

Service Manual

Blu-ray Disc Player

Model No. **DMP-BD60GN**
DMP-BD60GA
DMP-BD60GZ
DMP-BD60GC
DMP-BD60PU
DMP-BD80GN




The illustration shows the image of DMP-BD80.

Notes: These model's BDP/Digital P.C.B. Module are -
 - RFKNBD60GN
 - RFKNBD60GA
 - RFKNBD60GZ
 - RFKNBD60GC
 - RFKNBD60PU
 - RFKNBD80GN

Caution:
 Pairing of BD Drive and Digital P.C.B. as "BDP/Digital P.C.B. Module" have to be replaced together. If the either BD drive or Digital P.C.B. is changed, BD Drive unit has to be re-aligned. Because the alignment data for BD Drive Unit is stored in Digital P.C.B..

Vol. 1
 Colour
 (K).....Black Type

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⚠ 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.

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1 Safety Precautions

1.1. General guidelines

1. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
2. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.
3. After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.

1.1.1. Leakage current cold check

1. Unplug the AC cord and connect a jumper between the two prongs on the plug.
2. Measure the resistance value, with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the equipment such as screwheads, connectors, control shafts, etc. When the exposed metallic part has a return path to the chassis, the reading should be between $1M\Omega$ and $5.2M\Omega$.
When the exposed metal does not have a return path to the chassis, the reading must be ∞ .

1.1.2. Leakage current hot check (See Figure 1.)

1. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.
2. Connect a $1.5k\Omega$, 10 watts resistor, in parallel with a $0.15\mu F$ capacitors, between each exposed metallic part on the set and a good earth ground such as a water pipe, as shown in Figure 1.
3. Use an AC voltmeter, with 1000 ohms/volt or more sensitivity, to measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.

5. Reverse the AC plug in the AC outlet and repeat each of the above measurements.
6. The potential at any point should not exceed 0.75 volts RMS. A leakage current tester (Simpson Model 229 or equivalent) may be used to make the hot checks, leakage current must not exceed 1/2 milliampere. In case a measurement is outside of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

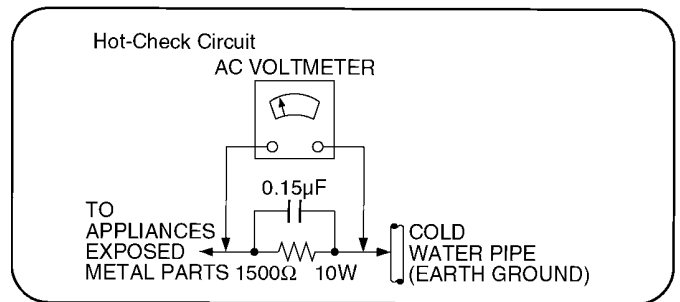


Figure 1

2 Warning

2.1. Prevention of Electrostatic Discharge (ESD) to Electrostatic Sensitive (ES) Devices

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatic Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistor-and semiconductor chip components. The following techniques should be used to help reduce the incidence of component damage caused by electrostatic discharge (ESD).

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any ESD on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging ESD wrist strap, which should be removed for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static solder removal device. Some solder removal devices not classified as anti-static (ESD protected) can generate electrical charge sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

Caution

Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ES device).

IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are important for safety. These parts are marked by \triangle in the schematic diagrams, Exploded Views and replacement parts list. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire, or other hazards. Do not modify the original design without permission of manufacturer.

2.2. Precaution of Laser Diode

CAUTION:

This product utilizes a laser diode with the unit turned "on", invisible laser radiation is emitted from the pickup lens.

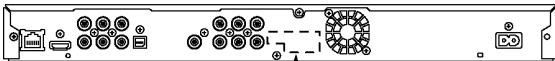
Wave length: 790 nm (CDs)/ 650 nm (DVDs)/ 405 nm (BDs)

Maximum output radiation power from pickup: 100 μ W/VDE

Laser radiation from the pickup lens is safety level, but be sure the followings:

1. Do not disassemble the optical pickup unit, since radiation from exposed laser diode is dangerous.
2. Do not adjust the variable resistor on the pickup unit. It was already adjusted.
3. Do not look at the focus lens using optical instruments.
4. Recommend not to look at pickup lens for a long time.

The illustration shows the image of DMP-BD80.



LUOKAN 1 LASERLAITE
KLASS 1 LASER APPARAT



ACHTUNG:

Dieses Produkt enthält eine Laserdiode.

Im eingeschalteten Zustand wird unsichtbare Laserstrahlung von der Lasereinheit abgestrahlt.

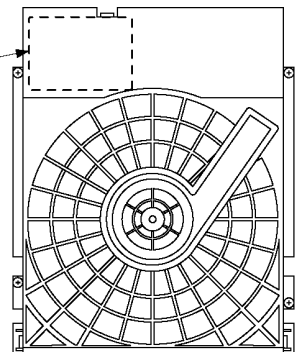
Wellenlänge: 790 nm (CDs)/ 650 nm (DVDs)/ 405 nm (BDs)

Maximale Strahlungsleistung der Lasereinheit: 100 μ W/VDE

Die Strahlung der Lasereinheit ist ungefährlich, wenn folgende Punkte beachtet werden:

1. Die Lasereinheit nicht zerlegen, da die Strahlung an der freigelegten Laserdiode gefährlich ist.
2. Den werkseitig justierten Einstellregler der Lasereinheit nicht verstellen.
3. Nicht mit optischen Instrumenten in die Fokussierlinse blicken.
4. Nicht über längere Zeit in die Fokussierlinse blicken.

CAUTION	- VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. DO NOT STARE INTO BEAM. FOM 21 Class II (IIa)
CAUTION	- CLASS 1M VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. DO NOT VIEW DIRECTLY WITH OPTICAL INSTRUMENTS. IEC2025-1, I42/CLASS 1M
ATTENTION	- RAYONNEMENT LASER VISIBLE ET INVISIBLE, CLASSE 1M. EN CAS D'OUVERTURE, NE PAS REGARDER DIRECTEMENT A L'AIDE D'INSTRUMENTS D'OPTIQUE.
FORSIGTIG	- SYNLIIG OG USYNLIIG LASERSTRÅLING KLASSE 1M. NÅR LÅGET ER ÅBENT, UNDGÅ AT SE LIGE PÅ MED OPTISKE INSTRUMENTER.
VARO	- AVATTRESSA OLET ALTTIIN LUOKAN 1M NÄKYVÄÄ JA NÄKYMÄTÖNTÄ LASERLÄITELÄÄ. ÄLÄ KATSO OPTISELLÄ LAITTEELLA SUORAN SÄTEESSEN.
WARNING	- KLASS 1M SYNLIIG OCH USYNLIIG LASERSTRÅLING NÅR DENNA DEL ÄR ÖPPNAD. BETRÄCK EJ STRÅLEN DIREKT GENOM OPTISKT INSTRUMENT.
VORSICHT	- SICHTBARE UND UNSICHTBARE LASERSTRÄHLUNG KLASSE 1M. WENN ABDECKUNG GEÖFFNET, NICHT DIREKT MIT OPTISCHEN INSTRUMENTEN BETRACHTEN.
注意	- 打开时有可见及不可见激光辐射。避免光束直射。
注意	- この製品はレーザー光線を放射し、長時間の直射は有害です。レーザー光線を直接観察しないでください。



CAUTION!

THIS PRODUCT UTILIZES A LASER.

USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

2.3. Service caution based on legal restrictions

2.3.1. General description about Lead Free Solder (PbF)

The lead free solder has been used in the mounting process of all electrical components on the printed circuit boards used for this equipment in considering the globally environmental conservation.

The normal solder is the alloy of tin (Sn) and lead (Pb). On the other hand, the lead free solder is the alloy mainly consists of tin (Sn), silver (Ag) and Copper (Cu), and the melting point of the lead free solder is higher approx.30 degrees C (86°F) more than that of the normal solder.

Definition of PCB Lead Free Solder being used

The letter of PbF is printed either foil side or components side on the PCB using the lead free solder. (See right figure)	PbF
--	------------

Service caution for repair work using Lead Free Solder (PbF)

- The lead free solder has to be used when repairing the equipment for which the lead free solder is used.
(Definition: The letter of **PbF** is printed on the PCB using the lead free solder.)
- To put lead free solder, it should be well molten and mixed with the original lead free solder.
- Remove the remaining lead free solder on the PCB cleanly for soldering of the new IC.
- Since the melting point of the lead free solder is higher than that of the normal lead solder, it takes the longer time to melt the lead free solder.
- Use the soldering iron (more than 70W) equipped with the temperature control after setting the temperature at 350±30 degrees C (662±86°F).

Recommended Lead Free Solder (Service Parts Route.)

- The following 3 types of lead free solder are available through the service parts route.
 - RFKZ03D01KS----- (0.3mm 100g Reel)
 - RFKZ06D01KS----- (0.6mm 100g Reel)
 - RFKZ10D01KS----- (1.0mm 100g Reel)

Note

- * Ingredient: tin (Sn), 96.5%, silver (Ag) 3.0%, Copper (Cu) 0.5%, Cobalt (Co) / Germanium (Ge) 0.1 to 0.3%

3 Service Navigation

3.1. Service Information

This service manual contains technical information which will allow service personnel's to understand and service this model.

Please place orders using the parts list and not the drawing reference numbers.

If the circuit is changed or modified, this information will be followed by supplement service manual to be filed with original service manual.

1) This service manual does not contain the following information, because of the impossibility of servicing at component level.

- * Schematic Diagram, Block Diagram and P.C.B. layout of BDP/Digital P.C.B. Module.
- * Parts List for individual parts of BDP/Digital P.C.B. Module.
- * Exploded View and Parts List for individual parts of BDP/Digital P.C.B. Module.

2) The following category are recycle module part. Please send them to Central Repair Center.

- * BDP/Digital P.C.B. Module (BD60GN : RFKNBD60GN)
(BD60GA : RFKNBD60GA)
(BD60GZ : RFKNBD60GZ)
(BD60GC : RFKNBD60GC)
(BD60PU : RFKNBD60PU)
(BD80GN : RFKNBD80GN)

4 Specifications

Power supply	AC 220 - 240 V, 50 Hz (BD60GN/GZ, BD80GN) AC 220 - 240 V, 50 / 60Hz (BD60GC/GA) AC 110 - 240 V, 50 / 60Hz (BD60PU)
Power consumption	Approx. 22 W (BD60GN/GA/GC/GZ) Approx. 25 W (BD60PU) Approx. 24 W (BD80GN)
Power consumption in standby mode	Less than 0.5 W (Quick start : OFF) 5 W (Quick start : ON) (BD60) 6 W (Quick start : ON) (BD80)
Optical pick-up	System with 2 lenses, (405 nm wavelength for BDs, 650 nm wavelength for DVDs, 790 nm wavelength for CDs)
Media	
Playable disc	<p>BD-Video : BD-ROM Version 2 BD-RE : Version 3 (Single Layer / Dual Layer), JPEG BD-R : Version 2 (Single Layer / Dual Layer) DVD - RAM : DVD Video Recording format, AVCHD format, JPEG DVD-R/ : DVD-Video format (*1), DVD Video DVD-R DL : Recording format (*1), AVCHD format (*1), DivX (*2, *3), JPEG (*2), MP3 (*2) DVD-RW : DVD-Video format (*1), DVD Video Recording format (*1), AVCHD format (*1) +R/+R DL / +RW : Video (*1), AVCHD format (*1) DVD-VIDEO : DVD-Video format CD-Audio : CD-DA CD-R/CD-RW : CD-DA, JPEG (*2), MP3 (*2), DivX (*2, *3)</p> <p>(*1) Finalizing is necessary. (*2) ISO9660 level 1 or 2 (except for extended formats), Joliet. This unit is compatible with multi-session. This unit is not compatible with packet writing. (*3) Official DivX® Certified product. Plays all version of DivX® video (including DivX® 6) with standard playback of DivX® media files. Certified to the DivX Home Theater Profile. GMC (Global Motion Compensation) is not supported. DivX, DivX Certified, and associated logos are trademarks of DivX, Inc. and are used under license. Maximum number of folders recognizable: 300 folders (including the root folder) Maximum number of files recognizable: 200 files</p>
SD Card	<p>SD Memory Card (*4) formatted FAT12, FAT16, FAT32 (*5), JPEG, AVCHD format, MPEG-2(BD80) (*4) includes SDHC card includes miniSD™ cards (need a miniSD™ adaptor) includes microSD™ cards (need a microSD™ adaptor) (*5) Not support long file name.</p>
USB device	<p>USB Standard : USB2.0 High Speed MP3, JPEG, DivX(BD80) Format : FAT12, FAT16, FAT32 (*6) (*6) Not support long file name.</p>

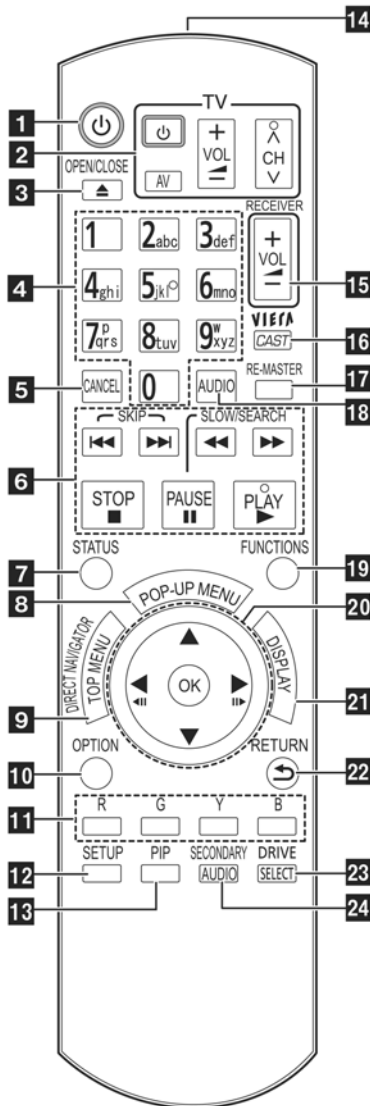
Contents	
JPEG SD card CD-R/RW DVD-RAM BD-RE DVD-R USB device	<p>Pixels: 34 x 34 - 8192 x 8192 Sub sampling: 4:2:2, 4:2:0 Motion JPEG not supported. SD card: JPEG conforming DCF (Design rule for Camera File System) Thawing Time: approx. 2 sec (7M pixels)</p> <p>Maximum numbers of folders and files; Maximum folders: 99(CD) / 300(SD card) / 300(DVD-RAM) / 300(BD-RE) / 300(DVD-R) / 300(USB device) Maximum files: 999(CD) / 3000(SD card) / 3000(DVD-RAM) / 9999(BD-RE) / 3000(DVD-R) / 3000(USB device)</p>
MP3 CD-R CD-RW DVD-R USB device	<p>Compression rate: 32 kbps - 320 kbps Sampling rate: 44.1 kHz, 48 kHz</p>
AVCHD (H.264) SD card DVD	AVCHD format V1.0
Region Code	<p>DVD: #2 (BD60GC), #3 (BD60GA), #4 (Except BD60GC/GA) BD: Region A (BD60GU/GA) Region B (Except BD60GU/GA)</p>
Playable disc (SL: Single Layer/ DL: Dual Layer)	<p>BD-ROM(SL/DL): compliant Ver. 1.3 BD-RE(SL/DL): BD-MV BD-R(SL/DL): BD-MV DVD-ROM(SL/DL): DVD-Video DVD-RAM: DVD-VR DVD-R: DVD-Video DVD-R(DL): DVD-Video DVD-RW: DVD-Video +R: Video +R(DL): Video +RW: Video CD: CD-DA, CD-R/RW</p>
HDMI	<p>480p(525p)/ 576p(625p)(Except BD60PU)/ 720p(750p)/ 1080i(1125i)/1080p(1125p) HDMI™ (Deep colour, x.v. Colour™ High Bit Rate Audio) This unit supports "HDMI Control 4" function.</p>
Signal system	PAL/NTSC (Except BD60PU), NTSC(BD60PU)
Video output	<p>Output level: 1.0 Vp-p (75 Ω) Output connector: Pin jack (1 system)</p>
Component video output (1080i/ 720p/ 480p/ 480i: 60 Hz) (1080i/ 720p/ 576p/ 576i: 50 Hz) (Except BD60PU))	<p>Y output level: 1.0 Vp-p (75 Ω) P_B output level: 0.7 Vp-p (75 Ω) P_R output level: 0.7 Vp-p (75 Ω) Output connector: Pin jack (Y: green, P_B: blue, P_R: red) (1 system)</p>
Audio output	<p>Output level: 2 Vrms (1 kHz 0 dB) Output connector: Pin jack Number of connectors (BD60): 2 channel; 1 system Number of connectors (BD80): 7.1 channel discrete output; 1 system (2 channel + 5.1 channel discrete output)</p>
Audio performance	<p>Frequency response •DVD (linear audio) 4 Hz - 22 kHz (48 kHz sampling) 4 Hz - 44 kHz (96 kHz sampling) •CD-Audio 4 Hz - 20 kHz S/N ratio 115 dB Dynamic range 100 dB Total harmonic distortion 0.003%</p>
Digital audio output	<p>Optical digital output Optical terminal Coaxial digital output (BD80) Pin jack</p>

HDMI AV output	Output format 1080p/1080i/720p/ 576p (Except BD60PU)/480p Output Connector Type A (19 pin)
SD card slot	Connector 1 system
USB slot	Connector 1 system
Ethernet	10BASE-T/ 100BASE-TX 1 system
Others	
Dimensions	Excluding the projecting parts (BD60): 430 (W) x 49 (H) x 242 (D) mm Including the projecting parts (BD60): 430 (W) x 49 (H) x 249 (D) mm Excluding the projecting parts (BD80): 430 (W) x 55 (H) x 242 (D) mm Including the projecting parts (BD80): 430 (W) x 55 (H) x 249 (D) mm
Mass	Approx. 2.6 kg
Operating Temperature range	5°C - 35°C
Operating Humidity range	10 % - 80 % RH (no condensation)
LASER Specification	
Class I LASER Product	
Wave Length	405 nm(BDs), 650 nm(DVDs), 790 nm(CDs)
Laser Power	No hazardous radiation is emitted with the safety protection.
Solder	These models use lead free solder (PbF)

Notes : Mass and dimensions are approximate.
Specifications are subject to change without notice.

5 Location of Controls and Components

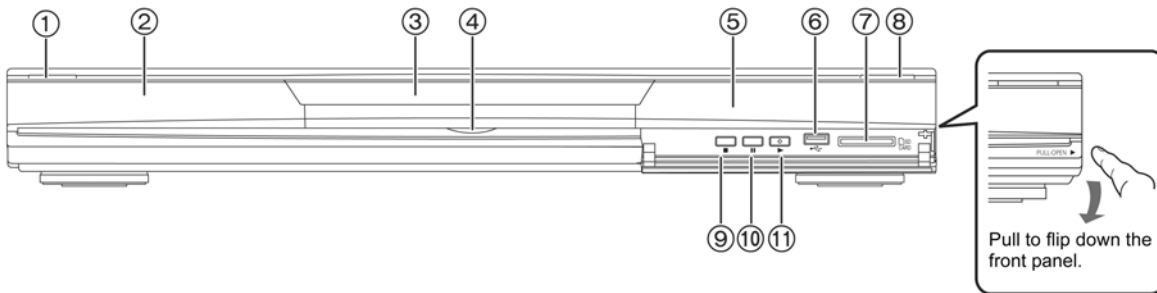
Followings are the Location of Controls and Components for DMP-BD60EB/EG, BD80EB/EG as a sample. For other models, refer to each Operating Instructions.



- 1 Turn the unit on and off
- 2 **TV operation buttons**
You can operate the TV through the unit's remote control.
[TV] : Turn the television on and off
[AV] : Switch the input select
[+ - VOL] : Adjust the volume
[^ v CH] : Channel select
- 3 Open or close the disc tray
- 4 Select title numbers, etc./Enter numbers or characters
(The character buttons may be used when operating VIERA CAST contents.)
- 5 Cancel
- 6 **Basic playback control buttons**
- 7 Show status messages
- 8 Show Pop-up menu
- 9 Show Top menu/Direct Navigator
- 10 Show OPTION menu
- 11 These buttons are used when;
• Operating a BD-Video disc that includes Java™ applications (BD-J). For more information about operating this kind of disc, please read the instructions that came with the disc.
• Displaying "Title View" and "Album View" screens. (Only the [R] and [G] buttons.)
• Operating contents of VIERA CAST.
- 12 Show Setup menu
- 13 Switch on/off Secondary Video (Picture-in-picture)
- 14 Transmit the remote control signal
- 15 Adjust the volume of an amplifier/receiver through the unit's remote control.
- 16 Displays Home screen of VIERA CAST
- 17 Reproduce more natural audio
- 18 Select audio
- 19 Show FUNCTIONS menu
- 20 Selection/OK, Frame-by-frame
- 21 Show on-screen menu
- 22 Return to previous screen
- 23 Select drive (BD/DVD/CD, SD card or USB device)
- 24 Switch on/off Secondary Audio

CAUTION

Do not place objects in front of the unit. The disc tray may collide with objects when it is opened, and this may cause injury.



- 1 Standby/on switch (⏻/⏻)
Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still consuming a small amount of power.
- 2 Display
- 3 Disc tray
- 4 **BD80** SD Card LED
• It is possible to set the LED to turn on/off. (SD Card LED Control)
- 5 Remote control signal sensor
- 6 USB port
- 7 SD card slot

- 8 Open or close the disc tray
- 9 Stop
- 10 Pause
- 11 Start play

SD **USB**

Disc indicator SD card indicator USB device indicator

The indicator blinks when reading data from a disc, a card or a USB device, or writing data to a card.

6 Operating Instructions

6.1. Taking out the Disc from BD Drive Unit when the Disc cannot be ejected by OPEN/CLOSE button

6.1.1. Forcible Disc Eject

6.1.1.1. When the power can be turned off.

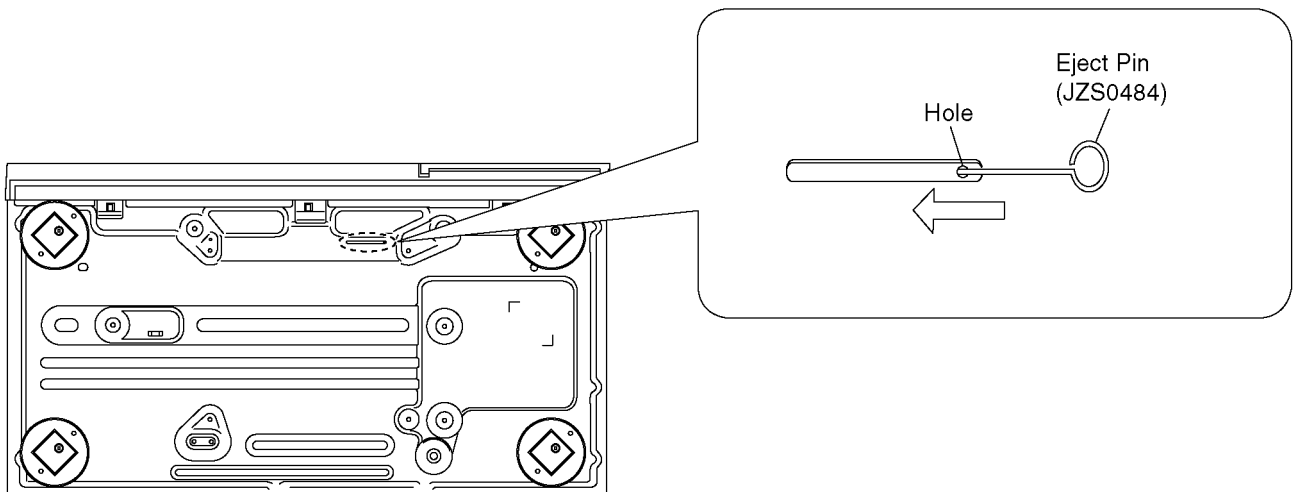
1. Turn off the power and press [PAUSE] and [OPEN/CLOSE] keys on the front panel simultaneously for 5 seconds.

6.1.1.2. When the power can not be turned off.

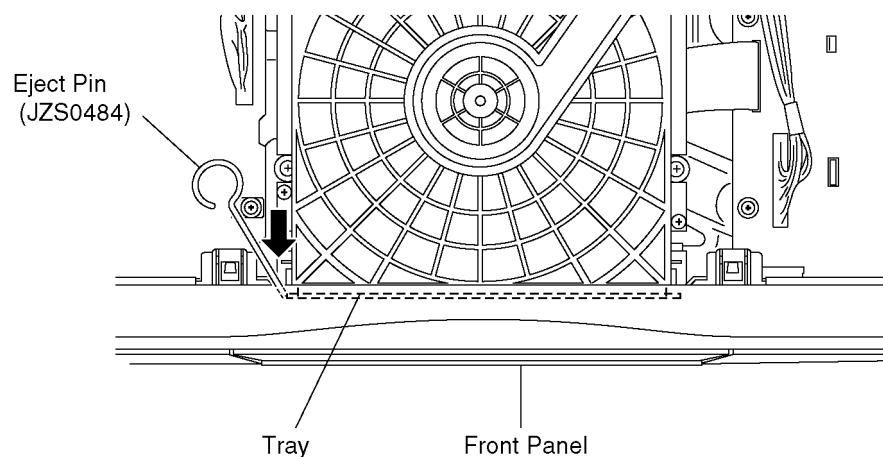
1. Press [POWER] key on the front panel for over 4 seconds to turn off the power forcibly, and press [PAUSE] and [OPEN/CLOSE] keys on the front panel simultaneously for 5 seconds.

6.1.2. When the Forcible Disc Eject can not be done.

1. Turn off the power and pull out AC cord.
2. Remove the Top Case.
3. Insert Eject Pin (JZS0484) into the hole on the bottom of BD Drive and slide the Eject Pin in the direction of the arrow to eject tray slightly.



4. Put deck upward, and push out Tray by Eject Pin (JZS0484) or minus screw driver (small).



7 Service Mode

7.1. Self-Diagnosis and Special Mode Setting

7.1.1. Self-Diagnosis Functions

Self-Diagnosis Function provides information for errors to service personnel by **Self-Diagnosis Display** when any error has occurred.

U, H** and F** are stored in memory and held.**

You can check latest error code by transmitting [0] [1] of Remote Controller in Service Mode.

Automatic Display on FL will be cancelled when the power is turned off or AC input is turned off during self-diagnosis display is ON.

Error Code	Diagnosis contents	Description	Monitor Display	Automatic FL display
U30	Remote control code error	Display appears when main unit and remote controller codes are not matched.	No display	<div style="border: 1px solid black; padding: 5px; text-align: center;">SET *</div> <p>* is remote controller code of the main unit. Display for 5 seconds.</p>
U59	Abnormal inner temperature detected	Display appears when the drive temperature exceeds 70°C. The power is turned off forcibly. For 30 minutes after this, all key entries are disabled. (Fan motor operates at the highest speed for the first 5 minutes. For the remaining 25 minutes, fan motor is also stopped.) The event is saved in memory as well.	No display	<div style="border: 1px solid black; padding: 5px; text-align: center;">U59</div> <p>U59 is displayed for 30 minutes.</p>
U71	HDMI incompatible error (HDCP incompatible)	Display this error when the equipment (compatible with DVI such as TV, amplifier etc.) connected to the unit by HDMI is incompatible with HDCP. *HDCP = High-bandwidth Digital Content Protection	No display	<div style="border: 1px solid black; padding: 5px; text-align: center;">U71</div>
U72	HDMI connection error (communication error)	This error is displayed when there are any communication problems with the unit and the equipments (TV, amplifier etc.) connected to the unit by HDMI. (or when there is a problem with the HDMI cable)	No display	<div style="border: 1px solid black; padding: 5px; text-align: center;">U72</div> <p>U72 display disappears when error has been solved by Power OFF/ON of connecting equipment or by inserting/removing of HDMI cable.</p>
U73	HDMI connection error (authentication error)	when authentication error occurs while the equipments (TV, amplifier etc.) are connected by HDMI. (or when there is a problem with the HDMI cable)	No display	<div style="border: 1px solid black; padding: 5px; text-align: center;">U73</div> <p>U73 display disappears when error has been solved by Power OFF/ON of connecting equipment or by inserting/removing of HDMI cable.</p>
F99	Hang-up	Displayed when communication error has occurred between Main microprocessor and Timer microprocessor.	No display	<div style="border: 1px solid black; padding: 5px; text-align: center;">F99</div> <p>Displayed is left until the [POWER] key is pressed.</p>
H19 02	Inoperative fan motor	When inoperative fan motor is detected after powered on, the power is turned off automatically. The event is saved in memory.	No display	No display
F00	No error information	Initial setting for error code in memory (Error code Initialization is possible with error code initialization and main unit initialization.)	No display	No display
F34	Initialization error	When initialization error is detected after starting up main microprocessor, the power is turned off automatically. The event is saved in memory.	No display	No display
F58	Drive hardware error	When drive unit error is detected, the event is saved in memory.	No display	No display

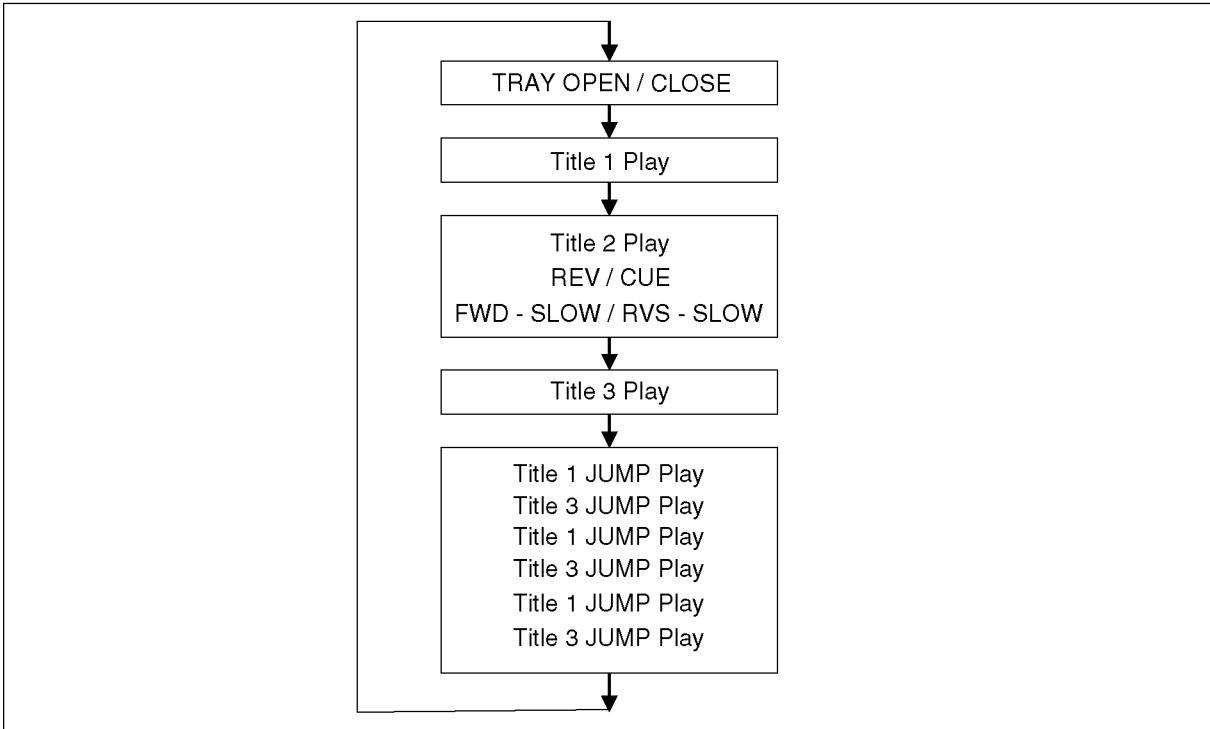
Error Code	Diagnosis contents	Description	Monitor Display	Automatic FL display
UNSUPPORT	Unsupported disc error	*An unsupported format disc was played, although the drive starts normally. *The data format is not supported, although the media type is supported. *Exceptionally in case of the disc is dirty.	This disc is incompatible.	Display for 5 seconds. <div style="border: 1px solid black; padding: 5px; text-align: center;">UNSUPPORT</div> The character indication flows sideways.
NO READ	Disc read error	*A disc is flawed or dirty. *A poor quality failed to start. *The track information could not be read.	Cannot read. Please check the disc.	<div style="border: 1px solid black; padding: 5px; text-align: center;">NoREAD</div>
HARD ERR	Drive error	The drive detected a hard error.	DVD drive error.	Display for 5 seconds. <div style="border: 1px solid black; padding: 5px; text-align: center;">HARD ERR</div> The character indication flows sideways.
SELF CHECK	Restoration operation	Since the power cord fell out during a power failure or operation, it is under restoration operation. *It will OK, if a display disappears automatically. If a display does not disappear, there is the possibility that defective Digital P.C.B. / BDP drive.	No display	<div style="border: 1px solid black; padding: 5px; text-align: center;">SELF CHECK</div> The character indication flows sideways.
PLEASE WAIT	Unit is in termination process	Unit is in termination process now. BYE is displayed and power will be turned off.	No display	<div style="border: 1px solid black; padding: 5px; text-align: center;">PLEASEWAIT</div> The character indication flows sideways.
UNFORMAT	Unformatted disc error	You have inserted an unformatted BD-RE/BD-R/DVD-RAM/DVD-RW or raw +R/+R DL, or DVD-RW of DVD-Video format.	This disc is not formatted properly. Cannot be played.	<div style="border: 1px solid black; padding: 5px; text-align: center;">UNFORMAT</div> The character indication flows sideways.
No PLAY	When there is a viewing restriction on a BD-Video or DVD-Video.	Rating password is set.	No display	<div style="border: 1px solid black; padding: 5px; text-align: center;">No PLAY</div>

7.1.2. Special Modes Setting

Item		FL display	Key operation
Mode name	Description		Front Key
Rating password	The audiovisual level setting password is initialized to Level 8 .	<div style="border: 1px solid black; padding: 5px; text-align: center;">INIT</div>	Open the tray, and press [SKIP REV (Remote Controller)] and [PLAY] simultaneously for 5 seconds.
Service Mode	Setting every kind of modes for servicing. *Details are described in 7.1.3. Service Mode at a glance .	<div style="border: 1px solid black; padding: 5px; text-align: center;">SERV</div>	When the power is off, press [PAUSE], [PLAY] and [SETUP (Remote Controller)] keys simultaneously for 5 seconds.
BD-ROM history cleaning	< Persistent Storage > of BD-ROM standard is cleaned. Screen display: [The history has been cleared] is displayed for five seconds.	<div style="border: 1px solid black; padding: 5px; text-align: center;">*****</div> Same display as before execution.	When the power is on, disc is not in tray, press [STOP] and [POWER (Remote Controller)] keys simultaneously for 5 seconds.
Forced disc eject	Removing a disc that cannot be ejected. The tray will open and unit will shift to P-off mode. While Demonstration Lock is being set, this Forced disc eject function is not accepted.	The display before execution leaves. <div style="border: 1px solid black; padding: 5px; text-align: center;">*****</div>	When the power is off, press [PAUSE] and [OPEN/CLOSE] keys simultaneously for 5 seconds.
NTSC/PAL system select	To switch PAL/NTSC alternately.	The display before execution leaves. <div style="border: 1px solid black; padding: 5px; text-align: center;">*****</div>	When the power is on (SS mode), press [STOP] and [OPEN/CLOSE] simultaneously for 5 seconds.
Forced power-off	When the power button is not effective while power is ON, turn off the power forcibly.	Display in P-off mode.	Press [POWER] key over than 4 seconds.

Item		FL display	Key operation
Mode name	Description		Front Key
Aging	Perform sequence of modes as * Aging Description shown below continually.	Display following the then mode.	When the power is ON, press [PAUSE], [PLAY] and [OPEN/CLOSE] simultaneously for over 5 seconds and less than 10 seconds. NOTE1: If the unit has hung-up because of pressing keys for over 10 seconds, once turn off the power, and re-execute this command. *When releasing Aging mode, press [POWER] key over 4 seconds.

Aging Contents (Example):



Demonstration unlock	lock/ Ejection of the disc is prohibited. The lock setting is effective until unlocking the tray and not released by Main unit initialization of service mode.	*When lock the tray. <div style="border: 1px solid black; padding: 5px; text-align: center;">LOCK</div> LOCK is displayed for 3 seconds.	When the power is on (SS mode), press [PLAY] and [OPEN/CLOSE] keys simultaneously for 5 seconds. Note: When a disc is not in tray, this setting is not effective.
		*When unlock the tray. <div style="border: 1px solid black; padding: 5px; text-align: center;">UNLOCK</div> UNLOCK is displayed for 3 seconds.	When the power is on (SS mode), press [PLAY] and [OPEN/CLOSE] keys simultaneously for 5 seconds.
		*When press OPEN/CLOSE key while the tray being locked. <div style="border: 1px solid black; padding: 5px; text-align: center;">LOCK</div> Display LOCK for 3 seconds.	Press [OPEN/CLOSE] key while the tray is being locked.
Progressive initialization	The progressive setting is initialized to Interlace.	The display before execution leaves. <div style="border: 1px solid black; padding: 5px; text-align: center;">*****</div>	When the power is on (SS mode), press [STOP] and [PLAY] simultaneously for 5 seconds.

Item		FL display	Key operation
Mode name	Description		Front Key
Default setting	The date of Menu, Mode and EEPROM setting, etc. is set to the default condition in factory.	<div style="border: 1px solid black; padding: 5px; text-align: center; margin-bottom: 5px;">HELLO</div> <div style="text-align: center; margin-bottom: 5px;">↓</div> <div style="border: 1px solid black; padding: 5px; text-align: center; margin-bottom: 5px;">BYE</div> <p>HELLO, BYE are displayed.</p>	When the power is off, press [PAUSE], [POWER] and [OPEN/CLOSE] simultaneously for 5 seconds.

7.1.3. Service Modes at a glance

Service mode setting: While the power is off, press [PAUSE], [PLAY] and [SETUP (Remote Controller)] simultaneously for five seconds.

Item		FL display	Key operation (Remote controller key)
Mode name	Description		
Release Items	Item of Service Mode executing is cancelled.	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">SERV</div>	Press [0] [0] in service mode.
Error Code Display	Last Error Code of U/H/F held by Timer is displayed on FL. *Details are described in 7.1.1. Self-Diagnosis Functions .	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">♣ □□</div> <p>*♣ shows U/H/F. □□ shows number.</p> <p>If any error history dose not exist, [F00] is displayed.</p>	Press [0] [1] in service mode
ROM Version Display	1. Region code (displayed for 5 sec.) 2. Main firm version (displayed for 5 sec.) 3. Timer firm version (displayed for 5 sec.) 4. Drive firm version (displayed for 5 sec.) 5. ROM correction version (displayed for 5 sec.) 6. B002 version (displayed for 5 sec.) 7. B003 version (left displayed)	<p>1. <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">NO\$%</div></p> <p>\$: Region of DVD (Example: 1,2.....) %: Region of BD (Example: A,B.....)</p> <p>2. <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">*****</div></p> <p>3. <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">*****</div></p> <p>4. <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">*****</div></p> <p>5. <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">***</div></p> <p>6. <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">***</div></p> <p>7. <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">***</div></p> <p>* are version displays.</p>	Press [0] [2] in service mode
Drive application check	Checking whether the drive is applicable drive or not.	<p>When the drive is applicable drive.</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">DRV OK</div> <p>When the drive is not applicable drive.</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">DRV NG</div>	Press [0] [3] in service mode.
Drive check	Simple quality of BD drive.	<p>When BD drive is OK and a drive error is not stored in EEPROM.</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">DRV OK</div> <p>When BD drive is NG or drive errors are stored in EEPROM.</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">DRV NG</div>	Press [3] [8] in service mode.

Item		FL display	Key operation (Remote controller key)
Mode name	Description		
Laser Used Time Indication	Check laser used time (hours) of drive.	<p>Laser used time: BD Playback</p> <div style="border: 1px solid black; padding: 5px; text-align: center;">BP * * * *</div> <p>Laser used time: BD Recording</p> <div style="border: 1px solid black; padding: 5px; text-align: center;">BR * * * *</div> <p>Laser used time: DVD Playback</p> <div style="border: 1px solid black; padding: 5px; text-align: center;">DP * * * *</div> <p>Laser used time: DVD Recording</p> <div style="border: 1px solid black; padding: 5px; text-align: center;">DR * * * *</div> <p>Laser used time: CD Playback</p> <div style="border: 1px solid black; padding: 5px; text-align: center;">CD * * * *</div> <p>I(****) is the used time display in hour. ILaser used time of BD/ DVD/ CD in Playback/Recording mode is counted.</p>	Press [4] [1] in service mode.

Item		FL display	Key operation
Mode name	Description		(Remote controller key)
BD drive last error	BD drive error code display.	<p>1. Error Number is displayed for 5 seconds.</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;">NO **</div> <p>2. Please ignore this display.</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;">*****</div> <p>3. Last drive error (1/2) is displayed for 5 seconds.</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;">*****</div> <p>00 : Bad disc 03 : Bad disc 04 : Bad disc or drive malfunction</p> <p>4. Last drive error (2/2) is displayed for five seconds.</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;">*****</div> <p>5. Error occurring disc type is displayed for 5 seconds.</p> <p>DVD-RW</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;">DVDRW</div> <p>CD-R</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;">CDR</div> <p>CD-RW</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;">CDRW</div> <p>DVD+R</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;">DVDPR</div> <p>DVD+RW</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;">DVDPRW</div> <p>BD-ROM</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;">BDROM</div>	Press [4] [2] in service mode.

Item		FL display	Key operation (Remote controller key)												
Mode name	Description														
		BD-RE <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;">BDRE</div> BD-R <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;">BDR</div> DVD ROM <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;">DVD</div> CD <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;">CD</div> RAM (2.6GB) <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;">RAM26</div> RAM (4.7GB) <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;">RAM47</div> DVD-R <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;">DVDR</div> Others <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;">MEDIA*</div> <small>* is displayed the respeced value from RTSC.</small>													
		6. Disc maker ID is displayed for 5 seconds. <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;">*****</div> 7. Factor of drive error (hexadecimal) occurring is left displayed. <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;">* * + + □ □</div> <small>* * : Error occurring operation code (This is not used)</small> <small>+ + : Error occurring disc type</small> <table border="1" style="margin-left: 20px; margin-top: 5px;"> <tr><td>00</td><td>DVD-ROM</td></tr> <tr><td>01</td><td>CD</td></tr> <tr><td>02</td><td>2.6GB DVD-RAM</td></tr> <tr><td>03</td><td>4.7GB DVD-RAM</td></tr> <tr><td>04</td><td>DVD-R</td></tr> <tr><td>After 05</td><td>Others</td></tr> </table>	00	DVD-ROM	01	CD	02	2.6GB DVD-RAM	03	4.7GB DVD-RAM	04	DVD-R	After 05	Others	In case that the maker cannot be identified, display is black out.
00	DVD-ROM														
01	CD														
02	2.6GB DVD-RAM														
03	4.7GB DVD-RAM														
04	DVD-R														
After 05	Others														

Item		FL display	Key operation (Remote controller key)																																																																																									
Mode name	Description																																																																																											
		<input type="checkbox"/> <input type="checkbox"/> : Error occurring disc situation <table border="1"> <thead> <tr> <th rowspan="2">Display</th> <th colspan="4">Detail</th> </tr> <tr> <th>Disc distinction</th> <th>With or without Cartridge</th> <th>Disc cart-ridge state</th> <th>Size</th> </tr> </thead> <tbody> <tr><td>00</td><td>OK</td><td>_____</td><td>_____</td><td>12cm</td></tr> <tr><td>10</td><td>OK</td><td>_____</td><td>_____</td><td>8cm</td></tr> <tr><td>20</td><td>OK</td><td>_____</td><td>_____</td><td>12cm</td></tr> <tr><td>30</td><td>OK</td><td>_____</td><td>_____</td><td>8cm</td></tr> <tr><td>40</td><td>OK</td><td>_____</td><td>_____</td><td>12cm</td></tr> <tr><td>50</td><td>OK</td><td>_____</td><td>_____</td><td>8cm</td></tr> <tr><td>60</td><td>OK</td><td>_____</td><td>_____</td><td>12cm</td></tr> <tr><td>70</td><td>OK</td><td>_____</td><td>_____</td><td>8cm</td></tr> <tr><td>80</td><td>NG</td><td>_____</td><td>_____</td><td>12cm</td></tr> <tr><td>90</td><td>NG</td><td>_____</td><td>_____</td><td>8cm</td></tr> <tr><td>A0</td><td>NG</td><td>_____</td><td>_____</td><td>12cm</td></tr> <tr><td>B0</td><td>NG</td><td>_____</td><td>_____</td><td>8cm</td></tr> <tr><td>C0</td><td>NG</td><td>_____</td><td>_____</td><td>12cm</td></tr> <tr><td>D0</td><td>NG</td><td>_____</td><td>_____</td><td>8cm</td></tr> <tr><td>E0</td><td>NG</td><td>_____</td><td>_____</td><td>12cm</td></tr> <tr><td>F0</td><td>NG</td><td>_____</td><td>_____</td><td>8cm</td></tr> </tbody> </table>	Display	Detail				Disc distinction	With or without Cartridge	Disc cart-ridge state	Size	00	OK	_____	_____	12cm	10	OK	_____	_____	8cm	20	OK	_____	_____	12cm	30	OK	_____	_____	8cm	40	OK	_____	_____	12cm	50	OK	_____	_____	8cm	60	OK	_____	_____	12cm	70	OK	_____	_____	8cm	80	NG	_____	_____	12cm	90	NG	_____	_____	8cm	A0	NG	_____	_____	12cm	B0	NG	_____	_____	8cm	C0	NG	_____	_____	12cm	D0	NG	_____	_____	8cm	E0	NG	_____	_____	12cm	F0	NG	_____	_____	8cm	
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F0	NG	_____	_____	8cm																																																																																								
CEC (H) output	Check of the CEC terminal high output of HDMI.	When the check is OK <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;">CECHOK</div> When the check is NG <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;">CECHNG</div>	Press [5] [5] in service mode.																																																																																									
CEC (L) output	Check of the CEC terminal low output of HDMI.	When the check is OK <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;">CECLOK</div> When the check is NG <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;">CECLNG</div>	Press [5] [6] in service mode.																																																																																									
Tray OPEN/CLOSE Test	The BD drive tray is opened and closed repeatedly.	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;">*****</div> * is number of open/close cycle times.	Press [9] [1] in service mode *When releasing this mode, press the [POWER] button of Remote Controller more than 4 seconds.																																																																																									
Delete the Laser Used Time	Laser used time stored in the memory of the unit is deleted.	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;">CLR</div>	Press [9] [5] in service mode.																																																																																									
Delete the Last Drive Error	Delete the Last Drive Error information stored on the BD Drive.	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;">CLR</div>	Press [9] [6] in service mode.																																																																																									
Delete the Error History	Delete Error History information stored on the unit.	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;">CLR</div>	Press [9] [7] in service mode.																																																																																									
Error code initialization	Initialization of the last error code held by timer (Write in F00)	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;">CLR</div>	Press [9] [8] in service mode.																																																																																									
Initialize Service	Last Drive Error, Error history and Error Codes stored on the unit are initialized to factory setting.	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;">CLR</div>	Press [9] [9] in service mode.																																																																																									
Finishing service mode	Release Service Mode.	Display in STOP (SS) mode. <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;">*****</div>	Press power button on the front panel or Remote controller in service mode.																																																																																									

8 Service Fixture & Tools

Part Number	Description	Pcs	Compatibility
RFKZ0216	Extension Cable (AV Out P.C.B. - Digital P.C.B. / 23 Pin) (only BD80)	1	Same as EH55 Series
RFKZ0168	Extension Cable (Power P.C.B. - Fan Motor / 3 Pin)	1	Same as EH55 Series
RFKZ0239	Extension Cable (Front P.C.B. - Digital P.C.B. / 10 Pin)	1	Same as EH55 Series
RFKZ0367	Extension Cable (Power P.C.B. - Front P.C.B. / 6 Pin)	1	Same as EH55 Series
JZS0484	Eject Pin	1	Same as ES15/ E50 Series
RFKZ03D01KS	Lead Free Solder (0.3mm/100g Reel)	-	Same as EH55 Series
RFKZ06D01KS	Lead Free Solder (0.6mm/100g Reel)	-	Same as EH55 Series
RFKZ10D01KS	Lead Free Solder (1.0mm/100g Reel)	-	Same as EH55 Series
RFKZ0316	Solder Remover (Lead free low temperature Solder/50g)	-	Same as EH55 Series
RFKZ0328	Flux	-	Same as EH55 Series

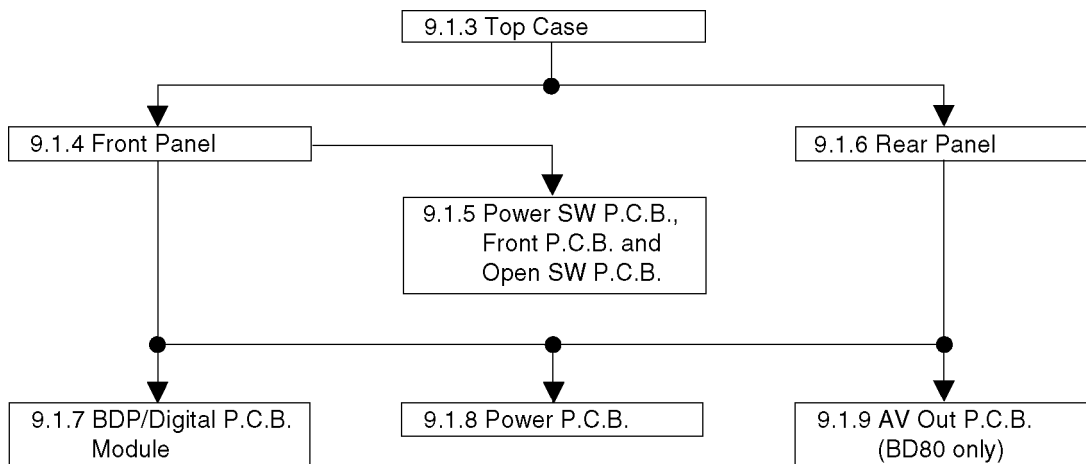
9 Disassembly and Assembly Instructions

9.1. Unit

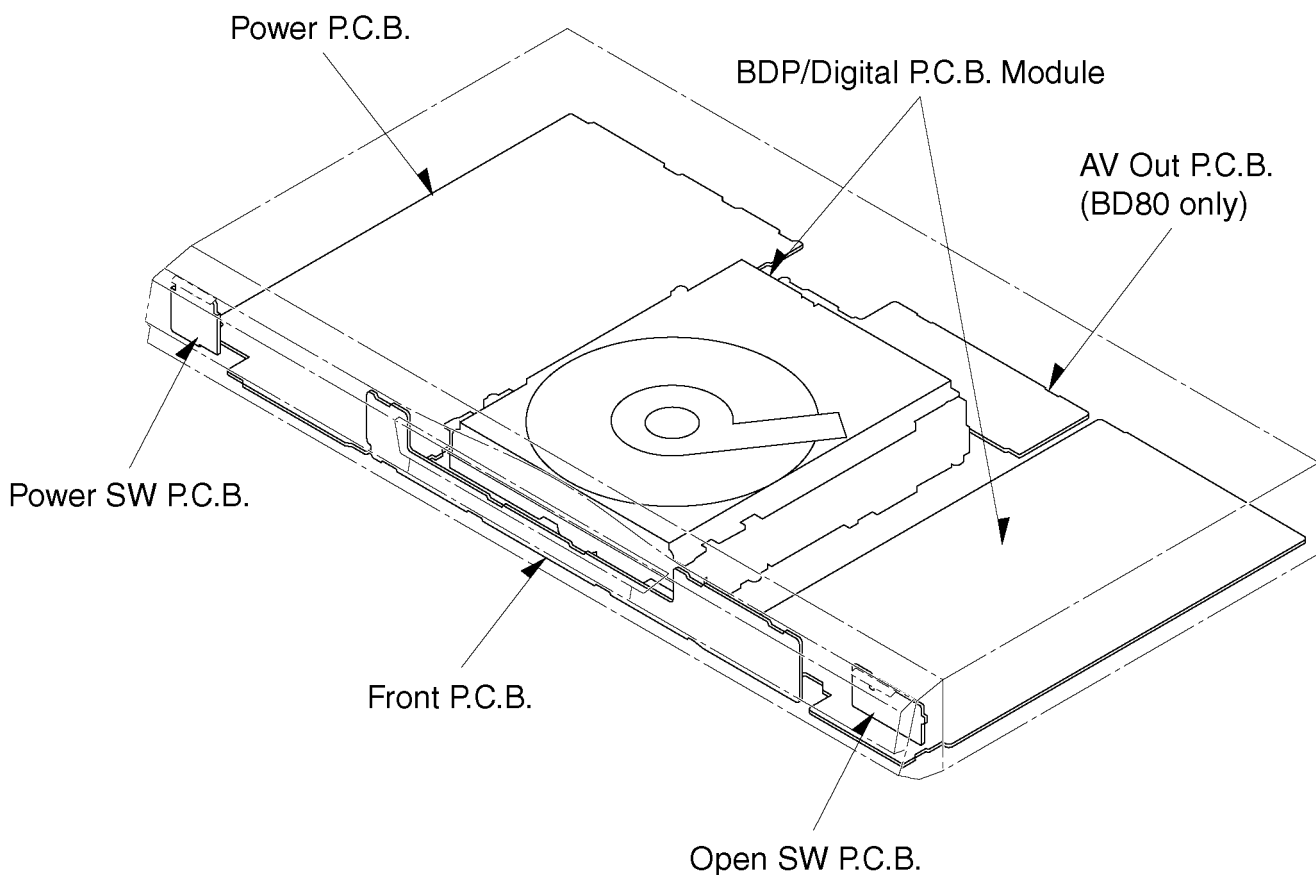
9.1.1. Disassembly Flow Chart

The following chart is the procedure for disassembling the casing and inside parts for internal inspection when carrying out the servicing.

To assemble the unit, reverse the steps shown in the chart below.

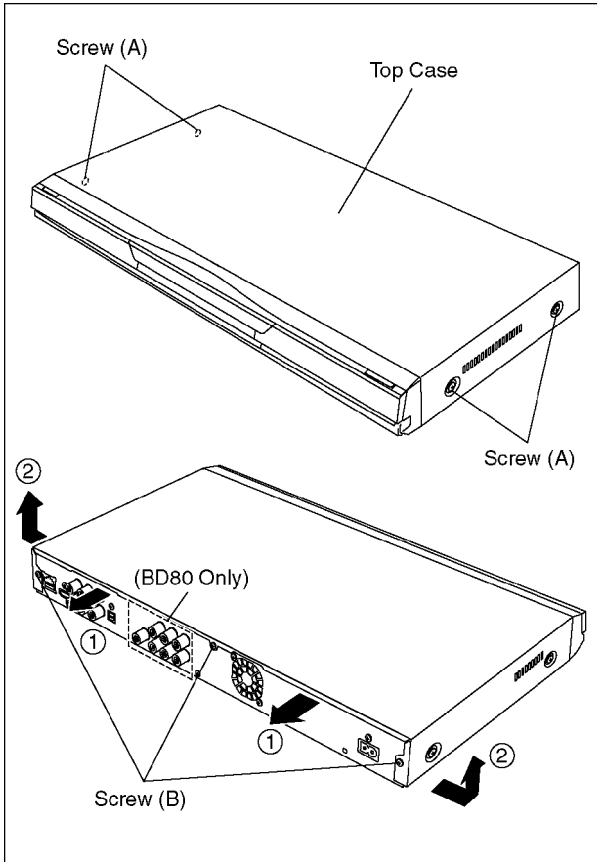


9.1.2. P.C.B. Positions



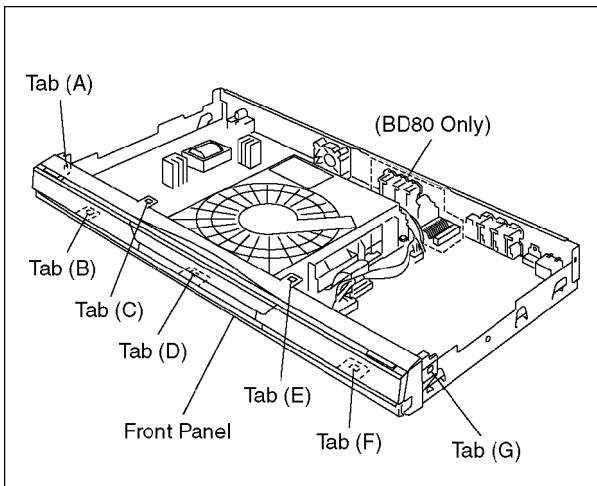
9.1.3. Top Case

1. Remove the 4 Screws (A) and 3 Screws (B).
2. Slide Top Case rearward and open the both ends at rear side of the Top Case a little and lift the Top Case in the direction of the arrows.



9.1.4. Front Panel

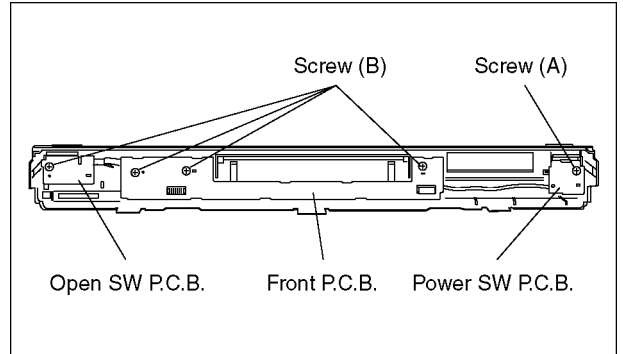
1. Unlock 7 tabs (A) - (G) turn. Pull with the Front Panel in the direction of your side.



9.1.5. Power SW P.C.B., Front P.C.B. and Open SW P.C.B.

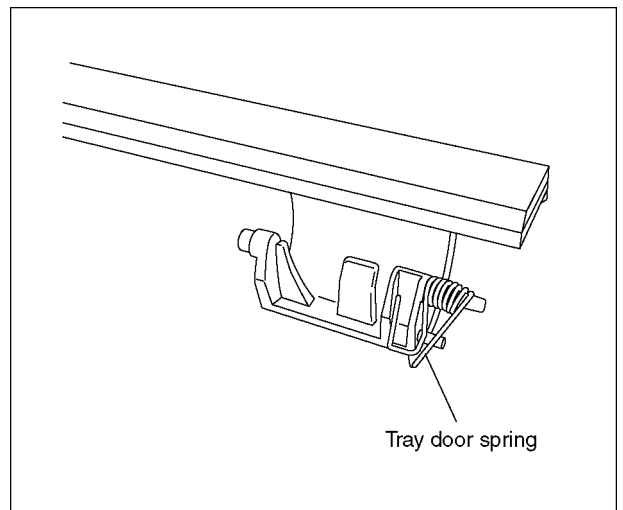
9.1.5.1. Power SW P.C.B., Front P.C.B. and Open SW P.C.B.

1. Remove the screw (A).
2. Remove the Power SW P.C.B..
3. Remove the 4 Screws (B).
4. Remove the Front P.C.B. and Open SW P.C.B..



9.1.5.2. How to assemble Tray door ass'y

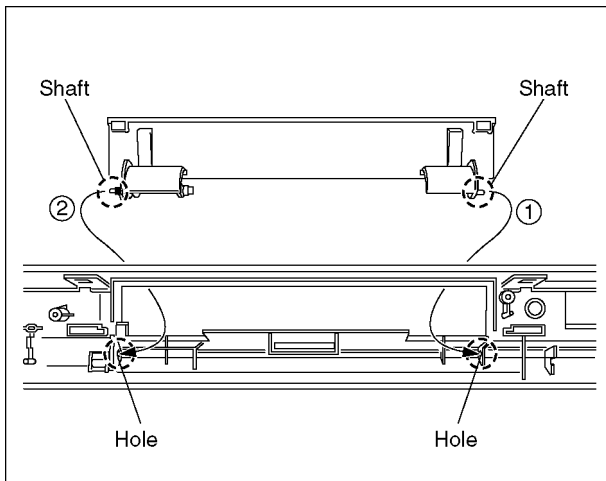
1. Attach the Tray door spring to Tray door ass'y.



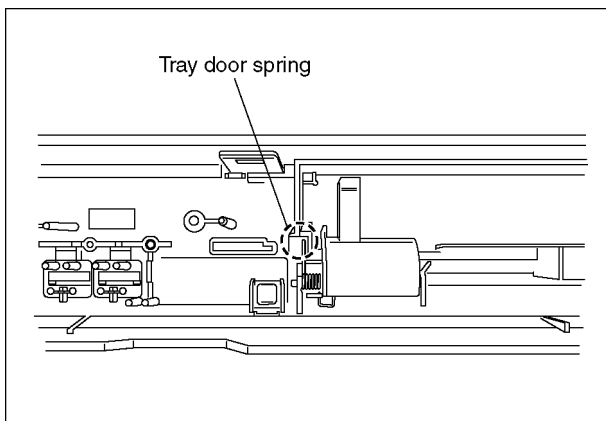
2. Attach Tray door ass'y in order from ① to ②

①: Insert the shaft in the hole.

②: Insert the shaft in the hole.

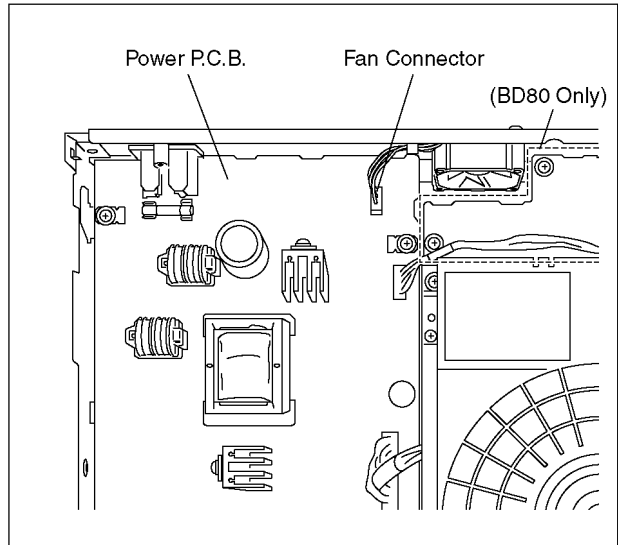


3. Confirm the Tray door spring is attached as following.



9.1.6. Rear Panel

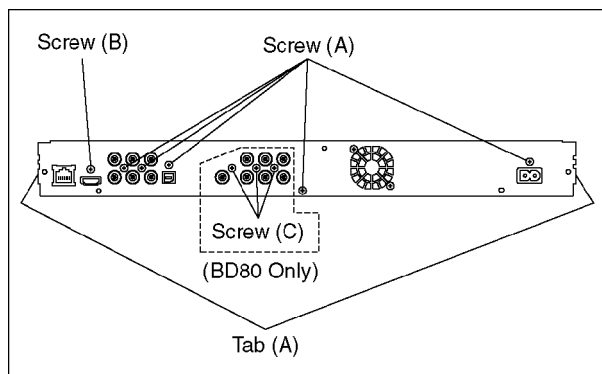
1. Remove the Fan Connector from Power P.C.B.



2. Remove the 5 Screws (A) and Screw (B).

3. Remove the 3 Screws (C). (BD80 only)

4. Unlock 2 locking Tabs (A) to remove the Rear Panel.

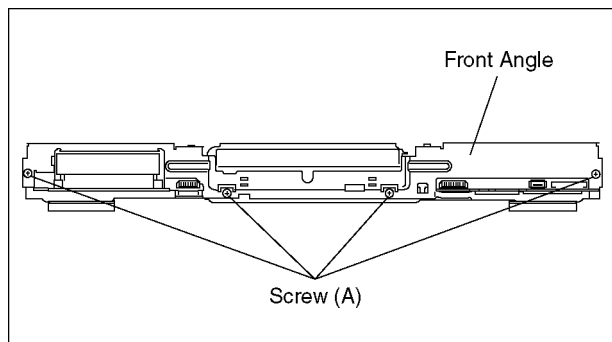


9.1.7. BDP/Digital P.C.B. Module

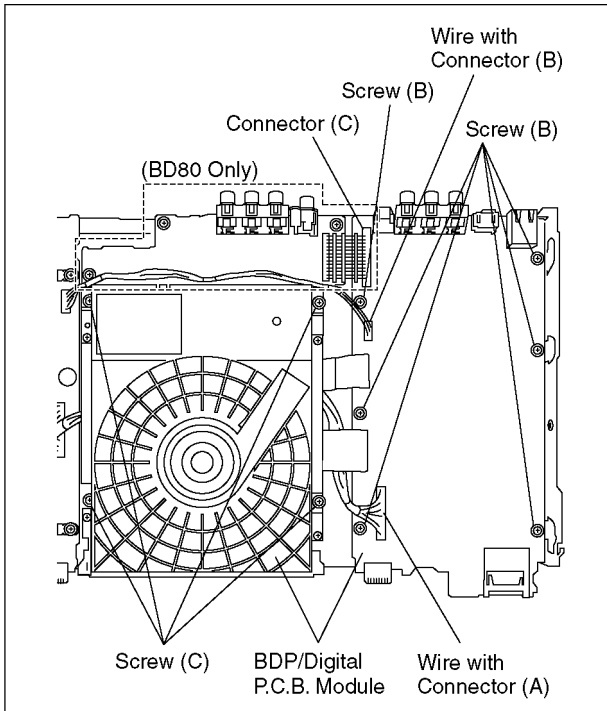
Caution:

Pairing of BD Drive and Digital P.C.B. as "BDP/ Digital P.C.B. Module" have to be replaced together. If the either BD drive or Digital P.C.B. is changed, BD Drive unit has to be re-adjusted. Because the adjustment data for BD Drive Unit is stored in Digital P.C.B..

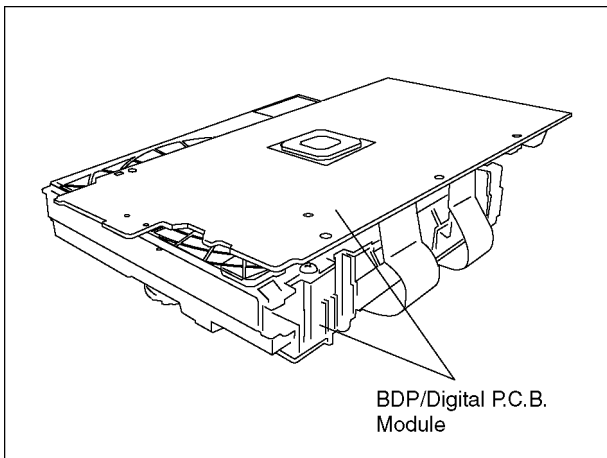
1. Remove the 4 Screws (A) to remove Front Angle.



2. Remove the Wire with Connector (A), (B).
3. Remove the Connector (C). (BD80 only)
4. Remove the 6 Screws (B) to remove Digital P.C.B..
5. Remove the 4 Screws (C) to remove BD Drive.

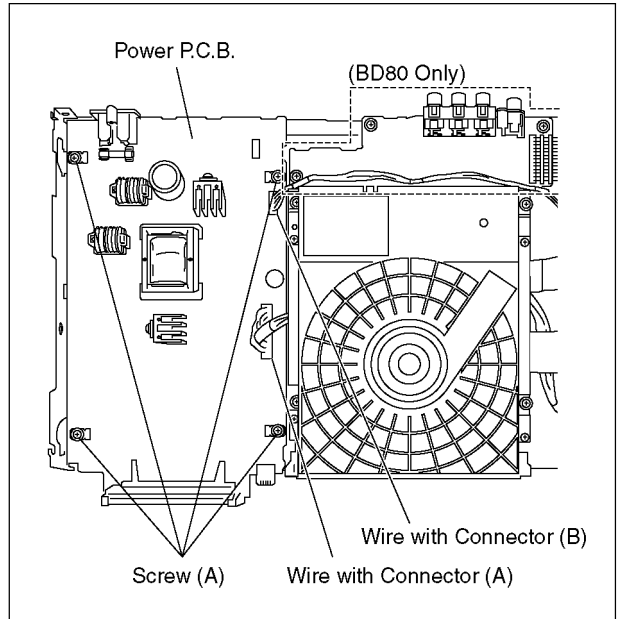


6. Put Digital P.C.B. on BD Drive and remove BDP/Digital P.C.B. Module.



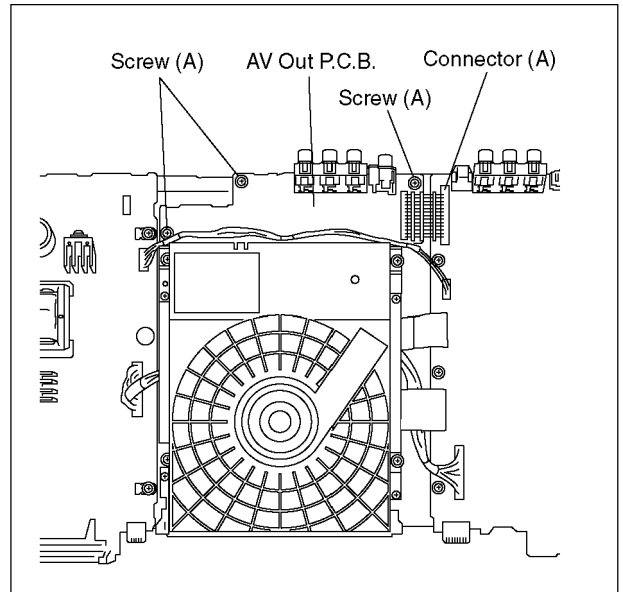
9.1.8. Power P.C.B.

1. Remove the Wire with Connector (A) and Wire with Connector (B).
2. Remove the 4 screws (A) to remove Power P.C.B..



9.1.9. AV Out P.C.B. (BD80 only)

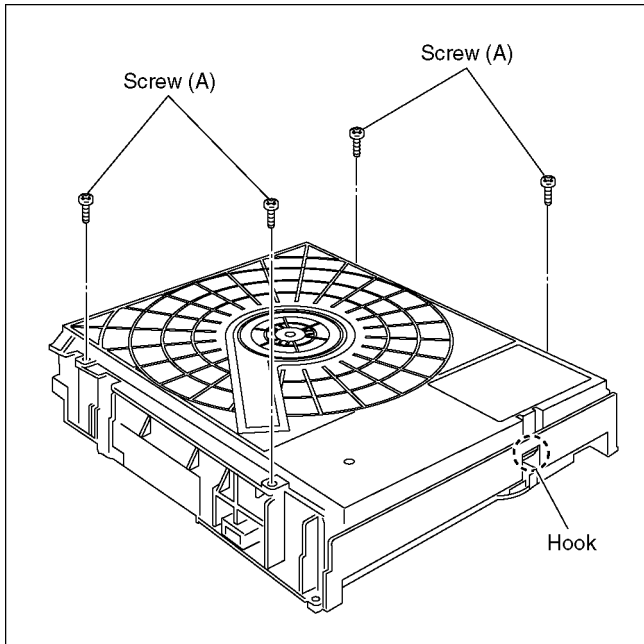
1. Remove the Connector (A).
2. Remove the 3 screws (A) to remove AV Out P.C.B..



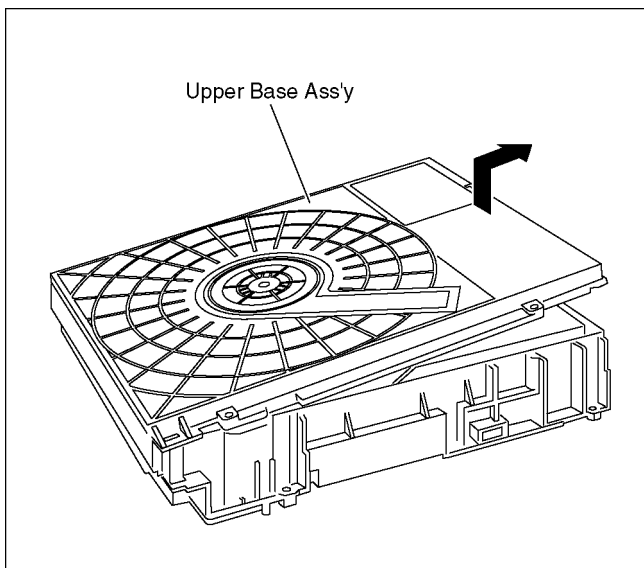
9.2. BD Drive

9.2.1. Upper Base Ass'y

1. Remove the 4 Screws (A), and push the Hook in.

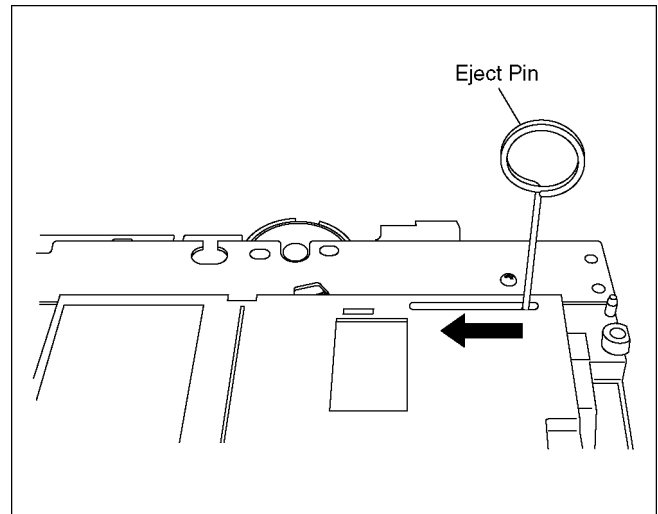


2. Lift up the Upper Base Ass'y, and pull it out to the direction of arrow.

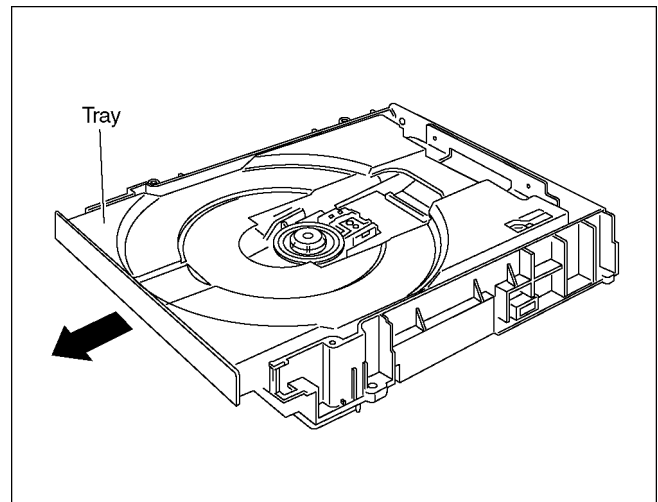


9.2.2. Tray

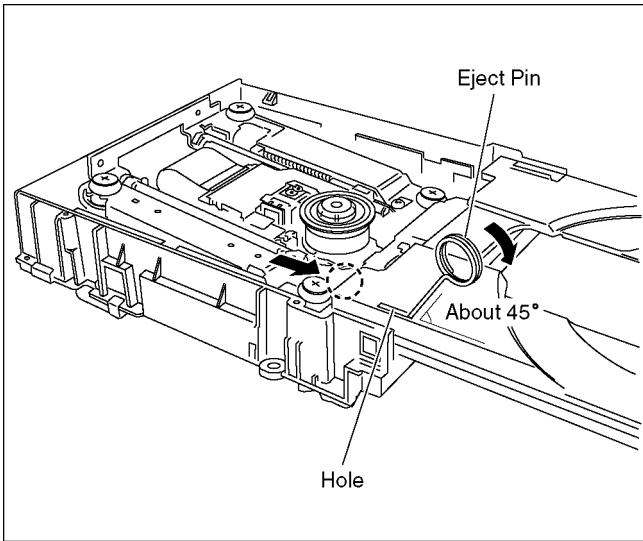
1. Perform the step "9.2.1. Upper Base Ass'y".
2. Insert the Eject Pin into the hole of the bottom side, and slide it to the direction of arrow until it can be.



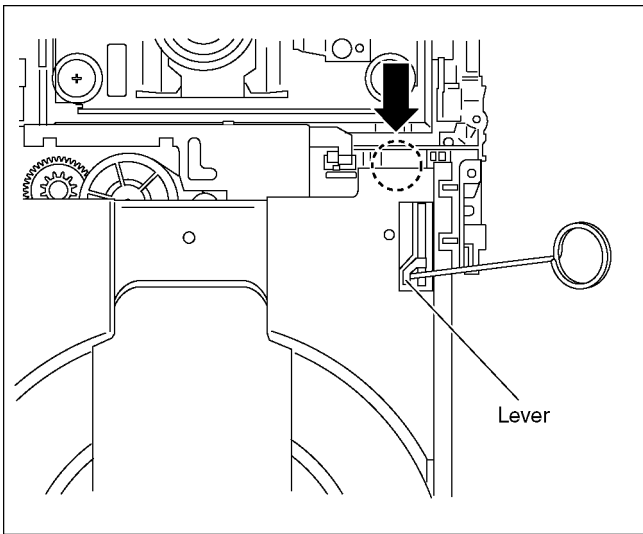
3. Pull the Tray to the direction of arrow until it can be.



4. Insert the Eject Pin into the hole of the Tray at 45 degrees, and lean it to the direction of arrow with pushing the dotted point of the tray forward. Then the one side of the tray is come off from the Drive.

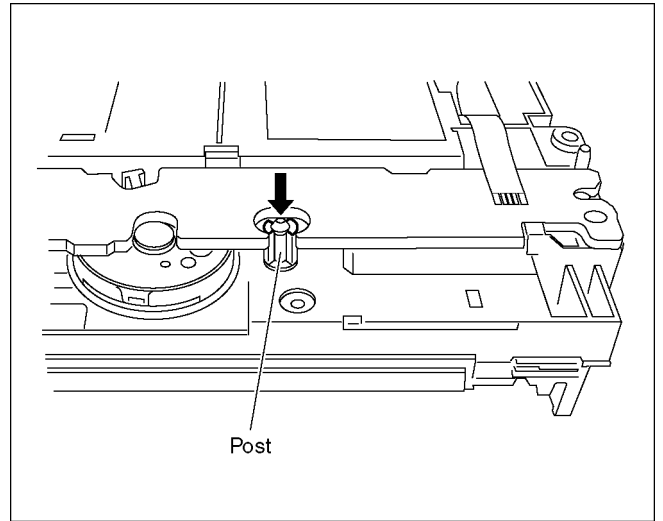


5. Insert the Eject Pin into the Tray as below figure, lift up the lever using the Eject Pin while pushing the dotted point of the Tray. And remove the Tray.

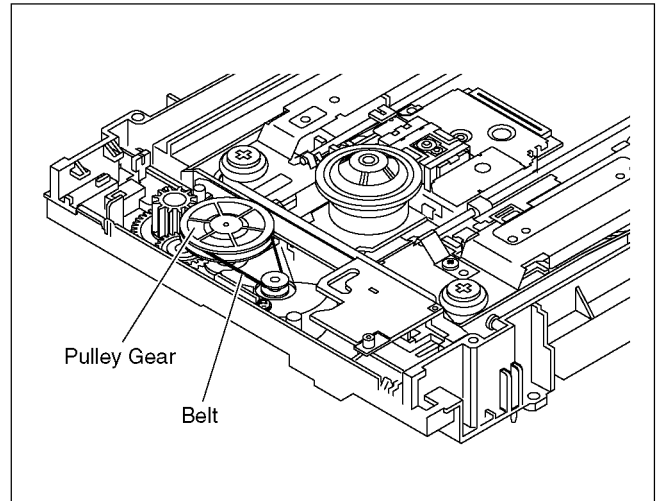


9.2.3. Pulley Gear, Belt

1. Perform the step "9.2.2. Tray".
2. Push the Post to the direction of arrow by using the slotted screwdriver.

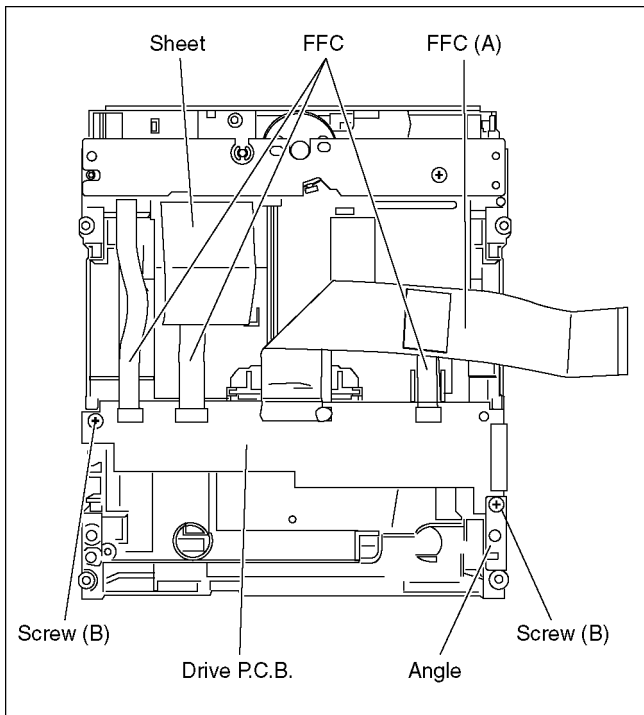


3. Remove the Pulley Gear and Belt.



9.2.4. Slide Cam

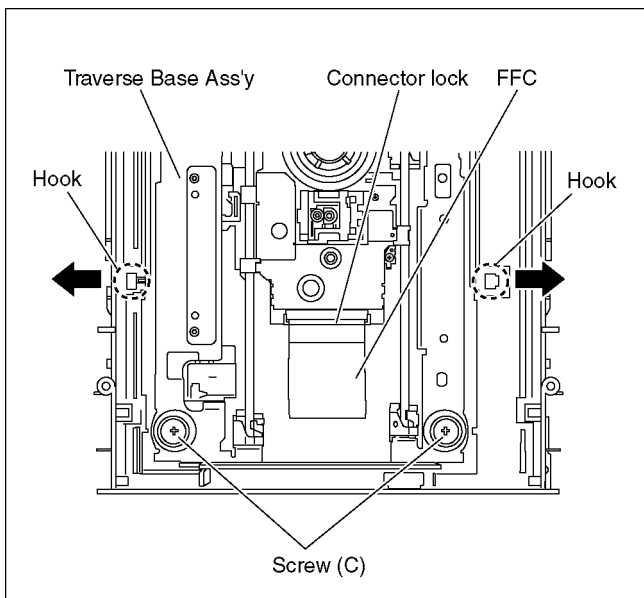
1. Perform the step "9.2.3. Pulley Gear, Belt".
2. Disconnect the 3 FFCs.
3. Remove the 2 Screws (B) and the Angle.
4. Peel off Coppery Sheet from FFC (A) and remove the Drive P.C.B.



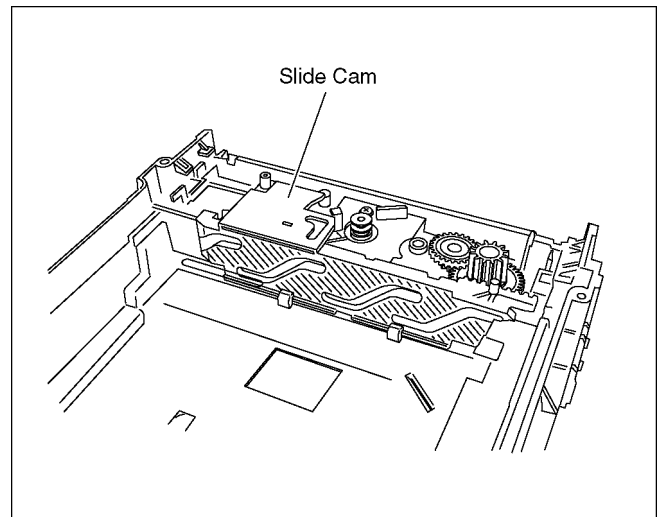
Caution:

Though the Drive P.C.B. is not supplied as replacement parts, it must be removed for after disassembling.

5. Open the connector lock, and disconnect the FFC.
6. Remove the 2 Screws (C), and remove the Traverse Base Ass'y with spreading the 2 hooks to the direction of arrows.

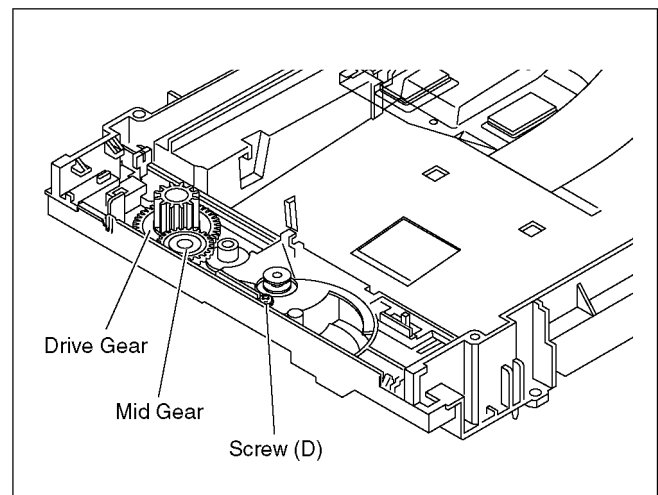


7. Remove the Slide Cam.

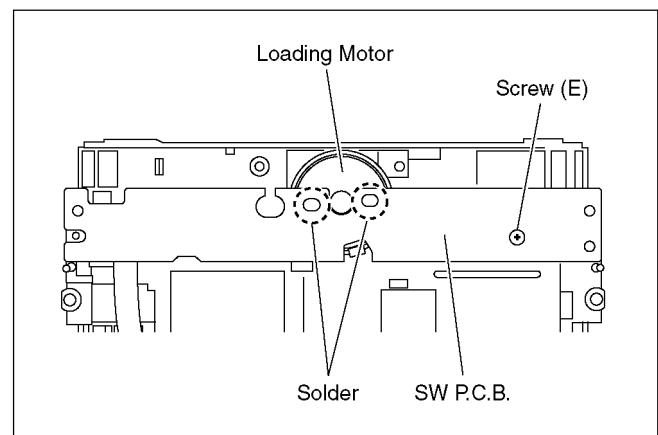


9.2.5. Mid Gear, Drive Gear and Loading Motor

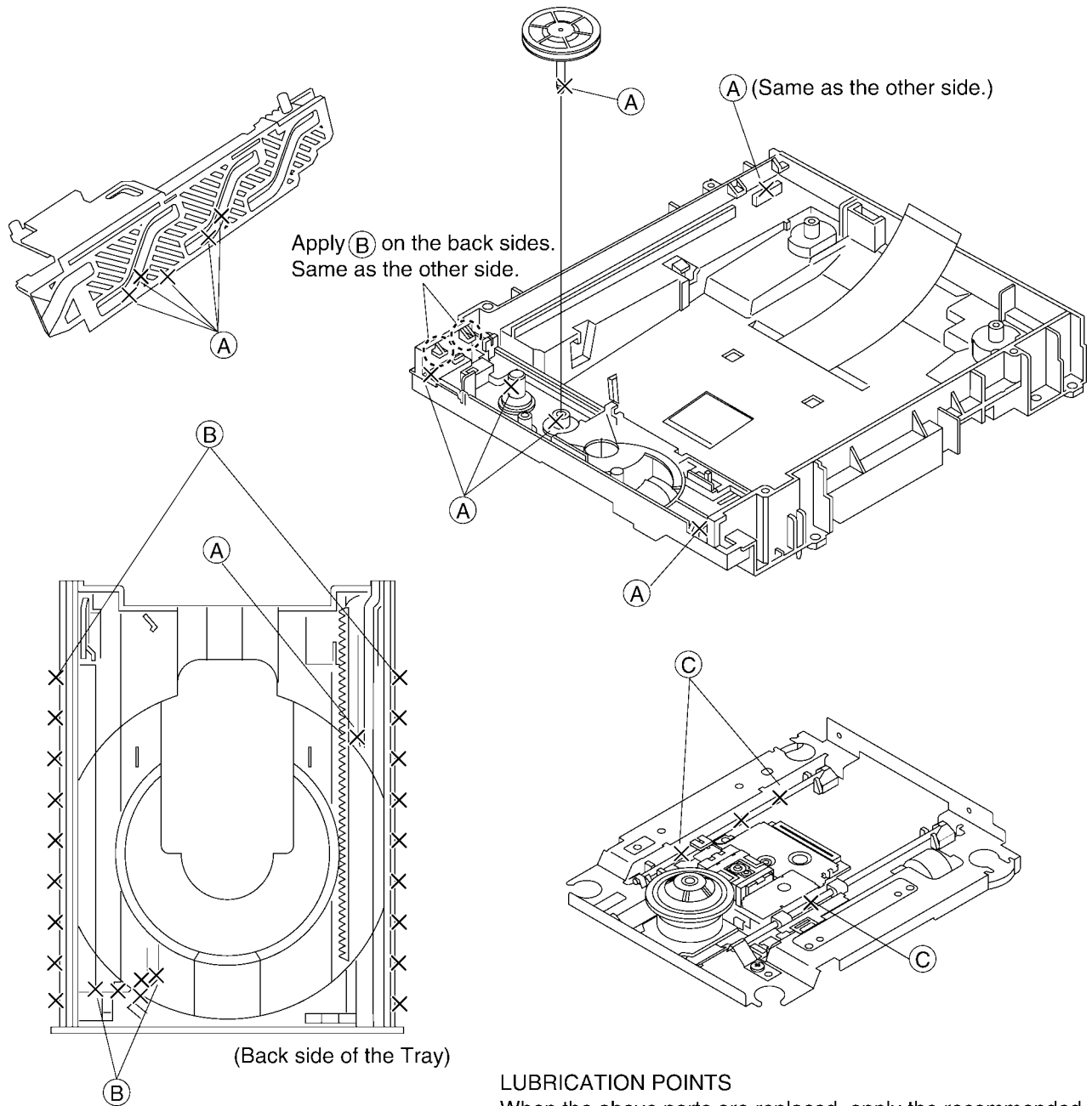
1. Perform the step "9.2.4. Slide Cam".
2. Remove the Mid Gear and Drive Gear.
3. Remove the Screw (D) to remove the Loading Motor.



4. Remove the Screw (E), and remove the SW P.C.B. with the Loading Motor. Remove the 2 soldering points, and remove the Loading Motor.



9.2.6. Grease

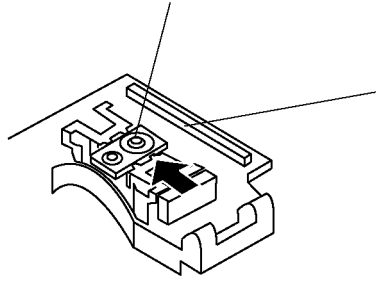


Mark	Kind of lubricant	Part No.
(A)	Grease	RFKZ0484
(B)	Hanarl	RFKZ0441
(C)	Grease	RFKXPG641

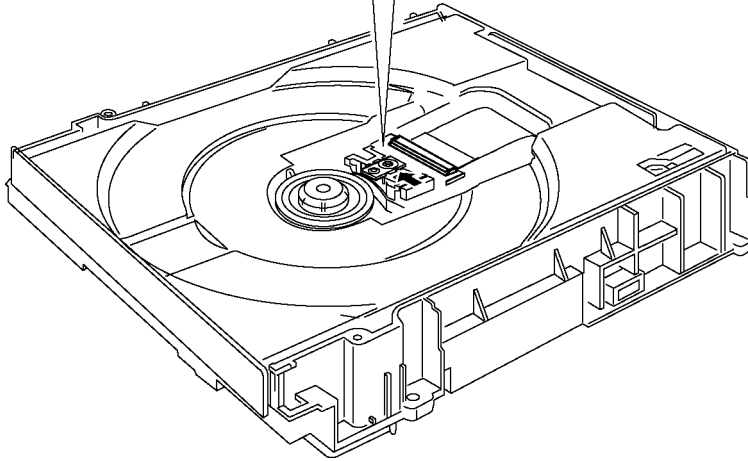
9.2.7. How to Clean the Lens of Optical Pick-UP

Follow the "9.2.1. Upper Base Ass'y

Caution : Be sure to wipe a lens in the direction of arrow.



Gently wipe the object lens surface with a cotton swab slightly dampened with ethyl alcohol. Clean the lens until the cotton swab no longer picks up dirt. Finally, wipe the lens surface with a soft, dry cloth to remove any residual alcohol.



10 Measurements and Adjustments

10.1. Service Positions

Note:

For description of the disassembling procedure, see the section 9.

10.1.1. Checking and Repairing of Power P.C.B.

1. Top Case

Remove 3 Screws on rear.

Remove 4 Screws on side.

Remove Top Case.

2. Front Panel

Unlock the 7 Tabs that is locking Front Panel and Bottom Chassis.

Remove the Front Panel.

3. Front Angle

Remove the 4 Screws, and remove the Front Angle.

4. Rear Panel

Remove the 9 Screws (One is for HDMI) fixing the Rear Panel.

Disconnect the Fan Connector, and remove the Rear Panel.

5. Power P.C.B.

Disconnect the Wire with Connector (14 pin) and the Wire with Connector (4 pin) between Power P.C.B. and Digital P.C.B.

Remove the 4 Screws, and remove the Power P.C.B..

Connecting the Power SW P.C.B. to the Power P.C.B. with original cable.

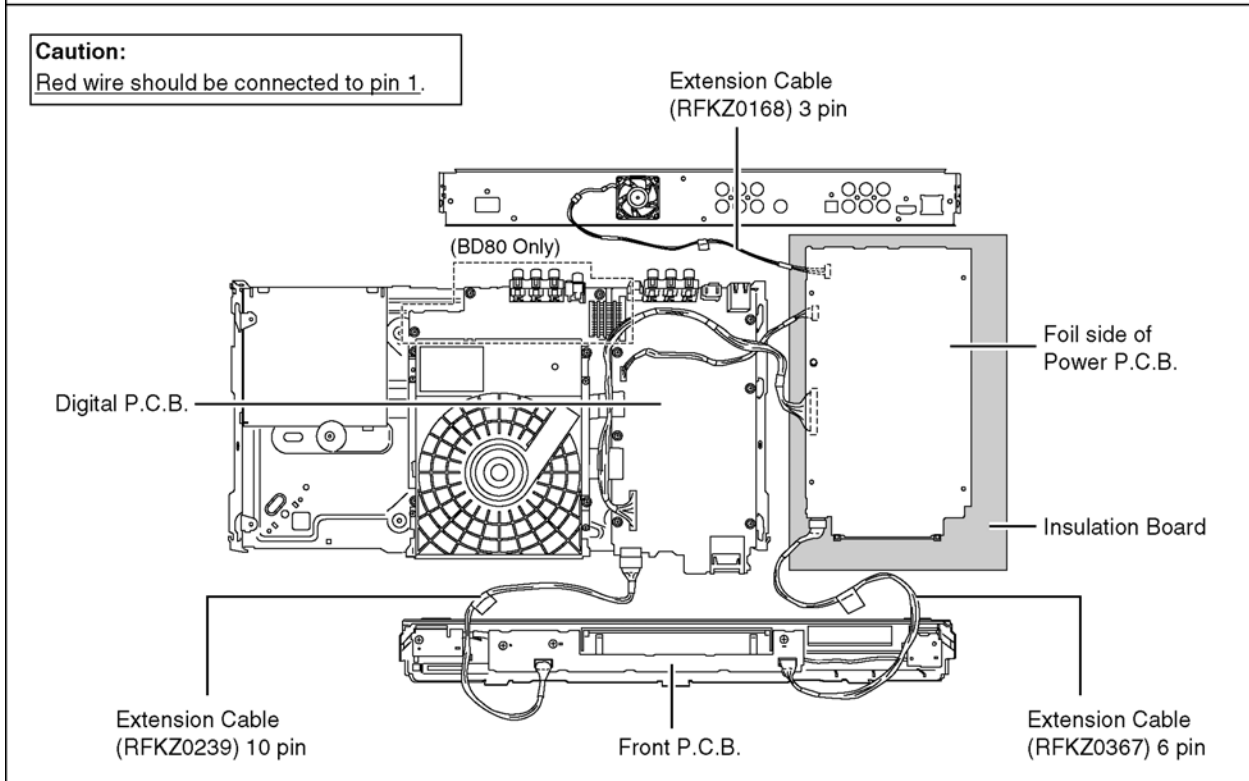
Connecting the original Wire with Connector (14 pin) and the original Wire with Connector (4 pin) between Power P.C.B. and Digital P.C.B.

Connect Extension Cables shown below.

Between Power P.C.B. and Front P.C.B.: (RFKZ0367) 6 pin

Between Power P.C.B. and Fan Motor: (RFKZ0168) 3 pin

Between Digital P.C.B. and Front P.C.B.: (RFKZ0239) 10 pin



10.1.2. Checking and Repairing of BDP/Digital P.C.B. Module

1. Top Case

Remove 3 Screws on rear.

Remove 4 Screws on side.

Remove Top Case.

2. Front Panel

Unlock the 7 Tabs that is locking Front Panel and Bottom Chassis.

Remove the Front Panel.

3. Front Angle

Remove the 4 Screws, and remove the Front Angle.

4. Rear Panel

Remove the 9 Screws (One is for HDMI) fixing the Rear Panel.

Disconnect the Fan Connector, and remove the Rear Panel.

5. BDP/Digital P.C.B. Module

Disconnect the Wire with Connector (14 pin) and the Wire with Connector (4 pin) between Power P.C.B. and Digital P.C.B.

Disconnect the Connector (23 pin).

Remove the 6 Screws fixing the Digital P.C.B.

Remove the 4 Screws fixing the BD Drive.

Connecting the original Wire with Connector (14 pin) and the original Wire with Connector (4 pin) between Power P.C.B. and Digital P.C.B.

Put Insulation Board on BD Drive, and put the Digital P.C.B. on Insulation Board.

Connect Extension Cables shown below.

Between Digital P.C.B. and AV Out P.C.B.: (RFKZ0216) 23 pin

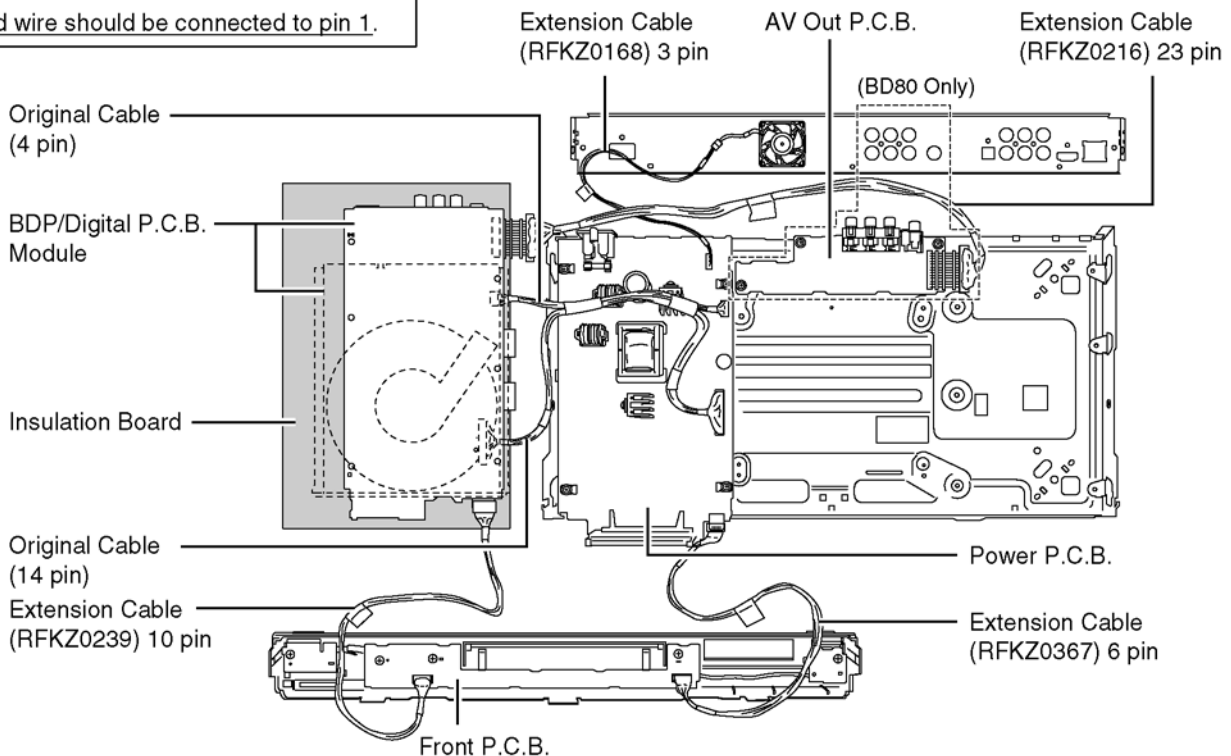
Between Power P.C.B. and Front P.C.B.: (RFKZ0367) 6 pin

Between Power P.C.B. and Fan Motor: (RFKZ0168) 3 pin

Between Digital P.C.B. and Front P.C.B.: (RFKZ0239) 10 pin

Caution:

Red wire should be connected to pin 1.



10.1.3. Checking and Repairing of AV Out P.C.B. (BD80 only)

1. Top Case

Remove the 3 Screws on rear.

Remove the 4 Screws on side.

Remove Top Case.

2. Rear Panel

Remove the 9 Screws (One is for HDMI) fixing the Rear Panel.

Disconnect the Fan Motor Connector, and remove the Rear Panel.

3. AV Out P.C.B.

Disconnect the Connector (23 pin) between AV Out and Digital P.C.B.

Remove the 3 Screws, and remove the AV Out P.C.B.

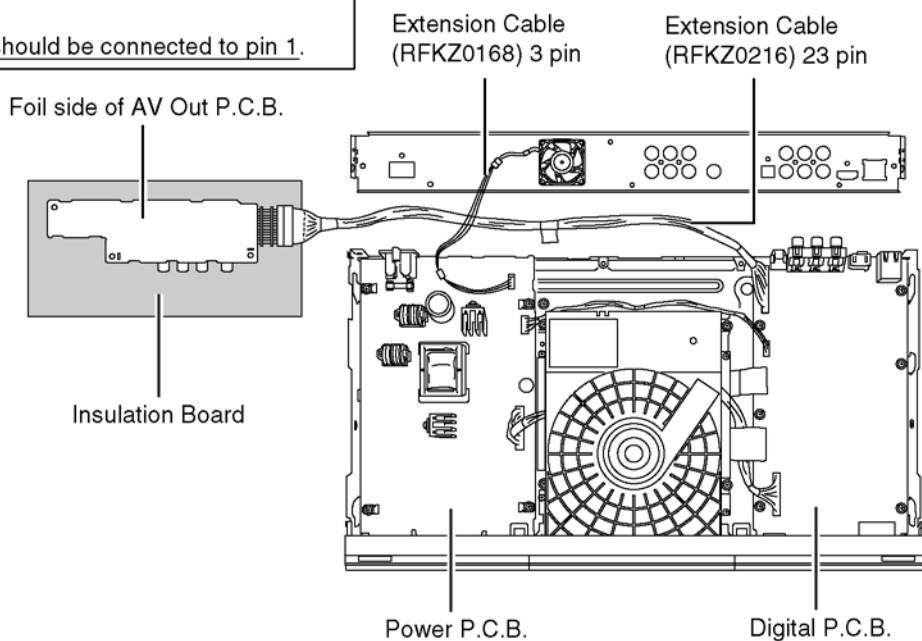
Put AV Out P.C.B. on Insulation Board so that its foil side faces top.

Connect the Extension Cables shown below.

- Between AV Out P.C.B. and Digital P.C.B.: (RFKZ0216) 23 pin
- Between Power P.C.B. and Fan Motor: (RFKZ0168) 3 pin

Caution:

Red wire should be connected to pin 1.



10.1.4. Caution for Replacing Parts

10.1.4.1. Items that should be done after replacing parts

√: Necessary —: Unnecessary

Replacing Parts	Items that Should be done	Updating Firmware (Note 1)
	BDP/Digital P.C.B.	√

Note 1:

Download latest Firmware and burn it on CD-R or CD-RW, and update Firmware.

10.1.4.2. Standard Inspection Specifications after Making Repairs

After making repairs, we recommend performing the following inspection, to check normal operation.

No.	Procedure	Item to Check
1	Turn on the power, and confirm items pointed out.	Items pointed out should reappear.
2	Insert RAM disc.	The Panasonic RAM disc should be recognized.
4	Perform playback for one minute using the RAM disc.	No abnormality should be seen in the picture, sound or operation. *Panasonic DVD-RAM disc should be used when recording and playback.
5	Perform playback for one minute using the BD-Video disc.	No abnormality should be seen in the picture, sound or operation.
6	If a problem is caused by a BD-Video disc, VCD, DVD-R, DVD-Video, Audio-CD, or MP3, playback the test disc.	No abnormality should be seen in the picture, sound or operation.
7	After checking and making repairs, upgrade the firmware to the latest version.	Make sure that [UPD OK] appears in the FL displays. *[UNSUPPORT] display means the unit is already updated to newest same version. Then version up is not necessary.
8	Transfer [9][9] in the service mode setting, and initialize the service settings (return various settings and error information to their default values. The laser time is not included in this initialization).	Make sure that [CLR] appears in the FL display. After checking it, turn the power off.

Use the following checklist to establish the judgment criteria for the picture and sound.

Item	Contents	Check	Item	Contents	Check
Picture	Block noise		Sound	Distorted sound	
	Crosscut noise			Noise (static, background noise, etc.)	
	Dot noise			The sound level is too low.	
	Picture disruption			The sound level is too high.	
	Not bright enough			The sound level changes.	
	Too bright				
	Flickering color				
	Color fading				

Service Manual

Diagrams and Replacement Parts List

Blu-ray Disc Player

Model No.

- DMP-BD60GN
- DMP-BD60GZ
- DMP-BD60GA
- DMP-BD60GC
- DMP-BD60PU
- DMP-BD80GN

Vol. 1
 Colour
 (K).....Black Type

Table of contents

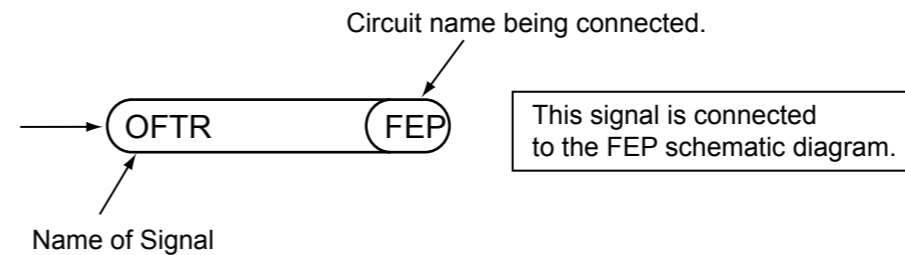
<p>S1. About Indication of The Schematic Diagram..... S-1</p> <p>S1.1. Important Safety Notice..... S-1</p> <p>S2. Voltage and Waveform Chart..... S-2</p> <p>S2.1. Audio Out P.C.B. S-2</p> <p>S2.2. Power_P P.C.B..... S-2</p> <p>S2.3. Front P.C.B..... S-3</p> <p>S3. Block Diagram..... S-4</p> <p>S3.1. Power Supply Block Diagram..... S-4</p> <p>S3.2. Analog Audio Block Diagram..... S-5</p> <p>S3.3. Timer Block Diagram..... S-6</p> <p>S4. Schematic Diagram..... S-7</p> <p>S4.1. Interconnection Diagram..... S-7</p> <p>S4.2. Audio Out Schematic Diagram..... S-8</p> <p>S4.3. FL (F) Schematic Diagram..... S-12</p> <p>S4.4. Power Wide (P) Schematic Diagram..... S-14</p> <p>S4.5. Front Schematic Diagram..... S-18</p> <p>S4.6. Power SW Schematic Diagram..... S-19</p> <p>S4.7. Open SW Schematic Diagram..... S-19</p>	<p>S5. Print Circuit Board..... S-20</p> <p>S5.1. Audio Out P.C.B. S-20</p> <p>S5.2. Power_P P.C.B..... S-21</p> <p>S5.2.1. Power_P P.C.B. (Component Side) S-21</p> <p>S5.2.2. Power_P P.C.B. (Foil Side) S-22</p> <p>S5.3. Front P.C.B..... S-24</p> <p>S5.4. Power SW P.C.B..... S-28</p> <p>S5.5. Open SW P.C.B..... S-28</p> <p>S6. Abbreviation S-29</p> <p>S7. Replacement Parts List..... S-33</p> <p>S8. Exploded View S-38</p> <p>S8.1. Frame and Casing Section..... S-38</p> <p>S8.2. Mechanism Section..... S-39</p> <p>S8.3. Packing Parts and Accessories Section..... S-40</p>
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S1. About Indication of The Schematic Diagram

S1.1. Important Safety Notice

COMPONENTS IDENTIFIED WITH THE MARK \triangle HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS USE ONLY THE SAME TYPE.

1. Although reference number of the parts is indicated on the P.C.B. drawing and/or schematic diagrams, it is NOT mounted on the P.C.B. when it is displayed with "\$" mark.
2. It is only the "Test Round" and no terminal (Pin) is available on the P.C.B. when the TP (Test Point) indicated as "●" mark.
3. The voltage being indicated on the schematic diagram is measured in "Standard-Playback" mode when there is no specify mode is mentioned.
4. Although the voltage and waveform available on here is measured with standard frame, it may be differ from actual measurement due to modification of circuit and so on.
5. The voltage being indicated here may be include observational-error (deviation) due to internal-resistance and/or reactance of equipment. Therefore, handle the value indicated on here as reference.
6. Use the parts number indicated on the Replacement Parts List .
7. Indication on Schematic diagrams:



S2. Voltage and Waveform Chart

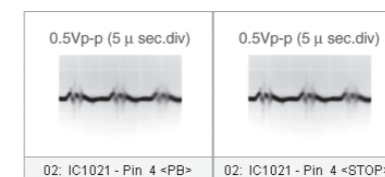
Note) Indicated voltage values are the standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.

S2.1. Audio Out P.C.B.

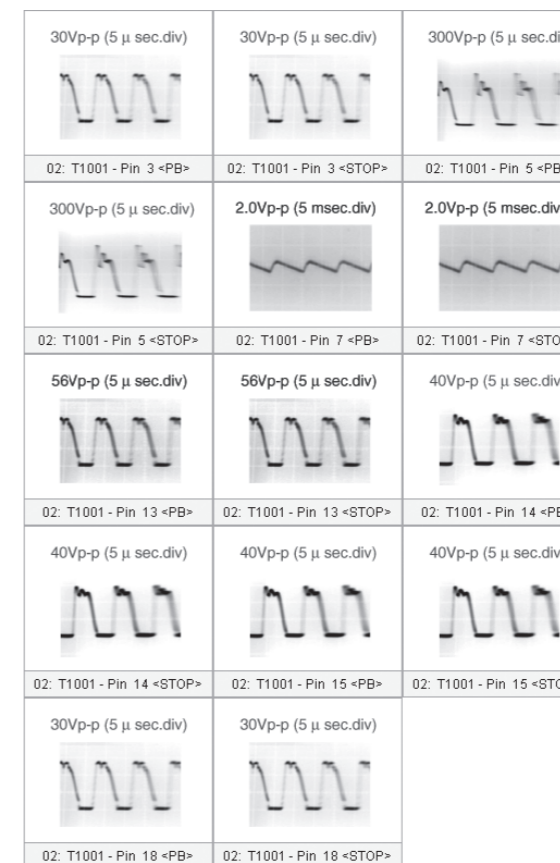
S2.2. Power_P P.C.B.

REF No.	PIN No.	PB	STOP	REF No.	PIN No.	PB	STOP	REF No.	PIN No.	PB	STOP	REF No.	PIN No.	PB	STOP
P4001	1	1.7	1.7	IC1021	1	2.5	2.5	IC7001	35	-	-	Q7001	C	3.3	3.3
P4001	2	5	5	IC1021	2	1.6	1.6	IC7001	36	-17.6	-17.6	Q7001	B	2.6	2.6
P4001	3	0	0	IC1021	3	0	0	IC7001	37	-17.6	-17.6	Q7003	E	-15	-15
P4001	4	2.6	2.6	IC1021	4	2.9	2.9	IC7001	38	-17.6	-17.6	Q7003	C	-15	-15
P4001	5	0	0	IC1021	5	0	0	IC7001	39	-17.6	-17.6	Q7003	B	-14.3	-14.3
P4001	6	2.6	2.6	IC1021	6	7.5	7.5	IC7001	40	-17.6	-17.6	QR1101	E	0	0
P4001	7	0	0	IC1021	7	16.5	16.5	IC7001	41	-17.6	-17.6	QR1101	C	0	0
P4001	8	0	0	IC1021	8	-	-	IC7001	42	-17.6	-17.6	QR1101	B	3.3	3.3
P4001	9	0	0	IC1021	9	-	-	IC7001	43	3.3	3.3	QR1102	E	0	0
P4001	10	0	0	IC1101	1	8.4	8.4	IC7001	44	0	0	QR1102	C	0	0
P4001	11	2.6	2.6	IC1101	2	2.5	2.5	IC7002	1	6	6	QR1102	B	3.3	3.3
P4001	12	2.6	2.6	IC1101	3	0	0	IC7002	2	0	0	QR1105	E	0	0
P4001	13	2.6	2.6	IC1102	1	-15	-15	IC7002	3	1.4	1.4	QR1105	C	0	0
P4001	14	2.7	2.7	IC1102	2	-	-	IC7002	4	3.3	3.3	QR1105	B	0	0
P4001	15	-4.9	1.6	IC1102	3	-16.4	-16.4	IC7002	5	6	6	QR7001	E	0	0
P4001	16	5	5	IC1102	4	-17.7	-17.7	P1102	1	3.3	3.3	QR7001	C	0	0
P4001	17	5.9	5.9	IC1102	5	-11.8	-11.8	P1102	2	0	0	QR7001	B	3.3	3.3
P4001	18	2.5	2.5	IC1102	6	-	-	P1102	3	3.3	3.3	QR7003	E	3.3	3.3
P4001	19	3.3	3.3	IC1102	7	-	-	P1102	4	3.3	3.3	QR7003	C	3.2	3.2
P4001	20	11.5	11.5	IC1102	8	-11.8	-11.8	P1102	5	0	0	QR7003	B	0	0
P4001	21	12.2	12.2	IC1103	1	12.2	12.2	P1102	6	0	0	QR7004	E	0	0
P4001	22	-10.8	-10.8	IC1103	2	4.5	4.5	P1102	7	0	0	QR7004	C	0	0
P4001	23	-11.5	-11.5	IC1103	3	1.2	1.2	P1102	8	6	6	QR7004	B	3.3	3.3
Q4001	E	0	0	IC1103	4	1.2	1.2	P1102	9	6	6	T1001	1	-	-
Q4001	C	0	0	IC1103	5	1.2	1.2	P1102	10	12.2	12.2	T1001	2	0	0
Q4001	B	-4.9	0.7	IC1103	6	0	0	P1102	11	12.2	12.2	T1001	3	-	-
Q4002	E	0	0	IC1103	7	7.5	7.5	P1102	12	5.2	5.2	T1001	4	-	-
Q4002	C	0	0	IC1103	8	12.2	12.2	P1102	13	0	0	T1001	5	-	-
Q4002	B	-4.9	0.7	IC1104	1	3.3	3.3	P1102	14	-11.5	-11.5	T1001	6	-	-
Q4003	E	0	0	IC1104	2	6	6	P7004	1	12.3	12.3	T1001	7	-	-
Q4003	C	0	0	IC1104	3	0	0	P7004	2	0	0	T1001	8	-	-
Q4003	B	-4.9	0.7	IC1104	4	5.1	5.1	P7004	3	0	0	T1001	9	-	-
Q4004	E	0	0	IC1104	5	1.1	1.1	P7004	4	5.1	5.1	T1001	10	-	-
Q4004	C	0	0	IC7001	1	-	-	Q1022	1	9.5	9.5	T1001	11	-	-
Q4004	B	-4.9	0.7	IC7001	2	-	-	Q1022	2	8.4	8.4	T1001	12	-	-
Q4005	E	11.5	11.5	IC7001	3	-	-	Q1022	3	0	0	T1001	13	-	-
Q4005	C	12.2	12.2	IC7001	4	-	-	Q1022	4	1.8	1.8	T1001	14	-	-
Q4005	B	12.2	12.2	IC7001	5	1.9	1.9	Q1023	1	1.2	1.2	T1001	15	-	-
Q4006	E	0	0	IC7001	6	3.3	3.3	Q1023	2	0	0	T1001	16	0	0
Q4006	C	0	0	IC7001	7	3.3	3.3	Q1023	3	0	0	T1001	17	0	0
Q4006	B	-4.9	0.7	IC7001	8	3.3	3.3	Q1023	4	0	0	T1001	18	-	-
Q4007	E	0	0	IC7001	9	3.2	3.2	Q1101	E	-20.4	-20.4				
Q4007	C	0	0	IC7001	10	0	0	Q1101	C	-23.2	-23.2				
Q4007	B	-4.9	0.7	IC7001	11	0	0	Q1101	B	-21.1	-21.1				
Q4008	E	-10.8	-10.8	IC7001	12	0	0	Q1102	1	12.3	12.3				
Q4008	C	-11.5	-11.5	IC7001	13	3.3	3.3	Q1102	2	12.3	12.3				
Q4008	B	-11.5	-11.5	IC7001	14	-20	-20	Q1102	3	12.3	12.3				
Q4009	E	3.4	3.4	IC7001	15	-20	-20	Q1102	4	6.2	6.2				
Q4009	C	5	5	IC7001	16	-14.7	-14.7	Q1102	5	12.3	12.3				
Q4009	B	4	4	IC7001	17	-17.3	-17.3	Q1102	6	12.3	12.3				
Q4010	E	2	2	IC7001	18	-12.1	-12.1	Q1102	7	12.3	12.3				
Q4010	C	0	0	IC7001	19	-9.5	-9.5	Q1102	8	12.3	12.3				
Q4010	B	1.7	1.7	IC7001	20	-14.7	-14.7	Q1104	1	12.2	12.2				
QR4001	1	0	0	IC7001	21	-14.7	-14.7	Q1104	2	12.2	12.2				
QR4001	2	0	0	IC7001	22	-12.1	-12.1	Q1104	3	12.2	12.2				
QR4001	3	12.2	12.2	IC7001	23	-14.7	-14.7	Q1104	4	7.5	7.5				
QR4001	4	12.2	12.2	IC7001	24	-17.3	-17.3	Q1104	5	6	6				
QR4001	5	3.3	3.3	IC7001	25	-14.7	-14.7	Q1104	6	6	6				
QR4001	6	0	0	IC7001	26	-20	-20	Q1104	7	6	6				
QR4002	1	-11.5	-11.5	IC7001	27	-20	-20	Q1104	8	6	6				
QR4002	2	0	0	IC7001	28	-20	-20	Q1106	E	-11.5	-11.5				
QR4002	3	12.2	12.2	IC7001	29	-6.8	-6.8	Q1106	C	-12.3	-12.3				
QR4002	4	12.2	12.2	IC7001	30	-20	-20	Q1106	B	-12.3	-12.3				
QR4002	5	12.2	12.2	IC7001	31	-20	-20	Q1107	E	0	0				
QR4002	6	-11.5	-11.5	IC7001	32	-20	-20	Q1107	C	12.3	12.3				
				IC7001	33	-	-	Q1107	B	0	0				
				IC7001	34	-	-	Q7001	E	3.3	3.3				

<IC1021>



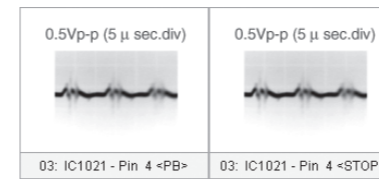
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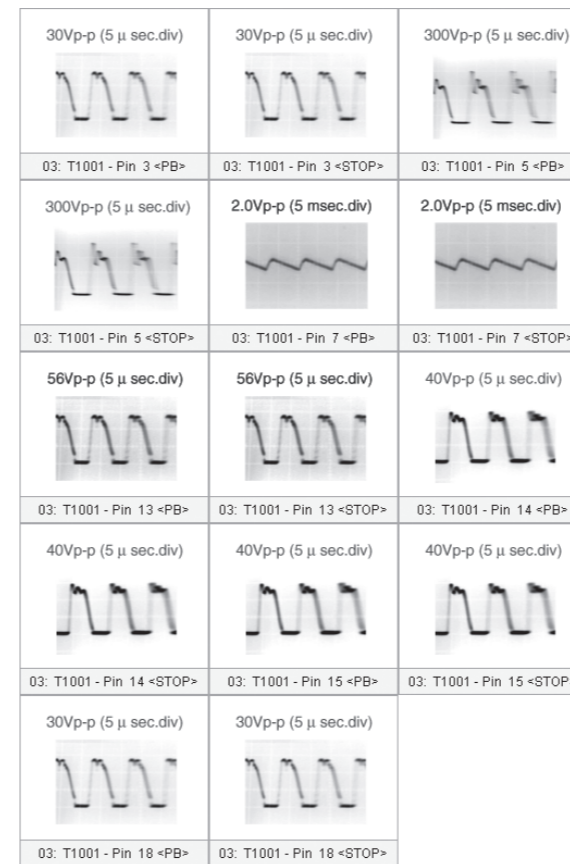
S2.3. Front P.C.B.

REF No.	PIN No.	PB	STOP	REF No.	PIN No.	PB	STOP	REF No.	PIN No.	PB	STOP
IC1021	1	2.5	2.5	IC7001	41	-17.6	-17.6	QR1105	C	0	0
IC1021	2	1.6	1.6	IC7001	42	-17.6	-17.6	QR1105	B	0	0
IC1021	3	0	0	IC7001	43	3.3	3.3	QR7001	E	0	0
IC1021	4	2.9	2.9	IC7001	44	0	0	QR7001	C	0	0
IC1021	5	0	0	IC7002	1	6	6	QR7001	B	3.3	3.3
IC1021	6	7.5	7.5	IC7002	2	0	0	QR7003	E	3.3	3.3
IC1021	7	16.5	16.5	IC7002	3	1.4	1.4	QR7003	C	3.2	3.2
IC1021	8	-	-	IC7002	4	3.3	3.3	QR7003	B	0	0
IC1021	9	-	-	IC7002	5	6	6	QR7004	E	0	0
IC1101	1	8.4	8.4	P1102	1	3.3	3.3	QR7004	C	0	0
IC1101	2	2.5	2.5	P1102	2	0	0	QR7004	B	3.3	3.3
IC1101	3	0	0	P1102	3	3.3	3.3	T1001	1	-	-
IC1102	1	-15	-15	P1102	4	3.3	3.3	T1001	2	0	0
IC1102	2	-	-	P1102	5	0	0	T1001	3	-	-
IC1102	3	-16.4	-16.4	P1102	6	0	0	T1001	4	-	-
IC1102	4	-17.7	-17.7	P1102	7	0	0	T1001	5	-	-
IC1102	5	-11.8	-11.8	P1102	8	6	6	T1001	6	-	-
IC1102	6	-	-	P1102	9	6	6	T1001	7	-	-
IC1102	7	-	-	P1102	10	12.2	12.2	T1001	8	-	-
IC1102	8	-11.8	-11.8	P1102	11	12.2	12.2	T1001	9	-	-
IC1103	1	12.2	12.2	P1102	12	5.2	5.2	T1001	10	-	-
IC1103	2	4.5	4.5	P1102	13	0	0	T1001	11	-	-
IC1103	3	1.2	1.2	P1102	14	-11.5	-11.5	T1001	12	-	-
IC1103	4	1.2	1.2	P7004	1	12.3	12.3	T1001	13	-	-
IC1103	5	1.2	1.2	P7004	2	0	0	T1001	14	-	-
IC1103	6	0	0	P7004	3	0	0	T1001	15	-	-
IC1103	7	7.5	7.5	P7004	4	5.1	5.1	T1001	16	0	0
IC1103	8	12.2	12.2	Q1022	1	9.5	9.5	T1001	17	0	0
IC1104	1	3.3	3.3	Q1022	2	8.4	8.4	T1001	18	-	-
IC1104	2	6	6	Q1022	3	0	0				
IC1104	3	0	0	Q1022	4	1.8	1.8				
IC1104	4	5.1	5.1	Q1023	1	1.2	1.2				
IC1104	5	1.1	1.1	Q1023	2	0	0				
IC7001	1	-	-	Q1023	3	0	0				
IC7001	2	-	-	Q1023	4	0	0				
IC7001	3	-	-	Q1101	E	-20.4	-20.4				
IC7001	4	-	-	Q1101	C	-23.2	-23.2				
IC7001	5	1.9	1.9	Q1101	B	-21.1	-21.1				
IC7001	6	3.3	3.3	Q1102	1	12.3	12.3				
IC7001	7	3.3	3.3	Q1102	2	12.3	12.3				
IC7001	8	3.3	3.3	Q1102	3	12.3	12.3				
IC7001	9	3.2	3.2	Q1102	4	6.2	6.2				
IC7001	10	0	0	Q1102	5	12.3	12.3				
IC7001	11	0	0	Q1102	6	12.3	12.3				
IC7001	12	0	0	Q1102	7	12.3	12.3				
IC7001	13	3.3	3.3	Q1102	8	12.3	12.3				
IC7001	14	-20	-20	Q1104	1	12.2	12.2				
IC7001	15	-20	-20	Q1104	2	12.2	12.2				
IC7001	16	-14.7	-14.7	Q1104	3	12.2	12.2				
IC7001	17	-17.3	-17.3	Q1104	4	7.5	7.5				
IC7001	18	-12.1	-12.1	Q1104	5	6	6				
IC7001	19	-9.5	-9.5	Q1104	6	6	6				
IC7001	20	-14.7	-14.7	Q1104	7	6	6				
IC7001	21	-14.7	-14.7	Q1104	8	6	6				
IC7001	22	-12.1	-12.1	Q1106	E	-11.5	-11.5				
IC7001	23	-14.7	-14.7	Q1106	C	-12.3	-12.3				
IC7001	24	-17.3	-17.3	Q1106	B	-12.3	-12.3				
IC7001	25	-14.7	-14.7	Q1107	E	0	0				
IC7001	26	-20	-20	Q1107	C	12.3	12.3				
IC7001	27	-20	-20	Q1107	B	0	0				
IC7001	28	-20	-20	Q7001	E	3.3	3.3				
IC7001	29	-6.8	-6.8	Q7001	C	3.3	3.3				
IC7001	30	-20	-20	Q7001	B	2.6	2.6				
IC7001	31	-20	-20	Q7003	E	-15	-15				
IC7001	32	-20	-20	Q7003	C	-15	-15				
IC7001	33	-	-	Q7003	B	-14.3	-14.3				
IC7001	34	-	-	QR1101	E	0	0				
IC7001	35	-	-	QR1101	C	0	0				
IC7001	36	-17.6	-17.6	QR1101	B	3.3	3.3				
IC7001	37	-17.6	-17.6	QR1102	E	0	0				
IC7001	38	-17.6	-17.6	QR1102	C	0	0				
IC7001	39	-17.6	-17.6	QR1102	B	3.3	3.3				
IC7001	40	-17.6	-17.6	QR1105	E	0	0				

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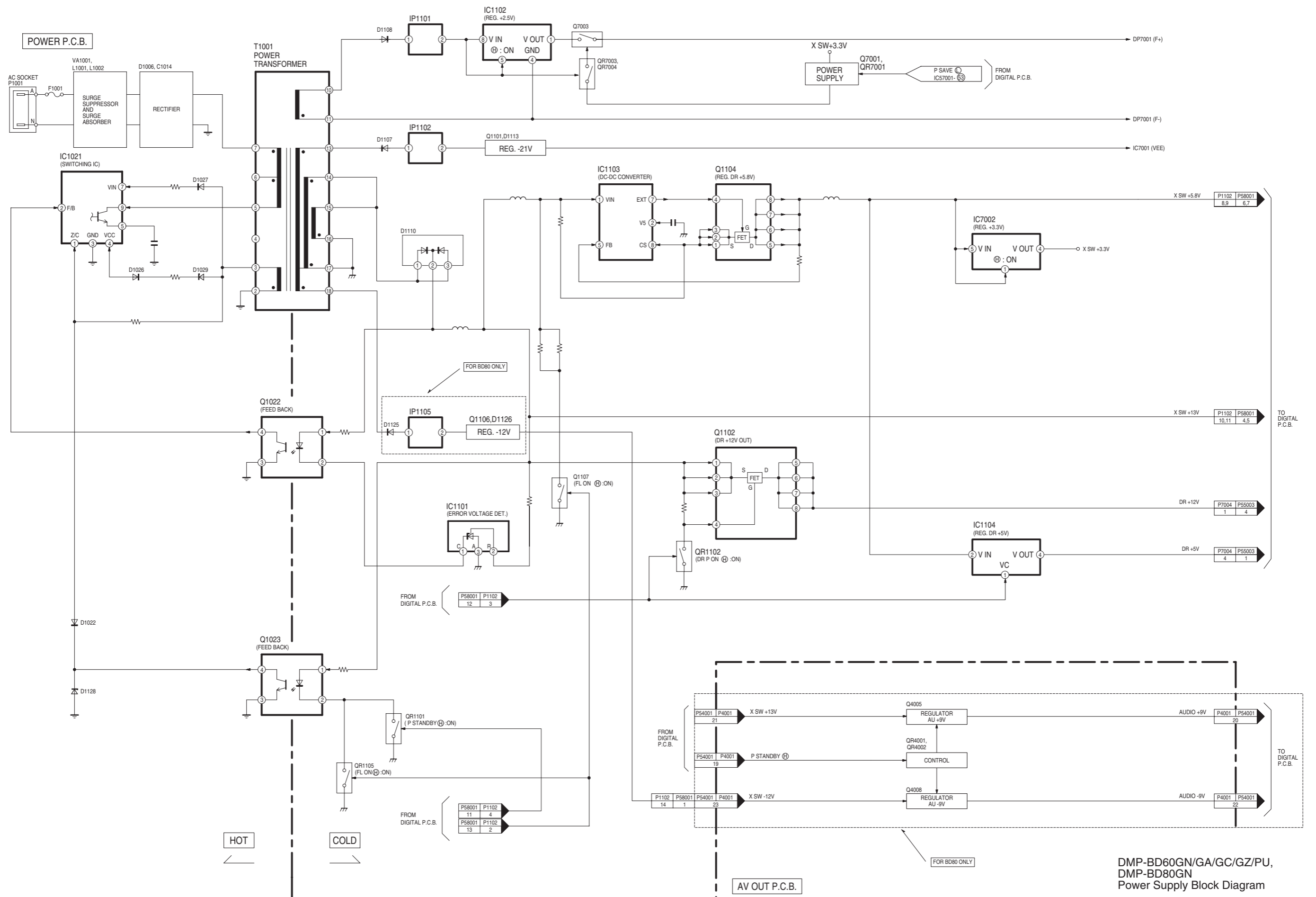


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S3. Block Diagram

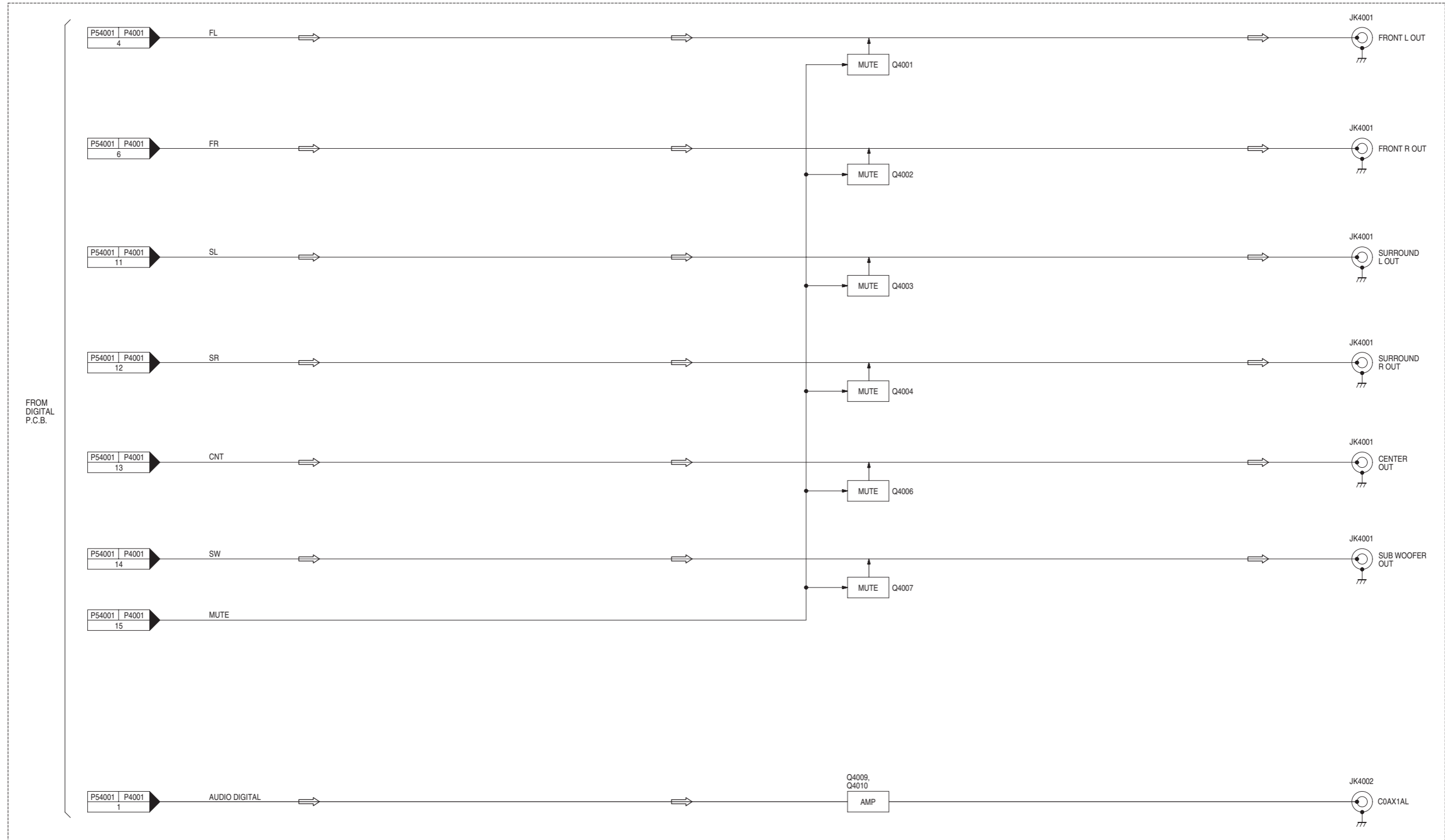
S3.1. Power Supply Block Diagram



DMP-BD60GN/GA/GC/GZ/PU,
DMP-BD80GN
Power Supply Block Diagram

S3.2. Analog Audio Block Diagram

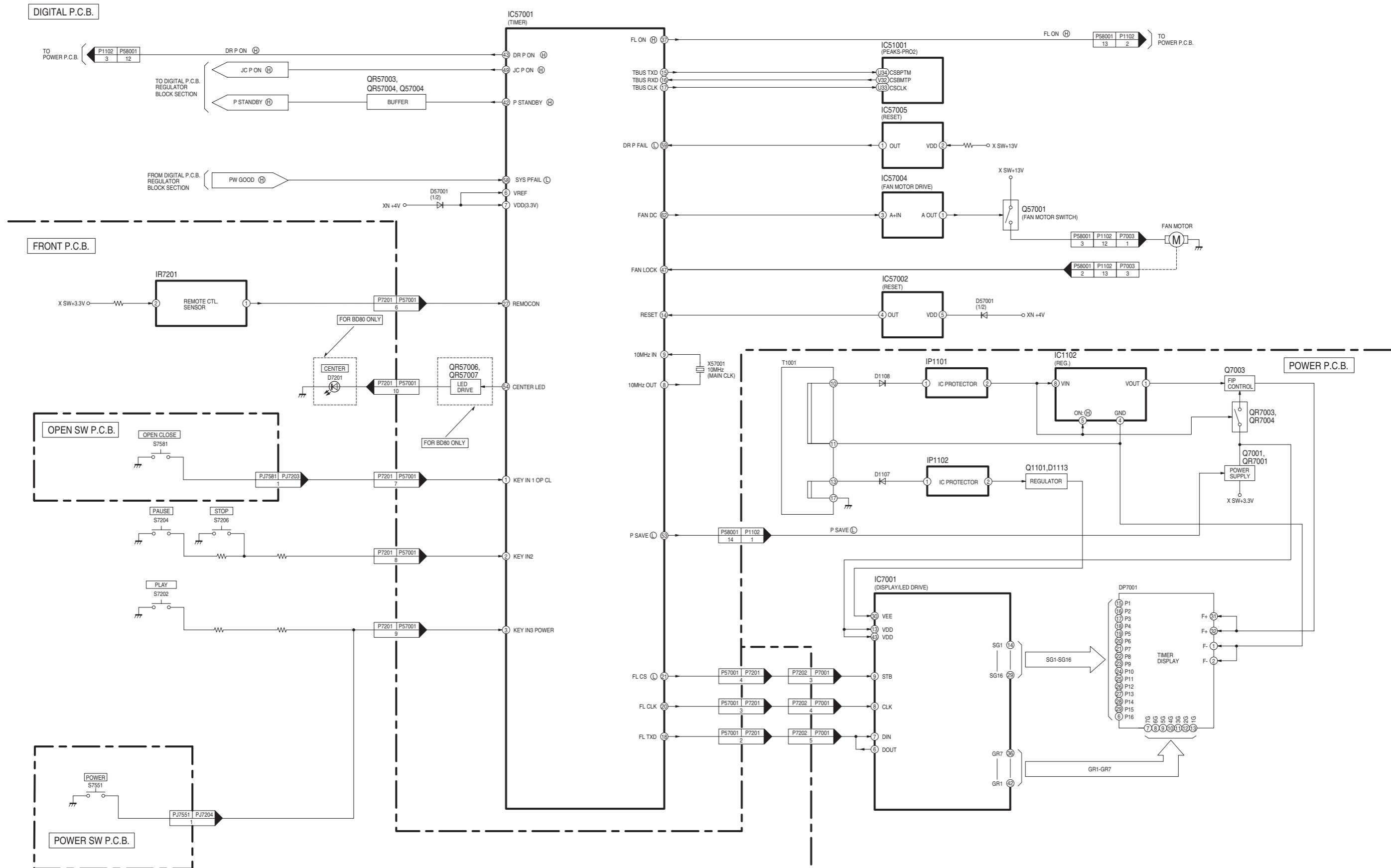
⇒ AUDIO PB SIGNAL



FOR BD80 ONLY

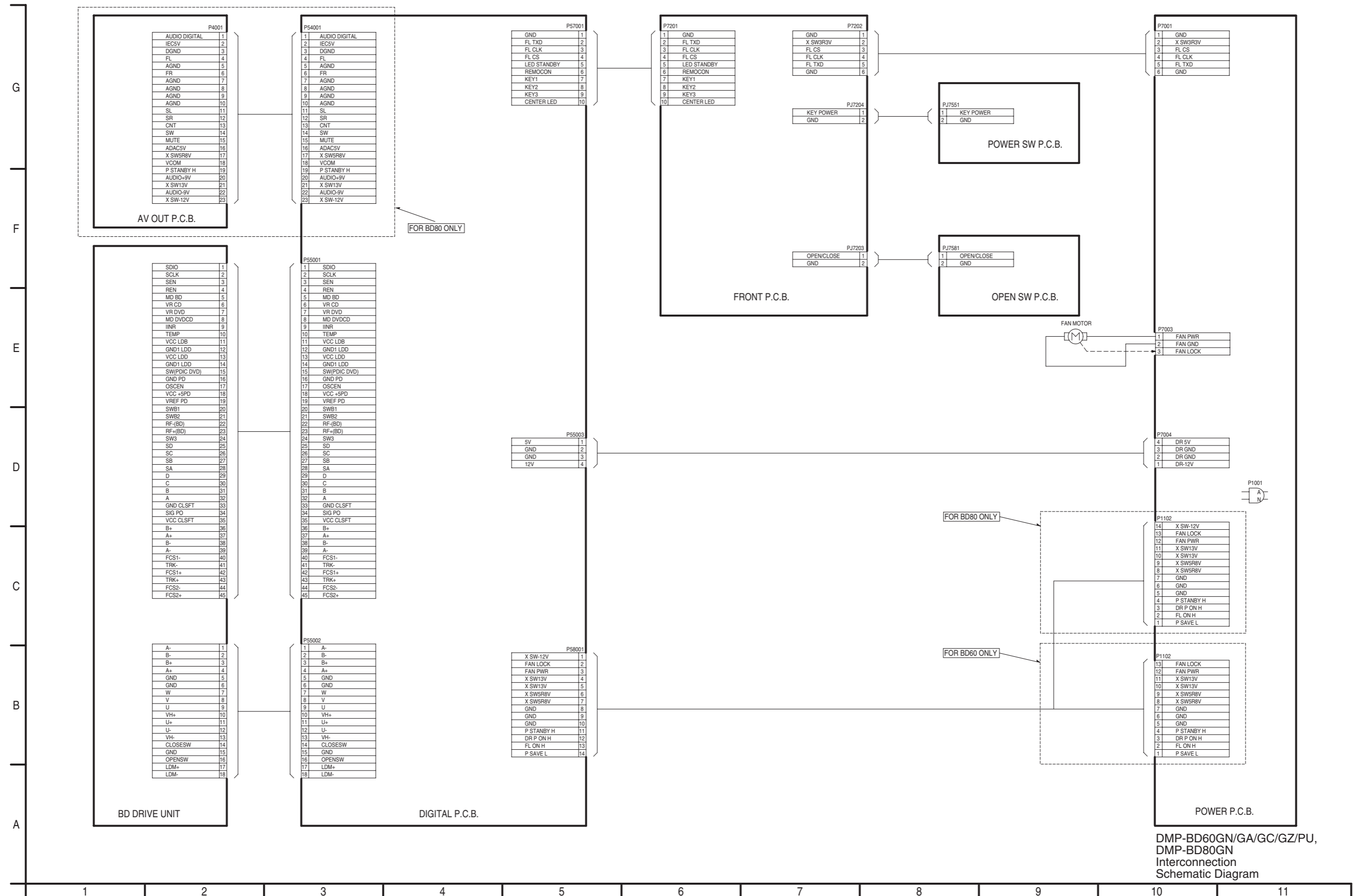
DMP-BD60GN/GA/GC/GZ/PU,
DMP-BD80GN
Analog Audio
Block Diagram

S3.3. Timer Block Diagram



S4. Schematic Diagram

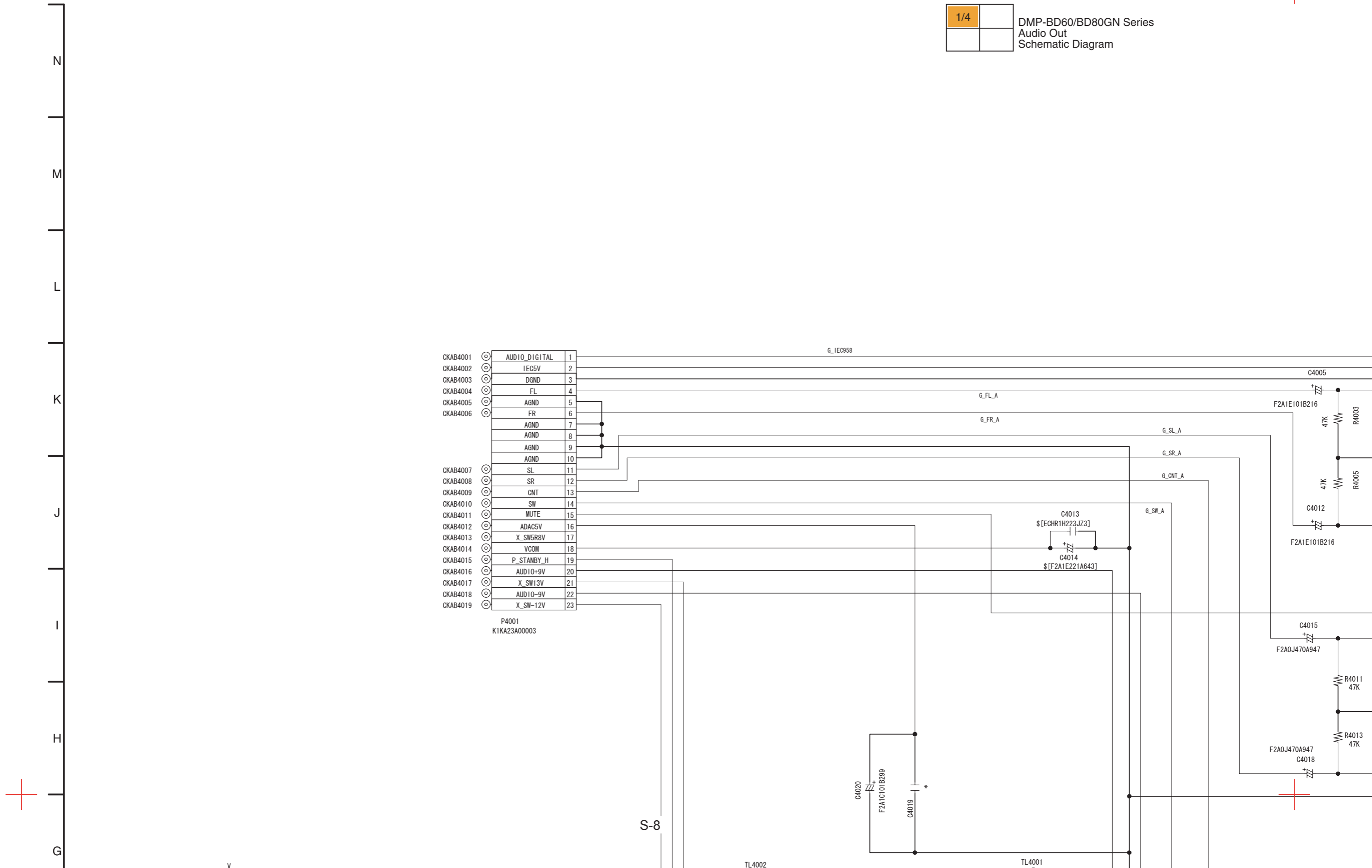
S4.1. Interconnection Diagram



DMP-BD60GN/GA/GC/GZ/PU,
DMP-BD80GN
Interconnection
Schematic Diagram

S4.2. Audio Out Schematic Diagram

1/4 DMP-BD60/BD80GN Series
Audio Out
Schematic Diagram



CKAB4001	⊙	AUDIO_DIGITAL	1
CKAB4002	⊙	IEC5V	2
CKAB4003	⊙	DGND	3
CKAB4004	⊙	FL	4
CKAB4005	⊙	AGND	5
CKAB4006	⊙	FR	6
		AGND	7
		AGND	8
		AGND	9
		AGND	10
CKAB4007	⊙	SL	11
CKAB4008	⊙	SR	12
CKAB4009	⊙	CNT	13
CKAB4010	⊙	SW	14
CKAB4011	⊙	MUTE	15
CKAB4012	⊙	ADAC5V	16
CKAB4013	⊙	X_SW5R8V	17
CKAB4014	⊙	VCOM	18
CKAB4015	⊙	P_STANBY_H	19
CKAB4016	⊙	AUDIO+9V	20
CKAB4017	⊙	X_SW13V	21
CKAB4018	⊙	AUDIO-9V	22
CKAB4019	⊙	X_SW-12V	23

P4001
K1KA23A00003

S-8

TL4002

TL4001

C4020

F2A1C101B299

C4019

C4015

F2A0J470A947

C4018

R4011

R4013

C4012

R4003

R4005

C4005

F2A1E101B216

F2A1E101B216

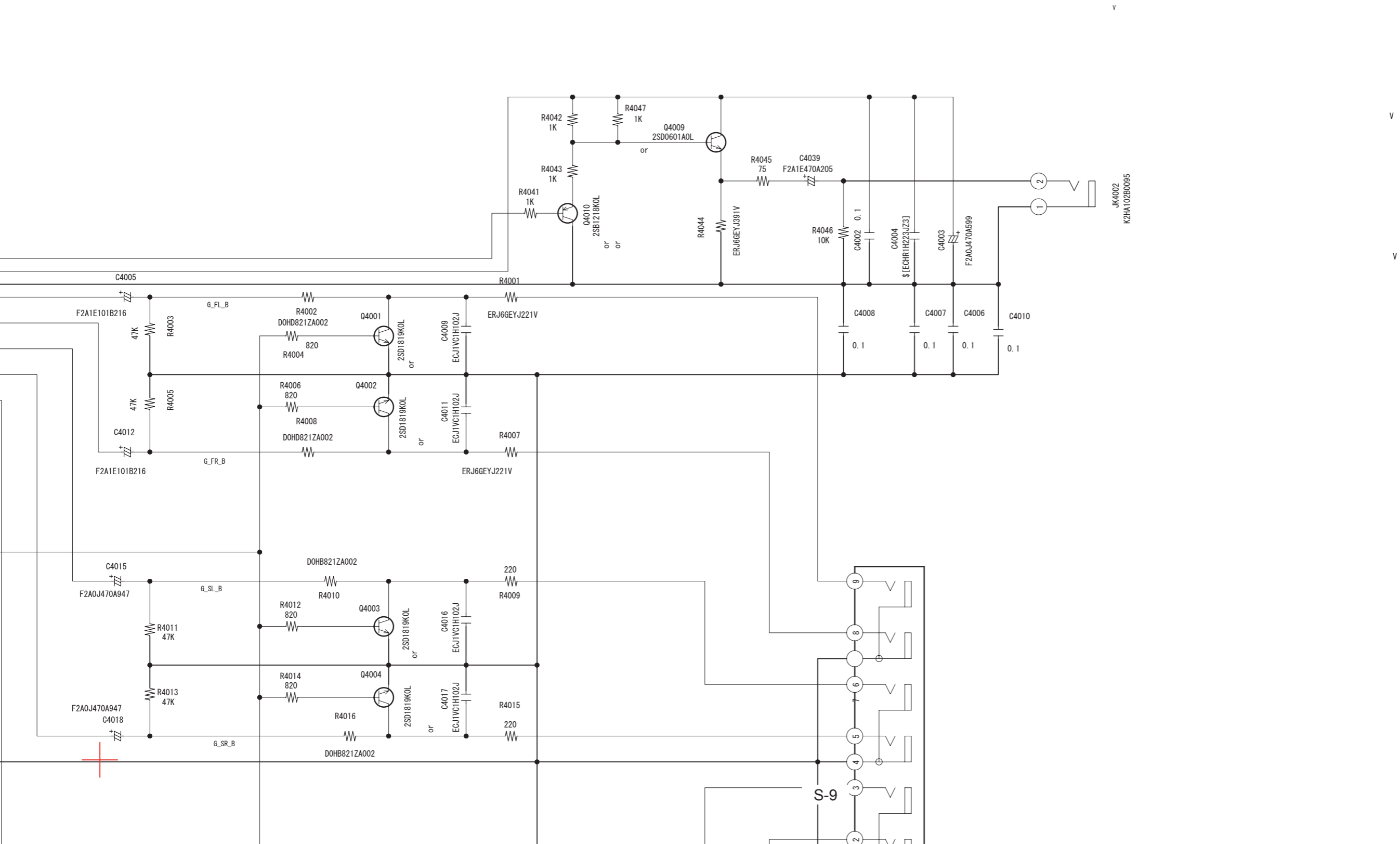
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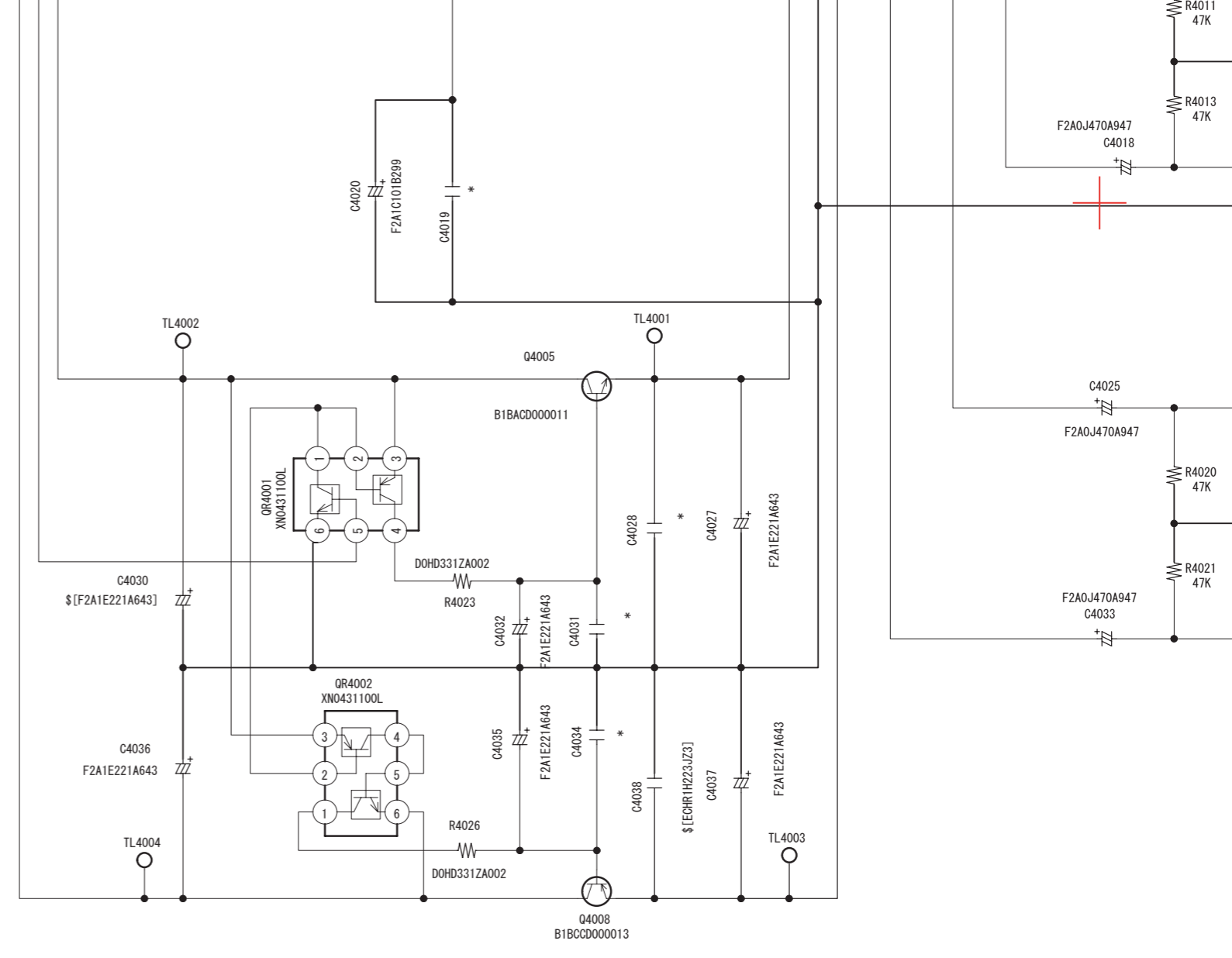
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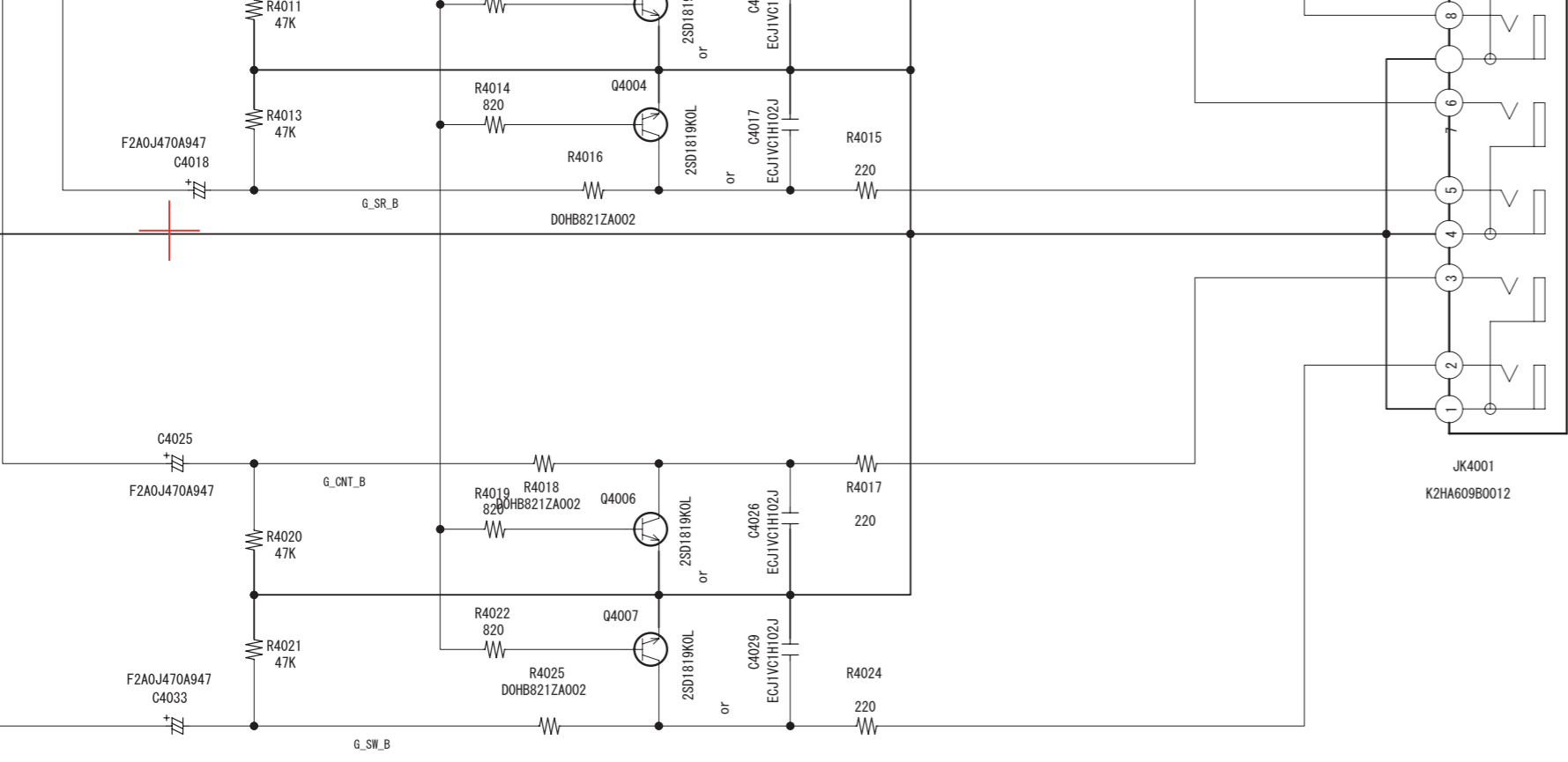


H
G
F
E
D
C
B
A



VariationCategory			
	A	B	
C4019	ECHR1H223JZ3	FOA2E103A012	
C4028	ECHR1H223JZ3	FOA2E103A012	
C4031	ECHR1H223JZ3	FOA2E103A012	
C4034	ECHR1H223JZ3	FOA2E103A012	

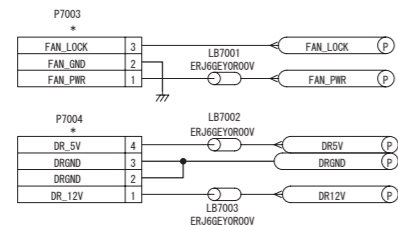
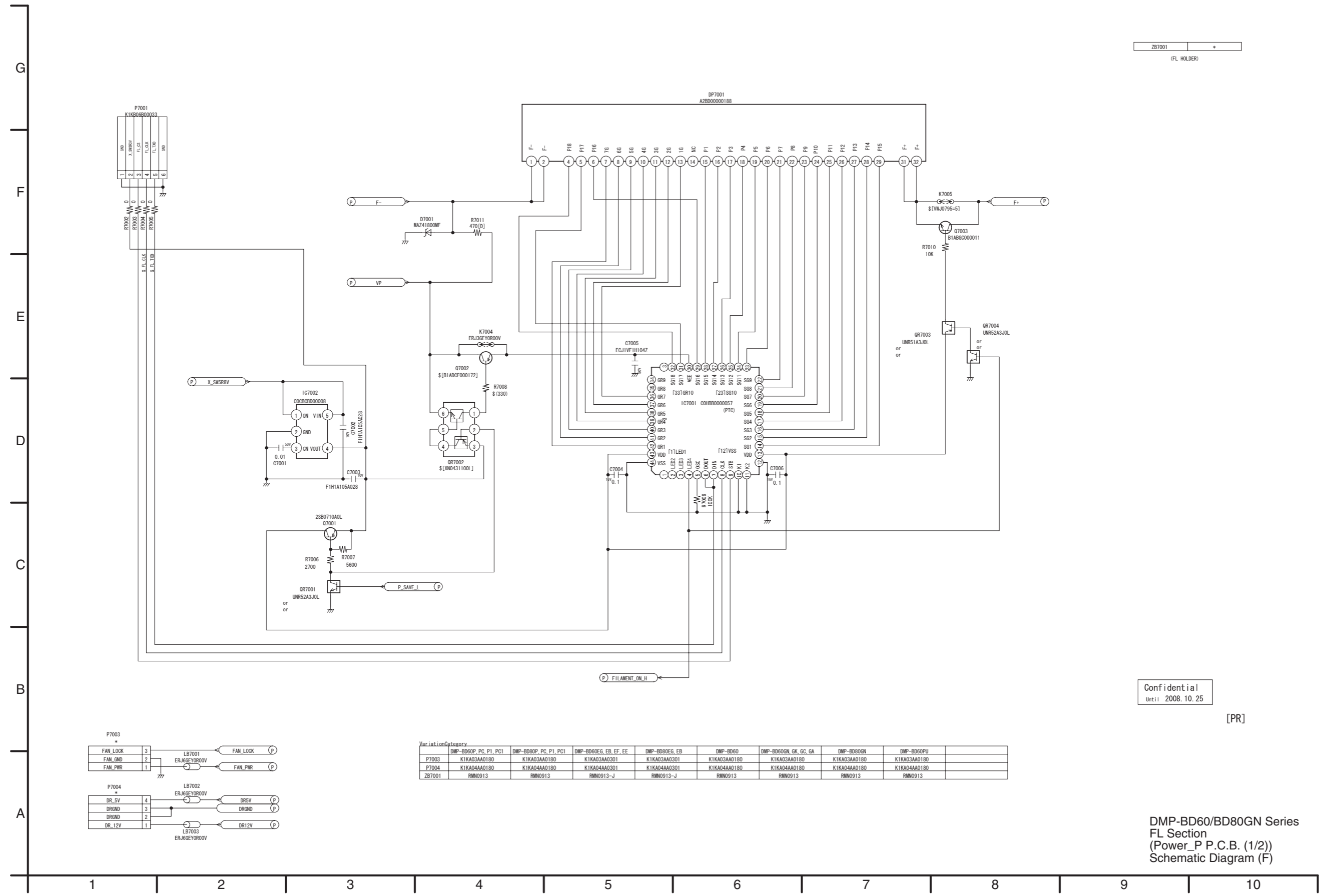
Modify Category		
	Variation	Type
1	BD55PP, PP1, EG	A
BD80Z, PC, GN, EG, EB, P1, PC1, EG1, EB1, GN1		B



[PR]

Confidential
Until 2008/10/25

S4.3. FL (F) Schematic Diagram



Variation	Category	DMP-BD60P, PC, P1, PC1	DMP-BD80P, PC, P1, PC1	DMP-BD60EG, EB, EF, EE	DMP-BD80EG, EB	DMP-BD60	DMP-BD60GN, GK, GC, GA	DMP-BD80GN	DMP-BD60PU
P7003	K1KA03AA0180	K1KA03AA0180	K1KA03AA0301	K1KA03AA0301	K1KA03AA0180	K1KA03AA0180	K1KA03AA0180	K1KA03AA0180	K1KA03AA0180
P7004	K1KA04AA0180	K1KA04AA0180	K1KA04AA0301	K1KA04AA0301	K1KA04AA0180	K1KA04AA0180	K1KA04AA0180	K1KA04AA0180	K1KA04AA0180
ZB7001	RMN0913	RMN0913	RMN0913-J	RMN0913-J	RMN0913	RMN0913	RMN0913	RMN0913	RMN0913

Confidential
Until 2008. 10. 25

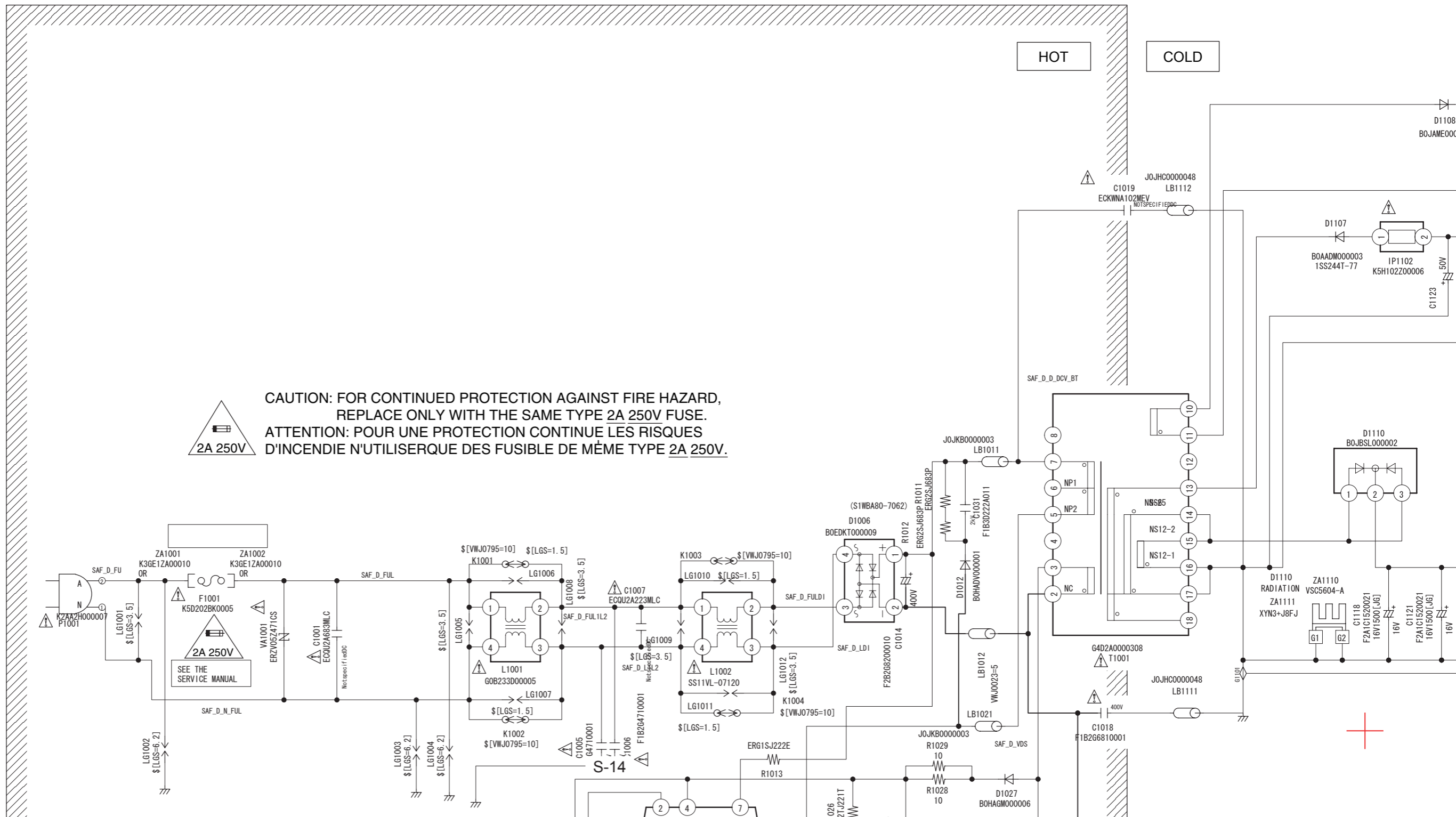
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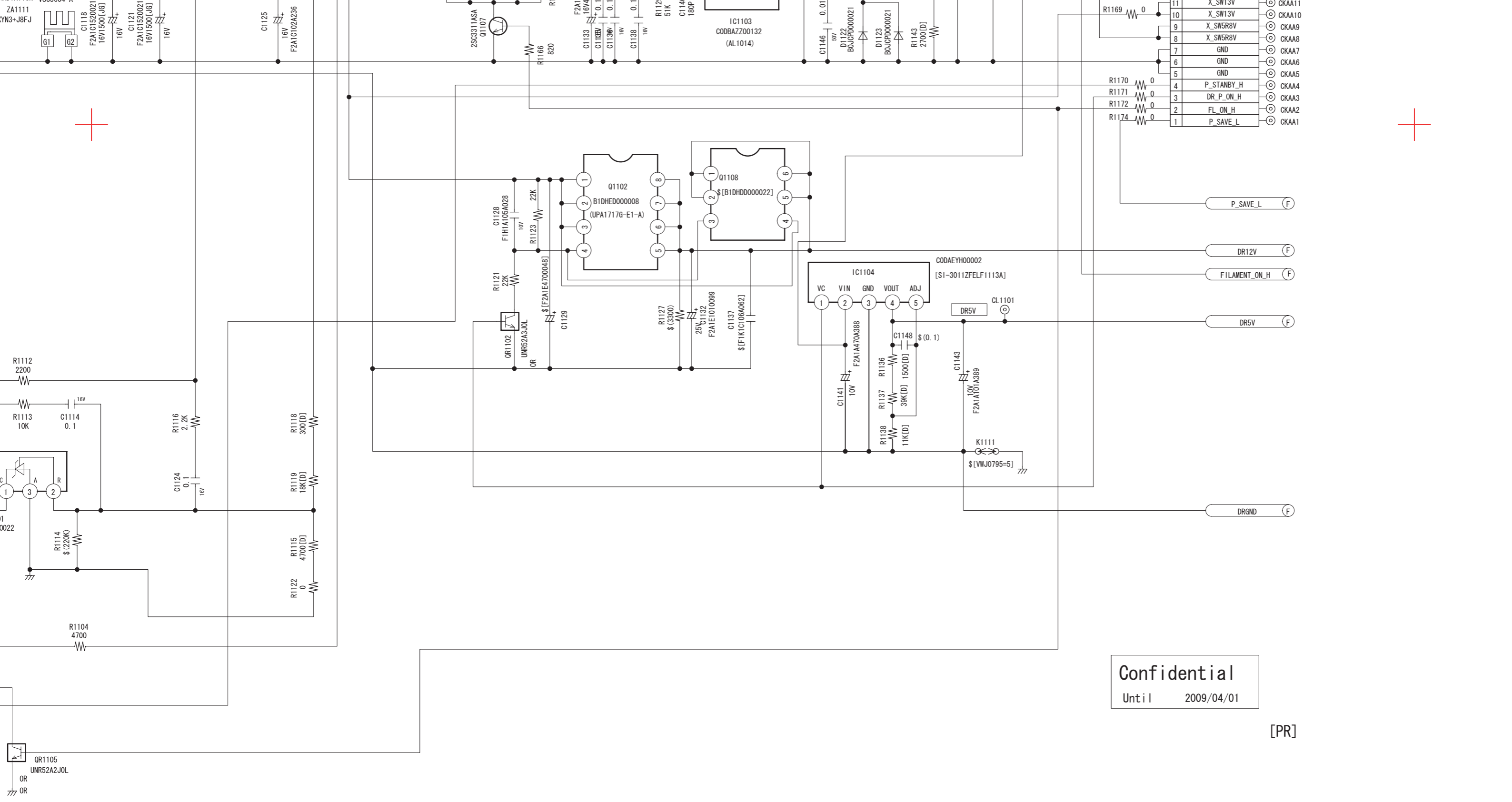
DMP-BD60/BD80GN Series
FL Section
(Power_P P.C.B. (1/2))
Schematic Diagram (F)

S4.4. Power Wide (P) Schematic Diagram

1/4	DMP-BD60/BD80GN Series Power Wide Section (Power_P P.C.B. (2/2)) Schematic Diagram (P)
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N
M
L
K
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I
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Confidential
 Until 2009/04/01

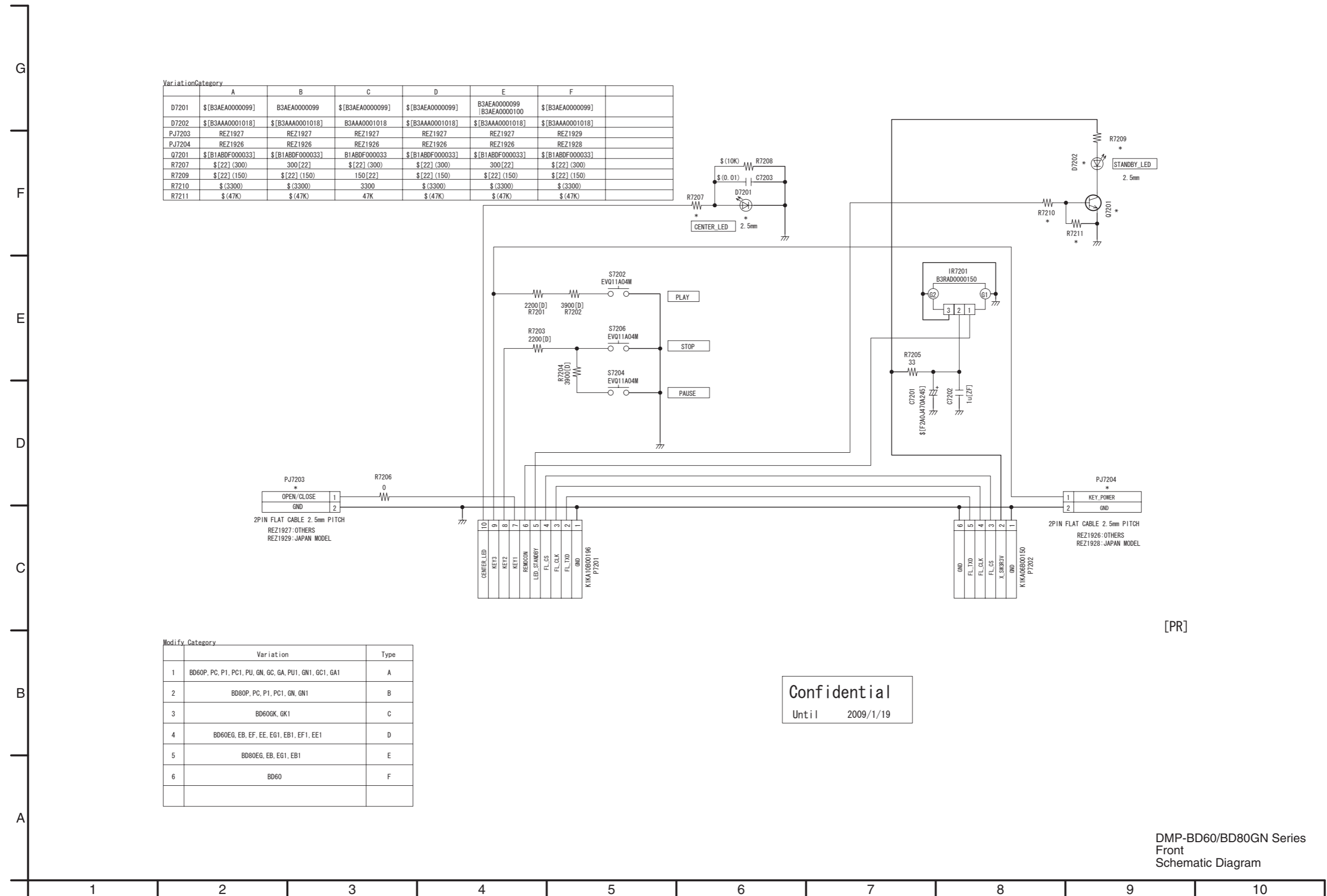
[PR]

ZA1022	XYN3+J8FJ
ZA1111	XYN3+J8FJ

DMP-BD60/BD80GN Series
 Power Wide Section
 (Power_P P.C.B. (2/2))
 Schematic Diagram (P)

4/4

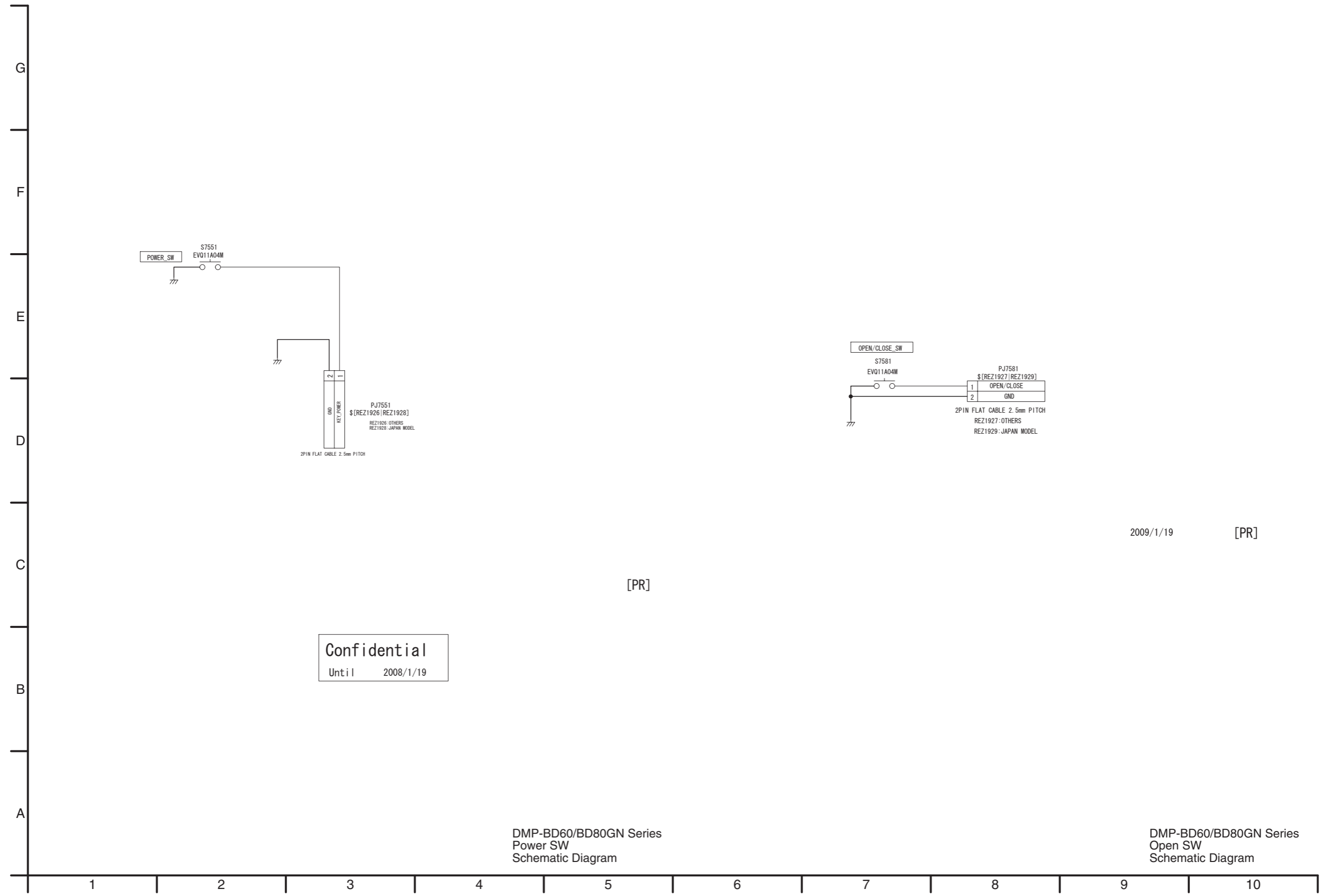
S4.5. Front Schematic Diagram



Confidential
Until 2009/1/19

[PR]

S4.6. Power SW Schematic Diagram / S4.7. Open SW Schematic Diagram



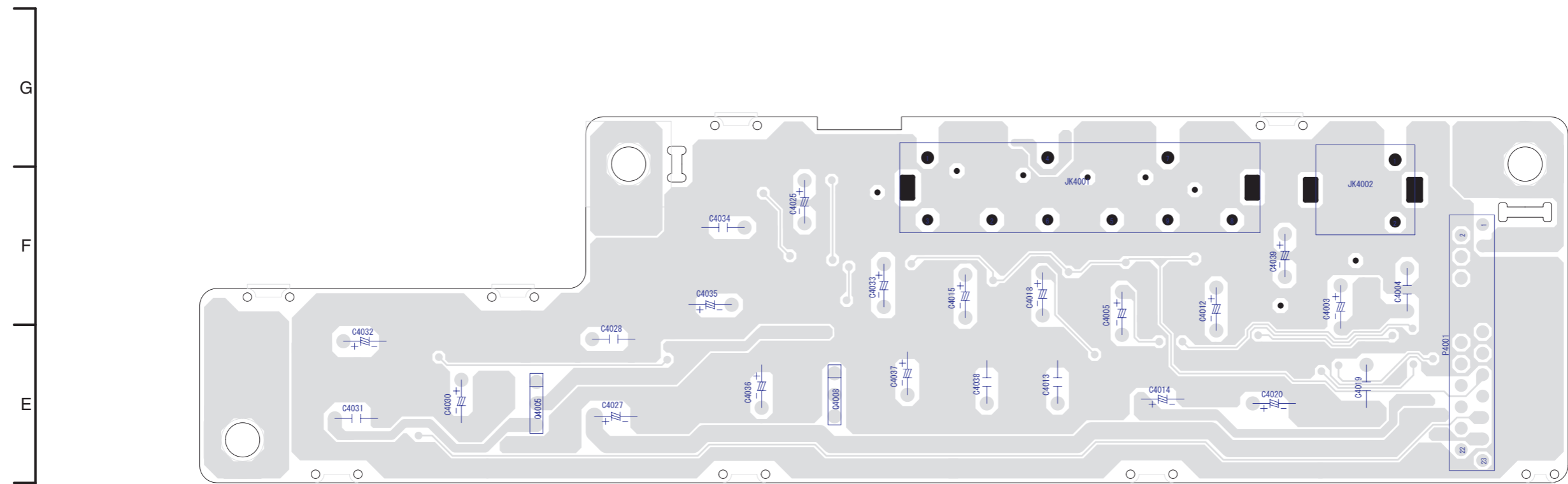
2009/1/19 [PR]

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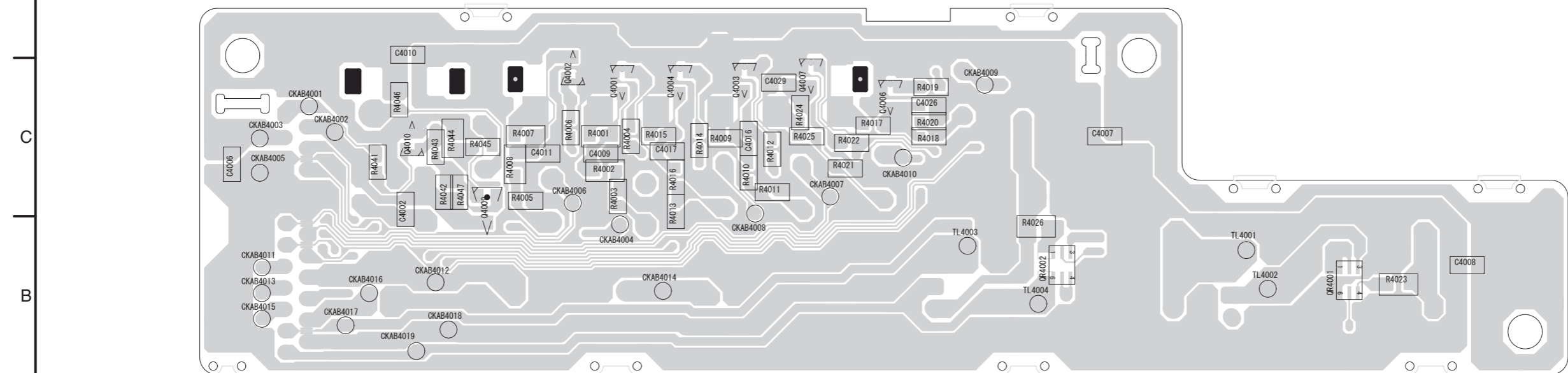
Confidential
Until 2008/1/19

S5. Print Circuit Board

S5.1. Audio Out P.C.B.



(Component Side)

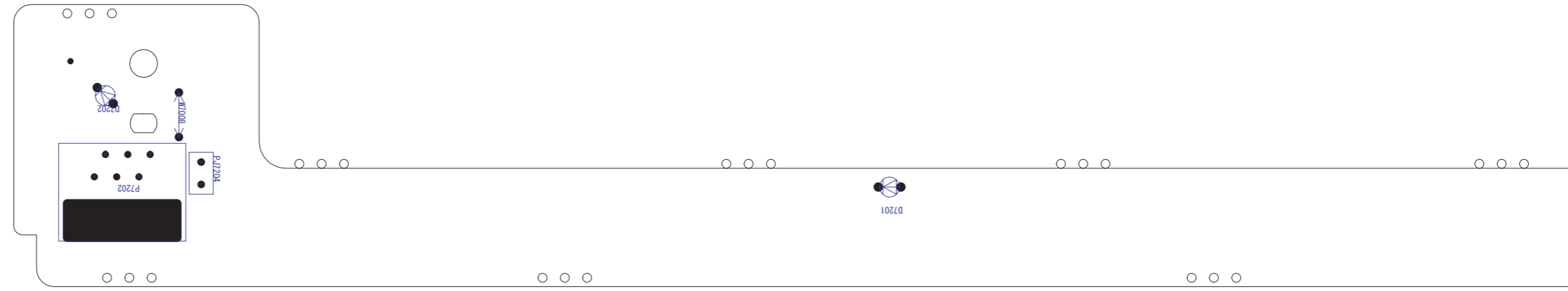


(Foil Side)

S5.3. Front P.C.B.

1/4		DMP-BD60/BD80GN Series Front P.C.B. (Component Side)

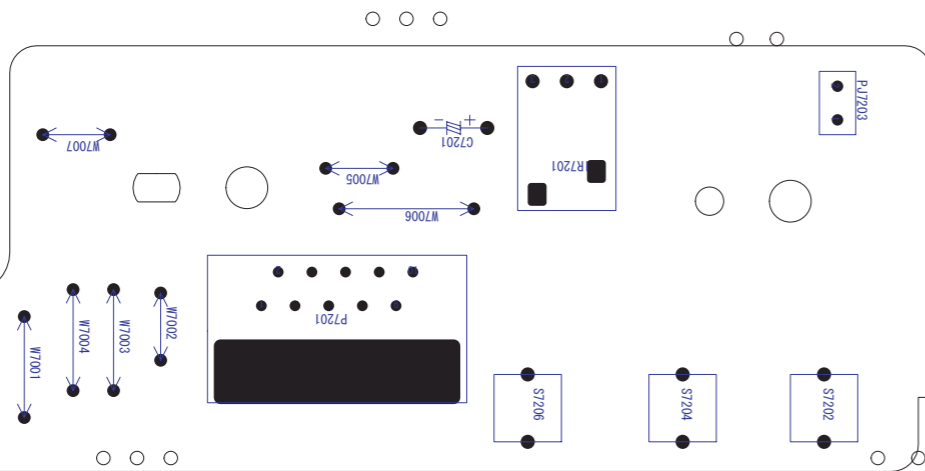
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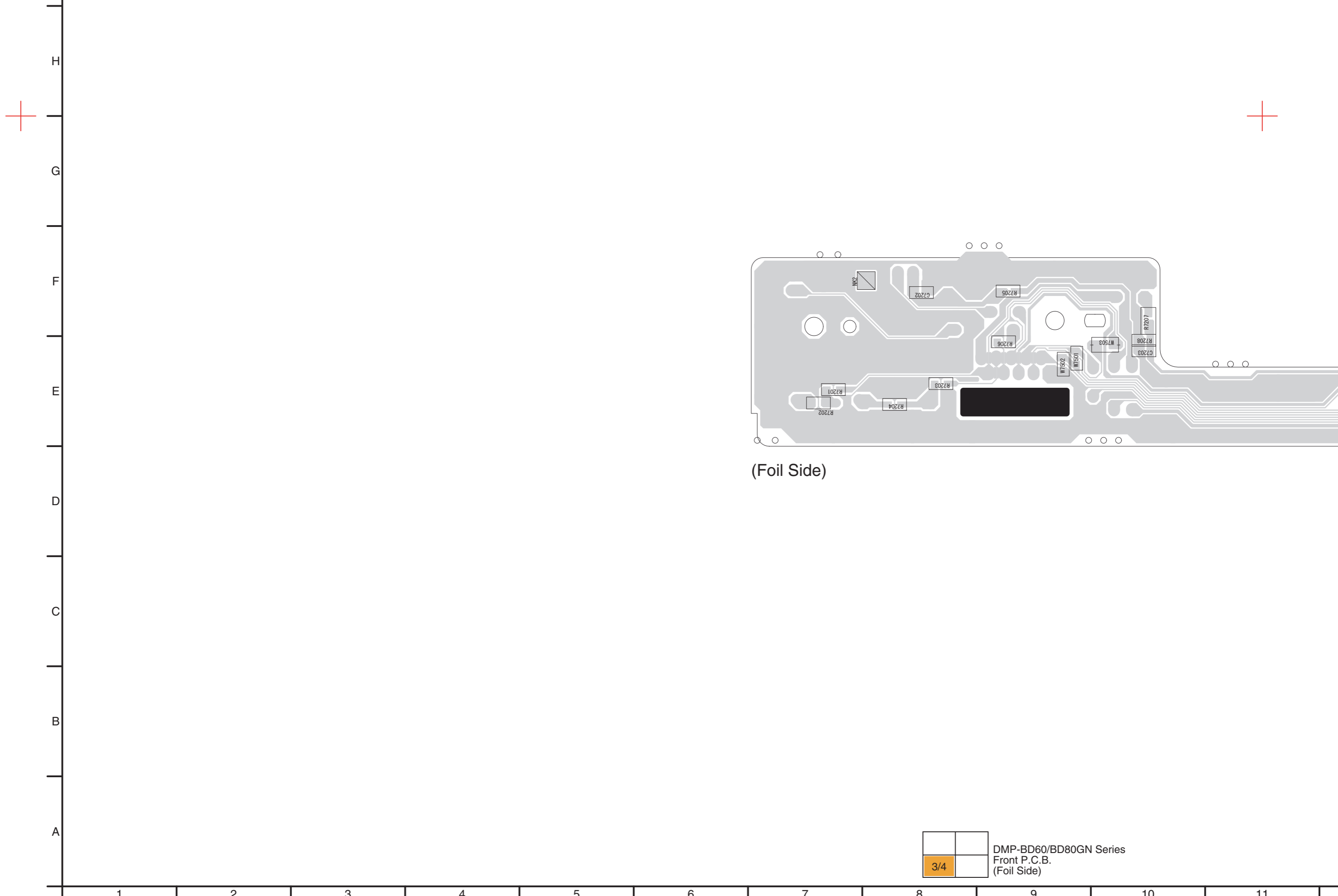


(Component Side)



	2/4	DMP-BD60/BD80GN Series Front P.C.B. (Component Side)

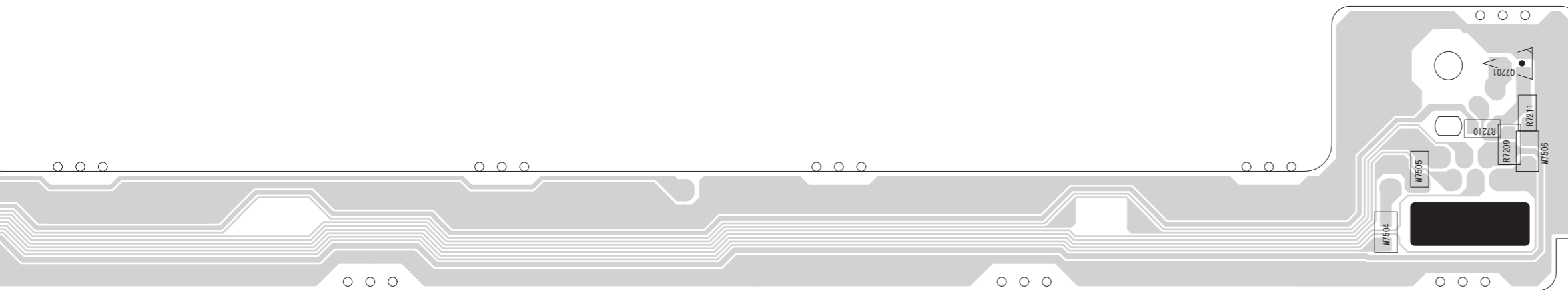




(Foil Side)

3/4	

DMP-BD60/BD80GN Series
Front P.C.B.
(Foil Side)

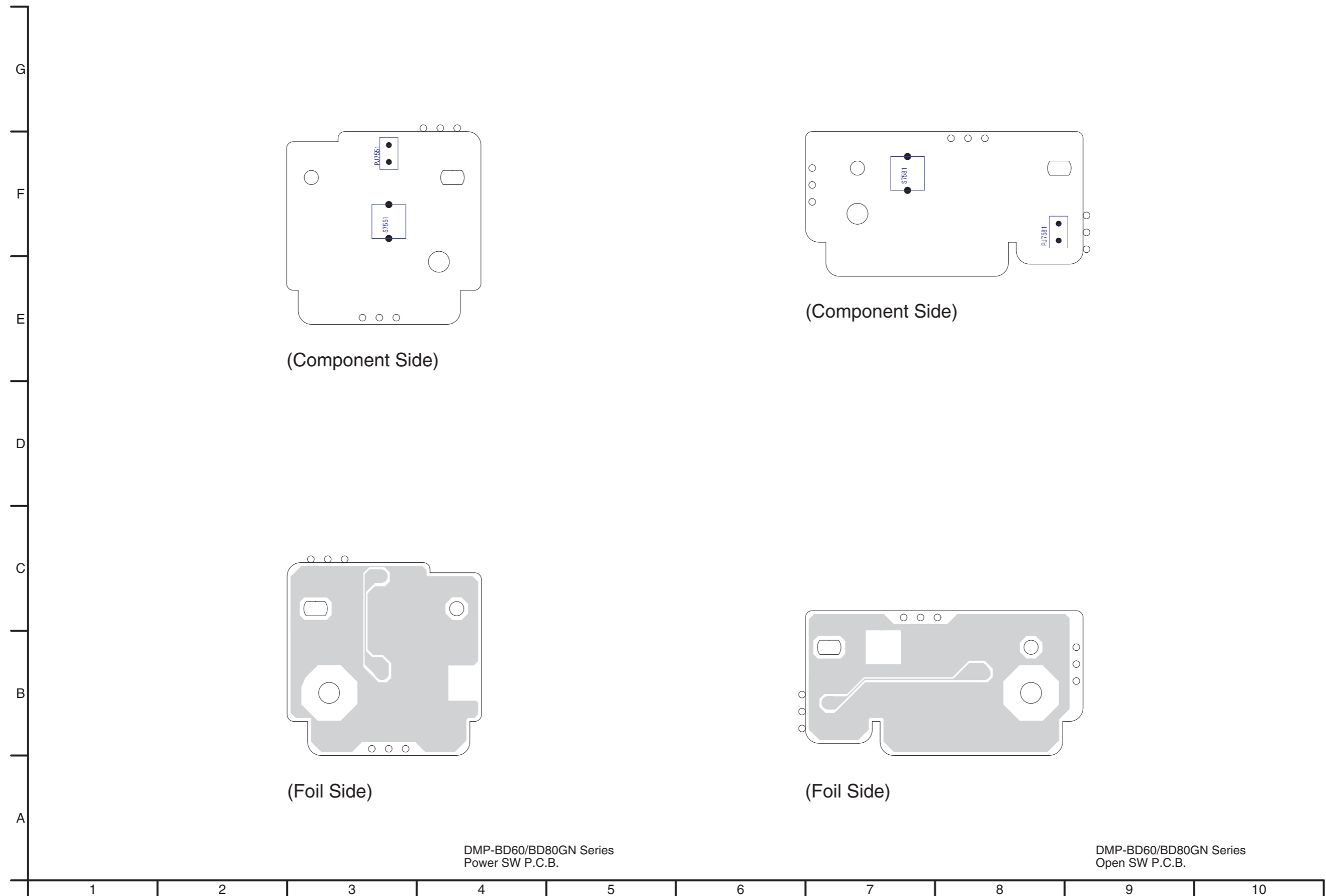


	4/4

DMP-BD60/BD80GN Series
Front P.C.B.
(Foil Side)

11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21

S5.4. Power SW P.C.B. / S5.5. Open SW P.C.B.



DMP-BD60/BD80GN Series
Power SW P.C.B.

DMP-BD60/BD80GN Series
Open SW P.C.B.

S6. Abbreviation

INITIAL/LOGO	ABBREVIATIONS
A	A0~UP ADDRESS ACLK AUDIO CLOCK AD0~UP ADDRESS BUS ADATA AUDIO PES PACKET DATA ALE ADDRESS LATCH ENABLE AMUTE AUDIO MUTE AREQ AUDIO PES PACKET REQUEST ARF AUDIO RF ASI SERVO AMP INVERTED INPUT ASO SERVO AMP OUTPUT ASYNC AUDIO WORD DISTINCTION SYNC
B	BCK BIT CLOCK (PCM) BCKIN BIT CLOCK INPUT BDO BLACK DROP OUT BLKCK SUB CODE BLOCK CLOCK BOTTOM CAP. FOR BOTTOM HOLD BYP BYPATH BYTCK BYTE CLOCK
C	CAV CONSTANT ANGULAR VELOCITY CBDO CAP. BLACK DROP OUT CD COMPACT DISC CDSCK CD SERIAL DATA CLOCK CDSRDATA CD SERIAL DATA CDRF CD RF (EFM) SIGNAL CDV COMPACT DISC-VIDEO CHNDATA CHANNEL DATA CKSL SYSTEM CLOCK SELECT CLV CONSTANT LINEAR VELOCITY COFTR CAP. OFF TRACK CPA CPU ADDRESS CPCS CPU CHIP SELECT CPDT CPU DATA CPH1~3 CLOCK PULSE SOURCE DRIVE CPUADR CPU ADDRESS LATCH CPUADT CPU ADDRESS DATA BUS CPUIRQ CPU INTERRUPT REQUEST CPRD CPU READ ENABLE CPV GATE DRIVER CLOCK PULSE CPWR CPU WRITE ENABLE CS CHIP SELECT CSYNCIN COMPOSITE SYNC IN CSYNCOUT COMPOSITE SYNC OUT
D	DACCK D/A CONVERTER CLOCK DEEMP DE-EMPHASIS BIT ON/OFF DEMPH DE-EMPHASIS SWITCHING DIG0~UP FL DIGIT OUTPUT DIN DATA INPUT DMSRCK DM SERIAL DATA READ CLOCK DMUTE DIGITAL MUTE CONTROL DO DROP OUT DOUT0~UP DATA OUTPUT DRF DATA SLICE RF (BIAS) DRPOUT DROP OUT SIGNAL

INITIAL/LOGO	ABBREVIATIONS
	DREQ DRESP DSC DSLIF DVD
E	EC ECR ENCSEL ETMCLK ETSCLK
F	FBAL FCLK FE FFI FEO FG FSC FSCK
G	GND
H	HA0~UP HD0~UP HINT HRXW
I	IECOUT IPFRAG IREF ISEL
L	LDON LPC LRCK
M	MA0~UP MCK MCKI MCLK MDATA MDQ0~UP MDQM MLD MPEG
O	ODC OEH OEV 1, 2 OFTR OSCI OSCO OSD
P	P1~UP PCD PCK PDVD PEAK PLLCLK PLLOK

INITIAL/LOGO	ABBREVIATIONS
	PWMCTL PWMDA PWMOA, B
R	RE RFENV RFO RS RSEL RST RSV
S	SBI0, 1 SBO0 SBT0, 1 SCK SCKR SCL SCLK SDA SEG0~UP SELCLK SEN SIN1, 2 SOUT1, 2 SPDI SPDO SPEN SPRCLK SPWCLK SQCK SQCX SRDATA SRMADR SRMDT0~7 SS STAT STCLK STD0~UP STENABLE STH STSEL STV STVALID SUBC SBCK SUBQ SYSCLK
T	TE TIBAL TID TIN TIP TIS TPSN

INITIAL/LOGO	ABBREVIATIONS
	TPO TPSP TRCRS TRON TRSON
V	VBLANK VCC VDCONT VDD VFB VREF VSS
W	WAIT WDCK WEH WSR
X	X XALE XAREQ XCDROM XCS XCSYNC XDS XHSYNCO XHINT XI XINT XMW XO XRE XSRMCE XSRMOE XSRMWE XVCS XVDS XVSYNCO

S7. Replacement Parts List

- Note: 1.* Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE
Components identified with the mark \triangle have the special characteristics for safety.
When replacing any of these components, use only the same type.
3. Unless otherwise specified,
All resistors are in OHMS, K=1,000 OHMS. All capacitors are in MICRO-FARADS (uf), P=uuF.
4. The marking (RTL) indicates the retention time is limited for this item. After the discontinuation of this assembly in production, it will no longer be available.

E.S.D. standards for Electrostatically Sensitive Devices, refer to “PREVENTION OF ELECTROSTATIC DISCHARGE (ESD) TO ELECTROSTATICALLY SENSITIVE (ES) DEVICES” section.

DMP-BD60GN-K

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
#	VEP74117B	AV OUT P.C.B.	1	(RTL)80GN
C4002	F1H1C104A071	16V 0.1U	1	80GN
C4003	F2A0J470A599	6.3V 47U	1	80GN
C4005	F2A1E101B216	25V 100U	1	80GN
C4006	F1H1C104A071	16V 0.1U	1	80GN
C4007	F1H1C104A071	16V 0.1U	1	80GN
C4008	F1H1C104A071	16V 0.1U	1	80GN
C4009	ECJ1VC1H102J	50V 1000P	1	80GN
C4010	F1H1C104A071	16V 0.1U	1	80GN
C4011	ECJ1VC1H102J	50V 1000P	1	80GN
C4012	F2A1E101B216	25V 100U	1	80GN
C4015	F2A0J470A947	6.3V 47U	1	80GN
C4016	ECJ1VC1H102J	50V 1000P	1	80GN
C4017	ECJ1VC1H102J	50V 1000P	1	80GN
C4018	F2A0J470A947	6.3V 47U	1	80GN
C4019	F0A2E103A012	250V 0.01U	1	80GN
C4020	F2A1C101B299	16V 100U	1	80GN
C4025	F2A0J470A947	6.3V 47U	1	80GN
C4026	ECJ1VC1H102J	50V 1000P	1	80GN
C4027	F2A1E221A643	25V 220U	1	80GN
C4028	F0A2E103A012	250V 0.01U	1	80GN
C4029	ECJ1VC1H102J	50V 1000P	1	80GN
C4031	F0A2E103A012	250V 0.01U	1	80GN
C4032	F2A1E221A643	25V 220U	1	80GN
C4033	F2A0J470A947	6.3V 47U	1	80GN
C4034	F0A2E103A012	250V 0.01U	1	80GN
C4035	F2A1E221A643	25V 220U	1	80GN
C4036	F2A1E221A643	25V 220U	1	80GN
C4037	F2A1E221A643	25V 220U	1	80GN
C4039	F2A1E470A205	25V 47U	1	80GN
JK4001	K2HA609B0012	JACK	1	80GN
JK4002	K2HA102B0095	JACK	1	80GN
P4001	K1KA23A00003	CONNECTOR(23P)	1	80GN
Q4001	2SD1819K0L	TRANSISTOR	1	80GN
Q4002	2SD1819K0L	TRANSISTOR	1	80GN
Q4003	2SD1819K0L	TRANSISTOR	1	80GN
Q4004	2SD1819K0L	TRANSISTOR	1	80GN
Q4005	B1BACD000011	TRANSISTOR	1	80GN
Q4006	2SD1819K0L	TRANSISTOR	1	80GN
Q4007	2SD1819K0L	TRANSISTOR	1	80GN
Q4008	B1BCCD000013	TRANSISTOR	1	80GN
Q4009	2SD0601A0L	TRANSISTOR	1	80GN
Q4010	2SB1218K0L	TRANSISTOR	1	80GN
QR4001	XN0431100L	TRANSISTOR	1	80GN
QR4002	XN0431100L	TRANSISTOR	1	80GN
R4001	ERJ6GEYJ221V	1/8W 220	1	80GN
R4002	D0HD821ZA002	1/10W 820	1	80GN
R4003	ERJ3GEYJ473V	1/10W 47K	1	80GN
R4004	ERJ3GEYJ821V	1/10W 820	1	80GN
R4005	ERJ3GEYJ473V	1/10W 47K	1	80GN
R4006	ERJ3GEYJ821V	1/10W 820	1	80GN
R4007	ERJ6GEYJ221V	1/8W 220	1	80GN
R4008	D0HD821ZA002	1/10W 820	1	80GN
R4009	ERJ3GEYJ221V	1/10W 220	1	80GN
R4010	D0HB821ZA002	1/16W 820	1	80GN
R4011	ERJ3GEYJ473V	1/10W 47K	1	80GN
R4012	ERJ3GEYJ821V	1/10W 820	1	80GN
R4013	ERJ3GEYJ473V	1/10W 47K	1	80GN
R4014	ERJ3GEYJ821V	1/10W 820	1	80GN
R4015	ERJ3GEYJ221V	1/10W 220	1	80GN
R4016	D0HB821ZA002	1/16W 820	1	80GN
R4017	ERJ3GEYJ221V	1/10W 220	1	80GN
R4018	D0HB821ZA002	1/16W 820	1	80GN
R4019	ERJ3GEYJ821V	1/10W 820	1	80GN
R4020	ERJ3GEYJ473V	1/10W 47K	1	80GN
R4021	ERJ3GEYJ473V	1/10W 47K	1	80GN
R4022	ERJ3GEYJ821V	1/10W 820	1	80GN
R4023	D0HD331ZA002	1/16W 330	1	80GN
R4024	ERJ3GEYJ221V	1/10W 220	1	80GN
R4025	D0HB821ZA002	1/16W 820	1	80GN

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
R4026	D0HD331ZA002	1/16W 330	1	80GN
R4041	ERJ3GEYJ102V	1/10W 1K	1	80GN
R4042	ERJ3GEYJ102V	1/10W 1K	1	80GN
R4043	ERJ3GEYJ102V	1/10W 1K	1	80GN
R4044	ERJ6GEYJ391V	1/8W 390	1	80GN
R4045	ERJ3GEYJ750V	1/10W 75	1	80GN
R4046	ERJ3GEYJ103V	1/10W 10K	1	80GN
R4047	ERJ3GEYJ102V	1/10W 1K	1	80GN
#	VEP71155C	POWER P.C.B.	1	(RTL)60GN 60GA 60GZ 60GC
#	VEP71155D	POWER P.C.B.	1	(RTL)80GN
△ C1001	ECQU2A683MLC	0.068U	1	
△ C1005	F1B2G4710001	400V 470P	1	
△ C1006	F1B2G4710001	400V 470P	1	
△ C1007	ECQU2A223MLC	0.022U	1	
C1014	F2B2W4700003	450V 47U	1	EXCEPT PU
△ C1018	F1B2G6810001	400V 680U	1	
C1019	ECKWNA102MEV	1000P	1	
C1021	F1A3D221A010	2KV 220P	1	EXCEPT PU
C1023	ECJ1VB1H102K	50V 1000P	1	
C1024	ECJ1VC1H101J	50V 100P	1	EXCEPT PU
C1025	F2A1V6800002	35V 68U	1	
C1026	ECJ1VB1H102K	50V 1000P	1	EXCEPT PU
C1027	ECJ1VB1H102K	50V 1000P	1	EXCEPT PU
C1028	F2A1E100A210	25V 10P	1	EXCEPT PU
C1029	ERJ3GEY0R00V	1/10W 0	1	EXCEPT PU
C1113	F1H1C105A095	16V 1U	1	
C1114	F1H1C104A071	16V 0.1U	1	
C1117	F1H1C105A095	16V 1U	1	
C1118	F2A1C1520021	16V 1500U	1	
C1120	ECJ1VB1H103K	50V 0.01U	1	
C1121	F2A1C1520021	16V 1500U	1	
C1122	F2A1A5600003	10V 56U	1	
C1123	F2A1H1010044	50V 100U	1	
C1124	F1H1C104A071	16V 0.1U	1	
C1125	F2A1C102A236	16V 1000U	1	BD60
C1125	F2A1C102B607	16V 1000U	1	80GN
C1126	ECJ1VF1E104Z	25V 0.1U	1	
C1127	F2A1H220A234	50V 22U	1	
C1128	F1H1A105A028	10V 1U	1	
C1132	F2A1E1010099	25V 100P	1	
C1133	F2A1C4710079	16V 470U	1	
C1135	F1H1C104A071	16V 0.1U	1	
C1136	F1H1C104A071	16V 0.1U	1	
C1138	F1H1C104A071	16V 0.1U	1	
C1140	ECJ1VC1H181J	50V 180P	1	
C1141	F2A1A470A388	10V 47U	1	
C1143	F2A1A101A389	10V 100U	1	
C1146	ECJ1VB1H103K	50V 0.01U	1	
C1150	F2A1A6810022	10V 680U	1	
C1151	F1H1C104A071	16V 0.1U	1	
C1152	F2A1E221A643	25V 220U	1	80GN
C1153	F1H1C104A071	16V 0.1U	1	80GN
C1154	F2A1E221A643	25V 220U	1	80GN
C7001	ECJ1VB1H103K	50V 0.01U	1	
C7002	F1H1A105A028	10V 1U	1	
C7003	F1H1A105A028	10V 1U	1	
C7004	F1H1C104A071	16V 0.1U	1	
C7005	ECJ1VF1H104Z	50V 0.1U	1	
C7006	F1H1C104A071	16V 0.1U	1	
D1006	B0EDKT000009	DIODE	1	
D1021	MAZ73000BC	DIODE	1	EXCEPT PU
D1022	MAZ1110GL	DIODE	1	
D1023	MAZ73000BC	DIODE	1	
D1025	MAZ41600MF	DIODE	1	
D1026	BOJAML000011	DIODE	1	
D1027	BOHAGM000006	DIODE	1	
D1029	MAZ41200MF	DIODE	1	EXCEPT PU
D1031	BOBB17000004	DIODE	1	EXCEPT PU
D1107	B0AADM000003	DIODE	1	
D1108	BOJAME000025	DIODE	1	
D1110	B0JBSL000002	DIODE	1	
D1113	MAZ42200LF	DIODE	1	
D1122	BOJCPD000021	DIODE	1	

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Ref.No.	Part No.	Part Name & Description	Pcs	Remarks	Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
D1123	B0JCPD000021	DIODE	1		R1033	ERJ3RBD163V	1/16W 16K	1	EXCEPT PU
D1125	B0JAML000004	DIODE	1	80GN	R1034	ERJ3RBD153V	1/16W 15K	1	EXCEPT PU
D1126	MAZ41200HF	DIODE	1	80GN	R1035	ERJ3RBD102V	1/16W 1K	1	EXCEPT PU
D1127	MAZ73000BC	DIODE	1	EXCEPT PU	R1104	ERJ3GEYJ472V	1/10W 4.7K	1	
D1128	MAZ41000MF	DIODE	1		R1111	ERJ3GEYJ102V	1/10W 1K	1	
D7001	MAZ41800MF	DIODE	1		R1112	ERJ3GEYJ222V	1/10W 2.2K	1	
					R1113	ERJ3GEYJ103V	1/10W 10K	1	
DP7001	A2BD00000188	DISPLAY TUBE	1		R1115	ERJ3RBD472V	1/16W 4.7K	1	
					R1116	ERJ3GEYJ222V	1/10W 2.2K	1	
△ F1001	K5D202BK0005	FUSE	1		R1117	ERDS2TJ101T	1/4W 100	1	
					R1118	ERJ3RBD301V	1/16W 300	1	
IC1021	C0DACZH00038	IC	1	EXCEPT PU	R1119	ERJ3RBD183V	1/16W 18K	1	
IC1101	C0DAEY00022	IC	1		R1120	ERJ3GEYJ472V	1/10W 4.7K	1	
IC1102	C0CBCAD00092	IC	1		R1121	ERJ3GEYJ223V	1/10W 22K	1	
IC1103	C0DBAZZ00132	IC	1		R1122	ERJ3GEY0R00V	1/10W 0	1	
IC1104	C0DAEYH00002	IC	1		R1123	ERJ3GEYJ223V	1/10W 22K	1	
IC7001	C0HBB0000057	IC	1		R1129	ERJ3GEYJ513V	1/10W 51K	1	
IC7002	C0CBCBD00008	IC	1		R1130	D1BDR027A101	2W 0.027U	1	
					R1136	ERJ3RBD152V	1/16W 1.5K	1	
△ IP1101	K5H122Z00003	IC PROTECTOR	1		R1137	ERJ3RBD393V	1/16W 39K	1	
△ IP1102	K5H102Z00006	IC PROTECTOR	1		R1138	ERJ3RBD113V	1/16W 11K	1	
△ IP1105	K5H172Z00003	IC PROTECTOR	1	80GN	R1141	ERJ3RBD222V	1/16W 2.2K	1	
					R1142	ERJ3RBD822V	1/16W 8.2K	1	
K7004	ERJ3GEY0R00V	1/10W 0	1		R1143	ERJ3RBD272V	1/16W 2.7K	1	
					R1146	ERJ6GEY0R00V	1/8W 0	1	
△ L1001	G0B233D00005	COIL	1		R1150	ERJ3GEY0R00V	1/10W 0	1	80GN
△ L1002	G0B233D00005	COIL	1		R1151	ERJ3GEYJ221V	1/10W 220	1	80GN
L1103	G0A100H00025	COIL 10UH	1		R1152	ERJ6GEY0R00V	1/8W 0	1	80GN
L1104	G0C100K00043	COIL 10UH	1		R1161	ERDS2TJ821T	1/4W 820	1	
L1105	G0A150ZA0041	COIL 15UH	1		R1162	ERDS2TJ821T	1/4W 820	1	
L1107	G0C330KA0065	COIL 33UH	1	80GN	R1163	ERDS2TJ821T	1/4W 820	1	
					R1164	ERDS2TJ821T	1/4W 820	1	
LB1021	J0JKB0000003	COIL	1		R1165	ERDS2TJ821T	1/4W 820	1	
LB1103	J0JHC0000048	FILTER	1		R1166	ERJ3GEYJ821V	1/10W 820	1	
LB1104	J0JHC0000048	FILTER	1		R1167	ERJ3GEY0R00V	1/10W 0	1	
LB1107	J0JHC0000048	FILTER	1		R7002	ERJ3GEY0R00V	1/10W 0	1	
LB1111	J0JHC0000048	FILTER	1		R7003	ERJ3GEY0R00V	1/10W 0	1	
LB1112	J0JHC0000048	FILTER	1		R7004	ERJ3GEY0R00V	1/10W 0	1	
LB7001	ERJ6GEY0R00V	1/8W 0	1		R7005	ERJ3GEY0R00V	1/10W 0	1	
LB7002	ERJ6GEY0R00V	1/8W 0	1		R7006	ERJ3GEYJ272V	1/10W 2.7K	1	
LB7003	ERJ6GEY0R00V	1/8W 0	1		R7007	ERJ3GEYJ562V	1/10W 5.6K	1	
					R7009	ERJ3GEYJ104V	1/10W 100K	1	
△ P1001	K2AA2H000007	AC INLET	1		R7010	ERJ3GEYJ103V	1/10W 10K	1	
P1102	K1KA13AA0185	CONNECTOR(13P)	1	BD60	R7011	ERJ3RBD471V	1/16W 470	1	
P1102	K1KA14AA0185	CONNECTOR(14P)	1	80GN					
P7001	K1KB06B00033	CONNECTOR(6P)	1		△ T1001	G4D2A0000308	TRANSFORMER	1	EXCEPT PU
P7003	K1KA03AA0180	CONNECTOR(3P)	1						
P7004	K1KA04AA0180	CONNECTOR(4P)	1		△ VA1001	ERZV05Z471CS	VARISTOR	1	
△ Q1022	B3PBA0000454	TRANSISTOR	1		W501	ERJ3GEY0R00V	1/10W 0	1	EXCEPT PU
△ Q1023	B3PBA0000454	TRANSISTOR	1						
Q1101	2SA1309ARA	TRANSISTOR	1		ZA1001	EYF52BCY	FUSE HOLDER	1	EXCEPT GZ
Q1102	B1DHED000008	TRANSISTOR	1		ZA1001	K3GE1ZA00010	FUSE HOLDER	1	60GZ
Q1104	B1DHED000008	TRANSISTOR	1		ZA1002	EYF52BCY	FUSE HOLDER	1	EXCEPT GZ
Q1106	2SB1320ARA	TRANSISTOR	1	80GN	ZA1002	K3GE1ZA00010	FUSE HOLDER	1	60GZ
Q1107	2SC3311ASA	TRANSISTOR	1		ZA1003	K9ZZ00001279	EARTH PLATE	1	
Q7001	2SB0710AOL	TRANSISTOR	1		ZA1004	K9ZZ00001279	EARTH PLATE	1	
Q7003	B1ABGC000011	TRANSISTOR	1		ZA1005	K9ZZ00001279	EARTH PLATE	1	
					ZA1021	VSC5603-A	HEAT SINK	1	EXCEPT PU
QR1101	UNR5212J0L	TRANSISTOR	1	BD60	ZA1022	XYN3+J8FJ	SCREW	1	
QR1101	UNR52A2J0L	TRANSISTOR	1	80GN	ZA1110	VSC5604-A	HEAT SINK	1	
QR1102	UNR52A3J0L	TRANSISTOR	1		ZA1111	XYN3+J8FJ	SCREW	1	
QR1105	UNR5212J0L	TRANSISTOR	1	BD60					
QR1105	UNR52A2J0L	TRANSISTOR	1	80GN	ZB7001	RMN0913	FL HOLDER	1	
QR7001	UNR52A3J0L	TRANSISTOR	1						
QR7003	UNR51A3J0L	TRANSISTOR	1						
QR7004	UNR52A3J0L	TRANSISTOR	1						
R1023	ERJ3GEYJ153V	1/10W 15K	1	EXCEPT PU	#	VEP71156A	POWER P.C.B.	1	(RTL)60PU
R1024	ERJ3RBD123V	1/16W 12K	1	EXCEPT PU					
R1025	ERJ3RBD102V	1/16W 1K	1	EXCEPT PU	C1014	F2B2G8200010	400V 82U	1	60PU
R1026	ERDS2TJ221T	1/4W 220	1		C1021	F1A3D331A005	330U	1	60PU
R1028	ERJ3GEYJ100V	1/10W 10	1		C1026	ECJ1VB1H472K	50V 4700P	1	60PU
R1029	ERJ3GEYJ100V	1/10W 10	1		C1029	ECJ1VC1H151J	50V 150P	1	60PU
R1030	ERJ3GEYJ152V	1/10W 1.5K	1	EXCEPT PU	C1031	F1B3D222A011	2000V 2200P	1	60PU
R1031	ERJ3GEYJ224V	1/10W 220K	1	EXCEPT PU	C1042	ECJ1VC1H680J	50V 68P	1	60PU
R1032	ERJ3RBD163V	1/16W 16K	1	EXCEPT PU	D1012	B0HADV000001	DIODE	1	60PU
					D1021	B0HADV000001	DIODE	1	60PU

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Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
D1024	MA2J110GL	DIODE	1	60PU
D1029	MAZ40910MF	DIODE	1	60PU
IC1021	C0DACZH00017	IC	1	60PU
LB1011	J0JKB0000003	COIL	1	60PU
QR1031	2SD0601ASL	TRANSISTOR	1	60PU
R1011	ERG2SJ683P	2W 68K	1	60PU
R1012	ERG2SJ683P	2W 68K	1	60PU
R1013	ERG1SJ222E	1W 2.2K	1	60PU
R1021	ERX2SZJR18E	10W 0.18	1	60PU
R1024	ERJ3RBD243V	1/16W 24K	1	60PU
R1025	ERJ3RBD222V	1/16W 2.2K	1	60PU
R1031	ERJ3RED224V	1/10W 220K	1	60PU
R1032	ERJ3RBD202V	1/16W 2K	1	60PU
R1033	ERJ3RBD272V	1/16W 2.7K	1	60PU
R1041	ERJ3GEYJ684V	1/10W 680K	1	60PU
R1044	ERJ3GEYJ153V	1/10W 15K	1	60PU
R1051	ERJ3GEYJ104V	1/10W 100K	1	60PU
R1052	ERJ3GEYJ104V	1/10W 100K	1	60PU
R1169	ERJ3GEY0R00V	1/10W 0	1	60PU
R1170	ERJ3GEY0R00V	1/10W 0	1	60PU
R1171	ERJ3GEY0R00V	1/10W 0	1	60PU
R1172	ERJ3GEY0R00V	1/10W 0	1	60PU
R1174	ERJ3GEY0R00V	1/10W 0	1	60PU
T1001	G4D2A0000309	TRANSFORMER	1	60PU
ZA1023	VSC6159	EARTH PLATE	1	60PU
##	VEP76191A	FRONT P.C.B.	1	(RTL)BD60
##	VEP76191B	FRONT P.C.B.	1	(RTL)80GN
C7202	ECJ1VF1A105Z	10V 1U	1	
D7201	B3AEA0000099	LED	1	80GN
IR7201	B3RAD0000150	REMOTE SENSOR	1	
P7201	K1KA10B00196	CONNECTOR(10P)	1	
P7202	K1KA06B00150	CONNECTOR(6P)	1	
PJ7203	REZ1927	WIRE	1	
PJ7204	REZ1926	WIRE	1	
R7201	ERJ3RBD222V	1/16W 2.2K	1	
R7202	ERJ3RBD392V	1/16W 3.9K	1	
R7203	ERJ3RBD222V	1/16W 2.2K	1	
R7204	ERJ3RBD392V	1/16W 3.9K	1	
R7205	ERJ3GEYJ330V	1/10W 33	1	
R7206	ERJ3GEY0R00V	1/10W 0	1	
R7207	ERJ6GEYJ301V	1/8W 300	1	80GN
S7202	EVQ11A04M	SWITCH,PLAY	1	
S7204	EVQ11A04M	SWITCH,PAUSE	1	
S7206	EVQ11A04M	SWITCH,STOP	1	
W7501	ERJ3GEY0R00V	1/10W 0	1	
W7502	ERJ3GEY0R00V	1/10W 0	1	
W7503	ERJ6GEY0R00V	1/8W 0	1	
W7504	ERJ6GEY0R00V	1/8W 0	1	
W7505	ERJ3GEY0R00V	1/10W 0	1	
W7506	ERJ6GEY0R00V	1/8W 0	1	
##	VEP70292A	POWER SW P.C.B.	1	(RTL)
S7551	EVQ11A04M	SWITCH,POWER	1	
##	VEP70293A	OPEN SW P.C.B.	1	(RTL)
S7581	EVQ11A04M	SWITCH,OPEN/CLOSE	1	

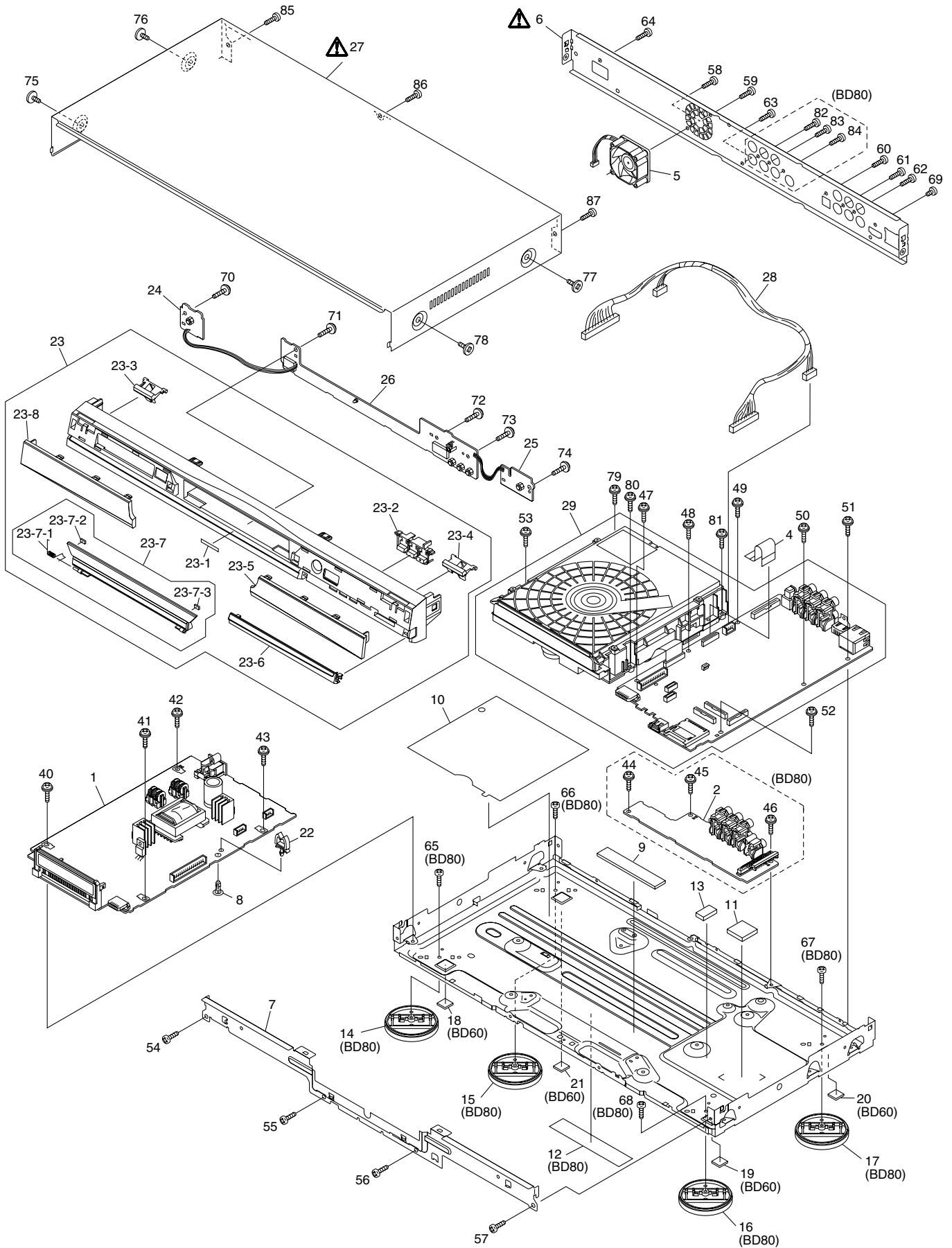
Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
##		CASING/ACCESSORY/PACKING		
1	VEP71155C	POWER P.C.B.	1	(RTL)60GN 60GA 60GZ 60GC
1	VEP71155D	POWER P.C.B.	1	(RTL)80GN
1	VEP71156A	POWER P.C.B.	1	(RTL)60PU
2	VEP74117B	AV OUT P.C.B.	1	(RTL)80GN
4	VWJ2058-1	FFC(18P)	1	
5	L6FAGC9E0002	FAN MOTOR	1	
△ 6	RGR0389A-J	REAR PANEL	1	60GN
△ 6	RGR0389A-K	REAR PANEL	1	60GA
△ 6	RGR0389A-T	REAR PANEL	1	60GZ
△ 6	RGR0389A-L	REAR PANEL	1	60GC
△ 6	RGR0389A-N1	REAR PANEL	1	60PU
△ 6	RGR0389B-E	REAR PANEL	1	80GN
7	RMA2159A-1	FRONT ANGLE	1	
8	RMN0091	PCB SUPPORT	1	
9	RMX0437	INSULATION SHEET	1	
10	RMZ0975A	INSULATION SHEET	1	
11	RSC0851	HEAT TRANSFER SHEET	1	
12	RQLC1025	CAUTION LABEL	1	80GN
13	RSC0854	HEAT TRANSFER SHEET	1	
14	RYQ0684-H	LEG	1	80GN
15	RYQ0684-H	LEG	1	80GN
16	RYQ0684-H	LEG	1	80GN
17	RYQ0684-H	LEG	1	80GN
18	RKA0206A-K	FOOT RUBBER	1	BD60
19	RKA0206A-K	FOOT RUBBER	1	BD60
20	RKA0206A-K	FOOT RUBBER	1	BD60
21	RKA0206A-K	FOOT RUBBER	1	BD60
22	VJF0882	CLAMPER	1	
23	RYP1461A-K	FRONT PANEL ASSY1	1	60GN 60GA 60GZ 60GC
23	RYP1461D-K	FRONT PANEL ASSY1	1	60PU
23	RYP1462A-K	FRONT PANEL ASSY1	1	80GN
23-1	RGQ0512A-W	SD PANEL LIGHT	1	80GN
23-2	RGU2605-K	OPERATION BUTTON	1	
23-3	RGU2627A-K	POWER BUTTON	1	EXCEPT PU
23-3	RGU2627-K	POWER BUTTON	1	60PU
23-4	RGU2628-K	OPEN/CLOSE BUTTON	1	
23-5	RKW0892-Q	FRONT WINDOW ASSY	1	BD60
23-5	RKW0894-Q	FRONT WINDOW ASSY	1	80GN
23-6	RYF0846C-K	DOOR ASSY	1	BD60
23-6	RYF0846A-K	DOOR ASSY	1	80GN
23-7	RYF0853-K	TRAY DOOR ASSY	1	BD60
23-7	RYF0854-K	TRAY DOOR ASSY	1	80GN
23-7-1	RMB0877	TRAY DOOR SPRING	1	
23-7-2	RMG0735-KJ	CUSHION	1	
23-7-3	RMG0735-KJ	CUSHION	1	
23-8	RYK1558-Q	FL WINDOW ASSY	1	BD60
23-8	RYK1559-Q	FL WINDOW ASSY	1	80GN
24	VEP70292A	POWER SW P.C.B.	1	(RTL)
25	VEP70293A	OPEN SW P.C.B.	1	(RTL)
26	VEP76191A	FRONT P.C.B.	1	(RTL)BD60
26	VEP76191B	FRONT P.C.B.	1	(RTL)80GN
△ 27	RKM0605-K	TOP CASE	1	
28	VEK0N34	WIRE WITH CONNECTOR	1	60GN 60GA 60GC 60PU
28	VEK0N34-2	WIRE WITH CONNECTOR	1	60GZ
28	VEK0N38	WIRE WITH CONNECTOR	1	80GN
29	RFKNBD60GN	BDP/DIGITAL P.C.B. MODULE	1	(RTL)60GN
29	RFKNBD60GA	BDP/DIGITAL P.C.B. MODULE	1	(RTL)60GA
29	RFKNBD60GZ	BDP/DIGITAL P.C.B. MODULE	1	(RTL)60GZ
29	RFKNBD60GC	BDP/DIGITAL P.C.B. MODULE	1	(RTL)60GC
29	RFKNBD60PU	BDP/DIGITAL P.C.B. MODULE	1	(RTL)60PU
29	RFKNBD80GN	BDP/DIGITAL P.C.B. MODULE	1	(RTL)80GN
40	RHD30101-1	SCREW	1	
41	RHD30101-1	SCREW	1	
42	RHD30101-1	SCREW	1	
43	RHD30101-1	SCREW	1	
44	RHD30101-1	SCREW	1	80GN
45	RHD30101-1	SCREW	1	80GN
46	RHD30101-1	SCREW	1	80GN
47	RHD30101-1	SCREW	1	
48	RHD30101-1	SCREW	1	
49	RHD30101-1	SCREW	1	
50	RHD30101-1	SCREW	1	
51	RHD30101-1	SCREW	1	
52	RHD30101-1	SCREW	1	

DMP-BD60GN-K

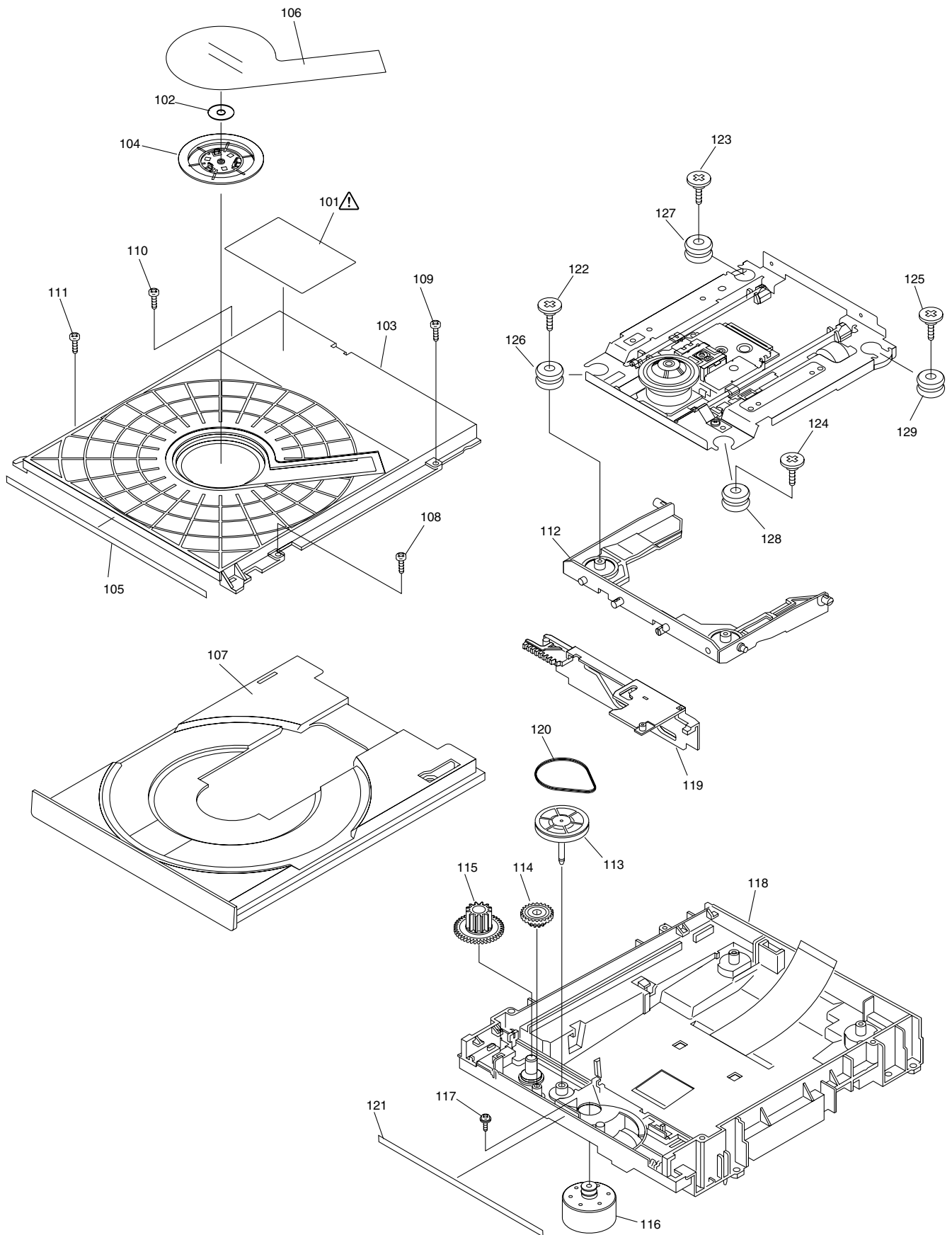
Ref.No.	Part No.	Part Name & Description	Pcs	Remarks	Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
53	RHD30101-1	SCREW	1		A3	K2KA6BA00004	AV CORD	1	
54	RHD30119-L	SCREW	1		A4	N2QAYB000380	REMOTE CONTROL UNIT	1	EXCEPT PU
55	RHD30119-L	SCREW	1		A4	N2QAYB000378	REMOTE CONTROL UNIT	1	60PU
56	RHD30119-L	SCREW	1		A4-1	100300037800	BATTERY COVER	1	
57	RHD30119-L	SCREW	1		A5	RPQCF0006	ACCESSORY BOX	1	
58	RHD30119-L	SCREW	1		A6	RPF0031-B	POLYETHYLENE BAG	1	
59	RHD30119-L	SCREW	1		△ A7	RQT9407-L	OPERATING INSTRUCTIONS	1	60GN 60GA 60GZ 60GC 80GN (IA)
60	RHD30119-L	SCREW	1		△ A7	RQT9408-K	OPERATING INSTRUCTIONS	1	60GA (IC)
61	RHD30119-L	SCREW	1		△ A7	RQT9409-A	OPERATING INSTRUCTIONS	1	60GC (ID)
62	RHD30119-L	SCREW	1		△ A7	RQT9406-M	OPERATING INSTRUCTIONS	1	60PU (IB)
63	RHD30119-L	SCREW	1		A8	K2DA42E00001	POWER PLUG ADAPTOR	1	60PU
64	RHD30119-L	SCREW	1						
65	RHD30105-1	SCREW	1	80GN	PC1	RPG8778	PACKING CASE	1	60GN
66	RHD30105-1	SCREW	1	80GN	PC1	RPG8779	PACKING CASE	1	60GA
67	RHD30105-1	SCREW	1	80GN	PC1	RPG8844	PACKING CASE	1	60GZ
68	RHD30105-1	SCREW	1	80GN	PC1	RPG8780	PACKING CASE	1	60GC
69	XSN3+4FJ	SCREW	1		PC1	RPG8782	PACKING CASE	1	60PU
70	RHD26045-J	SCREW	1		PC1	RPG8783	PACKING CASE	1	80GN
71	RHD26045-J	SCREW	1		PC2	RPF0458	POLYETHYLENE BAG	1	
72	RHD26045-J	SCREW	1		PC3	RPN2101A	CUSHION(A)	1	
73	RHD26045-J	SCREW	1		PC4	RPN2101B	CUSHION(B)	1	
74	RHD26045-J	SCREW	1						
75	RHD30113-1K	SCREW	1						
76	RHD30113-1K	SCREW	1						
77	RHD30113-1K	SCREW	1						
78	RHD30113-1K	SCREW	1						
79	RHD30101-1	SCREW	1						
80	RHD30101-1	SCREW	1						
81	RHD30101-1	SCREW	1						
82	RHD30119-L	SCREW	1	80GN					
83	RHD30119-L	SCREW	1	80GN					
84	RHD30119-L	SCREW	1	80GN					
85	VHD0690-1	SCREW	1						
86	VHD0690-1	SCREW	1						
87	VHD0690-1	SCREW	1						
##	M2								
101	VQL1V70-J	LASER CAUTION LABEL	1						
102	VMA0V86	YOKE	1						
103	VMD5751	UPPER BASE	1						
104	VMD5752	CLAMPER	1						
105	VMT1876-J	DUST COVER A	1						
106	VMZ3737-J	CLAMP COVER	1						
107	VXA8619	TRAY ASS'Y	1						
108	XTV26+10GFJ	SCREW	1						
109	XTV26+10GFJ	SCREW	1						
110	XTV26+10GFJ	SCREW	1						
111	XTV26+10GFJ	SCREW	1						
112	VMD5753	MID BASE	1						
113	VDG1713	PULLEY GEAR	1						
114	VDG1714	MID GEAR	1						
115	VDG1715	DRIVE GEAR	1						
116	VEM0867	LOADING MOTOR U	1						
117	VHD1653-1	SCREW	1						
118	VMD5748-1	MECHA CHASSIS	1						
119	VMD5749	SLIDE CAM	1						
120	VMG1809	BELT	1						
121	VMT1877-J	DUST COVER B	1						
122	VHD1518-1	SCREW	1						
123	VHD1518-1	SCREW	1						
124	VHD1518-1	SCREW	1						
125	VHD1518-1	SCREW	1						
126	VMG1883	DAMPER	1						
127	VMG1883	DAMPER	1						
128	VMG1883	DAMPER	1						
129	VMG1883	DAMPER	1						
##	M3								
△ A1	K2CJ2DA00008	AC CORD	1	60GN 60GZ 80GN					
△ A1	K2CP2CA00001	AC CORD	1	60GA					
△ A1	K2CR2DA00004	AC CORD	1	60GA 60GC 60PU					
△ A1	K2CT3CA00004	AC CORD	1	60GC					
A2	K1HA19DA00005	HDMI CABLE	1	60PU					

S8. Exploded View

S8.1. Frame and Casing Section



S8.2. Mechanism Section



S8.3. Packing Parts and Accessories Section

