

POWER AMPLIFIER

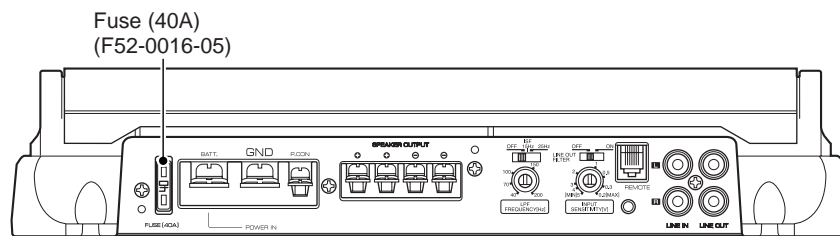
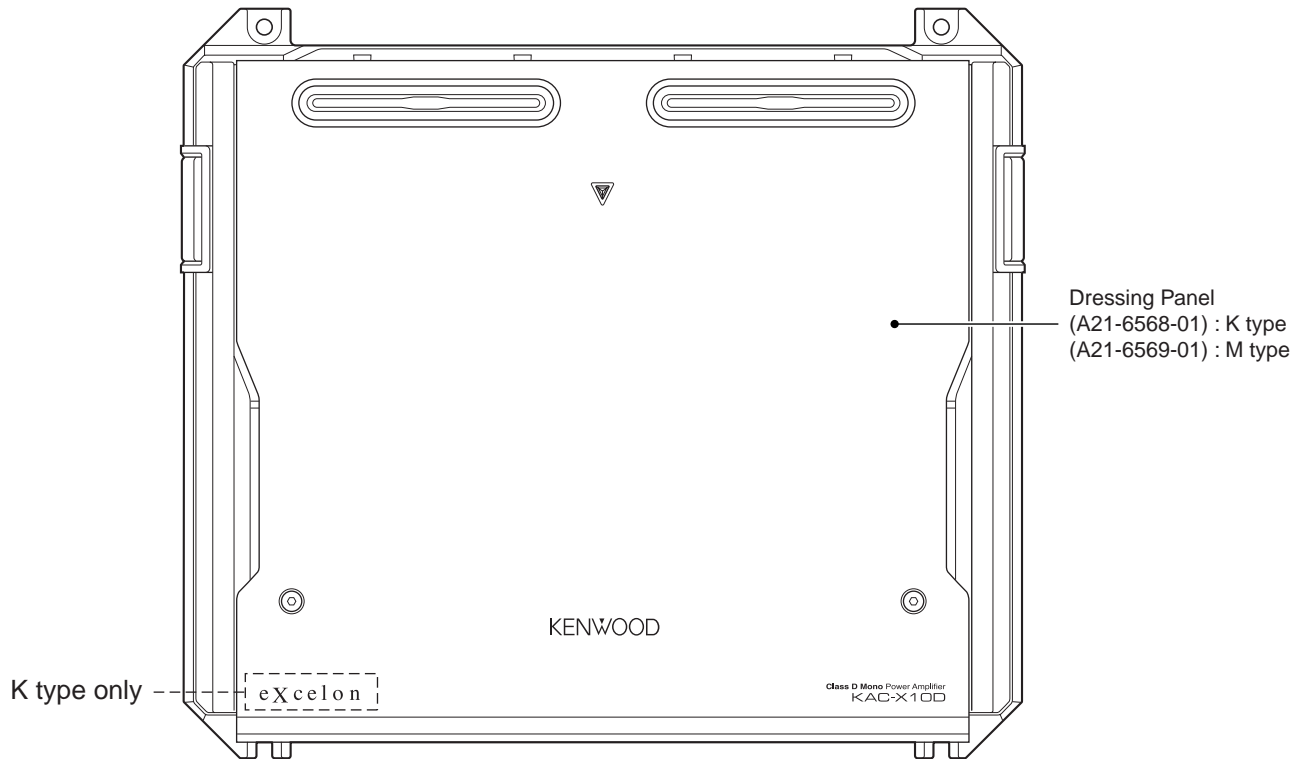
KAC-X10D

SERVICE MANUAL

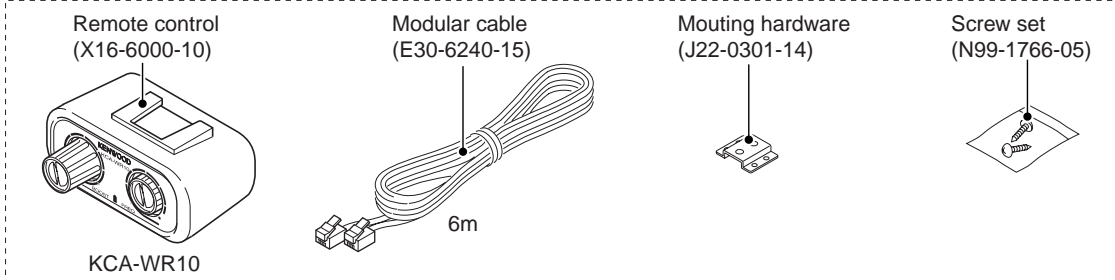
KENWOOD

Kenwood Corporation

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B53-0487-00 (N) 719



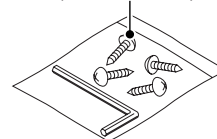
M type only



Accessories
(W01-1606-05)



Screw set
(N99-1794-05)

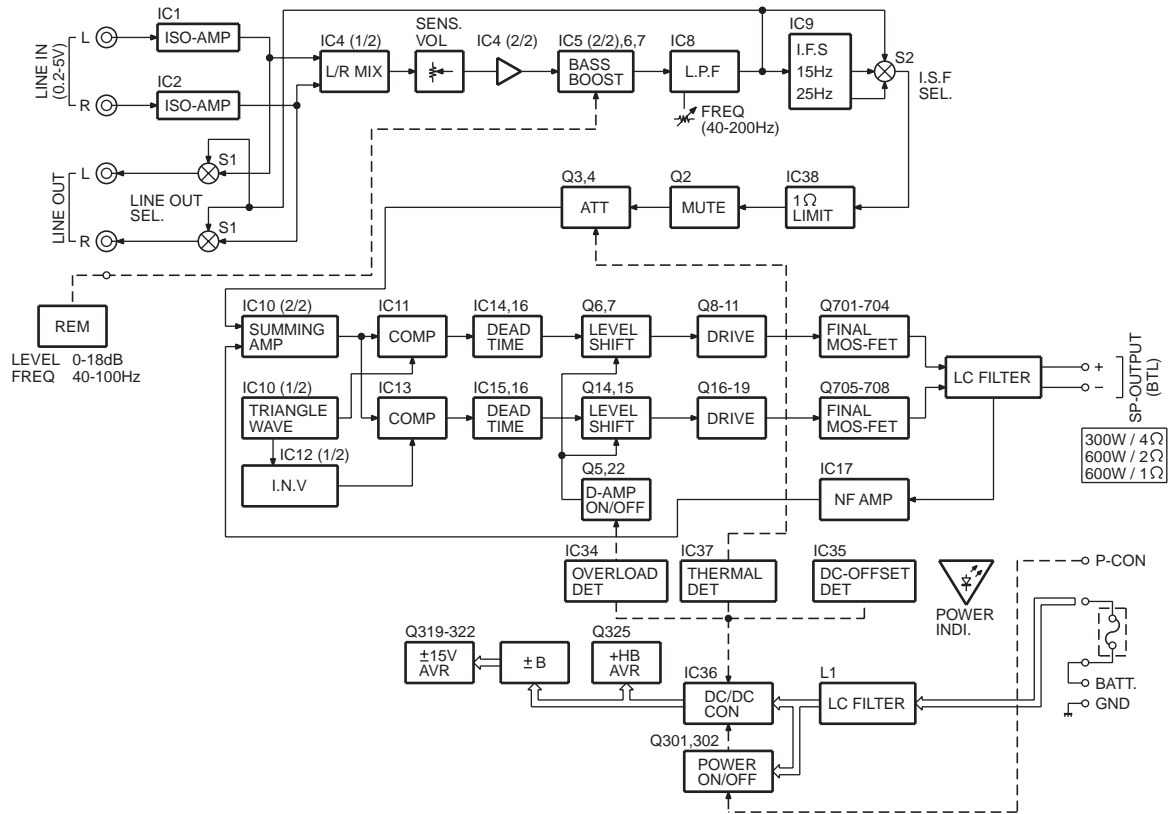


This product uses Lead Free solder.



KAC-X10D

BLOCK DIAGRAM



COMPONENTS DESCRIPTION

● AUDIO UNIT (X09-8590-10)

Ref. No.	Application / Function	Operation / Condition / Compatibility
IC1,2	Isolation AMP	Removal of common mode noise on input signal
IC3	Buffer AMP	Buffer AMP for RCA output
IC4	Mixing AMP and buffer AMP	It mixes input stereo signals into monaural signals. GAIN=0dB
IC5-7	Bass Boost circuit (remote control operation)	It boosts signals by the operation of the remote control. GAIN=0~+18dB, $f_c=40\sim 100\text{Hz}$
IC8	L.P.F	40~200Hz -24dB/oct
IC9	I.S.F	OFF/15Hz/25Hz switchable -24dB/oct
IC10	D-class phase input AMP	
IC11	PWM signal generating circuit	Generation of triangular wave, and generation of PWM signal by comparing triangular and sine wave.
IC12	Triangular wave reversal and DC servo circuit	It feeds back the triangular wave reversal and DC voltage offset.
IC13	PWM signal generating circuit and latch circuit	Circuit to generate PWM signal by comparing triangular and sine wave. Circuit to latch when 1Ω load is detected.

COMPONENTS DESCRIPTION

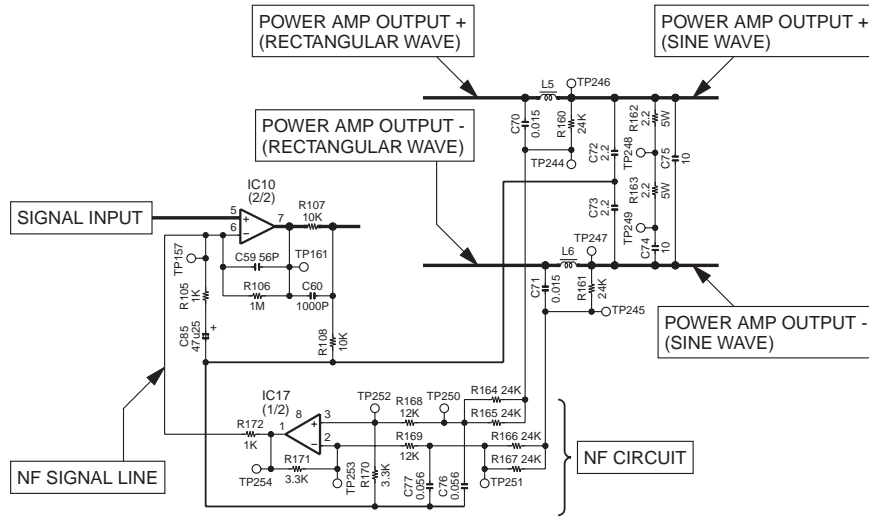
Ref. No.	Application / Function	Operation / Condition / Compatibility
IC14~16	Dead time generating circuit	It generates dead time not to penetrate the high-side and low-side PWM signal.
IC17	NF circuit	It applies negative return from output to D-class first phase.
IC31	Short-circuit detection	Detection of short-circuit between output and GND
IC32	ASO and short-circuit detection	Detection of current-voltage and output short-circuit.
IC33	Detection signal latch	It latches detection signal for a given length of time.
IC34	Detection circuit	It sends detection signal to each circuit when a failure is detected, and turn off the circuit.
IC35	Rectifying circuit	It rectifies output voltage.
IC36	DC/DC converter	It generates signals to make dual power supply from single power supply.
IC37	Mute circuit	It generates Mute signal.
IC38	Clipper	It limits the audio signal amplitude and suppresses power when 1Ω is detected.
IC39	Resonance detection	It detects resonance generated in output short-circuit.
Q2~4	ATT,MUTE	It applies ATT-1,ATT-2 and MUTE.
Q5,22	5V-SW	It controls ON and OFF of D-class AMP gate driver circuit power supply 5V.
Q6~21	Level shift and gate drive.	It performs D-class AMP level shift and MOS-FET gate drive.
Q301	Abnormal voltage detection	It turns off P-CON when abnormal voltage is applied to power supply.
Q302,303,307,308	PW-SW	It turns on AMP main body when it detects voltage in P-CON.
Q304,305	MUTE-SW	It turns on and off MUTE.
Q306	PW (OFF)-SW	It turn off AMP power when abnormal detections (over current, short-circuit and DC offset) is detected.
Q309~312	DC/DC-FET drive	DC/DC-FET gate driver
Q313~318	DC/DC-FET	Switching FET for generating AMP secondary power supply
Q319~322	$\pm 15V$ power supply	It generates $\pm 15V$ from secondary power supply $\pm B$.
Q323,324	Tracking circuit	It adjusts $\pm 15V$ attenuation curve when power is turned off.
Q325	High-tap power supply circuit	It generates +HB higher than +B to drive MOS-FET.
Q326,327,337~339	Current balance detection	It detects the current balance on + and - side while it detects the current.
Q328,329	Output voltage rectifying circuit	It applies bias on the signal with output voltage rectified.
Q330~334	DC offset detection	It detects abnormal output DC voltage.
Q335	Failure SW	It generates detection signals when a failure occurs.
Q336	1Ω detection malfunction prevention circuit	It prevents malfunction of 1Ω detection in voltage instability when AMP power is turned on.
Q701~708	MOS-FET	It amplifies the switching level to $\pm B$.

KAC-X10D

CIRCUIT DESCRIPTION

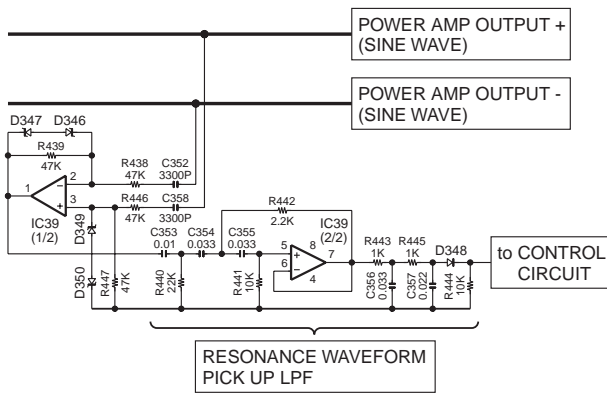
● NF Circuit

It applies NF from rear and front of LC filter. For BTL output, it receives each output by differential amplification and applies feedback to the first phase.



● Resonance Detection Circuit

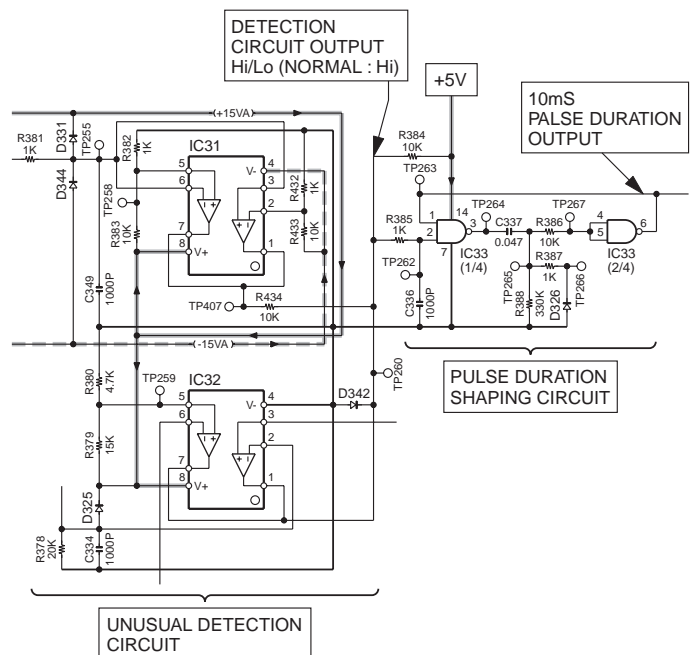
It detects resonant waveforms generated at output when the power AMP \pm output is dead-shortened (0Ω). It sends detected signals to the control circuit.



● Pulse Shaping Circuit

It detects with either one of abnormal detections (current voltage, resonance detection or unbalance current detection) at the previous phase.

It generates a certain width of pulse about 10msec even if input pulse width is small when input is pulled by L_o .



CIRCUIT DESCRIPTION

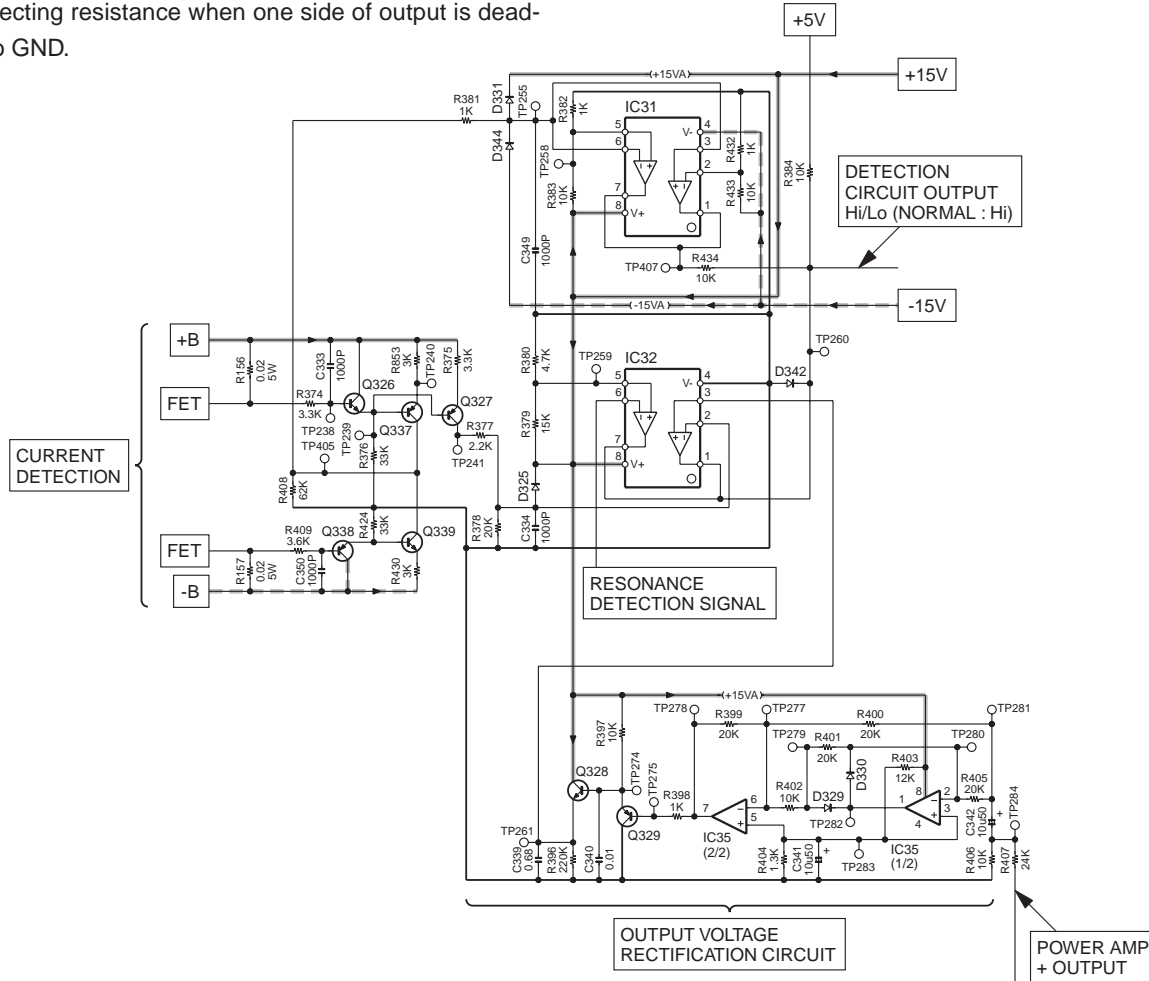
● Abnormal Detection Circuit

It compares signal levels of the current detecting circuit and output voltage rectification circuit with a comparator. If current > voltage, the detecting circuit operates to stop D-class circuit.

In the current detecting circuit, current flows into only one side of the detecting resistance when one side of output is dead-shortened to GND.

It detects also unbalance operation.

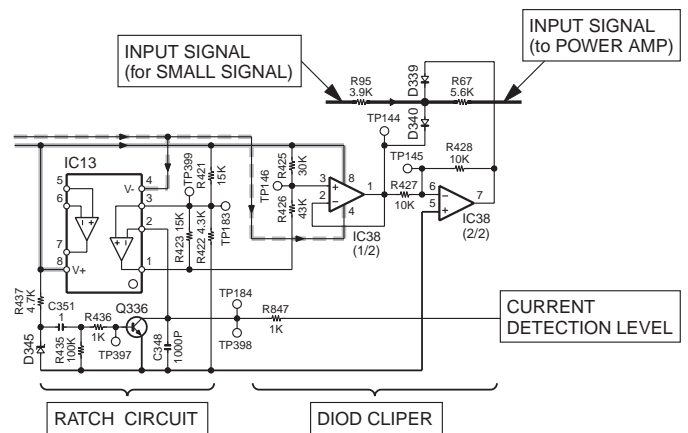
Resonance detecting signals detected with the new circuit description X10D_2 are also input to this circuit causing abnormal detection.



● 1Ω Detection Circuit

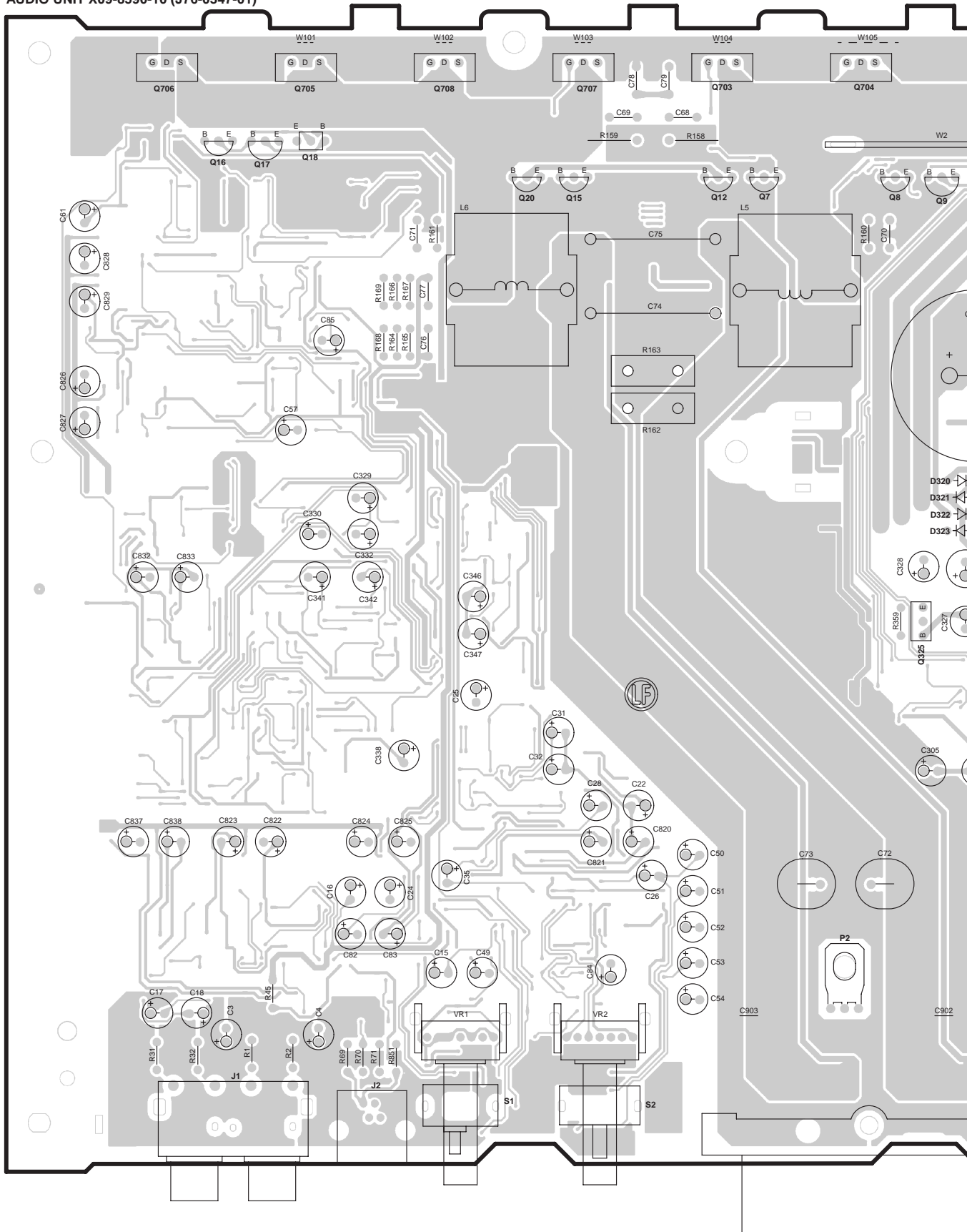
The detecting circuit operates and limits the input signal when the level sent from the current detecting circuit exceeds a certain level. (Diode clip)

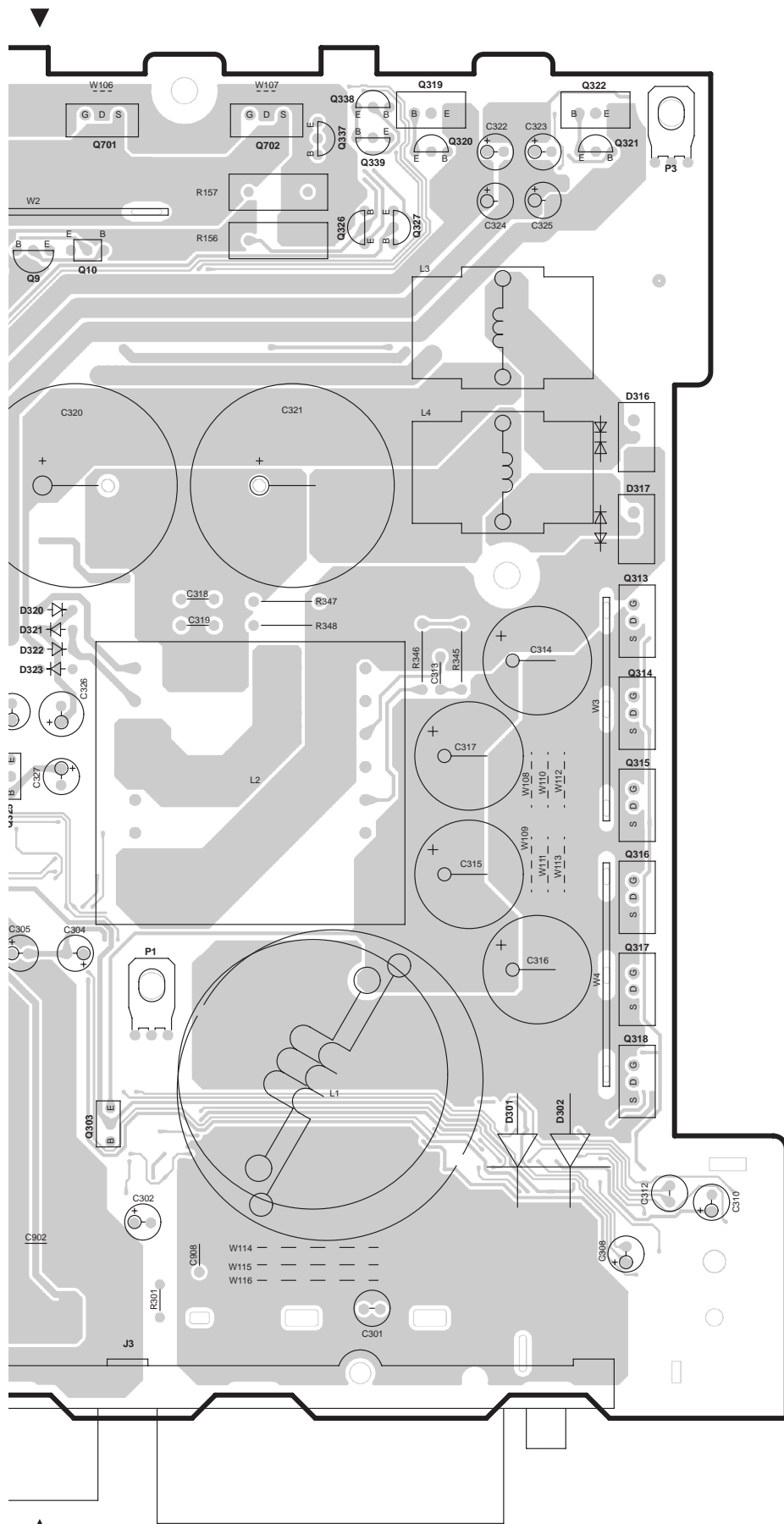
It detects at the current level that flows only when 1Ω is applied, and does not cancel unless P-con is turned off. (Latch circuit)



A B C D E
KAC-X10D
PC BOARD (COMPONENT SIDE VIEW)

AUDIO UNIT X09-8590-10 (J76-0347-01)





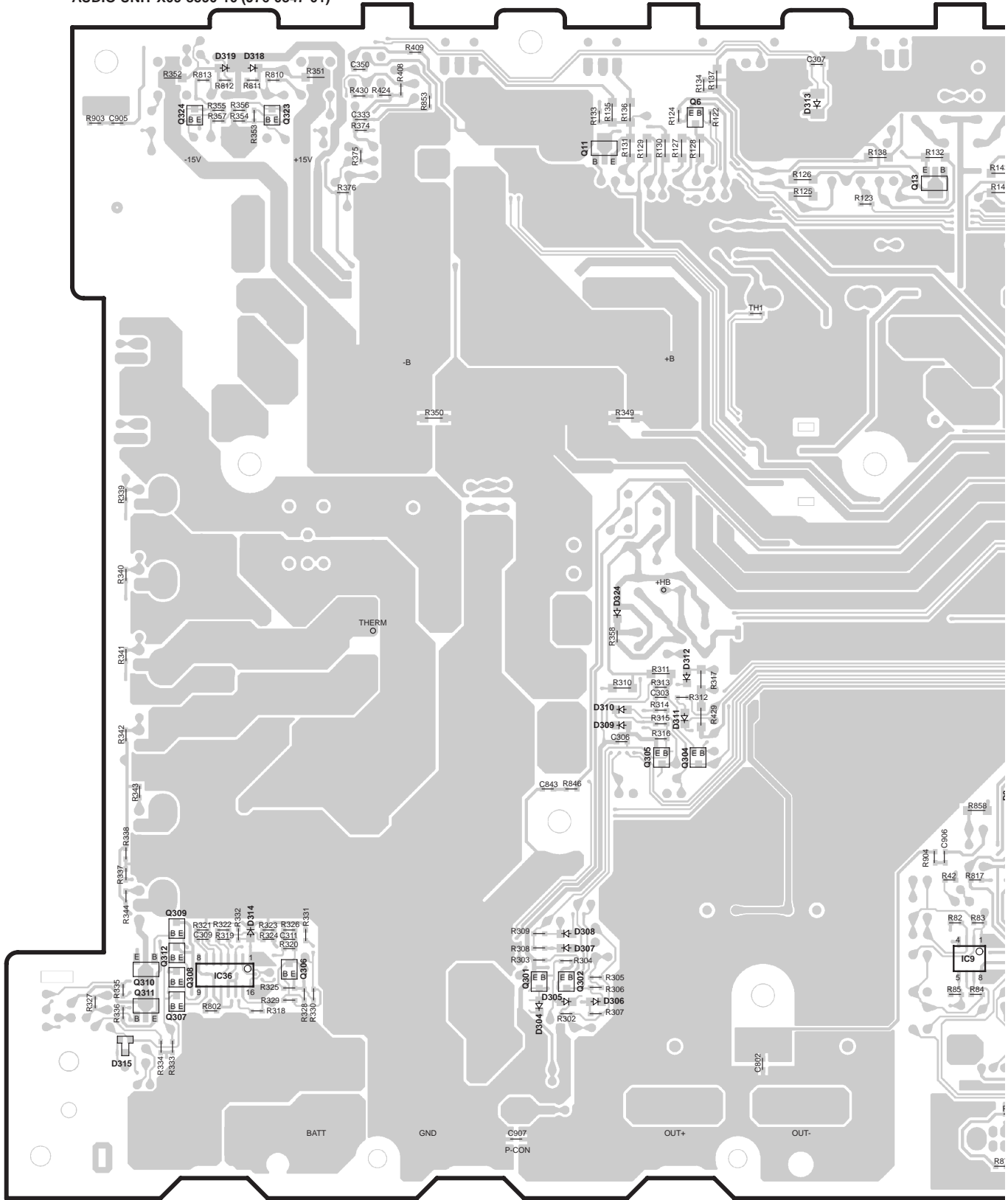
X09-8590-10

Ref. No.	Address
Q7	2E
Q8	2E
Q9	2E
Q10	2F
Q12	2D
Q15	2D
Q16	2B
Q17	2B
Q18	2B
Q20	2C
Q303	6F
Q313	3H
Q314	4H
Q315	4H
Q316	4H
Q317	5H
Q318	5H
Q319	1G
Q320	2G
Q321	2H
Q322	1H
Q325	4E
Q326	2G
Q327	2G
Q337	2G
Q338	2G
Q339	2G
Q701	2F
Q702	2G
Q703	2D
Q704	2E
Q705	2B
Q706	2B
Q707	2D
Q708	2C

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

KAC-X10D PC BOARD (FOIL SIDE VIEW)

AUDIO UNIT X09-8590-10 (J76-0347-01)



1

2

3

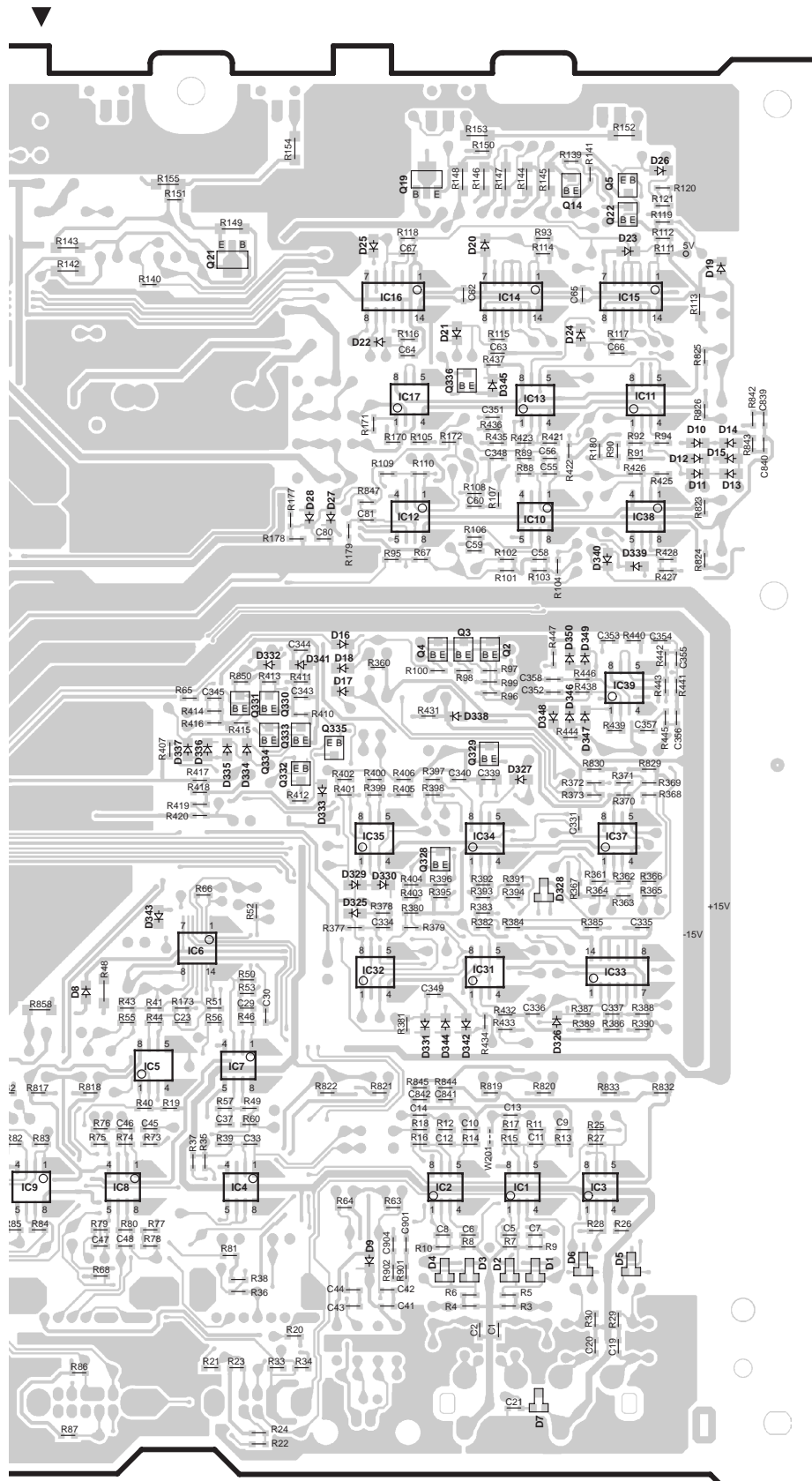
4

5

6

7

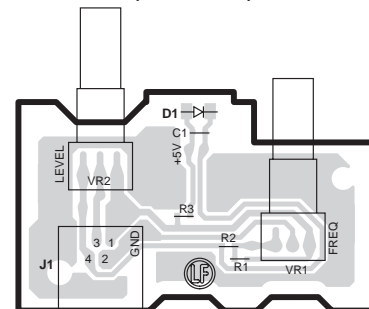
KAC-X10D



X09-8590-10

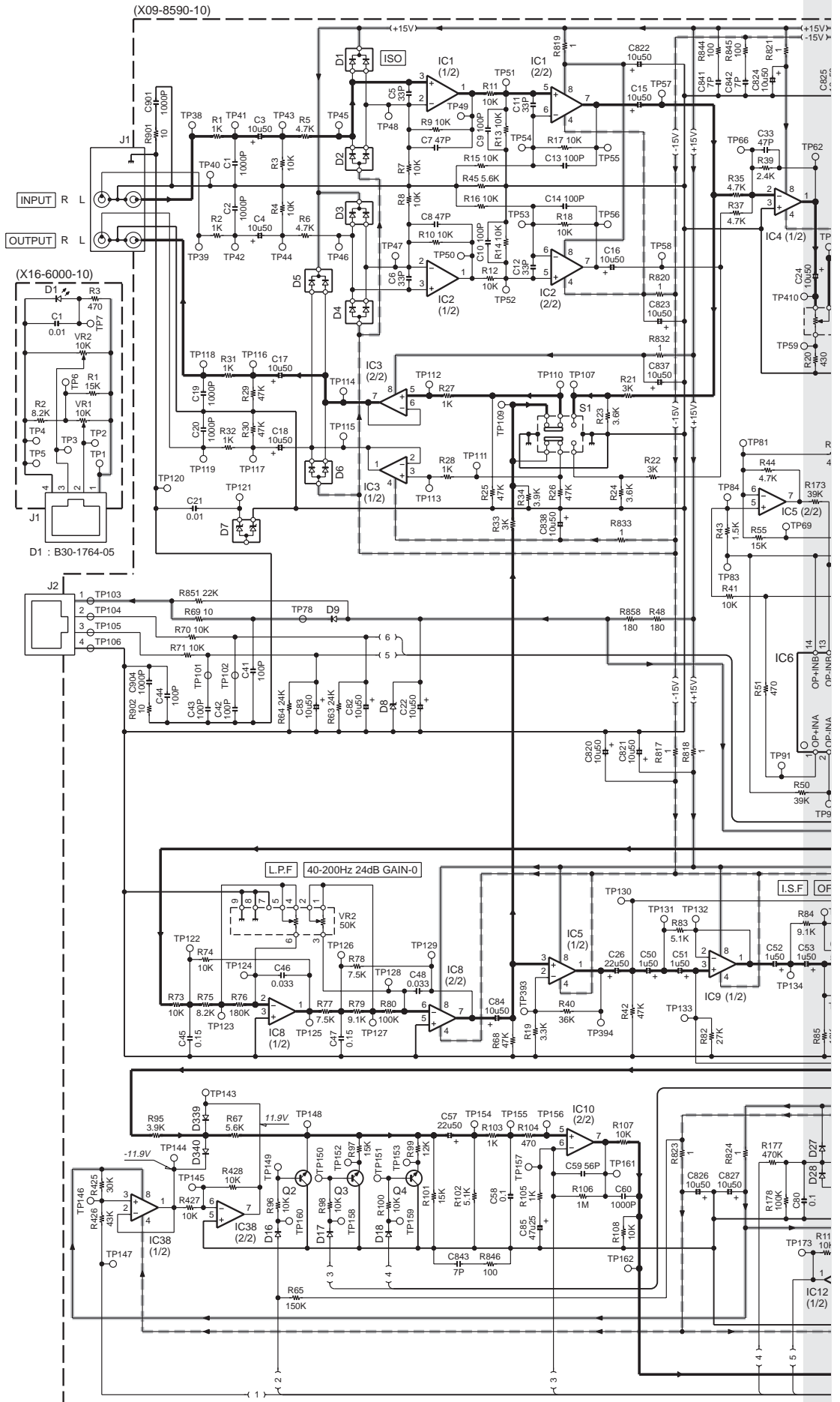
Ref. No.	Address	Ref. No.	Address
IC1	6Q	Q6	2N
IC2	6Q	Q11	2N
IC3	6R	Q13	2O
IC4	6P	Q14	2R
IC5	5P	Q19	2Q
IC6	5P	Q21	2P
IC7	5P	Q22	2R
IC8	6P	Q301	6M
IC9	6O	Q302	6N
IC10	3R	Q304	5N
IC11	3R	Q305	5N
IC12	3Q	Q306	6L
IC13	3R	Q307	6L
IC14	2Q	Q308	6L
IC15	2R	Q309	5L
IC16	2Q	Q310	6L
IC17	3Q	Q311	6L
IC31	5Q	Q312	6L
IC32	5Q	Q323	2L
IC33	5R	Q324	2L
IC34	4Q	Q328	4Q
IC35	4Q	Q329	4Q
IC36	6L	Q330	4Q
IC37	4R	Q331	4P
IC38	3R	Q332	4Q
IC39	4R	Q333	4Q
Q2	4Q	Q334	4P
Q3	4Q	Q335	4Q
Q4	4Q	Q336	3Q
Q5	2R		

SWITCH UNIT (REMOTE CONTROL)
X16-6000-10 (J76-0408-01)

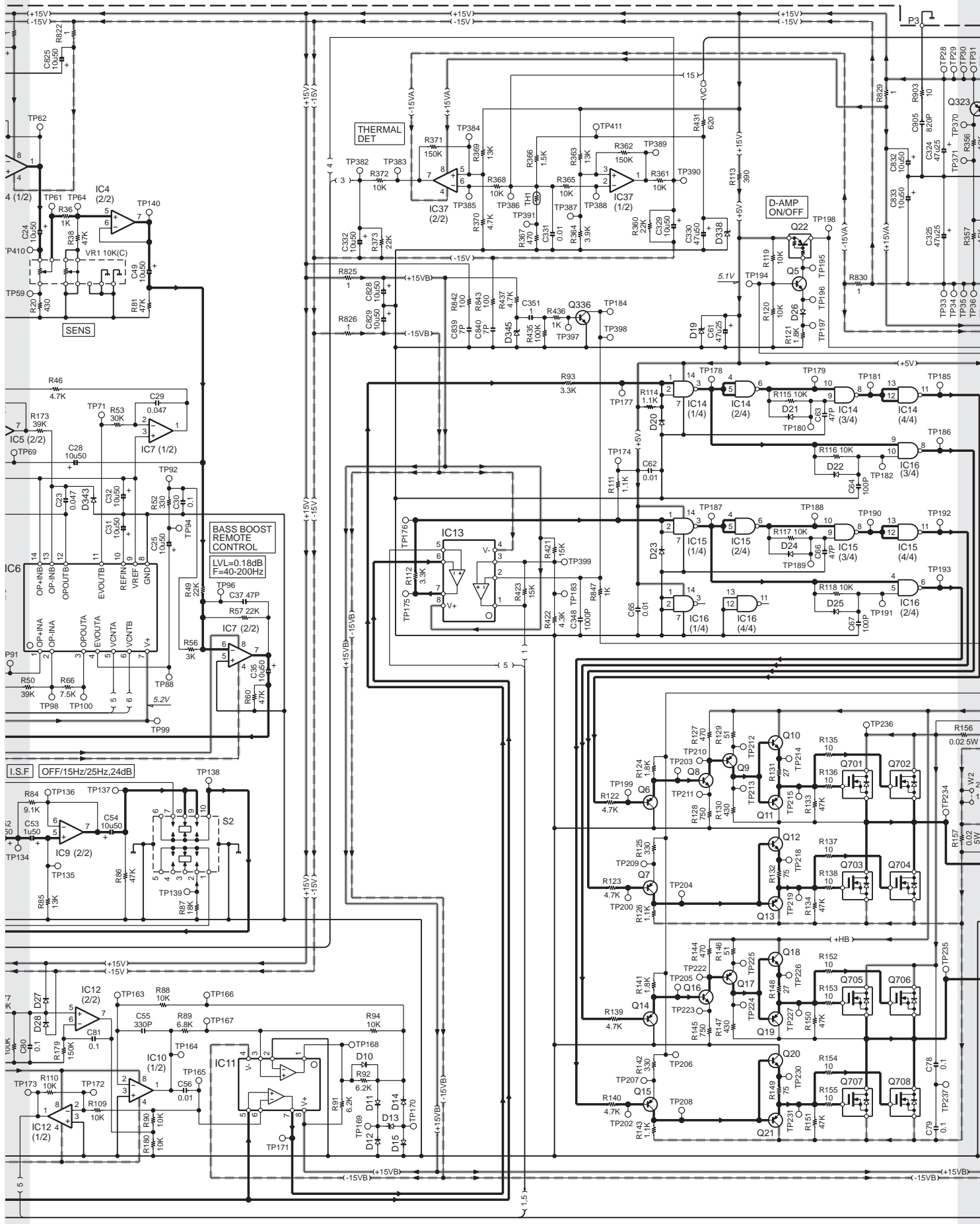


Refer to the schematic diagram for the values of resistors and capacitors.

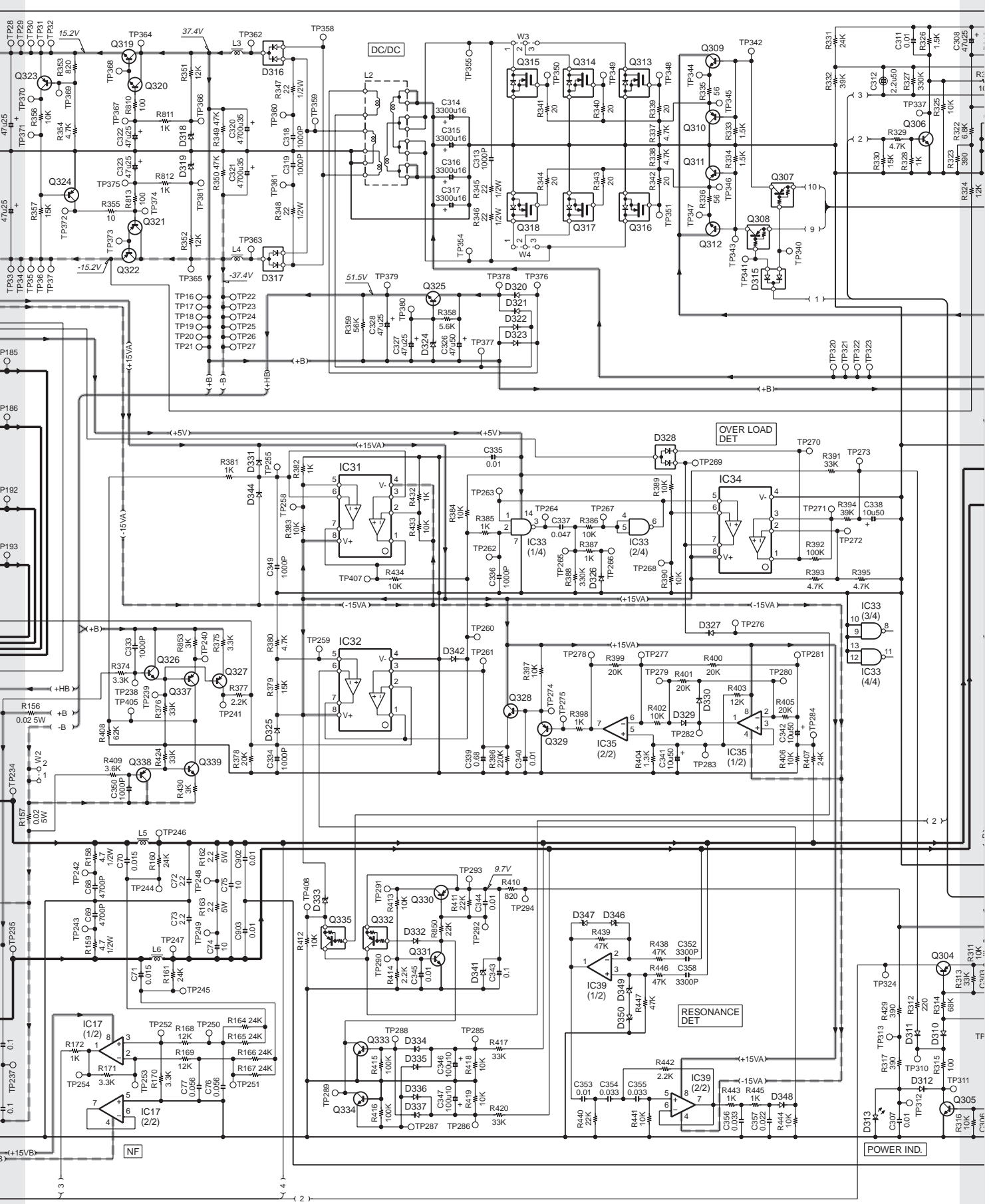
KAC-X10D

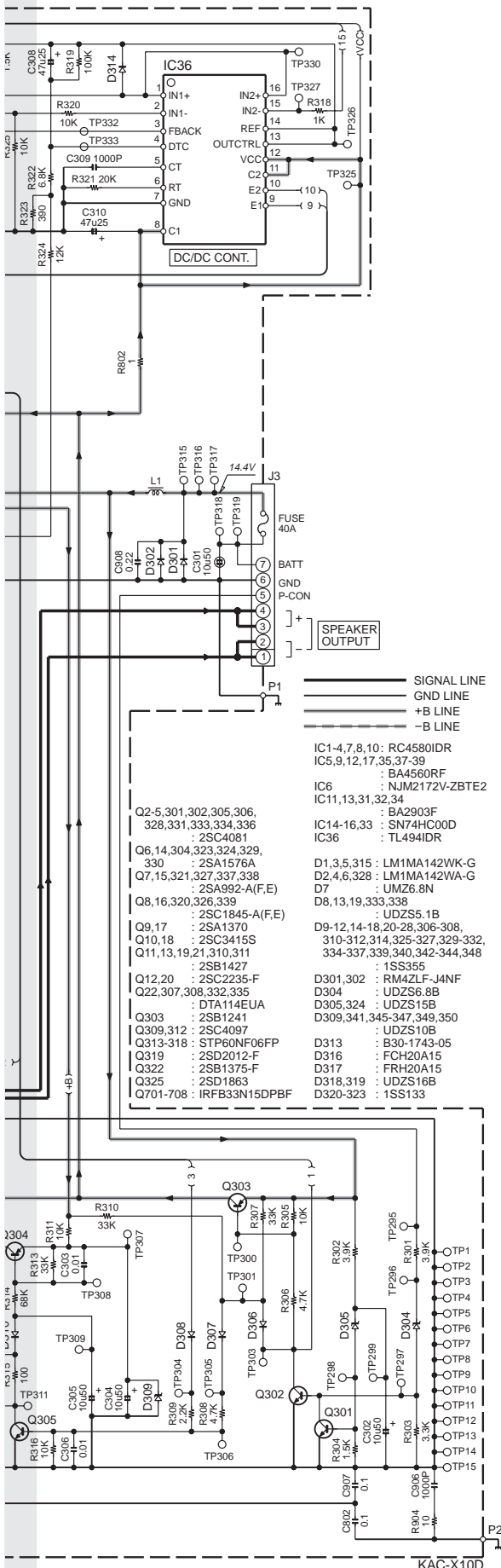


KAC-X10D



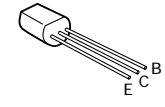
KAC-X10D



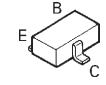


- | | | |
|--|------------------|---|
| Q2-5,301,302,305,306,328,331,333,334,336 | : 2SC4081 | IC1-4,7,8,10: RC4580IDR |
| Q6,14,304,323,324,329,330 | : 2SA1576A | IC5,9,12,17,35,37-39 |
| Q7,15,321,327,337,338 | : 2SA992-A(F,E) | : BA4560RF |
| Q8,16,320,326,339 | : 2SC1845-A(F,E) | IC6 : NJM2172V-ZBTE2 |
| Q9,17 | : 2SA1370 | IC11,13,31,32,34 |
| Q10,18 | : 2SC3415S | : BA2903F |
| Q11,13,19,21,310,311 | : 2SB1427 | IC14-16,33 : SN74HC00D |
| Q12,20 | : 2SC2235-F | IC36 : TL494IDR |
| Q22,307,308,332,335 | : DTA114EUA | |
| Q303 | : 2SB1241 | D1,3,5,315 : LM1MA142WK-G |
| Q309,312 | : 2SC4097 | D2,4,6,328 : LM1MA142WA-G |
| Q313-318 | : STP60NF06FP | D7 : UMZ6.8N |
| Q319 | : 2SD2012-F | D8,13,19,333,338 |
| Q322 | : 2SB1375-F | : UDZS5.1B |
| Q325 | : 2SD1863 | D9-12,14-18,20-28,306-308,310-312,314,325-327,329-332,334-337,339,340,342-344,348 |
| Q701-708 | : IRFB33N15DPBF | : 1SS355 |
| | | D301,302 : RM4ZLF-J4NF |
| | | D304 : UDZS6.8B |
| | | D305,324 : UDZS15B |
| | | D309,341,345-347,349,350 |
| | | : UDZS10B |
| | | D313 : B30-1743-05 |
| | | D316 : FCH20A15 |
| | | D317 : FRH20A15 |
| | | D318,319 : UDZS16B |
| | | D320-323 : 1SS133 |

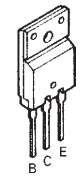
2SA992-A
2SC1845-F
2SC2235-F



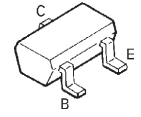
2SA1576A



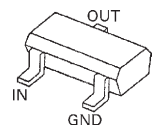
2SB1375-F
2SD2012-F



2SC4081



DTA114EUA

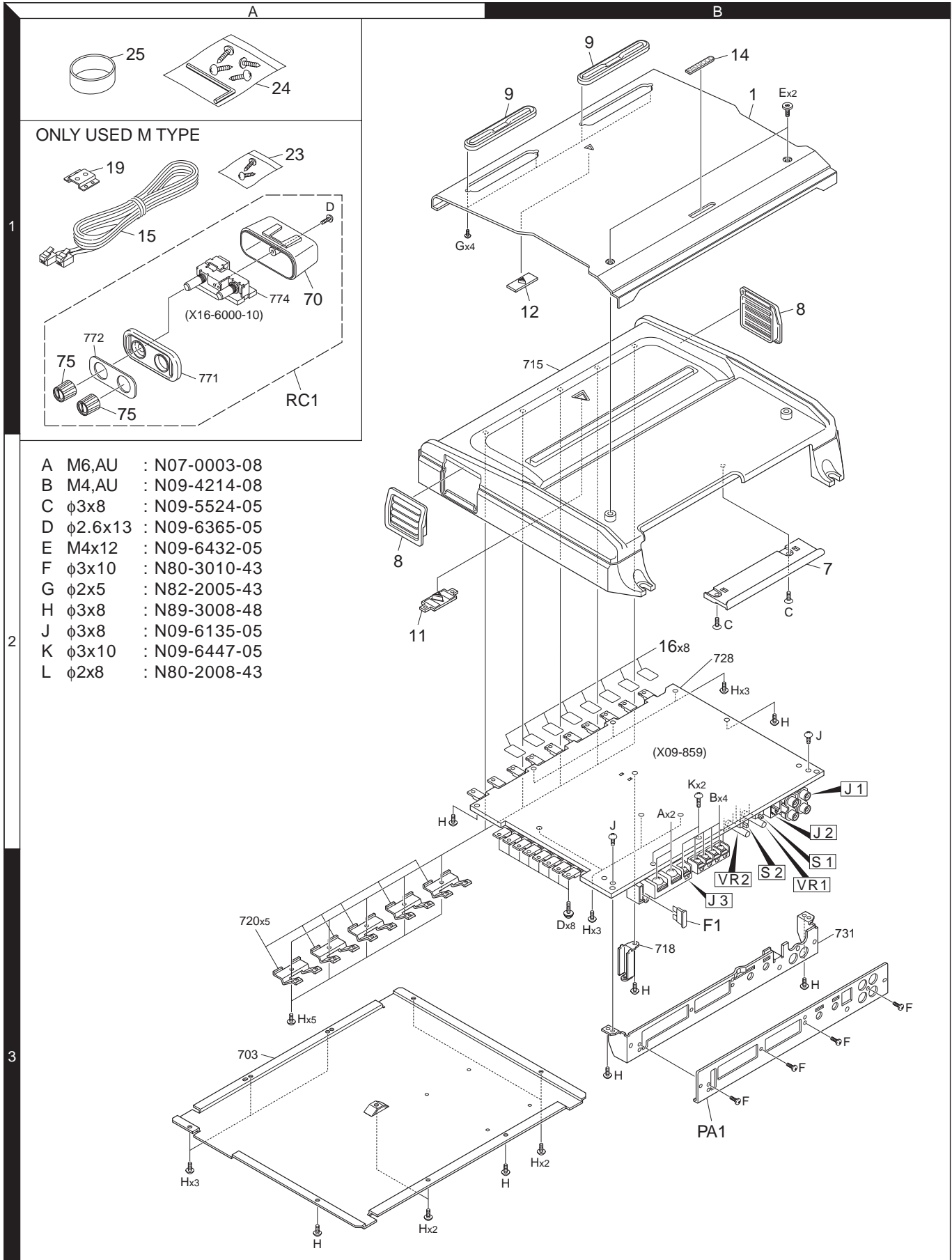


CAUTION : For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list).
⚠ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably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

- DC voltages are as measured with a high impedance voltmeter. Values may vary slightly due to variations between individual instruments or/and units.

KAC-X10D

EXPLODED VIEW



PARTS LIST

* New parts

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

Les articles non mentionnés dans le **Parts No.** ne sont pas fournis.

Teile ohne **Parts No.** werden nicht geliefert.

Ref. No.	Add	New	Parts No.	Description	Destination
KAC-X10D					
1	1B	*	A21-6568-01	DRESSING PANEL	K
1	1B	*	A21-6569-01	DRESSING PANEL	M1
PA1	3B	*	A64-4084-02	PANEL	
7	2B		B07-3195-03	ESCUTCHEON	
8	1B		B07-3197-02	ESCUTCHEON	
9	1B	*	B07-3207-03	ESCUTCHEON	
11	2A		B19-2420-03	LIGHTING BOARD	
12	1B	*	B19-2424-04	LIGHTING BOARD	
14	1B		B43-0336-04	BADGE	
-		*	B64-3517-00	INSTRUCTION MANUAL (ENG.FRE.SPA	K
-		*	B64-3518-00	INSTRUCTION MA (ENG.T-CHI.S-CHI	M1
15	1A		E30-6240-15	MODULAR CABLE	M1
16	2B		F20-2409-04	INSULATING SHEET	
F1	3B		F52-0016-05	FUSE (BLADE TYPE) 40A	
-		*	H54-3883-13	ITEM CARTON CASE	K
-		*	H54-3884-23	ITEM CARTON CASE	M1
19	1A		J22-0301-14	MOUNTING HARDWARE	M1
23	1A		N99-1766-05	SCREW SET	M1
24	1A		N99-1794-05	SCREW & WRENCH KEY SET	
A	2B		N07-0003-08	SCREW (M6,AU)	
B	2B		N09-4214-08	SCREW (M4,AU)	
C	2B		N09-5524-05	SET SCREW (3X8)	
D	3B		N09-6365-05	SEMS (2.6X13)	
E	1B	*	N09-6432-05	DRESSED SCREW (M4X12)	
F	3B		N80-3010-43	PAN HEAD TAPTITE SCREW	
G	1B		N82-2005-43	BINDING HEAD TAPTITE SCREW	
H	3A		N89-3008-48	BINDING HEAD TAPTITE SCREW	
25	1A		W01-1606-05	ACCESSORIES	
RC1	1A		X16-6000-10	SWITCH UNIT	M1
AUDIO UNIT (X09-8590-10)					
D313			B30-1743-05	LED (RED LED)	
C1 ,2			CK73GB1H102K	CHIP C 1000PF K	
C3 ,4			CD04BJ1H100M	ELECTRO 10UF 50WV	
C5 ,6			CC73GCH1H330J	CHIP C 33PF J	
C7 ,8			CC73GCH1H470J	CHIP C 47PF J	
C9 ,10			CC73GCH1H101J	CHIP C 100PF J	
C11 ,12			CC73GCH1H330J	CHIP C 33PF J	
C13 ,14			CC73GCH1H101J	CHIP C 100PF J	
C15 -18			CD04BJ1H100M	ELECTRO 10UF 50WV	
C19 ,20			CK73GB1H102K	CHIP C 1000PF K	
C21			CK73GB1H103K	CHIP C 0.010UF K	
C22			CD04BJ1H100M	ELECTRO 10UF 50WV	
C23			CK73GB1H473K	CHIP C 0.047UF K	
C24 ,25			CD04BJ1H100M	ELECTRO 10UF 50WV	
C26			CD04BJ1H220M	ELECTRO 22UF 50WV	
C28			CD04BJ1H100M	ELECTRO 10UF 50WV	
C29			CK73GB1H473K	CHIP C 0.047UF K	
C30			CK73GB1H104K	CHIP C 0.10UF K	

Ref. No.	Add	New	Parts No.	Description	Destination
C31 ,32			CD04BJ1H100M	ELECTRO 10UF 50WV	
C33			CC73GCH1H470J	CHIP C 47PF J	
C35			CD04BJ1H100M	ELECTRO 10UF 50WV	
C37			CC73GCH1H470J	CHIP C 47PF J	
C41 -44			CC73GCH1H101J	CHIP C 100PF J	
C45			CK73GB1E154K	CHIP C 0.15UF K	
C46			CK73GB1H333K	CHIP C 0.033UF K	
C47			CK73GB1E154K	CHIP C 0.15UF K	
C48			CK73GB1H333K	CHIP C 0.033UF K	
C49			CD04BJ1H100M	ELECTRO 10UF 50WV	
C50 -53			CD04BJ1H010M	ELECTRO 1.0UF 50WV	
C54			CD04BJ1H100M	ELECTRO 10UF 50WV	
C55			CC73GCH1H331J	CHIP C 330PF J	
C56			CK73GB1H103K	CHIP C 0.010UF K	
C57			CD04BJ1H220M	ELECTRO 22UF 50WV	
C58			CK73GB1H104K	CHIP C 0.10UF K	
C59			CC73GCH1H560J	CHIP C 56PF J	
C60			CK73GB1H102K	CHIP C 1000PF K	
C61			CD04BJ1E470M	ELECTRO 47UF 25WV	
C62			CK73GB1H103K	CHIP C 0.010UF K	
C63			CC73GCH1H470J	CHIP C 47PF J	
C64			CC73GCH1H101J	CHIP C 100PF J	
C65			CK73GB1H103K	CHIP C 0.010UF K	
C66			CC73GCH1H470J	CHIP C 47PF J	
C67			CC73GCH1H101J	CHIP C 100PF J	
C68 ,69			CQ93FMG1H472J	MYLAR 4700PF J	
C70 ,71			CF92FV1H153J	MF-C 0.015UF J	
C72 ,73		*	C91-2288-05	MF-C 2.2UF 50WV	
C74 ,75			C91-2267-05	MP-F 10UF J	
C76 ,77			CQ93FMG1H563J	MYLAR 0.056UF J	
C78 ,79			CQ93FMG1H104J	MYLAR 0.10UF J	
C80 ,81			CK73GB1H104K	CHIP C 0.10UF K	
C82 -84			CD04BJ1H100M	ELECTRO 10UF 50WV	
C85			CD04BJ1E470M	ELECTRO 47UF 25WV	
C301			CD04AU1H100M	NP ELEC 10UF 50WV	
C302			CD04BJ1H100M	ELECTRO 10UF 50WV	
C303			CK73GB1H103K	CHIP C 0.010UF K	
C304,305			CD04BJ1H100M	ELECTRO 10UF 50WV	
C306,307			CK73GB1H103K	CHIP C 0.010UF K	
C308			CD04BJ1E470M	ELECTRO 47UF 25WV	
C309			CK73GB1H102K	CHIP C 1000PF K	
C310			CD04BJ1E470M	ELECTRO 47UF 25WV	
C311			CK73GB1H103K	CHIP C 0.010UF K	
C312			CD04AU1H2R2M	NP-ELEC 2.2UF 50WV	
C313			CK45FB1H102K	CERAMIC 1000PF K	
C314-317			C90-6816-05	ELECTRO 3300UF 16WV	
C318,319			CK45FB1H102K	CERAMIC 1000PF K	
C320,321		*	C90-6837-05	ELECTRO 4700UF 50WV	
C322-325			CD04BJ1E470M	ELECTRO 47UF 25WV	
C326			CD04BJ1H470M	ELECTRO 47UF 50WV	
C327,328			CD04BJ1E470M	ELECTRO 47UF 25WV	
C329			CD04BJ1H100M	ELECTRO 10UF 50WV	
C330			CD04BJ1E470M	ELECTRO 47UF 25WV	
C331			CK73GB1H103K	CHIP C 0.010UF K	
C332			CD04BJ1H100M	ELECTRO 10UF 50WV	

K : KAC-X10D (North America) M1 : KAC-X10D (Other Areas)

△ Indicates safety critical components.

KAC-X10D

PARTS LIST

AUDIO UNIT (X09-8590-10)

Ref. No.	A d d	N e w	Parts No.	Description	Desti- nation
C333,334			CK73GB1H102K	CHIP C 1000PF K	
C335			CK73GB1H103K	CHIP C 0.010UF K	
C336			CK73GB1H102K	CHIP C 1000PF K	
C337			CK73GB1H473K	CHIP C 0.047UF K	
C338			CD04BJ1H100M	ELECTRO 10UF 50WV	
C339			CK73FB1C684K	CHIP C 0.68UF K	
C340			CK73GB1H103K	CHIP C 0.010UF K	
C341,342			CD04BJ1H100M	ELECTRO 10UF 50WV	
C343			CK73GB1H104K	CHIP C 0.10UF K	
C344,345			CK73GB1H103K	CHIP C 0.010UF K	
C346,347			CD04BJ1A101M	ELECTRO 100UF 10WV	
C348-350			CK73GB1H102K	CHIP C 1000PF K	
C351			CK73FB1C105K	CHIP C 1.0UF K	
C352			CK73GB1H332K	CHIP C 3300PF K	
C353			CK73GB1H103K	CHIP C 0.010UF K	
C354-356			CK73GB1H333K	CHIP C 0.033UF K	
C357			CK73GB1H223K	CHIP C 0.022UF K	
C358			CK73GB1H332K	CHIP C 3300PF K	
C802			CK73GB1H104K	CHIP C 0.10UF K	
C820-829			CD04BJ1H100M	ELECTRO 10UF 50WV	
C832,833			CD04BJ1H100M	ELECTRO 10UF 50WV	
C837,838			CD04BJ1H100M	ELECTRO 10UF 50WV	
C839-843			CC73GCH1H070D	CHIP C 7.0PF D	
C901			CK73GB1H102K	CHIP C 1000PF K	
C902,903			CK45FB1H103K	CERAMIC 0.010UF K	
C904			CK73GB1H102K	CHIP C 1000PF K	
C905			CC73GCH1H821J	CHIP C 820PF J	
C906			CK73GB1H102K	CHIP C 1000PF K	
C907			CK73GB1H104K	CHIP C 0.10UF K	
C908			CQ93FMG1H224J	MYLAR 0.22UF J	
J1			E63-0947-05	PIN JACK	
J2			E58-0966-15	RECTANGULAR RECEPTACLE	
J3			E70-0832-15	SCREW TERMINAL BOARD	
L1		*	L33-2406-05	CHOKE COIL	
L2		*	L19-0804-05	TRANSFORMER FOR CONVERTER	
L3 ,4		*	L33-2404-05	CHOKE COIL	
L5 ,6		*	L33-2407-05	CHOKE COIL	
J	2B		N09-6135-05	TAPTITE SCREW (3X8 B-T)	
K	2B		N09-6447-05	TAPTITE SCREW (3X10 P-T)	
R1 ,2			RD14BB2C102J	RD 1.0K J 1/6W	
R3 ,4			RK73GB2A103J	CHIP R 10K J 1/10W	
R5 ,6			RK73GB2A472J	CHIP R 4.7K J 1/10W	
R7 -10			RK73GB2A103J	CHIP R 10K J 1/10W	
R11 -18			RK73GH2A103D	CHIP R 10K D 1/10W	
R19			RK73GB2A332J	CHIP R 3.3K J 1/10W	
R20			RK73GB2A431J	CHIP R 430 J 1/10W	
R21 ,22			RK73GB2A302J	CHIP R 3.0K J 1/10W	
R23 ,24			RK73GB2A362J	CHIP R 3.6K J 1/10W	
R25 ,26			RK73GB2A473J	CHIP R 47K J 1/10W	
R27 ,28			RK73GB2A102J	CHIP R 1.0K J 1/10W	
R29 ,30			RK73GB2A473J	CHIP R 47K J 1/10W	
R31 ,32			RD14BB2C102J	RD 1.0K J 1/6W	
R33			RK73GB2A302J	CHIP R 3.0K J 1/10W	
R34			RK73GB2A392J	CHIP R 3.9K J 1/10W	

Ref. No.	A d d	N e w	Parts No.	Description	Desti- nation
R35			RK73GB2A472J	CHIP R 4.7K J 1/10W	
R36			RK73GB2A102J	CHIP R 1.0K J 1/10W	
R37			RK73GB2A472J	CHIP R 4.7K J 1/10W	
R38			RK73GB2A473J	CHIP R 47K J 1/10W	
R39			RK73GB2A242J	CHIP R 2.4K J 1/10W	
R40			RK73GB2A363J	CHIP R 36K J 1/10W	
R41			RK73GB2A103J	CHIP R 10K J 1/10W	
R42			RK73GB2A473J	CHIP R 47K J 1/10W	
R43			RK73GB2A152J	CHIP R 1.5K J 1/10W	
R44			RK73GB2A472J	CHIP R 4.7K J 1/10W	
R45			RD14BB2C562J	RD 5.6K J 1/6W	
R46			RK73GB2A472J	CHIP R 4.7K J 1/10W	
R48			RK73EB2E181J	CHIP R 180 J 1/4W	
R49			RK73GB2A223J	CHIP R 22K J 1/10W	
R50			RK73GB2A393J	CHIP R 39K J 1/10W	
R51			RK73GB2A471J	CHIP R 470 J 1/10W	
R52			RK73GB2A331J	CHIP R 330 J 1/10W	
R53			RK73GB2A303J	CHIP R 30K J 1/10W	
R55			RK73GB2A153J	CHIP R 15K J 1/10W	
R56			RK73GB2A302J	CHIP R 3.0K J 1/10W	
R57			RK73GB2A223J	CHIP R 22K J 1/10W	
R60			RK73GB2A473J	CHIP R 47K J 1/10W	
R63 ,64			RK73GB2A243J	CHIP R 24K J 1/10W	
R65			RK73GB2A154J	CHIP R 150K J 1/10W	
R66			RK73GB2A752J	CHIP R 7.5K J 1/10W	
R67			RK73GB2A562J	CHIP R 5.6K J 1/10W	
R68			RK73GB2A473J	CHIP R 47K J 1/10W	
R69			RD14BB2C100J	RD 10 J 1/6W	
R70 ,71			RD14BB2C103J	RD 10K J 1/6W	
R73 ,74			RK73GB2A103J	CHIP R 10K J 1/10W	
R75			RK73GB2A822J	CHIP R 8.2K J 1/10W	
R76			RK73GB2A184J	CHIP R 180K J 1/10W	
R77 ,78			RK73GB2A752J	CHIP R 7.5K J 1/10W	
R79			RK73GB2A912J	CHIP R 9.1K J 1/10W	
R80			RK73GB2A104J	CHIP R 100K J 1/10W	
R81			RK73GB2A473J	CHIP R 47K J 1/10W	
R82			RK73GB2A273J	CHIP R 27K J 1/10W	
R83			RK73GB2A512J	CHIP R 5.1K J 1/10W	
R84			RK73GB2A912J	CHIP R 9.1K J 1/10W	
R85			RK73GB2A133J	CHIP R 13K J 1/10W	
R86			RK73GB2A473J	CHIP R 47K J 1/10W	
R87			RK73GB2A183J	CHIP R 18K J 1/10W	
R88			RK73GB2A103J	CHIP R 10K J 1/10W	
R89			RK73GB2A682J	CHIP R 6.8K J 1/10W	
R90			RK73GB2A103J	CHIP R 10K J 1/10W	
R91 ,92			RK73GB2A622J	CHIP R 6.2K J 1/10W	
R93			RK73GB2A332J	CHIP R 3.3K J 1/10W	
R94			RK73GB2A103J	CHIP R 10K J 1/10W	
R95			RK73GB2A392J	CHIP R 3.9K J 1/10W	
R96			RK73GB2A103J	CHIP R 10K J 1/10W	
R97			RK73GB2A153J	CHIP R 15K J 1/10W	
R98			RK73GB2A103J	CHIP R 10K J 1/10W	
R99			RK73GB2A123J	CHIP R 12K J 1/10W	
R100			RK73GB2A103J	CHIP R 10K J 1/10W	
R101			RK73GB2A153J	CHIP R 15K J 1/10W	

K : KAC-X10D (North America) M1 : KAC-X10D (Other Areas)

△ Indicates safety critical components.

PARTS LIST

AUDIO UNIT (X09-8590-10)

Ref. No.	Add	New	Parts No.	Description	Destination	Ref. No.	Add	New	Parts No.	Description	Destination
R102			RK73GB2A512J	CHIP R 5.1K J 1/10W		R307			RK73GB2A333J	CHIP R 33K J 1/10W	
R103			RK73GB2A102J	CHIP R 1.0K J 1/10W		R308			RK73GB2A472J	CHIP R 4.7K J 1/10W	
R104			RK73GB2A471J	CHIP R 470 J 1/10W		R309			RK73GB2A222J	CHIP R 2.2K J 1/10W	
R105			RK73GB2A102J	CHIP R 1.0K J 1/10W		R310			RK73EB2E333J	CHIP R 33K J 1/4W	
R106			RK73GB2A105J	CHIP R 1.0M J 1/10W		R311			RK73EB2E103J	CHIP R 10K J 1/4W	
R107-110			RK73GB2A103J	CHIP R 10K J 1/10W		R312			RK73GB2A221J	CHIP R 220 J 1/10W	
R111			RK73GB2A112J	CHIP R 1.1K J 1/10W		R313			RK73GB2A333J	CHIP R 33K J 1/10W	
R112			RK73GB2A332J	CHIP R 3.3K J 1/10W		R314			RK73GB2A683J	CHIP R 68K J 1/10W	
R113			RK73EB2E391J	CHIP R 390 J 1/4W		R315			RK73GB2A101J	CHIP R 100 J 1/10W	
R114			RK73GB2A112J	CHIP R 1.1K J 1/10W		R316			RK73GB2A103J	CHIP R 10K J 1/10W	
R115-120			RK73GB2A103J	CHIP R 10K J 1/10W		R317			RK73EB2E391J	CHIP R 390 J 1/4W	
R121			RK73GB2A182J	CHIP R 1.8K J 1/10W		R318			RK73GB2A102J	CHIP R 1.0K J 1/10W	
R122,123			RK73GB2A472J	CHIP R 4.7K J 1/10W		R319			RK73GB2A104J	CHIP R 100K J 1/10W	
R124			RK73GB2A182J	CHIP R 1.8K J 1/10W		R320			RK73GB2A103J	CHIP R 10K J 1/10W	
R125			RK73EB2E331J	CHIP R 330 J 1/4W		R321			RK73GB2A203J	CHIP R 20K J 1/10W	
R126			RK73EB2E112J	CHIP R 1.1K J 1/4W		R322			RK73GB2A682J	CHIP R 6.8K J 1/10W	
R127			RK73EB2E471J	CHIP R 470 J 1/4W		R323			RK73GB2A391J	CHIP R 390 J 1/10W	
R128			RK73EB2E751J	CHIP R 750 J 1/4W		R324			RK73GB2A123J	CHIP R 12K J 1/10W	
R129			RK73EB2E510J	CHIP R 51 J 1/4W		R325			RK73GB2A103J	CHIP R 10K J 1/10W	
R130			RK73EB2E431J	CHIP R 430 J 1/4W		R326			RK73GB2A152J	CHIP R 1.5K J 1/10W	
R131			RK73EB2E270J	CHIP R 27 J 1/4W		R327			RK73GB2A334J	CHIP R 330K J 1/10W	
R132			RK73EB2E750J	CHIP R 75 J 1/4W		R328			RK73GB2A102J	CHIP R 1.0K J 1/10W	
R133,134			RK73GB2A473J	CHIP R 47K J 1/10W		R329			RK73GB2A472J	CHIP R 4.7K J 1/10W	
R135-138			RK73EB2E100J	CHIP R 10 J 1/4W		R330			RK73GB2A153J	CHIP R 15K J 1/10W	
R139,140			RK73GB2A472J	CHIP R 4.7K J 1/10W		R331			RK73GB2A243J	CHIP R 24K J 1/10W	
R141			RK73GB2A182J	CHIP R 1.8K J 1/10W		R332			RK73GB2A393J	CHIP R 39K J 1/10W	
R142			RK73EB2E331J	CHIP R 330 J 1/4W		R333,334			RK73GB2A152J	CHIP R 1.5K J 1/10W	
R143			RK73EB2E112J	CHIP R 1.1K J 1/4W		R335,336			RK73GB2A560J	CHIP R 56 J 1/10W	
R144			RK73EB2E471J	CHIP R 470 J 1/4W		R337,338			RK73GB2A472J	CHIP R 4.7K J 1/10W	
R145			RK73EB2E751J	CHIP R 750 J 1/4W		R339-344			RK73GB2A200J	CHIP R 20 J 1/10W	
R146			RK73EB2E510J	CHIP R 51 J 1/4W		R345-348			RD14DB2H220J	SMALL-RD 22 J 1/2W	
R147			RK73EB2E431J	CHIP R 430 J 1/4W		R349,350			RK73EB2E473J	CHIP R 47K J 1/4W	
R148			RK73EB2E270J	CHIP R 27 J 1/4W		R351,352			RK73EB2E123J	CHIP R 12K J 1/4W	
R149			RK73EB2E750J	CHIP R 75 J 1/4W		R353			RK73GB2A821J	CHIP R 820 J 1/10W	
R150,151			RK73GB2A473J	CHIP R 47K J 1/10W		R354			RK73GB2A472J	CHIP R 4.7K J 1/10W	
R152-155			RK73EB2E100J	CHIP R 10 J 1/4W		R355			RK73GB2A100J	CHIP R 10 J 1/10W	
R156,157		*	R92-5161-05	METAL PLATE RESISTOR		R356			RK73GB2A103J	CHIP R 10K J 1/10W	
R158,159			RD14DB2H4R7J	SMALL-RD 4.7 J 1/2W		R357			RK73GB2A153J	CHIP R 15K J 1/10W	
R160,161			RD14BB2C243J	RD 24K J 1/6W		R358			RK73GB2A562J	CHIP R 5.6K J 1/10W	
R162,163		*	R92-5142-05	METAL PLATE RESISTOR		R359			RD14BB2C563J	RD 56K J 1/6W	
R164-167			RD14BB2C243J	RD 24K J 1/6W		R360			RK73GB2A223J	CHIP R 22K J 1/10W	
R168,169			RD14BB2C123J	RD 12K J 1/6W		R361			RK73GB2A103J	CHIP R 10K J 1/10W	
R170,171			RK73GB2A332J	CHIP R 3.3K J 1/10W		R362			RK73GB2A154J	CHIP R 150K J 1/10W	
R172			RK73GB2A102J	CHIP R 1.0K J 1/10W		R363			RK73GB2A133J	CHIP R 13K J 1/10W	
R173			RK73GB2A393J	CHIP R 39K J 1/10W		R364			RK73GB2A392J	CHIP R 3.9K J 1/10W	
R177			RK73GB2A474J	CHIP R 470K J 1/10W		R365			RK73GB2A103J	CHIP R 10K J 1/10W	
R178			RK73GB2A104J	CHIP R 100K J 1/10W		R366			RK73GB2A152J	CHIP R 1.5K J 1/10W	
R179			RK73GB2A154J	CHIP R 150K J 1/10W		R367			RK73GB2A471J	CHIP R 470 J 1/10W	
R180			RK73GB2A103J	CHIP R 10K J 1/10W		R368			RK73GB2A103J	CHIP R 10K J 1/10W	
R301			RD14BB2C392J	RD 3.9K J 1/6W		R369			RK73GB2A133J	CHIP R 13K J 1/10W	
R302			RK73GB2A392J	CHIP R 3.9K J 1/10W		R370			RK73GB2A472J	CHIP R 4.7K J 1/10W	
R303			RK73GB2A332J	CHIP R 3.3K J 1/10W		R371			RK73GB2A154J	CHIP R 150K J 1/10W	
R304			RK73GB2A152J	CHIP R 1.5K J 1/10W		R372			RK73GB2A103J	CHIP R 10K J 1/10W	
R305			RK73GB2A103J	CHIP R 10K J 1/10W		R373			RK73GB2A223J	CHIP R 22K J 1/10W	
R306			RK73GB2A472J	CHIP R 4.7K J 1/10W		R374,375			RK73GB2A332J	CHIP R 3.3K J 1/10W	

K : KAC-X10D (North America) M1 : KAC-X10D (Other Areas)

△ Indicates safety critical components.

KAC-X10D

PARTS LIST

AUDIO UNIT (X09-8590-10)

Ref. No.	A d d	N e w	Parts No.	Description	Desti- nation
R376			RK73GB2A333J	CHIP R 33K J 1/10W	
R377			RK73GB2A222J	CHIP R 2.2K J 1/10W	
R378			RK73GB2A203J	CHIP R 20K J 1/10W	
R379			RK73GB2A153J	CHIP R 15K J 1/10W	
R380			RK73GB2A472J	CHIP R 4.7K J 1/10W	
R381,382			RK73GB2A102J	CHIP R 1.0K J 1/10W	
R383,384			RK73GB2A103J	CHIP R 10K J 1/10W	
R385			RK73GB2A102J	CHIP R 1.0K J 1/10W	
R386			RK73GB2A103J	CHIP R 10K J 1/10W	
R387			RK73GB2A102J	CHIP R 1.0K J 1/10W	
R388			RK73GB2A334J	CHIP R 330K J 1/10W	
R389,390			RK73GB2A103J	CHIP R 10K J 1/10W	
R391			RK73GB2A333J	CHIP R 33K J 1/10W	
R392			RK73GB2A104J	CHIP R 100K J 1/10W	
R393			RK73GB2A472J	CHIP R 4.7K J 1/10W	
R394			RK73GB2A393J	CHIP R 39K J 1/10W	
R395			RK73GB2A472J	CHIP R 4.7K J 1/10W	
R396			RK73GB2A224J	CHIP R 220K J 1/10W	
R397			RK73GB2A103J	CHIP R 10K J 1/10W	
R398			RK73GB2A102J	CHIP R 1.0K J 1/10W	
R399-401			RK73GB2A203J	CHIP R 20K J 1/10W	
R402			RK73GB2A103J	CHIP R 10K J 1/10W	
R403			RK73GB2A123J	CHIP R 12K J 1/10W	
R404			RK73GB2A132J	CHIP R 1.3K J 1/10W	
R405			RK73GB2A203J	CHIP R 20K J 1/10W	
R406			RK73GB2A103J	CHIP R 10K J 1/10W	
R407			RK73GB2A243J	CHIP R 24K J 1/10W	
R408			RK73GB2A623J	CHIP R 62K J 1/10W	
R409			RK73GB2A362J	CHIP R 3.6K J 1/10W	
R410			RK73GB2A821J	CHIP R 820 J 1/10W	
R411			RK73GB2A223J	CHIP R 22K J 1/10W	
R412,413			RK73GB2A103J	CHIP R 10K J 1/10W	
R414			RK73GB2A222J	CHIP R 2.2K J 1/10W	
R415,416			RK73GB2A104J	CHIP R 100K J 1/10W	
R417			RK73GB2A333J	CHIP R 33K J 1/10W	
R418,419			RK73GB2A103J	CHIP R 10K J 1/10W	
R420			RK73GB2A333J	CHIP R 33K J 1/10W	
R421			RK73GB2A153J	CHIP R 15K J 1/10W	
R422			RK73GB2A432J	CHIP R 4.3K J 1/10W	
R423			RK73GB2A153J	CHIP R 15K J 1/10W	
R424			RK73GB2A333J	CHIP R 33K J 1/10W	
R425			RK73GB2A303J	CHIP R 30K J 1/10W	
R426			RK73GB2A433J	CHIP R 43K J 1/10W	
R427,428			RK73GB2A103J	CHIP R 10K J 1/10W	
R429			RK73EB2E391J	CHIP R 390 J 1/4W	
R430			RK73GB2A302J	CHIP R 3.0K J 1/10W	
R431			RK73GB2A621J	CHIP R 620 J 1/10W	
R432			RK73GB2A102J	CHIP R 1.0K J 1/10W	
R433,434			RK73GB2A103J	CHIP R 10K J 1/10W	
R435			RK73GB2A104J	CHIP R 100K J 1/10W	
R436			RK73GB2A102J	CHIP R 1.0K J 1/10W	
R437			RK73GB2A472J	CHIP R 4.7K J 1/10W	
R438,439			RK73GB2A473J	CHIP R 47K J 1/10W	
R440			RK73GB2A223J	CHIP R 22K J 1/10W	
R441			RK73GB2A103J	CHIP R 10K J 1/10W	

Ref. No.	A d d	N e w	Parts No.	Description	Desti- nation
R442			RK73GB2A222J	CHIP R 2.2K J 1/10W	
R443			RK73GB2A102J	CHIP R 1.0K J 1/10W	
R444			RK73GB2A103J	CHIP R 10K J 1/10W	
R445			RK73GB2A102J	CHIP R 1.0K J 1/10W	
R446,447			RK73GB2A473J	CHIP R 47K J 1/10W	
R802			RK73GB2A1R0J	CHIP R 1.0 J 1/10W	
R810			RK73GB2A101J	CHIP R 100 J 1/10W	
R811,812			RK73GB2A102J	CHIP R 1.0K J 1/10W	
R813			RK73GB2A101J	CHIP R 100 J 1/10W	
R817-826			RK73GB2A1R0J	CHIP R 1.0 J 1/10W	
R829,830			RK73GB2A1R0J	CHIP R 1.0 J 1/10W	
R832,833			RK73GB2A1R0J	CHIP R 1.0 J 1/10W	
R842-846			RK73GB2A101J	CHIP R 100 J 1/10W	
R847			RK73GB2A102J	CHIP R 1.0K J 1/10W	
R850			RK73GB2A223J	CHIP R 22K J 1/10W	
R851			RD14BB2C223J	RD 22K J 1/6W	
R853			RK73GB2A302J	CHIP R 3.0K J 1/10W	
R858			RK73EB2E181J	CHIP R 180 J 1/4W	
R901-904			RK73GB2A100J	CHIP R 10 J 1/10W	
VR1			R31-0232-15	VARIABLE RESISTOR	
VR2			R31-0215-15	VARIABLE RESISTOR	
W201			R92-1252-05	CHIP R 0 OHM J 1/16W	
S1			S62-0842-05	SLIDE SWITCH	
S2			S31-2630-05	SLIDE SWITCH	
D1			LM1MA142WK-G	DIODE	
D2			LM1MA142WA-G	DIODE	
D3			LM1MA142WK-G	DIODE	
D4			LM1MA142WA-G	DIODE	
D5			LM1MA142WK-G	DIODE	
D6			LM1MA142WA-G	DIODE	
D7			UMZ6.8N	ZENER DIODE	
D8			UDZS5.1B	ZENER DIODE	
D9 -12			1SS355	DIODE	
D13			UDZS5.1B	ZENER DIODE	
D14 -18			1SS355	DIODE	
D19			UDZS5.1B	ZENER DIODE	
D20 -28			1SS355	DIODE	
D301,302			RM4ZLF-J4NF	DIODE	
D304			UDZS6.8B	ZENER DIODE	
D305			UDZS15B	ZENER DIODE	
D306-308			1SS355	DIODE	
D309			UDZS10B	ZENER DIODE	
D310-312			1SS355	DIODE	
D314			1SS355	DIODE	
D315			LM1MA142WK-G	DIODE	
D316		*	FCH20A15	DIODE	
D317		*	FRH20A15	DIODE	
D318,319			UDZS16B	ZENER DIODE	
D320-323			1SS133	DIODE	
D324			UDZS15B	ZENER DIODE	
D325-327			1SS355	DIODE	
D328			LM1MA142WA-G	DIODE	
D329-332			1SS355	DIODE	
D333			UDZS5.1B	ZENER DIODE	

K : KAC-X10D (North America) M1 : KAC-X10D (Other Areas)

△ Indicates safety critical components.

PARTS LIST

AUDIO UNIT (X09-8590-10)

Ref. No.	Add	New	Parts No.	Description	Destination
D334-337			1SS355	DIODE	
D338			UDZS5.1B	ZENER DIODE	
D339,340			1SS355	DIODE	
D341			UDZS10B	ZENER DIODE	
D342-344			1SS355	DIODE	
D345-347			UDZS10B	ZENER DIODE	
D348			1SS355	DIODE	
D349,350			UDZS10B	ZENER DIODE	
IC1 -4			RC4580IDR	ANALOGUE IC	
IC5			BA4560RF	ANALOGUE IC	
IC6			NJM2172V-ZBTE2	ANALOGUE IC	
IC7 ,8			RC4580IDR	ANALOGUE IC	
IC9			BA4560RF	ANALOGUE IC	
IC10			RC4580IDR	ANALOGUE IC	
IC11			BA2903F	ANALOGUE IC	
IC12			BA4560RF	ANALOGUE IC	
IC13			BA2903F	ANALOGUE IC	
IC14-16			SN74HC00D	MOS-IC	
IC17			BA4560RF	ANALOGUE IC	
IC31,32			BA2903F	ANALOGUE IC	
IC33			SN74HC00D	MOS-IC	
IC34			BA2903F	ANALOGUE IC	
IC35			BA4560RF	ANALOGUE IC	
IC36			TL494IDR	ANALOGUE IC	
IC37-39			BA4560RF	ANALOGUE IC	
Q2 -5			2SC4081	TRANSISTOR	
Q6			2SA1576A	TRANSISTOR	
Q7			2SA992-A(F,E)	TRANSISTOR	
Q8			2SC1845-A(F,E)	TRANSISTOR	
Q9			2SA1370	TRANSISTOR	
Q10			2SC3415S	TRANSISTOR	
Q11			2SB1427	TRANSISTOR	
Q12			2SC2235-F	TRANSISTOR	
Q13			2SB1427	TRANSISTOR	
Q14			2SA1576A	TRANSISTOR	
Q15			2SA992-A(F,E)	TRANSISTOR	
Q16			2SC1845-A(F,E)	TRANSISTOR	
Q17			2SA1370	TRANSISTOR	
Q18			2SC3415S	TRANSISTOR	
Q19			2SB1427	TRANSISTOR	
Q20			2SC2235-F	TRANSISTOR	
Q21			2SB1427	TRANSISTOR	
Q22			DTA114EUA	DIGITAL TRANSISTOR	
Q301,302			2SC4081	TRANSISTOR	
Q303			2SB1241	TRANSISTOR	
Q304			2SA1576A	TRANSISTOR	
Q305,306			2SC4081	TRANSISTOR	
Q307,308			DTA114EUA	DIGITAL TRANSISTOR	
Q309			2SC4097	TRANSISTOR	
Q310,311			2SB1427	TRANSISTOR	
Q312			2SC4097	TRANSISTOR	
Q313-318			STP60NF06FP	FET	
Q319			2SD2012-F	TRANSISTOR	
Q320			2SC1845-A(F,E)	TRANSISTOR	
Q321			2SA992-A(F,E)	TRANSISTOR	

Ref. No.	Add	New	Parts No.	Description	Destination
Q322			2SB1375-F	TRANSISTOR	
Q323,324			2SA1576A	TRANSISTOR	
Q325			2SD1863	TRANSISTOR	
Q326			2SC1845-A(F,E)	TRANSISTOR	
Q327			2SA992-A(F,E)	TRANSISTOR	
Q328			2SC4081	TRANSISTOR	
Q329,330			2SA1576A	TRANSISTOR	
Q331			2SC4081	TRANSISTOR	
Q332			DTA114EUA	DIGITAL TRANSISTOR	
Q333,334			2SC4081	TRANSISTOR	
Q335			DTA114EUA	DIGITAL TRANSISTOR	
Q336			2SC4081	TRANSISTOR	
Q337,338			2SA992-A(F,E)	TRANSISTOR	
Q339			2SC1845-A(F,E)	TRANSISTOR	
Q701-708		*	IRFB33N15DPBF	FET	
TH1			NCP18XH103J0S	THERMISTOR	

SWITCH UNIT (REMOTE CONTROL) (X16-6000-10)

Ref. No.	Add	New	Parts No.	Description	Destination
70	1A		A02-2738-02	PLASTIC CABINET	M1
D1		*	B30-1764-05	LED (3216 RED)	M1
C1			CK73GB1H103K	CHIP C 0.010UF K	M1
J1			E58-0966-15	RECTANGULAR RECEPTACLE	M1
75	2A		K23-1093-03	KNOB	M1
L	1A		N80-2008-43	PAN HEAD TAPTITE SCREW	M1
R1			RK73GB2A153J	CHIP R 15K J 1/10W	M1
R2			RK73GB2A822J	CHIP R 8.2K J 1/10W	M1
R3			RK73GB2A471J	CHIP R 470 J 1/10W	M1
VR1 ,2			R31-0243-05	VARIABLE RESISTOR	M1

K : KAC-X10D (North America) M1 : KAC-X10D (Other Areas)

△ Indicates safety critical components.

KAC-X10D

SPECIFICATIONS

CEA-2006

RMS Watts per channel @ 4Ω, 1% THD+N 300W x 1
Signal to Noise Ratio (Reference: 1W into 4Ω) 80dBA

Audio Section

Max Power Output 1200W
Rated Power Output (+B=12.0V)
(4Ω) (20Hz~200Hz, 0.5% THD) 200W x 1
(2Ω) (100Hz, 0.5% THD) 400W x 1
(1Ω) ≥400W x 1
Rated Power Output (+B=14.4V)
(4Ω) (20Hz~200Hz, 0.5% THD) 300W x 1
(2Ω) (100Hz, 0.5% THD) 600W x 1
(1Ω) ≥600W x 1
Frequency Response (+0, -3dB) 5Hz~200Hz
Sensitivity (rated output)
MAX 0.2V
MIN 5.0V

Input Impedance 10kΩ
Signal to Noise Ratio 105dB
Low Pass Filter Frequency (-24dB/oct.)
..... 40~200Hz (variable)
Infrasonic Filter Frequency (-24dB/oct.) 15/25Hz
Bass Boost Circuit (Optional accessory) ... 0~18dB (variable)
Bass Boost Frequency (Optional accessory)
..... 40~100Hz (variable)

General

Operating Voltage 14.4V (11~16V allowable)
Current Consumption 40A
Installation Size (W x H x D)
..... 318 x 65 x 286mm (12-1/2 x 2-9/16 x 11-1/4 inch)
Weight 3.5kg (7.72 lbs)

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

INSTALLATION

