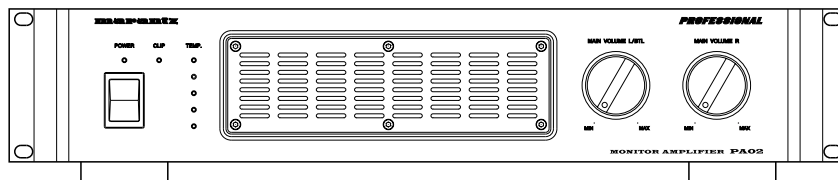


Service Manual

PA02 /F1S

Monitor Amplifier



PA02

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Please use this service manual with referring to the user guide (D.F.U.) without fail.

修理の際は、必ず取扱説明書を準備し操作方法を確認の上作業を行ってください。

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PA02

MARANTZ DESIGN AND SERVICE

Using superior design and selected high grade components, **MARANTZ** company has created the ultimate in stereo sound. Only original **MARANTZ** parts can insure that your **MARANTZ** product will continue to perform to the specifications for which it is famous.

Parts for your **MARANTZ** equipment are generally available to our National Marantz Subsidiary or Agent.

ORDERING PARTS :

Parts can be ordered either by mail or by Fax.. In both cases, the correct part number has to be specified.

The following information must be supplied to eliminate delays in processing your order :

1. Complete address
2. Complete part numbers and quantities required
3. Description of parts
4. Model number for which part is required
5. Way of shipment
6. Signature : any order form or Fax. must be signed, otherwise such part order will be considered as null and void.

USA

MARANTZ AMERICA, INC.
1100 MAPLEWOOD DRIVE
ITASCA, IL. 60143
USA
PHONE : 630 - 741 - 0300
FAX : 630 - 741 - 0301

EUROPE / TRADING

MARANTZ EUROPE B.V.
P.O.BOX 80002, BUILDING SFF2
5600 JB EINDHOVEN
THE NETHERLANDS
PHONE : +31 - 40 - 2732241
FAX : +31 - 40 - 2735578

BRAZIL

PHILIPS DA AMAZONIA IND. ELET. ITDA
CENTRO DE INFORMACOES AO
CEP 04698-970
SAO PAULO, SP, BRAZIL
PHONE : 0800 - 123123(Discagem Direta Gratuita)
FAX : +55 11 534. 8988

PROFESSIONAL AMERICAS

SUPERSCOPE TECHNOLOGIES, INC.
MARANTZ PROFESSIONAL PRODUCTS
2640 WHITE OAK CIRCLE, SUITE A
AURORA, ILLINOIS 60504 USA
PHONE : 630 - 820 - 4800
FAX : 630 - 820 - 8103

PROFESSIONAL AUSTRALIA

TECHNICAL AUDIO GROUP PTY, LTD
558 DARLING STREET,
BALMAIN, NSW 2041,
AUSTRALIA
PHONE : 61 - 2 - 9810 - 5300
FAX : 61 - 2 - 9810 - 5355

CANADA

LENBROOK INDUSTRIES LIMITED
633 GRANITE COURT,
PICKERING, ONTARIO L1W 3K1
CANADA
PHONE : 905 - 831 - 6333
FAX : 905 - 831 - 6936

AUSTRALIA

Qualifi Pty Ltd,
24 LIONEL ROAD,
MT. WAVERLEY VIC 3149
AUSTRALIA
PHONE : +61 - (0)3 - 9543 - 1522
FAX : +61 - (0)3 - 9543 - 3677

THAILAND

MRZ STANDARD CO.,LTD
746 - 754 MAHACHAI ROAD.,
WANGBURAPAPIROM, PHRANAKORN,
BANGKOK, 10200 THAILAND
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FAX : +66 - 2 - 224 6795

SINGAPORE

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#03-02 OLIVINE BUILDING
SINGAPORE 368357
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FAX : +65 858 6078

NEW ZEALAND

WILDASH AUDIO SYSTEMS NZ
14 MALVERN ROAD MT ALBERT
AUCKLAND NEW ZEALAND
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FAX : +64 - 9 - 8463554

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6 TH FL NO, 148 SUNG KIANG ROAD,
TAIPEI, 10429, TAIWAN R.O.C.
PHONE : +886 - 2 - 25221304
FAX : +886 - 2 - 25630415

MALAYSIA

WO KEE HONG ELECTRONICS SDN. BHD.
SUITE 8.1, LEVEL 8, MENARA GENESIS,
NO. 33, JALAN SULTAN ISMAIL,
50250 KUALA LUMPUR, MALAYSIA
PHONE : +60 3 - 2457677
FAX : +60 3 - 2458180

JAPAN *Technical*

MARANTZ JAPAN, INC.
35- 1, 7- CHOME, SAGAMIONO
SAGAMIHARA - SHI, KANAGAWA
JAPAN 228-8505
PHONE : +81 42 748 1013
FAX : +81 42 741 9190

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本 社 〒228-8505
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営業本部 〒150-0022
東京都渋谷区恵比寿南1-11-9

KOREA

MK ENTERPRISES LTD.
ROOM 604/605, ELECTRO-OFFICETEL, 16-58,
3GA, HANGANG-RO, YONGSAN-KU, SEOUL
KOREA
PHONE : +822 - 3232 - 155
FAX : +822 - 3232 - 154

SHOCK, FIRE HAZARD SERVICE TEST :

CAUTION : After servicing this appliance and prior to returning to customer, measure the resistance between either primary AC cord connector pins (with unit NOT connected to AC mains and its Power switch ON), and the face or Front Panel of product and controls and chassis bottom.

Any resistance measurement less than 1 Megohms should cause unit to be repaired or corrected before AC power is applied, and verified before it is return to the user/customer.

Ref. UL Standard No. 813.

In case of difficulties, do not hesitate to contact the Technical
Department at above mentioned address.

1. TECHNICAL SPECIFICATIONS

仕 様

定格出力 (20 Hz ~ 20 kHz 両 ch 同時駆動)	180W × 2 (8 Ω 負荷)
	230W × 2 (6 Ω 負荷)
	300W × 2 (4 Ω 負荷)
	350W × 2 (3 Ω 負荷)
全高調波歪率 (20 Hz ~ 20 kHz、両 ch 駆動、8 Ω 負荷).....	0.07 %
出力帯域幅 (8 Ω 負荷、90W).....	10 Hz ~ 120 kHz
周波数特性	5 Hz ~ 240 kHz + 0, -1 dB
入力感度/入力インピーダンス.....	0 dBV (0.775 V) /10 kΩ
S/N 比 (IHF A ネットワーク、入力ショート)	120 dB
電源電圧	AC 100 V, 50 Hz/60 Hz
消費電力 (電気用品安全法)	440 W
最大外形寸法	
幅	486 mm
高さ	103 mm
奥行き	420 mm
質 量	13.8 kg

2. THE OPERATION TESTS FOR PROTECTION CIRCUITS

動作確認

☆動作確認は、セットの仮調整の後、ヒートラン前に行ってください。

1. 過電流検出確認 (P101 pcb)

JN11 の ① pin - ② pin 間をショートした時、スピーカーリレーが OFF して POWER LED が点滅することを確認します。復帰させるためには、一度 POWER OFF して 10 秒程度経過した後、再度 POWER ON します。

2. クリップインジケータ確認 (P101 pcb)

JN12 の ① pin - ② pin 間をショートした時、クリップインジケータが点灯することを確認します。

3. ファン停止シミュレーション (PM01 pcb)

JM31 の ① pin - ② pin 間をショートと同時に ② pin - ③ pin 間に 22kΩ を挿入した時、スピーカーリレーが OFF して POWER LED が点滅することを確認します。 治具：22kΩ 付コネクタ (番号：* PA02FANJG)

4. TEMP メーター及び過熱プロテクタ確認 (PM01 pcb)

JM12 に挿入されているワイヤーコネクタ (2P PH) を抜き、TEMP. の赤色 LED が点灯することを確認し、再びワイヤーコネクタを挿入します。

次に JM11 に挿入されているワイヤーコネクタ (4P PH) を抜き、TEMP. の緑色 LED (4 個) が点灯することを確認します。さらにこの状態で再び JM12 に挿入されているワイヤーコネクタ (2P PH) を抜き、スピーカーリレーが OFF して POWER LED が点滅することを確認します。

確認終了後、POWER OFF し、JM11, JM12 を挿入します。

3. ALIGNMENTS

調整手順

1. POWER ON する前に、出力段アイドリング調整 VR(R117, R118) を反時計方向に廻しきっておきます。

2. POWER ON 直後 (1 分以内) に出力段のアイドリングとオフセット仮調整を行います。

	VR	TEST POINT	アジャスト電圧
出力段アイドリング調整 Lch	R117	J105	17mV±0.5mV
出力段アイドリング調整 Rch	R118	J106	17mV±0.5mV
出力段オフセット調整 Lch	R115	J107	0mV±10mV
出力段オフセット調整 Rch	R116	J108	0mV±10mV

3. 電圧増幅段の電流とオフセット仮調整を行います。

	VR	TEST POINT	アジャスト電圧
電圧増幅段電流調整 Lch +	R795	J705	1.0V±0.05V
電圧増幅段電流調整 Lch -	R793	J707	1.0V±0.05V
電圧増幅段オフセット調整 Lch	R795	J709	0mV±1V
電圧増幅段電流調整 Rch +	R796	J706	1.0V±0.05V
電圧増幅段電流調整 Rch -	R794	J708	1.0V±0.05V
電圧増幅段オフセット調整 Rch	R796	J710	0mV±1V



4. トップカバーをかけた状態でスピーカターミナルに 8Ω 負荷を接続し、1kHz 正弦波 5W 出力にて 15 分間ヒートランを行います。



5. 出力段のアイドリング調整とオフセット調整を行います。

	VR	TEST POINT	アジャスト電圧
出力段アイドリング調整 Lch	R117	J105	12.5mV±0.2mV
出力段アイドリング調整 Rch	R118	J106	12.5mV±0.2mV
出力段オフセット調整 Lch	R115	J107	測定値の 1/2 (注 1)
出力段オフセット調整 Rch	R116	J108	測定値の 1/2 (注 1)

(注 1) 例えば、ヒートラン後のオフセットが+ 120mV の場合は+ 60mV にアジャストし、
- 88mV の場合は- 44mV にアジャストします。偏差は±10mV 以内とします。
(+- は、絶対に間違わないでください)

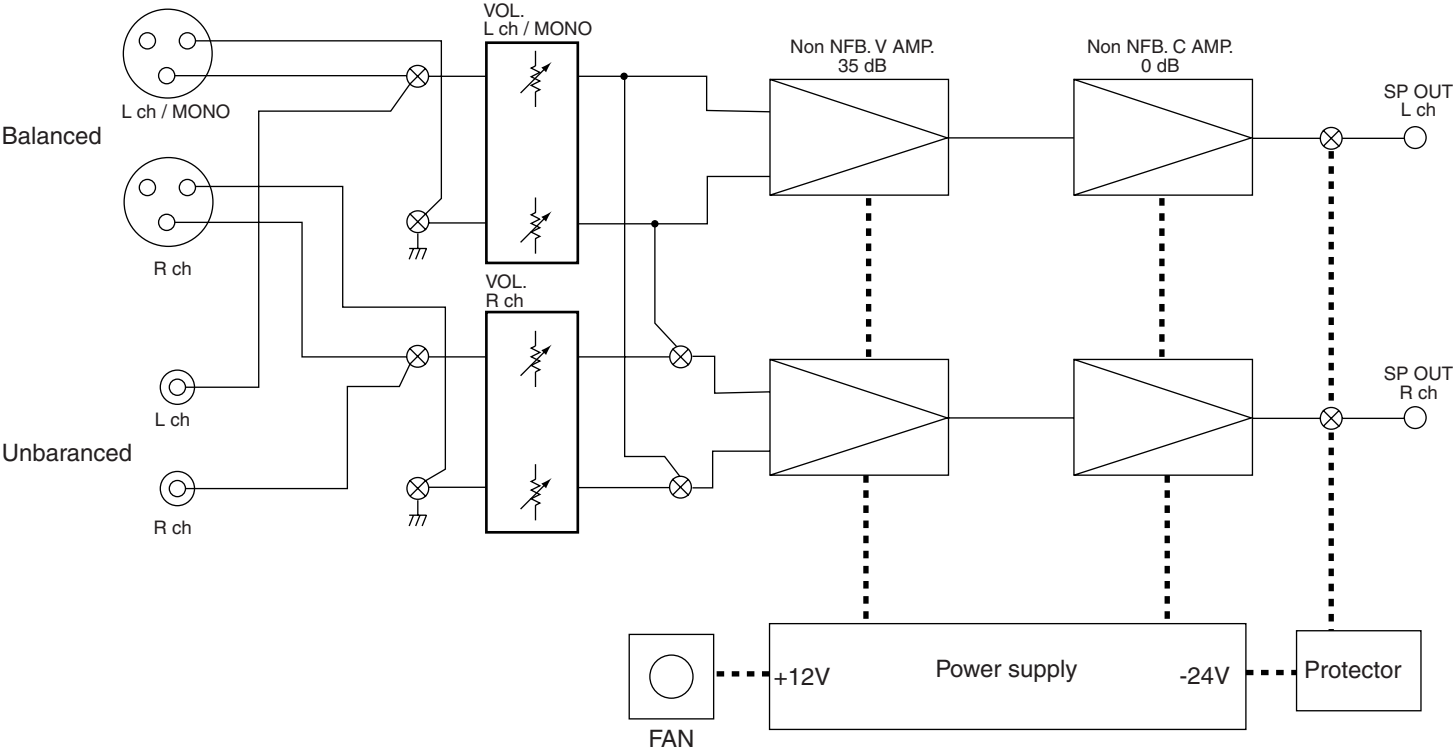
6. 電圧増幅段の電流とオフセット調整を行います。

	VR	TEST POINT	アジャスト電圧
電圧増幅段電流調整 Lch +	R795	J705	1.08V±0.02V
電圧増幅段電流調整 Lch -	R793	J707	1.08V±0.02V
電圧増幅段オフセット調整 Lch	R795	J709	0V±0.5V
電圧増幅段電流調整 Rch +	R796	J706	1.08V±0.02V
電圧増幅段電流調整 Rch -	R794	J708	1.08V±0.02V
電圧増幅段オフセット調整 Rch	R796	J710	0V±0.5V

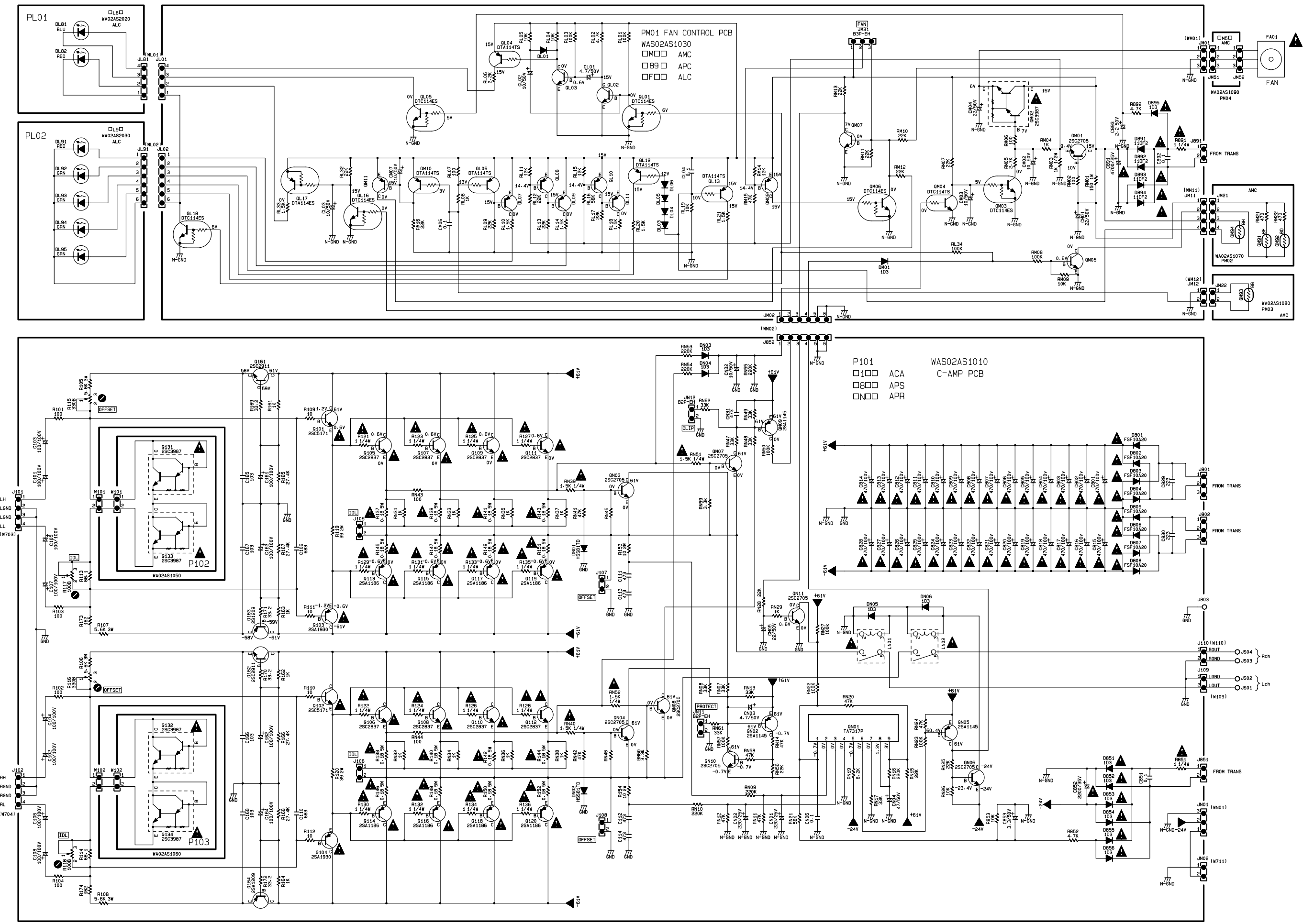
各テストポイント端子の極性：①ピン：テスターの+側、②ピン：テスターの-側

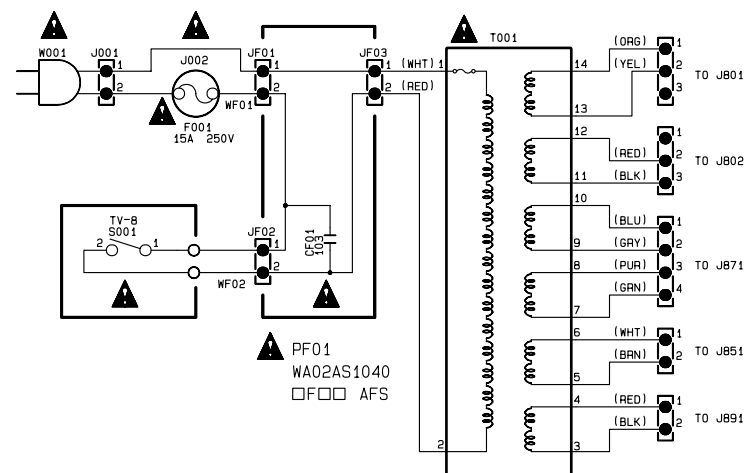
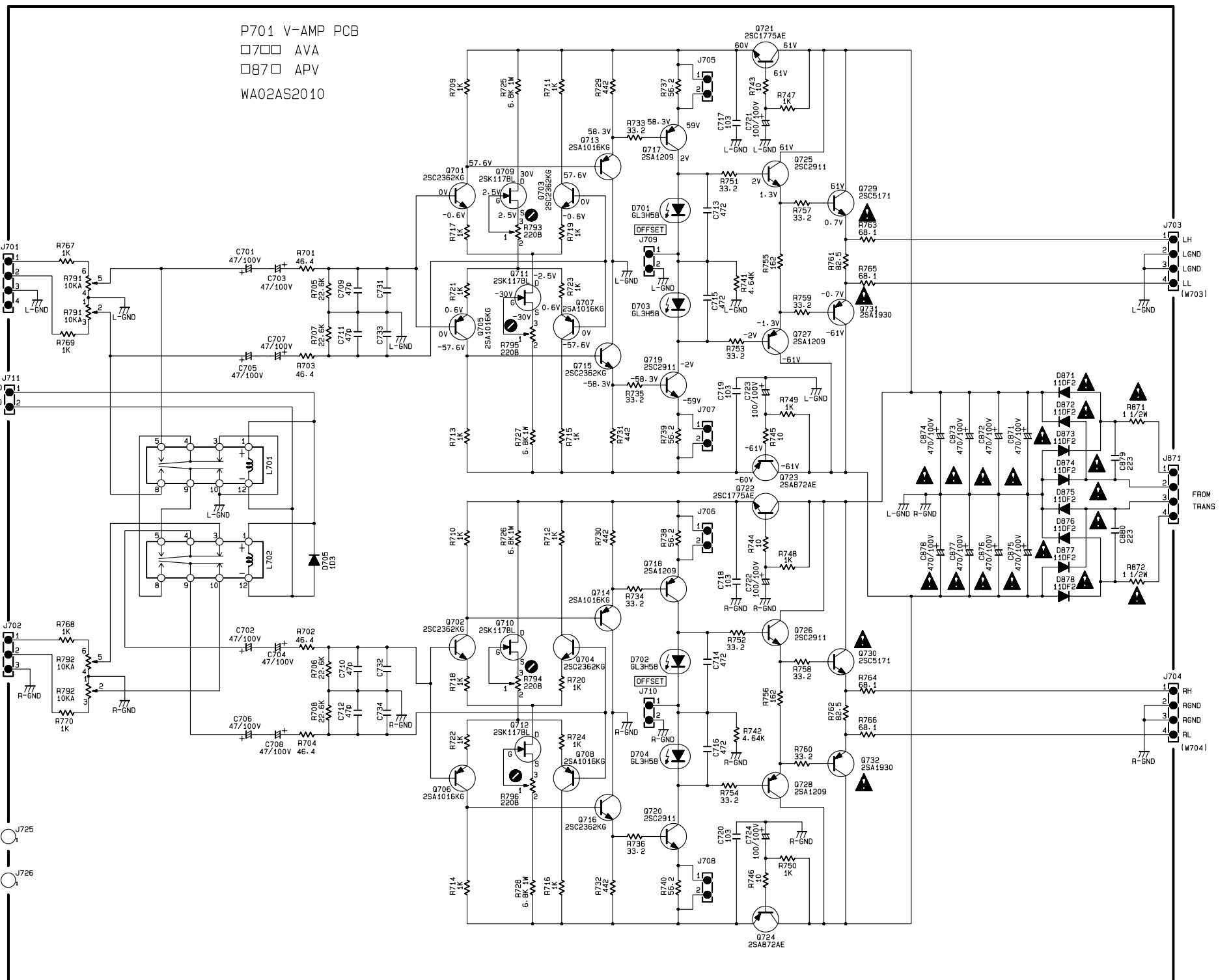
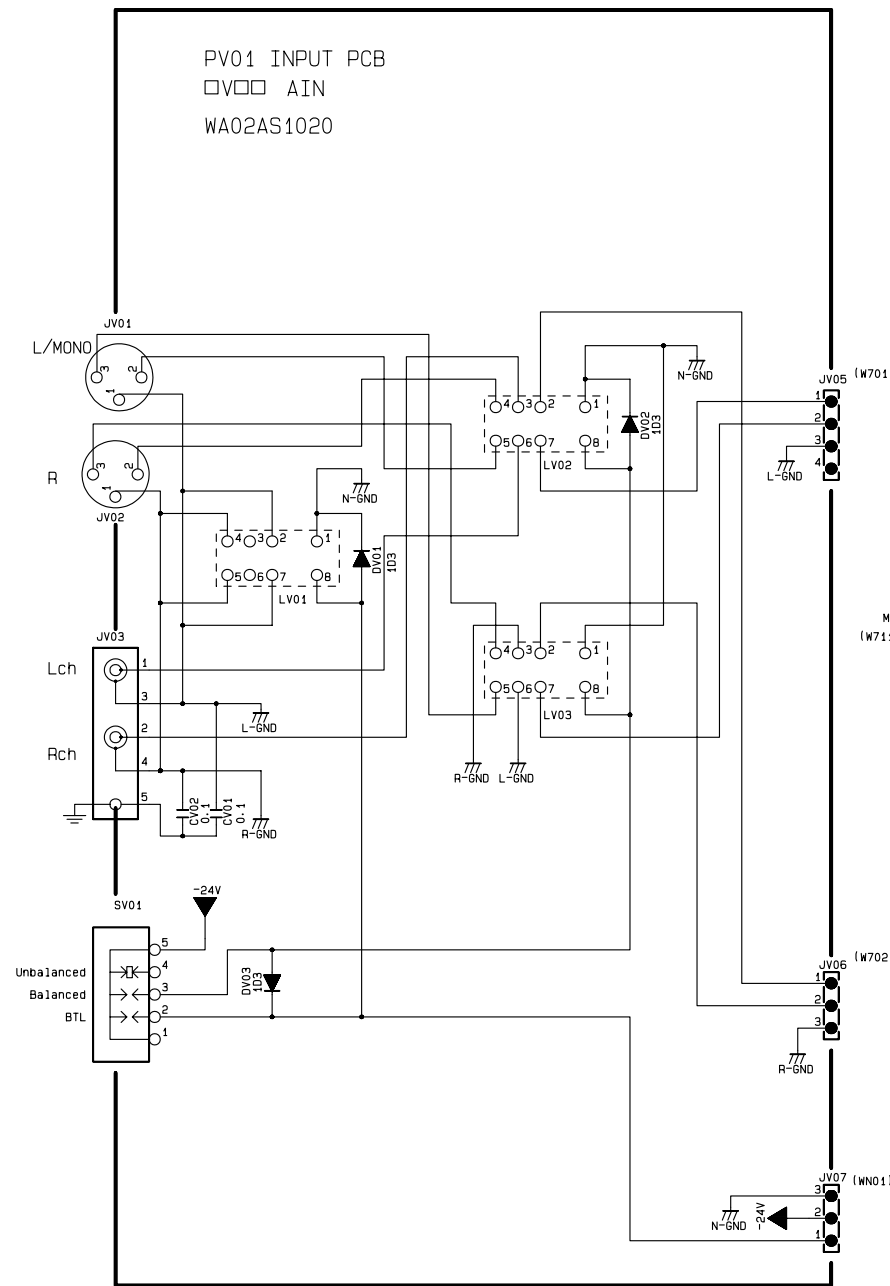
治具：コネクタ付延長ケーブル (番号：* PA02IDLJG)

4. BLOCK DIAGRAM

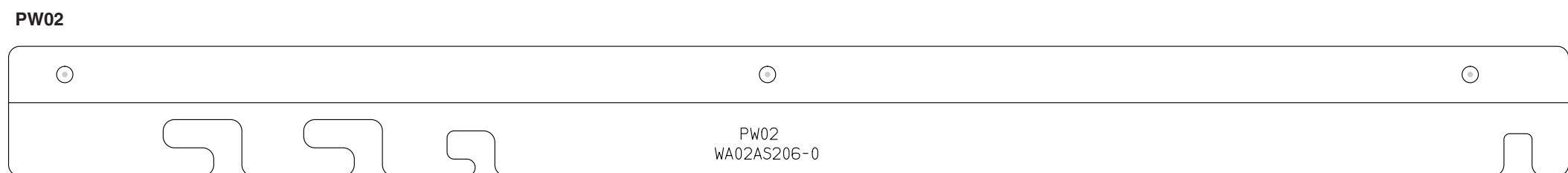
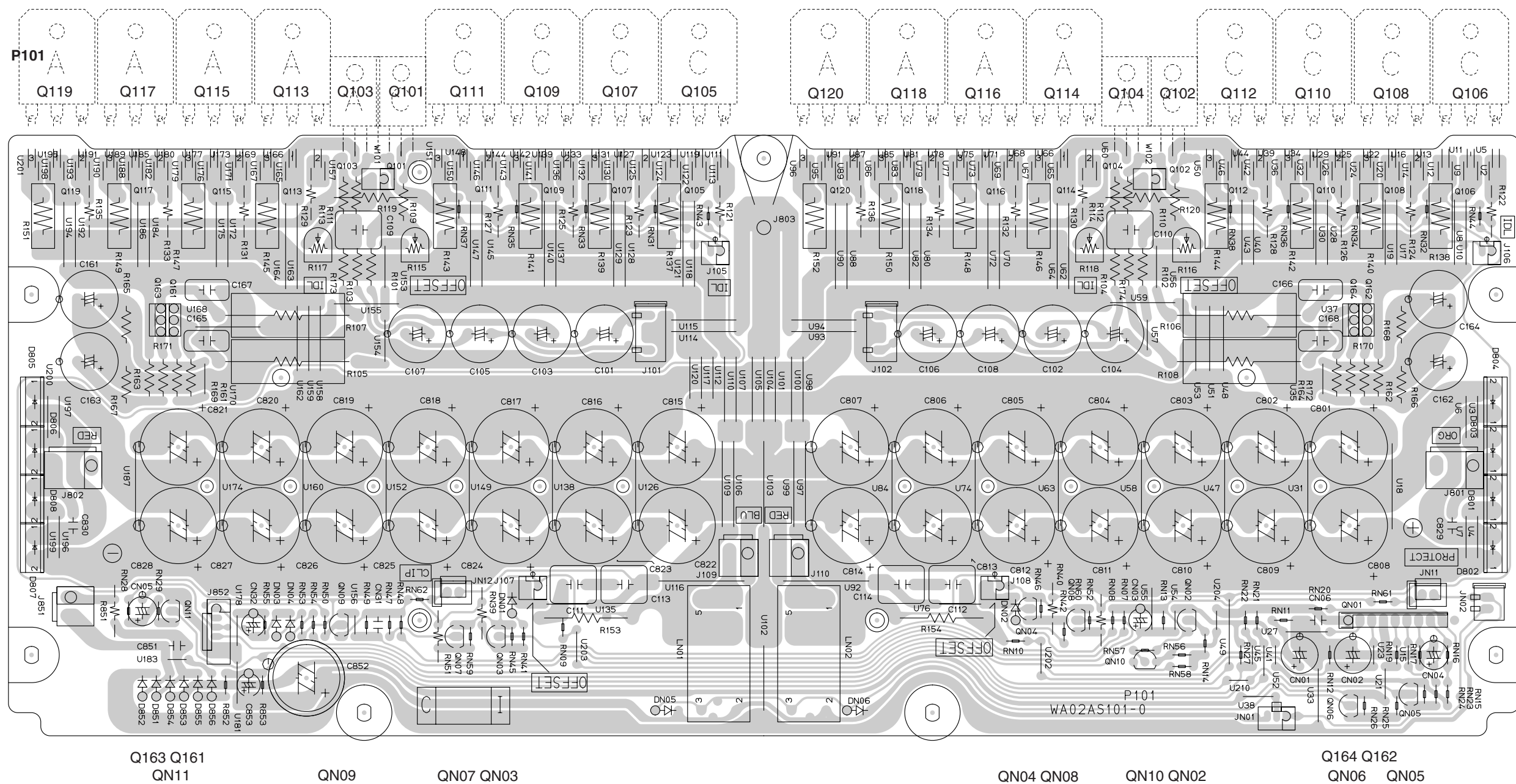


5. SCHEMATIC DIAGRAM

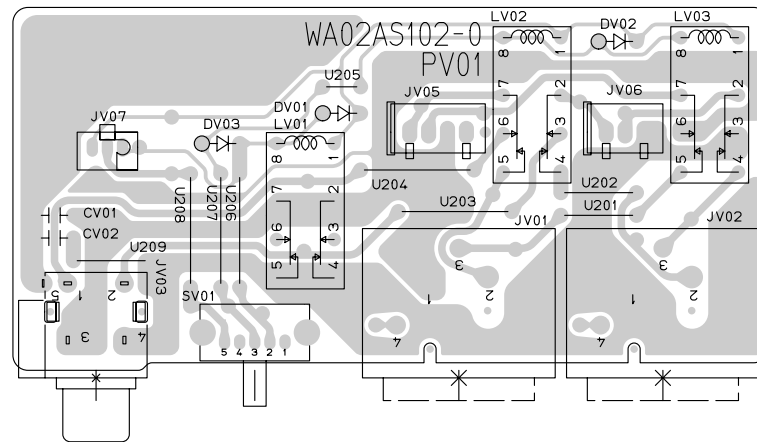




6. PARTS LOCATION

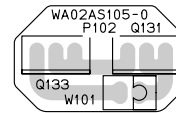


PV01



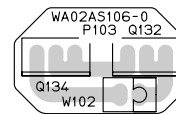
P102

Q133 Q131



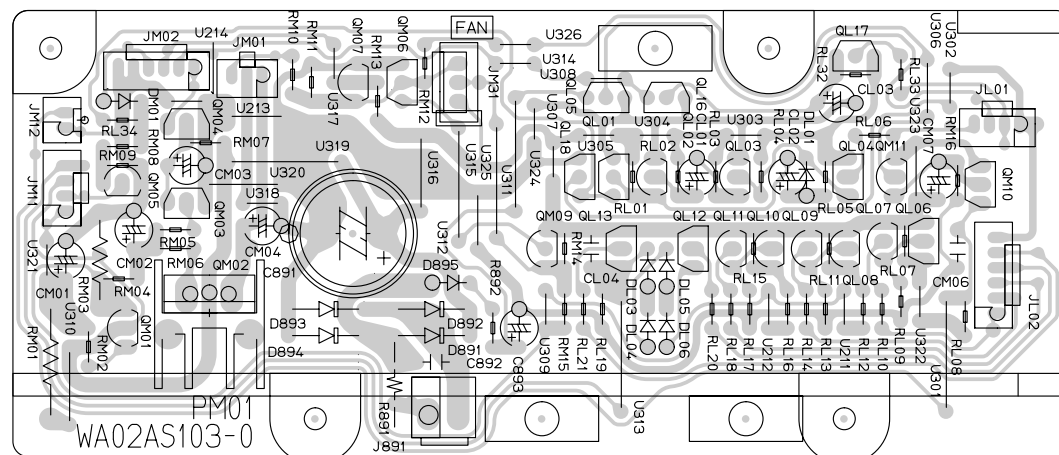
P103

Q134 Q132

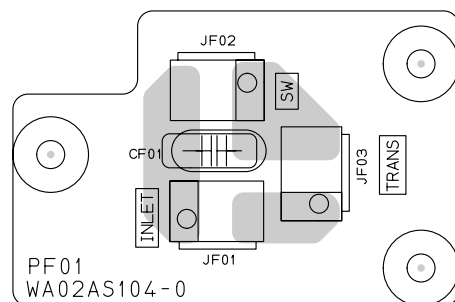


PM01

QM04 QM07 QM06 QL015 QL06 QL17
QM05 QM03 QL18 QL01 QL02 QL03 QL04 QM11 QM10
QM01 QM02 QL09 QL13 QL12 - QL10 - QL08 - QL06

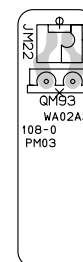


PF01



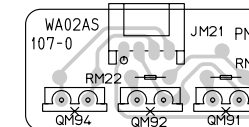
PM03

QM93

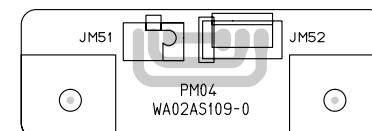


PM02

QM94 QM92 QM91

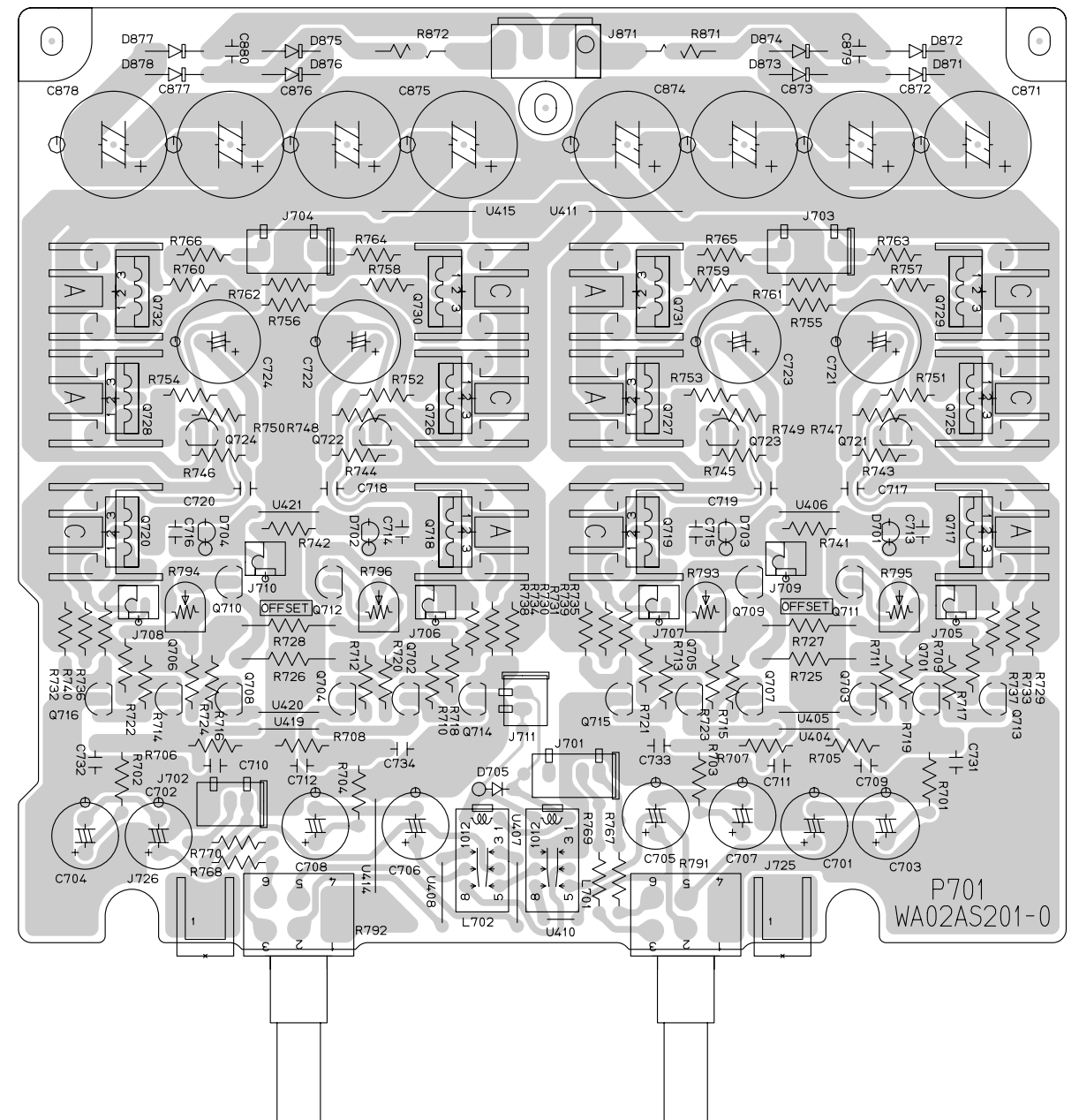


PM04

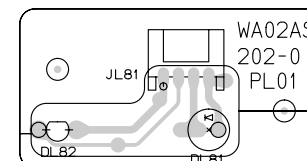


P701

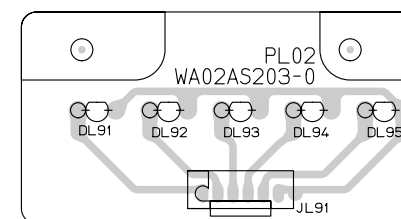
Q732 Q728 Q724 Q722 Q730 Q726 Q731 Q727 Q723 Q721 Q729 Q725
Q720 Q710 Q712 Q718 Q719 Q709 Q711 Q717
Q716 Q706 Q708 Q704 Q702 Q714 Q715 Q705 Q707 Q703 Q701 Q713



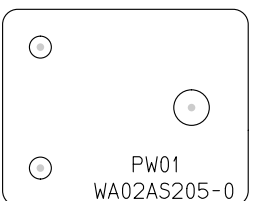
PL01



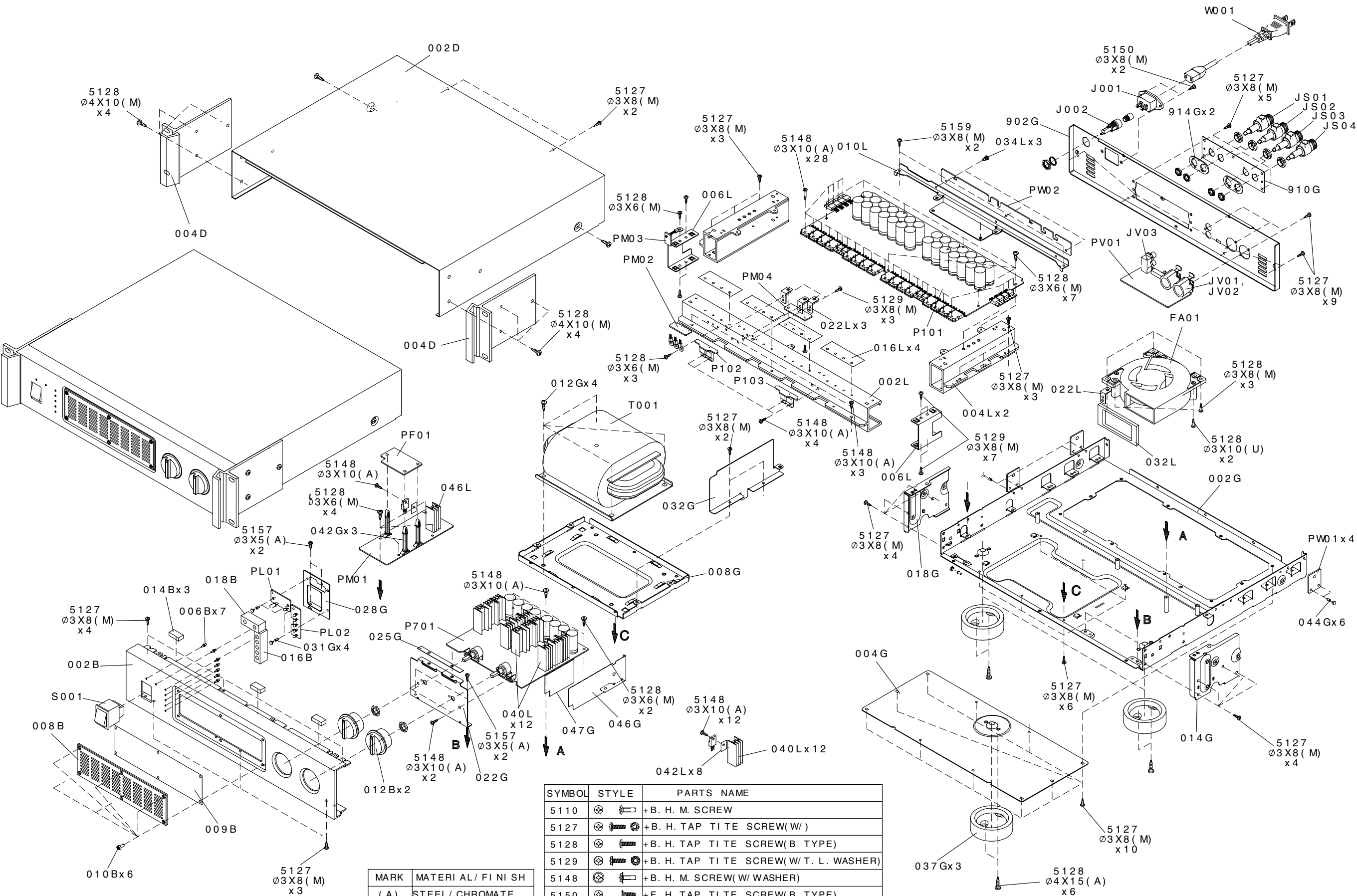
PL02



PW01



7. EXPLODED VIEW AND PARTS LIST



MARK	MATERI AL/ FI NI SH
(A)	STEEL/ CHROMATE
(M)	STEEL/ COPPER
(U)	STEEL/ BLACK

SYMBOL	STYLE	PARTS NAME
5110		+B. H. M. SCREW
5127		+B. H. TAP TITE SCREW(W/)
5128		+B. H. TAP TITE SCREW(B TYPE)
5129		+B. H. TAP TITE SCREW(W/ T. L. WASHER)
5148		+B. H. M. SCREW(W/ WASHER)
5150		+F. H. TAP TITE SCREW(B TYPE)
5157		+P. H. TAP TITE SCREW(S TYPE)
5159		+B. H. TAP TITE SCREW(S TYPE)

POS. NO	VERS. COLOR	PART NO. (PCS)	DESCRIPTION	PART NO. (MJI)	POS. NO	VERS. COLOR	PART NO. (PCS)	DESCRIPTION	PART NO. (MJI)
002B		4822 381 11893	FRONT PANEL (PA 02 F)	02AS248010	▲ S001			MAINS SWITCH JW-L11RKK	SC01010580
006B			LED LENS	269J355010	▲ T001			MAINS TRANSF. FOR PA 02 R-700	TS87001010
008B			FRONT COVER	02AS053010	▲ W001			MAINS CORD	ZC01803130
009B			NET (PANEL-FRONT COVER)	02AS202010				CORDSET FOR F OFC 2P	
010B			SCREW FOR FRONT COVER	02AS010010					
012B			VOLUME KNOB (L R)	02AS154010					
014B			BUFFER FOR LID	nsp					
016B			REFLECTOR FOR TEMP. LED	nsp					
018B			REFLECTOR FOR POWER PEAK LED	nsp	002T			PACKING USER GUIDE	02AS851110
002D			LID	nsp					
004D			HANDLE	nsp					
002G			MAIN CHASSIS	nsp					
004G			LID BOTTOM COVER	nsp					
008G			TRANSF. CHASSIS	nsp					
012G			SCREW FOR TRANS	02AS010020					
014G			FRONT BRACKET (R)	nsp					
018G			FRONT BRACKET (L)	nsp					
022G			VOLUME BRACKET	nsp					
025G			SPACER FOR VR BRACKET	nsp					
028G			LED PCB BRACKET	nsp					
031G			CLAMPER FOR LED PCB	284J005010					
032G			SHIELD	nsp					
037G			LEG	288S057120					
042G			SUPPORT FOR POWER PCB	nsp					
044G			CLAMPER FOR WIRE BIND PCB	284J005010					
046G		4822 256 30232	SHIELD FOR V-AMP PCB	nsp					
047G			INSULATOR FOR SHIELD (046G)	nsp					
902G			REAR PANEL	nsp					
910G			REAR PANEL SP TERMINAL	nsp					
914G			SPACER FOR SPK.TERMINAL	nsp					
002L			MAIN HEATSINK	nsp					
004L			SUB HEATSINK	nsp					
006L			HEATSINK BRACKET	nsp					
010L			HEATSINK STAY	nsp					
016L			INSULATOR FOR TR	02AS120010					
022L			RETAINER FOR FAN PCB	nsp					
032L			FAN BUFFER	nsp					
034L			CLAMPER FOR STAY+PCB	284J005010					
040L			HEATSINK FOR V-AMP PCB	nsp					
042L			INSULATOR FOR TR	01AS120020					
046L			HEATSINK FOR FAN CONTROL PCB	nsp					
▲ FA01			D.C MOTOR FAL6F12LLS	MM01200380					
▲ F001			SCIROCCO FAN						
			FUSE 15A 250V SM15	FS11500540					
			MITI 32-1246						
JS01		4822 256 30232	TERMINAL SP RED	YT01010780				NOT STANDARD SPARE PARTS	
JS02			TERMINAL SP WHT	YT01010770	002S			PACKING CASE	02AS801010
JS03			TERMINAL SP WHT	YT01010770	004S			CUSHION	02AS809010
JS04			TERMINAL SP RED	YT01010780	005S			CUSHION	02AS809020
▲ J001			JACK AC INLET TYPE HF-301	YJ04002550					
▲ J002			JACK FUSE HOLDER	YJ08000300	010T			TOOL HEX-KEY WRENCH	9710100070

NOTE : "nsp" PART IS LISTED FOR REFERENCE ONLY, MARANTZ WILL NOT SUPPLY THESE PARTS.

8. ELECTRICAL PARTS LIST

ASSIGNMENT OF COMMON PARTS CODES.

RESISTORS

R***: 1) GD05 × × × 140, Carbon film fixed resistor, ±5% 1/4W
 R***: 2) GD05 × × × 160, Carbon film fixed resistor, ±5% 1/6W

① — Resistance value

Examples ;

① Resistance value

0.1 Ω 001 10 Ω 100 1 kΩ 102 100 kΩ 104
 0.5 Ω 005 18 Ω 180 2.7 kΩ 272 680 kΩ 684
 1 Ω 010 100 Ω 101 10 kΩ 103 1 MΩ 105
 6.8 Ω 068 390 Ω 391 22 kΩ 223 4.7 MΩ 475

Note : Please distinguish 1/4W from 1/6W by the shape of parts used actually.

CAPACITORS

C***: CERAMIC CAP.

3) DD1 × × × × 370, Ceramic capacitor
 ② Disc type
 ③ Temp.coeff.P350 ~ N1000, 50V
 Capacity value
 Tolerance

Examples ;

② Tolerance (Capacity deviation)

±0.25 pF 0
 ±0.5 pF 1
 ±5% 5

* Tolerance of COMMON PARTS handled here are as follows :

0.5 pF ~ 5 pF ±0.25 pF
 6 pF ~ 10 pF ±0.5 pF
 12 pF ~ 560 pF ±5%

③ Capacity value

0.5 pF 005 3 pF 030 100 pF 101
 1 pF 010 10 pF 100 220 pF 221
 1.5 pF 015 47 pF 470 560 pF 561

C***: CERAMIC CAP.

4) DK16 × × × 300, High dielectric constant ceramic capacitor
 ④ Disc type
 Temp.chara. 2B4, 50V
 Capacity value

Examples ;

④ Capacity value

100 pF 101 1000 pF 102 10000 pF 103
 470 pF 471 2200 pF 222

C***: 5) ELECTROLY CAP. (), 6) FILM CAP. ()

5) EA × × × × × 10, Electrolytic capacitor
 ⑤ One-way lead type, Tolerance ±20%
 ⑥ Working voltage
 Capacity value

Examples ;

⑤ Capacity value

0.1 μF 104 4.7 μF 475 100 μF 107
 0.33 μF 334 10 μF 106 330 μF 337
 1 μF 105 22 μF 226 1100 μF 118
 2200 μF 228

⑥ Working voltage

6.3V 006 25V 025
 10V 010 35V 035
 16V 016 50V 050

6) DF15 × × × 350 — Plastic film capacitor
 DF15 × × × 310 — One-way type, Mylar ±5% 50V
 DF16 × × × 310 — Plastic film capacitor
 One-way type, Mylar ±10% 50V
 ⑦ Capacity value

Examples ;

⑦ Capacity value

0.001 μF (1000 pF) 102 0.1 μF 104
 0.0018 μF 182 0.56 μF 564
 0.01 μF 103 1 μF 105
 0.015 μF 153

NOTE : 1) The above CODES (R***, R***, C***, C*** and C***) are omitted on the schematic diagram in some case.

2) On the occasion, be confirmed the common parts on the parts list.

3) Refer to "Common Parts List" for the other common parts (R105, DD4, DK4).

NOTE ON SAFETY FOR FUSIBLE RESISTOR :

The suppliers and their type numbers of fusible resistors are as follows;

1. KOA Corporation

Part No. (MJI)	Type No. (KOA)	Description
NH05 × × × 140	RF25S × × × × ΩJ	(±5% 1/4W)
NH05 × × × 120	RF50S × × × × ΩJ	(±5% 1/2W)
NH85 × × × 110	RF73B2A × × × × ΩJ	(±5% 1/10W)
NH95 × × × 140	RF73B2E × × × × ΩJ	(±5% 1/4W)

* Resistance value Resistance value
 (0.1 Ω – 10 kΩ)

2. Matsushita Electronic Components Co., Ltd

Part No. (MJI)	Type No. (MEC)	Description
NF05 × × × 140	ERD-2FCJ × × ×	(±5% 1/4W)
RF05 × × × 140		
NF02 × × × 140	ERD-2FCG × × ×	(±2% 1/4W)
RF02 × × × 140		

* Resistance value * Resistance value

Examples ;

* Resistance value

0.1 Ω 001 10 Ω 100 1 kΩ 102 100 kΩ 104
 0.5 Ω 005 18 Ω 180 2.7 kΩ 272 680 kΩ 684
 1 Ω 010 100 Ω 101 10 kΩ 103 1 MΩ 105
 6.8 Ω 068 390 Ω 391 22 kΩ 223 4.7 MΩ 475

ABBREVIATION AND MARKS

ANT. : ANTENNA	BATT. : BATTERY
CAP. : CAPACITOR	CER. : CERAMIC
CONN. : CONNECTING	DIG. : DIGITAL
HP : HEADPHONE	MIC. : MICROPHONE
μ-PRO : MICROPROCESSOR	REC. : RECORDING
RES. : RESISTOR	SPK : SPEAKER
SW : SWITCH	TRANSF. : TRANSFORMER
TRIM. : TRIMMING	TRS. : TRANSISTOR
VAR. : VARIABLE	X'TAL : CRYSTAL

NOTE ON FUSE :

Regarding to all parts of parts code **FS20xxx2xx**, replace only with Wickmann-Werke GmbH, Type 372 non glass type fuse.

NOTE ON SAFETY :

Symbol  Fire or electrical shock hazard. Only original parts should be used to replaced any part marked with symbol  . Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.

安全上の注意 :

 がついている部品は、安全上重要な部品です。必ず指定されている部品番号の部品を使用して下さい。

POS. NO	VERS. COLOR	PART NO. (PCS)	DESCRIPTION	PART NO. (MJI)	POS. NO	VERS. COLOR	PART NO. (PCS)	DESCRIPTION	PART NO. (MJI)
C101 } C108 C109 C110 C111 } C114 C161 } C164 C165 } C168 ▲ C801 } ▲ C828 C829 C830 C851 ▲ C852 C853		4822 124 80771	P101-C-AMP CIRCUIT BOARD P101-CAPAITORS ELECT 100μF 100V RA-2 FILM 0.068μF ±5% 100V FILM 0.068μF ±5% 100V FILM 0.047μF ±5% 100V ELECT 100μF 100V RA-2 FILM 0.01μF ±5% 100V ELECT 470μF M 100V RA-2 FILM 0.022μF ±5% 100V FILM 0.022μF ±5% 100V CER. 0.1μF +80 -20% 50V ELECT 2200μF M 35V RA-2 ELECT 3.3μF M 50V RA-2	OA10710020 OF55683540 OF55683540 OF55473540 OA10710020 OF55103540 OA47710020 OF55223540 OF55223540 DD38104040 OA22803520 OA33505020	R161 } R164 R165 } R168 R169 } R172 R173 R174 ▲ R851 ▲ RN39 ▲ RN40 ▲ RN51 ▲ RN52		4822 117 10158 4822 050 21502 4822 050 21502 4822 050 21502 4822 050 21502	1k Ω ±1% 1/4W 27.4k Ω ±1% 1/4W 33.2 Ω ±1% 1/4W 162 Ω ±1% 1/4W 162 Ω ±1% 1/4W 1 Ω ±5% 1/4W 1.5k Ω ±5% 1/4W 1.5k Ω ±5% 1/4W 1.5k Ω ±5% 1/4W 1.5k Ω ±5% 1/4W	GM11410010 GM11427420 GM114332G0 GM11416200 GM11416200 GG05010140 GG05152140 GG05152140 GG05152140 GG05152140
▲ C828 C829 C830 C851 ▲ C852 C853		4822 124 12275	ELECT 470μF M 100V RA-2	OA47710020	R***			P101-RESISTORS COMMON) CARBON FILM FIXED RES. ±5% 1/6W : R852 R853 RN07-RN17 RN19-RN29 RN31-RN38 RN41-RN44 RN47-RN50 RN53-RN62	
CN01 CN02 CN03 CN04 CN05 CN06 CN32		4822 124 90365 4822 124 90365 4822 124 22274 4822 124 22276 4822 124 90362 CER. 0.1μF +80 -20% 50V 4822 124 22571	ELECT 220μF M 25V RA-2 ELECT 220μF M 25V RA-2 ELECT 4.7μF M 50V RA-2 ELECT 47μF M 50V RA-2 ELECT 22μF M 50V RA-2 CER. 0.1μF +80 -20% 50V ELECT 10μF M 50V RA-2	OA22702520 OA22702520 OA47505020 OA47605020 OA22605020 DD38104040 OA10605020	▲ D801 } ▲ D808 ▲ D851 } ▲ D856		4822 130 82421	P101-SEMICONDUCTORS DIODE FSF10A20 DIODE 1D3 1A/200V	HD20056100 HD20002710
C***			P101-CAPACITORS(COMMON) PLASTIC FILM CAPACITOR ±5% 50V : CN31		DN01 DN02 DN03 } DN06		4822 130 80837 4822 130 80837 4822 130 82421	DIODE HSS81TD 150V 150MA DIODE HSS81TD 150V 150MA DIODE 1D3 1A/200V	HD20027010 HD20027010 HD20002710
R101 } R104 R105 } R108 R109 } R112 R113 R114 R115			P101-RESISTORS 100 Ω ±1% 1/4W 5.6k Ω ±5% 3W 10 Ω ±1% 1/4W 68.1 Ω ±1% 1/4W 68.1 Ω ±1% 1/4W TRIMMING RH068 CERMET 330B 0.3W	GM11410000 GA05562030 GM114100G0 GM114681G0 GM114681G0 RA03311100	▲ Q101 ▲ Q102 ▲ Q103 ▲ Q104 ▲ Q105 } ▲ Q112 ▲ Q113 } ▲ Q120 ▲ Q131 } ▲ Q134		4822 209 83312 4822 130 42999 4822 130 43283 4822 130 43283 4822 130 42999 4822 130 43283 4822 130 43283 4822 130 42999 4822 130 43283 4822 130 42999 4822 130 43283 4822 130 43283	TRS. 2SC5171 TRS. 2SC5171 TRS. 2SA1930 TRS. 2SA1930 TRS. 2SC2837 Y TRS. 2SA1186 Y TRS. 2SC3987 50V 3A HFE4000 TRS. 2SC2911 S TRS. 2SC2911 S TRS. 2SA1209 S TRS. 2SA1209 S	HT35171000 HT35171000 HT11930000 HT11930000 HT328371C0 HT111861C0 HT33987000
R116 R117 R118			TRIMMING RH068 CERMET 330B 0.3W TRIMMING RH068 CERMET 330B 0.3W TRIMMING RH068 CERMET 100B 0.3W TRIMMING RH068 CERMET 100B 0.3W	RA03311100 RA03311100 RA01011100 RA01011100	Q161 Q162 Q163 Q164				
R119 R120 R121 } R136 ▲ R137 } ▲ R152 R153 R154		5322 116 51677 5322 116 51677 4822 117 10158 4822 116 80153 4822 053 11109 4822 053 11109	39 Ω ±5% 2W 39 Ω ±5% 2W 1 Ω ±5% 1/4W 0.18 Ω ±10% 5W 10 Ω ±5% 2W 10 Ω ±5% 2W	GA05390020 GA05390020 GG05010140 GO10182050 GA05100020 GA05100020	QN01 QN02 QN03 QN04 QN05 QN06 QN07 QN08 QN09 QN10 QN11		4822 209 83312 4822 130 42999 4822 130 43283 4822 130 43283 4822 130 42999 4822 130 43283 4822 130 43283 4822 130 42999 4822 130 43283 4822 130 43283	IC TA7317P TRS. 2SA1145 O OR Y TRS. 2SC2705 O OR Y TRS. 2SC2705 O OR Y TRS. 2SA1145 O OR Y TRS. 2SC2705 O OR Y TRS. 2SC2705 O OR Y TRS. 2SC2705 O OR Y TRS. 2SA1145 O OR Y TRS. 2SC2705 O OR Y TRS. 2SC2705 O OR Y	HC10042050 HT111452A0 HT327052A0 HT327052A0 HT111452A0 HT327052A0 HT327052A0 HT327052A0 HT111452A0 HT327052A0 HT327052A0

NOTE : "nsp" PART IS LISTED FOR REFERENCE ONLY, MARANTZ WILL NOT SUPPLY THESE PARTS.

POS. NO	VERS. COLOR	PART NO. (PCS)	DESCRIPTION	PART NO. (MJI)	POS. NO	VERS. COLOR	PART NO. (PCS)	DESCRIPTION	PART NO. (MJI)
▲ LN01		4822 280 10343	P101-MISCELLANEOUS RELAY VS-24MBU-551-UC	LY10240270	R763			68.1 Ω ±1% 1/4W	GM114681G0
▲ LN02		4822 280 10343	GOLD CONTACT	LY10240270	}				
			RELAY VS-24MBU-551-UC	LY10240270	R766				
			GOLD CONTACT	LY10240270	R767			1k Ω ±1% 1/4W	GM11410010
					}				
			P701-V-AMP CIRCUIT BOARD		R770				
			P701-CAPACITORS		R791			VAR. 10KA*2 MASTER VL L	RM01031190
C701					R792			VAR. 10KA*2 MASTER VL R	RM01031190
}					R793				
C708			ELECT 47μF M 100V RA-2	OA47610020	}			TRIMMING RH068 CERMET	RA02211100
C709					R796			220B 0.3W	
}		4822 123 30086	MICA 47pF J 500V	DF35470520	▲ R871		4822 050 21108	1 Ω ±5% 1/2W	GG05010120
C712					▲ R872		4822 050 21108	1 Ω ±5% 1/2W	GG05010120
C713									
}								P701-SEMICONDUCTORS	
C716			FILM 4700pF ±5% 100V	OF55472540	▲ D871			DIODE 11DF2 1A 200V FRD	HD20057100
C717					}				
}					▲ D878				
C720			FILM 0.01μF ±5% 100V	OF55103540	D701			L.E.D. GL3HS8	HI10111320
C721					}			(SUNSET ORANGE)	
}		4822 124 80771	ELECT 100μF 100V RA-2	OA10710020	D704			DIODE 1D3 1A/200V	HD20002710
C724					D705		4822 130 82421		
▲ C871									
}		4822 124 12275	ELECT 470μF M 100V RA-2	OA47710020	Q701				
▲ C878					}		4822 130 43813	TRS. 2SC2362K G RANK	HT323621G0
C879			FILM 0.022μF ±5% 100V	OF55223540	Q704				
C880			FILM 0.022μF ±5% 100V	OF55223540	Q705			TRS. 2SA1016K G RANK	HT110161G0
					}				
			P701-RESISTORS		Q708				
					Q709				
R701					}			F.E.T. 2SK117 BL RANK	HF201171D0
}			46.4 Ω ±1% 1/4W	GM114464G0	Q712				
R704					Q713				
R705					Q714			TRS. 2SA1016K G	HT110161G0
}		9965 000 00596	22.6k Ω ±1% 1/4W	GM11422620	Q715		4822 130 43813	TRS. 2SC2362K G	HT323621G0
R708					Q716		4822 130 43813	TRS. 2SC2362K G	HT323621G0
R709					Q717			TRS. 2SA1209 S	HT112091B0
}			1k Ω ±1% 1/4W	GM11410010	Q718			TRS. 2SA1209 S	HT112091B0
R724					Q719			TRS. 2SC2911 S	HT329111B0
R725					Q720			TRS. 2SC2911 S	HT329111B0
}		4822 053 10682	6.8k Ω ±5% 1W	GA05682010	Q721		4822 130 43192	TRS. 2SC1775A E	HT317751E0
R728					Q722		4822 130 43192	TRS. 2SC1775A E	HT317751E0
R729					Q723		4822 130 43617	TRS. 2SA872A E	HT108721E0
}			442 Ω ±1% 1/4W	GM11444200	Q724		4822 130 43617	TRS. 2SA872A E	HT108721E0
R732					Q725			TRS. 2SC2911 S	HT329111B0
R733					Q726			TRS. 2SC2911 S	HT329111B0
}			33.2 Ω ±1% 1/4W	GM114332G0	Q727			TRS. 2SA1209 S	HT112091B0
R736					Q728			TRS. 2SA1209 S	HT112091B0
R737					▲ Q729			TRS. 2SC5171	HT35171000
}			56.2 Ω ±1% 1/4W	GM114562G0	▲ Q730			TRS. 2SC5171	HT35171000
R740					▲ Q731			TRS. 2SA1930	HT11930000
R741			4.64k Ω ±1% 1/4W	GM11446410	▲ Q732			TRS. 2SA1930	HT11930000
R742			4.64k Ω ±1% 1/4W	GM11446410					
R743								P701-MISCELLANEOUS	
}			10 Ω ±1% 1/4W	GM114100G0	L701		9965 000 01570	RELAY ED2-24V	LY20240470
R746					L702		9965 000 01570	RELAY ED2-24V	LY20240470
R747									
}			1k Ω ±1% 1/4W	GM11410010				PF01-POWER CONNECT	
R750								CIRCUIT BOARD	
R751					▲ CF01			CER. CAP.DE1607-1F 103M-KH	DK17103910
}			33.2 Ω ±1% 1/4W	GM114332G0					
R754								PL01-POWER LED	
R755			162 Ω ±1% 1/4W	GM11416200				CIRCUIT BOARD	
R756			162 Ω ±1% 1/4W	GM11416200	DL81			L.E.D. BLU LED FOR POWER	HI10039080
R757					DL82		4822 130 80326	L.E.D. RED LED FOR CLIP	HI10062320
}			33.2 Ω ±1% 1/4W	GM114332G0					
R760									
R761			82.5 Ω ±1% 1/4W	GM114825G0					
R762			82.5 Ω ±1% 1/4W	GM114825G0					

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POS. NO	VERS. COLOR	PART NO. (PCS)	DESCRIPTION	PART NO. (MJI)	POS. NO	VERS. COLOR	PART NO. (PCS)	DESCRIPTION	PART NO. (MJI)
DL91		4822 130 80326	PL02-TEMP LED CIRCUIT BOARD	HI10062320	QL17		4822 130 61227	DIG. TRS. DTA114ES/UN4111 10K 10K	BA10001000
DL92			L.E.D. RED LED FOR TEMP		QL18		4822 130 60588	DIG. TRS. DTC114ES/UN4211 10K 10K	BA20001000
DL95		4822 130 11363	L.E.D. GRN LED FOR TEMP	HI10095320	QM01		4822 130 43283	TRS. 2SC2705 O OR Y	HT327052A0
					QM02			TRS. 2SC3987 50V 3A HFE4000	HT33987000
			PM01-FAN CONTROL CIRCUIT BOARD		QM03		4822 130 60588	DIG. TRS. DTC114ES/UN4211 10K 10K	BA20001000
			PM01-CAPACITORS		QM04		4822 130 61189	DIG. TRS. DTC114TS/UN4215 10K	BA20004000
C891		4822 124 81133	ELECT 4700μF 25V RA-2	OA47802520	QM05		4822 130 41947	TRS. 2SC2458 2SC1740S 2SC3199 ETC.	HT30001000
C892			CER. 0.1μF +80 -20% 50V	DD38104040	QM06		4822 130 60588	DIG. TRS. DTC114ES/UN4211 10K 10K	BA20001000
C893		4822 124 90357	ELECT 2.2μF M 50V RA-2	OA22505020	QM07		4822 130 41947	TRS. 2SC2458 2SC1740S 2SC3199 ETC.	HT30001000
CL01		4822 124 22274	ELECT 4.7μF M 50V RA-2	OA47505020	QM09		4822 130 42715	TRS. 2SA1048 2SA933S 2SA1267 ETC.	HT10001000
CL02		4822 124 22571	ELECT 10μF M 50V RA-2	OA10605020	QM10		4822 130 63211	DIG. TRS. DTA114TS/UN4115 10K	BA10004000
CL03		4822 124 22571	ELECT 10μF M 50V RA-2	OA10605020	QM11		4822 130 42715	TRS. 2SA1048 2SA933S 2SA1267 ETC.	HT10001000
CL04			CER. 0.1μF +80 -20% 50V	DD38104040					
CM01		4822 124 90362	ELECT 22μF M 50V RA-2	OA22605020				PM02-TEMP SENSOR CIRCUIT BOARD	
CM02		4822 124 22571	ELECT 10μF M 50V RA-2	OA10605020	QM91			VARISTOR PTH487A01BF222TS 2.2KW	HP00042230
CM03		4822 124 22571	ELECT 10μF M 50V RA-2	OA10605020	QM92		4822 126 90009	VARISTOR PTH487A01BD222TS 2.2KW	HP00029230
CM04		4822 124 90362	ELECT 22μF M 50V RA-2	OA22605020	QM94			VARISTOR PTH487A01 BH222TS POSISTER	HP00023230
CM06			CER. 0.1μF +80 -20% 50V	DD38104040				PM03-TEMP. SENSOR SUB CIRCUIT BOARD	
CM07		4822 124 22571	ELECT 10μF M 50V RA-2	OA10605020	QM93		4822 130 42848	VARISTOR POSISTOR PTH487 (01BB-120)	HP00009230
			PM01-RESISTORS					PV01-INPUT CIRCUIT BOARD PV01-CAPACITORS	
▲ R891		4822 117 10158	1 Ω ±5% 1/4W	GG05010140	CV01			CER. 0.1μF +80 -20% 50V	DD38104040
RM01		4822 053 10151	150 Ω ±5% 1W	GA05151010	CV02			CER. 0.1μF +80 -20% 50V	DD38104040
RM03		4822 050 21022	1k Ω ±5% 1/2W	GG05102120				PV01-SEMICONDUCTORS	
			P1M1-RESISTORS COMMON)		DV01		4822 130 82421	DIODE 1D3 1A/200V	HD20002710
			CARBON FILM FIXED RES.		DV02		4822 130 82421	DIODE 1D3 1A/200V	HD20002710
			±5% 1/6W : R892 RL01-RL21		DV03		4822 130 82421	DIODE 1D3 1A/200V	HD20002710
			RL32 RN33 RL34 RM02					PV01-MISCELLANEOUS	
			RM04-RM16 RM21 RM22		JV01		9965 000 02540	JACK NC3FAH2 4P	YJ01004340
			PM01-SEMICONDUCTORS		JV02		9965 000 02540	JACK NC3FAH2 4P	YJ01004340
			DIODE 11DF2 1A 200V FRD	HD20057100	JV03		4822 290 81598	TERMINAL 2P RCA JACK YKC21-3255 (GOLD)	YT02021130
▲ D891					LV01		9965 000 01576	RELAY MR82-24USR	LY20240480
DL01		4822 130 82421	DIODE 1D3 1A/200V	HD20002710	LV02		9965 000 01576	RELAY MR82-24USR	LY20240480
DM01		4822 130 82421	DIODE 1D3 1A/200V	HD20002710	LV03		9965 000 01576	RELAY MR82-24USR	LY20240480
DL03		4822 130 32362	DIODE 1SS176 MA165 1SS254 30V 0.1A	HD20002000	SV01			SLIDE SW. SSSF113-S06N1	SS01030300
DL06									
QL01		4822 130 60588	DIG. TRS. DTC114ES/UN4211 10K 10K	BA20001000					
QL02		4822 130 41947	TRS. 2SC2458 2SC1740S 2SC3199 ETC.	HT30001000					
QL03		4822 130 41947	TRS. 2SC2458 2SC1740S 2SC3199 ETC.	HT30001000					
QL04		4822 130 63211	DIG. TRS. DTA114TS/UN4115 10K	BA10004000					
QL05		4822 130 60588	DIG. TRS. DTC114ES/UN4211 10K 10K	BA20001000					
QL06		4822 130 63211	DIG. TRS. DTA114TS/UN4115 10K	BA10004000					
QL07									
QL11		4822 130 42715	TRS. 2SA1048 2SA933S 2SA1267 ETC.	HT10001000					
QL12		4822 130 63211	DIG. TRS. DTA114TS/UN4115 10K	BA10004000					
QL13		4822 130 63211	DIG. TRS. DTA114TS/UN4115 10K	BA10004000					
QL16		4822 130 60588	DIG. TRS. DTC114ES/UN4211 10K 10K	BA20001000					

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