

TOSHIBA

SERVICE MANUAL

LCD Color Television

42HL196

Rev.1

For Technical Bulletins, Technical Tips, or other information regarding the service of this model, visit the Toshiba America Consumer Products National Service Division website at:

www7.toshiba.com

This model is classified as a green product (*1), as indicated by the underlined serial number. This Service Manual describes replacement parts for the green product. When repairing this green product, use the part(s) described in this manual and lead-free solder (*2).

For (*1) and (*2), refer to **GREEN PRODUCT PROCUREMENT** and **LEAD-FREE SOLDER**.

IMPORTANT NOTICE

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GREEN PRODUCT PROCUREMENT

The EC is actively promoting the WEEE & RoHS Directives that define standards for recycling and reuse of Waste Electrical and Electronic Equipment and for the Restriction of the use of certain Hazardous Substances. From July 1, 2006, the RoHS Directive will prohibit any marketing of new products containing the restricted substances.

Increasing attention is given to issues related to the global environmental. Toshiba Corporation recognizes environmental protection as a key management tasks, and is doing its utmost to enhance and improve the quality and scope of its environmental activities. In line with this, Toshiba proactively promotes Green Procurement, and seeks to purchase and use products, parts and materials that have low environmental impacts.

Green procurement of parts is not only confined to manufacture. The same green parts used in manufacture must also be used as replacement parts.

LEAD-FREE SOLDER

WARNING: This product is manufactured using lead-free solder as a part of a movement within the consumer products industry at large to be environmentally responsible. **Lead-free solder must be used in the servicing and repair of this product.**

The melting temperature of lead-free solder is higher than that of leaded solder by 86°F to 104°F (30°C to 40°C). Use of a soldering iron designed for lead-based solders to repair product made with lead-free solder may result in damage to the component and/or PCB being soldered. Great care should be made to ensure high-quality soldering when servicing this product especially when soldering large components, through-hole pins, and on PCBs as the level of heat required to melt lead-free solder is high.

SAFETY INSTRUCTION

WARNING: Before servicing this chassis, read the "Safety Precaution" and "Product Safety Notice" instructions below.

Safety Precaution

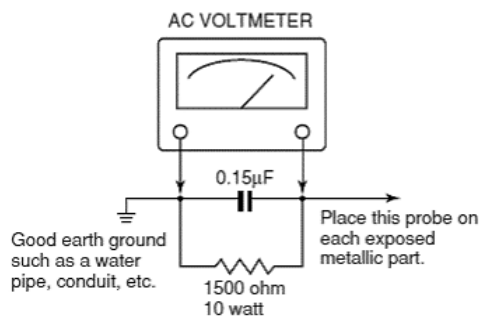
WARNING: Servicing should not be attempted by anyone unfamiliar with the necessary precautions on this receiver. The following are the necessary precautions to be observed before servicing this chassis.

1. An isolation transformer should be connected in the power line between the receiver and the AC line before any service is performed on the receiver.
2. Always disconnect the power plug before any disassembling of the product. It may result in electrical shock.
3. When replacing a chassis in the cabinet, always be certain that all the protective devices are put back in place, such as nonmetallic control knobs, insulating covers, shields, isolation resistor-capacitor network, etc.
4. Always keep tools, product components, etc. away from children as these items may cause injury.
5. Depending on the model, use an isolation transformer or wear suitable gloves when servicing with the power on. Disconnect the power plug to avoid electrical shock when replacing parts. In some cases, alternating current is also impressed in the chassis, so electrical shock is possible if the chassis is contacted with the power on.
6. Always use the replacement parts specified for the particular model when making repairs. The parts used in products require special safety characteristics such as inflammability; voltage resistance, etc. therefore, use only replacement parts

that have these same characteristics. Use only the specified parts when the ⚠ mark is indicated in the circuit diagram or parts list.

7. Part mounting and wire routing should be the same as that used originally. For safety purposes, insulating materials such as isolation tubes or tape are sometimes used and printed circuit boards are sometimes mounted floating. Also make sure that wiring is routed and clamped to avoid parts that generate heat or use high voltage. Always follow the manufactures wiring routes / dressings.
8. Always ensure that all internal wirings are in accordance before re-assembling the external casing after a repair is completed. Do not allow internal wiring to be pinched by cabinets, panels, etc. Any error in reassembly or wiring can result in electrical leakage, flame, etc., and may be hazardous.
9. NEVER remodel the product in any way. Remodeling can result in improper operation, malfunction, electrical leakage, or flame, which may be hazardous.
10. Always perform an AC leakage current check on the exposed metallic parts of the cabinet such as antennas, terminals, screw heads, metal overlays, control shafts, etc. to be sure that the set is safe to operate without any danger of electrical shock before returning the set to the customer.
11. To check leakage current: (After completing the work, measure the leakage current to prevent an electrical shock.)
 - Plug the AC line cord directly into a 120V AC outlet. Do not use an isolation transformer for this check.
 - Use an AC voltmeter having 5000 ohms per volt or more sensitivity in the following manner.

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



Product Safety Notice

Many electrical and mechanical parts in this chassis have special safety-related characteristics. These characteristics are often overlooked in a visual inspection. The protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this manual and its supplements. Electrical components having such features are identified by the international hazard symbols on the schematic diagram and the parts list. Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts which do not have the same safety as specified in the parts list may create electrical shock, fire, or other hazards.

SAFETY INSTRUCTION

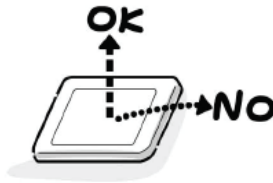
WARNING: The metal edges of the LCD module are sharp, **handle it with care.**

The LCD module can easily be damaged during disassembly or reassembly; therefore, always observe the following precautions when handling the module.

1. In the event that the screen is damaged or the liquid crystal (fluid) leaks, do not breathe in, drink, or touch this fluid. Such actions could cause toxicity or skin irritation. If this fluid should enter the mouth, rinse the mouth thoroughly with water. If the

fluid should contact the skin or clothing, wipe off with alcohol, etc., and rinse thoroughly with water. If the fluid should enter the eyes, immediately rinse the eyes thoroughly with running water.

2. When attaching the LCD module to the LCD cover, position it appropriately and fasten at the position where the display can be viewed most conveniently.



3. Carefully align the holes at all four corners of the LCD module with the corresponding holes in the LCD cover and fasten with screws. Do not strongly push on the module because any impact can adversely affect the performance. Also use caution when handling the polarized screen because it can easily be damaged.



4. If the panel surface becomes soiled, wipe with cotton or a soft cloth. If this does not remove the soiling, breathe on the surface and then wipe again. If the panel surface is extremely soiled, wipe the panel surface with CRT cleaner sprayed onto the cloth. Do not spray the cleaner on the panel. Pay attention not to scratch the panel surface.



5. Leaving water or other fluids on the panel for an extended period of time can result in discoloration or stripes. Immediately remove any type of fluid from the screen.



6. Glass is used in the panel construction. Damage can occur if dropped or struck with hard objects.



7. CMOS-LSI circuitry is used in the LCD module, so avoid damage due to static electricity. When handling the module, use a wrist ground or anchor ground.



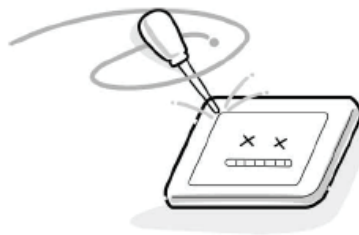
8. Do not expose the LCD module to direct sunlight or strong ultraviolet rays for extended periods.



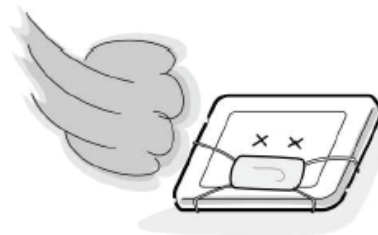
9. Do not store the LCD module below the temperature conditions described in the specifications. Doing so could result in freezing of the liquid crystal, loss of resilience, or other damage.



10. Do not disassemble the LCD module. Such actions could result in improper operation.



11. When transporting the LCD module, do not use packing containing epoxy resin (amine) or silicon resin (alcohol or oxim). The gas generated by these materials can cause loss of polarity.



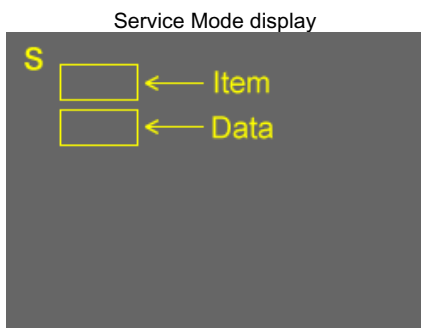
Entering Service Mode



1. Set VOLUME to minimum and press MUTE button twice on the remote control.



2. Press MUTE button again and hold button down.



3. While holding the MUTE button, press MENU button on TV set.

Selecting the Adjusting Item

Every pressing of CH ▲ or ▼ button in the service mode changes the adjustment items.

Adjusting the Data

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

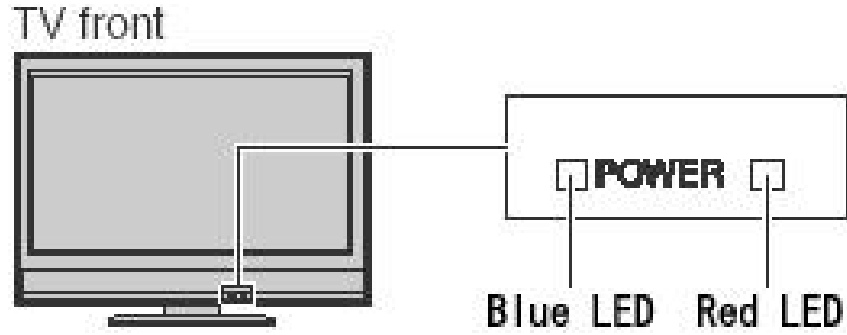
Exiting Service Mode

Press the POWER button once to turn off the TV.

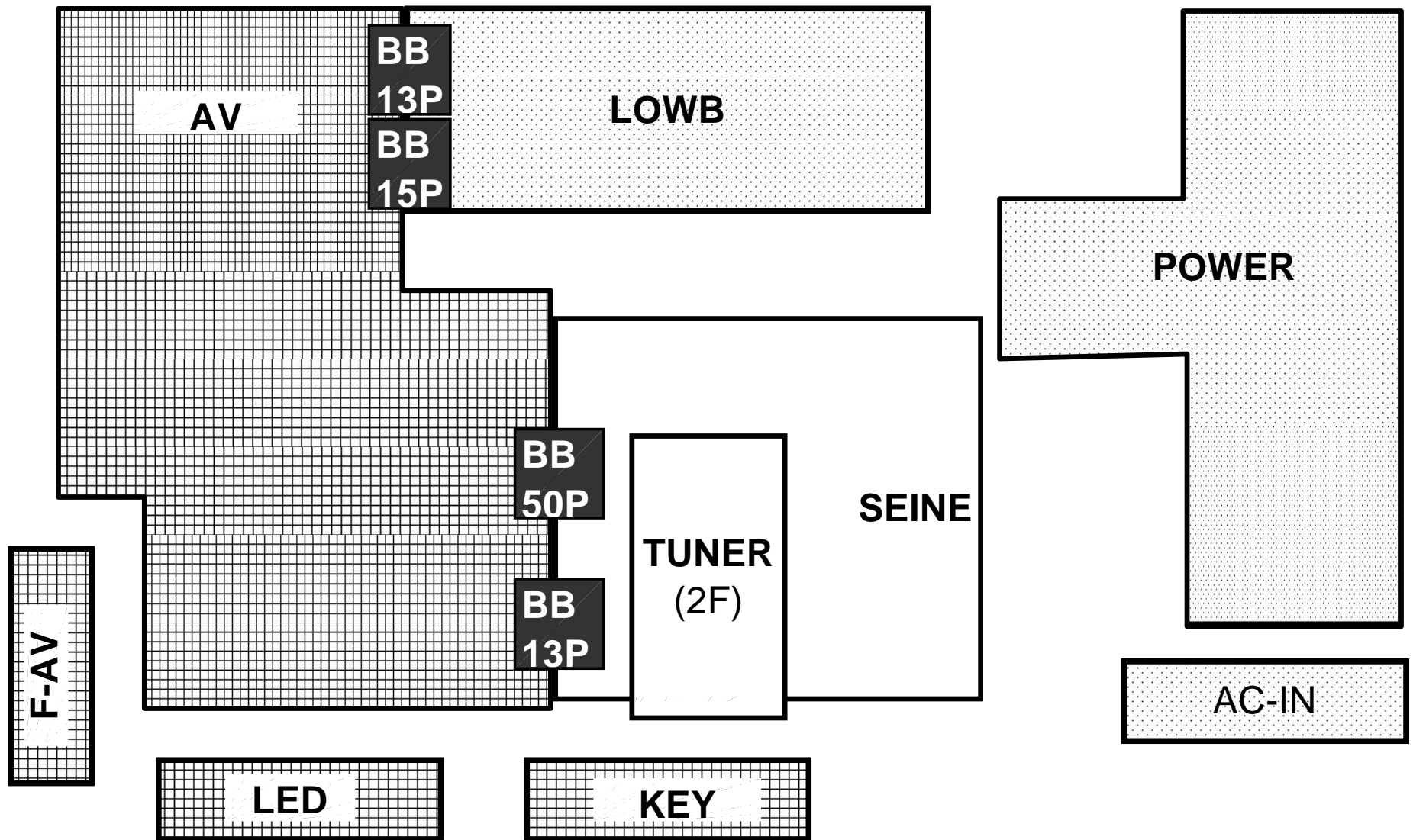
LED BLINK CODES

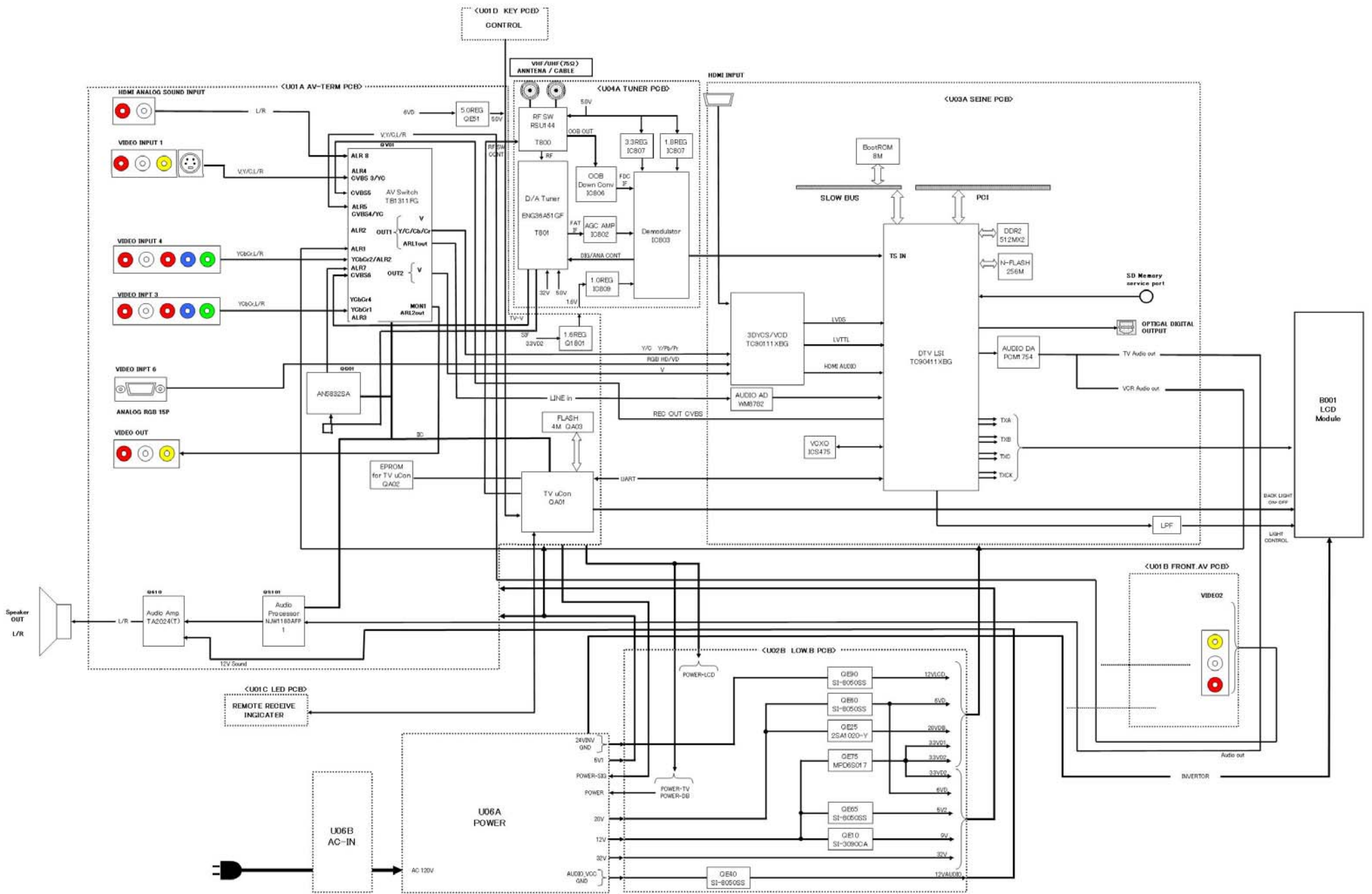
The blue and red LED lights on the TV (at the bottom of the TV) indicate the TV's status, as described below:

Note: If the TV loses A/C power (e.g., a power outage occurs or the power cord is unplugged), when power is restored, the red LED will blink while the TV is booting until the remote control is usable. This is normal and is not a sign of malfunction.

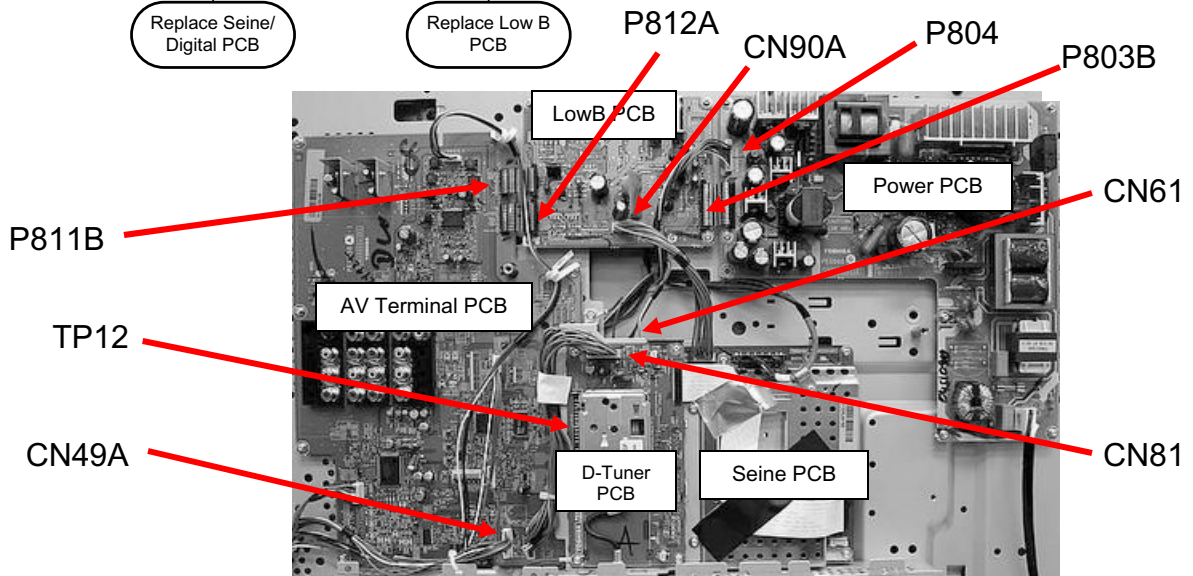
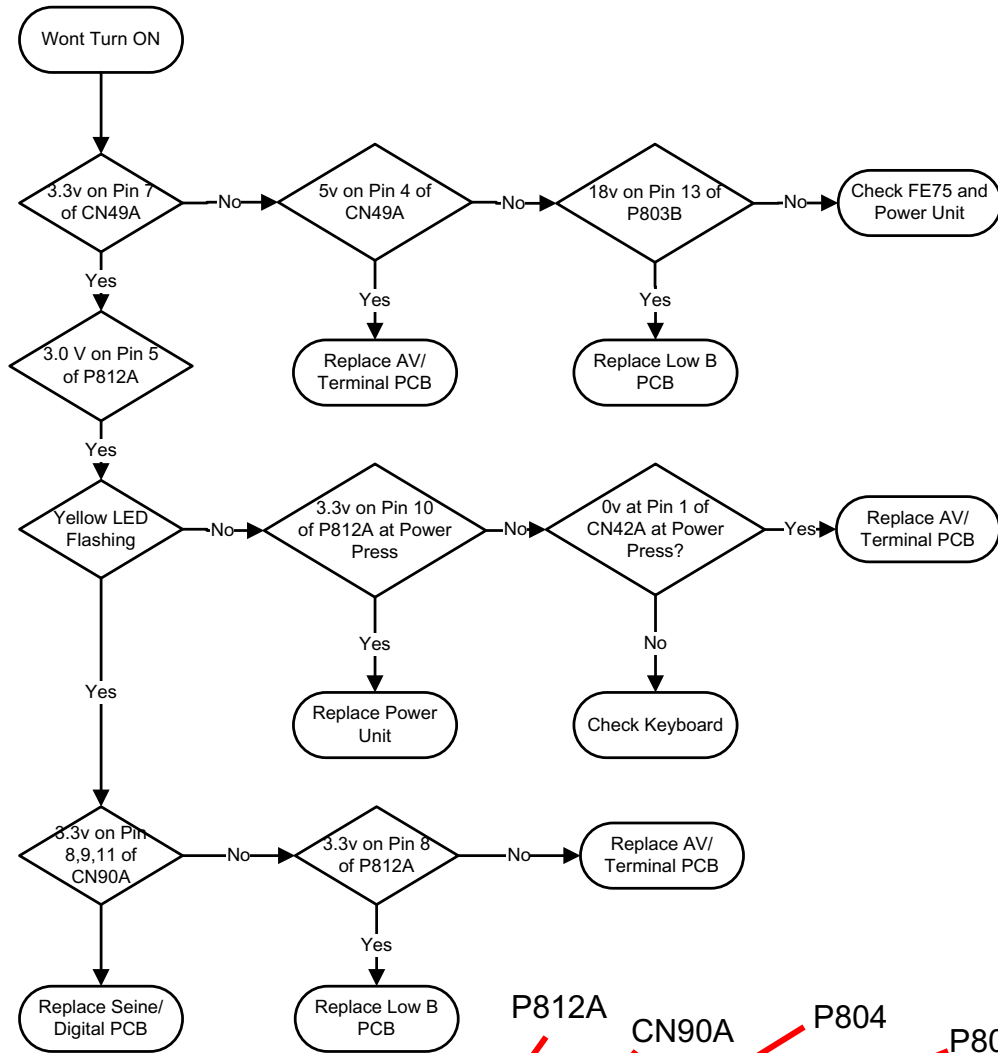


MODE	HL196 LED Codes	
	BLUE	RED
POWER ON	ON	
Recording in progress		ON
TV is rebooting		3 Blinks
IIC BUS Error	Slow blinking	
Power Protection	Fast blinking	

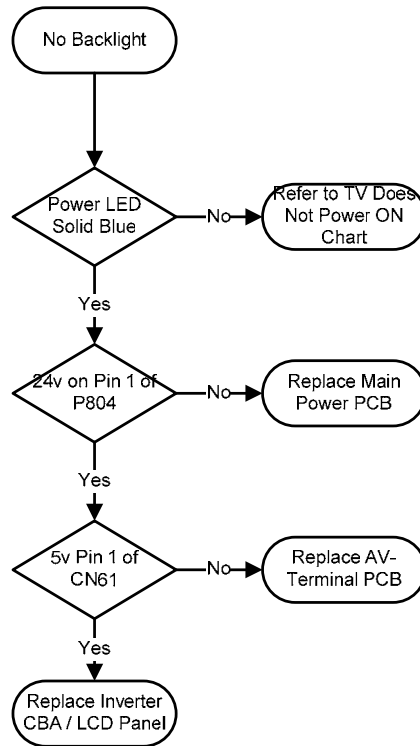




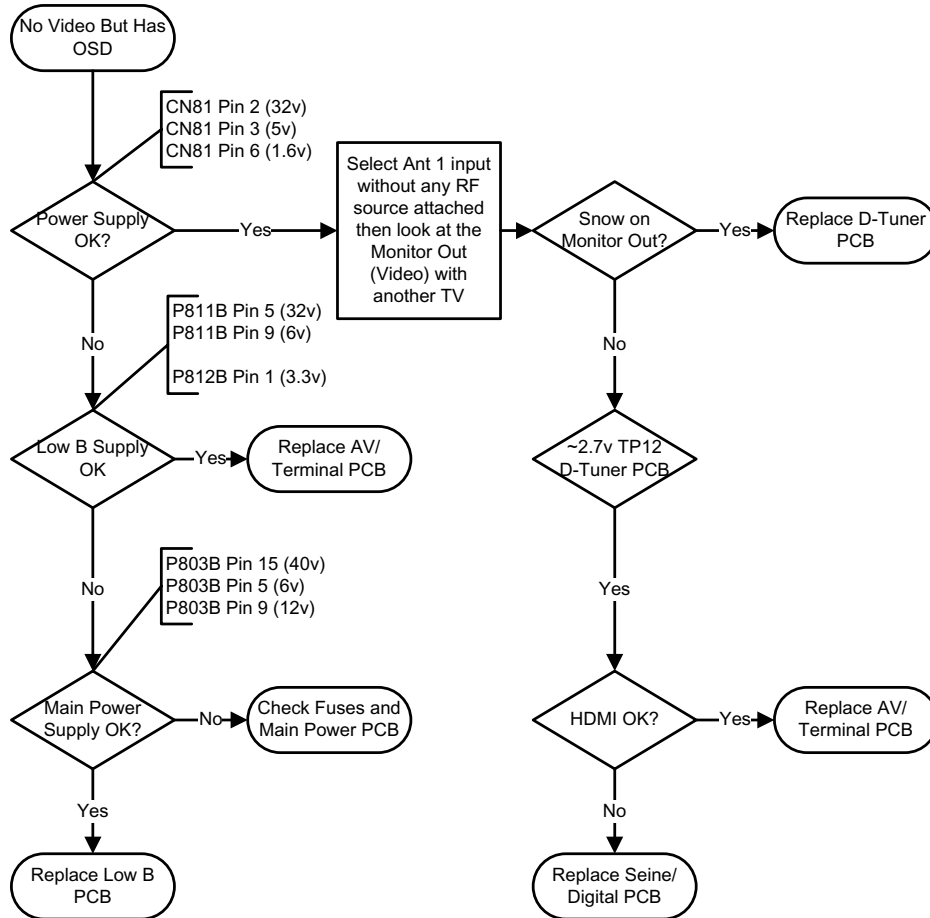
Troubleshooting Flowchart 2006 LCD "TV Does Not Power On"



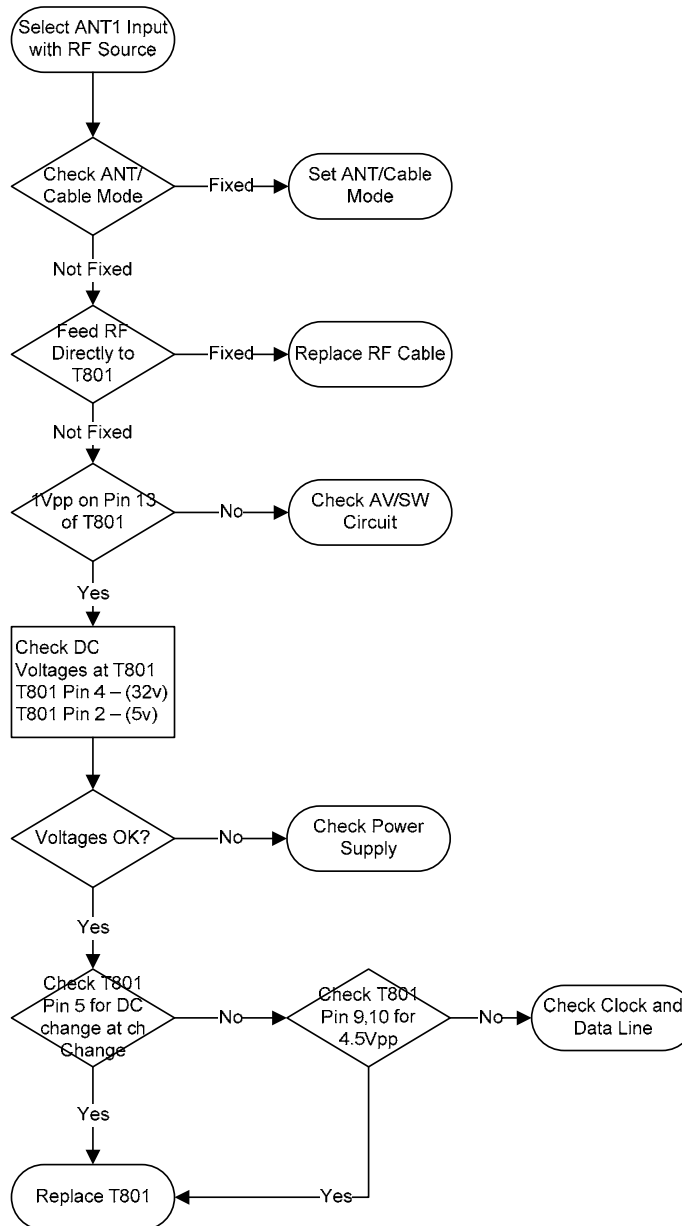
Troubleshooting Flowchart 2006 LCD “Backlight Won’t Turn ON”



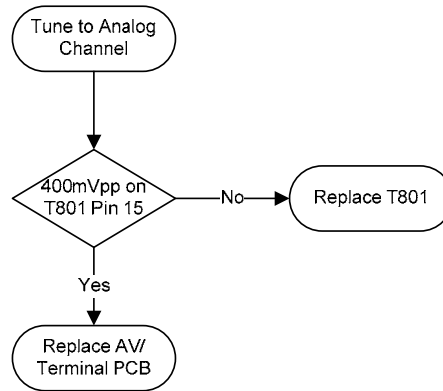
Troubleshooting Flowchart 2006 LCD “Loss of Video (Blank Screen) Has OSD”

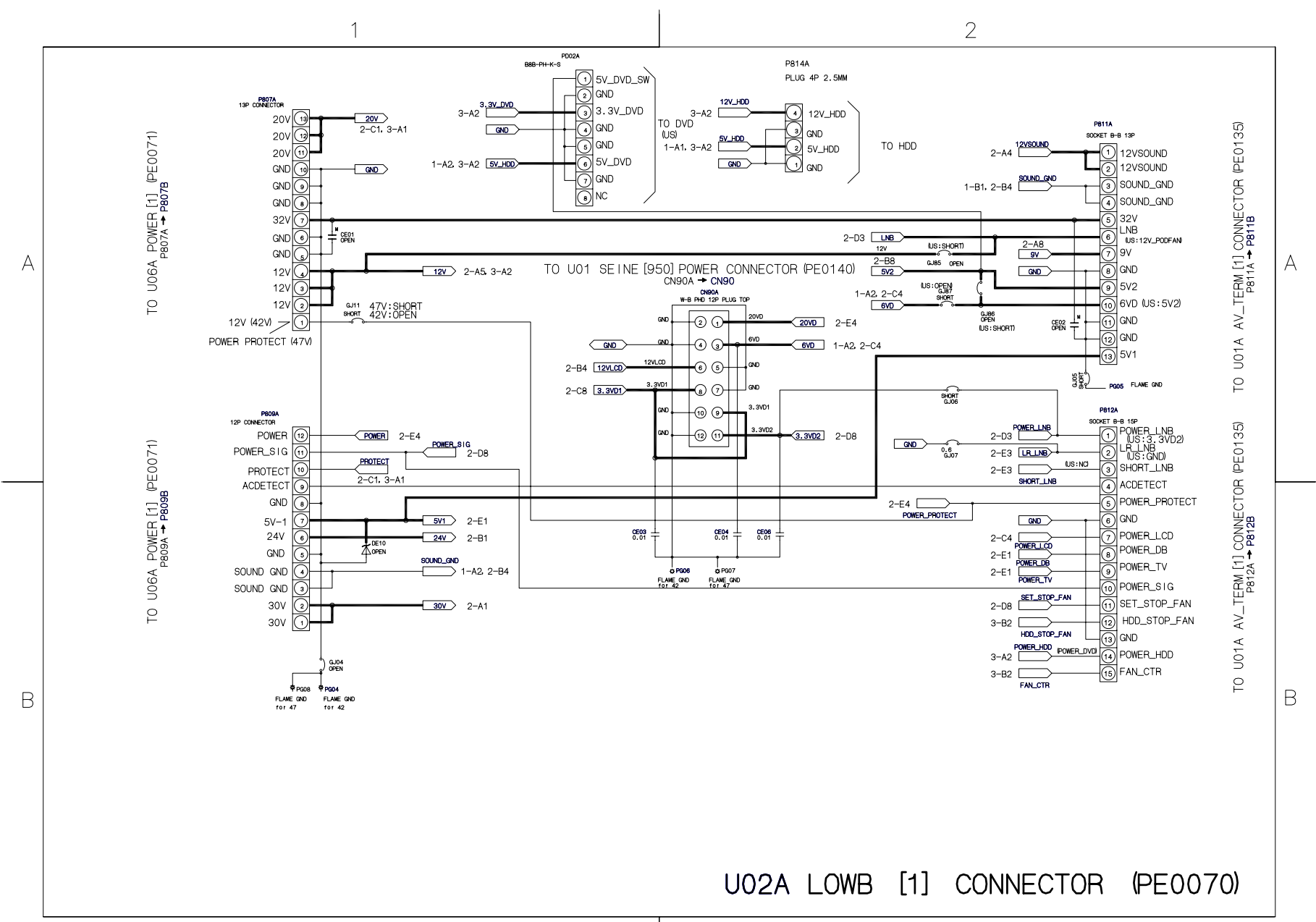


Troubleshooting Flowchart 2006 LCD “No Picture on Analog Tuner”



Troubleshooting Flowchart 2006 LCD “No Sound on Analog Tuner”





1

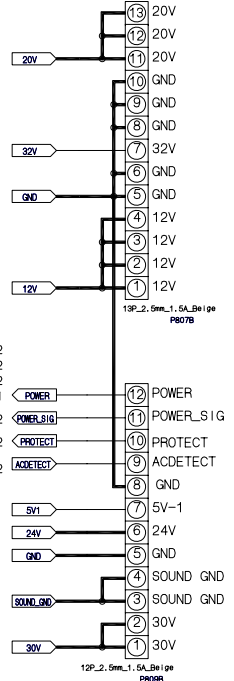
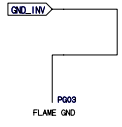
2

A

A

B

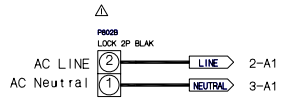
B



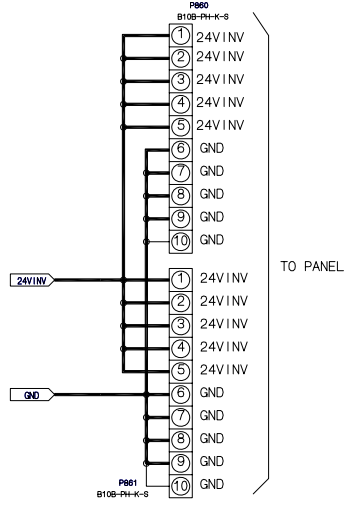
TO U02A LOWB [1] CONNECTOR (PE0070)
P807B → P807A

TO U02A LOWB [1] CONNECTOR (PE0070)
P809B → P809A

TO U06B AC-INPUT [8] AC INPUT (PE0071)
P802B → P802A



LIVE AREA



U06A POWER [1] (PE0071)

1

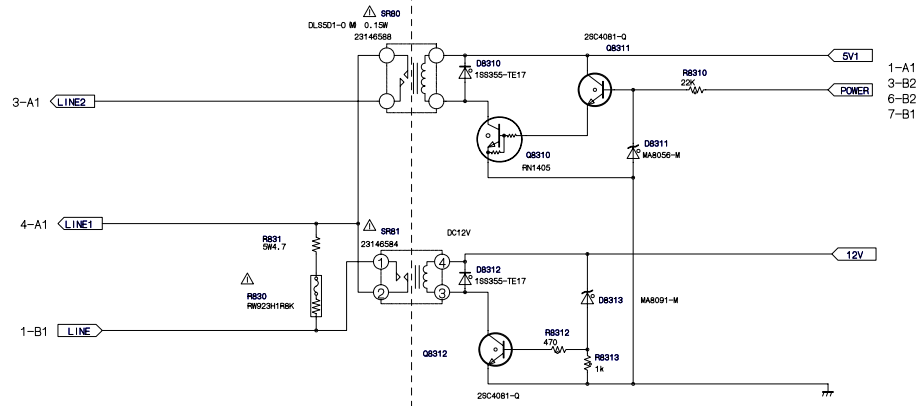
2

1

2

A

A



LIVE AREA

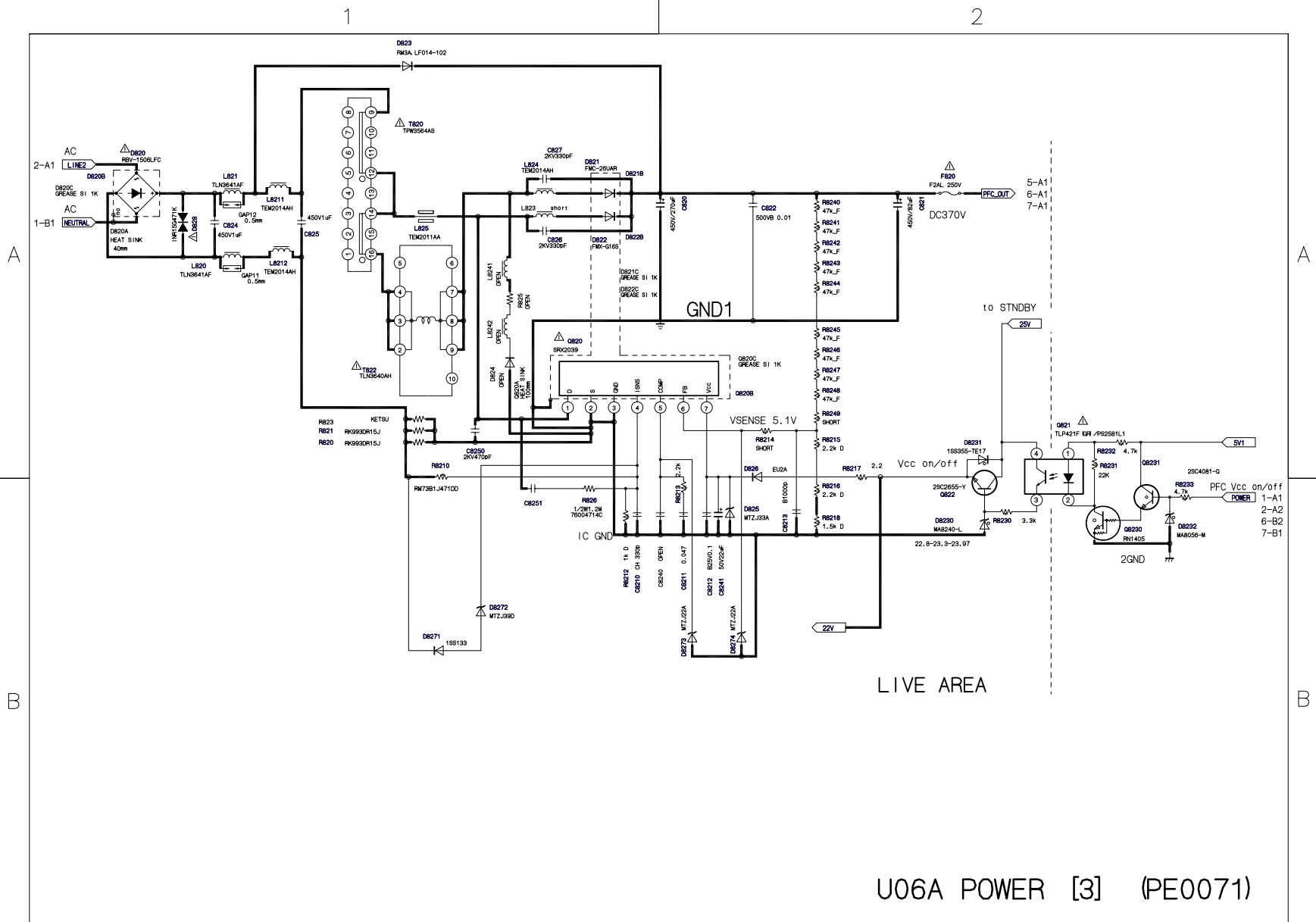
U06A POWER [2] (PE0071)

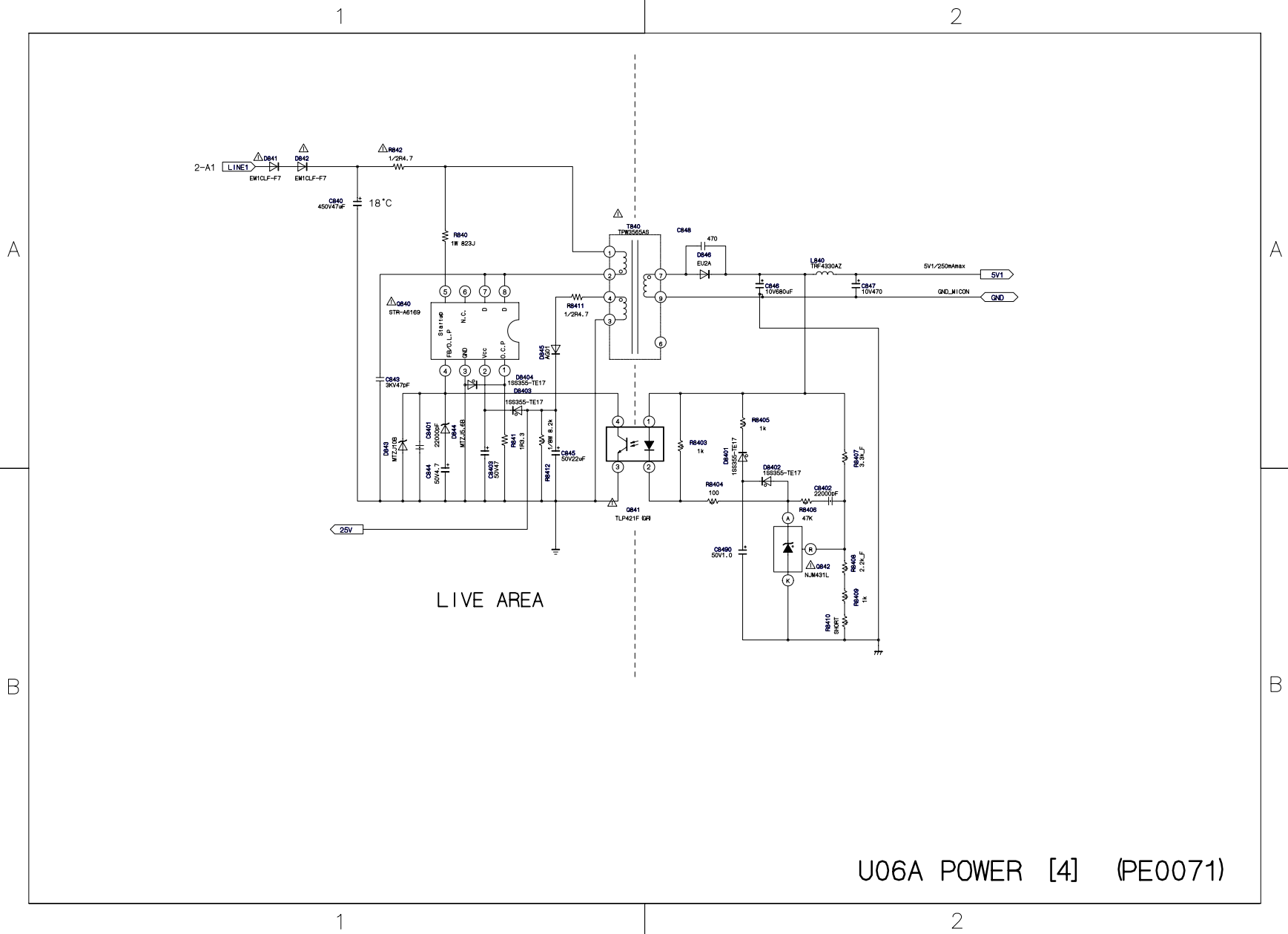
1

2

B

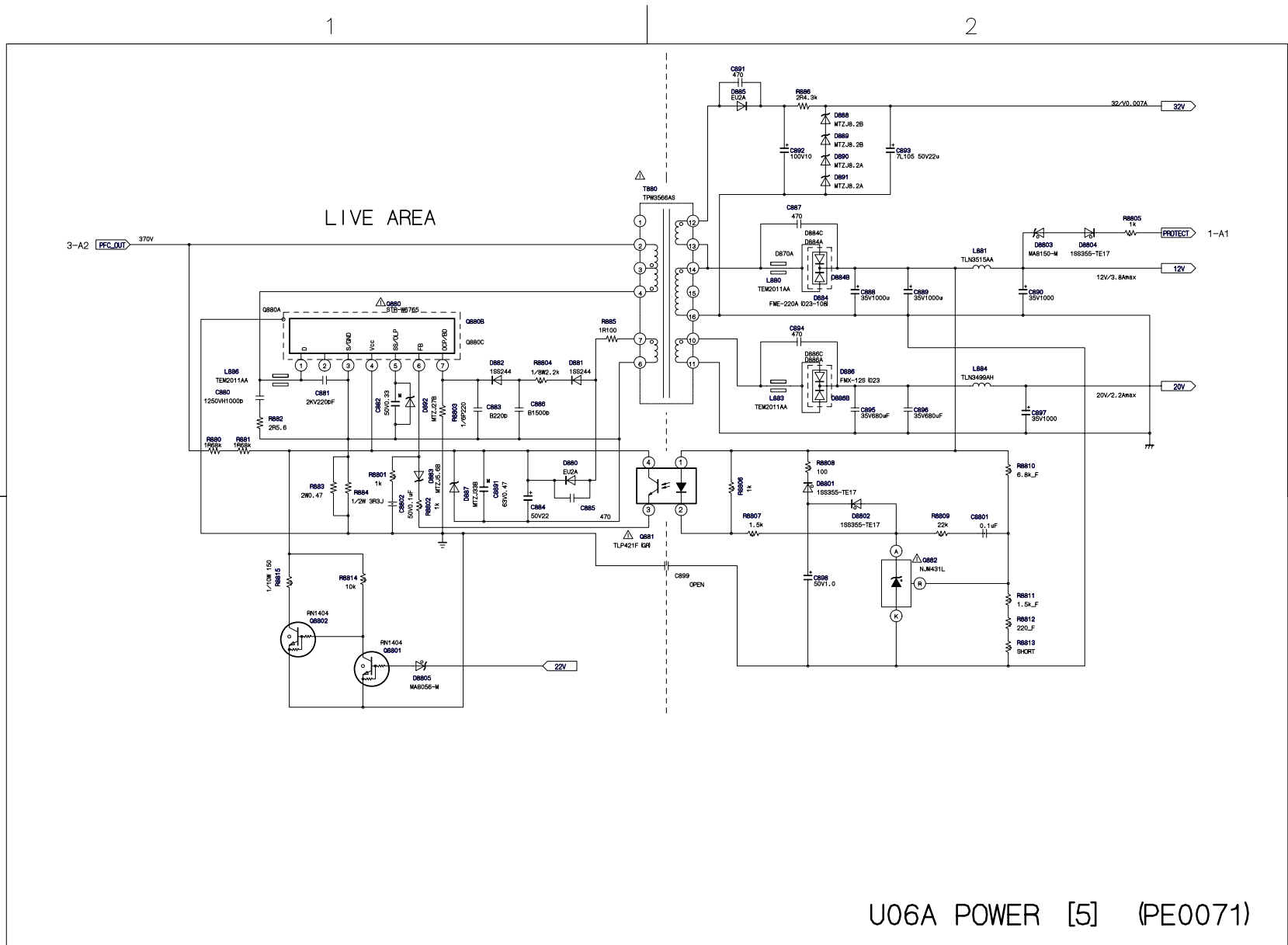
B



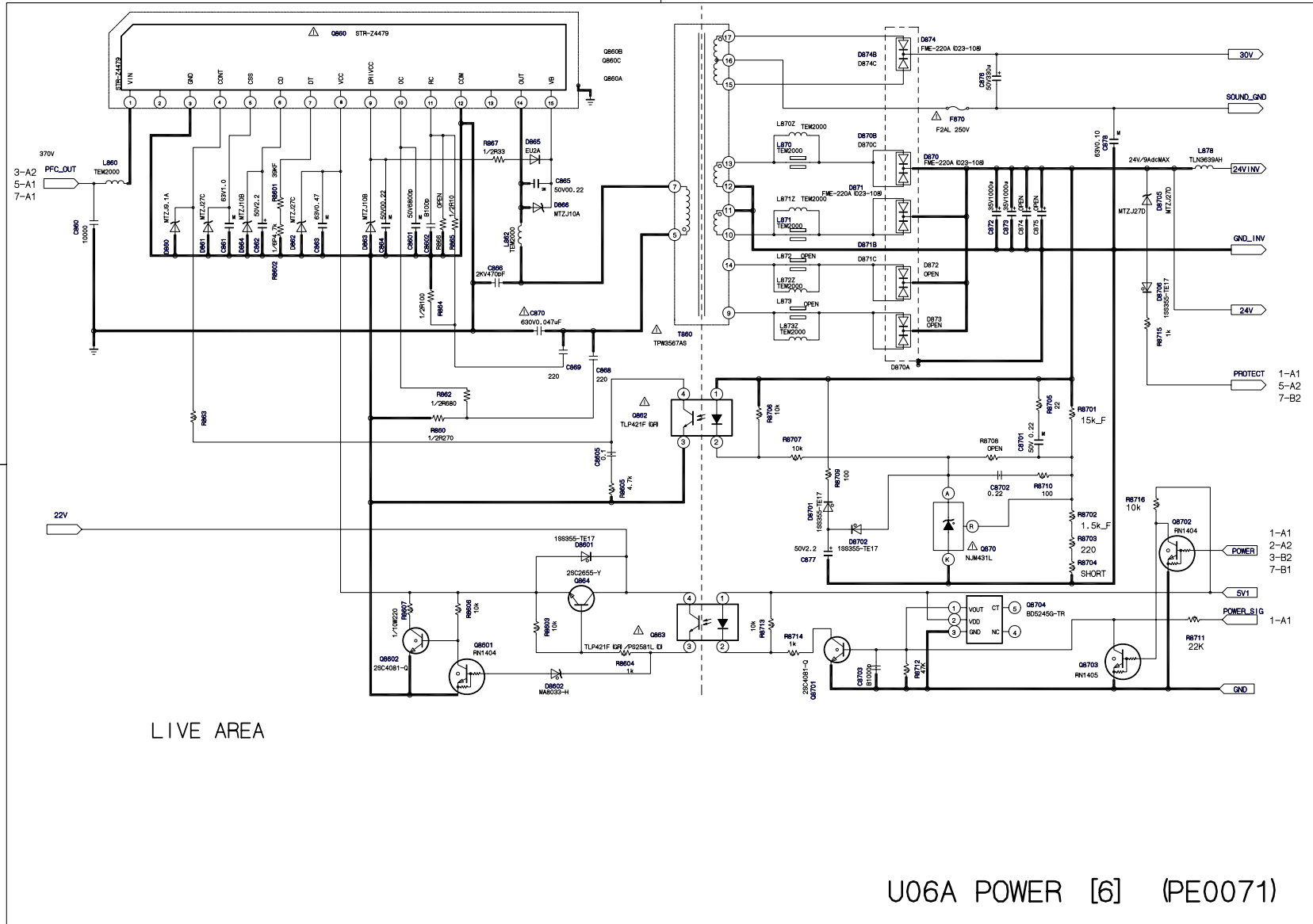


LIVE AREA

U06A POWER [4] (PE0071)



U06A POWER [5] (PE0071)



1

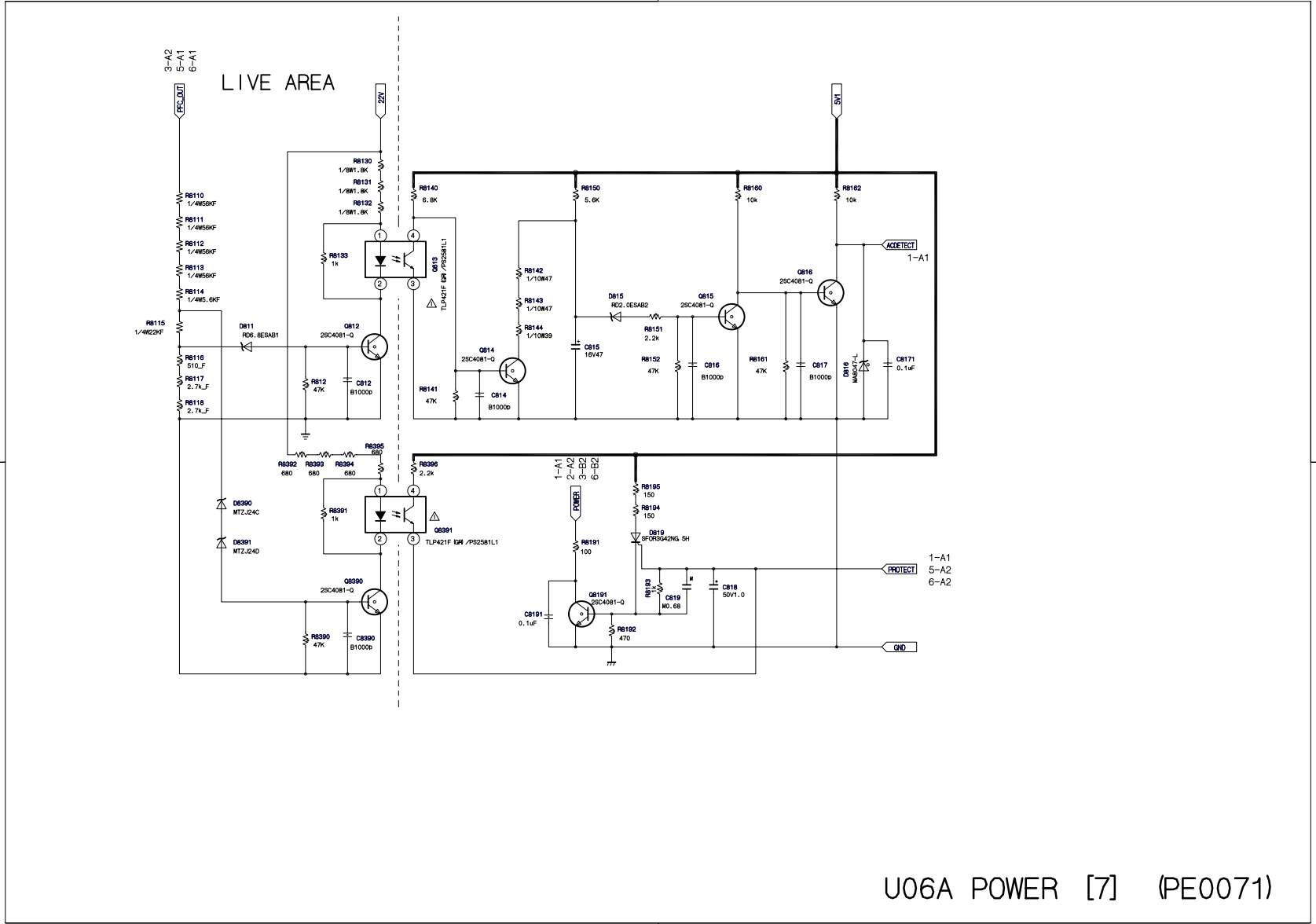
2

A

A

B

B



U06A POWER [7] (PE0071)

1

2

1

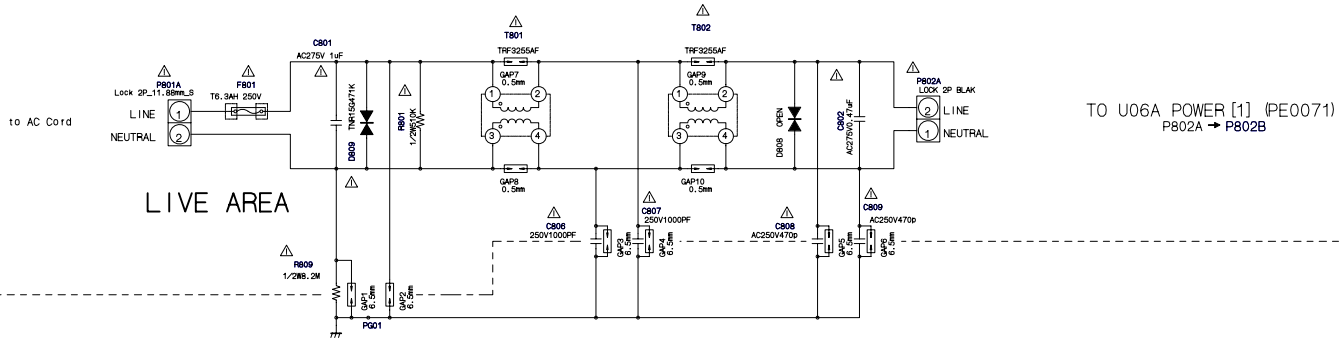
2

A

A

B

B
















U06B AC-INPUT [8] AC INPUT (PE0071)

1

2


Replacement Parts List

	Location	Part No.	Description
	A201	75002923	CESE/COVER/LID FRONT BEZEL ASSY
	A315	75002076	PIECE PIECE C COVER ASSYC1000
	A320	75002342	PIECE, FRONT AV ASSY
	A340	75002922	PIECE BUTTON 8 KEY
	A401	75002924	CESE/COVER/LID BACK COVER ASSY
	A420	75002157	LEG STAND ASSY
	B001	75002247	DISPLAY G6CMO42HD, V420H1-L05
	C801	76168007	MT PLA AC275V 1UF M
	C802	76503508	MT PLA PCX2 337 11474
	C806	76092555	CERAMIC DISC, AC250V E 1000PF M
	C807	76092555	CERAMIC DISC, AC250V E 1000PF M
	C808	76092553	CERAMIC DISC, AC250V B 470PF K
	C809	76092553	CERAMIC DISC, AC250V B 470PF K
	C812	76109102	CERAMIC CHIP, 50V B 1000PF K
	C814	76109102	CERAMIC CHIP, 50V B 1000PF K
	C815	76073037	ELECTROLYTIC, 16V 47UF M 3A
	C816	76109102	CERAMIC CHIP, 50V B 1000PF K
	C817	76109102	CERAMIC CHIP, 50V B 1000PF K
	C8171	76092730	CERAMIC CHIP, 16V B 0.1UF K
	C818	76669010	ELECTROLYTIC, 50V 1UF M
	C819	76539474	PLASTIC FILM, 50V 0.47UF J
	C8191	76092730	CERAMIC CHIP, 16V B 0.1UF K
	C820	76125010	CHEMICON CE69R 450V 270UF M 3H
	C821	76125011	CHEMICON CE04R 450V 82UF M 4A
	C8210	76105331	CERAMIC CHIP, 50V CH 330PF J
	C8211	76815473	CERAMIC CHIP, 50V B 0.047UF K
	C8212	76092178	CERAMIC CHIP, 25V B 0.1UF K
	C8213	76109102	CERAMIC CHIP, 50V B 1000PF K
	C822	76214103	CERAMIC DISC, 500V B 0.01UF K
	C824	76168008	MT PLA 450V 1UF K
	C8241	76073196	ELECTROLYTIC, 50V 22UF M 3A
	C825	76168008	MT PLA 450V 1UF K
	C8250	76092341	CERAMIC DISC, 2KV R 470PF K
	C8251	76434100	CERAMIC DISC, 500V SL 10PF D
	C826	76092339	CERAMIC DISC, 2KV 330PF K
	C827	76092339	CERAMIC DISC, 2KV 330PF K
	C8390	76109102	CERAMIC CHIP, 50V B 1000PF K
	C840	76125009	CHEMICON 450V 47UF M
	C8401	76092733	CERAMIC CHIP, 50V B 0.022UF K
	C8402	76092733	CERAMIC CHIP, 50V B 0.022UF K
	C8403	76669470	ELECTROLYTIC, 50V 47UF M
	C843	76166001	CERAMIC DISK CC45 SL 3.15KV 47PF J
	C844	76669479	ELECTROLYTIC, 50V 4.7UF M
	C845	76073196	ELECTROLYTIC, 50V 22UF M 3A
	C846	76073140	ELECTROLYTIC CE04P 10V 680UF M 3A
	C847	76665471	ELECTROLYTIC, 10V 470UF M
	C848	76214471	CERAMIC DISC, 500V B 470PF K
	C8490	76669010	ELECTROLYTIC, 50V 1UF M
	C860	76214103	CERAMIC DISC, 500V B 0.01UF K
	C8601	76591682	PLASTIC FILM, 50V 6800PF J
	C8602	76212101	CERAMIC DISC, 50V B 100PF K
	C8605	76285104	CERAMIC CHIP, 50V B 0.1UF K
	C861	76567105	PLASTIC FILM, 50V 1 UF J
	C862	76669229	ELECTROLYTIC, 50V 2.2UF M


Replacement Parts List

	Location	Part No.	Description
	C863	76539474	PLASTIC FILM, 50V 0.47UF J
	C864	76539224	PLASTIC FILM, 50V 0.22UF J
	C865	76539224	PLASTIC FILM, 50V 0.22UF J
	C866	76092341	CERAMIC DISC, 2KV R 470PF K
	C868	76435221	CERAMIC DISC, 500V SL 220PF J
	C869	76435221	CERAMIC DISC, 500V SL 220PF J
	C870	76503425	PLASTIC FILM CQ92 3D2J473J-K5
	C8701	76539224	PLASTIC FILM, 50V 0.22UF J
	C8702	76287224	CHIP CER 50V F 224Z GRM319F11H224ZA01D
	C8703	76109102	CERAMIC CHIP, 50V B 1000PF K
	C872	76073189	ELECTROLYTIC, 35V 1000UF M
	C873	76073189	ELECTROLYTIC, 35V 1000UF M
	C876	76073204	ELECTROLYTIC CE04P 50V 330UF M 3A
	C877	76669229	ELECTROLYTIC, 50V 2.2UF M
	C878	76539104	PLASTIC FILM, 50V 0.1UF J
	C880	76503229	PLASTIC FILM, 1250VH 1000PF H
	C8801	76092730	CERAMIC CHIP, 16V B 0.1UF K
	C8802	76092883	CERAMIC CHIP, 50V B 0.1UF K
	C881	76092337	CERAMIC DISC, 2KV 220PF K
	C882	76539334	PLASTIC FILM, 50V 0.33UF J
	C883	76212221	CERAMIC DISC, 50V B 220PF K
	C884	76073196	ELECTROLYTIC, 50V 22UF M 3A
	C885	76214471	CERAMIC DISC, 500V B 470PF K
	C886	76212152	CERAMIC DISC, 50V B 1500PF K
	C887	76214471	CERAMIC DISC, 500V B 470PF K
	C888	76073189	ELECTROLYTIC, 35V 1000UF M
	C889	76073189	ELECTROLYTIC, 35V 1000UF M
	C8891	76539474	PLASTIC FILM, 50V 0.47UF J
	C890	76796102	ELECTROLYTIC, 35V 1000UF M
	C891	76214471	CERAMIC DISC, 500V B 470PF K
	C892	76676100	ELECTROLYTIC, 100V 10UF M
	C893	76747220	ELECTROLYTIC, 50V 22UF M
	C894	76214471	CERAMIC DISC, 500V B 470PF K
	C895	76073188	ELECTROLYTIC, 35V 680UF M
	C896	76073188	ELECTROLYTIC, 35V 680UF M
	C897	76796102	ELECTROLYTIC, 35V 1000UF M
	C898	76669010	ELECTROLYTIC, 50V 1UF M
	CE03	76232103	CERAMIC DISC, 50V F 0.01UF Z
	CE04	76232103	CERAMIC DISC, 50V F 0.01UF Z
	CE06	76232103	CERAMIC DISC, 50V F 0.01UF Z
	CE10	76666470	ELECTORLYTIC, 16V 47UF M
	CE11	76567474	PLASTIC FILM, 50V 0.47UF J
	CE12	76666470	ELECTORLYTIC, 16V 47UF M
	CE25	76073181	ELECTROLYTIC, 35V 56UF M
	CE40	76073203	ELECTROLYTIC CE04P 50V 270UF M 3A
	CE41	76073158	ELECTROLYTIC, 16V 2200UF M 3A
	CE42	76666102	ELECTROLYTIC, 16V 1000UF M 3A
	CE43	76567104	PLASTIC FILM, 50V 0.1UF J
	CE44	76567104	PLASTIC FILM, 50V 0.1UF J
	CE45	76567474	PLASTIC FILM, 50V 0.47UF J
	CE46	76669010	ELECTROLYTIC, 50V 1UF M
	CE47	76669478	ELECTROLYTIC, 50V 0.47UF M 3A
	CE60	76073186	ELECTROLYTIC, 35V 470UF M
	CE61	76617028	ELECTROLYTIC, 16V 1200UF M










Replacement Parts List

	Location	Part No.	Description
	CE62	76073020	ELECTROLYTIC, 10V 1000UF M 3A
	CE63	76567104	PLASTIC FILM, 50V 0.1UF J
	CE64	76567104	PLASTIC FILM, 50V 0.1UF J
	CE65	76073186	ELECTROLYTIC, 35V 470UF M
	CE66	76617028	ELECTROLYTIC, 16V 1200UF M
	CE67	76073020	ELECTROLYTIC, 10V 1000UF M 3A
	CE68	76567104	PLASTIC FILM, 50V 0.1UF J
	CE69	76567104	PLASTIC FILM, 50V 0.1UF J
	CE71	76073128	ELECTROLYTIC, 6.3V 1000UF M
	CE76	76073128	ELECTROLYTIC, 6.3V 1000UF M
	CE90	76073186	ELECTROLYTIC, 35V 470UF M
	CE91	76617028	ELECTROLYTIC, 16V 1200UF M
	CE92	76666471	ELECTROLYTIC, 16V 470UF M
	CE93	76567104	PLASTIC FILM, 50V 0.1UF J
	CE94	76567104	PLASTIC FILM, 50V 0.1UF J
	CN90A	23757002	CONNECTOR, 12P TOPTYPE, B12B-PHDSS(LF)
	D809	75001869	VARISTOR, V1=470V 2500A/2
	D811	23357636	DIODE, ZENER, RD6.8ESA B1
	D815	23357692	DIODE, ZENER, RD2.0ESA B2
	D816	23357738	DIODE, ZENER, MA8047-L
	D819	23357718	THYRISTOR, SF0R3G42(N, G5H1)
	D820	23357913	DIODE, RBV-1506, LF-A
	D821	23362240	DIODE, FMC-26UAR
	D822	23362220	DIODE, FMX-G16S
	D823	23362223	DIODE, RM3A, LF014-102
	D8230	23357792	DIODE, ZENER, MA8240-L, TX
	D8231	23357703	DIODE, 1SS355
	D8232	23357745	DIODE, ZENER, MA8056-M
	D825	23357899	DIODE, ZENER, MTZJ33A
	D826	23357513	DIODE, EU2A
	D8271	23357697	DIODE, 1SS133
	D8272	23357910	DIODE, ZENER, MTZJ39D
	D8273	23357883	DIODE, ZENER, MTZJ22A
	D8274	23357854	DIODE, ZENER, MTZJ10B
	D828	75001869	VARISTOR, V1=470V 2500A/2
	D8310	23357703	DIODE, 1SS355
	D8311	23357745	DIODE, ZENER, MA8056-M
	D8312	23357703	DIODE, 1SS355
	D8313	23357762	DIODE, ZENER, MA8091-M
	D8390	23357889	DIODE, ZENER, MTZJ24C
	D8391	23357890	DIODE, ZENER, MTZJ24D
	D8401	23357703	DIODE, 1SS355
	D8402	23357703	DIODE, 1SS355
	D8403	23357703	DIODE, 1SS355
	D8404	23357703	DIODE, 1SS355
	D841	23362221	DIODE, EM1C, LF-F7
	D842	23362221	DIODE, EM1C, LF-F7
	D843	23357854	DIODE, ZENER, MTZJ10B
	D844	23357837	DIODE, ZENER, MTZJ5.6B
	D845	23357510	DIODE, AG01
	D846	23357513	DIODE, EU2A
	D860	23357850	DIODE, ZENER, MTZJ9.1A
	D8601	23357703	DIODE, 1SS355
	D8602	23357731	DIODE, ZENER, MA8033-H






Replacement Parts List

	Location	Part No.	Description
	D861	23357893	DIODE, ZENER, MTZJ27C
	D862	23357893	DIODE, ZENER, MTZJ27C
	D863	23357854	DIODE, ZENER, MTZJ10B
	D864	23357854	DIODE, ZENER, MTZJ10B
	D865	23357513	DIODE, EU2A
	D866	23357853	DIODE, ZENER, MTZJ10A
	D870	75002164	DIODE, FMEN-220A(LF023-108)
	D8701	23357703	DIODE, 1SS355
	D8702	23357703	DIODE, 1SS355
	D8705	23357894	DIODE, ZENER, MTZJ27D
	D8706	23357703	DIODE, 1SS355
	D871	75002164	DIODE, FMEN-220A(LF023-108)
	D874	75002164	DIODE, FMEN-220A(LF023-108)
	D880	23357513	DIODE, EU2A
	D8801	23357703	DIODE, 1SS355
	D8802	23357703	DIODE, 1SS355
	D8803	23357778	DIODE, ZENER, MA8150-M
	D8804	23357703	DIODE, 1SS355
	D8805	23357745	DIODE, ZENER, MA8056-M
	D881	23357104	DIODE, 1SS244
	D882	23357104	DIODE, 1SS244
	D883	23357837	DIODE, ZENER, MTZJ5.6B
	D884	75002164	DIODE, FMEN-220A(LF023-108)
	D885	23357513	DIODE, EU2A
	D886	23357408	DIODE, FMX-12S(023-108)
	D887	23357900	DIODE, ZENER, MTZJ33B
	D888	23357848	DIODE, ZENER, MTZJ8.2B
	D889	23357848	DIODE, ZENER, MTZJ8.2B
	D890	23357847	DIODE, ZENER, MTZJ8.2A
	D891	23357847	DIODE, ZENER, MTZJ8.2A
	D892	23357892	DIODE, ZENER, MTZJ27B
	DE01	23357706	DIODE, AK04
	DE02	23357706	DIODE, AK04
	DE03	23357823	DIODE, ZENER, MTZJ3.6A
	DE18	23357697	DIODE, 1SS133
	DE40	23357810	DIODE, FMB-G14L
	DE41	23357697	DIODE, 1SS133
	DE42	23357871	DIODE, ZENER, MTZJ15B
	DE45	23357718	THYRISTOR, SF0R3G42(N, G5H1)
	DE46	23357697	DIODE, 1SS133
	DE60	23357810	DIODE, FMB-G14L
	DE61	23357697	DIODE, 1SS133
	DE62	23357845	DIODE, ZENER, MTZJ7.5B
	DE65	23357519	DIODE, RK44,
	DE66	23357697	DIODE, 1SS133
	DE67	23357845	DIODE, ZENER, MTZJ7.5B
	DE75	23357821	DIODE, ZENER, MTZJ3.3A
	DE76	23357697	DIODE, 1SS133
	DE77	23357829	DIODE, ZENER, MTZJ4.3C
	DE90	23357810	DIODE, FMB-G14L
	DE91	23357697	DIODE, 1SS133
	DE92	23357871	DIODE, ZENER, MTZJ15B
	F801	23144406	FUSE, CERA 5.2X20, 250V 6.3A
	F801A	23165433	FUSE HOLDER, 5.2

Replacement Parts List

	Location	Part No.	Description
	F801B	23165433	FUSE HOLDER, 5.2
	F820	23144378	FUSE, RADIAL LEAD SUB-MINIATUR, 250V 2A
	F870	23144378	FUSE, RADIAL LEAD SUB-MINIATUR, 250V 2A
	FE25	23144707	FUSE, AXIAL, 125V 0.63A
	K902	75002859	REMOCON HAND UNIT, CT-90255
	K913	23306644	REMOCON HAND UNIT
	L820	23248491	COIL, CHOKE, TLN3641AF
	L821	23248491	COIL, CHOKE, TLN3641AF
	L8211	23103330	FERRITE CHOKE, 3.5X5X2, TEM2014AH
	L8212	23103330	FERRITE CHOKE, 3.5X5X2, TEM2014AH
	L824	23103330	FERRITE CHOKE, 3.5X5X2, TEM2014AH
	L825	23103304	FERRITE CHOKE, TEM2011AA
	L840	23289981	COIL, PEAKING, TRF4330AZ
	L860	23103320	COIL, CHOKE, TEM2011
	L862	23103320	COIL, CHOKE, TEM2011
	L870	23103320	COIL, CHOKE, TEM2011
	L871	23103320	COIL, CHOKE, TEM2011
	L878	23248489	COIL, CHOKE, TLN3639AH
	L880	23103304	FERRITE CHOKE, TEM2011AA
	L881	23248388	COIL, CHOKE, TLN3515AA
	L883	23103304	FERRITE CHOKE, TEM2011AA
	L884	23248387	COIL, CHOKE, TLN3499AA
	L886	23103304	FERRITE CHOKE, TEM2011AA
	LE10	23289980	COIL, PEAKING, TRF4220AZ
	LE40	23248456	COIL, CHOKE, TLN3540AH
	LE41	23289980	COIL, PEAKING, TRF4220AZ
	LE42	23248417	COIL, CHOKE, TLN3481AH
	LE60	23248456	COIL, CHOKE, TLN3540AH
	LE61	23289980	COIL, PEAKING, TRF4220AZ
	LE62	23248432	COIL, CHOKE, TLN3499AH
	LE65	23248456	COIL, CHOKE, TLN3540AH
	LE66	23289980	COIL, PEAKING, TRF4220AZ
	LE67	23248432	COIL, CHOKE, TLN3499AH
	LE70	23248417	COIL, CHOKE, TLN3481AH
	LE75	23248417	COIL, CHOKE, TLN3481AH
	LE90	23248456	COIL, CHOKE, TLN3540AH
	LE91	23289980	COIL, PEAKING, TRF4220AZ
	LE92	23248432	COIL, CHOKE, TLN3499AH
	MZ01	75006137	CABEL, LVDS
	P801	75002678	POWER CORD, INQ2682(1)
	P801A	23713702	PLUG, 2P 11.88MM W VT
	P802A	23757043	CONNECTOR, PLUG, B02B-VT-K(LF)(SN)
	P802B	23757043	CONNECTOR, PLUG, B02B-VT-K(LF)(SN)
	P807A	23713764	PLUG, 13P
	P807B	23713764	PLUG, 13P
	P809A	23713763	PLUG, NP 2.5MM G, B12B-EH-F1A
	P809B	23713763	PLUG, NP 2.5MM G, B12B-EH-F1A
	P811A	23713816	SOCKET, 127301113K2
	P812A	23713817	SOCKET, 127301115K2
	P860	23713942	CONNECTOR, 10P, B10B-PH-K-S(LF)
	P861	23713942	CONNECTOR, 10P, B10B-PH-K-S(LF)
	PG01	23165495	EARTH TERMINAL, MET31-0332
	PG03	23165495	EARTH TERMINAL, MET31-0332
	PG04	23165495	EARTH TERMINAL, MET31-0332

Replacement Parts List

	Location	Part No.	Description
	PG05	23165495	EARTH TERMINAL, MET31-0332
	PG06	23165495	EARTH TERMINAL, MET31-0332
	Q812	23205277	TRANSISTOR, 2SC4116-Y(TE85L, F)
	Q813	23000823	IC, PHOTO COUPLER, TLP421F(GR)
	Q814	23205277	TRANSISTOR, 2SC4116-Y(TE85L, F)
	Q815	23205277	TRANSISTOR, 2SC4116-Y(TE85L, F)
	Q816	23205277	TRANSISTOR, 2SC4116-Y(TE85L, F)
	Q8191	23205277	TRANSISTOR, 2SC4116-Y(TE85L, F)
	Q820	23135094	IC, SRX2039
	Q821	23000823	IC, PHOTO COUPLER, TLP421F(GR)
	Q822	23205339	TRANSISTOR, 2SC2655-Y(F)
	Q8230	23205328	TRANSISTOR, RN1405(F)
	Q8231	23205277	TRANSISTOR, 2SC4116-Y(TE85L, F)
	Q8310	23205328	TRANSISTOR, RN1405(F)
	Q8311	23205277	TRANSISTOR, 2SC4116-Y(TE85L, F)
	Q8312	23205277	TRANSISTOR, 2SC4116-Y(TE85L, F)
	Q8390	23205277	TRANSISTOR, 2SC4116-Y(TE85L, F)
	Q8391	23000823	IC, PHOTO COUPLER, TLP421F(GR)
	Q840	23135083	IC, STRA6169
	Q841	23000823	IC, PHOTO COUPLER, TLP421F(GR)
	Q842	23085587	IC, TA76431S
	Q860	23135066	IC, STRZ4479
	Q8601	23205329	TRANSISTOR, RN1404(F)
	Q8602	23205277	TRANSISTOR, 2SC4116-Y(TE85L, F)
	Q862	23000823	IC, PHOTO COUPLER, TLP421F(GR)
	Q863	23000823	IC, PHOTO COUPLER, TLP421F(GR)
	Q864	23205339	TRANSISTOR, 2SC2655-Y(F)
	Q870	23085587	IC, TA76431S
	Q8701	23205277	TRANSISTOR, 2SC4116-Y(TE85L, F)
	Q8702	23205329	TRANSISTOR, RN1404(F)
	Q8703	23205328	TRANSISTOR, RN1405(F)
	Q8704	23085338	IC, BD5245G-TR
	Q880	23135072	IC, STRW6765
	Q8801	23205329	TRANSISTOR, RN1404(F)
	Q8802	23205329	TRANSISTOR, RN1404(F)
	Q881	23000823	IC, PHOTO COUPLER, TLP421F(GR)
	Q882	23085587	IC, TA76431S
	QE01	23205313	TRANSISTOR, 2SC1815-Y(F)
	QE02	23205315	TRANSISTOR, RN1206(F)
	QE04	23205313	TRANSISTOR, 2SC1815-Y(F)
	QE10	23135077	IC, SI-3090CA
	QE11	23205315	TRANSISTOR, RN1206(F)
	QE25	23205340	TRANSISTOR, 2SA1020-Y(F)
	QE26	23205313	TRANSISTOR, 2SC1815-Y(F)
	QE40	23085381	IC, SI-8050SS
	QE45	23205313	TRANSISTOR, 2SC1815-Y(F)
	QE46	23205313	TRANSISTOR, 2SC1815-Y(F)
	QE47	23205313	TRANSISTOR, 2SC1815-Y(F)
	QE48	23205313	TRANSISTOR, 2SC1815-Y(F)
	QE60	23085381	IC, SI-8050SS
	QE61	23205315	TRANSISTOR, RN1206(F)
	QE65	23085381	IC, SI-8050SS
	QE66	23205315	TRANSISTOR, RN1206(F)
	QE75	75001935	IC, MPD6S017

Replacement Parts List

	Location	Part No.	Description
	QE90	23085381	IC, SI-8050SS
	QE91	23205313	TRANSISTOR, 2SC1815-Y(F)
	QE92	23205339	TRANSISTOR, 2SC2655-Y(F)
	QE93	23205315	TRANSISTOR, RN1206(F)
	R801	76017004	METAL GLAZE 1/2W 510K J
	R809	76004718	METAL GLAZE, 1/2W 8.2M OHM J
	R8110	76000250	METAL FILM, 1/4W 56K OHM F
	R8111	76000250	METAL FILM, 1/4W 56K OHM F
	R8112	76000250	METAL FILM, 1/4W 56K OHM F
	R8113	76000250	METAL FILM, 1/4W 56K OHM F
	R8114	76000527	METAL FILM, 1/4W 5.6K OHM F
	R8115	76000639	METAL FILM, 1/4W 22K OHM F
	R8116	76000554	CHIP 1/16W 510 F
	R8117	76000574	METAL FILM CHIP 1/16W 2.7K F
	R8118	76000574	METAL FILM CHIP 1/16W 2.7K F
	R812	76011473	CHIP, 1/20W 47K OHM J
	R8130	76871182	CHIP, 1/8W 1.8K OHM J
	R8131	76871182	CHIP, 1/8W 1.8K OHM J
	R8132	76871182	CHIP, 1/8W 1.8K OHM J
	R8133	76011102	CHIP, 1/20W 1K OHM J
	R8140	76011682	CHIP, 1/20W 6.8K OHM J
	R8141	76011473	CHIP, 1/20W 47K OHM J
	R8142	76872470	CHIP, 1/16W 47 OHM J
	R8143	76872470	CHIP, 1/16W 47 OHM J
	R8144	76872390	CHIP, 1/16W 39 OHM J
	R8150	76011562	CHIP, 1/20W 5.6K OHM J
	R8151	76011222	CHIP, 1/20W 2.2K OHM J
	R8152	76011473	CHIP, 1/20W 47K OHM J
	R8160	76011103	CHIP, 1/20W 10K OHM J
	R8161	76011473	CHIP, 1/20W 47K OHM J
	R8162	76011103	CHIP, 1/20W 10K OHM J
	R8191	76000445	CHIP JUMPER, 1608TYPE
	R8192	76011471	CHIP, 1/20W 470 OHM J
	R8193	76011102	CHIP, 1/20W 1K OHM J
	R8194	76011151	CHIP, 1/20W 150 OHM J
	R8195	76011151	CHIP, 1/20W 150 OHM J
	R820	76019461	METAL PLATE, 2W 0.15 OHM J
	R821	76019461	METAL PLATE, 2W 0.15 OHM J
	R8210	76998471	CHIP, 1/16W 470 OHM
	R8212	76998102	CHIP, 1/16W 1K OHM
	R8213	76011222	CHIP, 1/20W 2.2K OHM J
	R8214	76011101	CHIP, 1/20W 100 OHM J
	R8215	76998222	CHIP, 1/16W 2.2K OHM
	R8216	76998222	CHIP, 1/16W 2.2K OHM
	R8217	76011229	CHIP, 1/16W 2.2 OHM J
	R8218	76998152	CHIP, 1/16W 1.5K OHM D
	R8230	76872332	CHIP, 1/16W 3.3K OHM J
	R8231	76011223	CHIP, 1/20W 22K OHM J
	R8232	76011472	CHIP, 1/20W 4.7K OHM J
	R8233	76011473	CHIP, 1/20W 47K OHM J
	R8240	76000598	CHIP, 1/16W 47K OHM F
	R8241	76000598	CHIP, 1/16W 47K OHM F
	R8242	76000598	CHIP, 1/16W 47K OHM F
	R8243	76000598	CHIP, 1/16W 47K OHM F

Replacement Parts List

	Location	Part No.	Description
	R8244	76000598	CHIP, 1/16W 47K OHM F
	R8245	76000598	CHIP, 1/16W 47K OHM F
	R8246	76000598	CHIP, 1/16W 47K OHM F
	R8247	76000598	CHIP, 1/16W 47K OHM F
	R8248	76000598	CHIP, 1/16W 47K OHM F
	R8249	76000445	CHIP JUMPER, 1608TYPE
	R826	76004714	METAL GLAZE, 1/2W 1.2M OHM J
	R830	76007061	CERAMIC COVERED, 2W 1.8 OHM K
	R831	76120003	CERAMIC COVERED G 5W 4.7 J
	R8310	76011223	CHIP, 1/20W 22K OHM J
	R8312	76011471	CHIP, 1/20W 470 OHM J
	R8313	76011102	CHIP, 1/20W 1K OHM J
	R8390	76011473	CHIP, 1/20W 47K OHM J
	R8391	76011102	CHIP, 1/20W 1K OHM J
	R8392	76011681	CHIP, 1/20W 680 OHM J
	R8393	76011681	CHIP, 1/20W 680 OHM J
	R8394	76011681	CHIP, 1/20W 680 OHM J
	R8395	76011681	CHIP, 1/20W 680 OHM J
	R8396	76011222	CHIP, 1/20W 2.2K OHM J
	R840	76382823	OXIDE METAL FILM, 1W 82K OHM J
	R8403	76011102	CHIP, 1/20W 1K OHM J
	R8404	76011101	CHIP, 1/20W 100 OHM J
	R8405	76011102	CHIP, 1/20W 1K OHM J
	R8406	76011473	CHIP, 1/20W 47K OHM J
	R8407	76000572	CHIP, 1/16W 3.3K F
	R8408	76000422	CHIP, 1/16W 2.2K F
	R8409	76011102	CHIP, 1/20W 1K OHM J
	R841	76322339	METAL FILM 1W 3R3 J
	R8410	76000445	CHIP JUMPER, 1608TYPE
	R8411	76321479	OXIDE METAL FILM, 1/2W 4.7 OHM J
	R8412	76871822	CHIP, 1/8W 8.2K OHM J
	R842	76310479	OXIDE METAL FILM, 1/2W 4.7 OHM J
	R860	76552271	OXIDE METAL FILM, 1/2W 270 OHM J
	R8601	76000247	METAL FILM, 1/4W 39K OHM F
	R8602	76366472	CARBON FILM, 1/6W 4.7K OHM J
	R8603	76011103	CHIP, 1/20W 10K OHM J
	R8604	76011102	CHIP, 1/20W 1K OHM J
	R8605	76011472	CHIP, 1/20W 4.7K OHM J
	R8606	76011103	CHIP, 1/20W 10K OHM J
	R8607	76872221	CHIP, 1/16W 220 OHM J
	R862	76552681	OXIDE METAL FILM, 1/2W 680 OHM J
	R863	76011272	CHIP, 1/20W 2.7K OHM J
	R864	76552101	OXIDE METAL FILM, 1/2W 100 OHM J
	R865	76552100	OXIDE METAL FILM, 1/2W 10 OHM J
	R867	76552330	OXIDE METAL FILM, 1/2W 33 OHM J
	R8701	76000595	CHIP, 1/16W 15K F
	R8702	76190012	CHIP, 1/16W 1.5K OHM F
	R8703	76011221	CHIP, 1/20W 220 OHM J
	R8704	76000445	CHIP JUMPER, 1608TYPE
	R8705	76011220	CHIP, 1/20W 22 OHM J
	R8706	76011103	CHIP, 1/20W 10K OHM J
	R8707	76011103	CHIP, 1/20W 10K OHM J
	R8709	76011101	CHIP, 1/20W 100 OHM J
	R8710	76011101	CHIP, 1/20W 100 OHM J

Replacement Parts List

	Location	Part No.	Description
	R8711	76011223	CHIP, 1/20W 22K OHM J
	R8712	76011473	CHIP, 1/20W 47K OHM J
	R8713	76011103	CHIP, 1/20W 10K OHM J
	R8714	76011102	CHIP, 1/20W 1K OHM J
	R8715	76011102	CHIP, 1/20W 1K OHM J
	R8716	76011103	CHIP, 1/20W 10K OHM J
	R880	76553683	OXIDE METAL FILM, 1W 68K OHM J
	R8801	76011102	CHIP, 1/20W 1K OHM J
	R8802	76011102	CHIP, 1/20W 1K OHM J
	R8803	76366221	CARBON FILM, 1/6W 220 OHM J
	R8804	76871222	CHIP, 1/8W 2.2K OHM J
	R8805	76011102	CHIP, 1/20W 1K OHM J
	R8806	76011102	CHIP, 1/20W 1K OHM J
	R8807	76011152	CHIP, 1/20W 1.5K OHM J
	R8808	76011101	CHIP, 1/20W 100 OHM J
	R8809	76011223	CHIP, 1/20W 22K OHM J
	R881	76553683	OXIDE METAL FILM, 1W 68K OHM J
	R8810	76000605	CHIP, 1/16W 6.8K OHM F
	R8811	76190012	CHIP, 1/16W 1.5K OHM F
	R8812	76000446	CHIP, 1/16W 220 F
	R8813	76000824	CHIP JUMPER, 2125TYPE
	R8814	76011103	CHIP, 1/20W 10K OHM J
	R8815	76872151	CHIP, 1/16W 150 OHM J
	R882	76323569	METAL FILM 2W 5R6 J
	R883	76079010	METAL RES 2W R47 J
	R884	76321339	OXIDE METAL FILM, 1/2W 3.3 OHM J
	R885	76553101	OXIDE METAL FILM, 1W 100 OHM J
	R886	76554432	OXIDE FILM 2W 4.3K J
	RE01	76366153	CARBON FILM, 1/6W 15K OHM J
	RE02	76366473	CARBON FILM, 1/6W 47K OHM J
	RE03	76366472	CARBON FILM, 1/6W 4.7K OHM J
	RE04	76366472	CARBON FILM, 1/6W 4.7K OHM J
	RE06	76366473	CARBON FILM, 1/6W 47K OHM J
	RE09	76366473	CARBON FILM, 1/6W 47K OHM J
	RE10	76367180	CARBON FILM, 1/6W 18 OHM G
	RE11	76367222	CARBON FILM, 1/6W 2.2K OHM G
	RE12	76554561	OXIDE FILM 2W 560 J
	RE13	76554561	OXIDE FILM 2W 560 J
	RE15	76366332	CARBON FILM, 1/6W 3.3K OHM J
	RE16	76366473	CARBON FILM, 1/6W 47K OHM J
	RE17	76366103	CARBON FILM, 1/6W 10K OHM J
	RE18	76366103	CARBON FILM, 1/6W 10K OHM J
	RE27	76552102	OXIDE METAL FILM, 1/2W 1K OHM J
	RE28	76552332	OXIDE METAL FILM, 1/2W 3.3K OHM J
	RE29	76366103	CARBON FILM, 1/6W 10K OHM J
	RE32	76366473	CARBON FILM, 1/6W 47K OHM J
	RE40	76366102	CARBON FILM, 1/6W 1K OHM J
	RE41	76366681	CARBON FILM, 1/6W 680 OHM J
	RE42	76366121	CARBON FILM, 1/6W 120 OHM J
	RE43	76366102	CARBON FILM, 1/6W 1K OHM J
	RE44	76366153	CARBON FILM, 1/6W 15K OHM J
	RE45	76366472	CARBON FILM, 1/6W 4.7K OHM J
	RE46	76366822	CARBON FILM, 1/6W 8.2K OHM J
	RE47	76366331	CARBON FILM, 1/6W 330 OHM J

Replacement Parts List

	Location	Part No.	Description
	RE48	76366471	CARBON FILM, 1/6W 470 OHM J
	RE49	76366102	CARBON FILM, 1/6W 1K OHM J
	RE60	76000142	METAL FILM, 1/4W 240 OHM F
	RE61	76000360	METAL FILM, 1/4W 1.2K OHM F
	RE62	76367180	CARBON FILM, 1/6W 18 OHM G
	RE63	76366102	CARBON FILM, 1/6W 1K OHM J
	RE64	76000360	METAL FILM, 1/4W 1.2K OHM F
	RE65	76366332	CARBON FILM, 1/6W 3.3K OHM J
	RE66	76366473	CARBON FILM, 1/6W 47K OHM J
	RE67	76366103	CARBON FILM, 1/6W 10K OHM J
	RE68	76366473	CARBON FILM, 1/6W 47K OHM J
	RE69	76366102	CARBON FILM, 1/6W 1K OHM J
	RE74	76366472	CARBON FILM, 1/6W 4.7K OHM J
	RE75	76366473	CARBON FILM, 1/6W 47K OHM J
	RE76	76366153	CARBON FILM, 1/6W 15K OHM J
	RE77	76366102	CARBON FILM, 1/6W 1K OHM J
	RE78	76366102	CARBON FILM, 1/6W 1K OHM J
	RE79	76366181	CARBON FILM, 1/6W 180 OHM J
	RE90	76000358	METAL FILM, 1/4W 1K OHM F
	RE91	76182046	METAL FILM 1/4W 680 F
	RE92	76366161	CARBON FILM 1/6W 160 J
	RE93	76366102	CARBON FILM, 1/6W 1K OHM J
	RE94	76553680	OXIDE METAL FILM, 1W 68 OHM J
	RE95	76366101	CARBON FILM, 1/6W 100 OHM J
	RE96	76366473	CARBON FILM, 1/6W 47K OHM J
	RE97	76366472	CARBON FILM, 1/6W 4.7K OHM J
	RE98	76366473	CARBON FILM, 1/6W 47K OHM J
	RE99	76366101	CARBON FILM, 1/6W 100 OHM J
	SR80	23146588	RELAY, DLS5D1-O(M) 0.15W
	SR81	23146584	RELAY, DC12V, TV5, DG-3
	T801	23211904	COIL, LINE FILTER, TRF3255AF
	T802	23211904	COIL, LINE FILTER, TRF3255AF
	T820	23217799	TRANSFORMER, CONVERTER, TPW3564AS
	T822	23248490	COIL, CHOKE, TLN3640AH
	T840	23217800	TRANSFORMER, CONVERTER, TPW3565AS
	T860	23217802	TRANSFORMER, CONVERTER, TPW3567AS
	T880	23217801	TRANSFORMER, CONVERTER, TPW3566AS
	U01	75004712	PC BOARD ASSY, PE0140H1, SEINE
	U01A	75002915	PWU, AV_TERM, B910PE0135A1
	U01B	75002916	PWU, F-AV, B910PE0135A2
	U01C	75002917	PWU, LED, B910PE0135A3
	U01D	75002918	PWU, KEY, B910PE0135A4
	U02A	75002920	PWB, LOWB, B911PE0070B1
	U05A	75002876	PC BOARD ASSY, PE0044A1, D-TUNER T314 CHILD
	U06A	75002913	PWU, POWER, B910PE0071E1
	U06B	75002914	PWU, AC-INPUT, B910PE0071E2
	UF03	23125949	MOTOR, DCFAN 12V60MMPOD2, D06R-12TS1001BC1
	W661	23351292	SPEAKER, SPK1410AM, 60X120 8-OHM 10W

TOSHIBA CORPORATION

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