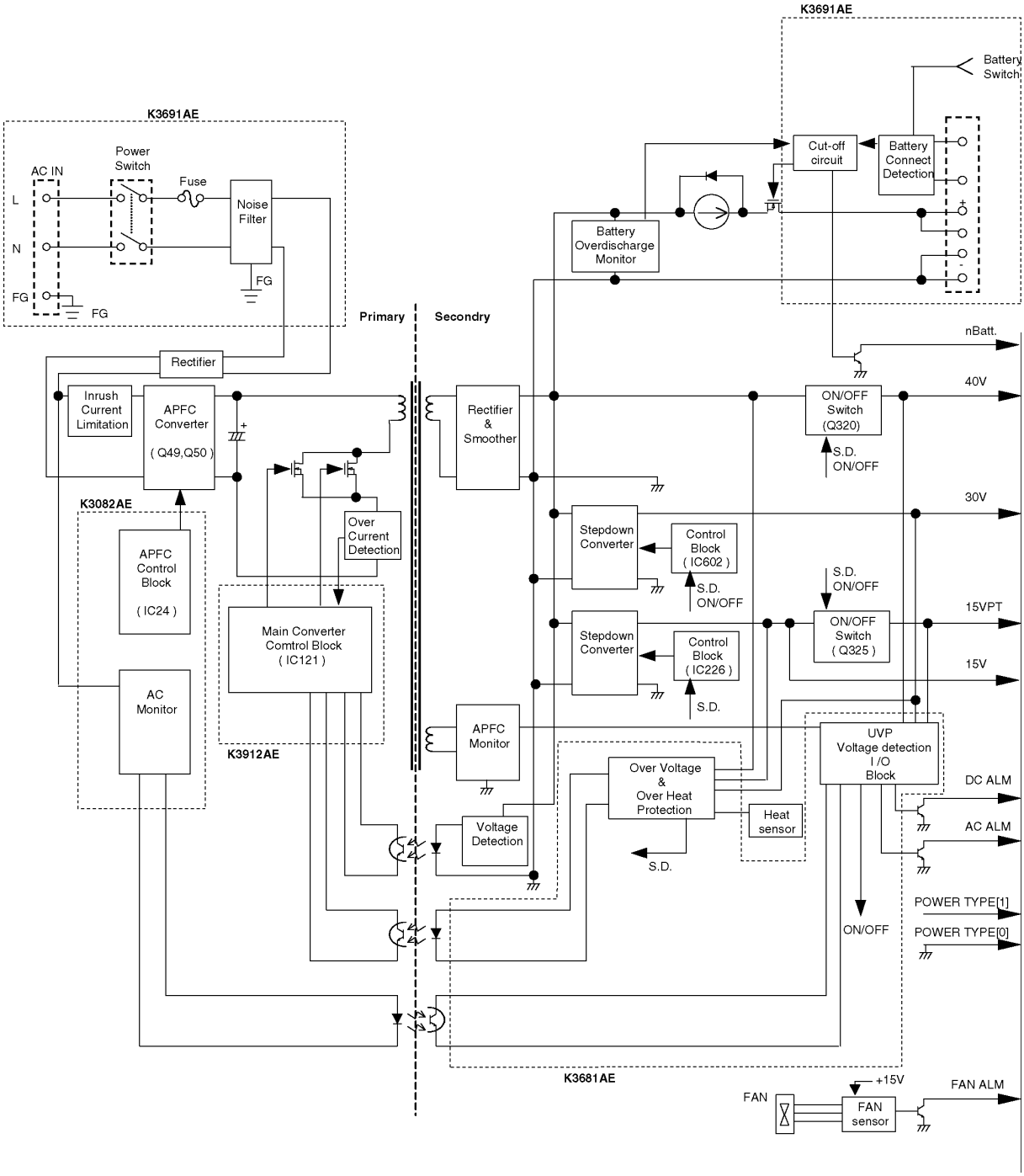
When the temperature inside of power supply goes over 100 °C (212F°), overheating is detected. Then the operation of power supply is stopped by the shut down signals, which are sent out from Q435 and Q729.

7.5. PSU-L (KX-TDA0103XJ/X)

This power supply unit consists of five boards.



7.5.1. Block Diagram of PSU-L



7.6. CIRCUIT DESCRIPTION

7.6.1. APFC Converter

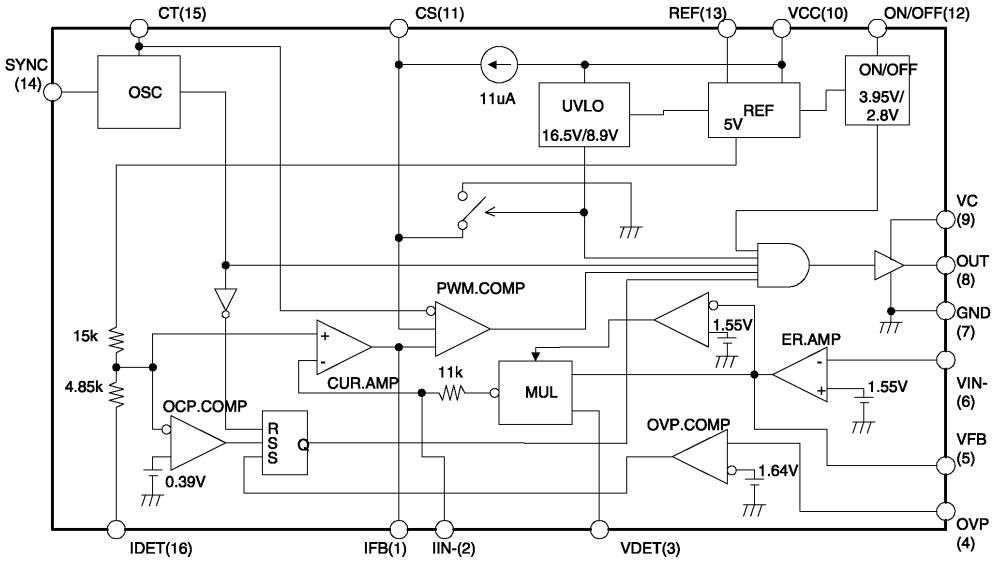
This circuit corrects the input current in order to follow the sine-wave with pressurizing the rectified AC power to about 400V.

1) PFC output voltage is detected by R34~R37, R90 and R91 and is input to 6pin of IC24.
Input current is detected by R10, R11, R49, R50, R52 and R56 and is input to 16pin of IC24.
The followed AC sine-wave voltage is detected by R6~R8 and R9 and is input to 3pin of IC24.
IC24 operates PWM control of Q49 and Q50 with those signals in order to control of APFC output voltage and to follow the sine-wave of input current.

2) Over voltage protection
Voltage is detected by R38~R40 and R43
If over voltage is detected, IC24 stops its operation for protection.

3) Over current protection
Current is detected by R10, R11, R49, R50, R52 and R56.
If over voltage is detected, IC24 stops its operation for protection.

4) IC24
Pin1 IFB: Current error amp output
Pin2 IIN-: Current error amp -input
Pin3 VDET: Multiplexer input
Pin4 OVP: Over Voltage Protection
Pin5 VFB: Voltage error amp output
Pin6 VIN-: Voltage error amp -input
Pin7 GND: Ground
Pin8 OUT: Gate pulse output
Pin9 VC: The collector side of the output transistor
Pin10 VCC: Input Voltage
Pin11 CS: Soft start Cap.
Pin12 ON/OFF: ON/OFF
Pin13 REF: Reference Voltage output
Pin14 SYNC: Synchronous input
Pin15 CT: Timing Resistor/Capacitor
Pin16 IDET: Current error amp +input



7.6.2. Main Converter

This circuit converts the output of APFC converter to the insulated 40V.

1) Q110 is PWM-controlled by IC121 in order to regulate the output voltage.

Secondary voltage detection is performed by R250, R251and R360, and changes in the secondary voltage with respect to the collector voltage of Q247 are isolated by photocoupler PC147 sent to IC121.

over voltage protection operates as follows:

D433 and D434 detects the voltage.

If over voltage is detected, Q435 and Q729 send out the shutdown signal and all outputs are intercepted.

Over current protection operates as follows:

R112 detects the Q110 drain current.

If over current is detected, IC121 limited the Q110 gate pulse, thus protecting Q110.

2) IC121

Pin1 Compensation: Voltage error amplifier output

Pin2 Voltage feedback: Inverting input of error amplifier

Pin3 Current Sense: Voltage proportional inductor current

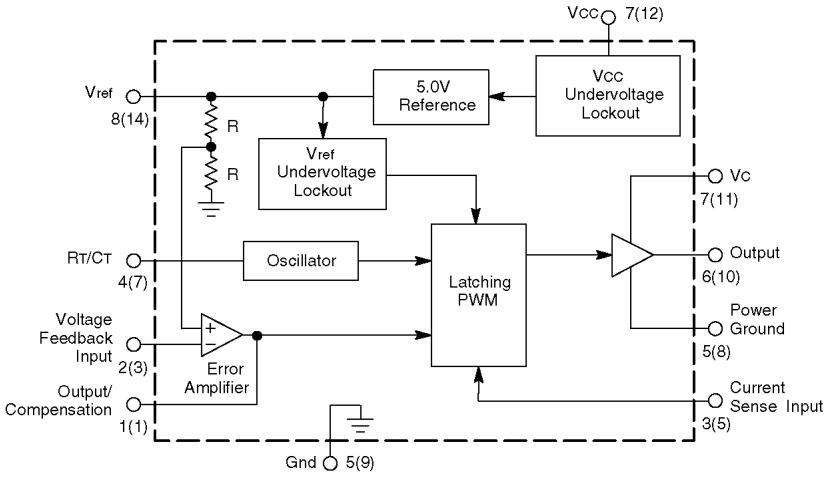
Pin4 Rt/Ct: Timing Resistor and Cap.

Pin5 Gnd: Ground

Pin6 Output: Gate pulse output

Pin7 Vcc: Input Voltage

Pin8 Vref: Reference Voltage

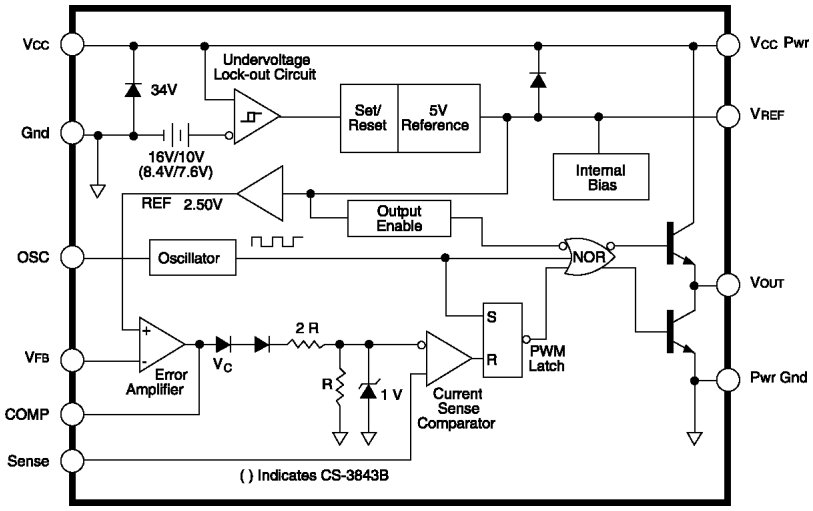


7.6.3. Stepdown Converter (40V → 30V)

This circuit converts the output of Main converter from 40V to 30V.

1) Q578 is PWM-controlled by IC601 in order to regulate the +30V output voltage.
Output voltage is detected by R610, R612 and R614 and sent to IC601.
Over voltage protection operates as follows:
D558 and R559 detects the voltage.
If over voltage is detected, Q435 and Q729 send out the shutdown signal and all outputs are intercepted.
Over current protection operates as follows:
R571 detects the Q578 drain current.
If over current is detected, IC601 limited the Q578 gate pulse, thus protecting Q578.

2) IC602
Pin1 Compensation: Voltage error amplifier output
Pin2 Voltage feedback: Inverting input of error amplifier
Pin3 Current Sense: Voltage proportional inductor current
Pin4 Rt/Ct: Timing Resistor and Cap.
Pin5 Gnd: Ground
Pin6 Output: Gate pulse output
Pin7 Vcc: Input Voltage
Pin8 Vref: Reference Voltage

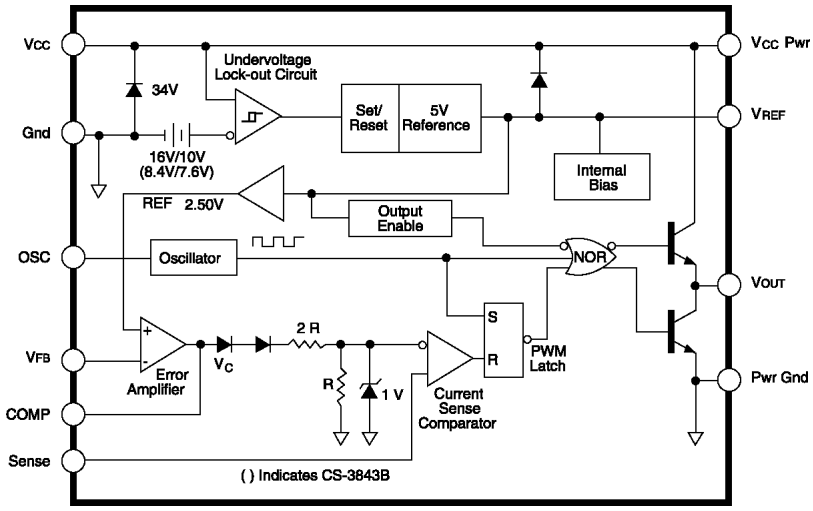


7.6.4. Stepdown Converter (40V → 15V)

This circuit converts the output of Main converter from 40V to 15V.

1) Q268 is PWM-controlled by IC226 in order to regulate the +15V output voltage.
Output voltage is detected by R283, R284, R285 and R286 and sent to IC226.
Over voltage protection operates as follows:
D430 and R437 detects the voltage.
If over voltage is detected, Q660 and Q661 send out the shutdown signal and all outputs are intercepted.
Over current protection operates as follows:
R263, R264 and R265 detects the Q268 drain current.
If over current is detected, IC226 limited the Q268 gate pulse, thus protecting Q268.

2) IC226
Pin1 Compensation: Voltage error amplifier output
Pin2 Voltage feedback: Inverting input of error amplifier
Pin3 Current Sense: Voltage proportional inductor current
Pin4 Rt/Ct: Timing Resistor and Cap.
Pin5 Gnd: Ground
Pin6 Output: Gate pulse output
Pin7 Vcc: Input Voltage
Pin8 Vref: Reference Voltage



7.6.5. 15VPT Control Circuit

This circuit controls +15VPT output voltage separated from +15V output.

Q325 is the output switch controlled by IC513 in order to separate the +15VPT output voltage from +15V output.

Over current protection operates as follows:

R510, R511 detects +15VPT output current.

If over current is detected, IC513 turn off the Q325, thus protecting Q325 and the 15V stepdown converter circuit.

7.6.6. Backup Batteries Charge Function

This function is available when the battery switch (SW2) is ON.

Q287 detects that the dedicated battery cable (KX-A228X) has connected to the battery connector, and outputs the detection signal for battery connection through Q367. This signal is transferred from 20pin of CN2 to MPR card.

When power unit operates normally by AC power, the constant current circuits of Q308 and Q311 charge the batteries.

When AC power shuts off, the power supplied from the battery through D300 generates DC output.

If any abnormalities such as the unusual dropping of voltage occur in the battery, Q303 turns OFF to separate the battery for the battery protection.

7.6.7. AC Cutoff Detection Function

AC power failure is detected by R180~R182, R93~R95, D184 and Q163.

When AC power is normal, PC429 is activated and the corrector of Q404 is ground.

When AC power failure occurs, PC429 is not activated and the corrector of Q404 is open.

This signal is informed to MPR card through pin122 of CN2 as "AC ALM".

7.6.8. DC Abnormality Detection Function

DC power failure is detected by power failure detection circuit of 40V, 30V, 15V and 15VPT.

R421, R423, Q726 are for detection of +40V power failure.

R724, R725, Q728 are for detection of +30V power failure.

R413, R415, Q727 are for detection of +15VPT power failure.

R417, R418, R426, R427 are for detection of +15V power failure.

When all outputs are normal, Q426 is activated and the corrector of Q426 is ground.

If abnormalities occur in any one output, the corrector of Q426 is open.

This signal is informed to MPR card through pin22 of CN2 as "DC ALM".

7.6.9. Overheating Detection Function

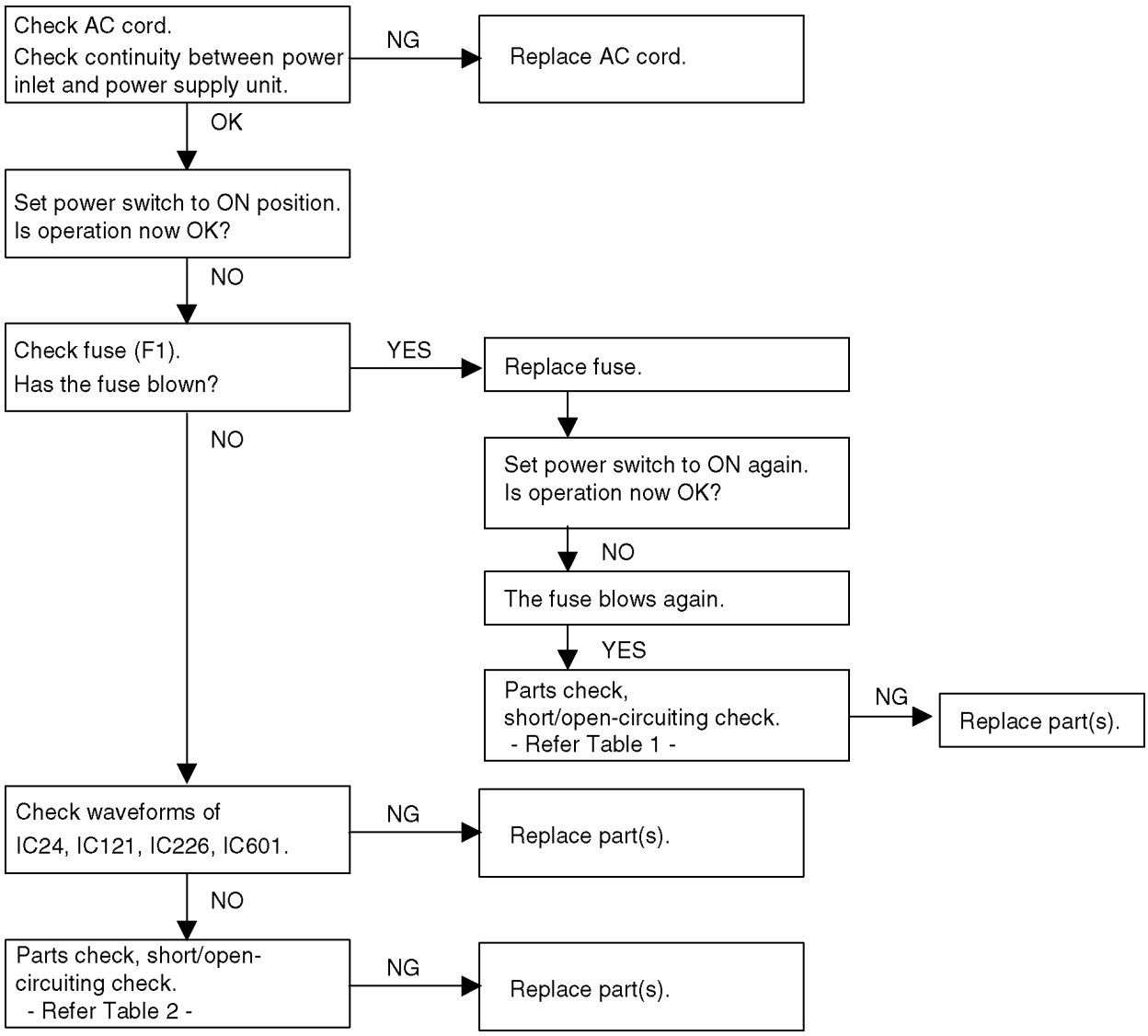
Overheating is detected in R150, R445 and R672 mounted to the point increasing in temperature on board.

When the temperature inside of power supply goes over 90~100 °C (194~212F°), overheating is detected. Then the operation of power supply is stopped by the shut down signals, which are sent out from Q660 and Q661.

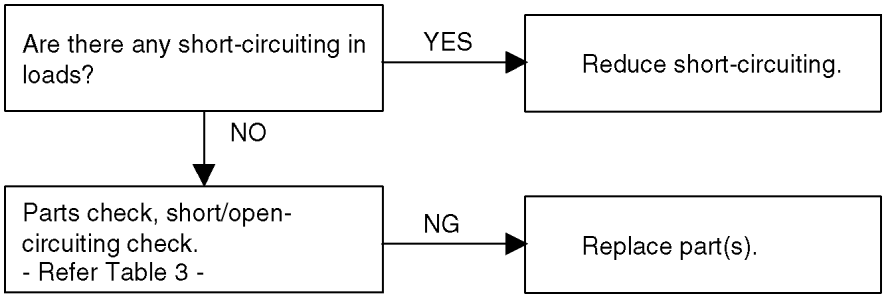
8 TROUBLESHOOTING GUIDE

8.1. KX-TDA0108XJ/X POWER UNIT TROUBLE SHOOTING

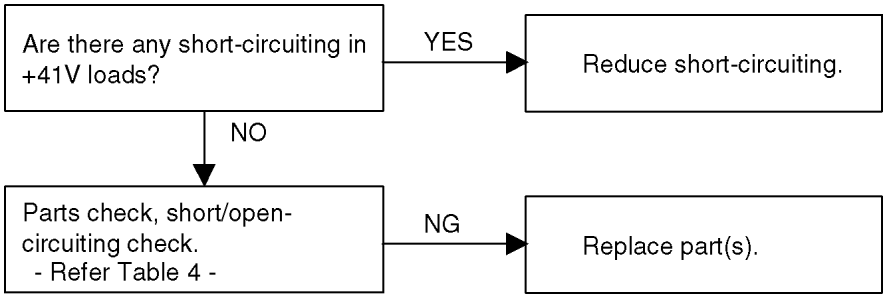
8.1.1. No Voltages are Output at All



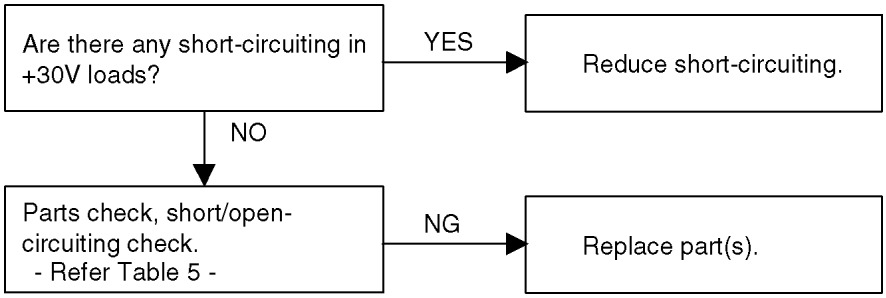
8.1.2. +41V, +30V, +15VPT are Not Output (Only +15V is Output)



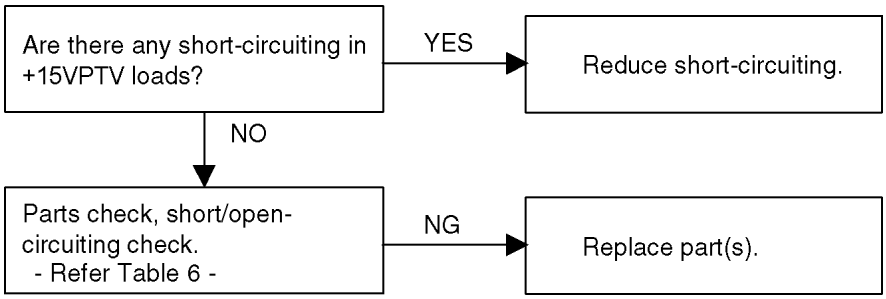
8.1.3. Only +41V is Not Output



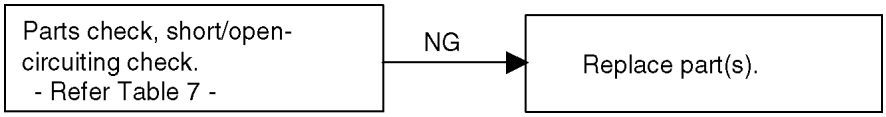
8.1.4. Only +30V is Not Output



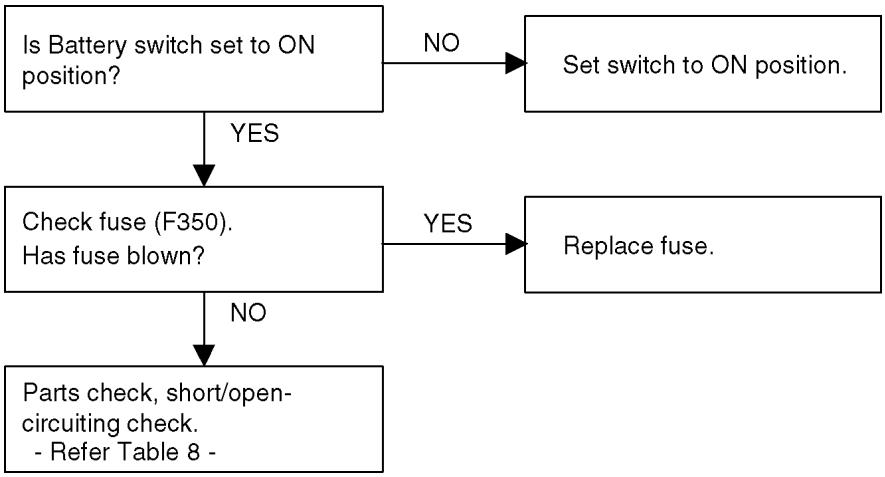
8.1.5. Only +15VPT is Not Output



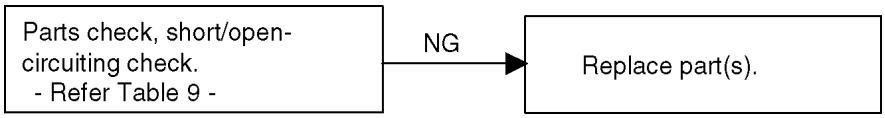
8.1.6. Only +41V is Available (Other Voltage are Not Output)



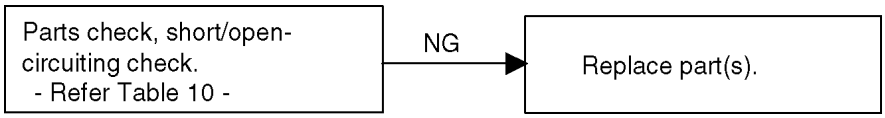
8.1.7. Battery Backup Function does Not Operate / PSU can Not Charge Batteries



8.1.8. AC Alarm is Sent (Although AC Power is Normal)



8.1.9. DC Alarm is Sent (Although All DC Output are Normal)



8.1.10. Table 1

Remark	Defective mode short/open	Check point				The parts which have the possibility of failure simultaneously					
D8		+ - ~	- - ~	+ - -							
D9		A-C				Q49	IC24				
D10		A-C				D11					
D11		A-C				D10					
D53	open/short	A-C				Q49	IC24				
D60		A-C									
D201	open	1-2	3-2			Q110	R106	R112	D88	D115	IC121
Q49		D-S	D-G			IC24	R22				
Q110		D-S	D-G			D88	D115	IC121	R106	R112	R114
R11						Q49	IC24	D8	R16	R22	
R12	open					Q49	D8	R11	R16		
R14	open					Q49	D8	R11	R16		
R16						Q49	IC24	D8	R11	R22	
R37						Q49	D8	R9	R11	R16	
R106	open					Q110	D115	D88	IC121	R106	R102
R112						Q110	D115	D88	IC121	R106	R102

A : Anode
C : Cathode
D : Drain
S : Source
G : Gate
+, -, ~, 1, 2, 3, 4

Corresponding terminal is the thing of refer to the schematic diagram.

8.1.11. Table 2

Remark	Defective mode short/open	Check point				The parts which have the possibility of failure simultaneously					
D10	open	A-C									
D11	open	A-C									
D75	open	A-C									
D77	short	A-C									
D82	open	A-C									
D88	open	A-C									
D132	open/short	A-C				R131					
D184	open	A-C									
D201	short	1-2	3-2								
D222	short	A-C									
D245	open/short	A-C				F350					
D257	open	A-C									
D260	open/short	1-2	3-2	1/2		Q268	IC601				
D432	short	A-C									
D433	short	A-C									
D434	short	A-C									
D558	short	A-C									
D582	short	A-C									
D583	open/short	1-2	3-2	1/2		Q578					
D591	short	A-C									
PC145	open/short	1-2	1/2/3/4								
PC147	short	3-4									
Q70	open/short	C-E	C-B	B-E							
Q110	open	D/S/G									
Q139	short	C-E	C-B								
Q141	short	C-E	C-B								
Q149	short	C-E	C-B								
Q163	open/short	B-E	C/B/E								
Q167	open/short	B-E	C/B/E								
Q170	open/short	B-E	C/B/E								
Q172	open/short	B-E	C/B/E								
Q193	short	C-E	C-B								
Q247	open/short	B-E	C/B/E								
Q255	open/short	B-E	C/B/E								
Q268	short	D-S	D-G								
Q435	short	C-E	C-B								
Q450	open/short	B-E	C/B/E								
Q578	short	D-S	D-G								
Q591	short	C-E	C-B								
Q600	open	C/E/B									
Q729	short	C-E	C-B								
R6, R7, R8	open										
R9	open					R1					
R10	short										
R14	short					IC24					
R22	open										
R23	short										
R37	open										
R73	short										
R74	open/short										
R78	short										
R94	short										
R95	short										
R106	open										
R110	short										
R112	open										
R114	open										
R116	open										
R122	open/short										
R151	open										
R153	short										
R163	open										
R164	short										

Remark	Defective mode short/open	Check point				The parts which have the possibility of failure simultaneously					
R165	open										
R168	open										
R169	open/short										
R170	short										
R171	short										
R185	short										
R215	open/short										
R217	open										
R225	open										
R249	short										
R250	open/short					D245	Q247				
R251	short										
R254	short										
R255	short										
R257	short					D257	R254				
R263	short										

8.1.12. Table 3

Remark	Defective mode short/open	Check point				The parts which have the possibility of failure simultaneously					
D654	open										
Q470	open	C/E/B									
	short	B-E									
Q475	short	C-E	C-B								
Q653	short	C-E	C-B								
Q655	short	C-E	C-B								
R73	short										
R74	open/short										
R78	short										
R94	short										
R95	short										
R106	open										
R110	short										
R112	open										
R114	open										
R116	open										
R122	open/short										
R151	open										
R153	short										
R163	open										
R164	short										
R165	open										
R168	open										
R169	open/short										
R170	short										
R171	short										
R185	short										
R215	open/short										
R217	open										
R225	open										
R249	short										
R250	open/short					D245	Q247				
R251	short										
R254	short										
R255	short										
R257	short					D257	R254				
R263	short										

8.1.13. Table 4

Remark	Defective mode short/open	Check point				The parts which have the possibility of failure simultaneously					
D100	short	A-C									
D430	short										
D275	open										
D373	short										
PC145	short	3-4									
Q254	short	C-E	C-B								
Q274	open	C/E/B									
	short	B-E									
Q320	open	D/G/S									
	short	D-G	G-S								
R251	open/short										
R260	open					Q320	Q274				
R73	short										
R74	open/short										
R78	short										
R94	short										
R95	short										
R106	open										
R110	short										
R112	open										
R114	open										
R116	open										
R122	open/short										
R151	open										
R153	short										
R163	open										
R164	short										
R165	open										
R168	open										
R169	open/short										
R170	short										
R171	short										
R185	short										
R215	open/short										
R217	open										
R225	open										
R249	short										
R250	open/short					D245	Q247				
R251	short										
R254	short										
R255	short										
R257	short					D257	R254				
R263	short										

8.1.14. Table 5

Remark	Defective mode short/open	Check point				The parts which have the possibility of failure simultaneously					
D582	open										
D583	short										
D740	open										
PC145	short	3-4									
Q574	short	C-E	C-B								
Q578	open	D/S/G									
	short	G-S									
Q591	open	C/E/B									
	short	B-E									
Q600	short	C-E	C-B	B-E							
Q605	short	C-E	C-B								
R251	open/short										
IC601											
R73	short										
R74	open/short										
R78	short										
R94	short										
R95	short										
R106	open										
R110	short										
R112	open										
R114	open										
R116	open										
R122	open/short										
R151	open										
R153	short										
R163	open										
R164	short										
R165	open										
R168	open										
R169	open/short										
R170	short										
R171	short										
R185	short										
R215	open/short										
R217	open										
R225	open										
R249	short										
R250	open/short					D245	Q247				
R251	short										
R254	short										
R255	short										
R257	short					D257	R254				
R263	short										

8.1.15. Table 6

Remark	Defective mode short/open	Check point				The parts which have the possibility of failure simultaneously					
D530	open										
D553	open					IC513					
	short										
Q325	open										
	short	D-G									
		G-S									
Q328	short	C-E	C-B								
Q466	open	C/E/B									
	short	B-E									
Q520	short	C-E	C-B								
Q577	short	C-E	C-B								
R228	open/short										
R73	short										
R74	open/short										
R78	short										
R94	short										
R95	short										
R106	open										
R110	short										
R112	open										
R114	open										
R116	open										
R122	open/short										
R151	open										
R153	short										
R163	open										
R164	short										
R165	open										
R168	open										
R169	open/short										
R170	short										
R171	short										
R185	short										
R215	open/short										
R217	open										
R225	open										
R249	short										
R250	open/short					D245	Q247				
R251	short										
R254	short										
R255	short										
R257	short					D257	R254				
R263	short										

8.1.16. Table 7

Remark	Defective mode short/open	Check point				The parts which have the possibility of failure simultaneously					
D286	open										
D294	open										
D300	open										
	short					F350					
F350	open										
Q287	open	C/E/B									
	short	B-E									
Q292	open	C/E/B									
	short	B-E									
Q303	open	D/G/S									
	short	G-S									
Q308	open	D/G/S									
	short	G-S									
Q311	short	C-E	C-B			R310					
Q367	open	E/B									
R73	short										
R74	open/short										
R78	short										
R94	short										
R95	short										
R106	open										
R110	short										
R112	open										
R114	open										
R116	open										
R122	open/short										
R151	open										
R153	short										
R163	open										
R164	short										
R165	open										
R168	open										
R169	open/short										
R170	short										
R171	short										
R185	short										
R215	open/short										
R217	open										
R225	open										
R249	short										
R250	open/short					D245	Q247				
R251	short										
R254	short										
R255	short										
R257	short					D257	R254				
R263	short										

8.1.17. Table 8

Remark	Defective mode short/open	Check point				The parts which have the possibility of failure simultaneously					
Q404	open	C/E/B									
	short	B-E									
R73	short										
R74	open/short										
R78	short										
R94	short										
R95	short										
R106	open										
R110	short										
R112	open										
R114	open										
R116	open										
R122	open/short										
R151	open										
R153	short										
R163	open										
R164	short										
R165	open										
R168	open										
R169	open/short										
R170	short										
R171	short										
R185	short										
R215	open/short										
R217	open										
R225	open										
R249	short										
R250	open/short					D245	Q247				
R251	short										
R254	short										
R255	short										
R257	short					D257	R254				
R263	short										

8.1.18. Table 9

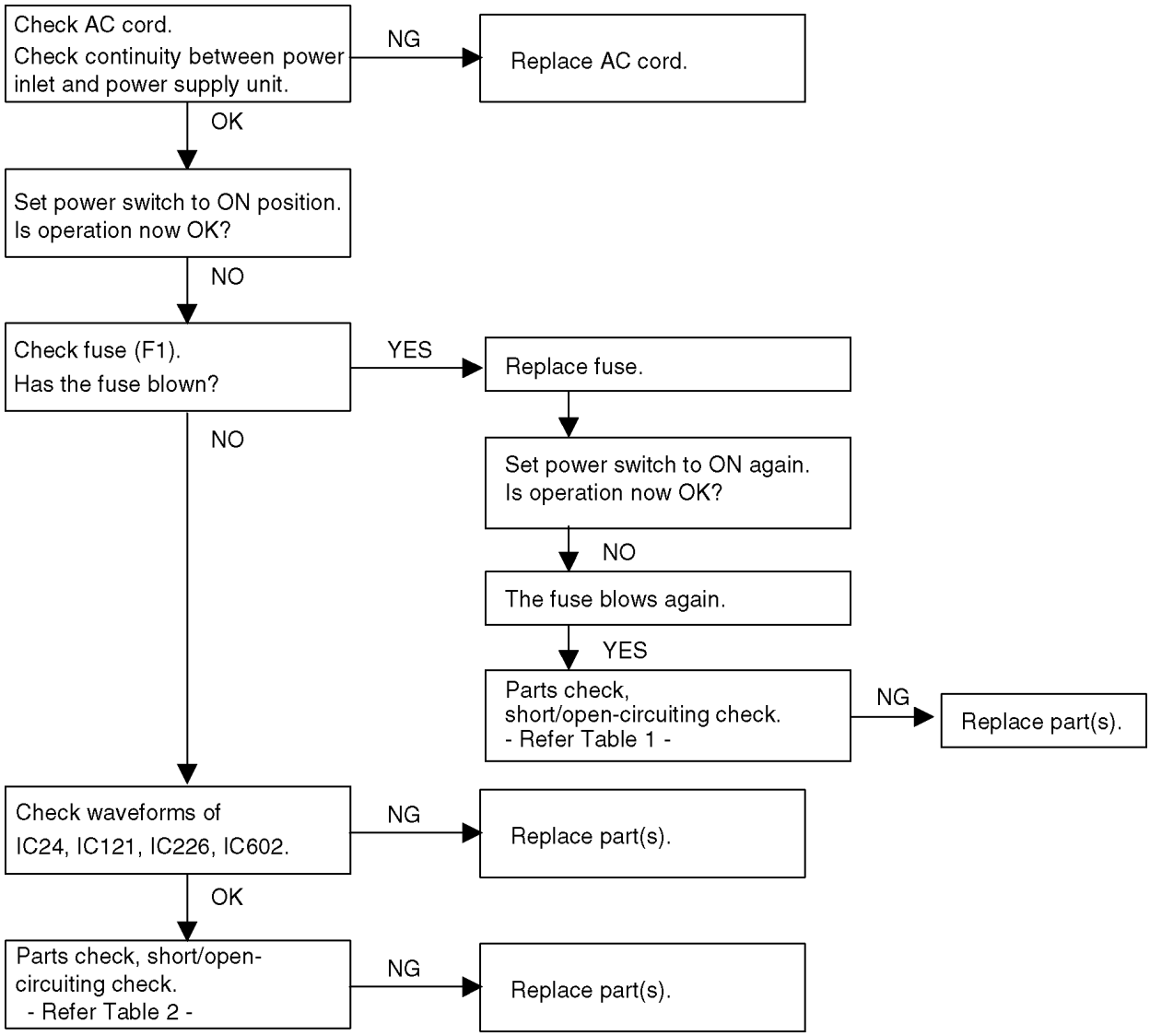
Remark	Defective mode short/open	Check point				The parts which have the possibility of failure simultaneously					
D271	open										
D407	open										
Q426	open	C/E/B									
	short	B-E									
Q720	short	C-E	C-B								
Q725	open	C/E/B									
Q726	short	C-E	C-B								
Q727	short	C-E	C-B								
Q728	short	C-E	C-B								
IC544											
R73	short										
R74	open/short										
R78	short										
R94	short										
R95	short										
R106	open										
R110	short										
R112	open										
R114	open										
R116	open										
R122	open/short										
R151	open										
R153	short										
R163	open										
R164	short										
R165	open										
R168	open										
R169	open/short										
R170	short										
R171	short										
R185	short										
R215	open/short										
R217	open										
R225	open										
R249	short										
R250	open/short					D245	Q247				
R251	short										
R254	short										
R255	short										
R257	short					D257	R254				
R263	short										

8.1.19. Table 10

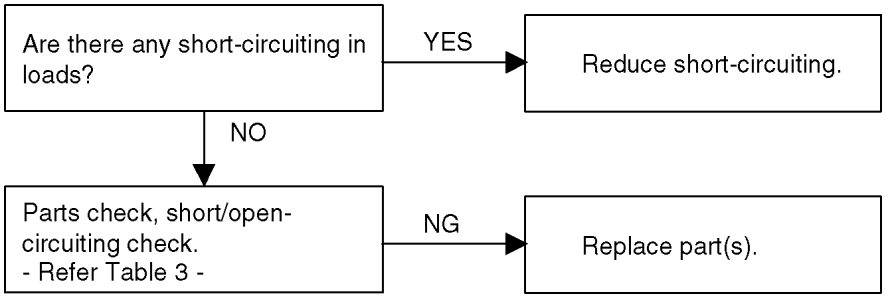
Remark	Defective mode short/open	Check point				The parts which have the possibility of failure simultaneously					
D260	open	1	2			IC601					
D281	open										
D373	short										
PC429	open/short	1-2	1/2/3/4								
Q255	short	C-E	C-B								
Q268	open	D/S/G									
	short	G-S									
Q725	short	C-B									
R210	short					IC226	C234				
R217	short										
R223	open										
R229	open/short										
R255	short										
IC226											
R73	short										
R74	open/short										
R78	short										
R94	short										
R95	short										
R106	open										
R110	short										
R112	open										
R114	open										
R116	open										
R122	open/short										
R151	open										
R153	short										
R163	open										
R164	short										
R165	open										
R168	open										
R169	open/short										
R170	short										
R171	short										
R185	short										
R215	open/short										
R217	open										
R225	open										
R249	short										
R250	open/short					D245	Q247				
R251	short										
R254	short										
R255	short										
R257	short					D257	R254				
R263	short										

8.2. KX-TDA0104XJ/X POWER UNIT TROUBLE SHOOTING

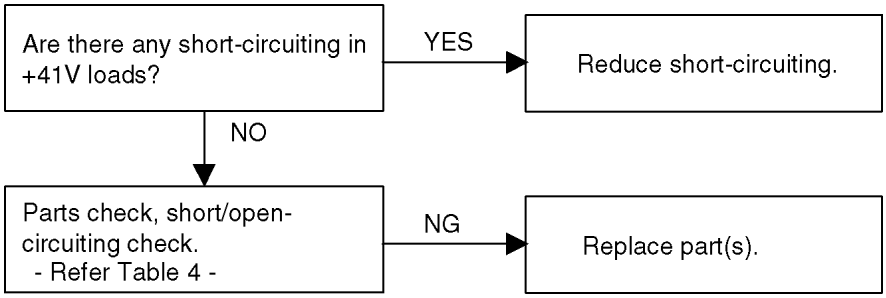
8.2.1. No Voltages are Output at All



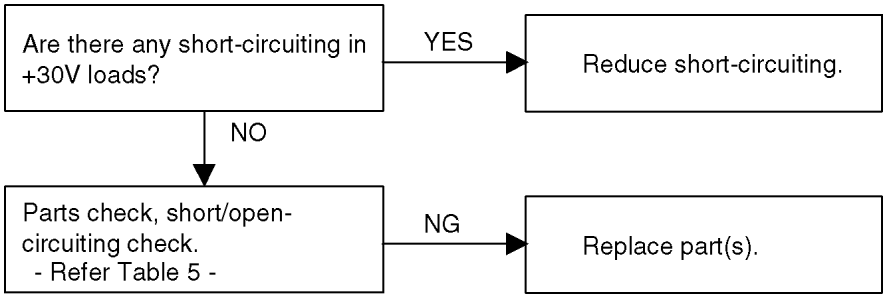
8.2.2. +41V, +30V, +15VPT are Not Output (Only +15V is Output)



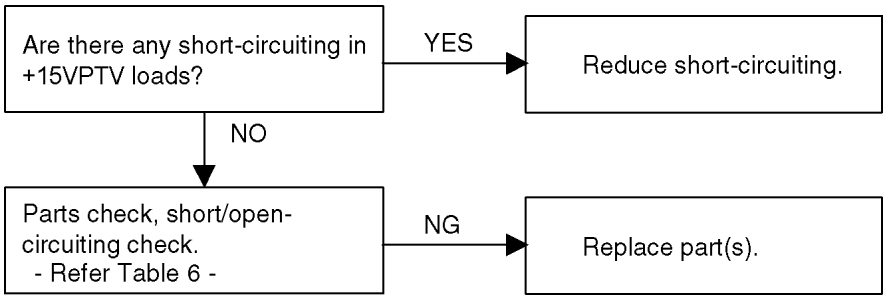
8.2.3. Only +41V is Not Output



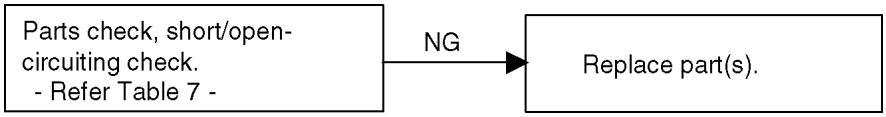
8.2.4. Only +30V is Not Output



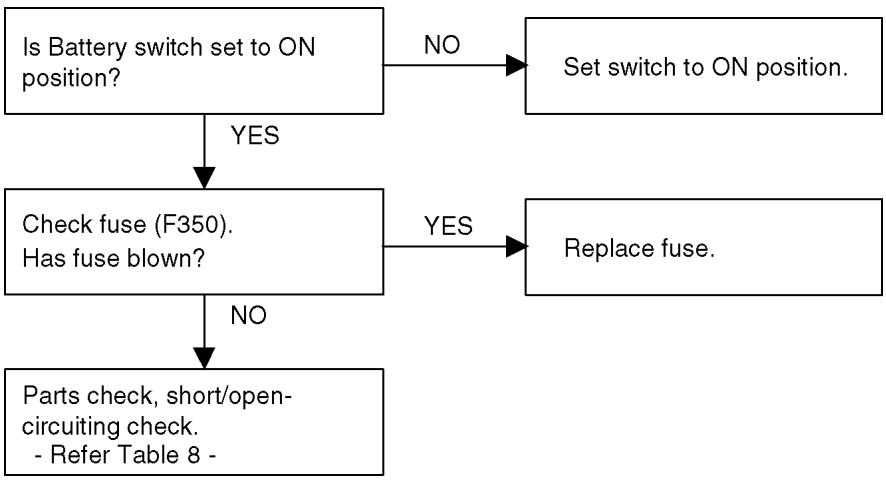
8.2.5. Only +15VPT is Not Output



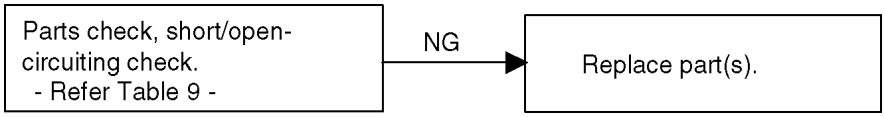
8.2.6. Only +41V is Available (Other Voltage are Not Output)



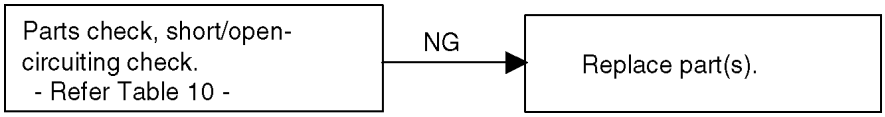
8.2.7. Battery Backup Function Does Not Operate / PSU can Not Charge Batteries



8.2.8. AC Alarm is Sent (Although AC Power is Normal)



8.2.9. DC Alarm is Sent (Although All DC Output are Normal)



8.2.10. Table 1

Remark	Defective mode short/open	Check point				The parts which have the possibility of failure simultaneously					
D8	short	+ - ~	- - ~	+ - -							
D9	short	A-C				Q49	IC24				
D14	short	A-C				D15					
D15	short	A-C				D14					
D36	short	A-C				Q49	Q50				
D53	open	A-C				Q49					
D56	short	A-K	A-G			D8					
D60	short	A-C									
Q49	short	D-S									
Q50	short	D-S									
Q51	open	C/E/B				Q49	Q50				
Q52	open	C/E/B				Q49	Q50				
R10	short					Q49	Q50				
R12	open					Q49	Q50				
R44	open					Q49					

8.2.11. Table 2

Remark	Defective mode short/open	Check point				The parts which have the possibility of failure simultaneously					
D8	open	+	-	~							
D43	short	A-C									
D47	short	A-C				R2					
D53	short	A-C				R1	R2	Q49			
D56	open	A	K	G		R2					
D57	open	A	C			IC24	IC121				
D64	open	A	C			R2					
D70	open	A	C			R2					
D77	open	A	C			R1	R2				
D88	open	A	C			R2					
D95	short	A-C				R2	D88	Q45	R20		
D100	short	A-C				R2					
D103	short	A-C				R2					
D132	short	A-C				C133					
	open	A	C								
D133	open	A	C								
D147	open	A	C								
D200	short	1-2	2-3			R2	Q151	Q111	Q110	IC121	D100
						D201	R120				
D201	short	1-2	2-3			R2	Q151	Q111	Q110	IC121	D100
						D201	R120				
D222	short	A-C									
D245	short	A-C									
	open	A-C	C								
D260	short	2-3				Q268					
D345	short	2-3				Q268					
D430	short	A-C									
D433	short	A-C									
D434	short	A-C									
D436	short	A-C									
D558	short	A-C									
D583	open	2				Q578					
D591	short	A-C									
D666	short	A-C									
PC147	short	1-2									
	open	1	2	3	4						
PC145	short	3-4									
Q44	short	B-E									
	open	C	E	B							
Q45	short	C-E	C-B	B-E		IC24	IC121				
	open	C	E	B							
Q68	short	C-E	C-B			R2					
Q69	open	C	E	B		R2					
	short	B-E				R2					
Q110	short	D-S				Q150	Q111	IC121	D100		
Q111	short	D-S				Q150	Q110	IC121	D100		
Q134	open	C	E	B							
	short	B-E									
Q135	open	C	E	B							
	short	B-E									
Q139	short	C-E	C-B								
Q141	short	C-E	C-B								
Q150	open	C	E	B		Q111	Q110	IC121	D100		
Q151	open	C	E	B		Q111	Q110	IC121	D100		
Q157	short	C-E	C-B								
Q218	open	C	E	B							
Q222	short	C-E	C-B								
Q247	short	B-E									
	open	C	E	B							
Q268	short	D-S	D-G								
Q314	open	C	E	B							
Q435	short	B-E									
	open	C	E	B							
Q567	short	B-E									

Remark	Defective mode short/open	Check point				The parts which have the possibility of failure simultaneously					
	open	C	E	B							
Q577	open	C	E	B							
Q578	short	D-S	D-G								
Q591	short	C-E	C-B								
Q600	open	C	E	B							
Q660	short	C-E	C-B								
Q661	short	C-E	C-B								

8.2.12. Table 3

Remark	Defective mode short/open	Check point				The parts which have the possibility of failure simultaneously					
D184	open	A	C								
D533	open	A	C								
D535	open	A	C								
Q163	open	C	E	B							
	short	B-E									
Q167	open	C	E	B							
	short	B-E									
Q170	open	C	E	B							
	short	B-E									
Q437	open	C	E	B							
	short	B-E									
Q475	open	C	E	B							
	short	B-E									
R73	short										
R74	open/short										
R78	short										
R94	short										
R95	short										
R106	open										
R110	short										
R112	open										
R114	open										
R116	open										
R122	open/short										
R151	open										
R153	short										
R163	open										
R164	short										
R165	open										
R168	open										
R169	open/short										
R170	short										
R171	short										
R185	short										
R215	open/short										
R217	open										
R225	open										
R249	short										
R250	open/short					D245	Q247				
R251	short										
R254	short										
R255	short										
R257	short					D257	R254				
R263	short										

8.2.13. Table 4

Remark	Defective mode short/open	Check point				The parts which have the possibility of failure simultaneously					
D326	open	A	C								
D346	short	A-C									
Q319	short	C-E	C-B								
Q320	open	D	S	G							
	short	D-G	G-S								
Q379	open	E	B								
Q483	short	C-E	C-B								
R73	short										
R74	open/short										
R78	short										
R94	short										
R95	short										
R106	open										
R110	short										
R112	open										
R114	open										
R116	open										
R122	open/short										
R151	open										
R153	short										
R163	open										
R164	short										
R165	open										
R168	open										
R169	open/short										
R170	short										
R171	short										
R185	short										
R215	open/short										
R217	open										
R225	open										
R249	short										
R250	open/short					D245	Q247				
R251	short										
R254	short										
R255	short										
R257	short					D257	R254				
R263	short										

8.2.14. Table 5

Remark	Defective mode short/open	Check point				The parts which have the possibility of failure simultaneously					
D582	open	A	C								
D583	short	1-2	2-3			Q578					
	open	2									
D615	open	A	C								
Q574	short	C-E	C-B								
Q577	short	C-E	C-B			R590					
Q578	open	D	S	G							
	short	G-S									
Q591	open	C	E	B							
	short	B-E									
Q592	short	C-E	C-B								
Q600	short	C-E	C-B	B-E							
Q640	short	C-E	C-B								
R73	short										
R74	open/short										
R78	short										
R94	short										
R95	short										
R106	open										
R110	short										
R112	open										
R114	open										
R116	open										
R122	open/short										
R151	open										
R153	short										
R163	open										
R164	short										
R165	open										
R168	open										
R169	open/short										
R170	short										
R171	short										
R185	short										
R215	open/short										
R217	open										
R225	open										
R249	short										
R250	open/short					D245	Q247				
R251	short										
R254	short										
R255	short										
R257	short					D257	R254				
R263	short										

8.2.15. Table 6

Remark	Defective mode short/open	Check point				The parts which have the possibility of failure simultaneously					
D668	open	A	C			IC513					
	short	A-C									
Q325	open	D	S	G							
	short	D-G	G-S								
Q466	short	C-E	C-B								
Q526	short	C-E	C-B								
R73	short										
R74	open/short										
R78	short										
R94	short										
R95	short										
R106	open										
R110	short										
R112	open										
R114	open										
R116	open										
R122	open/short										
R151	open										
R153	short										
R163	open										
R164	short										
R165	open										
R168	open										
R169	open/short										
R170	short										
R171	short										
R185	short										
R215	open/short										
R217	open										
R225	open										
R249	short										
R250	open/short					D245	Q247				
R251	short										
R254	short										
R255	short										
R257	short					D257	R254				
R263	short										

8.2.16. Table 7

Remark	Defective mode short/open	Check point				The parts which have the possibility of failure simultaneously					
D220	short	A-C									
D281	open	A	C								
PC429	open	1	2	3	4						
	short	1-2	3-4								
Q218	short	C-E	C-B	B-E							
Q222	open	C	E	B							
	short	B-E									
Q255	short	C-E	C-B								
Q268	open	D	S	G							
	short	G-S									
Q298	short	C-E	C-B								
Q314	short	C-E	C-B			R221					
Q645	short	C-B									
R73	short										
R74	open/short										
R78	short										
R94	short										
R95	short										
R106	open										
R110	short										
R112	open										
R114	open										
R116	open										
R122	open/short										
R151	open										
R153	short										
R163	open										
R164	short										
R165	open										
R168	open										
R169	open/short										
R170	short										
R171	short										
R185	short										
R215	open/short										
R217	open										
R225	open										
R249	short										
R250	open/short					D245	Q247				
R251	short										
R254	short										
R255	short										
R257	short					D257	R254				
R263	short										

8.2.17. Table 8

Remark	Defective mode short/open	Check point				The parts which have the possibility of failure simultaneously					
D238	open	A	C								
D286	open	A	C								
D300	open	2									
	short	1-2				F350					
D301	short	A-C									
D390	open	A	C								
Q287	open	C	E	B							
	short	B-E									
Q292	open	C	E	B							
	short	B-E									
Q303	open	D	S	G							
	short	G-S									
Q308	open	D	S	G							
	short	G-S									
Q311	short	C-E	C-B			R310					
Q367	open	E	B								
R73	short										
R74	open/short										
R78	short										
R94	short										
R95	short										
R106	open										
R110	short										
R112	open										
R114	open										
R116	open										
R122	open/short										
R151	open										
R153	short										
R163	open										
R164	short										
R165	open										
R168	open										
R169	open/short										
R170	short										
R171	short										
R185	short										
R215	open/short										
R217	open										
R225	open										
R249	short										
R250	open/short					D245	Q247				
R251	short										
R254	short										
R255	short										
R257	short					D257	R254				
R263	short										

8.2.18. Table 9

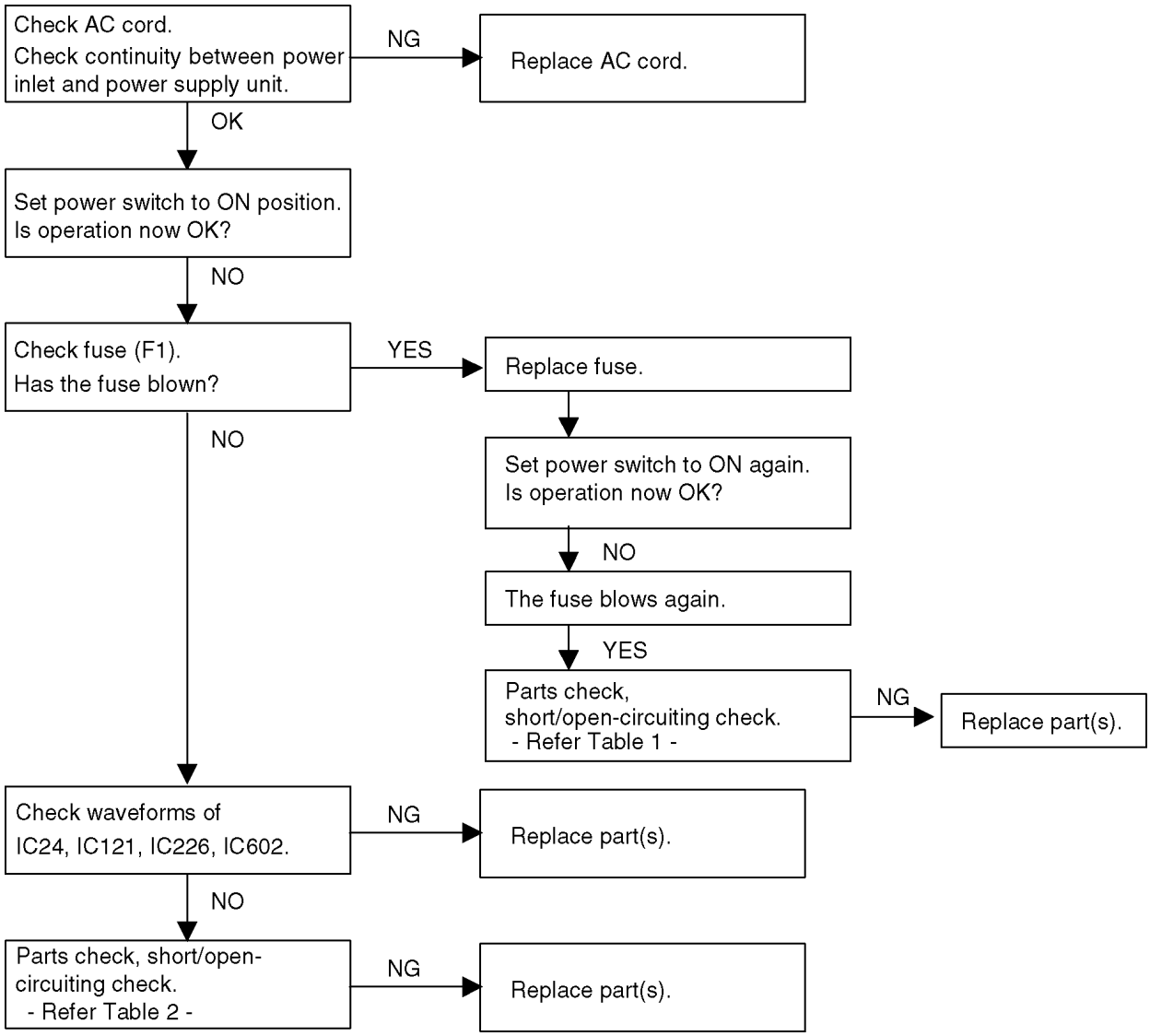
Remark	Defective mode short/open	Check point				The parts which have the possibility of failure simultaneously					
D184	open	A	C								
D535	open	A	C								
PC429	short	1-2	3-4								
	open	1	2	3	4						
Q163	open	C	E	B							
	short	B-E									
Q167	open	C	E	B							
	short	B-E									
Q170	open	C	E	B							
	short	B-E									
Q404	open	C	E	B							
	short	B-E									
Q437	open	C	E	B							
	short	B-E									
R73	short										
R74	open/short										
R78	short										
R94	short										
R95	short										
R106	open										
R110	short										
R112	open										
R114	open										
R116	open										
R122	open/short										
R151	open										
R153	short										
R163	open										
R164	short										
R165	open										
R168	open										
R169	open/short										
R170	short										
R171	short										
R185	short										
R215	open/short										
R217	open										
R225	open										
R249	short										
R250	open/short					D245	Q247				
R251	short										
R254	short										
R255	short										
R257	short					D257	R254				
R263	short										

8.2.19. Table 10

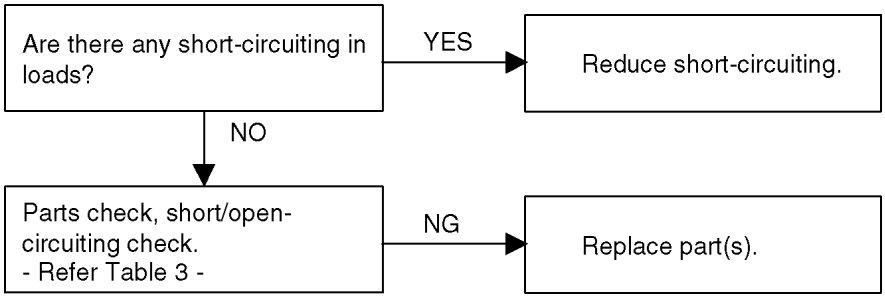
Remark	Defective mode short/open	Check point				The parts which have the possibility of failure simultaneously					
D361	open	A	C								
	short	A-C				R368					
D407	open	A	C								
Q325	short	D-G									
Q426	open	C	E	B							
	short	B-E									
Q600	short	B-E									
Q645	open	C	E	B							
Q646	short	C-E	C-B								
Q647	short	C-E	C-B								
Q648	short	C-E	C-B								
Q652	short	C-E	C-B								
Q694	short	C-E	C-B								
R73	short										
R74	open/short										
R78	short										
R94	short										
R95	short										
R106	open										
R110	short										
R112	open										
R114	open										
R116	open										
R122	open/short										
R151	open										
R153	short										
R163	open										
R164	short										
R165	open										
R168	open										
R169	open/short										
R170	short										
R171	short										
R185	short										
R215	open/short										
R217	open										
R225	open										
R249	short										
R250	open/short					D245	Q247				
R251	short										
R254	short										
R255	short										
R257	short					D257	R254				
R263	short										

8.3. KX-TDA0103XJ/X POWER UNIT TROUBLE SHOOTING

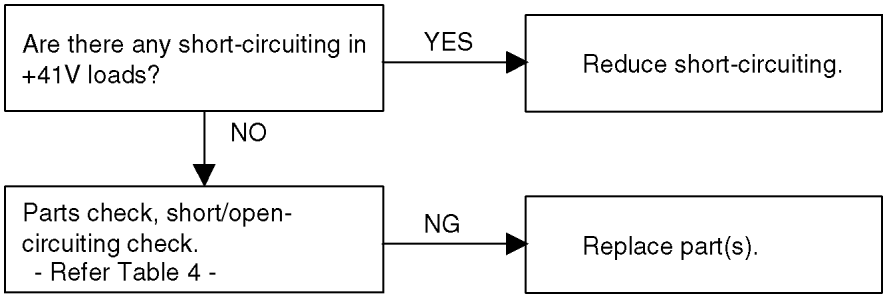
8.3.1. No Voltages are Output at All



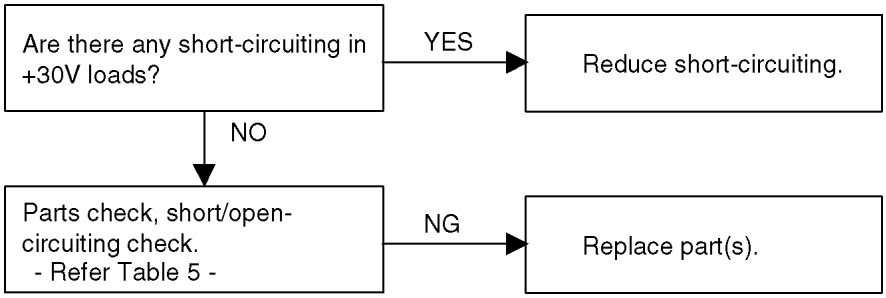
8.3.2. +41V, +30V, +15VPT are Not Output (Only +15V is Output)



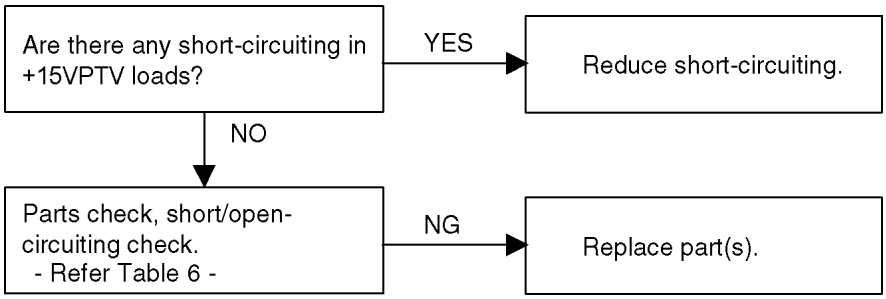
8.3.3. Only +41V is Not Output



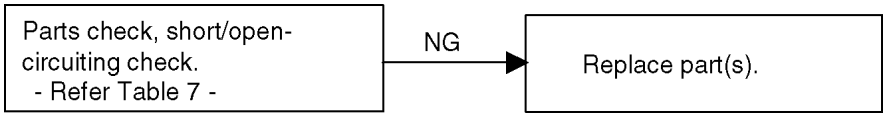
8.3.4. Only +30V is Not Output



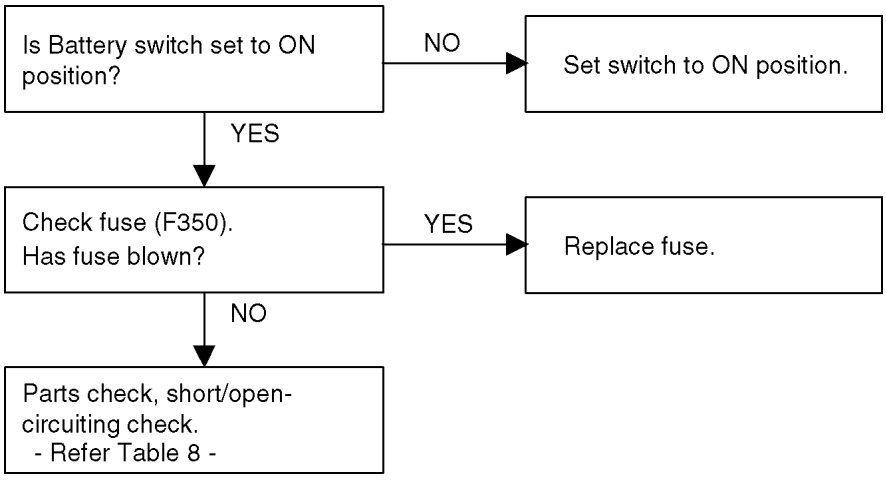
8.3.5. Only +15VPT is Not Output



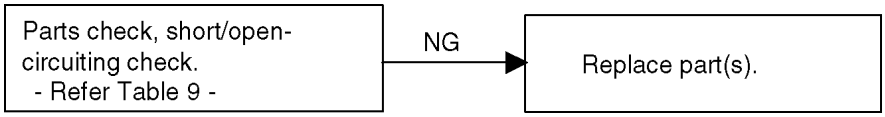
8.3.6. Only +41V is Available (Other Voltage are Not Output)



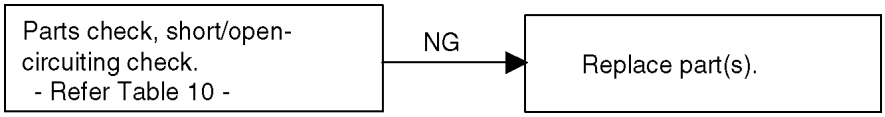
8.3.7. Battery Backup Function does Not Operate / PSU can Not Charge Batteries



8.3.8. AC Alarm is Sent (Although AC Power is Normal)

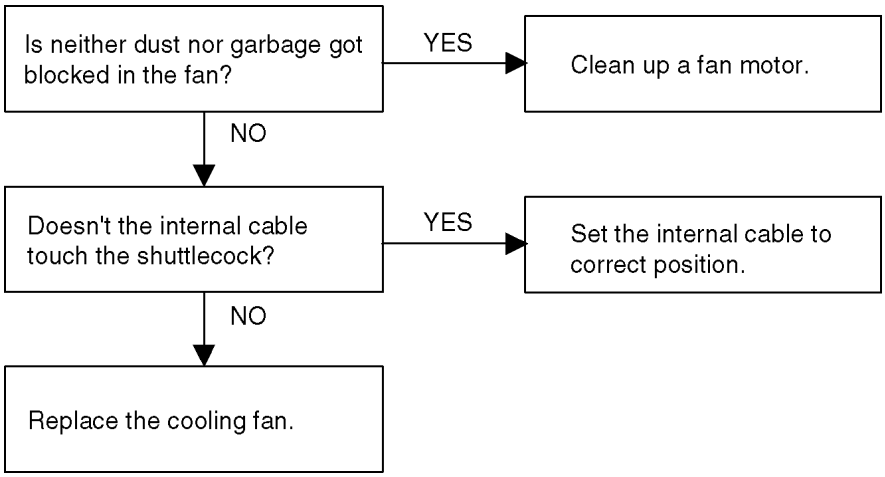


8.3.9. DC Alarm is Sent (Although All DC Output are Normal)

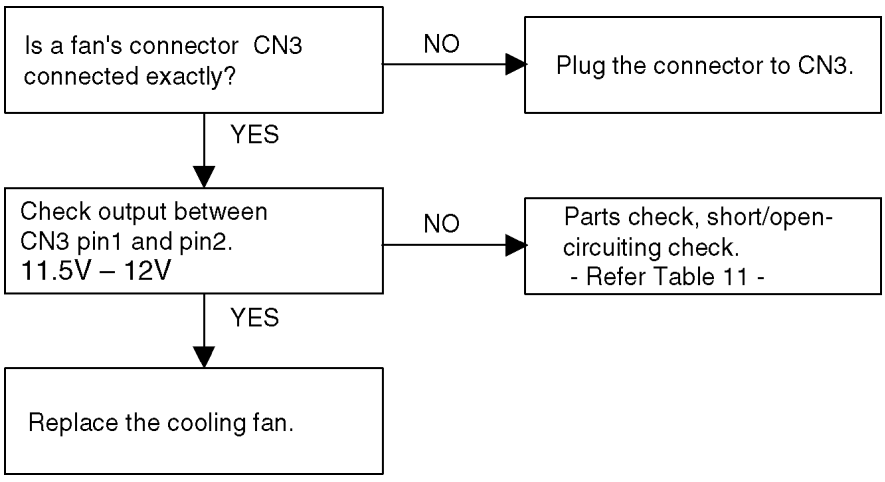


8.3.10. Cooling Fan Trouble

1) Rotation sound is unusual.



2) The fan does not operate / fan alarm is sent.



8.3.11. Table 1

Remark	Defective mode short/open	Check point				The parts which have the possibility of failure simultaneously					
D8	short	+ - ~	- - ~	+ - -							
D14	short	A-C				D8					
D15	short	A-C				D8					
D36	short	A-C				Q49	Q50				
D53	open	A	C			Q49					
D56	short	A-K	A-G			D8					
D60	short	A-C									
Q49	short	D-S	D-G								
Q50	short	D-S	D-G								
Q51	open	C	E	B		Q49	Q50				
Q52	open	C	E	B		Q49	Q50				
R10	short					Q49	Q50				
R12	open					Q49	Q50				
R11	short					Q49	Q50				

8.3.12. Table 2

Remark	Defective mode short/open	Check point				The parts which have the possibility of failure simultaneously					
D8	open	+	-	~							
D43	short	A-C									
D47	short	A-C				R2					
D53	short	A-C				R1	R2	Q50			
D56	open	A	K	G		R2					
D57	open	A	C			IC24	IC121				
D64	open	A	C			R2					
D75	open	A	C			R2					
D77	open	A	C			R1	R2				
D88	open	A	C			R2					
D95	short	A-C				R2					
D100	short	A-C				R2					
D103	short	A-C				R2					
D132	short	A-C				C133					
D132	open	A	C								
D133	open	A	C								
D147	open	A	C								
D200	short	1-2	2-3			R2	Q151	Q111	Q110	IC121	D100
						D201	R120				
D201	short	1-2	2-3			R2	Q151	Q111	Q110	IC121	D100
						D201	R120				
D214	short	A-C									
D214	open	A	C								
D215	short	A-C									
D228	open	A	C			D372	D373	R371	Q268	R370	
D228	short	A-C				D372	D373	R371	Q268		
D240	short	A-C									
D245	short	A-C									
D245	open	A-C	C								
D260	short	2-3				Q268	R371				
D265	open	A	C								
D281	open	A	C								
D373	short	A-C									
D430	short	A-C									
D433	short	A-C									
D434	short	A-C									
D436	short	A-C									
D558	short	A-C									
D583	open	2				Q578					
D591	short	A-C									
D615	short	A-C									
D656	open	A	C								
PC147	short	1-2	3-4								
PC147	open	1	2	3	4						
PC145	short	3-4									
Q44	short	B-E									

Remark	Defective mode short/open	Check point				The parts which have the possibility of failure simultaneously					
Q44	open	C	E	B							
Q45	short	C-E	C-B	B-E		IC24	IC121				
Q45	open	C	E	B							
Q68	short	C-E	C-B			R2					
Q69	open	C	E	B		R2					
Q69	short	B-E				R2					
Q110	short	D-S	D-G			Q110	Q111	Q150	Q151	IC121	D99
						D147	R120	R116	R114	R117	R112
						R113	R2	Q141	D110	D111	D137
						D156	D143	D155	D147	PC147	PC429
						R108	R106				
Q111	short	D-S	D-G			Q110	Q111	Q150	Q151	IC121	D99
						D147	R120	R116	R114	R117	R112
						R113	R2	Q141	D110	D111	D137
						D156	D143	D155	D147	PC147	PC429
						R108	R106				
Q134	open	C	E	B							
Q134	short	B-E									
Q135	open	C	E	B							
Q135	short	B-E									
Q139	short	C-E	C-B								
Q141	short	C-E	C-B								
Q150	open	C	E	B		Q111	Q110	D100	R1	R2	
Q151	open	C	E	B		Q111	Q110	D100	R1	R2	
Q155	open	C	E	B							
Q155	short	B-E									
Q157	short	C-E	C-B								
Q218	short	C-E	C-B	B-E							
Q247	short	C-E	C-B	B-E							
Q247	open	C	E	B							
Q268	short	D-S	D-G	G-S							
Q268	open	D	S	G							
Q435	short	B-E									
Q435	open	C	E	B							
Q567	short	B-E									
Q567	open	C	E	B							
Q577	open	C	E	B							
Q578	short	D-S	D-G								
Q591	short	C-E	C-B								
Q600	open	C	E	B							
Q657	short	C-E	C-B								
Q660	short	C-E	C-B								
Q661	short	C-E	C-B								
D9	short	A-C				R1	R2	Q49			
D145	short	A-C									

8.3.13. Table 3

Remark	Defective mode short/open	Check point				The parts which have the possibility of failure simultaneously				
D184	open	A	C							
D533	open	A	C							
D535	open	A	C							
Q163	open	C	E	B						
Q163	short	B-E								
Q167	open	C	E	B						
Q167	short	B-E								
Q170	open	C	E	B						
Q170	short	B-E								
Q437	open	C	E	B						
Q437	short	B-E								
Q475	open	C	E	B						
Q475	short	B-E								
Q682	open	C	E	B						
Q682	short	B-E								
PC429	short	1-2								
PC429	open	1	2	3	4					
R73	short									
R74	open/short									
R78	short									
R94	short									
R95	short									
R106	open									
R110	short									
R112	open									
R114	open									
R116	open									
R122	open/short									
R151	open									
R153	short									
R163	open									
R164	short									
R165	open									
R168	open									
R169	open/short									
R170	short									
R171	short									
R185	short									
R215	open/short									
R217	open									
R225	open									
R249	short									
R250	open/short					D245	Q247			
R251	short									
R254	short									
R255	short									
R257	short					D257	R254			
R263	short									

8.3.14. Table 4

Remark	Defective mode short/open	Check point				The parts which have the possibility of failure simultaneously					
D326	open	A	C								
D346	short	A-C									
Q319	short	C-E	C-B								
Q320	open	D	S	G							
Q320	short	D-G	G-S								
Q379	open	E	B								
Q483	short	C-E	C-B								
D238	short	A-C									
D238	open	A	C								
D349	open	A	C								
Q490	short	C-E	B-E								
Q657	open	C	E	B							
R73	short										
R74	open/short										
R78	short										
R94	short										
R95	short										
R106	open										
R110	short										
R112	open										
R114	open										
R116	open										
R122	open/short										
R151	open										
R153	short										
R163	open										
R164	short										
R165	open										
R168	open										
R169	open/short										
R170	short										
R171	short										
R185	short										
R215	open/short										
R217	open										
R225	open										
R249	short										
R250	open/short					D245	Q247				
R251	short										
R254	short										
R255	short										
R257	short					D257	R254				
R263	short										

8.3.15. Table 5

Remark	Defective mode short/open	Check point				The parts which have the possibility of failure simultaneously					
D582	open	A	C								
D583	short	1-2	2-3			Q578					
D583	open	2									
Q574	short	C-E	C-B								
Q577	short	C-E	C-B			R590					
Q578	open	D	S	G							
Q578	short	G-S									
Q591	open	C	E	B							
Q591	short	B-E									
Q592	short	C-E	C-B								
Q600	short	C-E	C-B	B-E							
Q640	short	C-E	C-B								
R73	short										
R74	open/short										
R78	short										
R94	short										
R95	short										
R106	open										
R110	short										
R112	open										
R114	open										
R116	open										
R122	open/short										
R151	open										
R153	short										
R163	open										
R164	short										
R165	open										
R168	open										
R169	open/short										
R170	short										
R171	short										
R185	short										
R215	open/short										
R217	open										
R225	open										
R249	short										
R250	open/short					D245	Q247				
R251	short										
R254	short										
R255	short										
R257	short					D257	R254				
R263	short										

8.3.16. Table 6

Remark	Defective mode short/open	Check point				The parts which have the possibility of failure simultaneously					
D668	open	A	C			IC513					
D668	short	A-C				R667					
Q325	open	D	S	G							
Q325	short	D-G	G-S								
Q466	short	C-E	C-B								
Q527	short	C-E	C-B								
D327	short	A-C									
R73	short										
R74	open/short										
R78	short										
R94	short										
R95	short										
R106	open										
R110	short										
R112	open										
R114	open										
R116	open										
R122	open/short										
R151	open										
R153	short										
R163	open										
R164	short										
R165	open										
R168	open										
R169	open/short										
R170	short										
R171	short										
R185	short										
R215	open/short										
R217	open										
R225	open										
R249	short										
R250	open/short					D245	Q247				
R251	short										
R254	short										
R255	short										
R257	short					D257	R254				
R263	short										

8.3.17. Table 7

Remark	Defective mode short/open	Check point				The parts which have the possibility of failure simultaneously					
D222	short	A-C									
R73	short										
R74	open/short										
R78	short										
R94	short										
R95	short										
R106	open										
R110	short										
R112	open										
R114	open										
R116	open										
R122	open/short										
R151	open										
R153	short										
R163	open										
R164	short										
R165	open										
R168	open										
R169	open/short										
R170	short										
R171	short										
R185	short										
R215	open/short										
R217	open										
R225	open										
R249	short										
R250	open/short					D245	Q247				
R251	short										
R254	short										
R255	short										
R257	short					D257	R254				
R263	short										

8.3.18. Table 8

Remark	Defective mode short/open	Check point				The parts which have the possibility of failure simultaneously					
D238	open	A	C								
D286	open	A	C								
D300	open	2									
D300	short	1-2				F350					
D301	short	A-C									
D390	open	A	C								
Q287	open	C	E	B							
Q287	short	B-E									
Q292	open	C	E	B							
Q292	short	B-E									
Q303	open	D	S	G							
Q303	short	G-S									
Q308	open	D	S	G							
Q308	short	G-S									
Q311	short	C-E	C-B	B-E		R310	F350				
Q311	open	C	E	B		R310	F350				
Q367	open	E	B								
D264	open	A	C								
D265	open	A	C								
D352	open	A	C								
D353	open	A	C								
R73	short										
R74	open/short										
R78	short										
R94	short										
R95	short										
R106	open										
R110	short										
R112	open										
R114	open										
R116	open										
R122	open/short										
R151	open										
R153	short										
R163	open										
R164	short										
R165	open										
R168	open										
R169	open/short										
R170	short										
R171	short										
R185	short										
R215	open/short										
R217	open										
R225	open										
R249	short										
R250	open/short					D245	Q247				
R251	short										
R254	short										
R255	short										
R257	short					D257	R254				
R263	short										

8.3.19. Table 9

Remark	Defective mode short/open	Check point				The parts which have the possibility of failure simultaneously					
D184	open	A	C								
D535	open	A	C								
PC429	short	1-2	3-4								
PC429	open	1	2	3	4						
Q163	open	C	E	B							
Q163	short	B-E									
Q167	open	C	E	B							
Q167	short	B-E									
Q170	open	C	E	B							
Q170	short	B-E									
Q404	open	C	E	B							
Q404	short	B-E									
Q437	open	C	E	B							
Q437	short	B-E									
R73	short										
R74	open/short										
R78	short										
R94	short										
R95	short										
R106	open										
R110	short										
R112	open										
R114	open										
R116	open										
R122	open/short										
R151	open										
R153	short										
R163	open										
R164	short										
R165	open										
R168	open										
R169	open/short										
R170	short										
R171	short										
R185	short										
R215	open/short										
R217	open										
R225	open										
R249	short										
R250	open/short					D245	Q247				
R251	short										
R254	short										
R255	short										
R257	short					D257	R254				
R263	short										

8.3.20. Table 10

Remark	Defective mode short/open	Check point				The parts which have the possibility of failure simultaneously					
D361	open	A	C								
D361	short	A-C				R368					
D407	open	A	C								
Q506	short	B-E									
Q426	open	C	E	B							
Q426	short	B-E									
Q646	short	C-E	C-B								
Q647	short	C-E	C-B								
Q648	short	C-E	C-B								
Q652	short	C-E	C-B								
Q694	short	C-E	C-B								
R73	short										
R74	open/short										
R78	short										
R94	short										
R95	short										
R106	open										
R110	short										
R112	open										
R114	open										
R116	open										
R122	open/short										
R151	open										
R153	short										
R163	open										
R164	short										
R165	open										
R168	open										
R169	open/short										
R170	short										
R171	short										
R185	short										
R215	open/short										
R217	open										
R225	open										
R249	short										
R250	open/short					D245	Q247				
R251	short										
R254	short										
R255	short										
R257	short					D257	R254				
R263	short										

9 HOW TO REPLACE A FLAT PACKAGE IC

9.1. PREPARATION

- PbF (: Pb free) Solder
- Soldering Iron

  Tip Temperature of 700°F ± 20°F (370°C ± 10°C)

  Note: We recommend a 30 to 40 Watt soldering iron. An expert may be able to use a 60 to 80 Watt iron where someone with less experience could overheat and damage the PCB foil.
- Flux

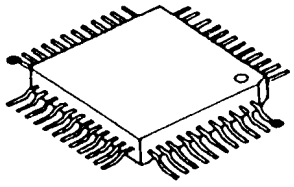
  Recommended Flux: Specific Gravity → 0.82.

  Type → RMA (lower residue, non-cleaning type)

  Note: See **ABOUT LEAD FREE SOLDER (PbF: Pb free)** (P.3).

9.2. PROCEDURE

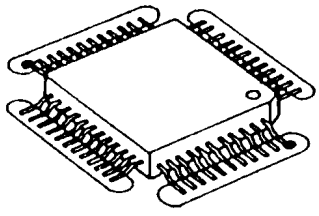
1. Tack the flat pack IC to the PCB by temporarily soldering two diagonally opposite pins in the correct positions on the PCB.

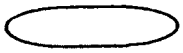


● - - - - - - Temporary soldering point.

Be certain each pin is located over the correct pad on the PCB.

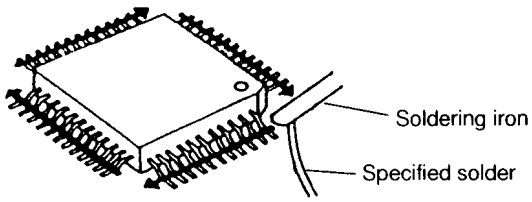
2. Apply flux to all of the pins on the IC.





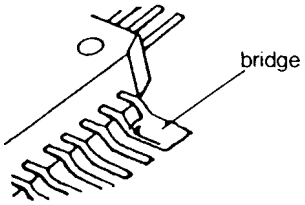
- - - - - - Flux

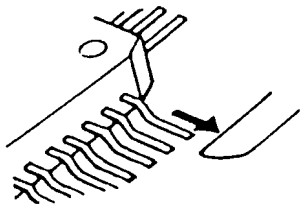
3. Being careful to not unsolder the tack points, slide the soldering iron along the tips of the pins while feeding enough solder to the tip so that it flows under the pins as they are heated.



9.3. REMOVING SOLDER FROM BETWEEN PINS

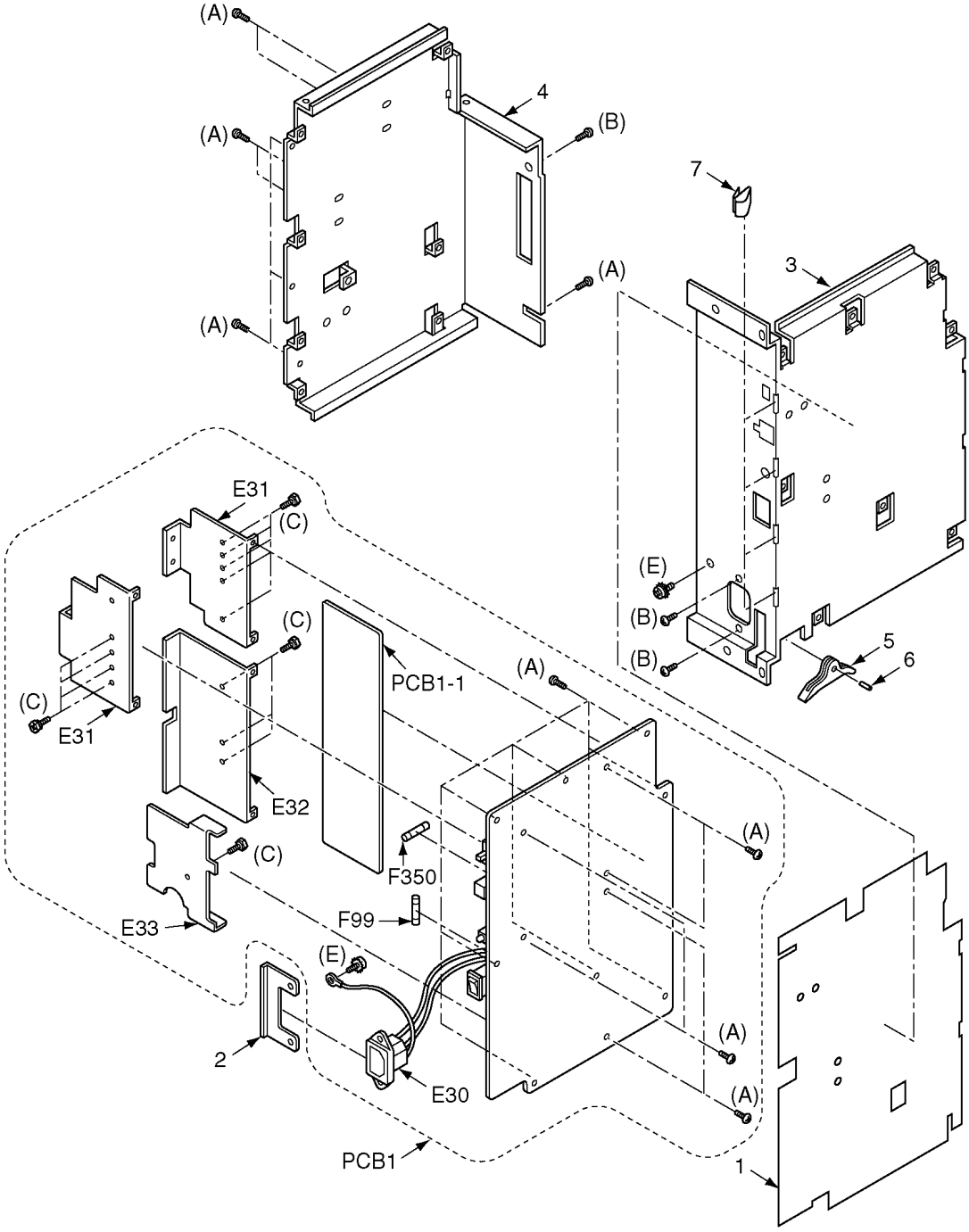
1. Add a small amount of solder to the bridged pins.
2. With a hot iron, use a sweeping motion along the flat part of the pin to draw the solder from between the adjacent pads.



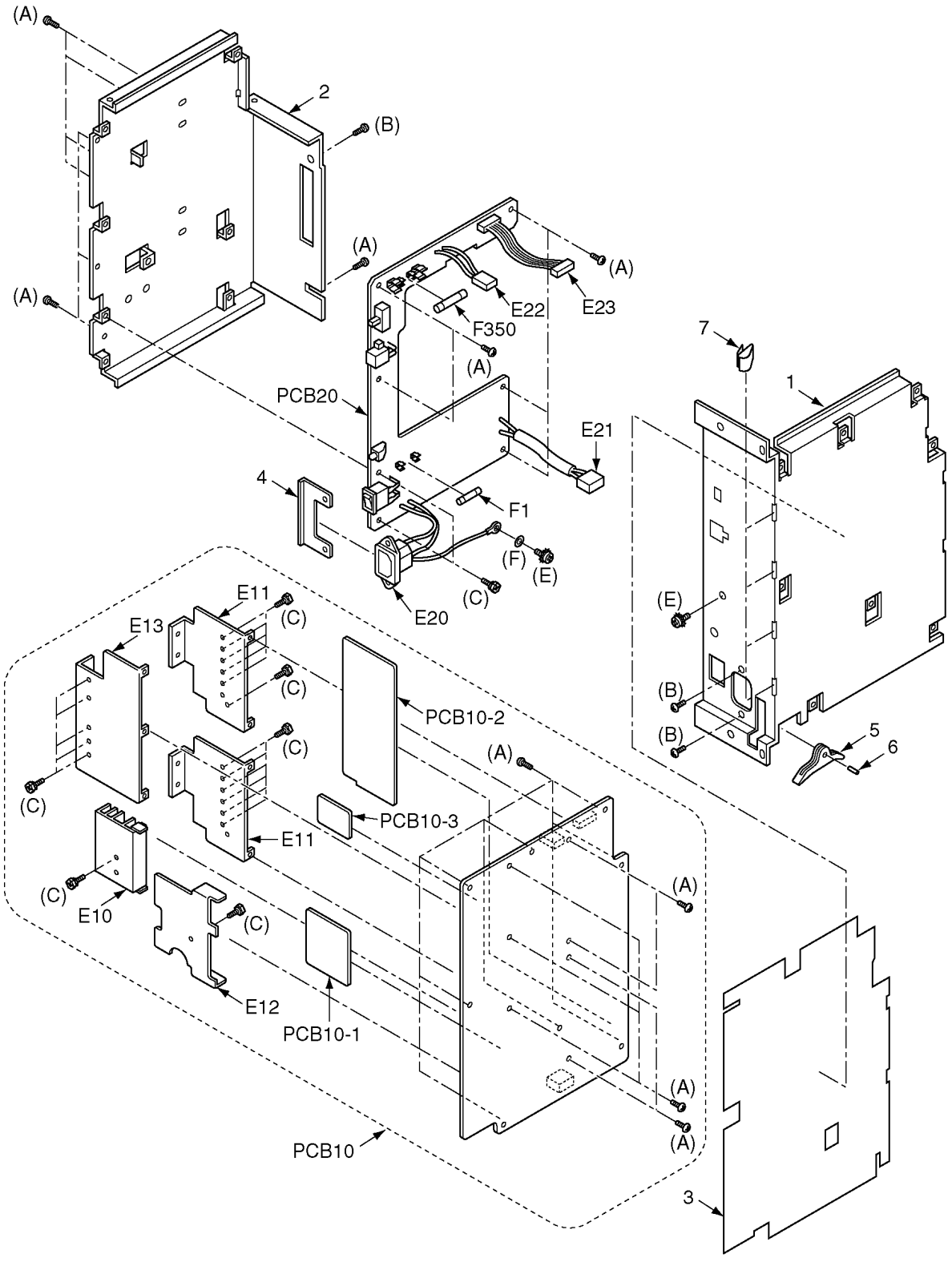


10 CABINET AND ELECTRICAL PARTS LOCATION

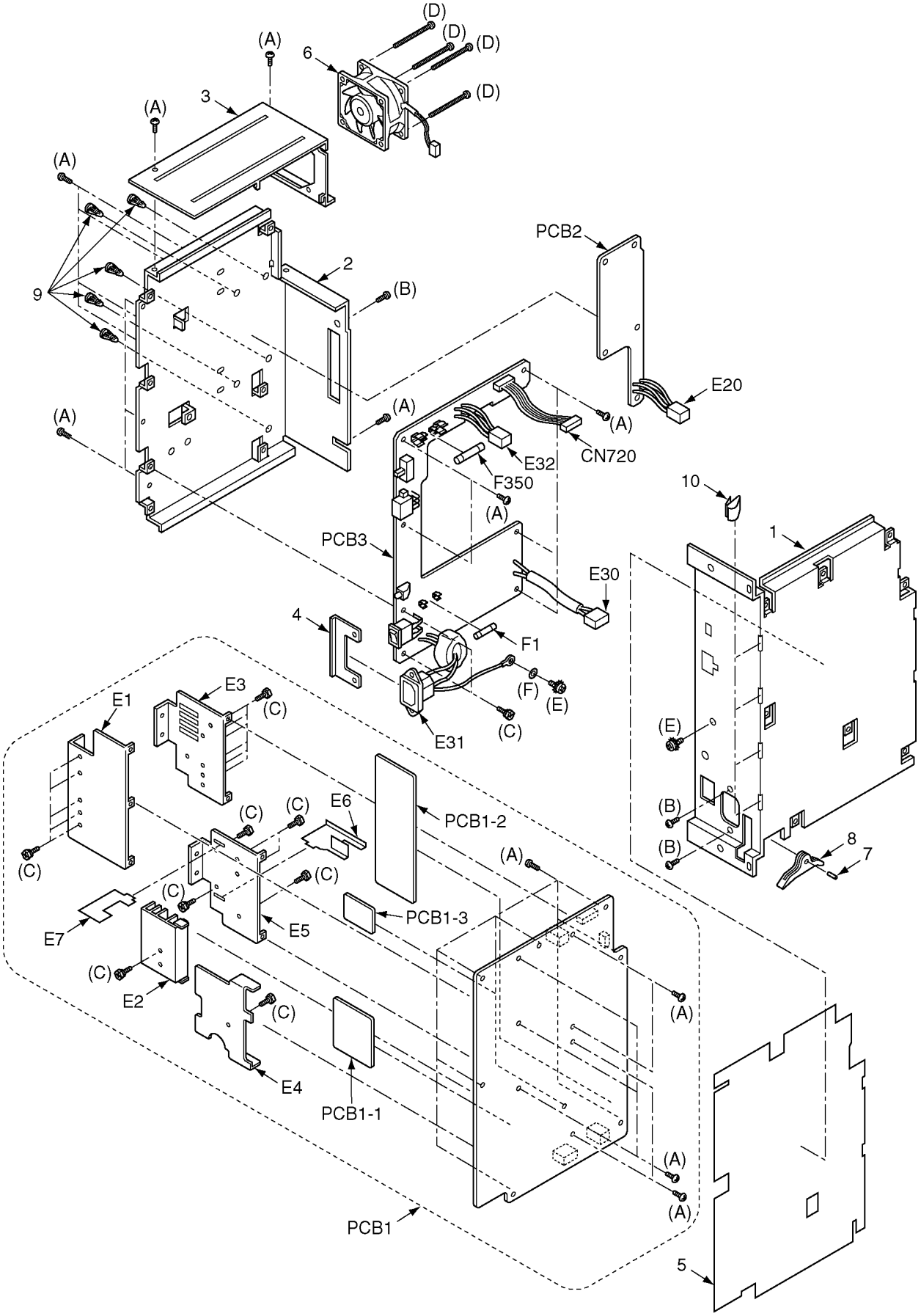
10.1. PSU-S (KX-TDA0108XJ/X)



10.2. PSU-M (KX-TDA0104XJ/X)



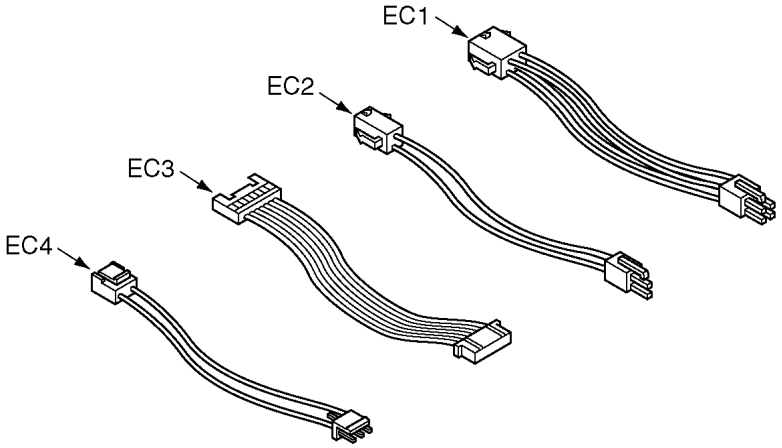
10.3. PSU-L (KX-TDA0103XJ/X)



10.4. SCREWS AND WASHER

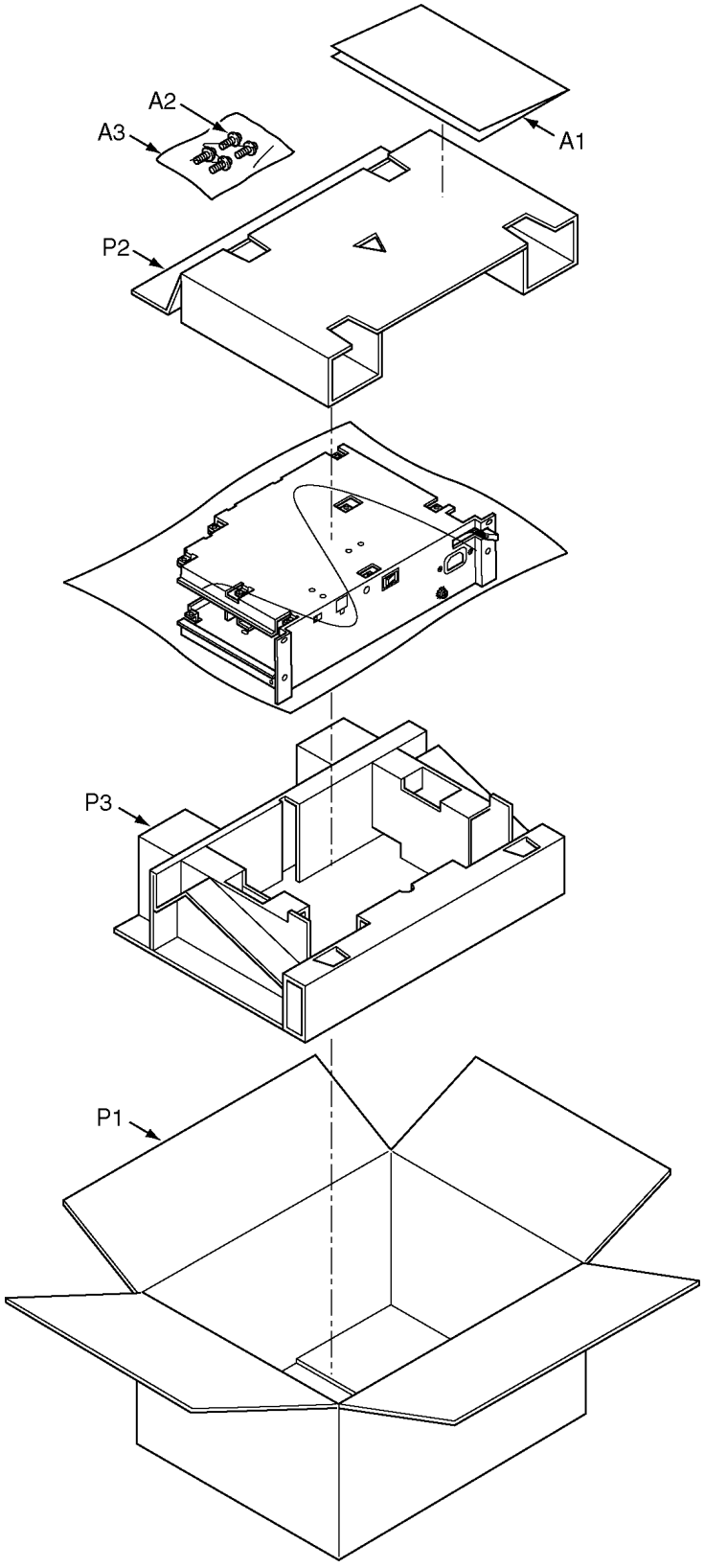
Ref No.	Parts No.	Figure
(A)	PSHDB1054BS	 Φ3x6mm
(B)	PSHDY9308EB	 Φ3x6mm
(C)	PSHDB1049BS	 Φ3x8mm
(D)	PSHDY9330JB	 Φ3x30mm
(E)	PSHDB1051BS	 Φ4x6mm
(F)	PSNWT9066TJ	

10.5. EXTENSION CORD FOR SERVICING

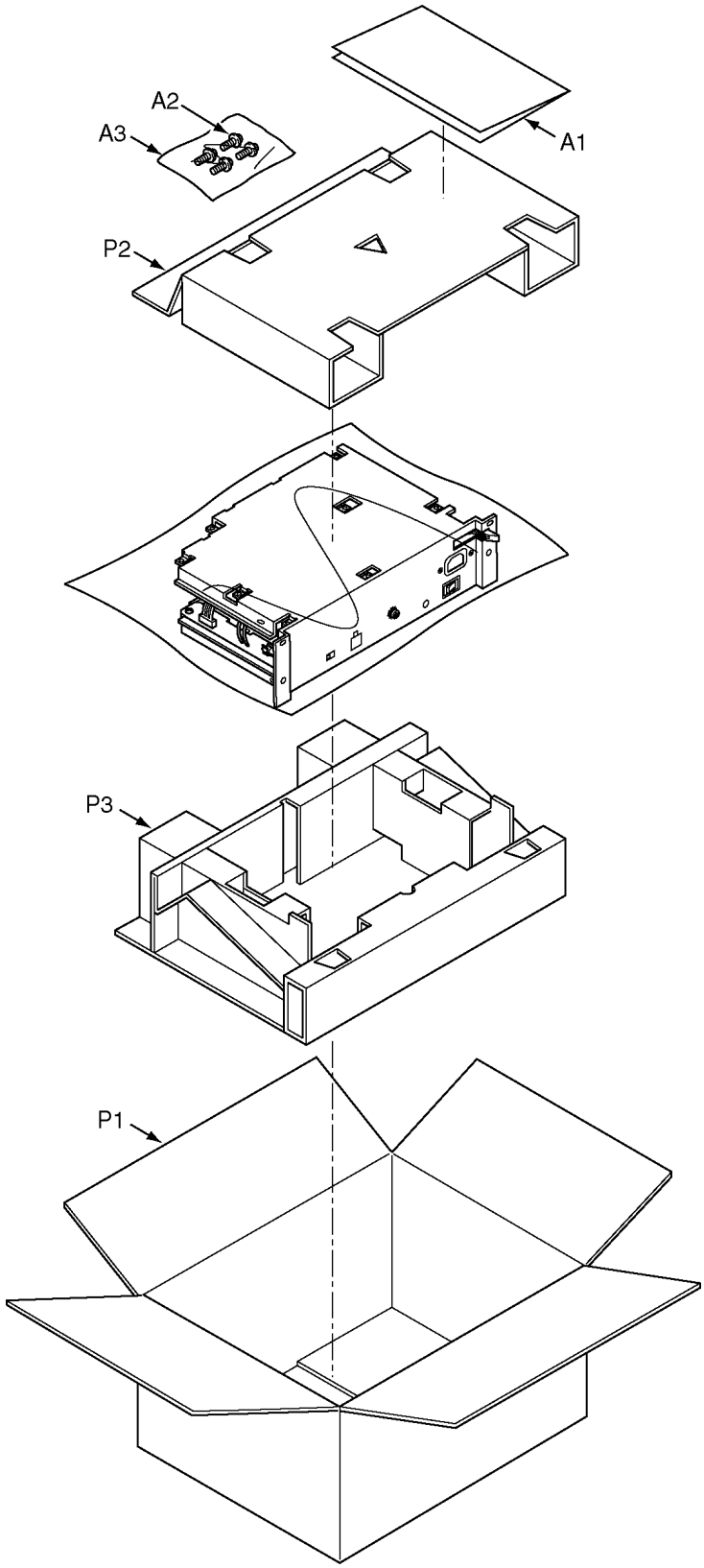


11 ACCESSORIES AND PACKING MATERIALS

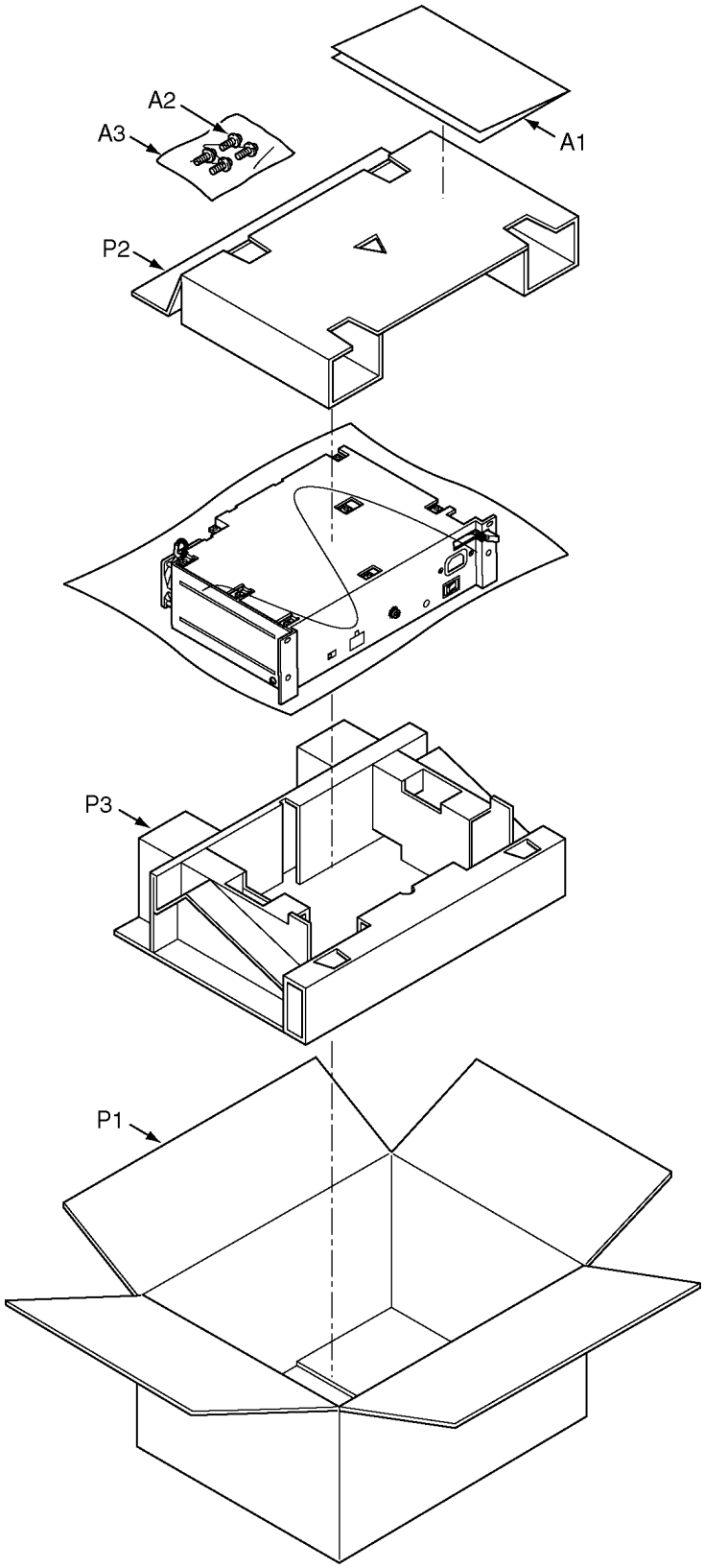
11.1. PSU-S (KX-TDA0108XJ/X)



11.2. PSU-M (KX-TDA0104XJ/X)



11.3. PSU-L (KX-TDA0103XJ/X)



12 REPLACEMENT PARTS LIST

Note:

1. RTL (Retention Time Limited)

   The marking (RTL) indicates that the Retention Time is limited for this item.

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

2. Important safety notice

   Components identified by the ⚠ mark indicates special characteristics important for safety. When replacing any of these components, only use specified manufacture´s parts.

3. The S mark means the part is one of some identical parts. For that reason, it may be different from the installed part.

4. RESISTORS & CAPACITORS

   Unless otherwise specified;

   All resistors are in ohms (Ω), k=1000Ω, M=1000kΩ

   All capacitors are in MICRO FARADS (μF), p=μ(μF)

   *Type & Wattage of Resistor

Type

ERC:Solid ERD:Carbon PQRD:Carbon	ERX:Metal Film ERG:Metal Oxide ER0:Metal Film	PQ4R:Carbon ERS:Fusible Resistor ERF:Cement Resistor

Wattege

10,16:1/8W	14,25:1/4W	12:1/2W	1:1W	2:2W	3:3W

*Type & Voltage of Capacitor

Type

ECFD:Semi-Conductor ECQS:Styrol PQCUV:Chip ECQMS:Mica	ECCD,ECKD,ECBT,PQCBC:Ceramic ECQE,ECQV,ECQG:Polyester ECEA,ECSZ:Electlytic ECQP:Polypropylene

Voltage

ECQ Type	ECQG ECQV Type	ECSZ Type	Others	
1H:50V 2A:100V 2E:250V 2H:500V	05:50V 1:100V 2:200V	0F:3.15V 1A:10V 1V:35V 0J:6.3V	0J :6.3V 1A :10V 1C :16V 1E,25:25V	1V :35V 50,1H:50V 1J :63V 2A :100V

12.1. KX-TDA0108XJ/X

12.1.1. Electrical Parts

Ref. No.	Part No.	Part Name & Description	Remarks
1	PSMXT9066SR	INSULATOR	
2	PSMDT9066NG	ANGLE	
3	PSUAT9066QN	CHASSIS, BODY	
4	PSUAT9066QV	CHASSIS, COVER	
5	PQUB14Z2	LEVER	
6	PSKTB1000BP	PIN	
7	PSUST9067AR	LEAF SPRING	

12.1.2. Accessories and Packing Materials

Ref. No.	Part No.	Part Name & Description	Remarks
A1	PSQW1988Z	LEAFLET	
A2	XYN3+F6	SCREW	
A3	XZB05X08A03	PROTECTION COVER	
P1	PSZKDA0108XJ	PACKING CASE (for KX-TDA0108XJ)	
P1	PSZKDA0108XU	PACKING CASE (for KX-TDA0108X)	
P2	PSPD1225Z	CUSHION	
P3	PSPD1224Z	CUSHION	

12.1.3. Main Board Parts

Ref. No.	Part No.	Part Name & Description	Remarks
PCB1	PSWP1DA0108X	MAIN BOARD ASS´Y (RTL)	
		(ICS)	
IC24	PSVIL6561	IC	
IC601	PSVIUC3842BN	IC	
		(TRANSISTORS)	
Q49	2SK1982	TRANSISTOR(SI)	
Q90	2SC5201	TRANSISTOR(SI)	
Q110	2SK2651	TRANSISTOR(SI)	
Q172	2SA1309	TRANSISTOR(SI)	S
Q186	2SC1740S	TRANSISTOR(SI)	S
Q254	2SA1309	TRANSISTOR(SI)	S
Q268	2SK3053	TRANSISTOR(SI)	S
Q274	2SC1740S	TRANSISTOR(SI)	S
Q287	2SC2784	TRANSISTOR(SI)	S
Q292	2SA1174	TRANSISTOR(SI)	S
Q303	2SK3053	TRANSISTOR(SI)	
Q308	2SK2750	TRANSISTOR(SI)	S
Q311	2SC1740S	TRANSISTOR(SI)	S
Q320	2SJ477	TRANSISTOR(SI)	
Q325	2SJ477	TRANSISTOR(SI)	
Q328	2SA1309	TRANSISTOR(SI)	S
Q367	2SC1740S	TRANSISTOR(SI)	S
Q404	2SC1740S	TRANSISTOR(SI)	S
Q426	2SC1740S	TRANSISTOR(SI)	S
Q574	2SA1309	TRANSISTOR(SI)	S
Q577	2SC2002	TRANSISTOR(SI)	
Q578	2SJ477	TRANSISTOR(SI)	
Q591	2SC2002	TRANSISTOR(SI)	
Q600	2SC1740S	TRANSISTOR(SI)	S
Q605	2SC1740S	TRANSISTOR(SI)	S
		(DIODES & VARISTORS)	
D8	PQVDD3SBA60M	DIODE(SI)	
D9	PFVDRL1N4005	DIODE(SI)	
D18	1SS133	DIODE(SI)	S
D53	PSVDFSU05B60	DIODE(SI)	
D60	ERZV10D471	VARISTOR	S ⚠
D68	ERZV07D471	VARISTOR	S ⚠
D76	PSVD1GU42	DIODE(SI)	
D82	1SS133	DIODE(SI)	S
D91	1SS133	DIODE(SI)	S
D92	PSVDRD22ESAB	DIODE(SI)	S
D99	PFVDRL1N4005	DIODE(SI)	
D100	PSVDAP01C	DIODE(SI)	
D115	1SS133	DIODE(SI)	S
D117	PSVDAP01C	DIODE(SI)	
D132	PSVD1GU42	DIODE(SI)	
D201	PSVDFCF06A40	DIODE(SI)	
D206	1SS133	DIODE(SI)	S
D258	1SS133	DIODE(SI)	S
D260	PSVDF5KQ60B	DIODE(SI)	
D268	1SS133	DIODE(SI)	S
D275	PSVDRD5R1ESA	DIODE(SI)	S
D286	PFVDRD27ESAB	DIODE(SI)	S
D294	PSVDRD16ESAB	DIODE(SI)	S

Ref. No.	Part No.	Part Name & Description	Remarks
D295	PSVD1GU42	DIODE(SI)	
D300	PSVDFCH10A10	DIODE(SI)	S
D306	PSVDRD9R1ESA	DIODE(SI)	S
D352	PFVDRD27ESAB	DIODE(SI)	S
D362	PSVDRD16ESAB	DIODE(SI)	S
D363	PFVDRD27ESAB	DIODE(SI)	
D372	1SS133	DIODE(SI)	S
D373	PSVDRD16ESAB	DIODE(SI)	S
D403	PSVDRD9R1ESA	DIODE(SI)	S
D410	1SS133	DIODE(SI)	S
D460	PSVDL73JB1GD	LED	
D573	1SS133	DIODE(SI)	S
D582	1SS133	DIODE(SI)	S
D583	PSVDF5KQ60B	DIODE(SI)	
D591	1SS133	DIODE(SI)	S
D617	1SS133	DIODE(SI)	S
D701	1SS133	DIODE(SI)	S
D740	1SS133	DIODE(SI)	S
		(CONNECTORS)	
CN2	PSJP12EA44P	CONNECTOR	
CN4	PSJP556904A	CONNECTOR	
		(CAPACITORS)	
C4	ECQU2A224ML	0.22	
C6	PSCKD2E332ME	0.0033	
C7	PSCKD2E332ME	0.0033	
C18	PSCEA50VB2R2	2.2	
C21	PSCKD1H104K	0.1	
C22	PSCQE50F472	0.0047	
C28	ECCR3A101JG	100P	
C34	PSCKD1H221JY	220P	
C48	PSCKD2E102M	0.001	
C55	ECKR3A221KBP	220P	
C61	PSCEA450V271	270	⚠
C64	ECKR3A222KBP	0.0022	
C79	PSCEA50VB220	22	
C93	ECQE6105KF	1	
C95	ECQU2A224ML	0.22	
C98	ECQU2A224ML	0.22	⚠
C102	ECKR3A222KBP	0.0022	
C103	ECCR3A101JG	100P	
C133	PSCEA35VB561	560	
C203	ECKR3A102KBP	0.001	
C205	PSCEA50VB681	680	
C208	PSCEA50VB220	22	
C266	PSCEA50VB220	22	
C267	PSCKD1H104Z	0.1	
C270	PSCKD1H104Z	0.1	
C278	PSCEA35VB471	470	
C279	PSCEA35VB471	470	
C294	PSCKD1H104Z	0.1	
C304	PSCKD1H104Z	0.1	
C313	PSCKD1H221JY	220P	
C324	PSQE50F2D103	0.01	
C344	PSCEA50VB681	680	
C345	PSCKD1H104Z	0.1	
C354	ECKR3A222KBP	0.0022	
C366	PSCKD1H104Z	0.1	
C402	PSQE50F2D103	0.01	
C408	PSCEA50VB2R2	2.2	
C419	PSCKD1H104Z	0.1	
C479	PSCEA35VB561	560	
C480	PSCQE2E333M	0.033	
C482	PSCKD2E332ME	0.0033	
C501	PSCEA50VB681	680	
C570	PSCEA50VB181	180	
C573	PSCQE50F222	0.0022	
C581	PSCQE50F472	0.0047	
C584	ECKR3A102KBP	0.001	
C587	PSCEA50VB181	180	
C595	PSCQE50F102	0.001	
C598	PSQE50F2D103	0.01	

Ref. No.	Part No.	Part Name & Description	Remarks
C603	PSCEA50VB2R2	2.2	
C604	PSCKD1H104Z	0.1	
C605	PSCKD1H221JY	220P	
C607	PSQE50F2D103	0.01	
C608	PSCEA35VB561	560	
C613	PSCQE50F222	0.0022	
C662	PSCQE50F472	0.0047	
		(RESISTORS)	
R1	ERF5TJ220	22	
R4	ERDS2TJ224	220K	
R6	ERDS2TJ224	220K	
R7	ERDS2TJ224	220K	
R8	ERDS2TJ224	220K	
R9	PSRTSCK162X	1.6K	
R10	ERDS2TJ183	18K	
R11	ERX2SJR47	0.47	
R12	ERDS2TJ471	470	
R14	ERDS2TJ223	22K	
R15	ERDS2TJ473	47K	
R16	ERX2SJR47	0.47	
R17	ERDS2TJ223	22K	
R22	ERG1SJ150	15	
R23	ERDS2TJ103	10K	
R25	ERG2SJ470	47	
R31	ERDS2TJ224	220K	
R32	ER0S2TKF1503	150K	
R33	ERDS2TJ224	220K	
R34	ER0S2TKF2203	220K	
R35	ER0S2TKF2203	220K	
R36	ER0S2TKF2203	220K	
R37	ER0S2TKF2701	2.7K	
R38	ERDS2TJ224	220K	
R39	ERDS2TJ224	220K	
R41	ER0S2TKF2203	220K	
R42	ER0S2TKF2203	220K	
R43	ER0S2TKF2203	220K	
R44	ER0S2TKF2203	220K	
R45	ERDS2TJ474	470K	
R46	ERDS2TJ474	470K	
R63	ERDS2TJ224	220K	
R65	ERDS2TJ105	1M	
R66	ERDS2TJ334	330K	
R71	ERDS2TJ224	220K	
R72	ERDS2TJ224	220K	
R81	ERDS2TJ151	150	
R83	ERDS2TJ151	150	
R84	ERG2SJ333	33K	
R85	ERG2SJ333	33K	
R86	ERG2SJ333	33K	
R87	ER0S2TKF2203	220K	
R88	ERDS2TJ223	22K	
R89	ERDS2TJ222	2.2K	
R90	NVG6THTAB1K	SEMI-FIXED VARIABLE RESISTOR	
R91	ERDS2TJ152	1.5K	
R110	ERDS2TJ472	4.7K	
R112	ERX2SJR33	0.33	
R114	ERX1SJ5R6	5.6	
R116	ERG1SJ680	68	
R117	ERG2SJ221	220	
R131	ERX1SJ3R3	3.3	
R170	ERDS2TJ103	10K	
R171	ERDS2TJ153	15K	
R190	ERDS2TJ222	2.2K	
R191	ERDS2TJ223	22K	
R196	ERG2SJ683	68K	
R197	ERG2SJ683	68K	
R198	ERG2SJ683	68K	
R199	ERG2SJ683	68K	
R202	ERG2SJ100E	10	
R260	ERDS2TJ223	22K	
R261	ERDS2TJ104	100K	
R263	ERX2SJR10	0.1	

Ref. No.	Part No.	Part Name & Description	Remarks
R264	ERX2SJR10	0.1	
R266	ERDS2TJ471	470	
R267	ERDS2TJ471	470	
R269	ERDS2TJ220	22	
R276	ERDS2TJ223	22K	
R277	ERDS2TJ223	22K	
R278	ERDS2TJ222	2.2K	
R288	ERDS2TJ152	1.5K	
R290	ERDS2TJ473	47K	
R291	ERDS2TJ332	3.3K	
R293	ERDS2TJ472	4.7K	
R296	ERDS2TJ683	68K	
R299	ERDS2TJ682	6.8K	
R301	ERDS2TJ472	4.7K	
R302	ERDS2TJ473	47K	
R306	ERDS2TJ683	68K	
R307	ERDS2TJ223	22K	
R308	ERDS2TJ152	1.5K	
R309	ERDS2TJ471	470	
R310	ERX1SJ1R8	1.8	
R322	ERDS2TJ682	6.8K	
R324	ERDS2TJ223	22K	
R327	ERDS2TJ222	2.2K	
R329	ERDS2TJ102	1K	
R330	ERDS2TJ103	10K	
R336	ERDS2TJ100	10	
R355	ERG1SJ150	15	
R366	ERDS2TJ103	10K	
R369	ERDS2TJ102	1K	
R371	ERDS2TJ222	2.2K	
R376	ERX2SJR10	0.1	
R400	ERDS2TJ472	4.7K	
R401	ER0S2TKF5602	56K	
R405	ERDS2TJ472	4.7K	
R411	ERDS2TJ103	10K	
R426	ERDS2TJ472	4.7K	
R427	ERDS2TJ152	1.5K	
R459	ERDS2TJ102	1K	
R510	ERX2SJR10	0.1	
R511	ERX2SJR10	0.1	
R571	ERX2SJR22	0.22	
R573	ERDS2TJ153	15K	
R574	ERDS2TJ102	1K	
R576	ERDS2TJ682	6.8K	
R577	ERDS2TJ682	6.8K	
R579	ERDS2TJ152	1.5K	
R580	ERDS2TJ332	3.3K	
R582	ERDS2TJ153	15K	
R585	ERG1SJ150	15	
R588	ERG1SJ680	68	
R590	ERG2SJ221	220	
R591	ERDS2TJ471	470	
R592	ERDS2TJ221	220	
R593	ERDS2TJ221	220	
R594	ERDS2TJ102	1K	
R596	ERDS2TJ472	4.7K	
R597	ERDS2TJ102	1K	
R601	ER0S2TKF4301	4.3K	
R603	ERDS2TJ100	10	
R605	ERDS2TJ472	4.7K	
R606	ERDS2TJ473	47K	
R610	ER0S2TKF2001	2K	
R612	ER0S2TKF2202	22K	
R614	ERDS2TJ222	2.2K	
R740	ERDS2TJ333	33K	
R821	ERDS2TJ470	47	
		(COILS & COMPONENTS PARTS)	
L10	PSLQK3072VM	COIL	
L11	PSLQK3072VM	COIL	
L62	EXCELSA35	COIL	
L92	PSLQK3073VM	COIL	
L96	PSLQK3074VM	COIL	⚠

Ref. No.	Part No.	Part Name & Description	Remarks
L192	EXCELDR35	COMPONENTS PART	
L195	EXCELDR35	COMPONENTS PART	
L199	EXCELSA35	COIL	
L265	PSLQLHL083R3	COIL	
L272	PSLQK3071VM	COIL	
L326	EXCELDR35	COMPONENTS PART	
L350	EXCELSA35	COIL	
L572	EXCELSA35	COIL	
L586	PSLQK3072VM	COIL	
L820	PSLQLHL083R3	COIL	
		(SWITCHES)	
SW1	PSSTJE30200	POWER SWITCH	⚠
SW2	PSSSU111400	SLIDE SWITCH	
		(TRANSFORMERS)	
T146	PSLTK3048VM	TRANSFORMER	⚠
T268	PSLTK3049VM	PULSE TRANSFORMER	
		(OTHERS)	
E30	PSJSS9692VK	SOCKET, AC	⚠
E31	PSMYT9066HZ	HEAT SINK	
E32	PSMYT9066LN	HEAT SINK	
E33	PSMYT9066JA	HEAT SINK	
F99	PSBA5HT315	FUSE	⚠
F350	PSBA5HT63	FUSE	⚠
PCB1-1	PSWP2DA0108X	SUB BOARD ASS´Y (RTL)	
		(ICS)	
IC121	PSVIUC3842BN	IC	
IC226	PSVIUC3842BN	IC	
IC513	PSVIUPC393C	IC	
IC544	PSVIUPC393C	IC	
		(TRANSISTORS)	
Q70	2SC1740S	TRANSISTOR(SI)	S
Q139	2SA1309	TRANSISTOR(SI)	S
Q141	2SC1740S	TRANSISTOR(SI)	S
Q149	2SA1309	TRANSISTOR(SI)	S
Q163	2SC1740S	TRANSISTOR(SI)	S
Q167	2SA1309	TRANSISTOR(SI)	S
Q170	2SC1740S	TRANSISTOR(SI)	S
Q177	2SA1309	TRANSISTOR(SI)	S
Q178	2SA1309	TRANSISTOR(SI)	S
Q193	2SC1740S	TRANSISTOR(SI)	S
Q247	2SC1740S	TRANSISTOR(SI)	S
Q255	2SA1309	TRANSISTOR(SI)	S
Q382	2SA1309	TRANSISTOR(SI)	S
Q386	2SC1740S	TRANSISTOR(SI)	S
Q389	2SA1309	TRANSISTOR(SI)	S
Q435	2SC1740S	TRANSISTOR(SI)	S
Q450	2SC1740S	TRANSISTOR(SI)	S
Q466	2SC1740S	TRANSISTOR(SI)	S
Q470	2SC1740S	TRANSISTOR(SI)	S
Q475	2SC1740S	TRANSISTOR(SI)	S
Q520	2SA1309	TRANSISTOR(SI)	S
Q653	2SC1740S	TRANSISTOR(SI)	S
Q711	2SC1740S	TRANSISTOR(SI)	S
Q712	2SA1309	TRANSISTOR(SI)	S
Q717	2SC2002	TRANSISTOR(SI)	
Q720	2SC1740S	TRANSISTOR(SI)	S
Q725	2SA1309	TRANSISTOR(SI)	S
Q726	2SA1309	TRANSISTOR(SI)	S
Q727	2SA1309	TRANSISTOR(SI)	S
Q728	2SA1309	TRANSISTOR(SI)	S
Q729	2SA1309	TRANSISTOR(SI)	S
		(DIODES)	
D75	PSVDRD9R1ESA	DIODE(SI)	S
D77	1SS131	DIODE(SI)	S

Ref. No.	Part No.	Part Name & Description	Remarks
D88	1SS131	DIODE(SI)	S
D140	1SS131	DIODE(SI)	S
D154	1SS131	DIODE(SI)	S
D155	1SS131	DIODE(SI)	S
D184	PSVDRD6R8ESA	DIODE(SI)	S
D222	1SS131	DIODE(SI)	S
D233	1SS131	DIODE(SI)	S
D235	1SS131	DIODE(SI)	S
D236	MA2C723	DIODE(SI)	
D245	PSVDRD6R8ESA	DIODE(SI)	S
D257	1SS131	DIODE(SI)	S
D281	1SS131	DIODE(SI)	S
D298	1SS131	DIODE(SI)	S
D381	1SS131	DIODE(SI)	S
D384	1SS131	DIODE(SI)	S
D406	1SS131	DIODE(SI)	S
D407	1SS131	DIODE(SI)	S
D412	1SS131	DIODE(SI)	S
D419	1SS131	DIODE(SI)	S
D430	PSVDRD18ESAB	DIODE(SI)	S
D431	1SS131	DIODE(SI)	S
D432	1SS131	DIODE(SI)	S
D433	PFVDRD27ESAB	DIODE(SI)	S
D434	PSVDRD18ESAB	DIODE(SI)	S
D455	1SS131	DIODE(SI)	S
D469	1SS131	DIODE(SI)	S
D478	1SS131	DIODE(SI)	S
D524	1SS131	DIODE(SI)	S
D530	PSVDRD6R8ESA	DIODE(SI)	S
D544	1SS131	DIODE(SI)	S
D553	PSVDRD22ESAB	DIODE(SI)	S
D555	PSVDRD9R1ESA	DIODE(SI)	S
D558	PSVDRD33ESAB	DIODE(SI)	S
D703	1SS131	DIODE(SI)	S
D705	1SS131	DIODE(SI)	S
D707	1SS131	DIODE(SI)	S
D720	1SS131	DIODE(SI)	S
D730	1SS131	DIODE(SI)	S
D810	1SS131	DIODE(SI)	S
		(CONNECTORS)	
CN100	PSJP50055817	CONNECTOR	
CN200	PSJP50558110	CONNECTOR	
CN300	PSJP50558110	CONNECTOR	
		(CAPACITORS)	
C94	PSCQE50F472	0.0047	
C107	PSCKD1H221JY	220P	
C123	PSCQE50F472	0.0047	
C128	PSCEA35VB561	560	
C137	PSCKD1H104Z	0.1	
C142	PSCKD1H104Z	0.1	
C148	PSCKD1H104Z	0.1	
C156	PSCEA50VBR47	0.47	
C158	PSCEA35VB561	560	
C166	PSCKD1H104K	0.1	
C175	PSQE50F2D103	0.01	
C216	PSCQE50F102	0.001	
C221	PSCEA50VB220	22	
C226	PSCKD1H221JY	220P	
C227	PSQE50F2D103	0.01	
C230	PSCKD1H104Z	0.1	
C231	PSQE50F2D103	0.01	
C232	PSCEA50VB2R2	2.2	
C234	PSCEA35VB561	560	
C244	PSCEA50VBR47	0.47	
C248	PSQE50F2D103	0.01	
C269	PSCEA50VB2R2	2.2	
C281	PSCQE50F472	0.0047	
C323	PSQE50F2D103	0.01	
C387	PSCEA50VB220	22	
C409	PSCEA50VB220	22	
C440	PSCKD1H104Z	0.1	

Ref. No.	Part No.	Part Name & Description	Remarks
C463	PSCKD1H104Z	0.1	
C470	PSQE50F2D103	0.01	
C521	PSCEA50VB2R2	2.2	
C552	PSCKD1H104Z	0.1	
C556	PSQE50F2D103	0.01	
C560	PSCKD1H221JY	220P	
C656	PSCEA50VB220	22	
C708	PSCEA50VB2R2	2.2	
C720	PSCKD1H104Z	0.1	
C730	PSCKD1H104Z	0.1	
C750	PSCKD1H104Z	0.1	
		(RESISTORS)	
R73	ERDS2TJ473	47K	
R74	ERDS2TJ104	100K	
R78	ERDS2TJ100	10	
R94	ER0S2TKF1503	150K	
R95	ERDS2TJ473	47K	
R106	ERDS2TJ102	1K	
R109	ERDS2TJ472	4.7K	
R122	ER0S2TKF4301	4.3K	
R124	ERDS2TJ222	2.2K	
R138	ERDS2TJ102	1K	
R143	ERDS2TJ153	15K	
R144	ERDS2TJ223	22K	
R150	ER0S2TKF2001	2K	
R151	ERDS2TJ100	10	
R152	ERDS2TJ103	10K	
R153	ER0S2TKF4301	4.3K	
R157	ERDS2TJ223	22K	
R163	ERDS2TJ472	4.7K	
R164	ERDS2TJ473	47K	
R165	ERDS2TJ473	47K	
R168	ERDS2TJ221	220	
R169	ERDS2TJ223	22K	
R176	ERDS2TJ224	220K	
R179	ERDS2TJ103	10K	
R180	ER0S2TKF4301	4.3K	
R181	ERDS2TJ472	4.7K	
R185	ERDS2TJ683	68K	
R210	ERDS2TJ183	18K	
R214	ERDS2TJ473	47K	
R215	ERDS2TJ391	390	
R217	ERDS2TJ472	4.7K	
R223	ERDS2TJ470	47	
R225	ERDS2TJ472	4.7K	
R226	ERDS2TJ104	100K	
R228	ERDS2TJ104	100K	
R229	ERDS2TJ152	1.5K	
R230	ERDS2TJ103	10K	
R241	ERDS2TJ103	10K	
R242	ERDS2TJ103	10K	
R246	ER0S2TKF1503	150K	
R249	ERDS2TJ222	2.2K	
R250	ER0S2TKF2202	22K	
R251	ER0S2TKF4301	4.3K	
R252	ERDS2TJ103	10K	
R253	ERDS2TJ102	1K	
R254	ERDS2TJ471	470	
R255	ERDS2TJ181	180	
R257	ERDS2TJ224	220K	
R281	ERDS2TJ223	22K	
R283	ER0S2TKF2202	22K	
R284	ERDS2TJ220	22	
R285	ER0S2TKF4301	4.3K	
R360	NVG6THTAB1K	VARIABLE RESISTOR	
R380	ERDS2TJ221	220	
R383	ERDS2TJ223	22K	
R385	ERDS2TJ473	47K	
R388	ERDS2TJ472	4.7K	
R413	ER0S2TKF2402	24K	
R414	ERDS2TJ471	470	
R415	ERDS2TJ183	18K	

Ref. No.	Part No.	Part Name & Description	Remarks
R417	ERDS2TJ222	2.2K	
R418	ERDS2TJ472	4.7K	
R421	ER0S2TKF2702	27K	
R423	ERDS2TJ472	4.7K	
R436	ERDS2TJ472	4.7K	
R437	ERDS2TJ222	2.2K	
R441	ERDS2TJ102	1K	
R445	PSRTNTH4G33B	THERMISTOR	
R458	ERDS2TJ103	10K	
R460	ERDS2TJ332	3.3K	
R462	ERDS2TJ472	4.7K	
R464	ERDS2TJ103	10K	
R468	ERDS2TJ223	22K	
R469	ERDS2TJ472	4.7K	
R470	ERDS2TJ104	100K	
R472	ERDS2TJ472	4.7K	
R474	ERDS2TJ103	10K	
R475	ERDS2TJ223	22K	
R476	ERDS2TJ104	100K	
R477	ERDS2TJ473	47K	
R481	ERDS2TJ392	3.9K	
R482	ERDS2TJ222	2.2K	
R514	ER0S2TKF2701	2.7K	
R515	ER0S2TKF2203	220K	
R516	ERDS2TJ331	330	
R517	ERDS2TJ222	2.2K	
R522	ERDS2TJ224	220K	
R523	ERDS2TJ470	47	
R536	ERDS2TJ103	10K	
R543	ERDS2TJ333	33K	
R545	ERDS2TJ104	100K	
R546	ER0S2TKF9102	91K	
R547	ERDS2TJ333	33K	
R548	ER0S2TKF5602	56K	
R549	ERDS2TJ474	470K	
R550	ERDS2TJ333	33K	
R551	ERDS2TJ472	4.7K	
R554	ERDS2TJ221	220	
R557	ERDS2TJ102	1K	
R559	ERDS2TJ103	10K	
R650	ERDS2TJ104	100K	
R651	ERDS2TJ563	56K	
R652	ERDS2TJ334	330K	
R657	ERDS2TJ474	470K	
R658	ERDS2TJ681	680	
R659	ERDS2TJ683	68K	
R660	ERDS2TJ472	4.7K	
R702	ERDS2TJ334	330K	
R704	ERDS2TJ221	220	
R706	ER0S2TKF2701	2.7K	
R707	ERDS2TJ334	330K	
R709	ERDS2TJ333	33K	
R710	ERDS2TJ183	18K	
R714	ERDS2TJ104	100K	
R715	ERDS2TJ473	47K	
R716	ERDS2TJ224	220K	
R718	ERDS2TJ472	4.7K	
R719	ERDS2TJ471	470	
R722	ERDS2TJ103	10K	
R723	ERDS2TJ472	4.7K	
R724	ER0S2TKF9102	91K	
R725	ER0S2TKF2402	24K	
R726	ERDS2TJ152	1.5K	
R730	ERDS2TJ153	15K	
R731	ERDS2TJ471	470	
R810	ERDS2TJ473	47K	
R820	ERDS2TJ470	47	
		(PHOTO ELECTRIC TRANSDUCERS)	
PC145	PSVIPS2561L	PHOTO COUPLER	S ⚠
PC147	PSVIPS2561L	PHOTO COUPLER	S ⚠
PC429	PSVIPS2561L	PHOTO COUPLER	S ⚠

12.2. KX-TDA0104XJ/X

12.2.1. Electrical Parts

Ref. No.	Part No.	Part Name & Description	Remarks
1	PSUAT9066HM	CHASSIS, BODY	
2	PSMDT9066HN	CHASSIS, COVER	
3	PSMXT9066HW	INSULATOR	
4	PSMDT9066NG	ANGLE	
5	PQUB14Z2	LEVER	
6	PSKTB1000BP	PIN	
7	PSUST9067AR	LEAF SPRING	

12.2.2. Accessories and Packing Materials

Ref. No.	Part No.	Part Name & Description	Remarks
A1	PSQW1988Z	LEAFLET	
A2	XYN3+F6	SCREW	
A3	XZB05X08A03	PROTECTION COVER	
P1	PSZKDA0104XJ	PACKING CASE (for KX-TDA0104XJ)	
P1	PSZKDA0104XU	PACKING CASE (for KX-TDA0104X)	
P2	PSPD1225Z	CUSHION	
P3	PSPD1224Z	CUSHION	

12.2.3. Main Board Parts

Ref. No.	Part No.	Part Name & Description	Remarks
PCB10	PSWP1DA0104X	MAIN BOARD ASS´Y (RTL)	
		(IC)	
IC602	PSVIUC3842BN	IC	
		(TRANSISTORS)	
Q44	2SC1740S	TRANSISTOR(SI)	S
Q45	2SB1548	TRANSISTOR(SI)	
Q49	2SK1941	TRANSISTOR(SI)	
Q50	2SK1941	TRANSISTOR(SI)	
Q51	2SA1020	TRANSISTOR(SI)	
Q52	2SA1020	TRANSISTOR(SI)	
Q90	2SC5201	TRANSISTOR(SI)	
Q110	2SK2651	TRANSISTOR(SI)	
Q111	2SK2651	TRANSISTOR(SI)	
Q134	2SA1309	TRANSISTOR(SI)	S
Q135	2SC1740S	TRANSISTOR(SI)	S
Q150	2SA1020	TRANSISTOR(SI)	
Q151	2SA1020	TRANSISTOR(SI)	
Q157	2SA1309	TRANSISTOR(SI)	S
Q247	2SC1740S	TRANSISTOR(SI)	S
Q255	2SA953	TRANSISTOR(SI)	
Q268	2SJ334	TRANSISTOR(SI)	
Q303	2SK3053	TRANSISTOR(SI)	
Q308	2SK2750	TRANSISTOR(SI)	
Q311	2SC1740S	TRANSISTOR(SI)	S
Q319	2SC2003	TRANSISTOR(SI)	
Q320	2SK2907	TRANSISTOR(SI)	
Q325	2SJ477	TRANSISTOR(SI)	
Q379	2SC2003	TRANSISTOR(SI)	
Q574	2SA953	TRANSISTOR(SI)	
Q577	2SC2655	TRANSISTOR(SI)	
Q578	2SJ477	TRANSISTOR(SI)	
Q591	2SC2002	TRANSISTOR(SI)	
Q592	2SC1740S	TRANSISTOR(SI)	S
Q600	2SC1740S	TRANSISTOR(SI)	S
		(DIODES)	
D8	PSVDD5SBA60	DIODE(SI)	
D9	PFVDRL1N4005	DIODE(SI)	S
D14	ERZV07D471	VARISTOR	S
D15	ERZV07D471	VARISTOR	S
D30	PSVD1GU42	DIODE(SI)	

Ref. No.	Part No.	Part Name & Description	Remarks
D31	PSVD1GU42	DIODE(SI)	
D42	PSVD1GU42	DIODE(SI)	
D43	PSVDRD22ESAB	DIODE(SI)	S
D47	PSVD11EQS04	DIODE(SI)	
D52	PSVD1GU42	DIODE(SI)	
D53	PSVDFSU05B60	DIODE(SI)	
D56	PSVDSTF861S	THYRISTOR	
D57	1SS133	DIODE(SI)	S
D74	PSVD1GU42	DIODE(SI)	
D77	PSVD1GU42	DIODE(SI)	
D88	1SS133	DIODE(SI)	S
D91	1SS133	DIODE(SI)	S
D92	PSVDRD20ESAB	DIODE(SI)	S
D100	PSVDERB0613	DIODE(SI)	
D103	PSVDERB0613	DIODE(SI)	
D110	PFVDRD27ESAB	DIODE(SI)	S
D111	PFVDRD27ESAB	DIODE(SI)	S
D115	PSVD1GU42	DIODE(SI)	
D118	PSVD1GU42	DIODE(SI)	
D132	PSVD1GU42	DIODE(SI)	
D133	PSVDRD9R1ESA	DIODE(SI)	S
D137	PSVDRD2R2ESA	DIODE(SI)	S
D200	PSVDFCF06A40	DIODE(SI)	
D201	PSVDFCF06A40	DIODE(SI)	
D238	PSVD1GU42	DIODE(SI)	
D245	PSVDRD6R8ESA	DIODE(SI)	S
D260	PSVDSF10SC6	DIODE(SI)	
D300	PSVDFCH10A10	DIODE(SI)	
D301	PSVDRD16ESAB	DIODE(SI)	S
D306	PSVDRD9R1ESA	DIODE(SI)	S
D326	1SS133	DIODE(SI)	S
D345	PSVDSF10SC6	DIODE(SI)	
D346	PSVDRD20ESAB	DIODE(SI)	S
D349	1SS133	DIODE(SI)	S
D352	PFVDRD27ESAB	DIODE(SI)	S
D353	PFVDRD27ESAB	DIODE(SI)	S
D361	PSVD1GU42	DIODE(SI)	
D375	1SS133	DIODE(SI)	S
D383	1SS133	DIODE(SI)	S
D390	1SS133	DIODE(SI)	S
D581	1SS133	DIODE(SI)	S
D582	PSVD1GU42	DIODE(SI)	
D583	PSVDSF10SC6	DIODE(SI)	
D591	1SS133	DIODE(SI)	S
D604	1SS133	DIODE(SI)	S
D615	1SS133	DIODE(SI)	S
D617	1SS133	DIODE(SI)	S
		(CONNECTORS)	
CN2	PSJP12EA44P	CONNECTOR	
CN700	PQJP2D98Z	CONNECTOR	
CN711	PSJP556602A	CONNECTOR	
CN721	PSJPDF3A7P2D	CONNECTOR	
		(CAPACITORS)	
C12	ECQE6474KF	0.47	
C13	ECQE6474KF	0.47	
C32	PSCEA35VB561	560	
C33	PSCEA35VB561	560	
C48	PSCKD2E102M	0.001	
C54	ECCF1H471J	470P	
C55	ECKR3A221KBP	220P	
C59	PSCKD1H104Z	0.1	
C61	PSCEA450V271	270	⚠
C79	ECKR3A222KBP	0.0022	
C89	PSCEA35VB151	150	
C96	PSCEA450V271	270	⚠
C131	ECKR3A471KBP	470P	
C133	PSCEA50VB220	22	
C136	PSCEA50VB220	22	
C159	PSCKR1H222KB	0.0022	
C171	PSCKD1H104Z	0.1	
C203	ECKR3A221KBP	220P	

Ref. No.	Part No.	Part Name & Description	Remarks
C205	PSCEA50VB681	680	
C220	PSCQE50F472	0.0047	
C227	PSQE50F2D103	0.01	
C231	PSCQE50F472	0.0047	
C239	PSCEA35VB561	560	
C248	ECCF1H471J	470P	
C255	ECCF1H471J	470P	
C266	PSCEA50VB101	100	
C278	PSCEA25V1801	1800	
C281	PSCQE50F222	0.0022	
C294	PSCKD1H104Z	0.1	
C324	PSQE50F2D103	0.01	
C344	PSCEA50VB681	680	
C362	PSCEA50V220M	22	
C375	PSCQE50F472	0.0047	
C386	ECCF1H471J	470P	
C479	PSCEA35VB561	560	
C480	PSCQE2E333M	0.033	
C481	PSCKD2E102M	0.001	
C491	PSCQE50F472	0.0047	
C521	PSCQE50F472	0.0047	
C570	PSCEA50VB681	680P	
C573	PSQE50F2D103	0.01	
C581	PSCQE50F472	0.0047	
C587	PSCEA50VB181	180	
C595	ECCF1H471J	470P	
C598	PSCQE50F472	0.0047	
C603	PSCEA50VB220	22	
C607	PSCQE50F472	0.0047	
C608	PSCEA63VB470	47	
C613	PSCKR1H222KB	0.0022	
C620	PSCKD1H104K	0.1	
C621	PSCKD1H104K	0.1	
C662	PSCQE50F472	0.0047	
		(RESISTORS & THERMISTORS)	
R1	PSRQA53K100	10	
R2	PSRWNG05N5R6	5.6	
R23	ERDS2TJ103	10K	
R24	ERDS2TJ103	10K	
R25	ERG2SJ100E	10	
R26	ERG2SJ100E	10	
R33	ERDS2TJ102	1K	
R44	ERG1SJ100	10	
R54	ERG1SJ100	10	
R55	ERDS2TJ222	2.2K	
R58	ERDS2TJ102	1K	
R84	ERG2SJ153	15K	
R85	ERG2SJ153	15K	
R86	ERG2SJ153	15K	
R87	ERG2SJ153	15K	
R88	ERG2SJ153	15K	
R89	ERG2SJ153	15K	
R106	ERDS2TJ222	2.2K	
R116	ERDS2TJ220	22	
R120	ERDS2TJ220	22	
R133	ERDS2TJ330	33	
R134	ERDS2TJ224	220K	
R135	ERDS2TJ472	4.7K	
R136	ERDS2TJ683	68K	
R145	ERDS2TJ103	10K	
R146	ERDS2TJ103	10K	
R170	ERDS2TJ333	33K	
R172	ERDS2TJ104	100K	
R176	ERDS2TJ223	22K	
R179	ERDS2TJ333	33K	
R213	ERDS2TJ683	68K	
R237	ERDS2TJ100	10	
R241	ERDS2TJ222	2.2K	
R242	ERDS2TJ222	2.2K	
R243	ERDS2TJ153	15K	
R246	ERDS2TJ224	220K	
R249	ERDS2TJ222	2.2K	

Ref. No.	Part No.	Part Name & Description	Remarks
R251	ERDS2TJ272	2.7K	
R252	ERDS2TJ103	10K	
R253	ERDS2TJ562	5.6K	
R257	ERDS2TJ102	1K	
R258	ERDS2TJ104	100K	
R263	ERX2SJR10	0.1	
R264	ERX2SJR10	0.1	
R265	ERX2SJR10	0.1	
R297	ERDS2TJ102	1K	
R302	ERDS2TJ104	100K	
R305	ERDS2TJ683	68K	
R307	ERDS2TJ223	22K	
R308	ERDS2TJ152	1.5K	
R309	ERDS2TJ471	470	
R310	ERX1SJ1R8	1.8	
R318	ERX1SZJR10	0.1	
R321	ERDS2TJ224	220K	
R324	ERDS2TJ103	10K	
R328	ERDS2TJ102	1K	
R351	ERDS2TJ100	10	
R355	ERDS2TJ333	33K	
R360	NVG6THTAB1K	SEMI-FIXED VARIABLE RESISTOR	
R371	ERDS2TJ821	820	
R376	ERX1SZJR10	0.1	
R377	ERX1SZJR10	0.1	
R381	ERG1SJ332	3.3K	
R382	ERG1SJ332	3.3K	
R384	ERDS2TJ334	330K	
R385	ERDS2TJ334	330K	
R392	ERDS2TJ333	33K	
R445	PSRTNTH4G33B	THERMISTOR	
R510	ERX1SZJR10	0.1	
R511	ERX1SZJR10	0.1	
R512	ERX1SZJR10	0.1	
R571	ERX2SJR22	0.22	
R572	ERX2SJR22	0.22	
R574	ERDS2TJ333	33K	
R576	ERG2SJ222	2.2K	
R580	ERG1SJ822	8.2K	
R590	ERG2SJ151	150	
R593	ERG1SJ471	470	
R594	ERDS2TJ222	2.2K	
R595	ERDS2TJ102	1K	
R596	ERDS2TJ103	10K	
R606	ERDS2TJ223	22K	
R609	ERDS2TJ223	22K	
R682	PSRTNTH4G33B	THERMISTOR	
		(COILS & COMPONENTS PARTS)	
L10	PSLQCH07B0	COIL	
L37	PSLQCH01Y0	COIL	
L62	EXCELDR35	COMPONENTS PART	
L202	EXCELSA35	COIL	
L204	PSLQCH03E0	COIL	
L265	EXCELDR35	COMPONENTS PART	
L271	EXCELSA35	COIL	
L272	PSLQCH03X0	COIL	
L313	EXCELSA35	COIL	
L314	EXCELSA35	COIL	
L391	EXCELDR35	COMPONENTS PART	
L586	PSLQCH05S0	COIL	
		(PHOTO ELECTRIC TRANSDUCERS)	
PC145	PSVIPS2561L	PHOTO COUPLER	S ⚠
PC147	PSVIPS2561L	PHOTO COUPLER	S ⚠
PC429	PSVIPS2561L	PHOTO COUPLER	S ⚠
		(TRANSFORMER)	
T146	PSLTS9678VM	TRANSFORMER	⚠
		(OTHERS)	
E10	PSMYT9066HY	HEAT SINK	
E11	PSMYT9067AS	HEAT SINK	

Ref. No.	Part No.	Part Name & Description	Remarks
E12	PSMYT9066JA	HEAT SINK	
E13	PSMYT9067JE	HEAT SINK	
PCB10-1	PSWP2DA0104X	PRIMARY SUB. BOARD1 ASS´Y (RTL)	
		(IC)	
IC24	PSVIFA5502P	IC	
		(TRANSISTORS)	
Q68	2SC1740S	TRANSISTOR(SI)	S
Q69	2SC1740S	TRANSISTOR(SI)	S
Q163	2SC1740S	TRANSISTOR(SI)	S
Q167	2SA1309	TRANSISTOR(SI)	S
Q170	2SC1740S	TRANSISTOR(SI)	S
		(DIODES)	
D184	PFVDRD62ESAB	DIODE(SI)	S
D192	1SS133	DIODE(SI)	S
D193	1SS133	DIODE(SI)	S
D36	PFVDRD62ESAB	DIODE(SI)	S
D64	PFVDRD62ESAB	DIODE(SI)	S
D81	1SS133	DIODE(SI)	S
D95	PFVDRD27ESAB	DIODE(SI)	S
D96	1SS133	DIODE(SI)	S
		(CONNECTORS)	
CN100	PSJP50055816	CONNECTOR	
CN101	PSJP50055815	CONNECTOR	
		(CAPACITORS)	
C16	PSCKR1H222KB	0.0022	
C18	PSCKD1H101J	100P	
C21	PSCKD1H104K	0.1	
C22	PSCKR1H222KB	0.0022	
C26	PSCKD1H104K	0.1	
C27	PSCEA35VB151	150	
C28	PSQE50F2D103	0.01	
C34	PSQE50F2D103	0.01	
C71	PSCKD1H104K	0.1	
C73	ECCF1H471J	470P	
C84	PSCKD1H104Z	0.1	
C85	PSCKD1H104Z	0.1	
C94	PSCQE50F102	0.001	
C98	PSCKR1H222KB	0.0022	
C166	PSQE50F2D473	0.047	
C194	PSCEA50VB220	22	
C195	PSCKD1H104K	0.1	
		(RESISTORS)	
R12	ERDS2TJ270	27	
R15	ER0S2TKF2202	22K	
R16	ERDS2TJ105	1M	
R17	ERDS2TJ103	10K	
R18	ERDS2TJ474	470K	
R19	ERDS2TJ153	15K	
R27	ERDS2TJ223	22K	
R29	ERDS2TJ224	220K	
R31	ERDS2TJ333	33K	
R32	ER0S2TKF2702	27K	
R37	ER0S2TKF2201	2.2K	
R42	ERDS2TJ474	470K	
R43	ER0S2TKF2401	2.4K	
R65	ERDS2TJ224	220K	
R82	ER0S2TKF5602	56K	
R83	ERDS2TJ392	3.9K	
R90	NVG6THTAB200	SEMI-FIXED VARIABLE RESISTOR	
R91	ER0S2TKF2700	270	
R93	ER0S2TKF1503	150K	
R94	ER0S2TKF2702	27K	
R95	ER0S2CKF1002	10K	

Ref. No.	Part No.	Part Name & Description	Remarks
R97	ERDS2TJ153	15K	
R164	ERDS2TJ224	220K	
R165	ERDS2TJ473	47K	
R168	ERDS2TJ123	12K	
R169	ERDS2TJ103	10K	
R185	ERDS2TJ224	220K	
R190	ERDS2TJ123	12K	
R191	ERDS2TJ152	1.5K	
PCB10-2	PSWP3DA0104X	SECONDARY SUB. BOARD ASS´Y (RTL)	
		(ICS)	
IC226	PSVIUC3842BN	IC	
IC513	PSVIUPC393C	IC	S
IC544	PSVIUPC393C	IC	S
		(TRANSISTORS)	
Q218	2SC1740S	TRANSISTOR(SI)	S
Q222	2SC2003	TRANSISTOR(SI)	
Q298	2SC1740S	TRANSISTOR(SI)	S
Q314	2SC2655	TRANSISTOR(SI)	
Q404	2SC1740S	TRANSISTOR(SI)	S
Q426	2SC1740S	TRANSISTOR(SI)	S
Q435	2SC1740S	TRANSISTOR(SI)	S
Q437	2SC1740S	TRANSISTOR(SI)	S
Q444	2SA953	TRANSISTOR(SI)	
Q466	2SC1740S	TRANSISTOR(SI)	S
Q475	2SC1740S	TRANSISTOR(SI)	S
Q483	2SC2784	TRANSISTOR(SI)	S
Q490	2SA1309	TRANSISTOR(SI)	S
Q506	2SA1309	TRANSISTOR(SI)	S
Q507	2SC1740S	TRANSISTOR(SI)	S
Q511	2SA1309	TRANSISTOR(SI)	S
Q520	2SA1309	TRANSISTOR(SI)	S
Q526	2SA1309	TRANSISTOR(SI)	S
Q567	2SC1740S	TRANSISTOR(SI)	S
Q640	2SC1740S	TRANSISTOR(SI)	S
Q645	2SA1309	TRANSISTOR(SI)	S
Q646	2SA1309	TRANSISTOR(SI)	S
Q647	2SA1309	TRANSISTOR(SI)	S
Q648	2SA1309	TRANSISTOR(SI)	S
Q652	2SC1740S	TRANSISTOR(SI)	S
Q660	2SC1740S	TRANSISTOR(SI)	S
Q661	2SA1309	TRANSISTOR(SI)	S
Q673	2SC2784	TRANSISTOR(SI)	S
Q692	2SC1740S	TRANSISTOR(SI)	S
		(DIODES)	
D220	1SS133	DIODE(SI)	S
D222	1SS133	DIODE(SI)	S
D230	1SS133	DIODE(SI)	S
D233	1SS133	DIODE(SI)	S
D281	1SS133	DIODE(SI)	S
D372	PSVD1GU42	DIODE(SI)	
D403	PSVDRD20ESAB	DIODE(SI)	S
D407	1SS133	DIODE(SI)	S
D430	PSVDRD18ESAB	DIODE(SI)	S
D431	1SS133	DIODE(SI)	S
D433	PFVDRD27ESAB	DIODE(SI)	S
D434	PSVDRD20ESAB	DIODE(SI)	S
D436	1SS133	DIODE(SI)	S
D475	PSVDRD5R1ESA	DIODE(SI)	S
D487	1SS133	DIODE(SI)	S
D488	1SS133	DIODE(SI)	S
D492	PSVDRD9R1ESA	DIODE(SI)	S
D493	1SS133	DIODE(SI)	S
D494	1SS133	DIODE(SI)	S
D496	1SS133	DIODE(SI)	S
D497	1SS133	DIODE(SI)	S
D498	1SS133	DIODE(SI)	S

Ref. No.	Part No.	Part Name & Description	Remarks
D505	1SS133	DIODE(SI)	S
D510	1SS133	DIODE(SI)	S
D524	1SS133	DIODE(SI)	S
D530	PSVDRD9R1ESA	DIODE(SI)	S
D531	1SS133	DIODE(SI)	S
D532	1SS133	DIODE(SI)	S
D533	1SS133	DIODE(SI)	S
D535	1SS133	DIODE(SI)	S
D542	1SS133	DIODE(SI)	S
D543	PFVDRD62ESAB	DIODE(SI)	S
D545	1SS133	DIODE(SI)	S
D558	PSVDRD39ESAB	DIODE(SI)	S
D566	1SS133	DIODE(SI)	S
D634	1SS133	DIODE(SI)	S
D637	1SS133	DIODE(SI)	S
D664	1SS133	DIODE(SI)	S
D665	1SS133	DIODE(SI)	S
D666	1SS133	DIODE(SI)	S
D668	PSVDRD22ESAB	DIODE(SI)	S
D674	1SS133	DIODE(SI)	S
		(CONECTORS)	
CN200	PSJP50055814	CONNECTOR	
CN201	PSJP50055814	CONNECTOR	
CN202	PSJP50055814	CONNECTOR	
CN203	PSJP50055814	CONNECTOR	
CN204	PSJP50055814	CONNECTOR	
CN205	PSJP50055815	CONNECTOR	
		(CAPACITORS)	
C216	PSCKR1H222KB	0.0022	
C232	PSCEA50VB2R2	2.2	
C234	PSCEA50VB101	100	
C235	PSCKD1H104K	0.1	
C402	PSCKD1H104K	0.1	
C409	PSCEA50VB220	22	
C419	PSCKD1H104K	0.1	
C435	PSCKD1H104K	0.1	
C439	PSCKD1H104Z	0.1	
C440	PSCKD1H104K	0.1	
C512	PSCEA50VB220	22	
C534	PSCEA50VBR47	0.47	
C568	PSCKD1H104K	0.1	
C633	PSCEA50VB2R2	2.2	
C651	PSCKD1H104Z	0.1	
C663	PSCKD1H104K	0.1	
C669	PSCKD1H104Z	0.1	
		(RESISTORS)	
R210	ERG1SJ103	10K	
R214	ERDS2TJ473	47K	
R215	ERDS2TJ222	2.2K	
R217	ERDS2TJ332	3.3K	
R219	ERG1SJ681	680	
R221	ERG2SJ151	150	
R223	ERG1SJ101	100	
R224	ERDS2TJ102	1K	
R225	ERDS2TJ273	27K	
R227	ERDS2TJ101	100	
R228	ERDS2TJ104	100K	
R229	ER0S2THF6801	6.8K	
R267	ERG1SJ272	2.7K	
R281	ERDS2TJ103	10K	
R282	ERDS2TJ101	100	
R283	ERDS2TJ103	10K	
R284	NVG6THTAB1K	SEMI-FIXED VARIABLE RESISTOR	
R285	ERDS2TJ152	1.5K	
R299	ERDS2TJ102	1K	
R373	ERG1SJ222	2.2K	
R401	ERDS2TJ683	68K	
R405	ERDS2TJ103	10K	
R413	ER0S2TKF2402	24K	
R415	ER0S2TKF1802	18K	

Ref. No.	Part No.	Part Name & Description	Remarks
R417	ERDS2TJ222	2.2K	
R418	ERDS2TJ472	4.7K	
R421	ER0S2TKF2702	27K	
R422	ERDS2TJ103	10K	
R423	ER0S2TKF4701	4.7K	
R426	ERDS2TJ472	4.7K	
R427	ERDS2TJ152	1.5K	
R436	ERDS2TJ472	4.7K	
R437	ERDS2TJ471	470	
R438	ERDS2TJ473	47K	
R441	ERDS2TJ152	1.5K	
R446	ER0S2TKF4701	4.7K	
R448	ERDS2TJ331	330	
R458	ERDS2TJ332	3.3K	
R472	ERDS2TJ222	2.2K	
R473	ERDS2TJ222	2.2K	
R474	ERDS2TJ103	10K	
R477	ERDS2TJ153	15K	
R478	ERDS2TJ273	27K	
R484	ERDS2TJ102	1K	
R485	ERDS2TJ153	15K	
R486	ERDS2TJ102	1K	
R487	ERDS2TJ222	2.2K	
R488	ERDS2TJ103	10K	
R495	ER0S2TKF1803	180K	
R498	ERDS2TJ330	33	
R506	ERDS2TJ682	6.8K	
R507	ERDS2TJ333	33K	
R508	ERDS2TJ224	220K	
R509	ERDS2TJ683	68K	
R514	ER0S2CKF1002	10K	
R515	ER0S2TKF2203	220K	
R516	ERDS2TJ222	2.2K	
R517	ERDS2TJ101	100	
R522	ERDS2TJ474	470K	
R526	ERDS2TJ222	2.2K	
R527	ERDS2TJ102	1K	
R528	ERDS2TJ332	3.3K	
R533	ERDS2TJ104	100K	
R536	ERDS2TJ223	22K	
R538	ERDS2TJ103	10K	
R539	ERDS2TJ153	15K	
R546	ER0S2TKF5602	56K	
R547	ER0S2TKF1801	1.8K	
R548	ER0S2TKF8201	8.2K	
R549	ER0S2TKF2203	220K	
R550	ER0S2TKF1503	150K	
R551	ER0S2TKF2201	2.2K	
R552	ER0S2TKF1201	1.2K	
R559	ERDS2TJ471	470	
R565	ERDS2TJ332	3.3K	
R630	ERDS2TJ333	33K	
R631	ERDS2TJ473	47K	
R632	ERDS2TJ105	1M	
R635	ERDS2TJ151	150	
R636	ERDS2TJ273	27K	
R638	ERDS2TJ102	1K	
R639	ERDS2TJ103	10K	
R641	ER0S2TKF9102	91K	
R642	ER0S2TKF2402	24K	
R649	ERDS2TJ103	10K	
R650	ERDS2TJ104	100K	
R651	ERDS2TJ683	68K	
R652	ERDS2TJ334	330K	
R653	ERDS2TJ152	1.5K	
R654	ERDS2TJ472	4.7K	
R662	ERDS2TJ103	10K	
R667	ERG1SJ332	3.3K	
R670	ERDS2TJ473	47K	
R671	ERDS2TJ332	3.3K	
R672	ERDS2TJ273	27K	
R680	ER0S2TKF4701	4.7K	
R681	ERDS2TJ331	330	

Ref. No.	Part No.	Part Name & Description	Remarks
R691	ERDS2TJ224	220K	
R693	ERDS2TJ474	470K	
PCB10-3	PSWP4DA0104X	PRIMARY SUB. BOARD2 ASS´Y (RTL)	
		(IC)	
IC121	PSVIC3844BN0	IC	
		(TRANSISTORS)	
Q139	2SA1309	TRANSISTOR(SI)	S
Q141	2SC1740S	TRANSISTOR(SI)	S
		(DIODES)	
D143	1SS133	DIODE(SI)	S
D147	PSVD11EQS04	DIODE(SI)	
D154	1SS133	DIODE(SI)	S
D155	1SS133	DIODE(SI)	S
		(CONNECTORS)	
CN102	PSJP50055814	CONNECTOR	
CN103	PSJP50055815	CONNECTOR	
		(CAPACITORS)	
C107	ECCF1H471J	470P	
C122	PSCKD1H104K	0.1	
C123	PSCQE50F222	0.0022	
C128	PSCEA35VB561	560	
C129	PSCKD1H104Z	0.1	
C137	PSCKD1H104K	0.1	
C142	PSCKD1H104K	0.1	
C156	PSCEA50V2R2M	2.2	
		(RESISTORS)	
R108	ERDS2TJ472	4.7K	
R109	ERDS2TJ104	100K	
R119	ERDS2TJ124	120K	
R122	ER0S2TKF3901	3.9K	
R124	ERDS2TJ103	10K	
R138	ERDS2TJ223	22K	
R143	ERDS2TJ103	10K	
R144	ERDS2TJ222	2.2K	
R174	ERDS2TJ220	22	

12.2.4. Filter/Battery Board Parts

Ref. No.	Part No.	Part Name & Description	Remarks
PCB20	PSWP5DA0104X	FILTER/BATTERY BOARD ASS´Y (RTL)	
		(TRANSISTORS)	
Q287	2SC2784	TRANSISTOR(SI)	S
Q292	2SA1174	TRANSISTOR(SI)	S
Q367	2SC1740S	TRANSISTOR(SI)	S
Q694	2SA1309	TRANSISTOR(SI)	S
		(DIODES)	
D60	ERZV10D471	VARISTOR	S ⚠
D286	PFVDRD27ESAB	DIODE(SI)	S
D460	PSVDL73JB1GD	LED	
D560	1SS133	DIODE(SI)	
D698	PSVDRD39ESAB	DIODE(SI)	S
D699	1SS133	DIODE(SI)	
		(CONNECTOR)	
CN4	PSJP556904A	CONNECTOR	
		(CAPACITORS)	
C2	PSCQE2E474M	0.47	⚠

Ref. No.	Part No.	Part Name & Description	Remarks
C4	ECQU2A224ML	0.22	⚠
C6	PSCKD2E102M	0.001	
C7	PSCKD2E102M	0.001	
C8	PSCKD2E221K	220P	
C9	PSCKD2E221K	220P	
C17	PSCKD2E102M	0.001	
C19	PSCKD2E102M	0.001	
C290	PSCKD1H104K	0.1	
C304	PSCKD1H104Z	0.1	
C305	PSCKD1H104Z	0.1	
C306	PSCKD1H104Z	0.1	
C366	PSCKD1H104K	0.1	
		(RESISTORS)	
R45	ERDS2TJ224	220K	
R46	ERDS2TJ224	220K	
R47	ERDS2TJ224	220K	
R288	ERDS2TJ472	4.7K	
R289	ERDS2TJ222	2.2K	
R290	ERDS2TJ682	6.8K	
R291	ERDS2TJ472	4.7K	
R293	ERDS2TJ472	4.7K	
R294	ERDS2TJ472	4.7K	
R296	ERDS2TJ473	47K	
R459	ERDS2TJ222	2.2K	
R561	ERDS2TJ473	47K	
R695	ERDS2TJ101	100	
R696	ERDS2TJ474	470K	
R697	ERDS2TJ681	680	
		(FUSES)	
F1	PSBA5HT63	FUSE	⚠
F350	PSBA314015	FUSE	⚠
		(COILS)	
L3	PSLQCH03K0	COIL	⚠
L5	PSLQCH03K0	COIL	⚠
		(SWITCHES)	
SW1	PSSTJE30202	POWER SWITCH	⚠
SW2	PSSSU111400	SLIDE SWITCH	
		(OTHERS)	
E20	PSJSS9691VK	SOCKET, AC	⚠
E21	PSJSS9697VK	CONNECTOR	
E22	PSJSS9690VK	CONNECTOR	
E23	PSJSS9698VK	CONNECTOR	

12.3. KX-TDA0103XJ/X

12.3.1. Electrical Parts

Ref. No.	Part No.	Part Name & Description	Remarks
1	PSUAT9066RF	CHASSIS, BODY	
2	PSUAT9066RG	CHASSIS, COVER	
3	PSUVT9066HP	COVER	
4	PSMDT9066NG	ANGLE	
5	PSMXT9066HW	INSULATOR	
6	PSJQ109R0612	FAN MOTOR	
7	PSKTB1000BP	PIN	
8	PQUB14Z2	LEVER	
9	PSHRKGLS6RT	GUIDE	
10	PSUST9067AR	LEAF SPRING	

12.3.2. Accessories and Packing Materials

Ref. No.	Part No.	Part Name & Description	Remarks
A1	PSQW1988Z	LEAFLET	
A2	XYN3+F6	SCREW	
A3	XZB05X08A03	PROTECTION COVER	
P1	PSZKDA0103XJ	PACKING CASE (for KX-TDA0103XJ)	
P1	PSZKDA0103XU	PACKING CASE (for KX-TDA0103X)	
P2	PSPD1225Z	CUSHION	
P3	PSPD1224Z	CUSHION	

12.3.3. Main Board Parts

Ref. No.	Part No.	Part Name & Description	Remarks
PCB1	PSWP1DA0103X	MAIN BOARD ASS´Y (RTL)	
		(TRANSISTORS)	
Q44	2SC1740S	TRANSISTOR(SI)	S
Q45	2SB1548	TRANSISTOR(SI)	
Q49	2SK2953	TRANSISTOR(SI)	
Q50	2SK2953	TRANSISTOR(SI)	
Q51	2SA1020	TRANSISTOR(SI)	
Q52	2SA1020	TRANSISTOR(SI)	
Q90	2SC5201	TRANSISTOR(SI)	
Q110	2SK2655	TRANSISTOR(SI)	
Q111	2SK2655	TRANSISTOR(SI)	
Q134	2SA1309	TRANSISTOR(SI)	S
Q135	2SC1740S	TRANSISTOR(SI)	S
Q150	2SA1020	TRANSISTOR(SI)	
Q151	2SA1020	TRANSISTOR(SI)	
Q155	2SC1740S	TRANSISTOR(SI)	S
Q157	2SA1309	TRANSISTOR(SI)	S
Q247	2SC1740S	TRANSISTOR(SI)	S
Q268	2SK2691	TRANSISTOR(SI)	
Q303	2SK2903	TRANSISTOR(SI)	
Q308	2SK2750	TRANSISTOR(SI)	S
Q311	2SC1740S	TRANSISTOR(SI)	S
Q319	2SC2784	TRANSISTOR(SI)	
Q320	2SK2907	TRANSISTOR(SI)	
Q325	2SK2907	TRANSISTOR(SI)	
Q379	2SC2784	TRANSISTOR(SI)	
Q670	2SC2655	TRANSISTOR(SI)	
Q678	2SC1740S	TRANSISTOR(SI)	S
		(DIODES)	
D8	PSVDD15XB60	DIODE(SI)	
D9	PFVDRL1N4005	DIODE(SI)	S
D14	ERZV07D471	VARISTOR	S
D15	ERZV07D471	VARISTOR	S
D30	PSVD1GU42	DIODE(SI)	
D42	PSVD1GU42	DIODE(SI)	
D43	PSVDRD22ESAB	DIODE(SI)	S
D47	PSVD11EQS04	DIODE(SI)	
D52	PSVD1GU42	DIODE(SI)	
D53	PSVDFSU10B60	DIODE(SI)	
D56	PSVDSTF861S	THYRISTOR	
D57	1SS133	DIODE(SI)	
D74	PSVD1GU42	DIODE(SI)	
D76	PSVD1JU42	DIODE(SI)	
D77	PSVD11EQS04	DIODE(SI)	
D88	PSVD1GU42	DIODE(SI)	
D91	1SS133	DIODE(SI)	
D92	PSVDRD20ESAB	DIODE(SI)	S
D100	PSVDERB0613	DIODE(SI)	
D103	PSVDERB0613	DIODE(SI)	
D105	PSVD1GU42	DIODE(SI)	
D110	PFVDRD27ESAB	DIODE(SI)	S
D111	PFVDRD27ESAB	DIODE(SI)	S
D115	PSVD1GU42	DIODE(SI)	
D118	PSVD1GU42	DIODE(SI)	
D130	PSVD1GU42	DIODE(SI)	
D132	PSVD1GU42	DIODE(SI)	
D133	PSVDRD9R1ESA	DIODE(SI)	S
D137	PSVDRD2R2ESA	DIODE(SI)	S
D145	1SS133	DIODE(SI)	
D156	1SS133	DIODE(SI)	

Ref. No.	Part No.	Part Name & Description	Remarks
D200	PSVDFCF16A40	DIODE(SI)	
D201	PSVDFCF16A40	DIODE(SI)	
D238	PSVD1GU42	DIODE(SI)	
D245	PSVDRD6R8ESA	DIODE(SI)	S
D260	PSVDS60SC6M	DIODE(SI)	
D264	PSVD1GU42	DIODE(SI)	
D265	PSVD1GU42	DIODE(SI)	
D300	PSVD20SC9M	DIODE(SI)	
D301	PSVDRD16ESAB	DIODE(SI)	S
D306	PSVDRD9R1ESA	DIODE(SI)	S
D326	1SS133	DIODE(SI)	
D327	PSVDRD16ESAB	DIODE(SI)	S
D328	1SS133	DIODE(SI)	
D343	PSVD21DQ10	DIODE(SI)	
D344	PSVD21DQ10	DIODE(SI)	
D346	PSVDRD16ESAB	DIODE(SI)	S
D349	1SS133	DIODE(SI)	
D352	PFVDRD27ESAB	DIODE(SI)	S
D353	PFVDRD27ESAB	DIODE(SI)	S
D361	PSVD1GU42	DIODE(SI)	
D372	1SS133	DIODE(SI)	
D373	PSVDRD16ESAB	DIODE(SI)	S
D383	1SS133	DIODE(SI)	
D390	1SS133	DIODE(SI)	
D671	PSVDRD6R8ESA	DIODE(SI)	S
D672	PSVDRD5R1ESA	DIODE(SI)	S
D681	PSVD1GU42	DIODE(SI)	
		(CAPACITORS)	
C12	ECQE6474KF	0.47	
C13	ECQE6474KF	0.47	
C14	PSCKD2E221K	220P	
C15	PSCKD2E221K	220P	
C32	PSCEA63VB470	47	
C33	PSCEA63VB470	47	
C48	PSCKD2E102M	0.001	
C54	ECCF1H471J	470P	
C55	ECCR3A101JG	100P	
C59	PSCKD1H104Z	0.1	
C61	PSCEA450V271	270	⚠
C62	ECCR3A101JG	100P	
C79	ECKR3A222KBP	0.0022	
C89	PSCEA35VB151	150	
C96	PSCEA450V331	330	⚠
C102	ECKR3A331KBP	330P	
C103	ECKR3A331KBP	330P	
C104	ECKR3A331KBP	330P	
C131	ECKR3A471KBP	470P	
C133	PSCEA50VB220	22	
C136	PSCEA63VB470	47	
C152	PSCKD1H104K	0.1	
C157	PSCEA50VB2R2	2.2	
C159	PSCKR1H222KB	0.0022	
C171	PSCKD1H104Z	0.1	
C203	ECKR3A221KBP	220P	
C204	ECKR3A221KBP	220P	
C205	PSCEA50VB681	680	
C239	PSCEA63VB470	47	
C248	PSCQE50F472	0.0047	
C266	PSCEA50VB101	100	
C278	PSCEA25VB102	1000	
C279	PSCEA25VB102	1000	
C282	PSCEA25VB102	1000	
C294	PSCKD1H104Z	0.1	
C324	PSQE50F2D103	0.01	
C340	ECKR3A222KBP	0.0022	
C342	ECQP1104JZ	0.1	
C343	ECQP1104JZ	0.1	
C344	PSCEA50VB681	680	
C345	PSCEA50VB681	680	
C346	PSCEA50VB681	680	
C354	ECKR3A222KBP	0.0022	
C362	PSCEA50VB220	22	

Ref. No.	Part No.	Part Name & Description	Remarks
C386	ECCF1H471J	470P	
C479	PSCEA35VB561	560	
C480	PSCQE2E333M	0.033	
C481	PSCKD2E472M	0.0047	
C482	PSCKD2E472M	0.0047	
C483	PSCKD2E472M	0.0047	
C674	PSCEA50VB220	22	
C679	PSCEA50VB220	22	
C680	PSCKD1H104Z	0.1	
		(CONNECTORS)	
CN2	PSJP12EA44P	CONNECTOR	
CN3	PSJPB3BPHKS	CONNECTOR	
CN700	PQJP2D98Z	CONNECTOR	
CN711	PSJP556604A	CONNECTOR	
CN721	PSJPDF3A7P2D	CONNECTOR	
CN731	PSJP556604A	CONNECTOR	
		(RESISTORS & THERMISTORS)	
R1	PSRQA53K100	10	
R2	PSRQA53K100	10	
R4	ERDS2TJ823	82K	
R6	ER0S2TKF2203	220K	
R7	ER0S2TKF2203	220K	
R8	ER0S2TKF2203	220K	
R9	ER0S2TKF3901	3.9K	
R10	ERX2SJR47	0.47	
R11	ERX2SJR47	0.47	
R20	ERX2SJ4R7	4.7	
R21	ERG1SJ680	68	
R22	ERG1SJ680	68	
R23	ERDS2TJ103	10K	
R24	ERDS2TJ103	10K	
R26	ERG2SJ222	2.2K	
R33	ERDS2TJ102	1K	
R34	ER0S2TKF2203	220K	
R35	ER0S2TKF2203	220K	
R36	ER0S2TKF2203	220K	
R38	ER0S2TKF2203	220K	
R39	ER0S2CKF2003	200K	
R40	ER0S2CKF2003	200K	
R41	ERDS2TJ682	6.8K	
R44	ERG1SJ220	22	
R49	ERX2SJR47	0.47	
R50	ERX2SJR47	0.47	
R52	ERX2SJR47	0.47	
R53	ERDS2TJ682	6.8K	
R54	ERG1SJ220	22	
R55	ERDS2TJ222	2.2K	
R56	ERX2SJR47	0.47	
R57	ERG2SJ680	68	
R58	ERDS2TJ471	470	
R59	ERG2SJ680	68	
R63	ERG2SJ220	22	
R71	ERDS2TJ823	82K	
R72	ERDS2TJ823	82K	
R84	ERG2SJ153	15K	
R85	ERG2SJ153	15K	
R86	ERG2SJ153	15K	
R87	ERG2SJ153	15K	
R88	ERG2SJ153	15K	
R89	ERG2SJ153	15K	
R103	ERG2SJ220	22	
R104	ERG2SJ220	22	
R106	ERDS2TJ222	2.2K	
R112	ERX2SJR22	0.22	
R113	ERX2SJR22	0.22	
R114	ERG1SJ470	47	
R116	ERG1SJ220	22	
R117	ERG1SJ470	47	
R120	ERG1SJ220	22	
R132	ERG1SJ470	47	

Ref. No.	Part No.	Part Name & Description	Remarks
R133	ERDS2TJ330	33	
R134	ERDS2TJ224	220K	
R135	ERDS2TJ472	4.7K	
R136	ERDS2TJ683	68K	
R141	ERDS2TJ103	10K	
R145	ERDS2TJ103	10K	
R146	ERDS2TJ103	10K	
R149	ERDS2TJ103	10K	
R150	PSRT15050275	THERMISTOR	
R151	ER0S2TKF1501	1.5K	
R153	ER0S2TKF1501	1.5K	
R154	ERDS2TJ103	10K	
R160	PSR0SK2C1500	150	
R161	PSR0SK2C1500	150	
R162	PSR0SK2C1500	150	
R170	ERDS2TJ333	33K	
R172	ERDS2TJ473	47K	
R176	ERDS2TJ153	15K	
R179	ERDS2TJ103	10K	
R180	PSR0SK2C1500	150	
R181	PSR0SK2C1500	150	
R182	PSR0SK2C1500	150	
R202	ERG2SJ101	100	
R203	ERG2SJ101	100	
R204	ERG2SJ101	100	
R205	ERG2SJ101	100	
R213	ERDS2TJ683	68K	
R237	ERG1SJ100	10	
R241	ERDS2TJ222	2.2K	
R242	ERDS2TJ222	2.2K	
R243	ERDS2TJ153	15K	
R246	ERDS2TJ223	22K	
R249	ERDS2TJ222	2.2K	
R251	ERDS2TJ272	2.7K	
R252	ERDS2TJ103	10K	
R253	ERDS2TJ562	5.6K	
R260	ERDS2TJ100	10	
R261	ERDS2TJ100	10	
R302	ERDS2TJ104	100K	
R305	ERDS2TJ683	68K	
R307	ERDS2TJ223	22K	
R308	ERDS2TJ152	1.5K	
R309	ERDS2TJ471	470	
R310	ERX1SJ1R8	1.8	
R318	ERX1SZJR10	0.1	
R321	ERDS2TJ104	100K	
R324	ERDS2TJ333	33K	
R325	ERDS2TJ473	47K	
R326	ERDS2TJ102	1K	
R327	ER0S2TKF2001	2K	
R341	ERG2SJ220	22	
R347	ERG1SJ332	3.3K	
R348	ERG1SJ332	3.3K	
R351	ERDS2TJ100	10	
R352	ERG2SJ470	47	
R355	ERDS2TJ333	33K	
R360	NVG6THTAB1K	SEMI-FIXED VARIABLE RESISTOR	
R368	ERG1SJ470	47	
R370	ERX1SJ5R6	5.6	
R371	ERDS2TJ222	2.2K	
R376	ERX1SZJR10	0.1	
R377	ERX1SZJR10	0.1	
R380	ER0S2TKF1501	1.5K	
R381	ERG1SJ332	3.3K	
R382	ERG1SJ332	3.3K	
R384	ERDS2TJ334	330K	
R385	ERDS2TJ334	330K	
R445	PSRT15050275	THERMISTOR	
R481	ERDS2TJ682	6.8K	
R510	PSR0S58F0022	0.2K	
R511	PSR0S58F0022	0.2K	
R672	PSRT15050275	THERMISTOR	
R673	ERDS2TJ221	220	

Ref. No.	Part No.	Part Name & Description	Remarks
R675	ERDS2TJ103	10K	
R676	ERDS2TJ472	4.7K	
R678	ERDS2TJ472	4.7K	
		(COILS & COMPONENTS PARTS)	
L10	PSLQK3102VM	COIL	
L37	PSLQK3056VM	COIL	
L63	EXCELDR35	COMPONENTS PART	
L64	EXCELDR35	COMPONENTS PART	
L200	EXCELSA35	COIL	
L201	EXCELSA35	COIL	
L202	EXCELSA35	COIL	
L203	EXCELSA35	COIL	
L204	PSLQS9696VM	COIL	
L272	PSLQK3099VM	COIL	
L280	PSLQS9433VM	COIL	
L320	EXCELDR35	COMPONENTS PART	
L321	EXCELDR35	COMPONENTS PART	
L391	EXCELDR35	COMPONENTS PART	
		(PHOTO ELECTRIC TRANSDUCERS)	
PC145	PSVIPS2561L	PHOTO COUPLER	S ⚠
PC147	PSVIPS2561L	PHOTO COUPLER	S ⚠
PC429	PSVIPS2561L	PHOTO COUPLER	S ⚠
		(TRANSFORMER)	
T146	PSLTS9678VM	TRANSFORMER	⚠
T263	PSLTK3044VM	CURRENT TRANSFORMER	
T268	PSLTK3049VM	PULSE TRANSFORMER	
		(OTHERS)	
E1	PSMYT9066JE	HEAT SINK	
E2	PSMYT9066HY	HEAT SINK	
E3	PSMYT9066TS	HEAT SINK	
E4	PSMYT9066JA	HEAT SINK	
E5	PSMYT9067AL	HEAT SINK	
E6	PSMXT9067AM	INSULATOR	
E7	PSMXT9067AN	INSULATOR	
PCB1-1	PSWP2DA0103X	PRIMARY SUB. BOARD1 ASS´Y (RTL)	
		(IC)	
IC24	PSVIFA5502P	IC	
		(TRANSISTORS)	
Q68	2SC1740S	TRANSISTOR(SI)	S
Q69	2SC1740S	TRANSISTOR(SI)	S
Q163	2SC1740S	TRANSISTOR(SI)	S
Q167	2SA1309	TRANSISTOR(SI)	S
Q170	2SC1740S	TRANSISTOR(SI)	S
		(DIODES)	
D36	PFVDRD62ESAB	DIODE(SI)	S
D64	PFVDRD62ESAB	DIODE(SI)	S
D81	1SS133	DIODE(SI)	
D95	PFVDRD27ESAB	DIODE(SI)	S
D96	1SS133	DIODE(SI)	
D184	PFVDRD62ESAB	DIODE(SI)	S
D192	1SS133	DIODE(SI)	
D193	1SS133	DIODE(SI)	
		(CONECTORS)	
CN100	PSJP50055816	CONNECTOR	
CN101	PSJP50055815	CONNECTOR	
		(CAPACITORS)	
C16	PSCKR1H222KB	0.0022	
C18	PSCKD1H101J	100P	
C21	PSCKD1H104K	0.1	
C22	PSCKR1H222KB	0.0022	

Ref. No.	Part No.	Part Name & Description	Remarks
C26	PSCKD1H104Z	0.1	
C27	PSCEA35VB151	150	
C28	PSQE50F2D103	0.01	
C34	PSQE50F2D103	0.01	
C71	PSCKD1H104K	0.1	
C73	ECCF1H471J	470P	
C84	PSCKD1H104Z	0.1	
C85	PSCKD1H104Z	0.1	
C94	PSCQE50F102	0.001	
C98	PSCKR1H222KB	0.0022	
C166	PSQE50F2D473	0.047	
C194	PSCEA50VB220	22	
C195	PSCKD1H104K	0.1	
		(RESISTORS)	
R12	ERDS2TJ270	27	
R13	ERDS2TJ221	220	
R15	ER0S2TKF3302	33K	
R16	ERDS2TJ105	1M	
R17	ERDS2TJ103	10K	
R18	ERDS2TJ474	470K	
R19	ERDS2TJ333	33K	
R27	ERDS2TJ223	22K	
R29	ERDS2TJ224	220K	
R31	ERDS2TJ333	33K	
R32	ERDS2TJ273	27K	
R37	ER0S2TKF2201	2.2K	
R42	ERDS2TJ474	470K	
R43	ER0S2TKF2401	2.4K	
R65	ERDS2TJ224	220K	
R82	ER0S2TKF6802	68K	
R83	ERDS2TJ332	3.3K	
R90	NVG6THTAB200	SEMI-FIXED VARIABLE RESISTOR	
R91	ER0S2TKF2700	270	
R93	PSR0SK2C1500	150	
R94	ER0S2TKF2202	22K	
R95	ER0S2TKF1502	15K	
R97	ERDS2TJ103	10K	
R164	ERDS2TJ224	220K	
R165	ERDS2TJ473	47K	
R168	ERDS2TJ123	12K	
R169	ERDS2TJ103	10K	
R185	ERDS2TJ224	220K	
R190	ERDS2TJ123	12K	
R191	ERDS2TJ152	1.5K	
PCB1-2	PSWP3DA0103X	SECONDARY SUB. BOARD ASS´Y (RTL)	
		(ICS)	
IC226	PSVIUC3842BN	IC	
IC513	PSVIUPC393C	IC	S
IC544	PSVIUPC393C	IC	S
		(TRANSISTORS)	
Q218	2SC1740S	TRANSISTOR(SI)	S
Q404	2SC1740S	TRANSISTOR(SI)	S
Q426	2SC1740S	TRANSISTOR(SI)	S
Q435	2SC1740S	TRANSISTOR(SI)	S
Q437	2SC2784	TRANSISTOR(SI)	S
Q444	2SA953	TRANSISTOR(SI)	
Q466	2SC1740S	TRANSISTOR(SI)	S
Q475	2SC1740S	TRANSISTOR(SI)	S
Q483	2SC2784	TRANSISTOR(SI)	S
Q490	2SA1174	TRANSISTOR(SI)	S
Q506	2SA1309	TRANSISTOR(SI)	S
Q507	2SC1740S	TRANSISTOR(SI)	S
Q511	2SA1309	TRANSISTOR(SI)	S
Q520	2SA1309	TRANSISTOR(SI)	S
Q527	2SC1740S	TRANSISTOR(SI)	S
Q567	2SC1740S	TRANSISTOR(SI)	S

Ref. No.	Part No.	Part Name & Description	Remarks
Q640	2SC1740S	TRANSISTOR(SI)	S
Q645	2SA1309	TRANSISTOR(SI)	S
Q646	2SA1309	TRANSISTOR(SI)	S
Q647	2SA1309	TRANSISTOR(SI)	S
Q648	2SA1309	TRANSISTOR(SI)	S
Q652	2SC1740S	TRANSISTOR(SI)	S
Q657	2SA1020	TRANSISTOR(SI)	
Q660	2SC2784	TRANSISTOR(SI)	S
Q661	2SA1174	TRANSISTOR(SI)	S
Q682	2SC1740S	TRANSISTOR(SI)	S
Q692	2SC2784	TRANSISTOR(SI)	S
		(DIODES)	
D214	PSVD1GU42	DIODE(SI)	
D215	PSVD1GU42	DIODE(SI)	
D222	1SS133	DIODE(SI)	
D228	1SS133	DIODE(SI)	
D233	1SS133	DIODE(SI)	
D240	PSVD11EQS04	DIODE(SI)	
D281	1SS133	DIODE(SI)	
D403	PSVDRD20ESAB	DIODE(SI)	S
D407	1SS133	DIODE(SI)	
D430	PSVDRD18ESAB	DIODE(SI)	S
D431	1SS133	DIODE(SI)	
D433	PFVDRD27ESAB	DIODE(SI)	S
D434	PSVDRD18ESAB	DIODE(SI)	S
D436	1SS133	DIODE(SI)	
D474	PSVDRD5R1ESA	DIODE(SI)	S
D487	1SS133	DIODE(SI)	
D488	1SS133	DIODE(SI)	
D492	PSVDRD9R1ESA	DIODE(SI)	S
D494	1SS133	DIODE(SI)	
D496	1SS133	DIODE(SI)	
D497	1SS133	DIODE(SI)	
D498	1SS133	DIODE(SI)	
D505	1SS133	DIODE(SI)	
D510	1SS133	DIODE(SI)	
D524	1SS133	DIODE(SI)	
D530	PSVDRD9R1ESA	DIODE(SI)	S
D532	1SS133	DIODE(SI)	
D533	1SS133	DIODE(SI)	
D535	1SS133	DIODE(SI)	
D542	1SS133	DIODE(SI)	
D543	PFVDRD62ESAB	DIODE(SI)	S
D545	1SS133	DIODE(SI)	
D558	PSVDRD39ESAB	DIODE(SI)	S
D566	1SS133	DIODE(SI)	
D634	1SS133	DIODE(SI)	
D637	1SS133	DIODE(SI)	
D656	PSVD1GU42	DIODE(SI)	
D664	1SS133	DIODE(SI)	
D665	1SS133	DIODE(SI)	
D666	1SS133	DIODE(SI)	
D668	PSVDRD22ESAB	DIODE(SI)	S
D686	1SS133	DIODE(SI)	
		(CONECTORS)	
CN200	PSJP50055814	CONNECTOR	
CN201	PSJP50055814	CONNECTOR	
CN202	PSJP50055814	CONNECTOR	
CN203	PSJP50055814	CONNECTOR	
CN204	PSJP50055814	CONNECTOR	
CN205	PSJP50055816	CONNECTOR	
		(CAPACITORS)	
C213	ECCF1H471J	470P	
C214	PSQE50F2D473	0.047	
C216	ECCF1H471J	470P	
C220	PSCKD1H104K	0.1	
C221	PSCEA50VB220	22	
C227	PSQE50F2D103	0.01	
C229	PSCQE50F102	0.001	
C231	PSQE50F2D103	0.01	

Ref. No.	Part No.	Part Name & Description	Remarks
C232	ECA1HHG100	10P	
C234	PSCEA50VB101	100	
C235	PSCKD1H104K	0.1	
C281	PSCQE50F472	0.0047	
C323	ECCF1H471J	470P	
C402	PSCKD1H104K	0.1	
C409	PSCEA50VB220	22	
C419	PSCKD1H104K	0.1	
C435	PSCKD1H104K	0.1	
C439	PSCKD1H104Z	0.1	
C440	PSCKD1H104K	0.1	
C491	PSQE50F2D473	0.047	
C500	PSCKD1H104Z	0.1	
C501	PSCKD1H104Z	0.1	
C512	PSCEA50VB220	22	
C521	PSQE50F2D473	0.047	
C534	PSCEA50VBR47	0.47	
C545	PSCKD1H104K	0.1	
C546	PSCKD1H104K	0.1	
C568	PSCKD1H104K	0.1	
C633	PSCEA50VB2R2	2.2	
C651	PSCKD1H104Z	0.1	
C663	PSCKD1H104K	0.1	
C669	PSCKD1H104Z	0.1	
		(RESISTORS)	
R210	ERG1SJ103	10K	
R215	ERDS2TJ621	620	
R217	ERDS2TJ152	1.5K	
R220	ERDS2TJ102	1K	
R228	ERDS2TJ104	100K	
R229	ER0S2TKF2701	2.7K	
R234	ERDS2TJ153	15K	
R281	ERDS2TJ223	22K	
R282	ERDS2TJ470	47	
R283	ERDS2TJ223	22K	
R284	NVG6THTAB1K	SEMI-FIXED VARIABLE RESISTOR	
R285	ERDS2TJ392	3.9K	
R392	ERDS2TJ333	33K	
R401	ERDS2TJ683	68K	
R405	ERDS2TJ103	10K	
R413	ER0S2TKF2402	24K	
R415	ERDS2TJ183	18K	
R417	ERDS2TJ222	2.2K	
R418	ERDS2TJ472	4.7K	
R421	ER0S2TKF2702	27K	
R422	ERDS2TJ103	10K	
R423	ER0S2TKF4701	4.7K	
R426	ERDS2TJ472	4.7K	
R427	ERDS2TJ152	1.5K	
R428	ERDS2TJ471	470	
R436	ERDS2TJ472	4.7K	
R437	ERDS2TJ222	2.2K	
R438	ERDS2TJ473	47K	
R441	ERDS2TJ152	1.5K	
R446	ER0S2TKF1801	1.8K	
R448	ER0S2TKF1501	1.5K	
R458	ERDS2TJ332	3.3K	
R472	ERDS2TJ333	33K	
R473	ERDS2TJ222	2.2K	
R474	ERDS2TJ103	10K	
R477	ERDS2TJ153	15K	
R478	ERDS2TJ273	27K	
R484	ERDS2TJ102	1K	
R485	ERDS2TJ103	10K	
R486	ERDS2TJ102	1K	
R487	ERDS2TJ222	2.2K	
R488	ERDS2TJ103	10K	
R495	PSR0SK2C1800	180	
R498	ERDS2TJ330	33	
R506	ERDS2TJ682	6.8K	
R507	ERDS2TJ333	33K	
R508	ERDS2TJ224	220K	

Ref. No.	Part No.	Part Name & Description	Remarks
R509	ERDS2TJ683	68K	
R514	ER0S2TKF6800	680	
R515	ER0S2TKF3302	33K	
R516	ERDS2TJ222	2.2K	
R522	ERDS2TJ474	470K	
R526	ERDS2TJ103	10K	
R533	ERDS2TJ104	100K	
R536	ERDS2TJ223	22K	
R538	ERDS2TJ153	15K	
R546	ER0S2TKF5602	56K	
R547	ER0S2TKF1801	1.8K	
R548	ER0S2TKF9101	9.1K	
R549	ERDS2TJ334	330K	
R550	PSR0SK2C1500	150	
R551	ER0S2TKF2201	2.2K	
R552	ERDS2TJ471	470	
R559	ERDS2TJ471	470	
R565	ERDS2TJ332	3.3K	
R630	ERDS2TJ333	33K	
R631	ERDS2TJ473	47K	
R632	ERDS2TJ105	1M	
R635	ERDS2TJ151	150	
R636	ERDS2TJ273	27K	
R638	ERDS2TJ102	1K	
R639	ERDS2TJ103	10K	
R641	ER0S2TKF9102	91K	
R642	ER0S2TKF2402	24K	
R649	ERDS2TJ103	10K	
R650	ERDS2TJ104	100K	
R651	ERDS2TJ683	68K	
R652	ERDS2TJ334	330K	
R653	ERDS2TJ152	1.5K	
R654	ERDS2TJ472	4.7K	
R655	ERDS2TJ330	33	
R662	ERDS2TJ103	10K	
R667	ERDS2TJ332	3.3K	
R680	ER0S2TKF2001	2K	
R681	ER0S2TKF2001	2K	
R683	ERDS2TJ223	22K	
R684	ERDS2TJ222	2.2K	
R685	ERDS2TJ273	27K	
R691	ERDS2TJ224	220K	
R693	ERDS2TJ474	470K	
PCB1-3	PSWP4DA0103X	PRIMARY SUB. BOARD2 ASS´Y (RTL)	
		(IC)	
IC121	PSVIUC3844BN	IC	
		(DIODES)	
D128	1SS133	DIODE(SI)	
D143	1SS133	DIODE(SI)	
D147	PSVD11EQS04	DIODE(SI)	
D154	1SS133	DIODE(SI)	
D155	1SS133	DIODE(SI)	
		(TRANSISTORS)	
Q139	2SA1309	TRANSISTOR(SI)	S
Q141	2SC1740S	TRANSISTOR(SI)	S
		(CONNECTORS)	
CN102	PSJP50055814	CONNECTOR	
CN103	PSJP50055816	CONNECTOR	
		(CAPACITORS)	
C107	ECCF1H471J	470P	
C122	PSCKD1H104K	0.1	
C123	PSCQE50F222	0.0022	
C128	PSCEA63VB470	47	
C129	PSCKD1H104Z	0.1	

Ref. No.	Part No.	Part Name & Description	Remarks
C137	PSCKD1H104K	0.1	
C142	PSCKD1H104K	0.1	
C156	PSCEA50VB2R2	2.2	
		(RESISTORS)	
R108	ERDS2TJ472	4.7K	
R119	ERDS2TJ104	100K	
R122	ER0S2TKF3901	3.9K	
R124	ERDS2TJ103	10K	
R138	ERDS2TJ223	22K	
R143	ERDS2TJ101	100	
R144	ERDS2TJ272	2.7K	
R174	ERDS2TJ220	22	

12.3.4. 30V Board Parts

Ref. No.	Part No.	Part Name & Description	Remarks
PCB2	PSWP5DA0103X	30V BOARD ASS´Y (RTL)	
		(IC)	
IC602	PSVIUC3842BN	IC	
		(TRANSISTORS)	
Q574	2SA953	TRANSISTOR(SI)	
Q577	2SC2655	TRANSISTOR(SI)	
Q578	2SJ477	TRANSISTOR(SI)	
Q591	2SC2002	TRANSISTOR(SI)	
Q592	2SC1740S	TRANSISTOR(SI)	S
Q600	2SC1740S	TRANSISTOR(SI)	S
		(DIODES)	
D581	1SS133	DIODE(SI)	
D582	PSVD1GU42	DIODE(SI)	
D583	PSVDSF10SC6	DIODE(SI)	S
D591	1SS133	DIODE(SI)	
D604	1SS133	DIODE(SI)	
D615	1SS133	DIODE(SI)	
D617	1SS133	DIODE(SI)	
D618	PFVDRD62ESAB	DIODE(SI)	S
D619	PFVDRD62ESAB	DIODE(SI)	S
		(CAPACITORS)	
C570	PSCEA50VB181	180	
C573	PSCQE50F102	0.001	
C581	PSCQE50F472	0.0047	
C584	ECKR3A102KBP	0.001	
C587	PSCEA50VB181	180	
C595	ECCF1H471J	470P	
C598	PSCQE50F472	0.0047	
C603	PSCEA50VB220	22	
C607	PSCQE50F472	0.0047	
C608	PSCEA35V331M	330	
C613	PSCQE50F222	0.0022	
C620	PSCKD1H104K	0.1	
C621	PSCKD1H104K	0.1	
C624	PSCKD1H104Z	0.1	
C628	PSCKD1H104Z	0.1	
C662	PSCQE50F472	0.0047	
		(RESISTORS)	
R570	ERDS2TJ102	1K	
R571	ERX2SJR22	0.22	
R572	ERX2SJR22	0.22	
R574	ERDS2TJ563	56K	
R575	ERDS2TJ331	330	
R576	ERG2SJ222	2.2K	
R579	ERDS2TJ332	3.3K	
R580	ERG1SJ822	8.2K	
R585	ERG1SJ150	15	
R590	ERG2SJ151	150	
R592	ERDS2TJ221	220	
R593	ERG1SJ471	470	
R594	ERDS2TJ222	2.2K	
R595	ERDS2TJ222	2.2K	
R596	ERDS2TJ103	10K	
R597	ERDS2TJ681	680	
R599	ERDS2TJ153	15K	
R601	ER0S2TKF4701	4.7K	
R603	ERDS2TJ100	10	
R606	ERDS2TJ223	22K	
R608	ERG1SJ331	330	
R609	ERG1SJ332	3.3K	
R610	ER0S2TKF2001	2K	
R612	ER0S2TKF2202	22K	
R614	ERDS2TJ101	100	
R623	ERDS2TJ101	100	
R624	ERDS2TJ273	27K	
		(COILS & COMPONENTS PARTS)	
L570	PSLQLHL083R3	COIL	
L586	PSLQK3072VM	COIL	
L625	EXCELDR35	COMPONENTS PART	
L626	EXCELDR35	COMPONENTS PART	
L627	EXCELDR35	COMPONENTS PART	
		(OTHER)	
E20	PSJSS9694VK	CONNECTOR	

12.3.5. Filter/Battery Board Parts

Ref. No.	Part No.	Part Name & Description	Remarks
PCB3	PSWP6DA0103X	FILTER/BATTERY BOARD ASS´Y (RTL)	
		(TRANSISTORS)	
Q287	2SC2784	TRANSISTOR(SI)	
Q292	2SA1174	TRANSISTOR(SI)	
Q367	2SC1740S	TRANSISTOR(SI)	S
Q694	2SA1309	TRANSISTOR(SI)	S
		(DIODES)	
D60	ERZV10D471	VARISTOR	S ⚠
D286	PFVDRD27ESAB	DIODE(SI)	S
D460	PSVDL73JB1GD	LED	
D560	1SS133	DIODE(SI)	
D698	PSVDRD39ESAB	DIODE(SI)	S
D699	1SS133	DIODE(SI)	
		(CONNECTORS)	
CN4	PSJP556906A	CONNECTOR	
CN720	PSJSS9698VK	CONNECTOR	
		(CAPACITORS)	
C2	PSCQE2E105M	1	⚠
C3	ECQU2A224ML	0.22	⚠
C4	ECQU2A224ML	0.22	⚠
C6	PSCKD2E222M	0.0022	
C7	PSCKD2E222M	0.0022	
C290	PSCKD1H104K	0.1	
C304	PSCKD1H104Z	0.1	
C305	PSCKD1H104Z	0.1	
C306	PSCKD1H104Z	0.1	
C366	PSCKD1H104K	0.1	
		(RESISTORS)	
R45	ERDS2TJ224	220K	
R46	ERDS2TJ224	220K	
R47	ERDS2TJ224	220K	
R288	ERDS2TJ222	2.2K	
R289	ERDS2TJ222	2.2K	
R290	ERDS2TJ682	6.8K	

Ref. No.	Part No.	Part Name & Description	Remarks
R291	ERDS2TJ472	4.7K	
R293	ERDS2TJ472	4.7K	
R294	ERDS2TJ472	4.7K	
R296	ERDS2TJ473	47K	
R459	ERDS2TJ222	2.2K	
R561	ERDS2TJ473	47K	
R695	ERDS2TJ101	100	
R696	ERDS2TJ474	470K	
R697	ERDS2TJ681	680	
		(FUSES)	
F1	PSBA5HT63	FUSE	⚠
F350	PSBA314015	FUSE	⚠
		(COILS)	
L3	PSLESC05100J	COIL	⚠
L5	PSLECH05V0	COIL	⚠
		(SWITCHS)	
SW1	PSSTJE30202	POWER SWITCH	⚠
SW2	PSSSU111400	SLIDE SWITCH	
		(OTHERS)	
E30	PSJSS9697VK	CONNECTOR	
E31	PSJSS9695VK	SOCKET, AC	⚠
E32	PSJSS9693VK	CONNECTOR	

12.4. FIXTURES AND TOOLS

Ref. No.	Part No.	Part Name & Description	Remarks
EC1	PSZZ4K4Z	EXTENSION CORD, 4P (for KX-TDA0103XJ/X)	
EC2	PSZZ2K1Z	EXTENSION CORD, 2P (for KX-TDA0104XJ/X)	
EC3	PSZZ7K2Z	EXTENSION CORD, 7P (for KX-TDA0103XJ/X, KX-TDA0104XJ/X)	
EC4	PQZZ2K13Z	EXTENSION CORD, 2P (for KX-TDA0103XJ/X, KX-TDA0104XJ/X)	

Note:

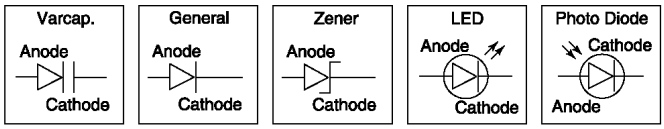
Extension Cords are useful for servicing.

(They make servicing easy.)

13 FOR THE SCHEMATIC DIAGRAM

Note:

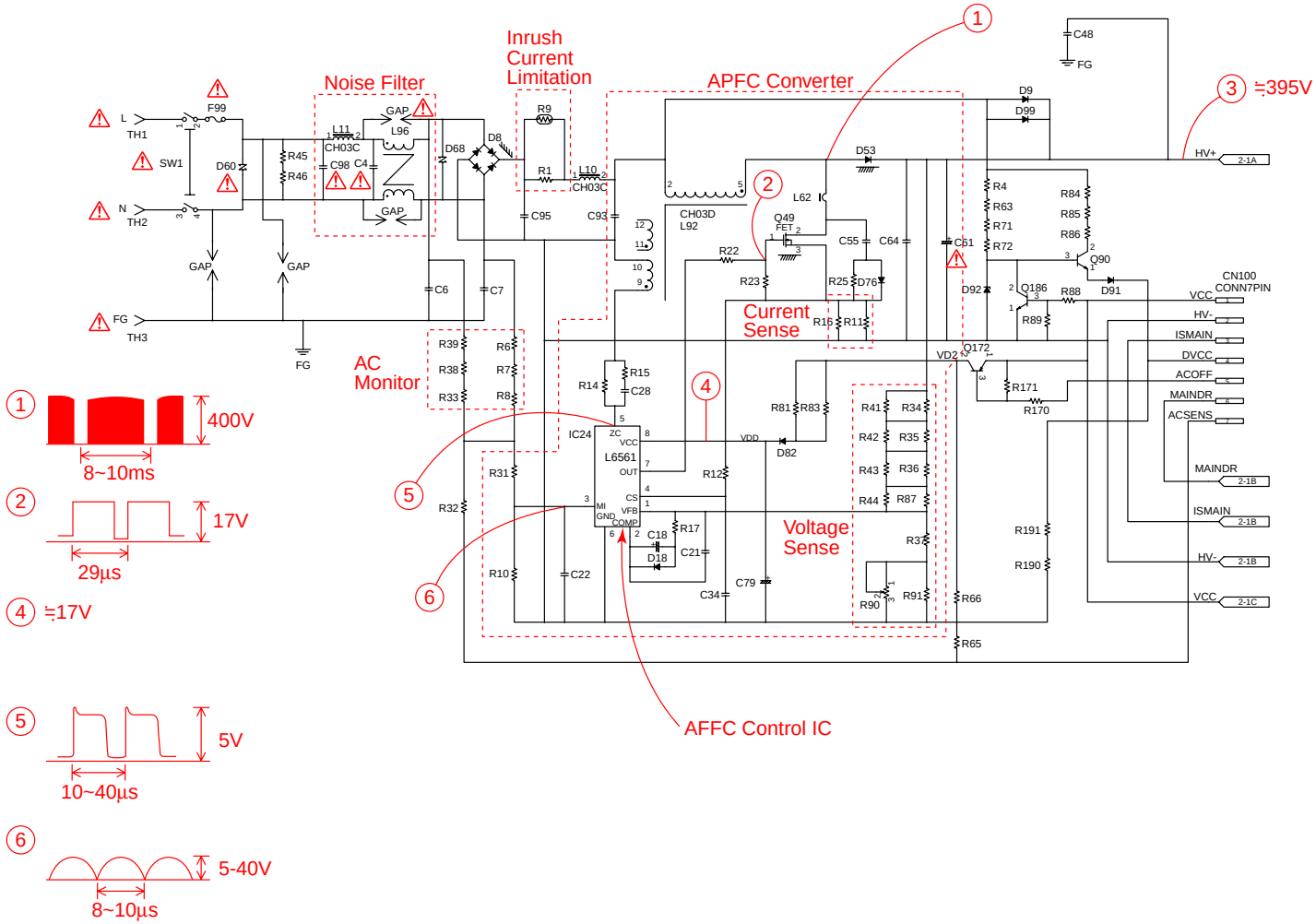
1. DC voltage measurements are taken with an oscilloscope or a tester with a ground.
2. The schematic diagrams and circuit board may be modified at any time with the development of new technology.



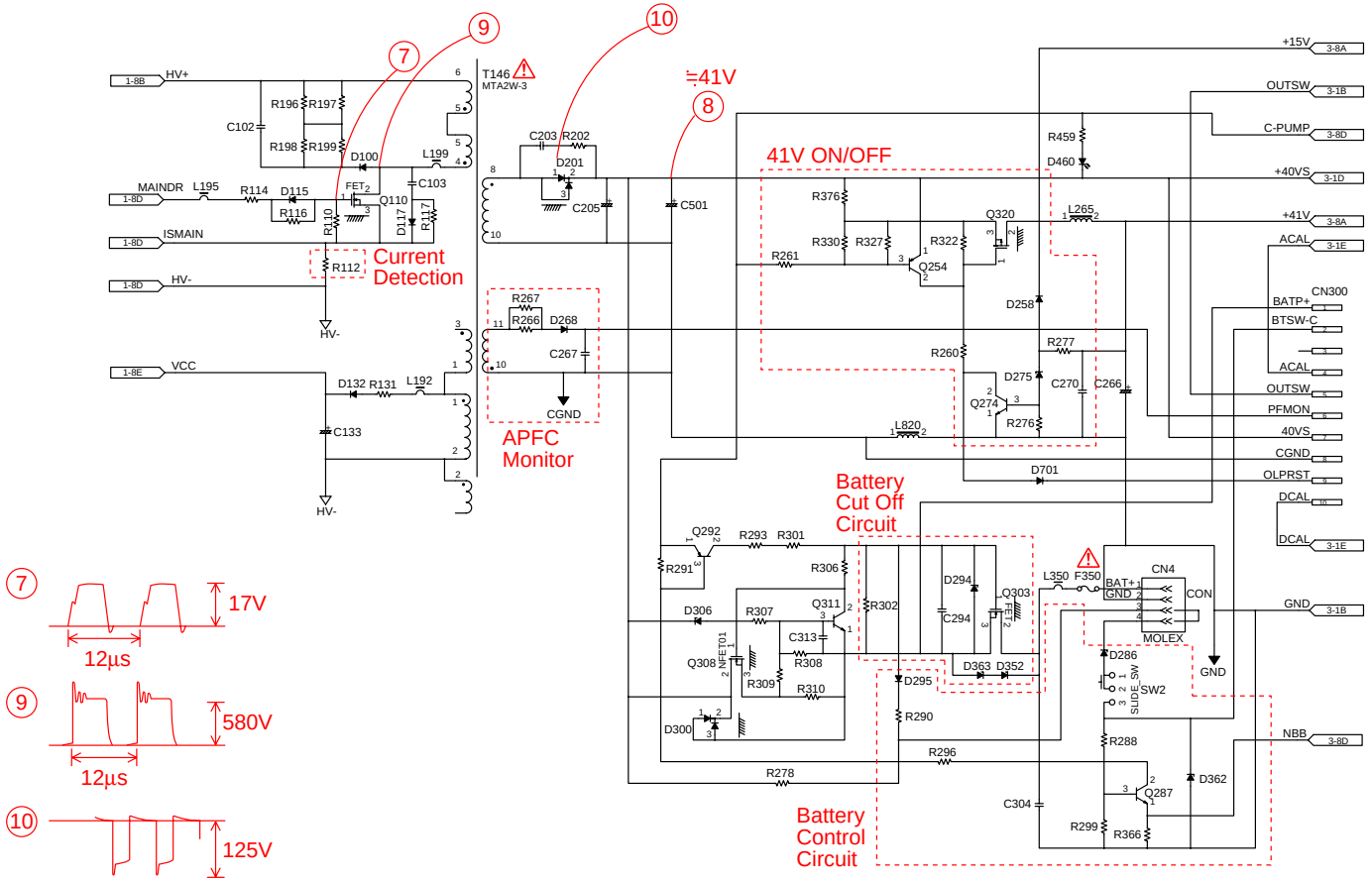
Important safety notice
Components identified by ⚠ mark have special characteristics important for safety. When replacing any of there components, use only manufacturer's specified parts.

14 SCHEMATIC DIAGRAM

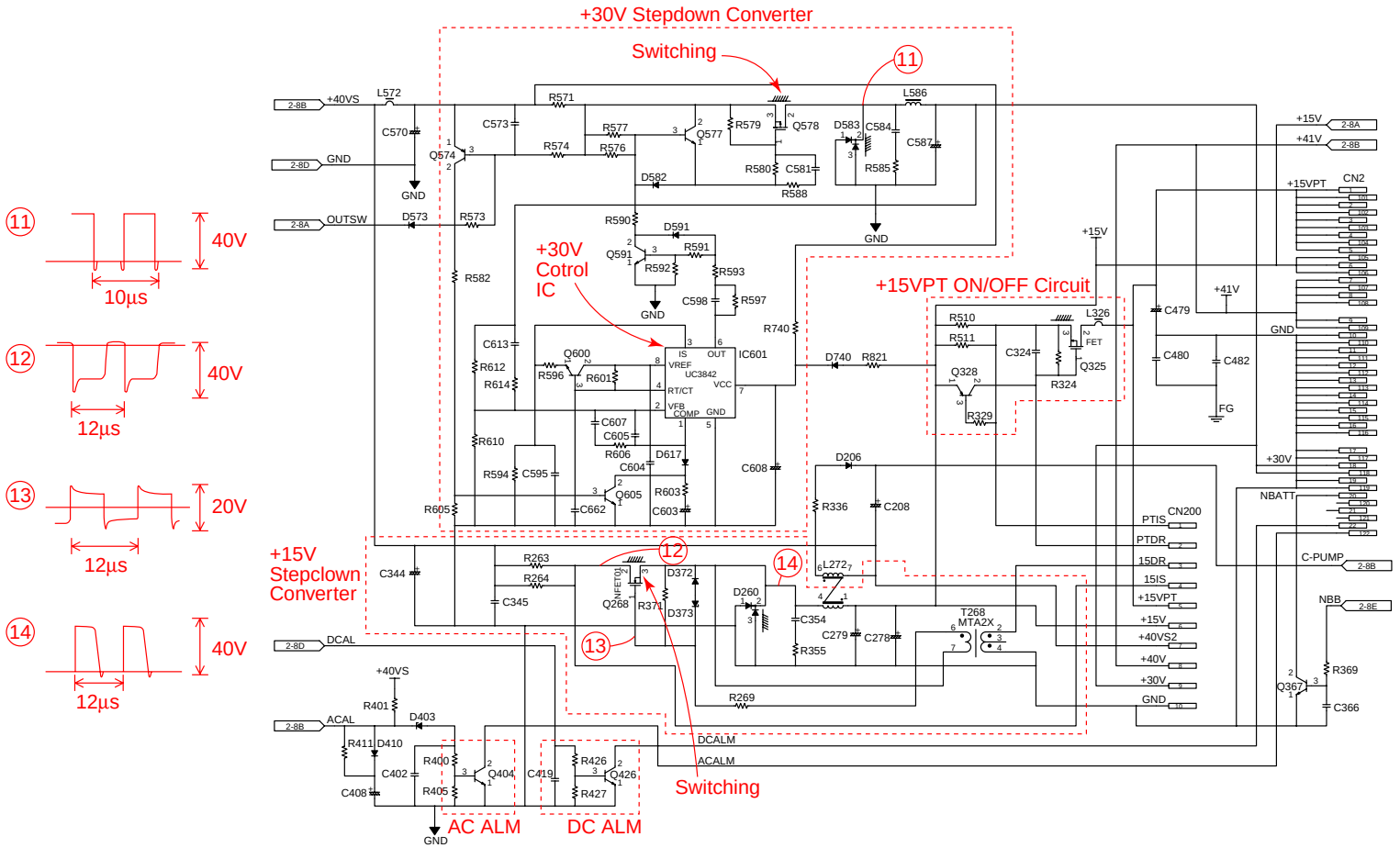
14.1. S-TYPE POWER SUPPLY UNIT (PSU-S) / KX-TDA0108XJ/X



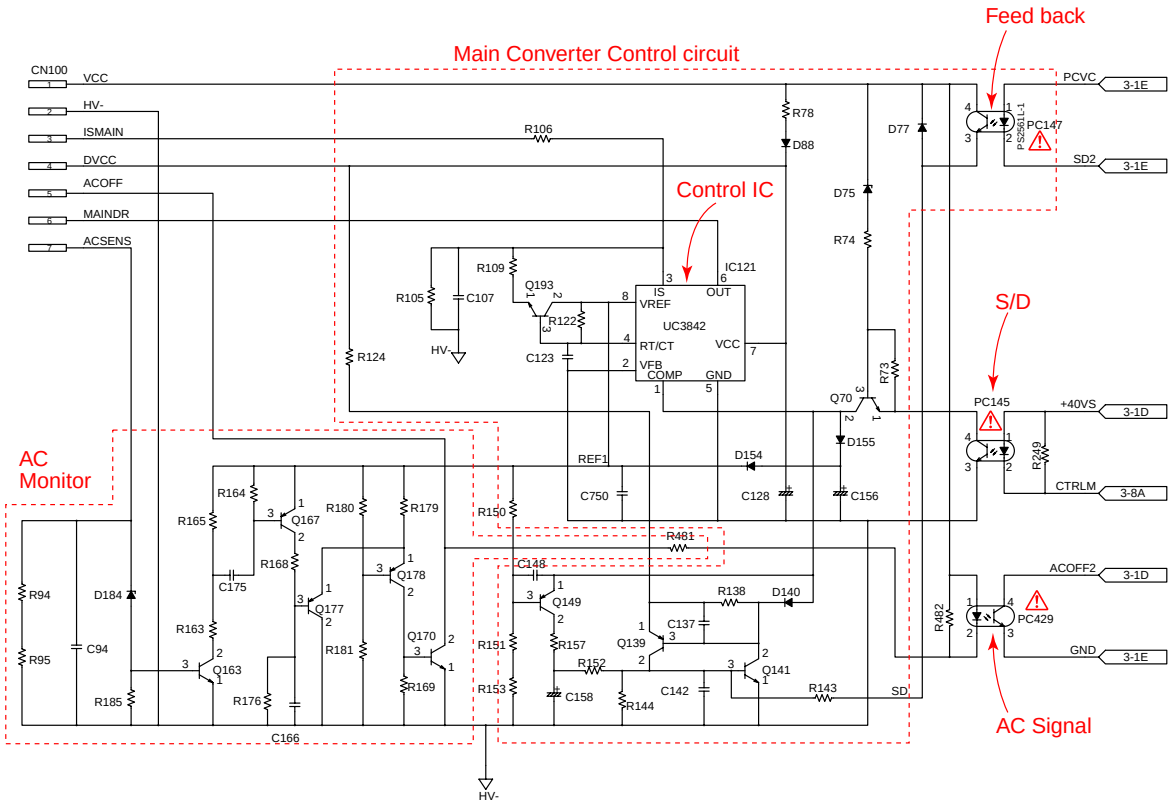
KX-TDA0108XJ/KX-TDA0108X S-TYPE POWER SUPPLY UNIT (PSU-S) 1/6
MAIN BOARD (1/3)



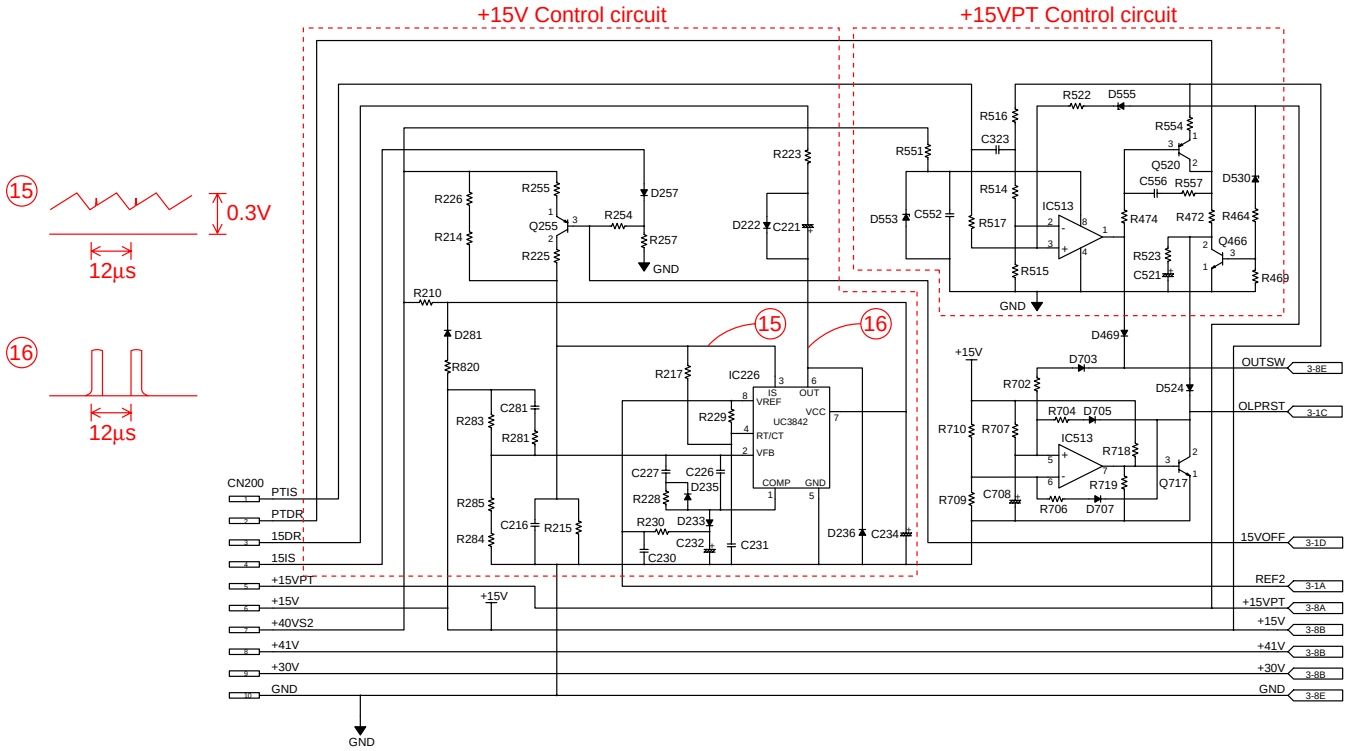
KX-TDA0108XJ/KX-TDA0108X S-TYPE POWER SUPPLY UNIT (PSU-S) 2/6
MAIN BOARD (2/3)



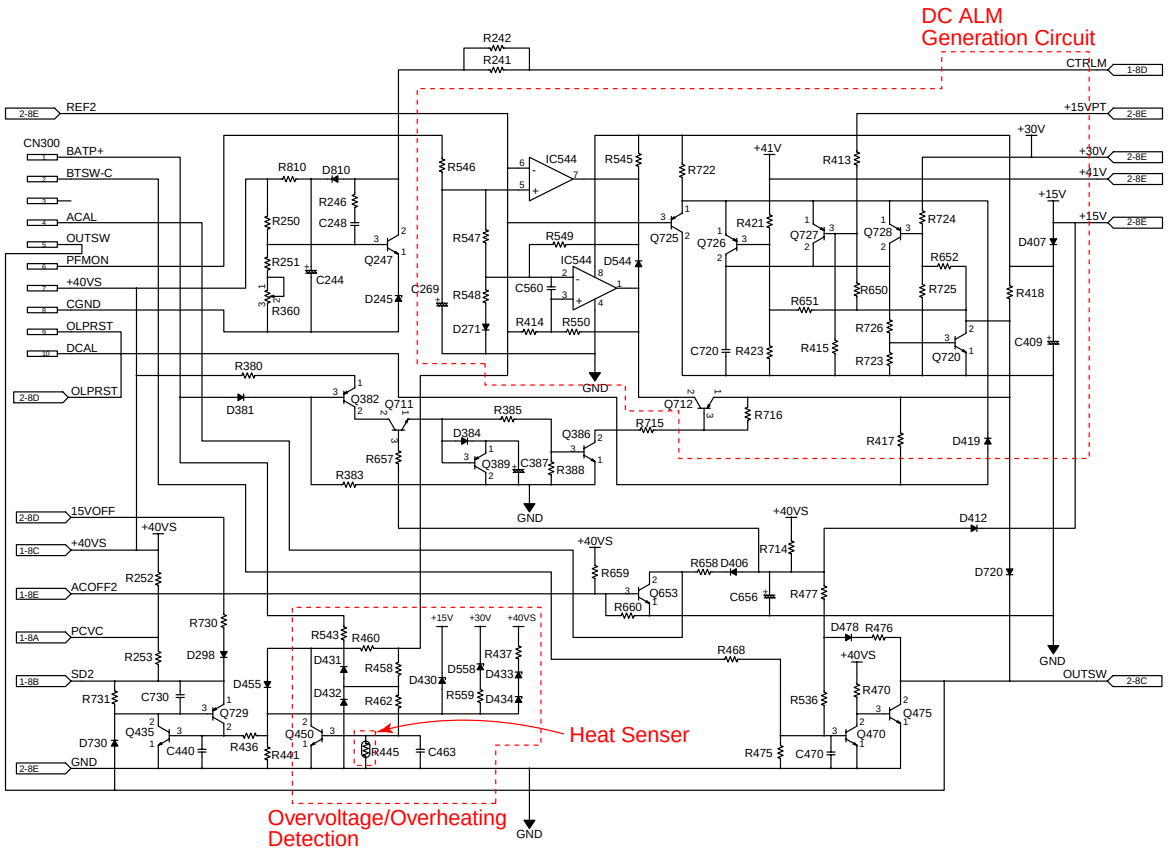
KX-TDA0108XJ/KX-TDA0108X S-TYPE POWER SUPPLY UNIT (PSU-S) 3/6
MAIN BOARD (3/3)



KX-TDA0108XJ/KX-TDA0108X S-TYPE POWER SUPPLY UNIT (PSU-S) 4/6
SUB BOARD (1/3)

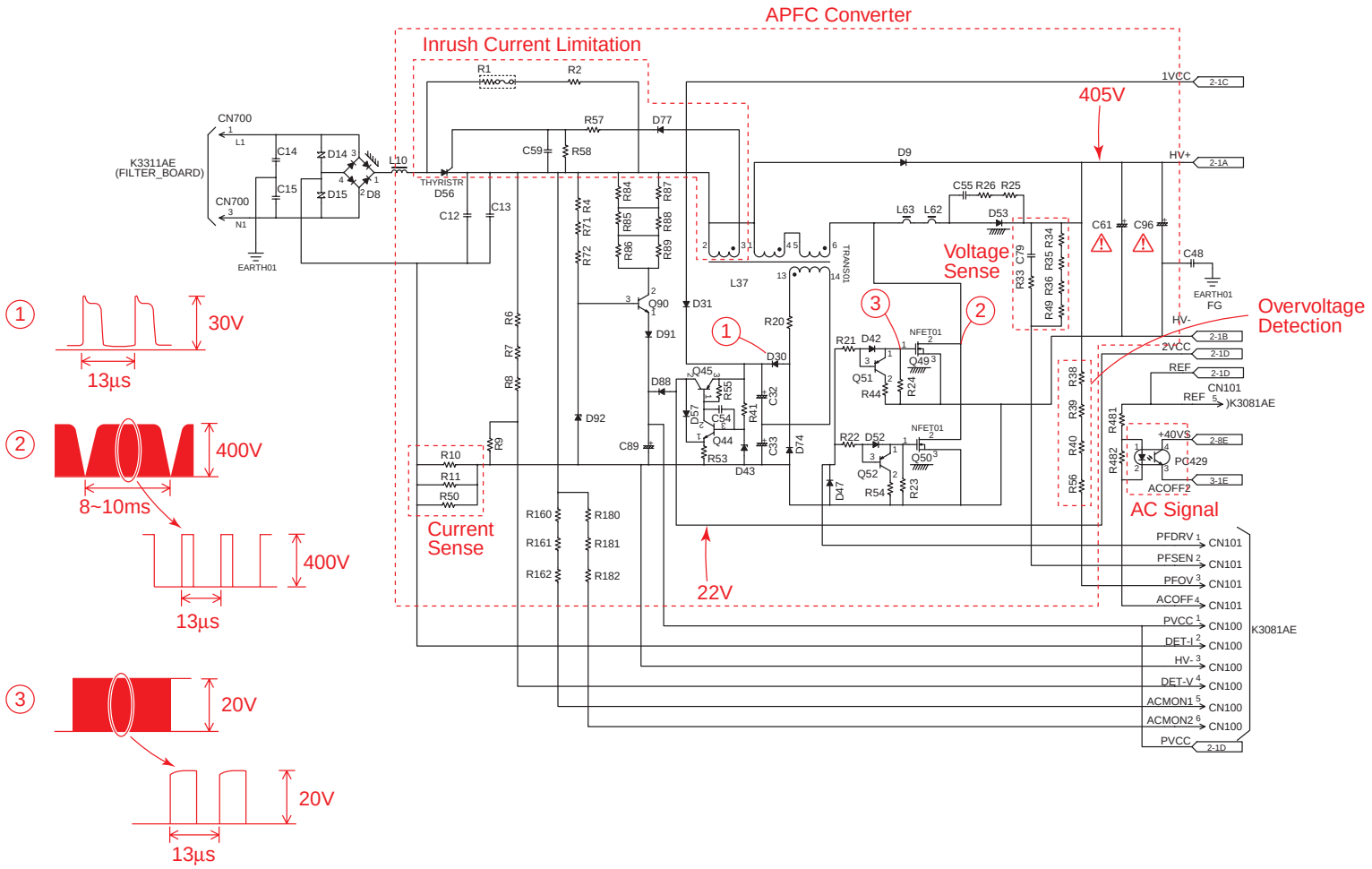


KX-TDA0108XJ/KX-TDA0108X S-TYPE POWER SUPPLY UNIT (PSU-S) 5/6
SUB BOARD (2/3)

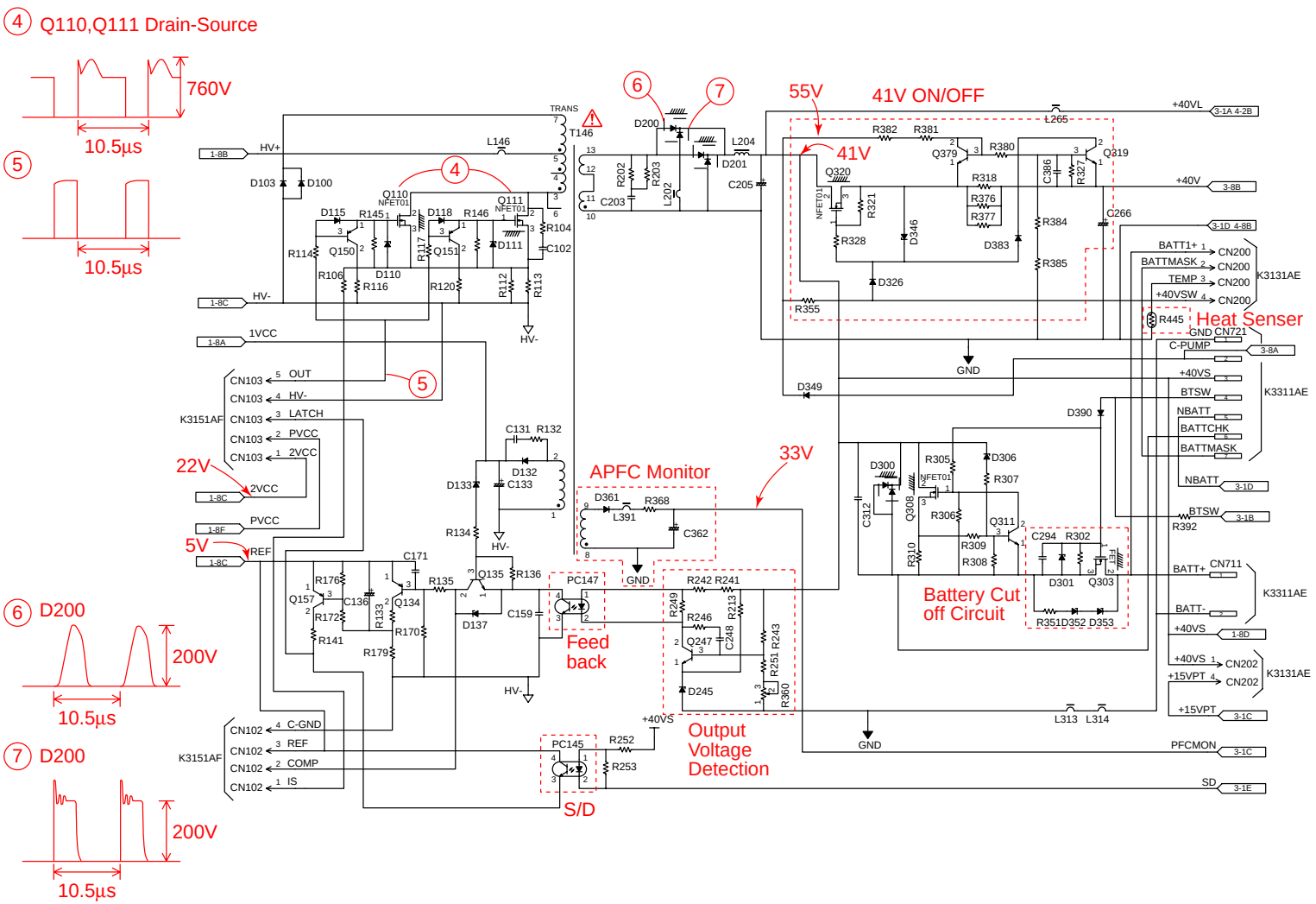


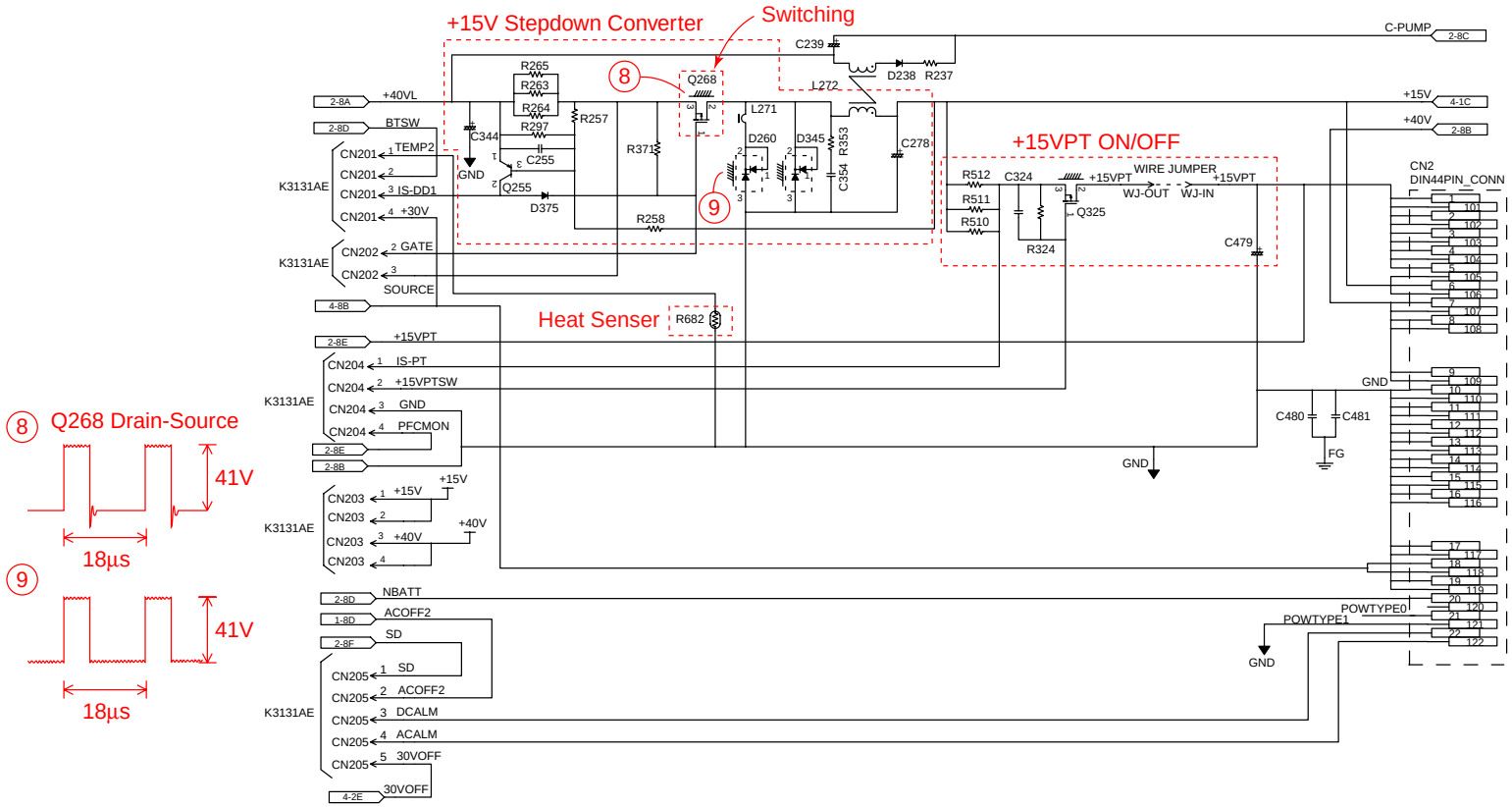
KX-TDA0108XJ/KX-TDA0108X S-TYPE POWER SUPPLY UNIT (PSU-S) 6/6
SUB BOARD (3/3)

14.2. M-TYPE POWER SUPPLY UNIT (PSU-M) / KX-TDA0104XJ/X

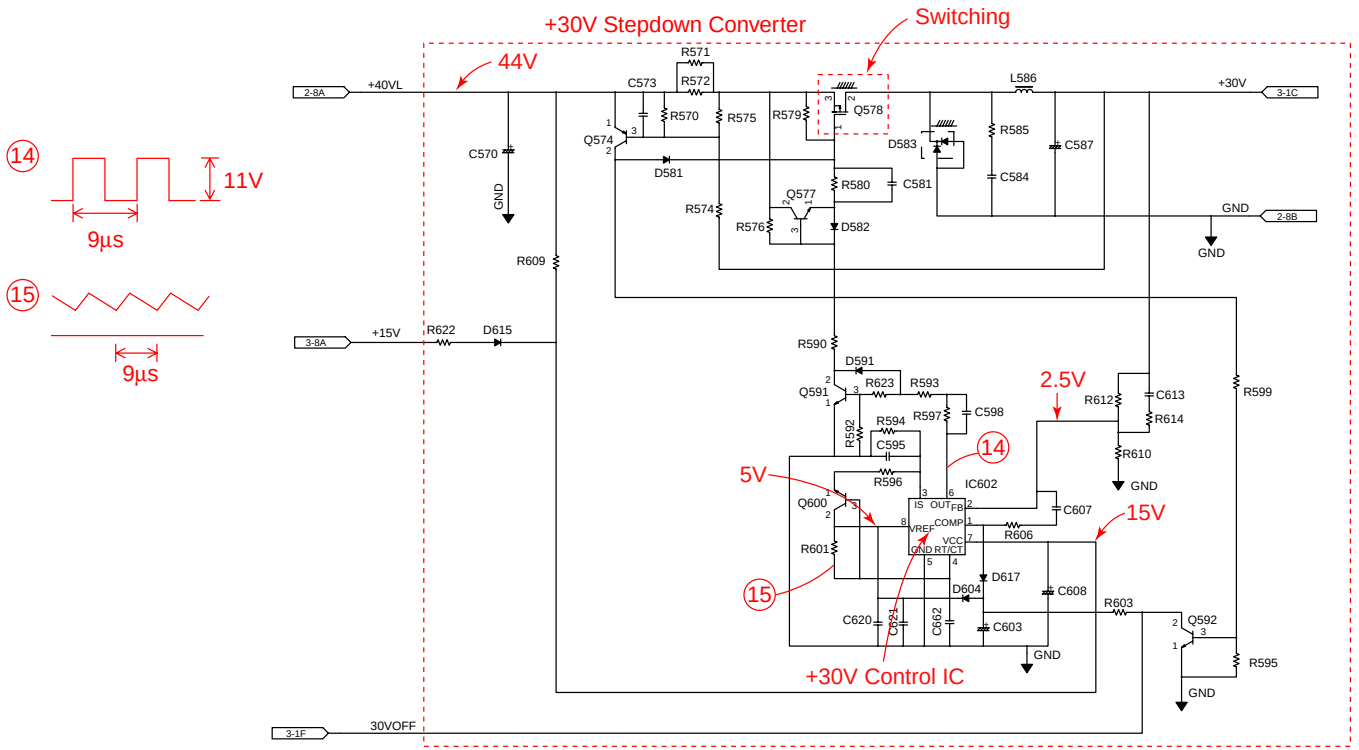


KX-TDA0104XJ/KX-TDA0104X M-TYPE POWER SUPPLY UNIT (PSU-M) 1/9

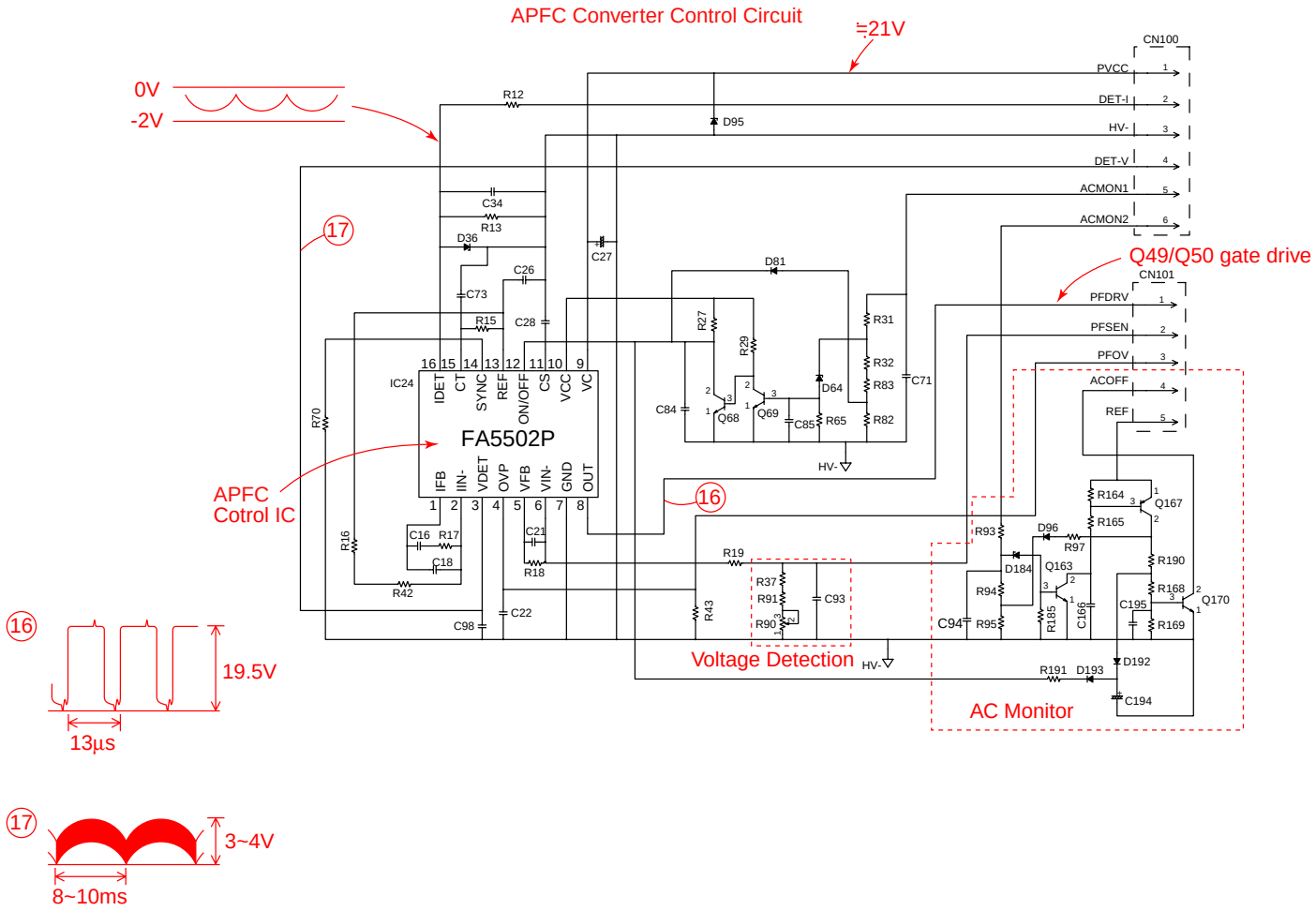

4 Q110,Q111 Drain-Source
760V
10.5µs
5
10.5µs
6 D200
200V
10.5µs
7 D200
200V
10.5µs
55V
41V ON/OFF
41V
33V
APFC Monitor
22V
5V
Feed back
Output Voltage Detection
S/D
Battery Cut off Circuit
Heat Senser
TRANS
T146
HV+
HV-
1VCC
OUT
LATCH
PVCC
2VCC
REF
C-GND
COMP
IS
+40VL
+40V
+40VS
+15VPT
BATT1+
BATTMASK
TEMP
+40VSW
C-PUMP
BTSW
NBATT
BATTCHK
BATT+
BATT-
PFCMON
SD
GND
K3151AF
K3131AE
K3311AE

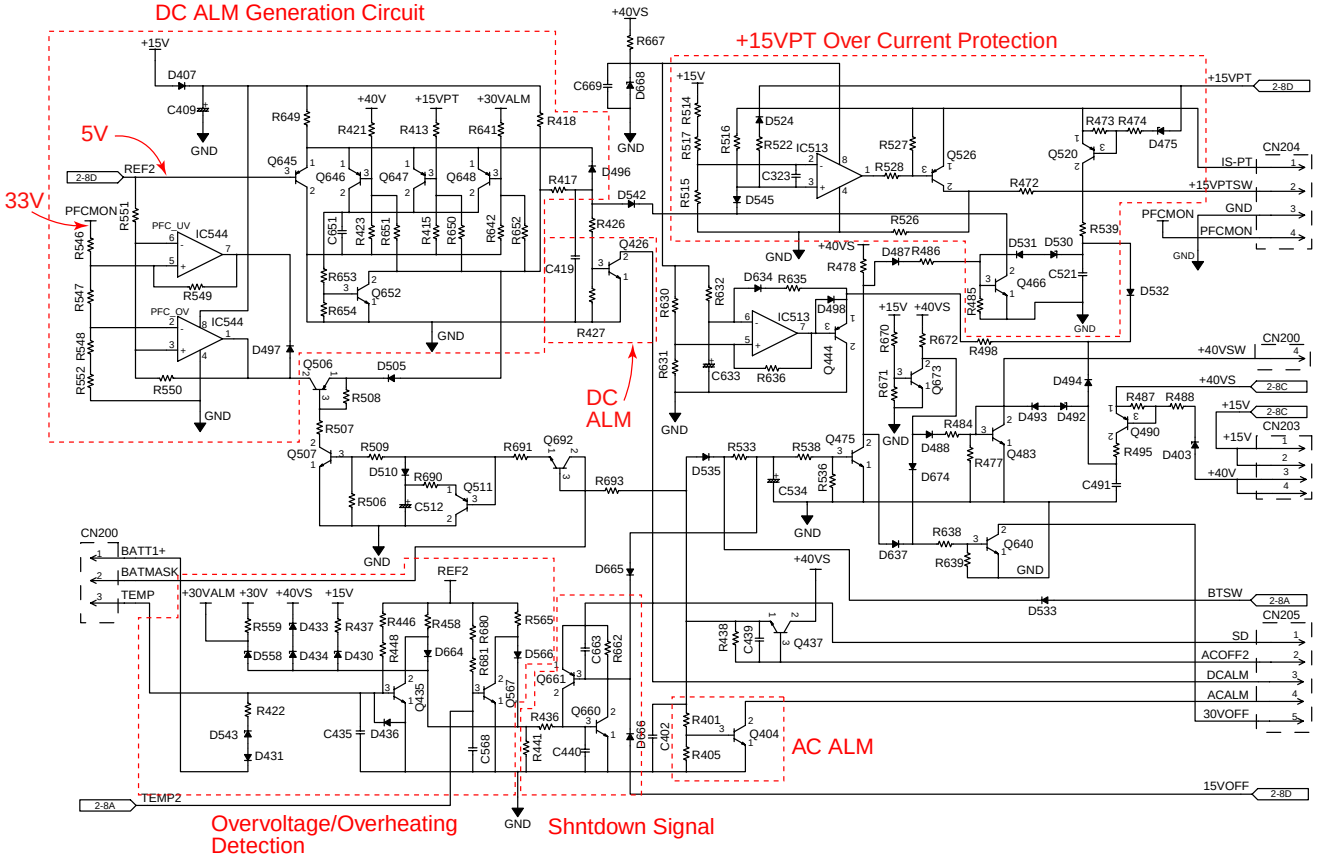


KX-TDA0104XJ/KX-TDA0104X M-TYPE POWER SUPPLY UNIT (PSU-M) 3/9

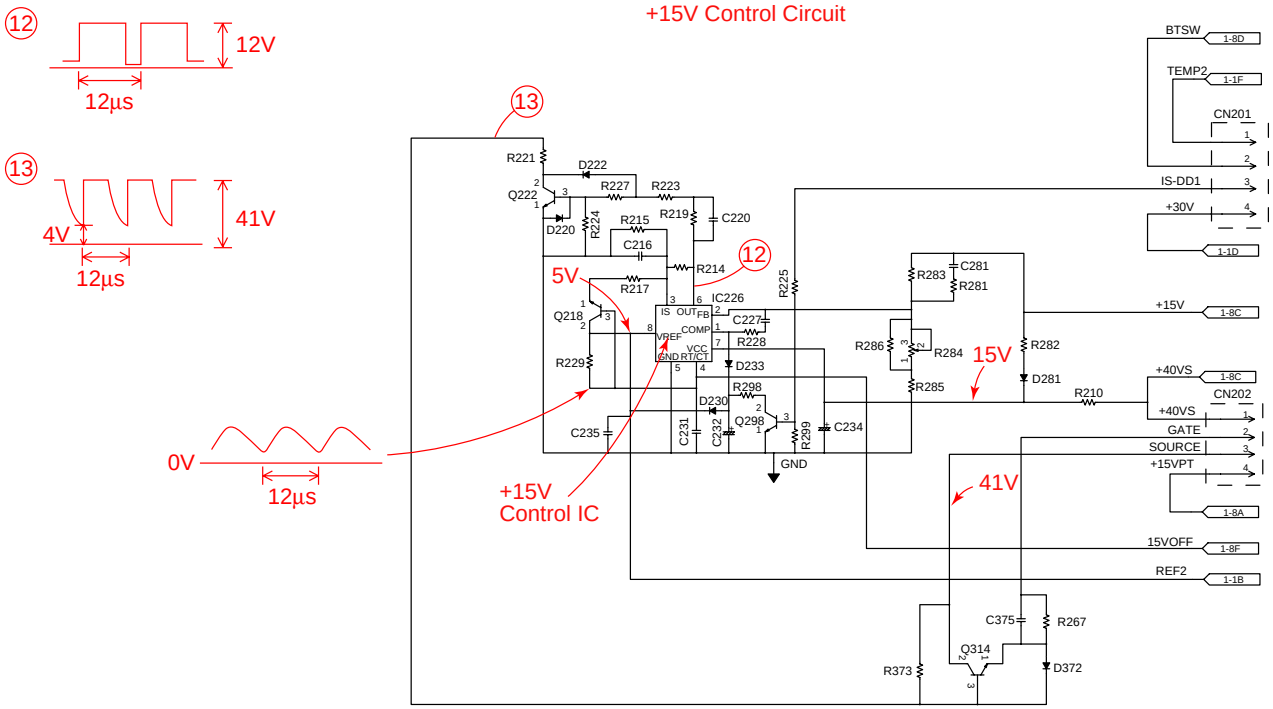


KX-TDA0104XJ/KX-TDA0104X M-TYPE POWER SUPPLY UNIT (PSU-M) 4/9


APFC Converter Control Circuit
≒21V
0V
-2V
CN100
PVCC
DET-I
HV-
DET-V
ACMON1
ACMON2
CN101
PFDRV
PFSEN
PFOV
ACOFF
REF
Q49/Q50 gate drive
IC24
FA5502P
IDET
CT
SYNC
REF
ON/OFF
CS
VCC
VC
IFB
IIN-
VDET
OVP
VFB
VIN-
GND
OUT
APFC
Cotrol IC
Voltage Detection
AC Monitor
HV-
16
17
19.5V
13µs
3~4V
8~10ms

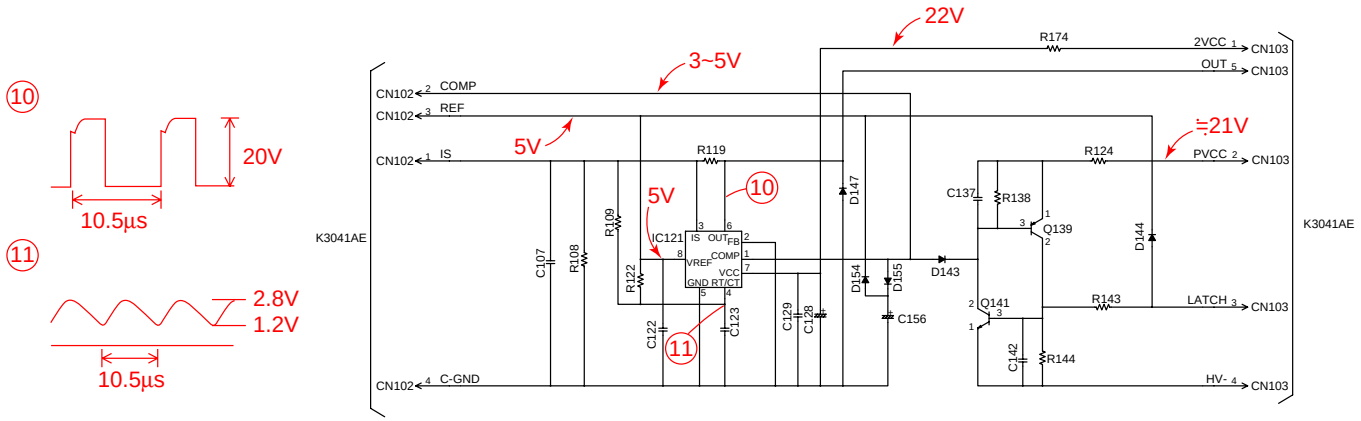


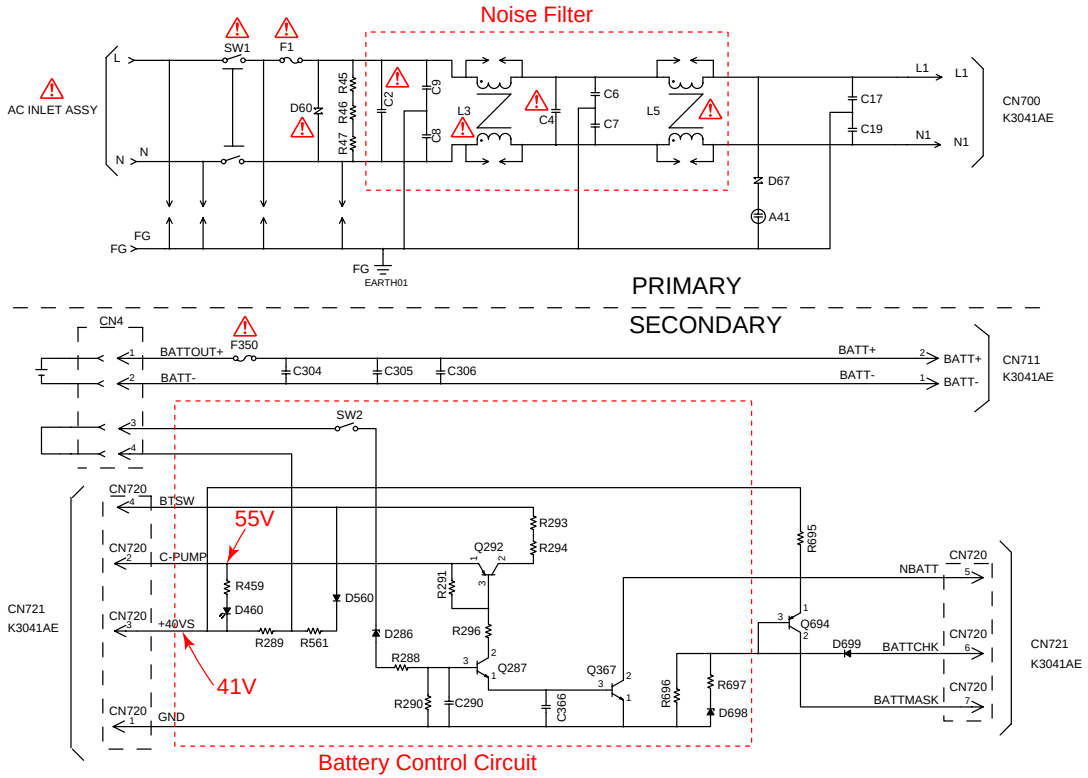
KX-TDA0104XJ/KX-TDA0104X M-TYPE POWER SUPPLY UNIT (PSU-M) 6/9



KX-TDA0104XJ/KX-TDA0104X M-TYPE POWER SUPPLY UNIT (PSU-M) 7/9

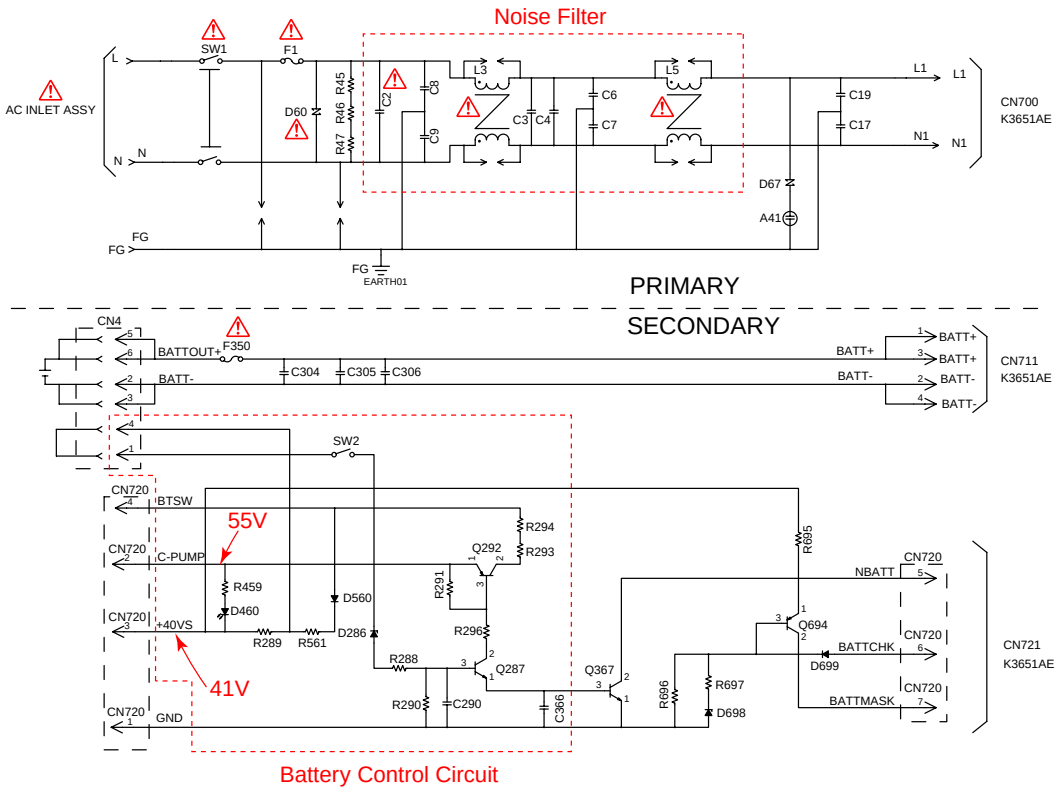
Main Converter Control circuit

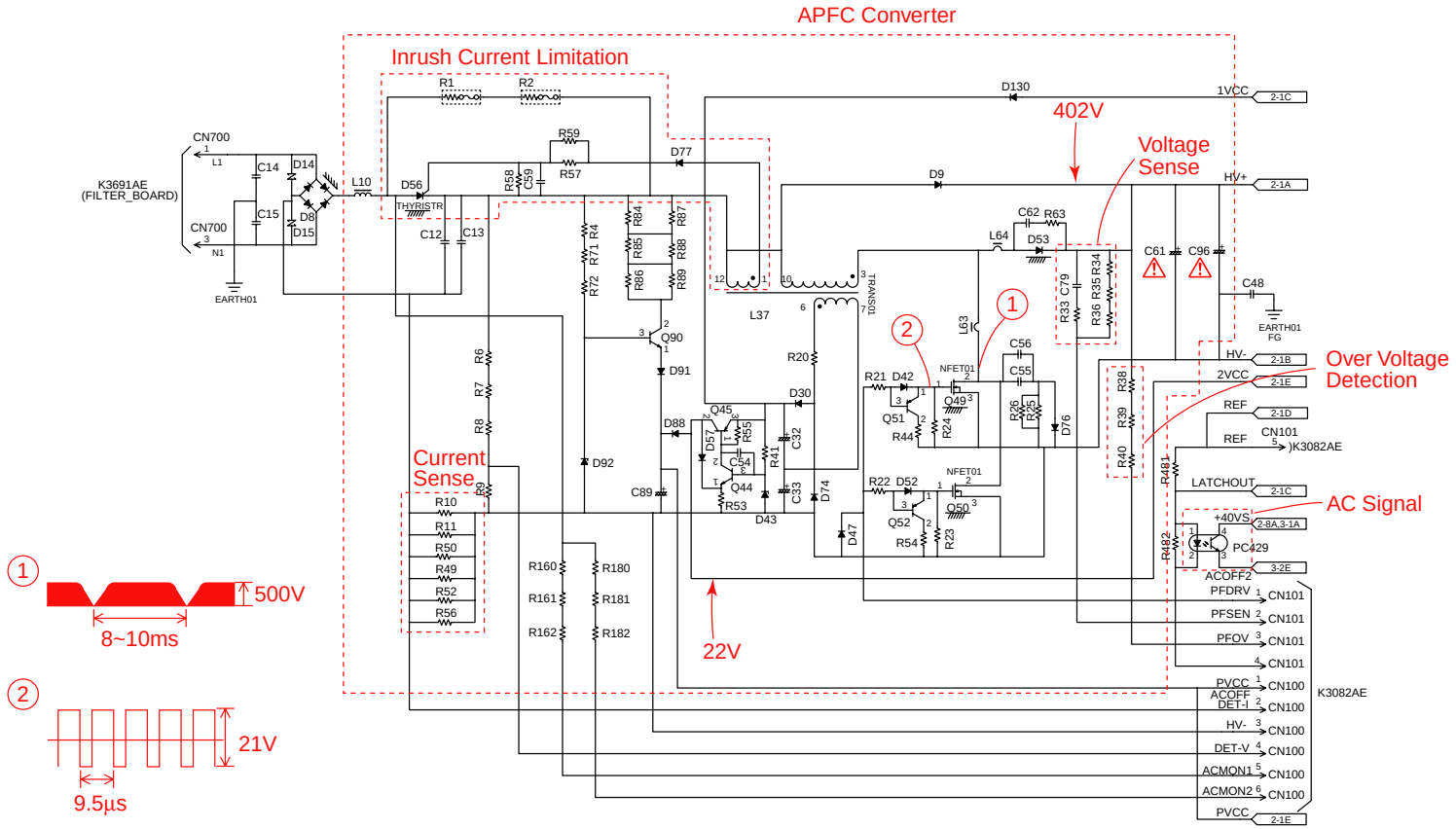




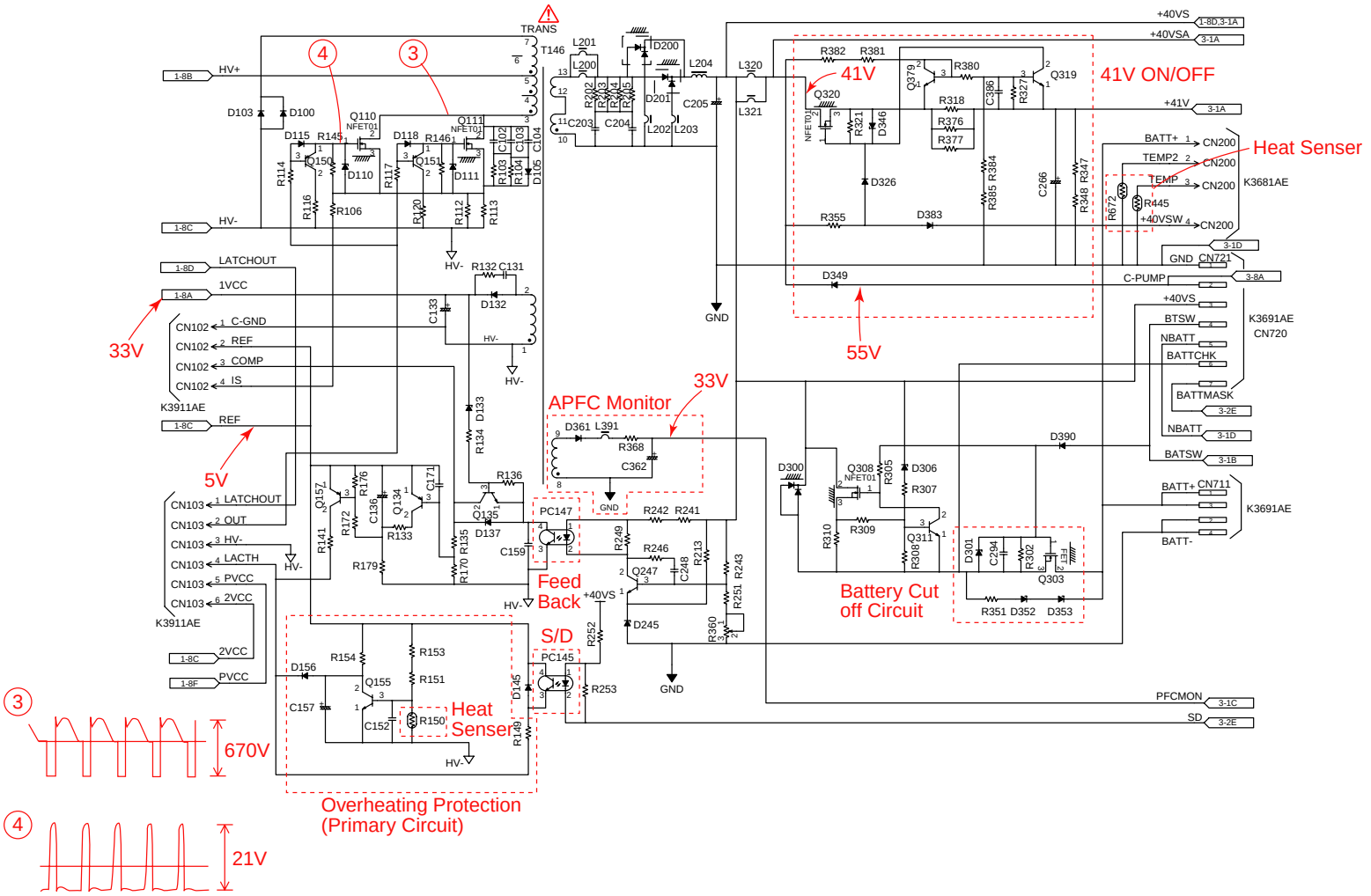
KX-TDA0104XJ/KX-TDA0104X M-TYPE POWER SUPPLY UNIT (PSU-M) 9/9

14.3. L-TYPE POWER SUPPLY UNIT (PSU-L) / KX-TDA0103XJ/X

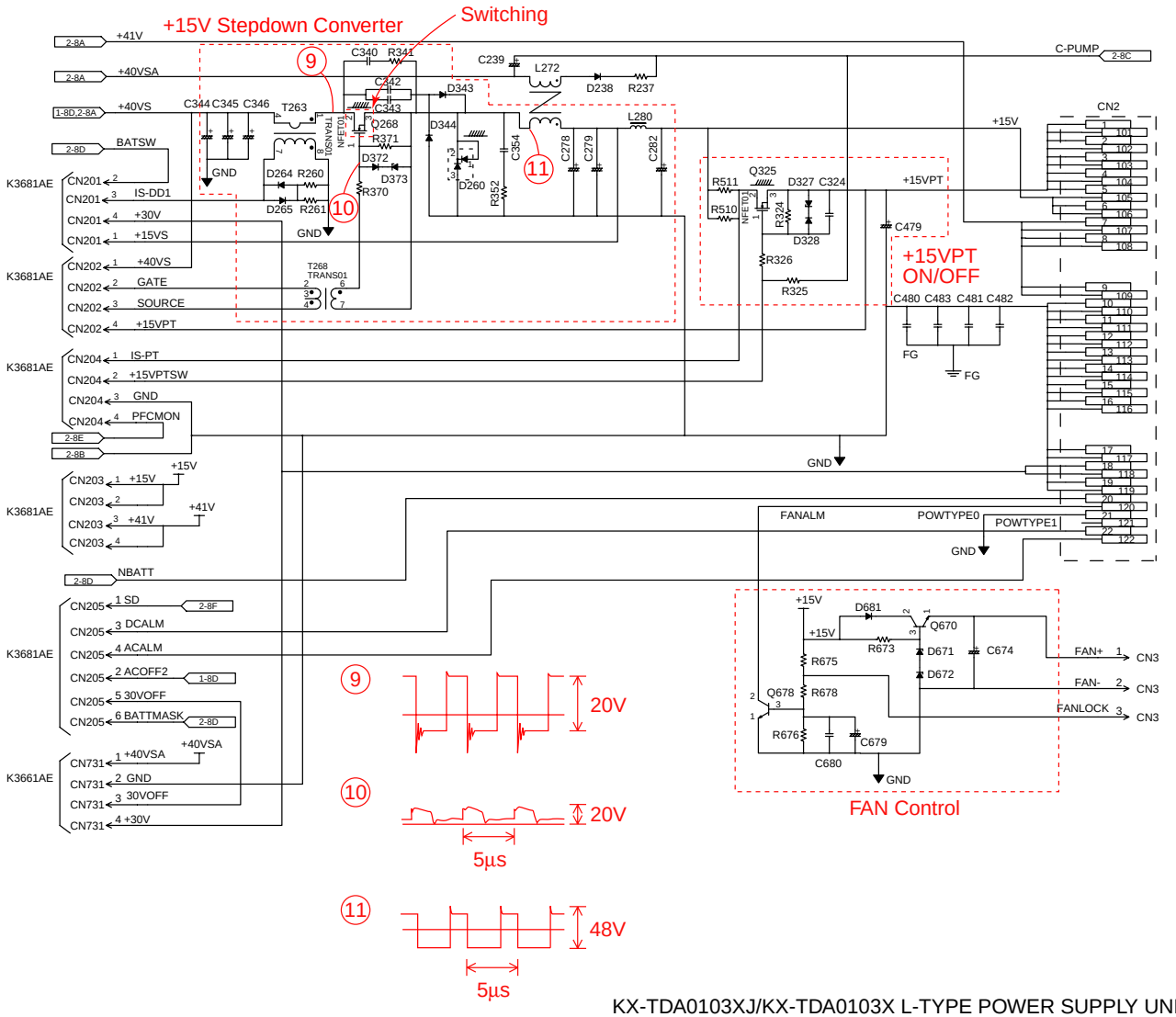




KX-TDA0103XJ/KX-TDA0103X L-TYPE POWER SUPPLY UNIT (PSU-L) 2/9

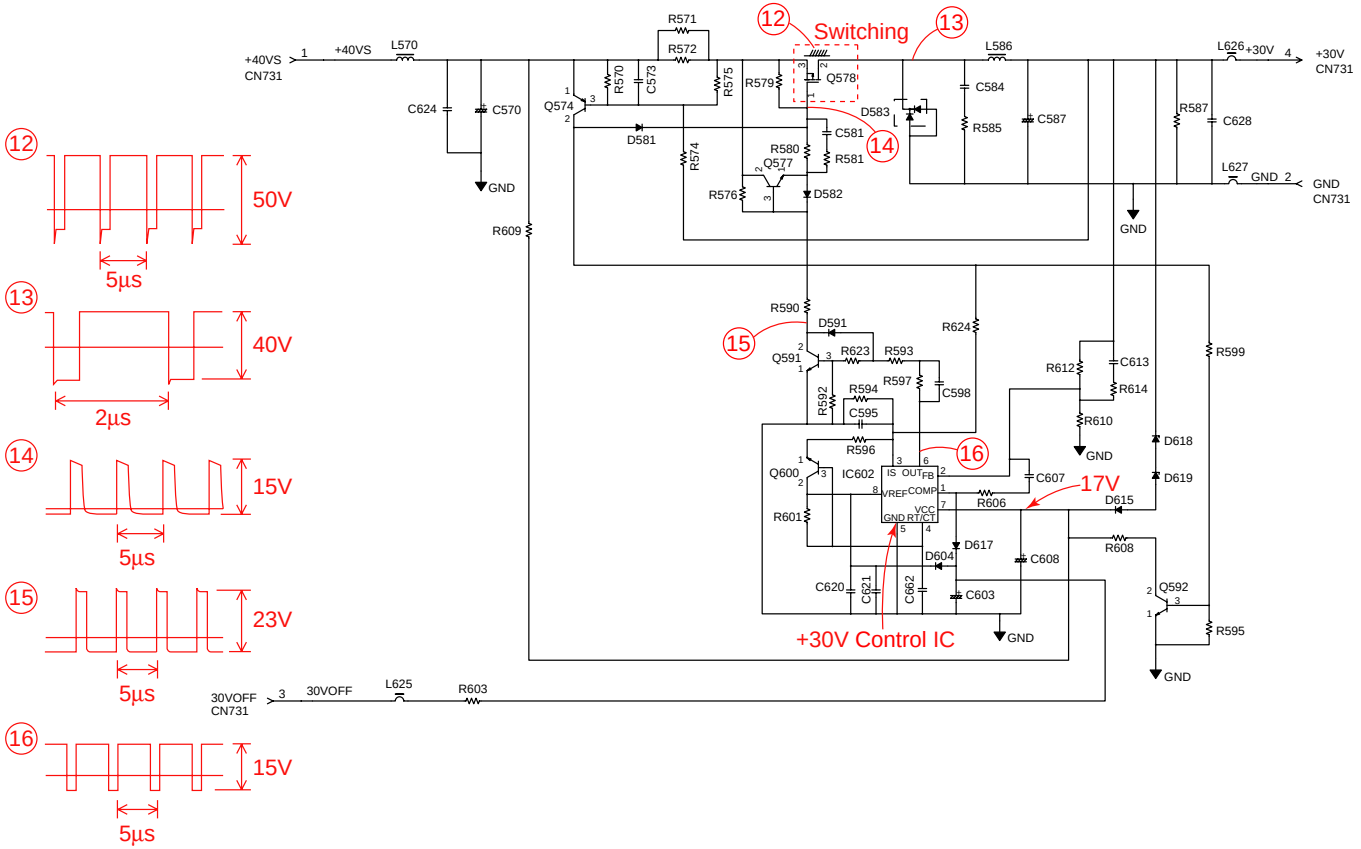


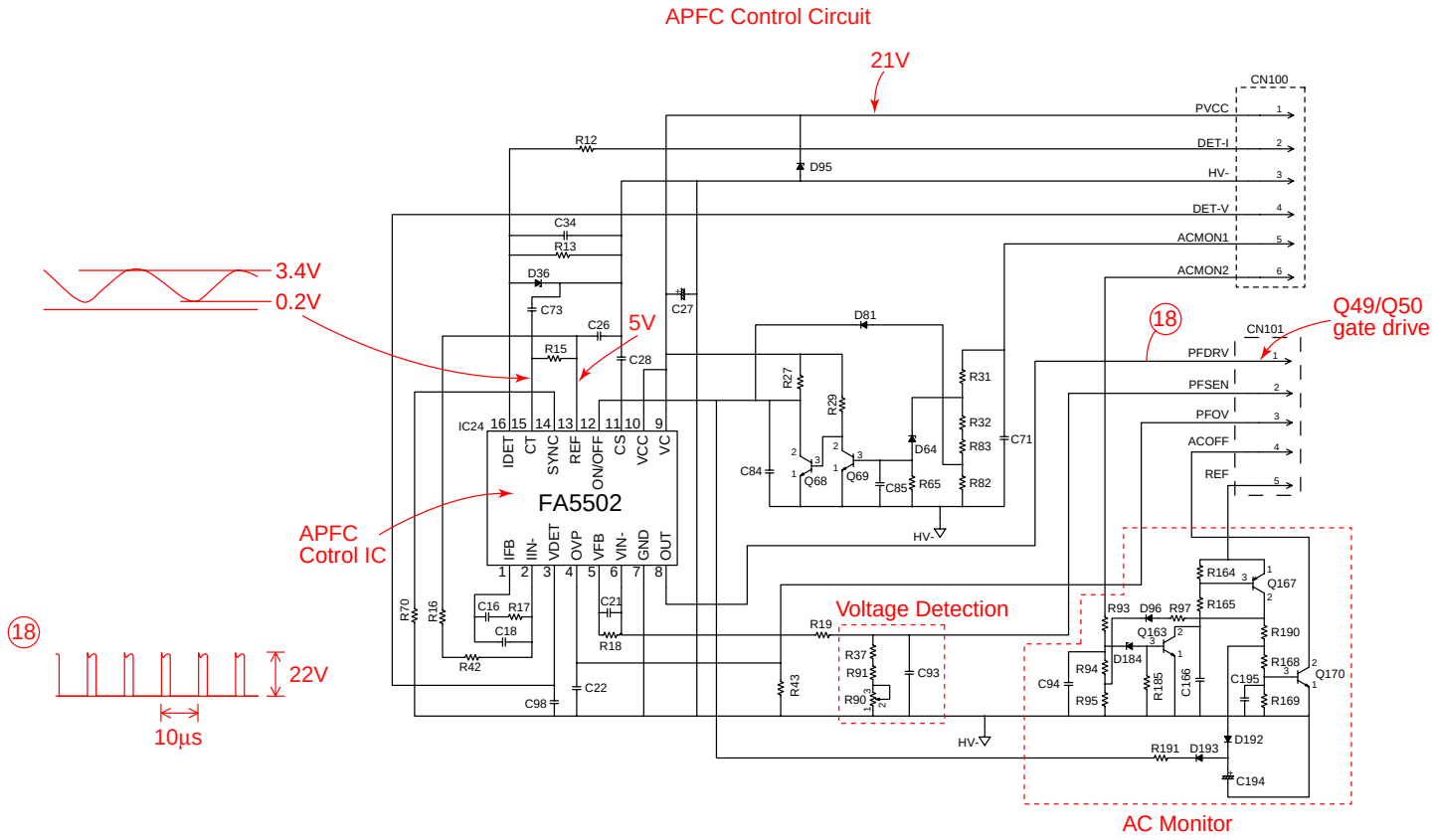
KX-TDA0103XJ/KX-TDA0103X L-TYPE POWER SUPPLY UNIT (PSU-L) 3/9



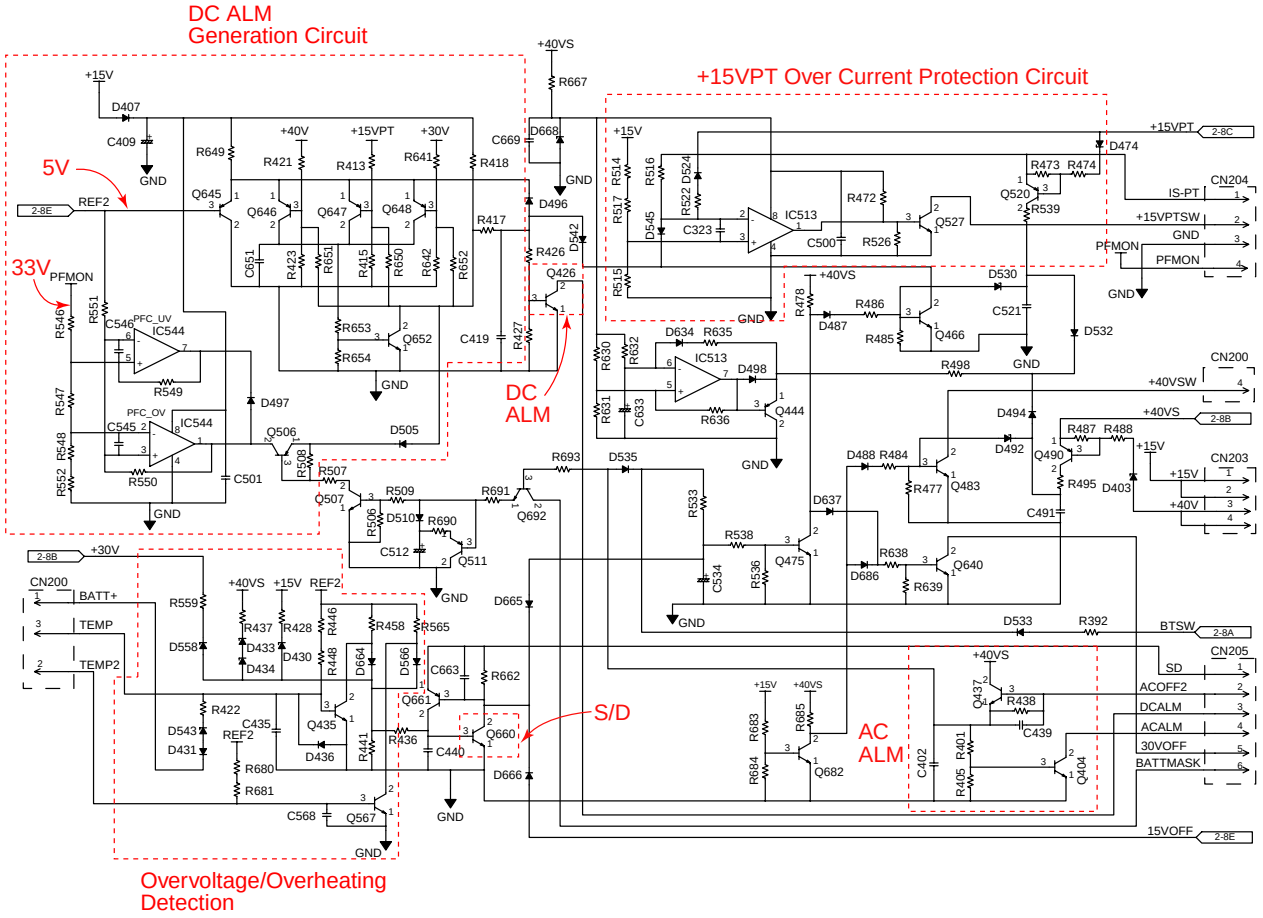
KX-TDA0103XJ/KX-TDA0103X L-TYPE POWER SUPPLY UNIT (PSU-L) 4/9

+30V Stepdown Converter

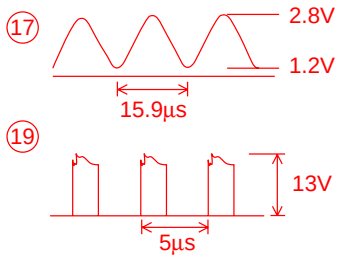


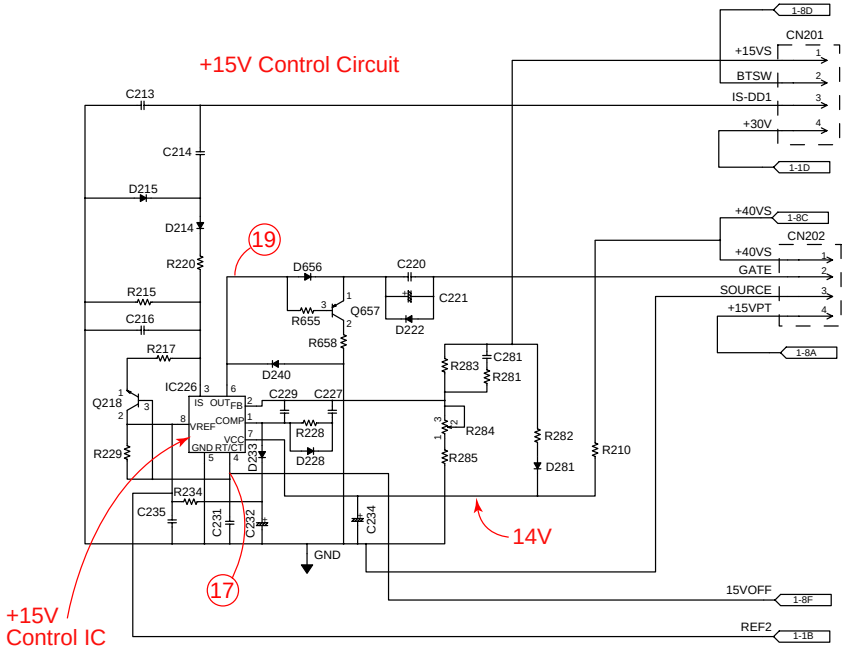


KX-TDA0103XJ/KX-TDA0103X L-TYPE POWER SUPPLY UNIT (PSU-L) 6/9

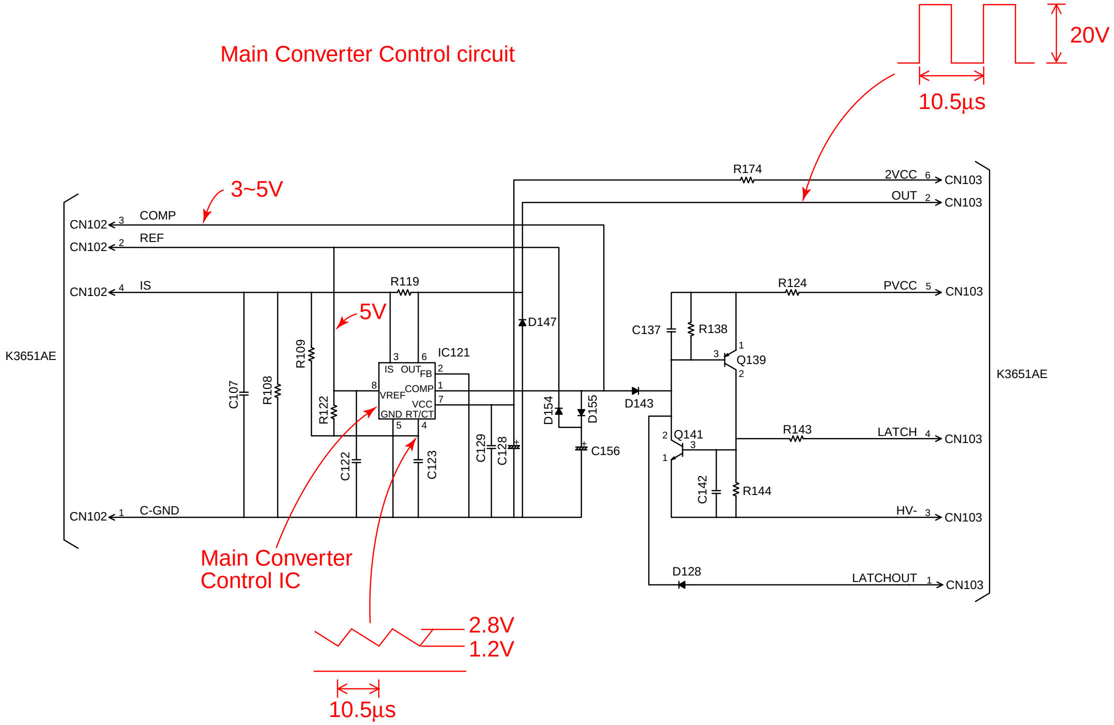


KX-TDA0103XJ/KX-TDA0103X L-TYPE POWER SUPPLY UNIT (PSU-L) 7/9





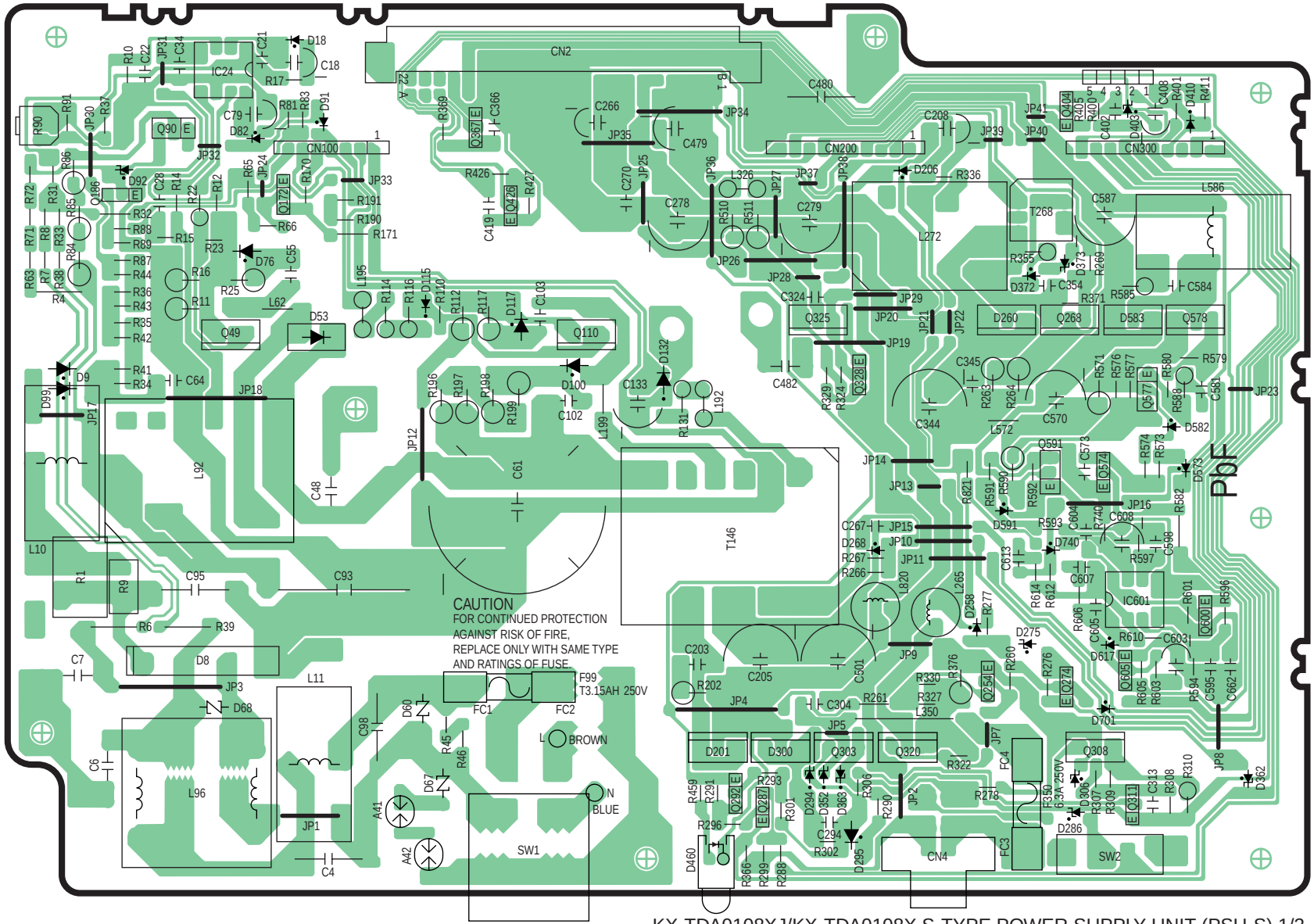
KX-TDA0103XJ/KX-TDA0103X L-TYPE POWER SUPPLY UNIT (PSU-L) 8/9



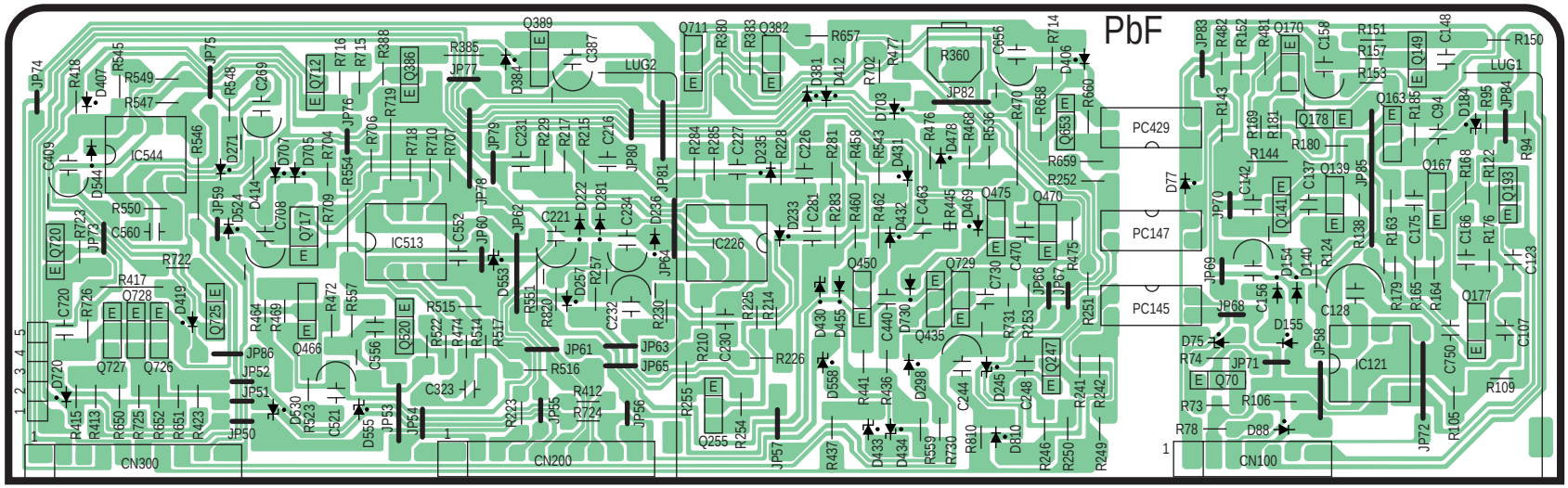
KX-TDA0103XJ/KX-TDA0103X L-TYPE POWER SUPPLY UNIT (PSU-L) 9/9

15 PRINTED CIRCUIT BOARD

15.1. S-TYPE POWER SUPPLY UNIT (PSU-S) / KX-TDA0108XJ/X

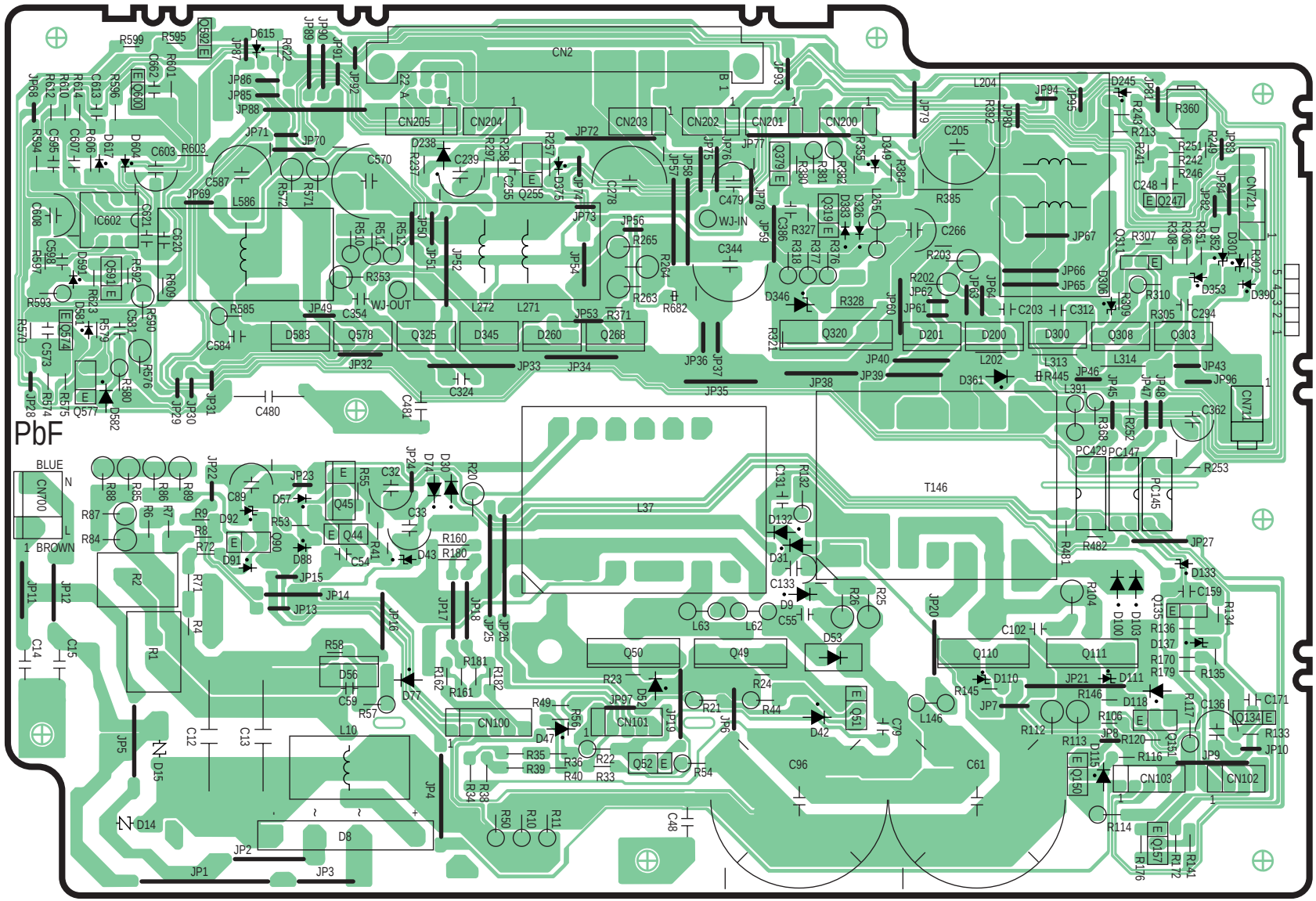


KX-TDA0108XJ/KX-TDA0108X S-TYPE POWER SUPPLY UNIT (PSU-S) 1/2

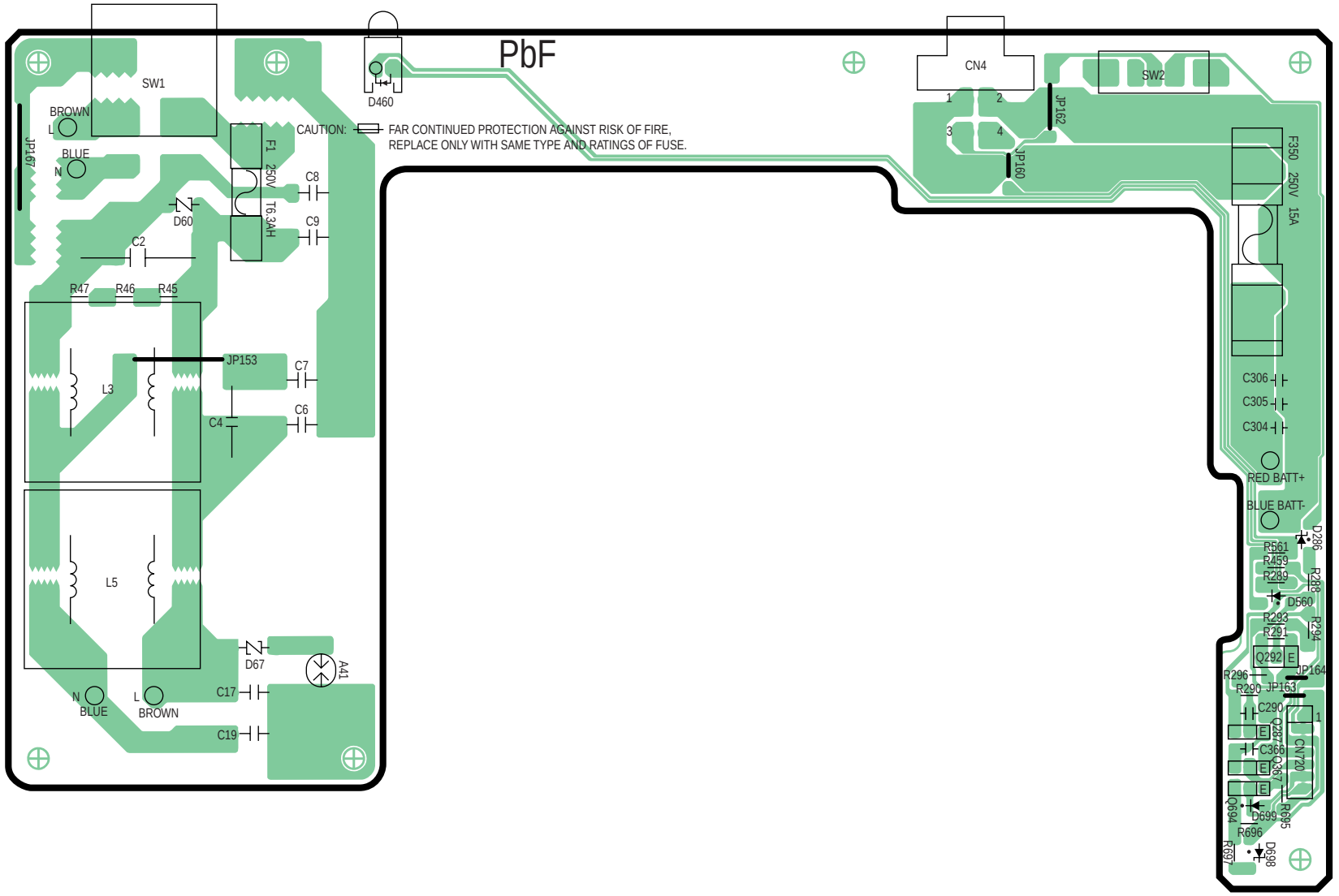


KX-TDA0108XJ/KX-TDA0108X S-TYPE POWER SUPPLY UNIT (PSU-S) 2/2

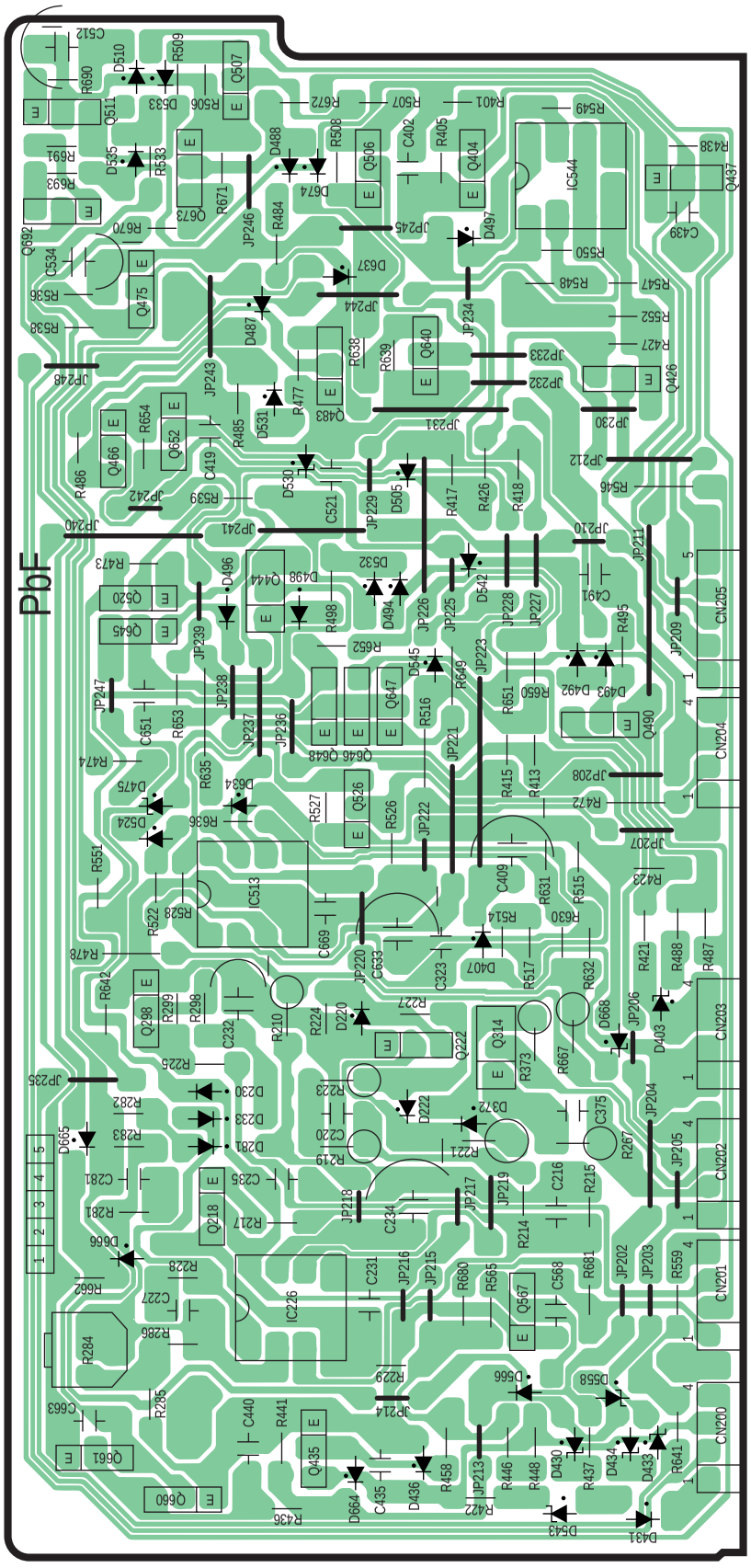
15.2. M-TYPE POWER SUPPLY UNIT (PSU-M) / KX-TDA0104XJ/X



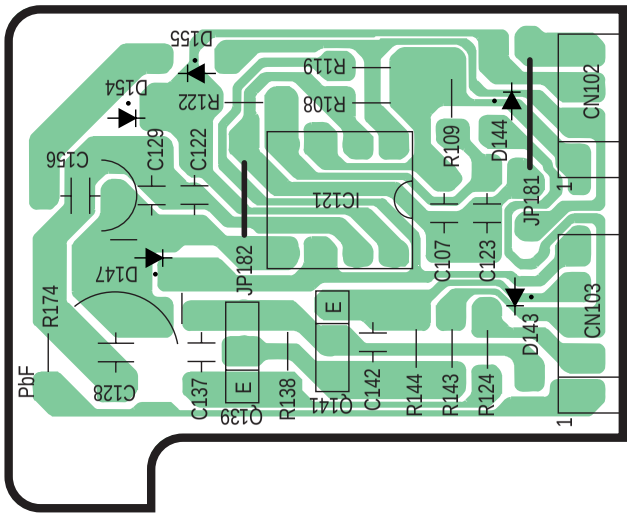
KX-TDA0104XJ/KX-TDA0104X M-TYPE POWER SUPPLY UNIT (PSU-M) 1/5



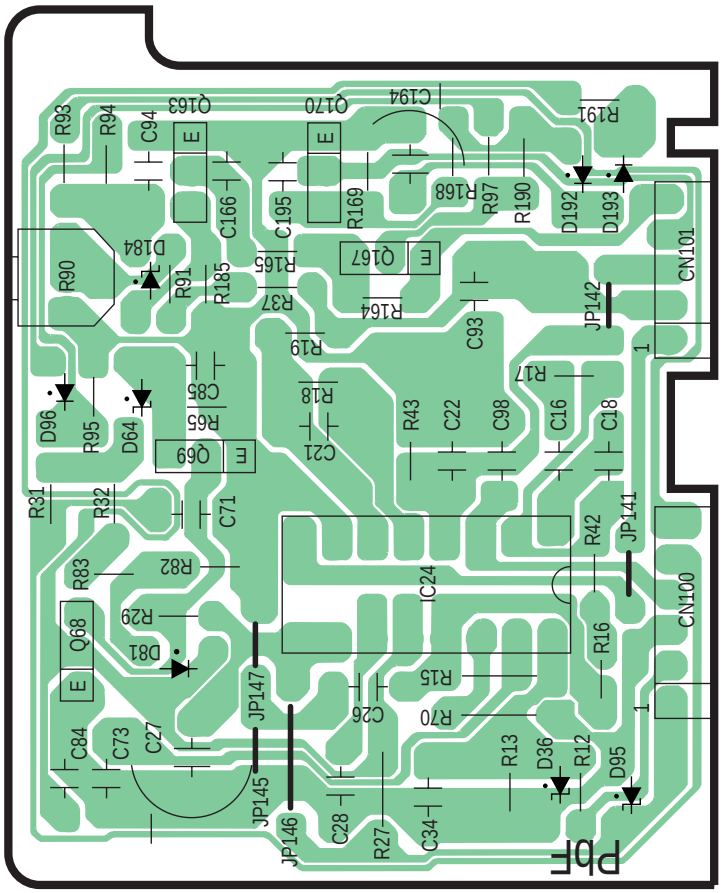
KX-TDA0104XJ/KX-TDA0104X M-TYPE POWER SUPPLY UNIT (PSU-M) 2/5



KX-TDA0104XJ/KX-TDA0104X M-TYPE POWER SUPPLY UNIT (PSU-M) 3/5

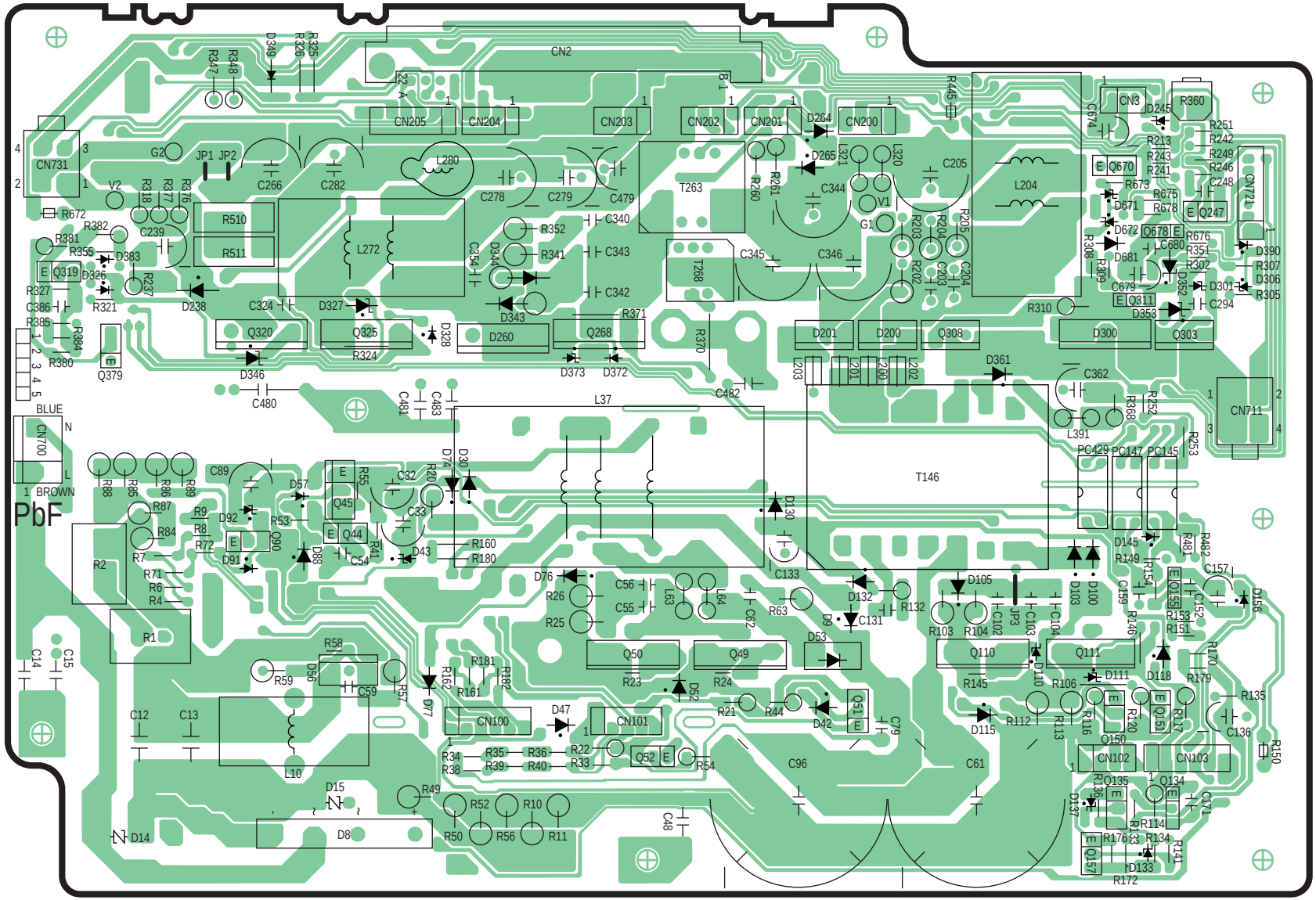


KX-TDA0104XJ/KX-TDA0104X M-TYPE
POWER SUPPLY UNIT (PSU-M) 4/5

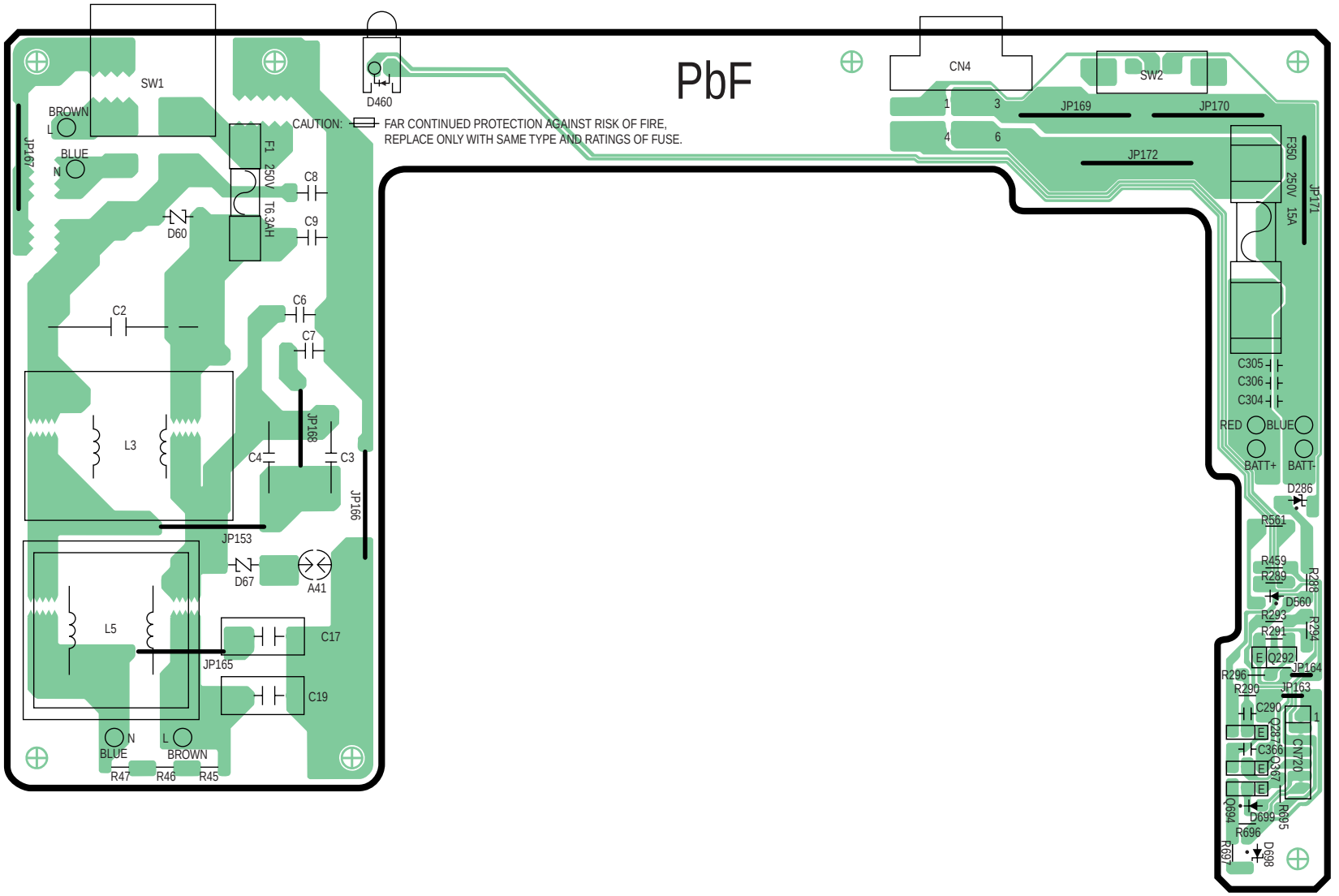


KX-TDA0104XJ/KX-TDA0104X M-TYPE POWER SUPPLY UNIT (PSU-M) 5/5

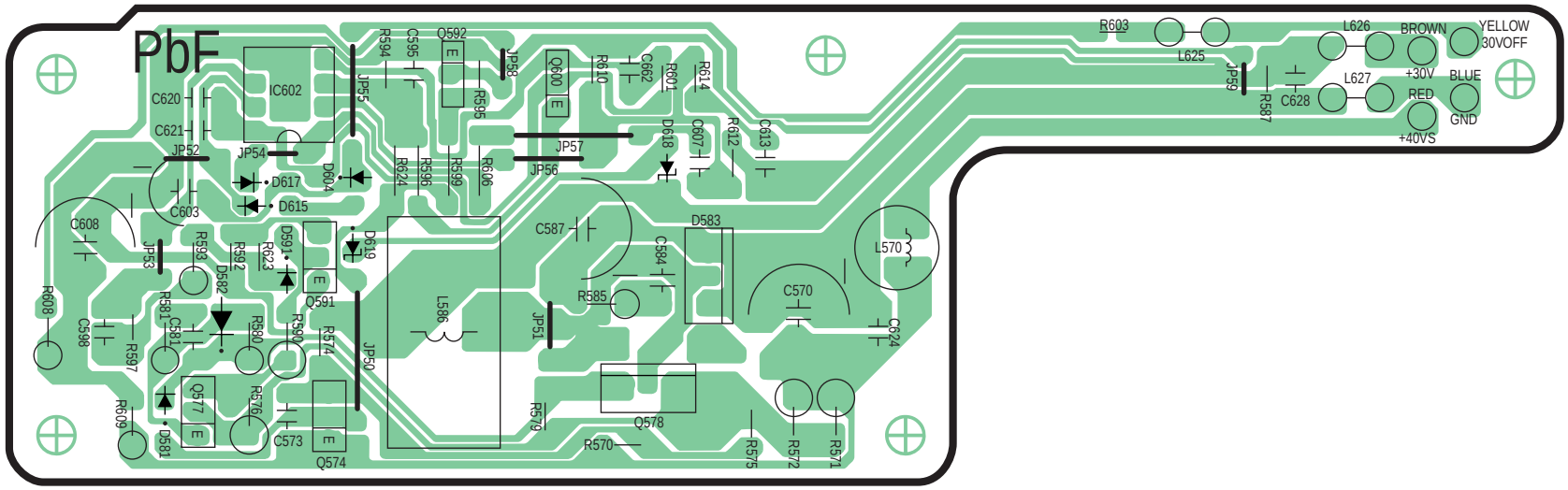
15.3. L-TYPE POWER SUPPLY UNIT (PSU-L) / KX-TDA0103XJ/X



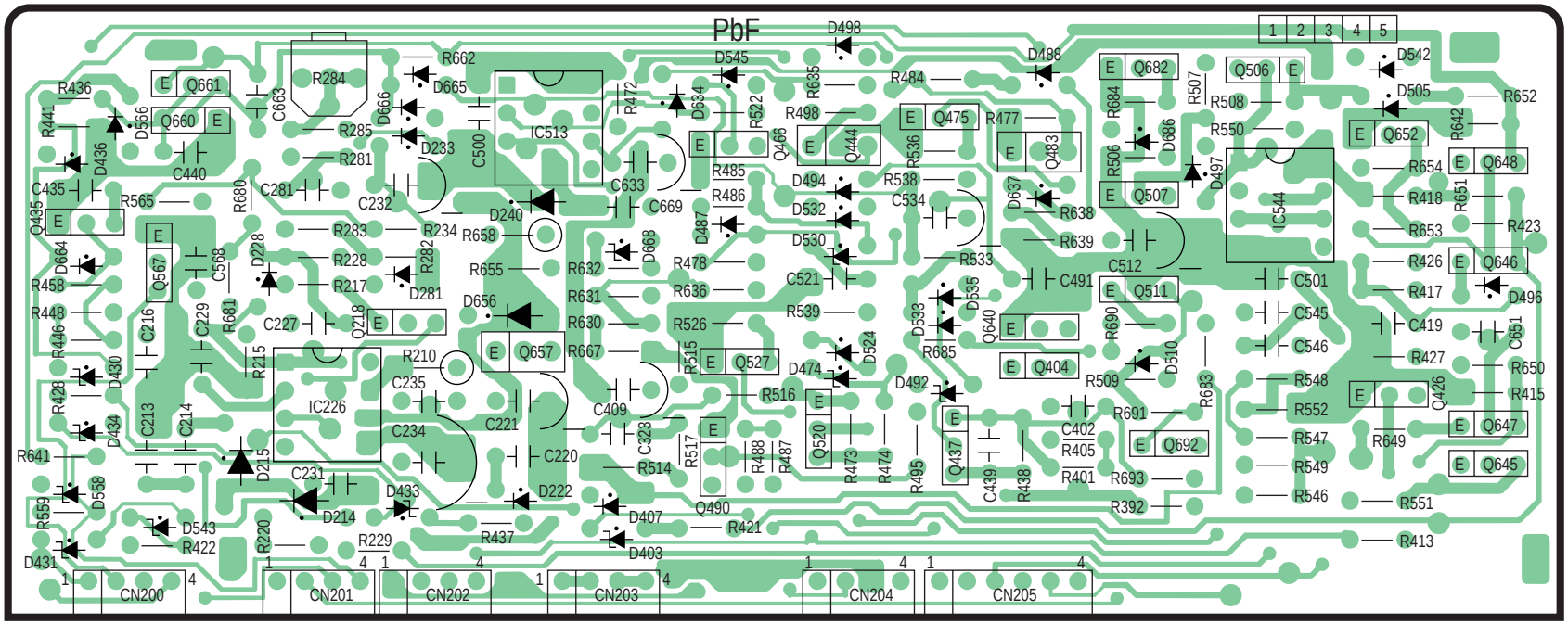
KX-TDA0103XJ/KX-TDA0103X L-TYPE POWER SUPPLY UNIT (PSU-L) 1/6



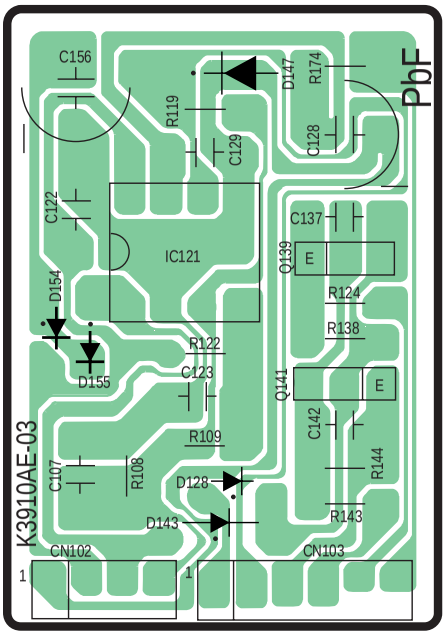
KX-TDA0103XJ/KX-TDA0103X L-TYPE POWER SUPPLY UNIT (PSU-L) 2/6



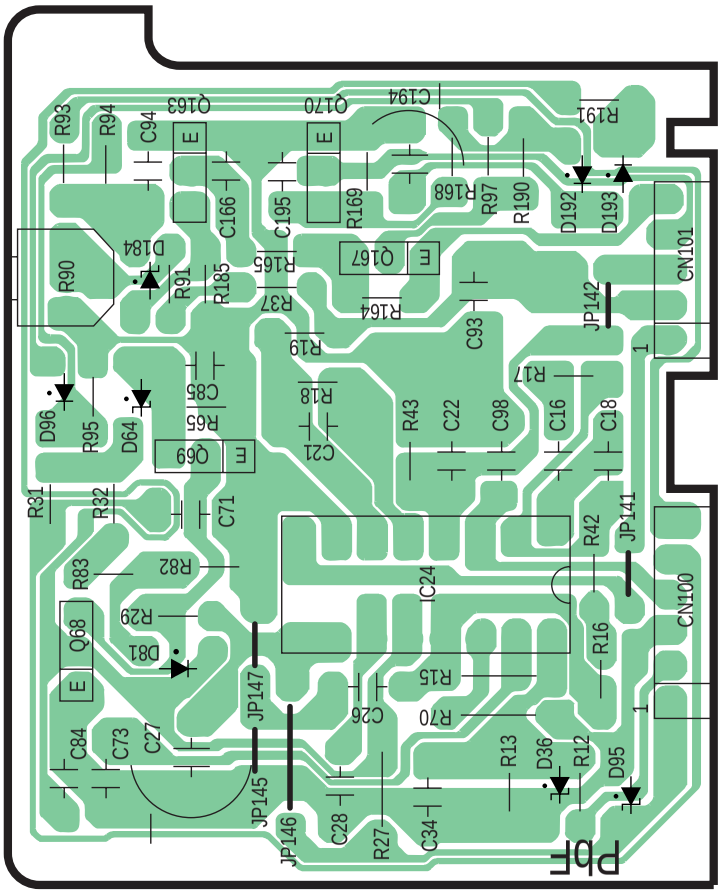
KX-TDA0103XJ/KX-TDA0103X L-TYPE POWER SUPPLY UNIT (PSU-L) 3/6



KX-TDA0103XJ/KX-TDA0103X L-TYPE POWER SUPPLY UNIT (PSU-L) 4/6



KX-TDA0103XJ/KX-TDA0103X L-TYPE POWER SUPPLY UNIT (PSU-L) 5/6



KX-TDA0103XJ/KX-TDA0103X L-TYPE POWER SUPPLY UNIT (PSU-L) 6/6