

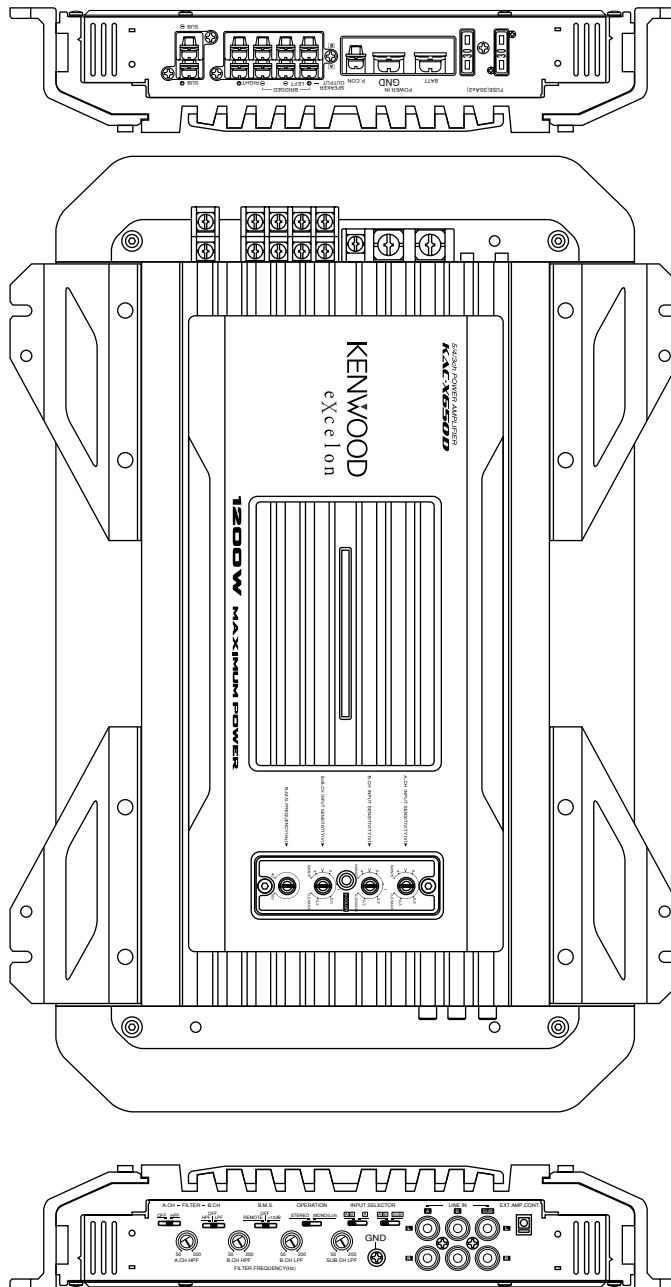
POWER AMPLIFIER

KAC-PS650D KAC-X650D

SERVICE MANUAL

KENWOOD

© 2002-3 PRINTED IN KOREA
B51-7935-00 (K) 3547



KAC-PS650D/X650D

MICROCOMPUTER'S TERMINAL DESCRIPTION

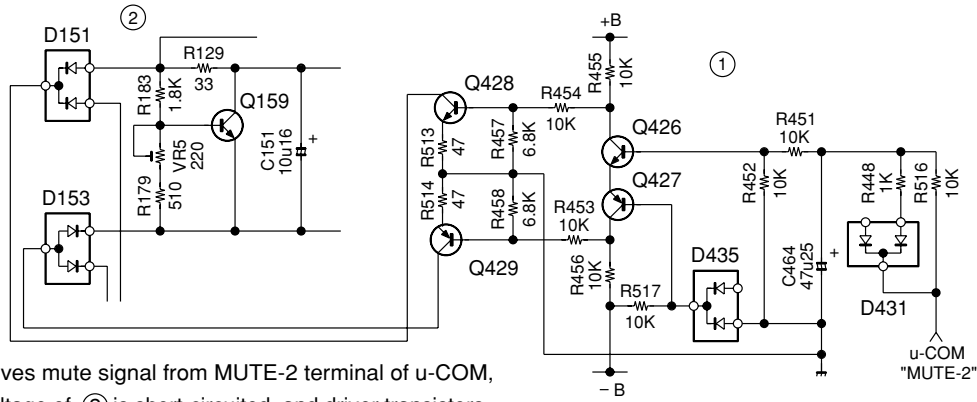
(X09-) IC22 : u-COM

PORT No.	PORT NAME	I/O	FUNCTION	OPERATING CONDITION
1	+5V SW	O	Controls small-amount current.	"L" : SW 5V on.
2	-	-	-	-
3	FAN	O	Controls fan rotation.	"H" : Fan on.
4	-	-	-	-
5	D VOLTAGE	I	Detects class-D over-voltage.	"L" : Over-voltage detection.
6	V DOWN	I	Detects momentary power down.	"H" : Momentary power-down detection.
7	D CURRENT	I	Detects class-D over-current.	"L" (Class-D power on) : Over-current detection.
8	AB VOLTAGE	I	Detects class-AB over-voltage.	"L" : Over-voltage detection.
9	AB CURRENT	I	Detects class-AB over-current.	"H" : Over-current detection.
10	BLUE	O	Controls BLUE of variable illumination.	"H" : Illumination on.
11	GREEN	O	Controls GREEN of variable illumination.	"H" : Illumination on.
12	RED	O	Controls RED of variable illumination.	"H" : Illumination on.
13	TEST	-	-	-
14	RESET	-	Resets.	"L" : Reset.
15	XIN	-	-	-
16	XOUT	-	-	-
17	VSS	-	-	-
18	VAREF	-	A/D reference.	-
19	ADIN 1	I	Detects temperature.	"H" : Unusual temperature detection.
20	ADIN 2	I	Detects temperature.	"H" : Unusual temperature detection.
21	ADIN 3	I	Detects temperature.	"H" : Unusual temperature detection.
22	ADIN 4	I	Detects temperature.	"H" : Unusual temperature detection.
23	-	-	-	-
24	BASS 12dB	I	Stabilizes BMS +12dB.	"H" : BMS +12dB stabilization.
25	BASS REMO	I	Being remote-controlled from BMS head unit.	"H" : remote control available.
26	BASS OFF	I	Releases boost.	"H" : Boost off.
27	D POWER	O	Controls class-D amplifier.	"H" : Class-D amplifier on.
28,29	-	-	-	-
30	POWER	O	Controls power amplifier.	"H" : SW 14.4V on.
31	COM HU	I	Measures the head unit pulse.	-
32	OFFSET CON	O	Controls bass boost frequency offset.	"H" : Offset on.
33	BASS CON A	O	Controls bass boost frequency offset.	-
34	BASS CON B	O	Controls bass boost frequency offset.	-
35,36	-	-	-	-
37	STAND-BY	I	Cancel stop mode by P.CON on.	"L" : P.CON on or BACK-UP over-voltage detection.
38,39	-	-	-	-
40	VDD	-	VDD.	-
41	TACT SW	I	Switches color.	"H" : SW on.
42	MUTE 2	O	Controls driver stages.	"L" : Mute on.
43	MUTE 1	O	Controls amplifier input mute.	"L" : Mute on.
44	-	-	-	-

KAC-PS650D/X650D

CIRCUIT DESCRIPTION

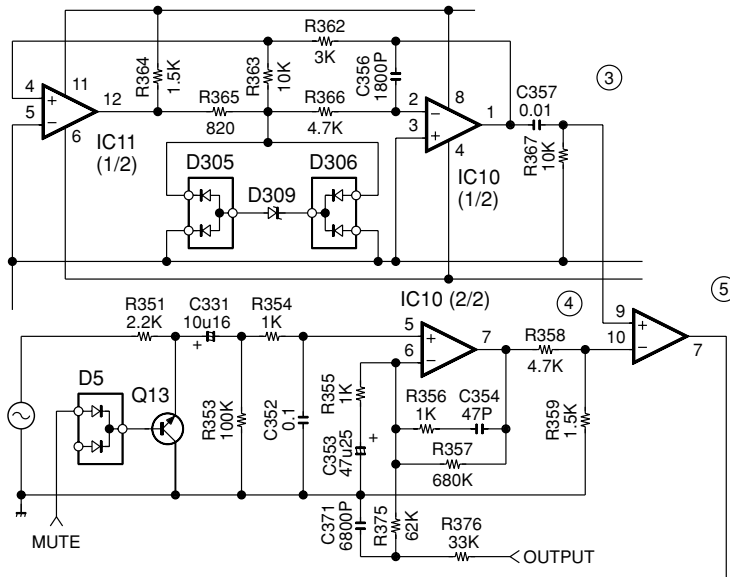
Shock Noise Prevention Circuit



① receives mute signal from MUTE-2 terminal of u-COM, and bias voltage of ② is short-circuited, and driver transistors and final transistors on X08- get in condition of non-operation, and shock noise is prevented.

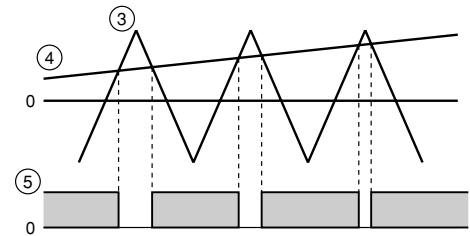
PWM Wave Former

Triangular Wave Former Circuit

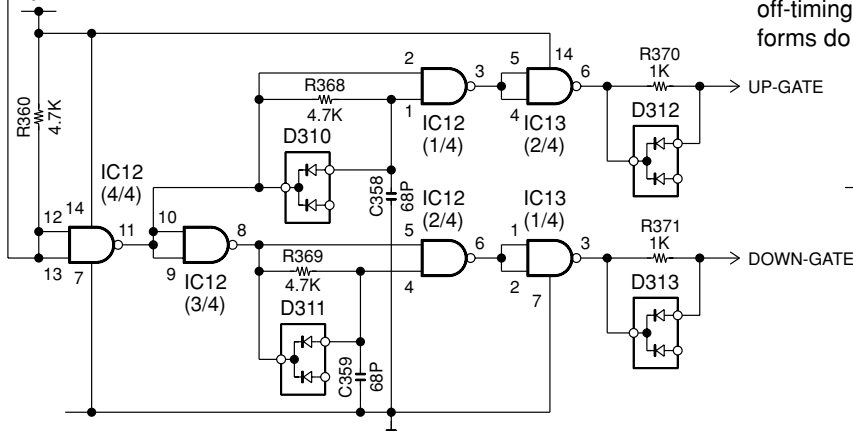


- ③ : Triangular wave form
- ④ : Analogue signal
- ⑤ : PWM wave form

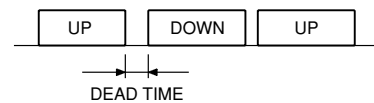
This circuit creates PWM wave form ⑤ after comparing triangular wave form ③ and analogue signal ④.



Dead Time Oscillation Circuit



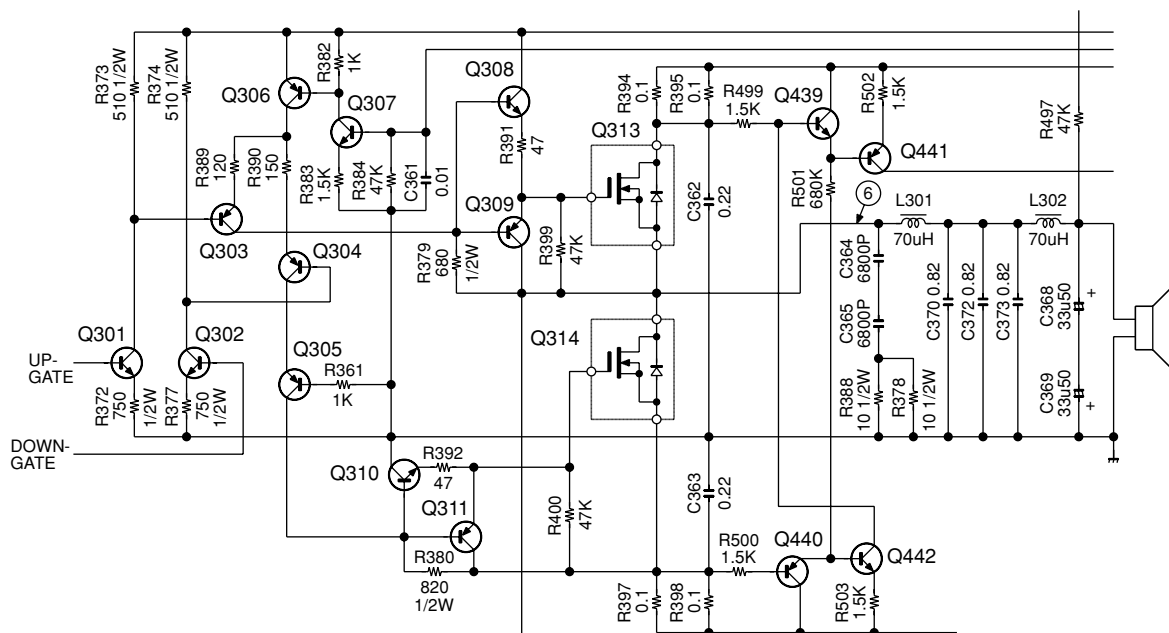
After PWM wave form ⑤ is divided into up-gate and down-gate wave forms, this circuit makes off-timing so that up-gate and down-gate wave forms do not turn on at same time.



KAC-PS650D/X650D

CIRCUIT DESCRIPTION

Class-D Amplifier



Q301-304 convert voltage of up-gate and down-gate to current.

R379,380 convert the current to voltage, and Q308-311 drive MOS-FETs Q313,314.

Swung PWM wave form is output to $\pm B$ on line ⑥ , and the swung PWM wave form is converted to analogue signal by LC filter.

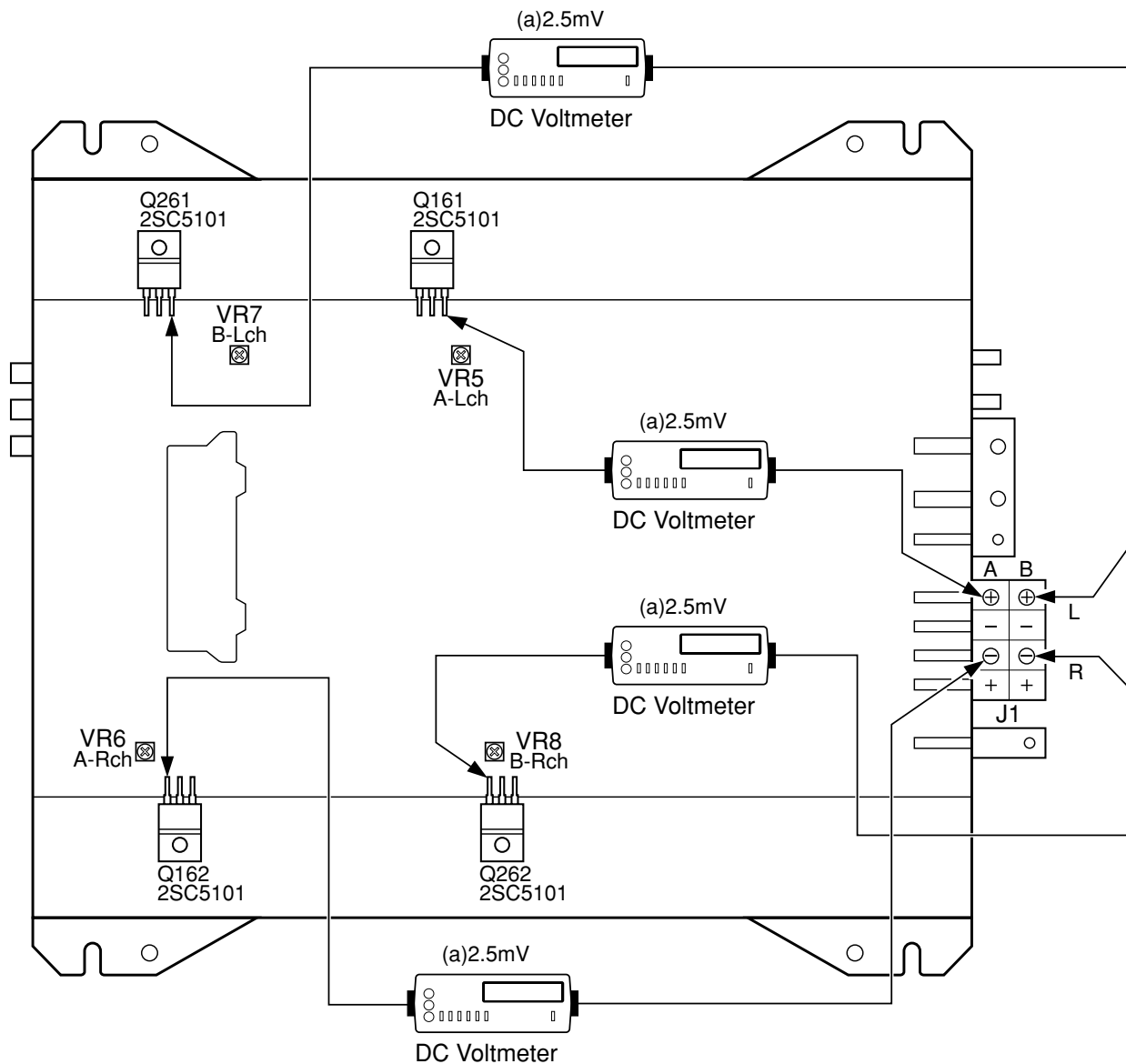
KAC-PS650D/X650D

ADJUSTMENT (KAC-PS650D/X650D)

No.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	RECEIVER SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG.
Connect a cassette receiver or other receiver.							
1	IDEL CURRENT	-	Connect a DC voltmeter between emitter terminals of Q161,162,261,262 and J1 (SP.OUT, L+/R-).	VOLUME : 0	VR5 (A-Lch) VR6 (A-Rch) VR7 (B-Lch) VR8 (B-Rch) (X09-)	2.5mV	(a)

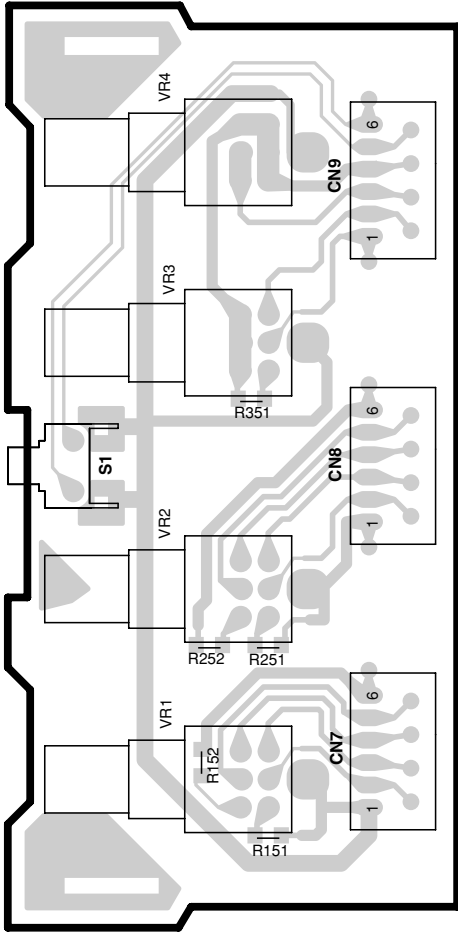
KAC-PS650D/X650D

ADJUSTMENT



PC BOARD (Foil side view)

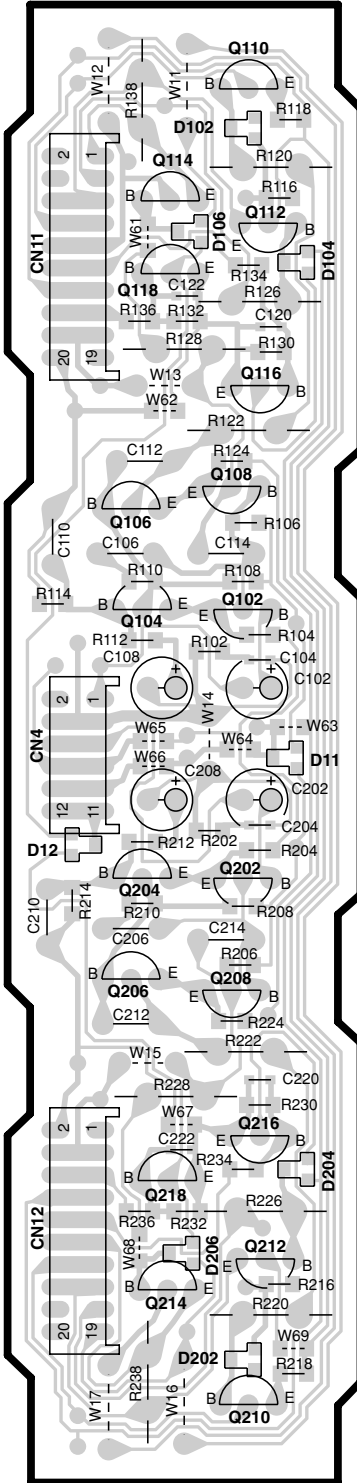
PREAMPLIFIER UNIT X08-4100-10 A/3 (J74-1375-12)



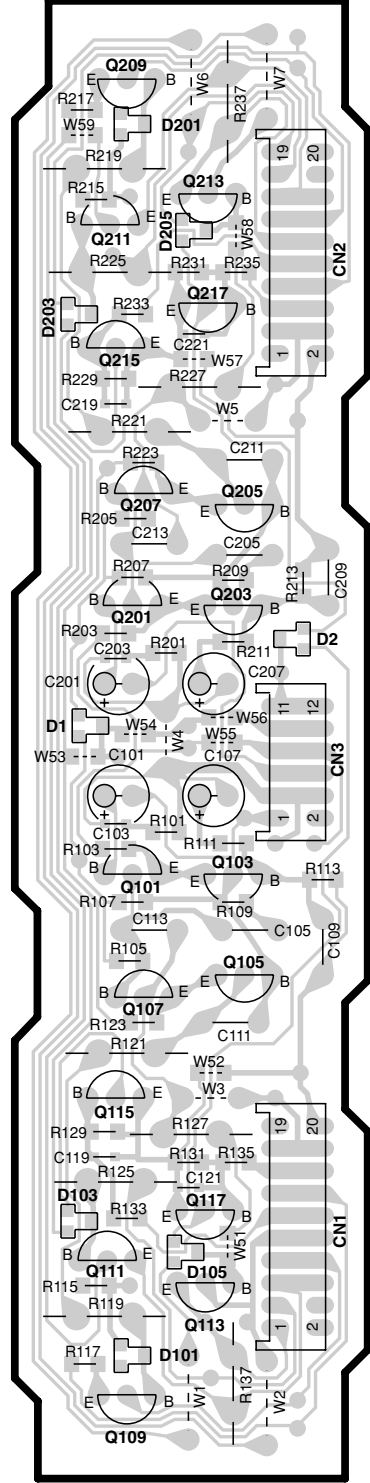
X08 B/3

Ref.No	Q102	Q104	Q106	Q108	Q110	Q112	Q114	Q116	Q118
Address	4C	4C	3C	3C	2C	2C	2C	3C	3C
Ref.No	Q202	Q204	Q206	Q208	Q210	Q212	Q214	Q216	Q218
Address	5C	5C	5C	5C	6C	6C	6C	5C	6C

X08 B/3



X08 C/3



X08 C/3

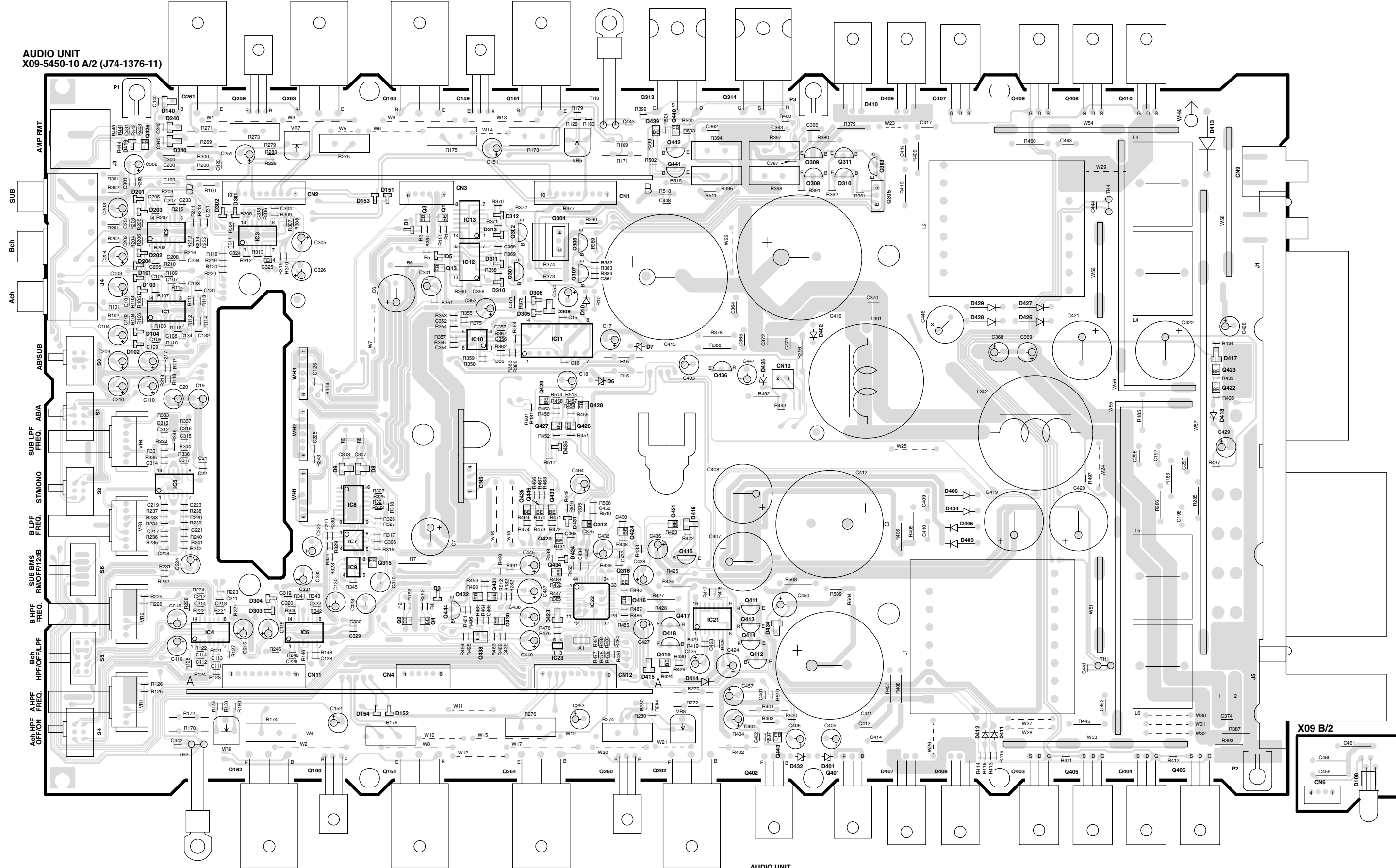
Ref.No	Q101	Q103	Q105	Q107	Q109	Q111	Q113	Q115	Q117
Address	5D	5D	5D	5D	6D	6D	6D	5D	6D
Ref.No	Q201	Q203	Q205	Q207	Q209	Q211	Q213	Q215	Q217
Address	4D	4D	3D	3D	2D	2D	2D	3D	3D

PC BOARD(Component side view)

AUDIO UNIT X09-5450-10 A/2(J74-1376-11)

Ref.No	IC1	IC2	IC3	IC4	IC5	IC6	IC7	IC8	IC9	IC10	IC11	IC12	IC13	IC21	IC22	IC23
Address	3G	3G	3G	5G	4G	5H	5H	4H	5H	3I	3I	3I	2I	5K	5J	5I

Ref.No	Q1	Q2	Q3	Q4	Q13	Q159	Q160	Q161	Q162	Q163	Q164	Q259	Q260	Q261	Q262	Q263	Q264	Q301	Q302	Q303	Q304	Q305	Q306	Q307	Q308	Q309
Address	2I	5H	2I	5I	3I	2I	6H	2I	6G	2H	6H	2G	6J	2G	6J	2H	6I	3I	3I	2L	2I	2L	3J	3J	2K	2K



Refer to the schematic diagram for the value of resistors and capacitors.

AUDIO UNIT X09-5450-10 A/2(J74-1376-11)

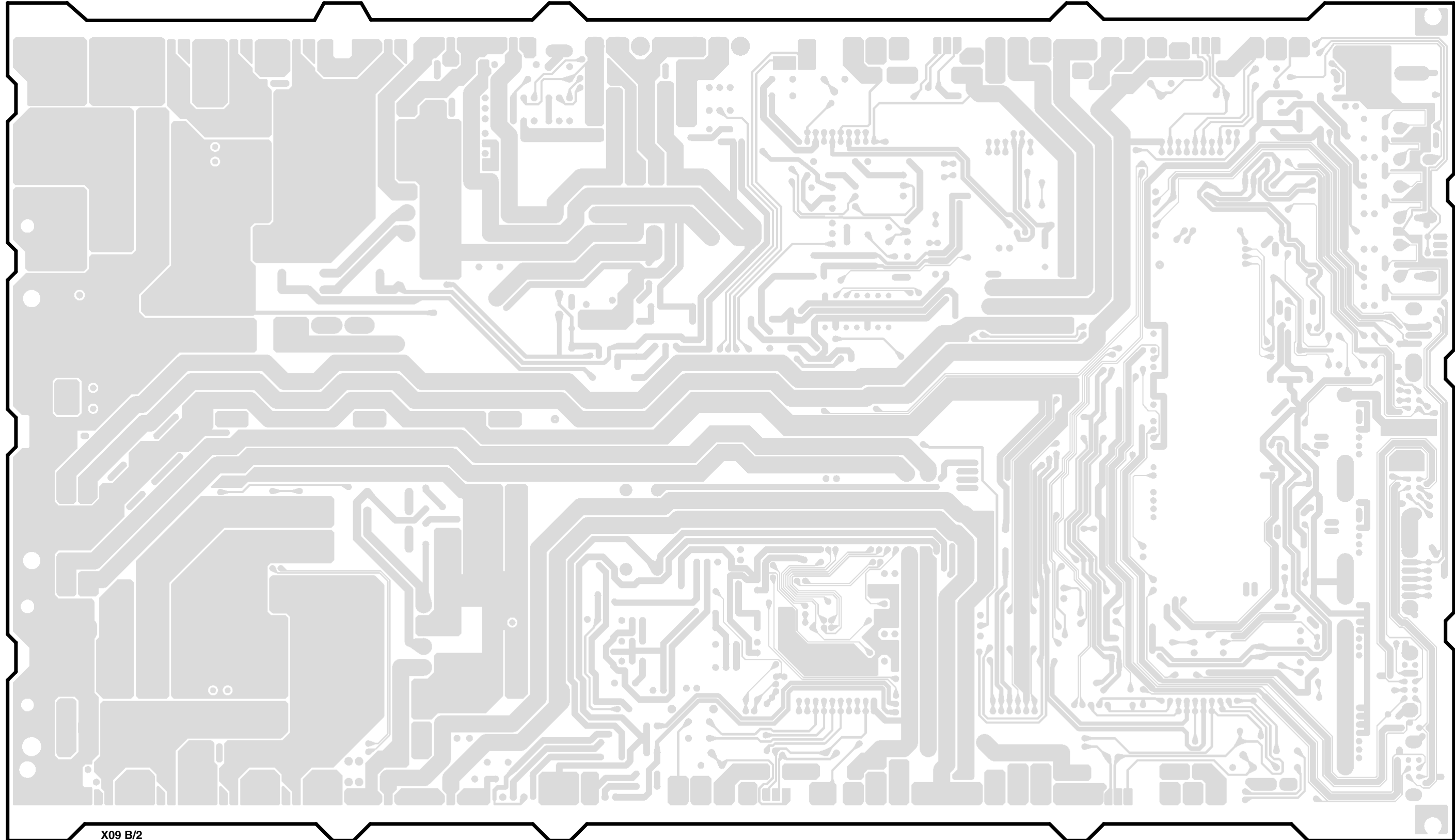
Ref.No	Q310	Q311	Q312	Q313	Q314	Q315	Q316	Q401	Q402	Q403	Q404	Q405	Q406	Q407	Q408	Q409	Q410	Q411	Q412	Q413	Q414	Q415	Q416	Q417	Q418	Q419
Address	2K	2K	5J	2J	2K	5H	5J	6K	6K	6M	6M	6M	6N	2L	2M	2M	2M	5K	5K	5K	5K	5J	5J	5J	5J	5J

Ref.No	Q420	Q421	Q422	Q423	Q424	Q425	Q426	Q427	Q428	Q429	Q430	Q431	Q432	Q433	Q434	Q435	Q436	Q438	Q439	Q440	Q441	Q442	Q443	Q444	Q446
Address	5I	4J	4N	3N	5J	2G	4J	4I	4J	4I	5I	5I	5I	4I	5I	4I	3K	5I	2J	2J	2J	2J	6K	5I	4I

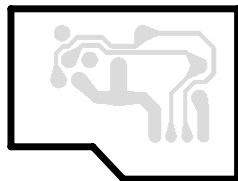
PC BOARD(Component side view)

AUDIO UNIT X09-5450-10 A/2 (J74-1376-11)

1
2
3
4
5
6
7

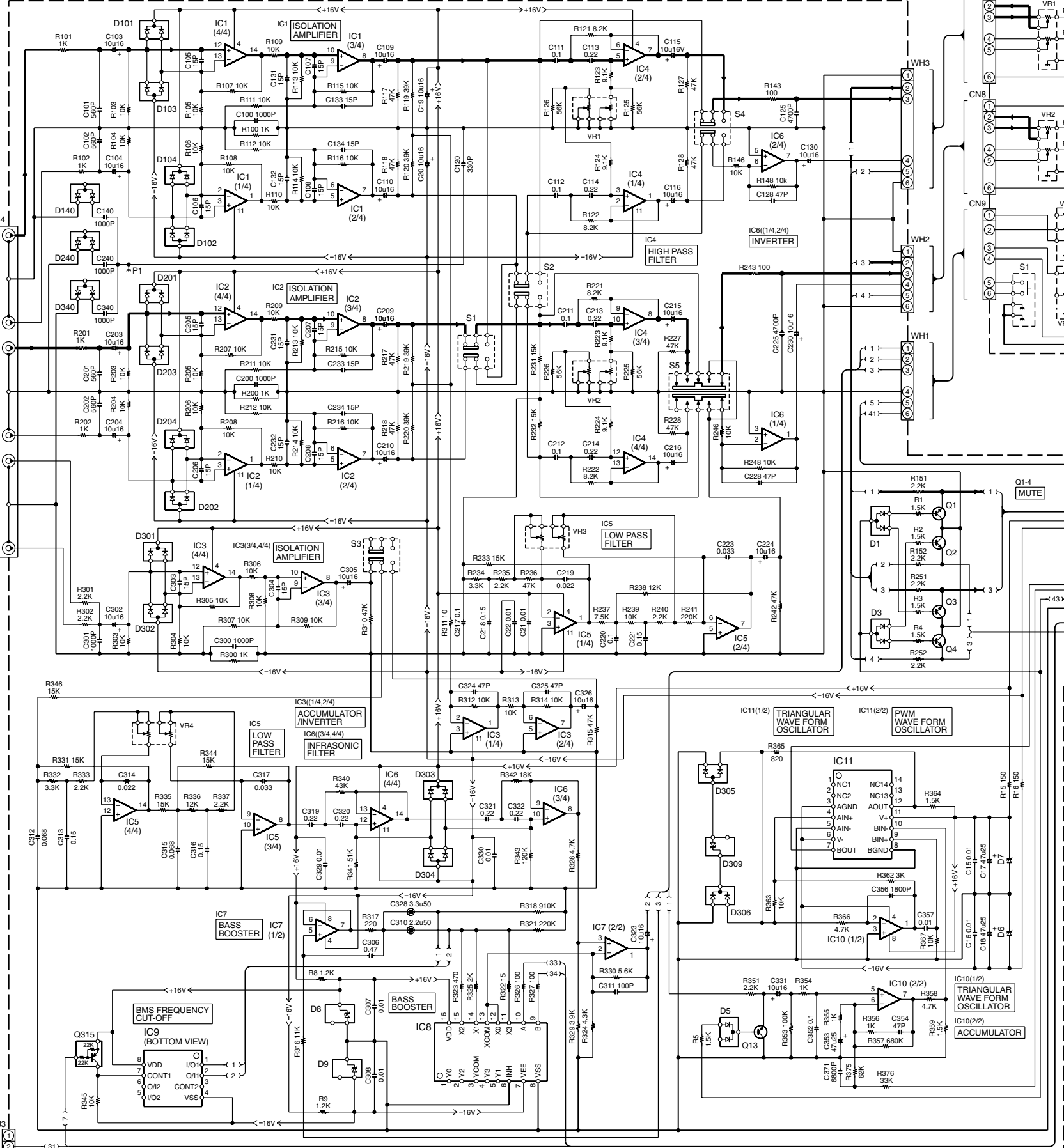


X09 B/2

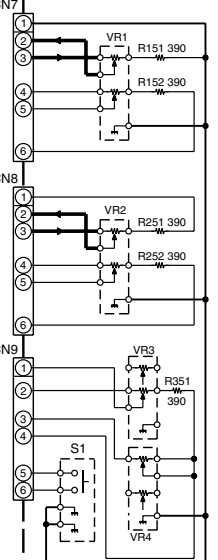


Refer to the schematic diagram for the value of resistors and capacitors.

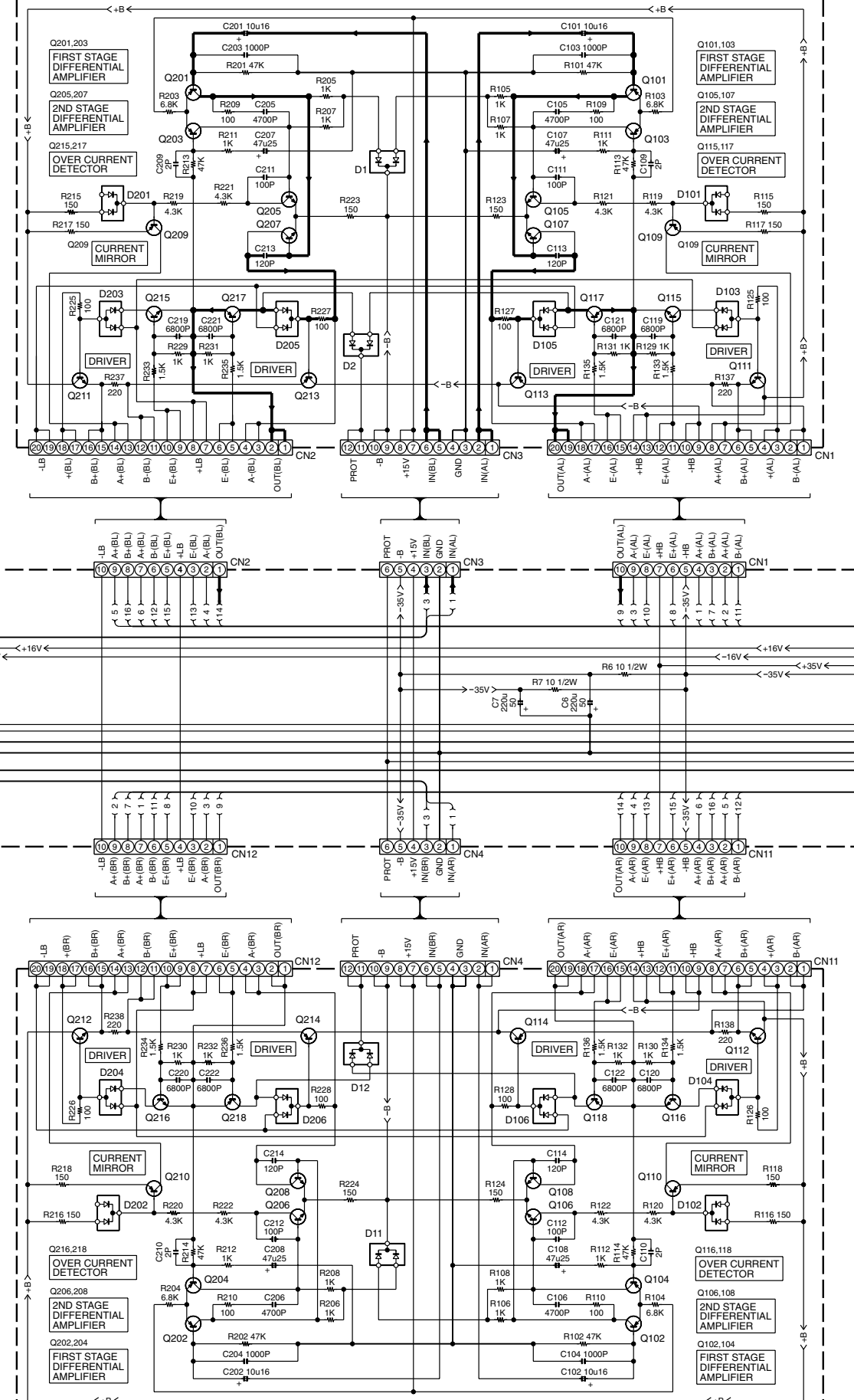
AUDIO UNIT (X09-5450-10) (A/2)



(X08-) (A/3)

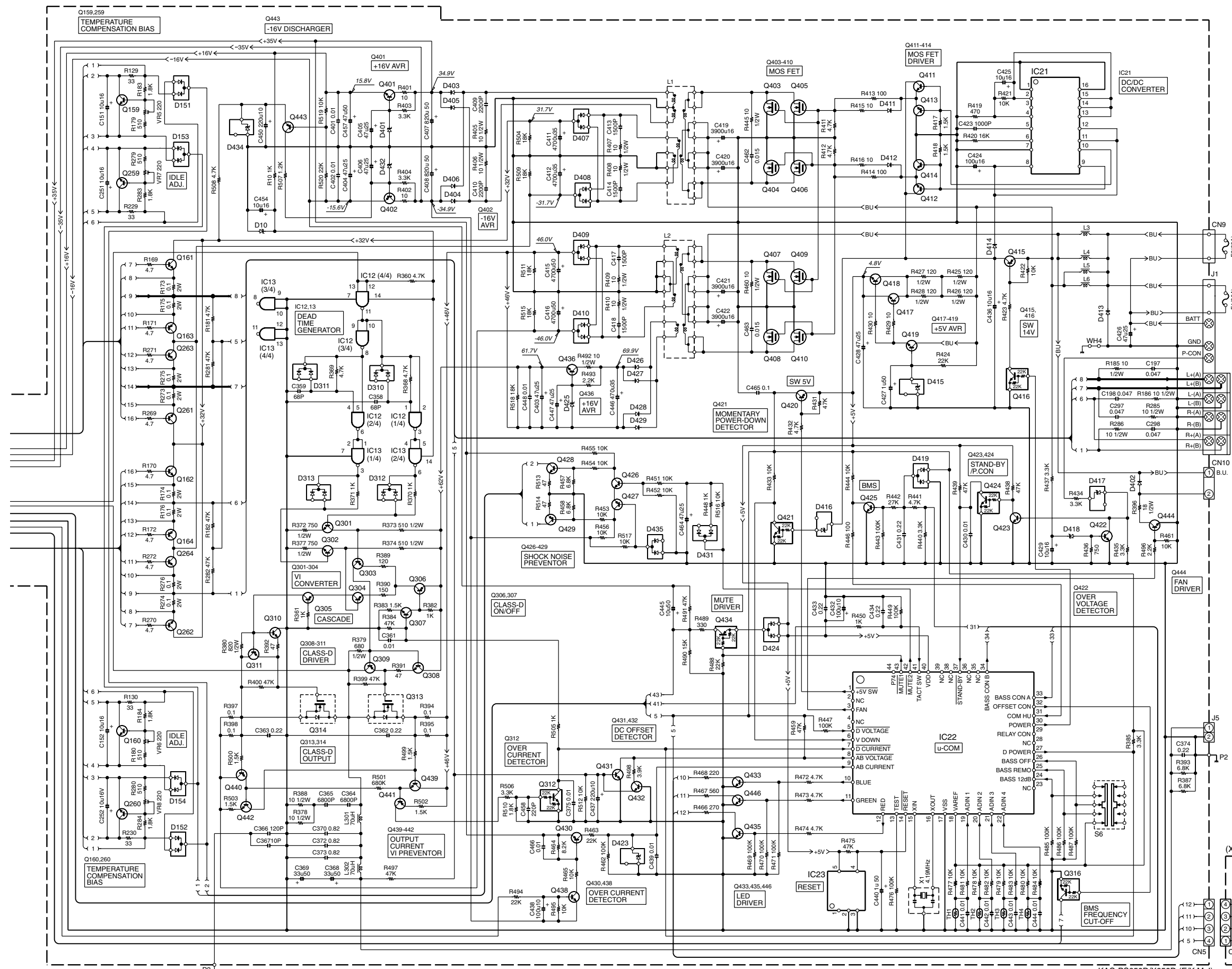


PREAMPLIFIER UNIT (X08-4100-10) (C/3)



(X08-) (B/3)





CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). Δ indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

- (X08-4100-10) : 2SA992(F,E)
- Q101-104,117,118,201-204,217,218 : 2SC2351(Q,R)
- Q105-108,205-208 : 2SA1123(Q,R)
- Q109,110,209,210 : 2SA1123(Q,R)
- Q111,112,211,212 : 2SC2235
- Q113,114,213,214 : 2SA965
- Q115,116,215,216 : 2SC1845(F,E)

- D1,2,11,12,101,102,105,106,201,202,205,206 : DAN202U or MA142WK
- D103,104,203,204 : DAP202U or MA124WA

- (X09-5450-10) : NJM2060M
- IC1-6 : NJM5532MD
- IC7,10 : TC4052BF(N)
- IC8 : TC4W66F
- IC9 : NJM319D
- IC11 : NJM319D
- IC12,13 : TC74HC00AF
- IC21 : UPC494GS
- IC22 : TMP87C847J3UV4
- IC23 : PST9130NR

- Q1-4,13,419,422,423,425,426,428,431-433,435,439,446 : 2SC4081 or 2SD1819A
- Q159,160,259,260 : 2SC4137(V,W)
- Q161,162,261,262 : 2SC510(LB*5)
- Q163,164,263,264 : 2SA1909(B*5)
- Q301,302,307,442 : 2SC1845(F,E)
- Q303,306 : 2SA1123(Q,R)
- Q304,305 : 2SA1352(E,F)
- Q308,310 : 2SC2631(Q,R)
- Q309,311 : 2SA1286-T11
- Q312,316,416,421,424 : DTG124EUA or UN5212

- Q313,314 : STW34NB20
- Q315,434 : DTA124EUA or UN5112
- Q401 : 2SD2375
- Q402 : 2SB1548(P)
- Q403-410 : IRF11010N
- Q411,412 : 2SC945(A)(Q,P)
- Q413,414 : 2SA733(A)(Q,P)
- Q415 : 2SA1534A(R,S)
- Q417,418,436,444 : 2SC3940A(R,S)
- Q420,427,429,430,440,443 : 2SA1576A or 2SB1218A
- Q438 : 2SC4209-Y
- Q441 : 2SA992(F,E)

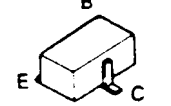
- D1,3,102,103,153,154,202,203,302,304,305 : DAP202U or MA142WA
- D5,101,104,151,152,201,204,301,303,306,310,313,424,431,435 : DAN202U or MA142WK
- D6,7 : RD10JS(B)
- D8,9 : MA3082-M
- D10 : RD5,1JS(B)
- D100 : B30-1582-05
- D140,240,340 : MA3068WA
- D309,423,434 : MA3051-M
- D401,425,432 : RD16JS(B)
- D402,411,412 : 1S133
- D403-406,414,426-429 : FR103S
- D407,409 : FML22S*A
- D408,410 : FML22R*A
- D413 : 6A20-M
- D415 : MA3062-M
- D416 : MA3100-M
- D417 : MA3075-M
- D418 : RD15JS(B)
- D419 : DA204U

- D67,7 : RD10JS(B)
- D8,9 : MA3082-M
- D10 : RD5,1JS(B)
- D100 : B30-1582-05
- D140,240,340 : MA3068WA
- D309,423,434 : MA3051-M
- D401,425,432 : RD16JS(B)
- D402,411,412 : 1S133
- D403-406,414,426-429 : FR103S
- D407,409 : FML22S*A
- D408,410 : FML22R*A
- D413 : 6A20-M
- D415 : MA3062-M
- D416 : MA3100-M
- D417 : MA3075-M
- D418 : RD15JS(B)
- D419 : DA204U

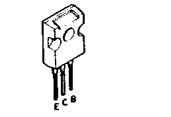
- D67,7 : RD10JS(B)
- D8,9 : MA3082-M
- D10 : RD5,1JS(B)
- D100 : B30-1582-05
- D140,240,340 : MA3068WA
- D309,423,434 : MA3051-M
- D401,425,432 : RD16JS(B)
- D402,411,412 : 1S133
- D403-406,414,426-429 : FR103S
- D407,409 : FML22S*A
- D408,410 : FML22R*A
- D413 : 6A20-M
- D415 : MA3062-M
- D416 : MA3100-M
- D417 : MA3075-M
- D418 : RD15JS(B)
- D419 : DA204U

- D67,7 : RD10JS(B)
- D8,9 : MA3082-M
- D10 : RD5,1JS(B)
- D100 : B30-1582-05
- D140,240,340 : MA3068WA
- D309,423,434 : MA3051-M
- D401,425,432 : RD16JS(B)
- D402,411,412 : 1S133
- D403-406,414,426-429 : FR103S
- D407,409 : FML22S*A
- D408,410 : FML22R*A
- D413 : 6A20-M
- D415 : MA3062-M
- D416 : MA3100-M
- D417 : MA3075-M
- D418 : RD15JS(B)
- D419 : DA204U

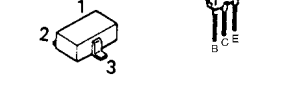
- 2SA1576A
- 2SB1218A
- 2SD1819A



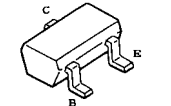
- 2SC4137



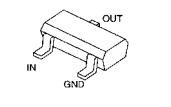
- MA142WA
- MA142WK
- UN5212



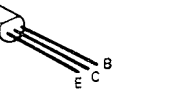
- 2SB1548



- 2SC4081



- 2SA1123
- 2SA1286-T11
- 2SA1534A
- 2SA733(A)
- 2SA965
- 2SA992
- 2SC1845
- 2SC2235
- 2SC2631
- 2SC3940A
- 2SC945(A)



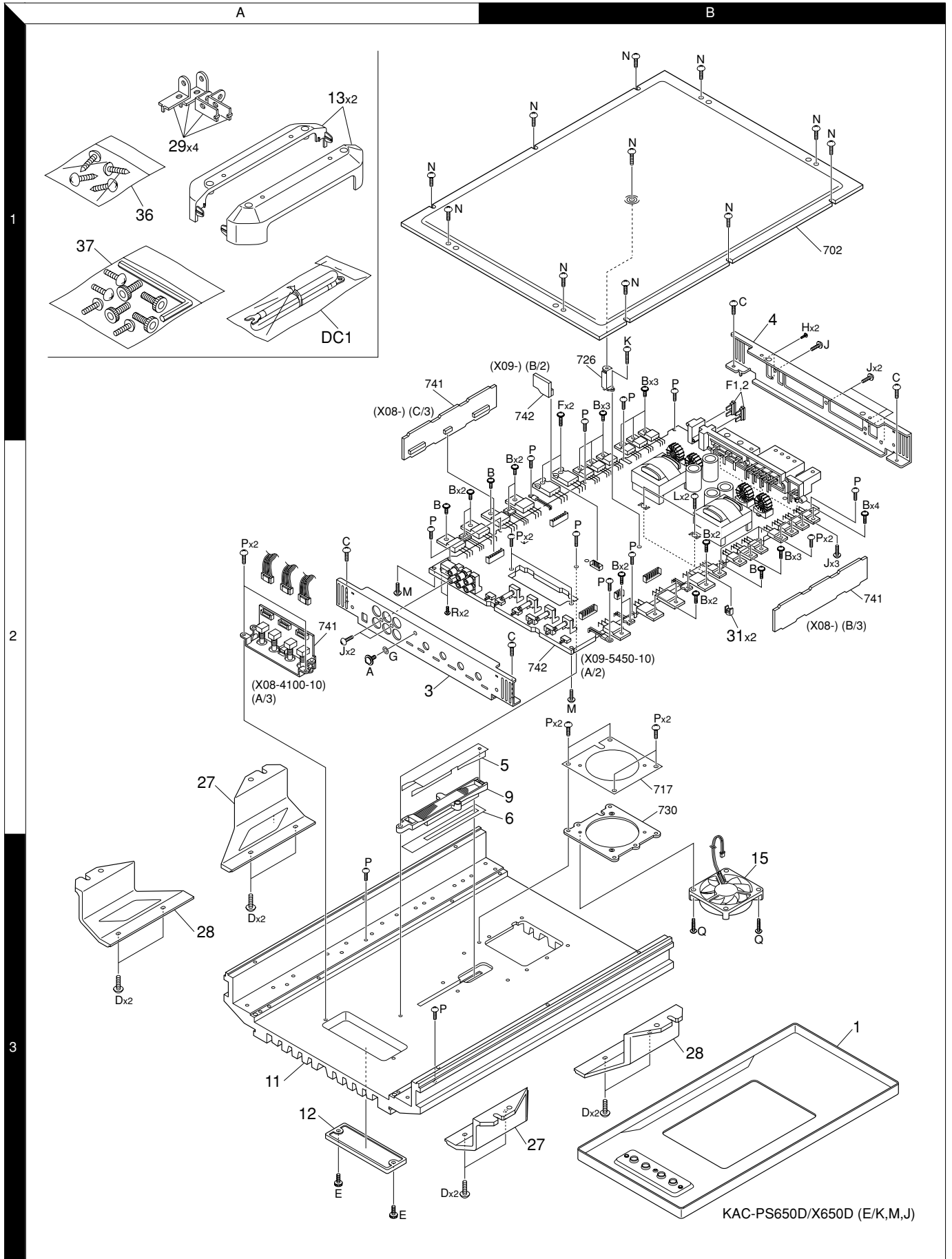
- TC4052BF
- NJM5532MD
- DAN202U
- DAP202U
- DA204U
- UPC494GS
- TC74HC00AF
- NJM2060M
- PST9130NR
- TC4W66F

KAC-PS650D/X650D

KENWOOD

KAC-PS650D/X650D

EXPLODED VIEW



Parts with exploded view numbers larger than 700 are not supplied.

KAC-PS650D/X650D

PARTS LIST

*New Parts

Parts without Part No. are not supplied.

Ref. No.	A d d	N e w	Parts No.	Description	Desti- nation
KAC-PS650D/X650D					
1	3B	*	A21-4188-02	DRESSING PANEL	KM1J1
1	3B	*	A21-4189-02	DRESSING PANEL	E1
3	2A	*	A64-2696-02	FRONT PANEL	
4	1B	*	A84-0309-02	REAR PANEL	
5	2B	*	B11-1388-04	REFLECTION SHEET	
6	2B	*	B11-1389-04	REFLECTION SHEET	
9	2B	*	B19-2143-03	LIGHTING BOARD	
-			B46-0100-50	WARRANTY CARD	KE1M1
-			B46-0648-03	USER CARD	K
-		*	B64-2270-00	INST. MANUAL (ENG,FRE,SPA)	KE1
-		*	B64-2271-00	INST. MANUAL (GER,DUT,ITA,POR)	E1
-		*	B64-2272-00	INST. MANUAL (ENG,T-CHI)	M1
11	3A	*	F01-1683-01	HEAT SINK	
12	3A	*	F07-1109-04	COVER	
13	1A	*	F07-1110-01	COVER	
15	3B	*	F09-1751-15	FAN	
△ F1 ,2	1B		F52-0015-05	FUSE (BLADE TYPE) (30A)	
-		*	H10-4805-02	POLYSTYRENE FOAMED FIXTURE	KE1M1
-		*	H11-1529-04	POLYSTYRENE FOAMED BOARD	KE1M1
-		*	H13-2022-04	CARTON BOARD	KE1M1
-		*	H21-1117-04	PROTECTION SHEET	KE1M1
-		*	H21-1141-04	PROTECTION SHEET	KE1M1
-			H25-0336-04	PROTECTION BAG (170X250X0.03)	KE1M1
-		*	H25-1179-04	PROTECTION BAG	KE1M1
-		*	H54-2518-04	ITEM CARTON CASE (KAC-X650D)	KM1
-		*	H54-2519-04	ITEM CARTON CASE (KAC-PS650D)	E1
27	2A	*	J21-9853-03	MOUNTING HARDWARE	
28	3A	*	J21-9854-03	MOUNTING HARDWARE	
29	1A	*	J21-9864-04	MOUNTING HARDWARE	
31	2B		J30-1066-04	SPACER	
36	1A		N99-1577-15	SCREW SET	
A	2A		N09-4026-05	TAPPING SCREW (4X8,TP,S)	
B	1B		N09-4382-05	TAPTITE SCREW (2.6X10)	
C	1B		N09-4488-05	TAPTITE SCREW (3X6)	
D	3A	*	N09-6032-05	DRESSED SCREW (TORX,4X12)	
E	3A	*	N09-6033-05	DRESSED SCREW (M3X8)	
F	1B	*	N09-6039-05	TAPTITE SCREW (2.6X13)	
G	2A		N15-1040-46	FLAT WASHER	
H	1B		N80-2008-45	PAN HEAD TAPTITE SCREW	

Ref. No.	A d d	N e w	Parts No.	Description	Desti- nation
J	1B		N80-3010-45	PAN HEAD TAPTITE SCREW	
K	1B		N83-3013-45	PAN HEAD TAPTITE SCREW	
L	2B		N87-3012-46	BRAZIER HEAD TAPTITE SCREW	
M	2B		N89-2606-46	BINDING HEAD TAPTITE SCREW	
N	1B		N89-3006-45	BINDING HEAD TAPTITE SCREW	
P	1B		N89-3008-46	BINDING HEAD TAPTITE SCREW	
Q	3B		N89-3015-46	BINDING HEAD TAPTITE SCREW	
R	2A		N80-2608-45	PAN HEAD TAPTITE SCREW	
37	1A	*	W01-1586-05	ACCESSORY	
PREAMPLIFIER UNIT (X08-4100-10)					
C101,102			CE04DW1C100M	ELECTRO 10UF	16WV
C103,104			CK73GB1H102K	CHIP C	1000PF K
C105,106			CF92FV1H472J	MF-C	4700PF J
C107,108			CE04DW1E470M	ELECTRO	47UF 25WV
C109,110			CC45FSL1H020C	CERAMIC	2.0PF C
C111,112			CC45FSL1H101J	CERAMIC	100PF J
C113,114			CC45FSL1H121J	CERAMIC	120PF J
C119-122			CK73GB1H102K	CHIP C	1000PF K
C201,202			CE04DW1C100M	ELECTRO	10UF 16WV
C203,204			CK73GB1H102K	CHIP C	1000PF K
C205,206			CF92FV1H472J	MF-C	4700PF J
C207,208			CE04DW1E470M	ELECTRO	47UF 25WV
C209,210			CC45FSL1H020C	CERAMIC	2.0PF C
C211,212			CC45FSL1H101J	CERAMIC	100PF J
C213,214			CC45FSL1H121J	CERAMIC	120PF J
C219-222			CK73GB1H102K	CHIP C	1000PF K
CN1 ,2			E40-4457-05	SOCKET FOR PIN ASSY	
CN3 ,4		*	E40-4453-05	SOCKET FOR PIN ASSY	
CN7 -9		*	E41-0294-05	PIN ASSY	
CN11,12			E40-4457-05	SOCKET FOR PIN ASSY	
R101,102		*	RK73FB2B473J	CHIP R	47K J 1/8W
R103,104		*	RK73FB2B682J	CHIP R	6.8K J 1/8W
R105-108			RK73FB2B102J	CHIP R	1.0K J 1/8W
R109,110			RK73FB2B101J	CHIP R	100 J 1/8W
R111,112			RK73FB2B102J	CHIP R	1.0K J 1/8W
R113,114		*	RK73FB2B473J	CHIP R	47K J 1/8W
R115-118		*	RK73FB2B151J	CHIP R	150 J 1/8W
R119-122		*	RD14NB2E432J	RD	4.3K J 1/4W
R123,124		*	RK73FB2B151J	CHIP R	150 J 1/8W
R125-128			RD14NB2E101J	RD	100 J 1/4W
R129-132			RK73FB2B102J	CHIP R	1.0K J 1/8W
R133-136			RK73FB2B152J	CHIP R	1.5K J 1/8W
R137,138			RD14NB2E221J	RD	220 J 1/4W
R151,152			RK73FB2B391J	CHIP R	390 J 1/8W
R201,202		*	RK73FB2B473J	CHIP R	47K J 1/8W
R203,204		*	RK73FB2B682J	CHIP R	6.8K J 1/8W
R205-208			RK73FB2B102J	CHIP R	1.0K J 1/8W
R209,210			RK73FB2B101J	CHIP R	100 J 1/8W
R211,212			RK73FB2B102J	CHIP R	1.0K J 1/8W
R213,214		*	RK73FB2B473J	CHIP R	47K J 1/8W
R215-218		*	RK73FB2B151J	CHIP R	150 J 1/8W
R219-222		*	RD14NB2E432J	RD	4.3K J 1/4W
R223,224		*	RK73FB2B151J	CHIP R	150 J 1/8W

E1 : KAC-PS650D

KM1J1 : KAC-X650D

E : Europe K : North America M : Other Areas

J : Japan

△ indicates safety critical components.

KAC-PS650D/X650D

PARTS LIST

*New Parts

Parts without Part No. are not supplied.

Ref. No.	A d d	N e w	Parts No.	Description	Desti- nation	Ref. No.	A d d	N e w	Parts No.	Description	Desti- nation
R225-228			RD14NB2E101J	RD 100 J 1/4W		C111,112			CK73GB1C104K	CHIP C 0.10UF K	
R229-232			RK73FB2B102J	CHIP R 1.0K J 1/8W		C113,114			CK73FB1C224K	CHIP C 0.22UF K	
R233-236			RK73FB2B152J	CHIP R 1.5K J 1/8W		C115,116			CE04DW1C100M	ELECTRO 10UF 16WV	
R237,238			RD14NB2E221J	RD 220 J 1/4W		C120			CC73GCH1H331J	CHIP C 330PF J	
R251,252			RK73FB2B391J	CHIP R 390 J 1/8W		C128			CC73GCH1H470J	CHIP C 47PF J	
R351			RK73FB2B391J	CHIP R 390 J 1/8W		C130			CE04DW1C100M	ELECTRO 10UF 16WV	
VR1 -3		*	R31-0234-05	VARIABLE RESISTOR		C131-134			CC73GCH1H150J	CHIP C 15PF J	
VR4		*	R31-0236-05	VARIABLE RESISTOR		C140			CK73GB1H102K	CHIP C 1000PF K	
W51 -59			R92-2052-05	CHIP R 0 OHM J 1/10W		C151,152			CE04DW1C100M	ELECTRO 10UF 16WV	
W61 -69			R92-2052-05	CHIP R 0 OHM J 1/10W		C197,198			CF92FV1H473J	MF-C 0.047UF J	
S1			S68-0806-05	PUSH SWITCH		C200			CF92FV1H102J	MF-C 1000PF J	
D1 ,2			DAN202U	DIODE		C201,202			CK73GB1H561K	CHIP C 560PF K	
D1 ,2			MA142WK	DIODE		C203,204			CE04DW1C100M	ELECTRO 10UF 16WV	
D11 ,12			DAN202U	DIODE		C205-208			CC73GCH1H150J	CHIP C 15PF J	
D11 ,12			MA142WK	DIODE		C209,210			CE04DW1C100M	ELECTRO 10UF 16WV	
D101,102			DAN202U	DIODE		C211,212			CK73GB1C104K	CHIP C 0.10UF K	
D103,104			MA142WK	DIODE		C213,214			CK73FB1C224K	CHIP C 0.22UF K	
D103,104			DAP202U	DIODE		C215,216			CE04DW1C100M	ELECTRO 10UF 16WV	
D105,106			MA142WA	DIODE		C217			CK73GB1C104K	CHIP C 0.10UF K	
D105,106			DAN202U	DIODE		C218			CK73FB1C154K	CHIP C 0.15UF K	
D105,106			MA142WK	DIODE		C219			CK73GB1E223K	CHIP C 0.022UF K	
D201,202			DAN202U	DIODE		C220			CK73GB1C104K	CHIP C 0.10UF K	
D201,202			MA142WK	DIODE		C221			CK73FB1C154K	CHIP C 0.15UF K	
D203,204			DAP202U	DIODE		C223			CK73GB1E333K	CHIP C 0.033UF K	
D203,204			MA142WA	DIODE		C224			CE04DW1C100M	ELECTRO 10UF 16WV	
D203,204			DAN202U	DIODE		C228			CC73GCH1H470J	CHIP C 47PF J	
D205,206			DAN202U	DIODE		C230			CE04DW1C100M	ELECTRO 10UF 16WV	
D205,206			MA142WK	DIODE		C231-234			CC73GCH1H150J	CHIP C 15PF J	
Q101-104			2SA992(F,E)	TRANSISTOR		C240			CK73GB1H102K	CHIP C 1000PF K	
Q105-108			2SC2631(Q,R)	TRANSISTOR		C251,252			CE04DW1C100M	ELECTRO 10UF 16WV	
Q109,110			2SA1123(Q,R)	TRANSISTOR		C297,298			CF92FV1H473J	MF-C 0.047UF J	
Q111,112			2SC2235	TRANSISTOR		C300			CF92FV1H102J	MF-C 1000PF J	
Q113,114			2SA965	TRANSISTOR		C301			CK73GB1H102K	CHIP C 1000PF K	
Q115,116			2SC1845(F,E)	TRANSISTOR		C302			CE04DW1C100M	ELECTRO 10UF 16WV	
Q117,118			2SA992(F,E)	TRANSISTOR		C303,304			CC73GCH1H150J	CHIP C 15PF J	
Q201-204			2SA992(F,E)	TRANSISTOR		C305			CE04DW1C100M	ELECTRO 10UF 16WV	
Q205-208			2SC2631(Q,R)	TRANSISTOR		C306			CK73FB1C474K	CHIP C 0.47UF K	
Q209,210			2SA1123(Q,R)	TRANSISTOR		C307,308			CK73GB1H103K	CHIP C 0.010UF K	
Q211,212			2SC2235	TRANSISTOR		C310			CE04HW1H2R2M	NP-ELEC 2.2UF 50WV	
Q213,214			2SA965	TRANSISTOR		C311			CC73GCH1H101J	CHIP C 100PF J	
Q215,216			2SC1845(F,E)	TRANSISTOR		C312			CK73GB1C683K	CHIP C 0.068UF K	
Q217,218			2SA992(F,E)	TRANSISTOR		C313			CK73FB1C154K	CHIP C 0.15UF K	
AUDIO UNIT (X09-5450-10)						C314			CK73GB1E223K	CHIP C 0.022UF K	
D100			B30-1582-05	LED		C315			CK73GB1C683K	CHIP C 0.068UF K	
C6 ,7			CE04DW1H221M	ELECTRO 220UF 50WV		C316			CK73FB1C154K	CHIP C 0.15UF K	
C15 ,16			CK73GB1H103K	CHIP C 0.010UF K		C317			CK73GB1E333K	CHIP C 0.033UF K	
C17 ,18			CE04DW1E470M	ELECTRO 47UF 25WV		C319-322			CK73FB1C224K	CHIP C 0.22UF K	
C19 ,20			CE04DW1C100M	ELECTRO 10UF 16WV		C323			CE04DW1C100M	ELECTRO 10UF 16WV	
C21 ,22			CK73GB1H103K	CHIP C 0.010UF K		C324,325			CC73GCH1H470J	CHIP C 47PF J	
C100			CF92FV1H102J	MF-C 1000PF J		C326			CE04DW1C100M	ELECTRO 10UF 16WV	
C101,102			CK73GB1H561K	CHIP C 560PF K		C328			CE04HW1H3R3M	NP-ELEC 3.3UF 50WV	
C103,104			CE04DW1C100M	ELECTRO 10UF 16WV		C329,330			CK73GB1H103K	CHIP C 0.010UF K	
C105-108			CC73GCH1H150J	CHIP C 15PF J		C331			CE04DW1C100M	ELECTRO 10UF 16WV	
C109,110			CE04DW1C100M	ELECTRO 10UF 16WV		C340			CK73GB1H102K	CHIP C 1000PF K	
						C352			CK73GB1C104K	CHIP C 0.10UF K	

E : Europe K : North America M : Other Areas
J : Japan

E1 : KAC-PS650D
KM1J1 : KAC-X650D

△ indicates safety critical components.

KAC-PS650D/X650D

PARTS LIST

*New Parts

Parts without Part No. are not supplied.

Ref. No.	A d d	N e w	Parts No.	Description	Desti- nation	Ref. No.	A d d	N e w	Parts No.	Description	Desti- nation
C353			CE04DW1E470M	ELECTRO 47UF 25WV		CN5			E40-9073-05	PIN ASSY	
C354			CC73GCH1H470J	CHIP C 47PF J		CN6			E40-9092-05	SOCKET FOR PIN ASSY	
C356			CK73GB1H182K	CHIP C 1800PF K		CN10			E40-3246-05	PIN ASSY	
C357			CK73GB1H103K	CHIP C 0.010UF K		CN11,12	*		E40-4444-05	PIN ASSY	
C358,359			CC73GCH1H680J	CHIP C 68PF J		J1			E70-0833-05	SCREW TERMINAL BOARD	
C361			CK73GB1H103K	CHIP C 0.010UF K		J3	*		E70-0836-05	LOCK TERMINAL BOARD	
C362,363			CF92FV1H224J	MF-C 0.22UF J		J4			E63-0874-05	PIN JACK	
C364,365			CF92FV1H682J	MF-C 6800PF J		J5	*		E70-0837-05	SCREW TERMINAL BOARD	
C368,369			C90-5452-05	ALMINIUM ELECTROLYTI C.		P1_2			E23-0149-05	TERMINAL	
C370			CF92FV1H824J	MF-C 0.82UF J		WH1-3	*		E39-0445-15	WIRING HARNESS	
C371			CF92FV1H682J	MF-C 6800PF J		CN9			J13-0602-05	FUSE HOLDER	
C372,373			CF92FV1H824J	MF-C 0.82UF J		L1	*		L19-0713-15	TRANSFORMER FOR CONVERTER	
C374			CF92FV1H224J	MF-C 0.22UF J		L2	*		L19-0714-05	TRANSFORMER FOR CONVERTER	
C375			CK73GB1H103K	CHIP C 0.010UF K		L3 -6			L33-1809-05	CHOKO COIL	
C401,402			CK73GB1H103K	CHIP C 0.010UF K		L301,302	*		L33-1851-05	CHOKO COIL	
C403-406			CE04DW1E470M	ELECTRO 47UF 25WV		X1	*		L78-0867-05	RESONATOR	
C407,408			C90-2923-05	ELECTRO 820UF 50WV		R1 -5			RK73GB2A152J	CHIP R 1.5K J 1/10W	
C409,410			CF92FV1H222J	MF-C 2200PF J		R6 -7			RD14DB2H100J	SMALL-RD 10 J 1/2W	
C411,412			C90-5372-05	ELECTRO 4700UF 35WV		R8 -9			RD14BB2C122J	RD 1.2K J 1/6W	
C413,414			CF92FV1H152J	MF-C 1500PF J		R10			RD14BB2C102J	RD 1.0K J 1/6W	
C415,416			C90-5371-05	ELECTRO 4700UF 50WV		R15 ,16			RD14NB2E151J	RD 150 J 1/4W	
C417,418			CF92FV1H152J	MF-C 1500PF J		R21 -76			RD14BB2E100J	RD 10 J 1/4W	
C419-422			C90-2921-05	ELECTRO 3900UF 16WV		R100-102			RD14BB2C102J	RD 1.0K J 1/6W	
C423			CK73GB1H102K	CHIP C 1000PF K		R103-108			RK73GB2A103J	CHIP R 10K J 1/10W	
C424			CE04DW1C101M	ELECTRO 100UF 16WV		R109-116			R92-3040-05	CHIP R 10K D 1/10W	
C425,426			CE04DW1C100M	ELECTRO 10UF 16WV		R117,118			RK73GB2A473J	CHIP R 47K J 1/10W	
C427			CE04DW1H010M	ELECTRO 1.0UF 50WV		R119,120			RK73GB2A393J	CHIP R 39K J 1/10W	
C428			CE04DW1E470M	ELECTRO 47UF 25WV		R121,122			RK73GB2A822J	CHIP R 8.2K J 1/10W	
C429			CE04DW1C100M	ELECTRO 10UF 16WV		R123,124			RK73GB2A912J	CHIP R 9.1K J 1/10W	
C430			CK73GB1H103K	CHIP C 0.010UF K		R125,126			RK73GB2A563J	CHIP R 56K J 1/10W	
C431			CK73FB1C224K	CHIP C 0.22UF K		R127,128			RK73GB2A473J	CHIP R 47K J 1/10W	
C432			CE04DW1A101M	ELECTRO 100UF 10WV		R129,130	*		RK73GB2A330J	CHIP R 33 J 1/10W	
C433,434			CK73FB1C224K	CHIP C 0.22UF K		R146			RK73GB2A103J	CHIP R 10K J 1/10W	
C436			CE04DW1C100M	ELECTRO 10UF 16WV		R148			RK73GB2A103J	CHIP R 10K J 1/10W	
C437			CE04DW1A221M	ELECTRO 220UF 10WV		R151,152			RK73GB2A222J	CHIP R 2.2K J 1/10W	
C438			CE04DW1A101M	ELECTRO 100UF 10WV		R169-172			RD14NB2E4R7J	RD 4.7 J 1/4W	
C439			CK73GB1H103K	CHIP C 0.010UF K		R173-176			R92-0205-05	METAL-PLATE 0.1 K 2W	
C440			CE04DW1H010M	ELECTRO 1.0UF 50WV		R179,180	*		RK73GB2A511J	CHIP R 510 J 1/10W	
C441-444			CK73GB1H103K	CHIP C 0.010UF K		R181,182			RK73GB2A473J	CHIP R 47K J 1/10W	
C445			CE04DW1H100M	ELECTRO 10UF 50WV		R183,184			RK73GB2A182J	CHIP R 1.8K J 1/10W	
C446			CE04DW1V471M	ELECTRO 470UF 35WV		R185,186			RD14DB2H100J	SMALL-RD 10 J 1/2W	
C447			CE04DW1E470M	ELECTRO 47UF 25WV		R200-202			RD14BB2C102J	RD 1.0K J 1/6W	
C448			CK73GB1H103K	CHIP C 0.010UF K		R203-208			RK73GB2A103J	CHIP R 10K J 1/10W	
C450			CE04DW1A221M	ELECTRO 220UF 10WV		R209-216			R92-3040-05	CHIP R 10K D 1/10W	
C454			CE04DW1C100M	ELECTRO 10UF 16WV		R217,218			RK73GB2A473J	CHIP R 47K J 1/10W	
C457			CE04DW1E470M	ELECTRO 47UF 25WV		R219,220			RK73GB2A393J	CHIP R 39K J 1/10W	
C458			CC73GCH1H221J	CHIP C 220PF J		R221,222			RK73GB2A822J	CHIP R 8.2K J 1/10W	
C459-461			C91-0769-05	CERAMIC 0.010UF K		R223,224			RK73GB2A912J	CHIP R 9.1K J 1/10W	
C462,463			CF92FV1H153J	MF-C 0.015UF J		R225,226			RK73GB2A563J	CHIP R 56K J 1/10W	
C464			CE04DW1E470M	ELECTRO 47UF 25WV		R227,228			RK73GB2A473J	CHIP R 47K J 1/10W	
C465			CK73GB1C104K	CHIP C 0.10UF K		R229,230	*		RK73GB2A330J	CHIP R 33 J 1/10W	
C466			CK73GB1H103K	CHIP C 0.010UF K		R231-233			RK73GB2A153J	CHIP R 15K J 1/10W	
CN1_2	*		E40-4444-05	PIN ASSY		R234			RK73GB2A332J	CHIP R 3.3K J 1/10W	
CN3_4	*		E40-4440-05	PIN ASSY		R235			RK73GB2A222J	CHIP R 2.2K J 1/10W	

E1 : KAC-PS650D

KM1J1 : KAC-X650D

E : Europe K : North America M : Other Areas

J : Japan

△ indicates safety critical components.

KAC-PS650D/X650D

PARTS LIST

*New Parts
Parts without Part No. are not supplied.

Ref. No.	A d d	N e w	Parts No.	Description	Desti- nation	Ref. No.	A d d	N e w	Parts No.	Description	Desti- nation
R236			RK73GB2A473J	CHIP R 47K J 1/10W		R360			RK73GB2A472J	CHIP R 4.7K J 1/10W	
R237			RK73GB2A752J	CHIP R 7.5K J 1/10W		R361			RK73GB2A102J	CHIP R 1.0K J 1/10W	
R238			RK73GB2A123J	CHIP R 12K J 1/10W		R362			RK73GB2A302J	CHIP R 3.0K J 1/10W	
R239			RK73GB2A103J	CHIP R 10K J 1/10W		R363			RK73GB2A103J	CHIP R 10K J 1/10W	
R240			RK73GB2A222J	CHIP R 2.2K J 1/10W		R364			RK73GB2A152J	CHIP R 1.5K J 1/10W	
R241			RK73GB2A224J	CHIP R 220K J 1/10W		R365			RK73GB2A821J	CHIP R 820 J 1/10W	
R242			RK73GB2A473J	CHIP R 47K J 1/10W		R366			RK73GB2A472J	CHIP R 4.7K J 1/10W	
R246			RK73GB2A103J	CHIP R 10K J 1/10W		R367			RK73GB2A103J	CHIP R 10K J 1/10W	
R248			RK73GB2A103J	CHIP R 10K J 1/10W		R368,369			RK73GB2A472J	CHIP R 4.7K J 1/10W	
R251,252			RK73GB2A222J	CHIP R 2.2K J 1/10W		R370,371			RK73GB2A102J	CHIP R 1.0K J 1/10W	
R269-272			RD14NB2E4R7J	RD 4.7 J 1/4W		R372	*		RD14DB2H751J	SMALL-RD 750 J 1/2W	
R273-276			R92-0205-05	METAL-PLATE 0.1 K 2W		R373,374	*		RD14DB2H511J	SMALL-RD 510 J 1/2W	
R279,280		*	RK73GB2A511J	CHIP R 510 J 1/10W		R375			RK73GB2A623J	CHIP R 62K J 1/10W	
R281,282			RK73GB2A473J	CHIP R 47K J 1/10W		R376			RD14BB2C333J	RD 33K J 1/6W	
R283,284			RK73GB2A182J	CHIP R 1.8K J 1/10W		R377	*		RD14DB2H751J	SMALL-RD 750 J 1/2W	
R285,286			RD14DB2H100J	SMALL-RD 10 J 1/2W		R378			RD14DB2H100J	SMALL-RD 10 J 1/2W	
R300			RD14BB2C102J	RD 1.0K J 1/6W		R379			RD14DB2H681J	SMALL-RD 680 J 1/2W	
R301,302			RD14BB2C222J	RD 2.2K J 1/6W		R380			RD14DB2H821J	SMALL-RD 820 J 1/2W	
R303-305			RK73GB2A103J	CHIP R 10K J 1/10W		R382			RK73GB2A102J	CHIP R 1.0K J 1/10W	
R306-309			R92-3040-05	CHIP R 10K D 1/10W		R383			RK73GB2A152J	CHIP R 1.5K J 1/10W	
R310			RK73GB2A473J	CHIP R 47K J 1/10W		R384			RK73GB2A473J	CHIP R 47K J 1/10W	
R311			RK73GB2A100J	CHIP R 10 J 1/10W		R385			RK73GB2A332J	CHIP R 3.3K J 1/10W	
R312-314			RK73GB2A103J	CHIP R 10K J 1/10W		R388			RD14DB2H100J	SMALL-RD 10 J 1/2W	
R315			RK73GB2A473J	CHIP R 47K J 1/10W		R389			RD14BB2C121J	RD 120 J 1/6W	
R316			RK73GB2A113J	CHIP R 11K J 1/10W		R390			RD14BB2C151J	RD 150 J 1/6W	
R317			RK73GB2A221J	CHIP R 220 J 1/10W		R391,392			RK73GB2A470J	CHIP R 47 J 1/10W	
R318		*	RK73GB2A914J	CHIP R 910K J 1/10W		R393			RD14DB2H332J	SMALL-RD 3.3K J 1/2W	
R321			RK73GB2A224J	CHIP R 220K J 1/10W		R394,395			R92-0205-05	METAL-PLATE 0.1 K 2W	
R322		*	RK73GB2A150J	CHIP R 15 J 1/10W		R396			RD14DB2H180J	SMALL-RD 18 J 1/2W	
R323			RK73GB2A471J	CHIP R 470 J 1/10W		R397,398			R92-0205-05	METAL-PLATE 0.1 K 2W	
R324			RK73GB2A432J	CHIP R 4.3K J 1/10W		R399,400			RK73GB2A473J	CHIP R 47K J 1/10W	
R325		*	RK73GB2A202J	CHIP R 2.0K J 1/10W		R401,402			RD14NB2E100J	RD 10 J 1/4W	
R326,327			RK73GB2A101J	CHIP R 100 J 1/10W		R403,404			RD14BB2C332J	RD 3.3K J 1/6W	
R328			RK73GB2A472J	CHIP R 4.7K J 1/10W		R405-410			RD14DB2H100J	SMALL-RD 10 J 1/2W	
R329			RK73GB2A392J	CHIP R 3.9K J 1/10W		R411,412			RK73GB2A472J	CHIP R 4.7K J 1/10W	
R330			RK73GB2A562J	CHIP R 5.6K J 1/10W		R413,414			RK73GB2A101J	CHIP R 100 J 1/10W	
R331			RK73GB2A153J	CHIP R 15K J 1/10W		R415,416			RK73GB2A100J	CHIP R 10 J 1/10W	
R332			RK73GB2A332J	CHIP R 3.3K J 1/10W		R417,418			RK73GB2A152J	CHIP R 1.5K J 1/10W	
R333			RK73GB2A222J	CHIP R 2.2K J 1/10W		R419			RK73GB2A471J	CHIP R 470 J 1/10W	
R335			RK73GB2A153J	CHIP R 15K J 1/10W		R420	*		RK73GB2A163J	CHIP R 16K J 1/10W	
R336			RK73GB2A123J	CHIP R 12K J 1/10W		R421,422			RK73GB2A103J	CHIP R 10K J 1/10W	
R337			RK73GB2A222J	CHIP R 2.2K J 1/10W		R423			RK73GB2A472J	CHIP R 4.7K J 1/10W	
R340			RK73GB2A433J	CHIP R 43K J 1/10W		R424			RK73GB2A223J	CHIP R 22K J 1/10W	
R341			RK73GB2A513J	CHIP R 51K J 1/10W		R425-428			RD14DB2H121J	SMALL-RD 120 J 1/2W	
R342			RK73GB2A183J	CHIP R 18K J 1/10W		R431			RK73GB2A473J	CHIP R 47K J 1/10W	
R343			RK73GB2A124J	CHIP R 120K J 1/10W		R432			RK73GB2A472J	CHIP R 4.7K J 1/10W	
R344			RK73GB2A153J	CHIP R 15K J 1/10W		R433			RK73GB2A103J	CHIP R 10K J 1/10W	
R345			RK73GB2A103J	CHIP R 10K J 1/10W		R434,435			RK73GB2A332J	CHIP R 3.3K J 1/10W	
R346			RK73GB2A153J	CHIP R 15K J 1/10W		R436			RK73GB2A751J	CHIP R 750 J 1/10W	
R351			RK73GB2A222J	CHIP R 2.2K J 1/10W		R437			RK73GB2A332J	CHIP R 3.3K J 1/10W	
R353			RK73GB2A104J	CHIP R 100K J 1/10W		R438,439			RK73GB2A473J	CHIP R 47K J 1/10W	
R354-356			RK73GB2A102J	CHIP R 1.0K J 1/10W		R440			RK73GB2A332J	CHIP R 3.3K J 1/10W	
R357			RK73GB2A684J	CHIP R 680K J 1/10W		R441			RK73GB2A472J	CHIP R 4.7K J 1/10W	
R358			RK73GB2A472J	CHIP R 4.7K J 1/10W		R442	*		RK73GB2A273J	CHIP R 27K J 1/10W	
R359			RK73GB2A152J	CHIP R 1.5K J 1/10W		R443			RK73GB2A104J	CHIP R 100K J 1/10W	

E1 : KAC-PS650D
KM1J1 : KAC-X650D

E : Europe K : North America M : Other Areas
J : Japan

△ indicates safety critical components.

KAC-PS650D/X650D

PARTS LIST

*New Parts

Parts without Part No. are not supplied.

Ref. No.	A d d	N e w	Parts No.	Description	Desti- nation	Ref. No.	A d d	N e w	Parts No.	Description	Desti- nation
R444			RK73GB2A103J	CHIP R 10K J 1/10W		VR1 -4			R31-0215-05	VARIABLE RESISTOR	
R445			RD14DB2H100J	SMALL-RD 10 J 1/2W		VR5 -8			R32-0030-05	SEMI FIXED VARIABLE RESISTOR	
R446			RK73GB2A101J	CHIP R 100 J 1/10W		W100			R92-1252-05	CHIP R 0 OHM J 1/16W	
R447			RK73GB2A104J	CHIP R 100K J 1/10W		W200			R92-1252-05	CHIP R 0 OHM J 1/16W	
R448			RK73GB2A102J	CHIP R 1.0K J 1/10W		W300			R92-1252-05	CHIP R 0 OHM J 1/16W	
R449			RK73GB2A104J	CHIP R 100K J 1/10W		R429,430			RK73GB2A100J	CHIP R 10 J 1/10W	
R450			RK73GB2A102J	CHIP R 1.0K J 1/10W		S1 -4			S62-0842-05	SLIDE SWITCH	
R451-456			RK73GB2A103J	CHIP R 10K J 1/10W		S5 ,6			S31-2630-05	SLIDE SWITCH	
R457,458			RK73GB2A682J	CHIP R 6.8K J 1/10W		D1			DAP202U	DIODE	
R459			RK73GB2A473J	CHIP R 47K J 1/10W		D1			MA142WA	DIODE	
R460			RD14DB2H100J	SMALL-RD 10 J 1/2W		D3			DAP202U	DIODE	
R461			RK73GB2A103J	CHIP R 10K J 1/10W		D3			MA142WA	DIODE	
R462			RK73GB2A104J	CHIP R 100K J 1/10W		D5			DAN202U	DIODE	
R463			RK73GB2A223J	CHIP R 22K J 1/10W		D5			MA142WK	DIODE	
R464			RK73GB2A822J	CHIP R 8.2K J 1/10W		D6 ,7			RD10JS(B)	ZENER DIODE	
R465			RK73GB2A103J	CHIP R 10K J 1/10W		D8 ,9			MA3082-M	ZENER DIODE	
R466			RK73GB2A271J	CHIP R 270 J 1/10W		D10			RD5.1JS(B)	ZENER DIODE	
R467		*	RK73GB2A561J	CHIP R 560 J 1/10W		D101			DAN202U	DIODE	
R468			RK73GB2A221J	CHIP R 220 J 1/10W		D101			MA142WK	DIODE	
R469-471			RK73GB2A104J	CHIP R 100K J 1/10W		D102,103			DAP202U	DIODE	
R472-474			RK73GB2A472J	CHIP R 4.7K J 1/10W		D102,103			MA142WA	DIODE	
R475			RK73GB2A473J	CHIP R 47K J 1/10W		D104			DAN202U	DIODE	
R476			RK73GB2A104J	CHIP R 100K J 1/10W		D104			MA142WK	DIODE	
R477-484			RK73GB2A103J	CHIP R 10K J 1/10W		D140			MA3068WA	ZENER DIODE	
R485-487			RK73GB2A104J	CHIP R 100K J 1/10W		D151,152			DAN202U	DIODE	
R488			RK73GB2A223J	CHIP R 22K J 1/10W		D151,152			MA142WK	DIODE	
R489			RK73GB2A331J	CHIP R 330 J 1/10W		D153,154			DAP202U	DIODE	
R490			RK73GB2A153J	CHIP R 15K J 1/10W		D153,154			MA142WA	DIODE	
R491			RK73GB2A473J	CHIP R 47K J 1/10W		D201			DAN202U	DIODE	
R492			RD14DB2H100J	SMALL-RD 10 J 1/2W		D201			MA142WK	DIODE	
R493			RK73GB2A222J	CHIP R 2.2K J 1/10W		D202,203			DAP202U	DIODE	
R494			RK73GB2A223J	CHIP R 22K J 1/10W		D202,203			MA142WA	DIODE	
R495			RK73GB2A103J	CHIP R 10K J 1/10W		D204			DAN202U	DIODE	
R496			RK73GB2A222J	CHIP R 2.2K J 1/10W		D204			MA142WK	DIODE	
R497			RK73GB2A473J	CHIP R 47K J 1/10W		D240			MA3068WA	ZENER DIODE	
R498			RK73GB2A392J	CHIP R 3.9K J 1/10W		D301			DAN202U	DIODE	
R499,500			RK73GB2A332J	CHIP R 3.3K J 1/10W		D301			MA142WK	DIODE	
R501			RK73GB2A684J	CHIP R 680K J 1/10W		D302			DAP202U	DIODE	
R502			RK73GB2A332J	CHIP R 3.3K J 1/10W		D302			MA142WA	DIODE	
R503			RK73GB2A272J	CHIP R 2.7K J 1/10W		D302			DAN202U	DIODE	
R504			RD14BB2C183J	RD 18K J 1/6W		D303			MA142WK	DIODE	
R505			RK73GB2A102J	CHIP R 1.0K J 1/10W		D303,305			DAP202U	DIODE	
R506			RK73GB2A332J	CHIP R 3.3K J 1/10W		D304,305			MA142WA	DIODE	
R507			RK73GB2A122J	CHIP R 1.2K J 1/10W		D306			DAN202U	DIODE	
R508			RD14BB2E472J	RD 4.7K J 1/4W		D306			MA142WK	DIODE	
R509			RD14BB2C183J	RD 18K J 1/6W		D309			MA3051-M	ZENER DIODE	
R510		*	RK73GB2A242J	CHIP R 2.4K J 1/10W		D310-313			DAN202U	DIODE	
R511			RD14BB2C183J	RD 18K J 1/6W		D310-313			MA142WK	DIODE	
R512			RK73GB2A103J	CHIP R 10K J 1/10W		D340			MA3068WA	ZENER DIODE	
R513,514			RK73GB2A470J	CHIP R 47 J 1/10W		D401			RD16JS(B)	ZENER DIODE	
R515			RD14BB2C183J	RD 18K J 1/6W		D402			1SS133	DIODE	
R516,517			RK73GB2A103J	CHIP R 10K J 1/10W		D403-406			FR103S	DIODE	
R518			RD14BB2C183J	RD 18K J 1/6W		D407			FML22S*A	DIODE	
R519			RK73GB2A103J	CHIP R 10K J 1/10W							
R520			RK73GB2A223J	CHIP R 22K J 1/10W							

E1 : KAC-PS650D

KM1J1 : KAC-X650D

E : Europe K : North America M : Other Areas

J : Japan

△ indicates safety critical components.

KAC-PS650D/X650D

PARTS LIST

*New Parts

Parts without Part No. are not supplied.

Ref. No.	A d d	N e w	Parts No.	Description	Desti- nation	Ref. No.	A d d	N e w	Parts No.	Description	Desti- nation
D408			FML22R*A	DIODE		Q315			UN5112	DIGITAL TRANSISTOR	
D409			FML22S*A	DIODE		Q316			DTC124EUA	DIGITAL TRANSISTOR	
D410			FML22R*A	DIODE		Q316			UN5212	DIGITAL TRANSISTOR	
D411,412			1SS133	DIODE		Q401			2SD2375	TRANSISTOR	
D413		*	6A20-M	DIODE		Q402			2SB1548(P)	TRANSISTOR	
D414		*	FR103S	DIODE		Q403-410			IRF1010N	FET	
D415			MA3062-M	ZENER DIODE		Q411,412			2SC945(A)(Q,P)	TRANSISTOR	
D416			MA3100-M	ZENER DIODE		Q413,414			2SA733(A)(Q,P)	TRANSISTOR	
D417			MA3075-M	ZENER DIODE		Q415			2SA1534A(R,S)	TRANSISTOR	
D418			RD15JS(B)	ZENER DIODE		Q416			DTC124EUA	DIGITAL TRANSISTOR	
D419			DA204U	DIODE		Q416			UN5212	DIGITAL TRANSISTOR	
D423			MA3051-M	ZENER DIODE		Q417,418			2SC3940A(R,S)	TRANSISTOR	
D424			DAN202U	DIODE		Q419			2SC4081	TRANSISTOR	
D424			MA142WK	DIODE		Q419			2SD1819A	TRANSISTOR	
D425			RD16JS(B)	ZENER DIODE		Q420			2SA1576A	TRANSISTOR	
D426-429		*	FR103S	DIODE		Q420			2SB1218A	TRANSISTOR	
D431			DAN202U	DIODE		Q421			DTC124EUA	DIGITAL TRANSISTOR	
D431			MA142WK	DIODE		Q421			UN5212	DIGITAL TRANSISTOR	
D432			RD16JS(B)	ZENER DIODE		Q422,423			2SC4081	TRANSISTOR	
D434			MA3051-M	ZENER DIODE		Q422,423			2SD1819A	TRANSISTOR	
D435			DAN202U	DIODE		Q424			DTC124EUA	DIGITAL TRANSISTOR	
D435			MA142WK	DIODE		Q424			UN5212	DIGITAL TRANSISTOR	
IC1 -6			NJM2060M	ANALOGUE IC		Q425,426			2SC4081	TRANSISTOR	
IC7			NJM5532MD	IC(OP AMP)		Q425,426			2SD1819A	TRANSISTOR	
IC8			TC4052BF(N)	MOS-IC		Q427			2SA1576A	TRANSISTOR	
IC9			TC4W66F	IC		Q427			2SB1218A	TRANSISTOR	
IC10			NJM5532MD	IC(OP AMP)		Q428			2SC4081	TRANSISTOR	
IC11		*	NJM319D	ANALOGUE IC		Q428			2SD1819A	TRANSISTOR	
IC12,13			TC74HC00AF	IC(2INPUT NAND GATE)		Q429,430			2SA1576A	TRANSISTOR	
IC21			UPC494GS	ANALOGUE IC		Q429,430			2SB1218A	TRANSISTOR	
IC22		*	TMP87C847U3JV4	MI-COM IC		Q431-433			2SC4081	TRANSISTOR	
IC23			PS19130NR	ANALOGUE IC		Q431-433			2SD1819A	TRANSISTOR	
Q1 -4			2SC4081	TRANSISTOR		Q434			DTA124EUA	DIGITAL TRANSISTOR	
Q1 -4			2SD1819A	TRANSISTOR		Q434			UN5112	DIGITAL TRANSISTOR	
Q13			2SC4081	TRANSISTOR		Q435			2SC4081	TRANSISTOR	
Q13			2SD1819A	TRANSISTOR		Q435			2SD1819A	TRANSISTOR	
Q159,160			2SC4137(V,W)	TRANSISTOR		Q436			2SC3940A(R,S)	TRANSISTOR	
Q161,162			2SC5101LB*5	TRANSISTOR		Q438			2SC4209-Y	TRANSISTOR	
Q163,164			2SA1909LB*5	TRANSISTOR		Q439			2SC4081	TRANSISTOR	
Q259,260			2SC4137(V,W)	TRANSISTOR		Q439			2SD1819A	TRANSISTOR	
Q261,262			2SC5101LB*5	TRANSISTOR		Q440			2SA1576A	TRANSISTOR	
Q263,264			2SA1909LB*5	TRANSISTOR		Q440			2SB1218A	TRANSISTOR	
Q301,302			2SC1845(F,E)	TRANSISTOR		Q441			2SA992(F,E)	TRANSISTOR	
Q303			2SA1123(Q,R)	TRANSISTOR		Q442			2SC1845(F,E)	TRANSISTOR	
Q304,305		*	2SA1352(E,F)	TRANSISTOR		Q443			2SA1576A	TRANSISTOR	
Q306			2SA1123(Q,R)	TRANSISTOR		Q443			2SB1218A	TRANSISTOR	
Q307			2SC1845(F,E)	TRANSISTOR		Q444			2SC3940A(R,S)	TRANSISTOR	
Q308			2SC2631(Q,R)	TRANSISTOR		Q446			2SC4081	TRANSISTOR	
Q309			2SA1286-T11	TRANSISTOR		Q446			2SD1819A	TRANSISTOR	
Q310			2SC2631(Q,R)	TRANSISTOR		TH1			PTH9L04BD222TS	POSITIVE RESISTOR	
Q311			2SA1286-T11	TRANSISTOR		TH2 ,3			PTH9M04BE222T	POSITIVE RESISTOR	
Q312			DTC124EUA	DIGITAL TRANSISTOR		TH4			PTH9L04BD222TS	POSITIVE RESISTOR	
Q312			UN5212	DIGITAL TRANSISTOR							
Q313,314		*	STW34NB20	FET							
Q315			DTA124EUA	DIGITAL TRANSISTOR							

E1 : KAC-PS650D

KM1J1 : KAC-X650D

E : Europe

K : North America

M : Other Areas

J : Japan

△ indicates safety critical components.

KAC-PS650D/X650D

SPECIFICATIONS

KAC-PS650D/X650D

Audio Section

Rated Power Output (12V, A/Bch, 4Ω, 20-20KHz, 0.05% THD).....	40W x 4
Rated Power Output (12V, Sub-ch, 4Ω, 20-200Hz, 0.5% THD)	130W x 1
Rated Power Output (12V, A/Bch, 2Ω, 1KHz, 0.5% THD).....	60W x 4
Rated Power Output (12V, Sub-ch, 2Ω, 100Hz, 0.8% THD).....	200W x 1
Bridged Power Output (12V, A/Bch, 4Ω, 1KHz, 0.5% THD)	120W x 2
Bridged Power Output (14.4V, A/Bch, 4Ω, 20-20KHz, 0.05% THD).....	60W x 4
Bridged Power Output (14.4V, Sub-ch, 4Ω, 20-200Hz, 0.5% THD).....	200W x 1
Bridged Power Output (14.4V, A/Bch, 4Ω, DIN45324)	60W x 4
Bridged Power Output (14.4V, Sub-ch, 4Ω, DIN45324).....	200W x 1
Bridged Power Output (14.4V, A/Bch, 2Ω, 1KHz, 0.5% THD)	80W x 4
Bridged Power Output (14.4V, Sub-ch, 2Ω, 100Hz, 0.8% THD).....	300W x 1
Bridged Power Output (14.4V, A/Bch, 4Ω, 1KHz, 0.5% THD)	160W x 2
Max Power Output (14.4V, 4Ω, Normal)	(160W x 4) + (300W x 1)
Max Power Output (14.4V, 4Ω, Bridge, 3-channel mode).....	(300W x 2) + (600W x 1)
Total Harmonic Distortion (14.4V, Rated Power, 4ch)	0.006%
Total Harmonic Distortion (14.4V, Rated Power, Sub-ch).....	0.2%
Low Pass Filter (Sub-ch, 24dB/oct.).....	50Hz - 200Hz
Low Pass Filter (Bch, 24dB/oct.).....	50Hz - 200Hz
High Pass Filter (A/Bch, 12dB/oct.).....	50Hz - 200Hz
Built-in Infrasonic Filter (Sub-ch, 24dB/oct.)	15Hz (Fix.)
New BMS (Bass Boost Circuit) (Sub-ch) : 40Hz - 100Hz	OFF / +6dB / +12dB / +18dB
Frequency Response (Sub-ch, +0dB, -3dB)	5Hz - 200Hz
Frequency Response (A/Bch, +0dB, -3dB)	5Hz - 70KHz
Signal to Noise Ratio (4ch)	105dB
Signal to Noise Ratio (Sub-ch).....	100dB
Sensitivity (Max) (Rated Output).....	0.2V
Sensitivity (Min) (Rated Output).....	5V
Input Impedance	10KΩ
Damping Factor (4ch)	More than 100
Damping Factor (Sub-ch).....	More than 26

General

Operating Voltage (11V-16V allowable).....	14.4V
Current Consumption (12V, 1KHz, 10% THD).....	53A
Installation Size (Width x Height x Depth)	283mm x 58mm x 350mm
Weight.....	5.7Kg

KENWOOD follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.

KENWOOD CORPORATION

14-6, Dogenzaka 1-chome, Shibuya-ku, Tokyo, 150-8501 Japan

KENWOOD SERVICE CORPORATION

P.O. Box 22745, 2201 East Dominguez Street,
Long Beach, CA90801-5745, U.S.A.

KENWOOD ELECTRONICS CANADA INC.

6070 Kestrel Road, Mississauga, Ontario, Canada L5T 1S8

KENWOOD ELECTRONICS LATIN AMERICA S.A.

P.O. Box 55-2791 Paitilla, Plaza Credicorp Bank Panama,
Piso 9, Oficina 901, Calle 50, Panama, Republic of Panama

KENWOOD ELECTRONICS BRASIL LTDA.

Alameda Ministro Rocha Azevedo No. 456,
Edifício Jaú, 10o Andar, Cerqueira César, Cep 0140-001,
São Paulo-SP-Brasil

KENWOOD ELECTRONICS UK LIMITED

Kenwood House, Dwight Road, Watford,
Herts, WD1 8EB, United Kingdom

KENWOOD ELECTRONICS DEUTSCHLAND GMBH

Rembrücker Str. 15, 63150 Heusenstamm, Germany

KENWOOD ELECTRONICS FRANCE S.A.

13, Boulevard Ney, 75018 Paris, France

KENWOOD ELECTRONICS BELGIUM N.V.

Leuvensesteenweg 248 J, 1800 Vilvoorde, Belgium

KENWOOD ELECTRONICS ITALIA S.p.A.

Via G. Sirtori 7/9, 20129 Milano, Italy

KENWOOD IBÉRICA S.A.

Bolivia, 239-08020 Barcelona, Spain

KENWOOD ELECTRONICS AUSTRALIA PTY. LTD.

(A.C.N. 001 499 074)
16 Giffnock Avenue, Centrecourt Estate, North Ryde,
N.S.W. 2113, Australia

KENWOOD ELECTRONICS (HONG KONG) LTD.

Unit 3712-3724, Level 37, Tower 1, Metroplaza,
223 Hing Fong Road, Kwai Fong, N.T., Hong Kong

KENWOOD ELECTRONICS GULF FZE

P.O.Box 61318, Jebel Ali, Dubai, U.A.E.

KENWOOD ELECTRONICS (THAILAND) CO., LTD.

2019 New Pechburi Road, Bangkapi, Huaykwang,
Bangkok, 10320 Thailand

KENWOOD ELECTRONICS SINGAPORE PTE LTD.

1 Genting Lane, #07-00, Kenwood Building, Singapore 349544

KENWOOD ELECTRONICS (MALAYSIA) SDN BHD

#4.01 Level 4, Wisma Academy Lot 4A, Jalan 19/1,
46300 Petaling Jaya, Selangor Darul Ehsan, Malaysia