

POWER AMPLIFIER

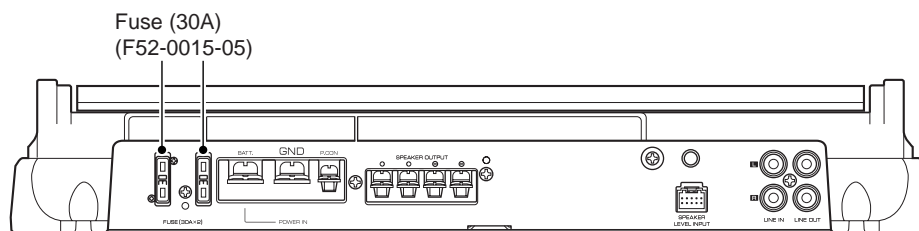
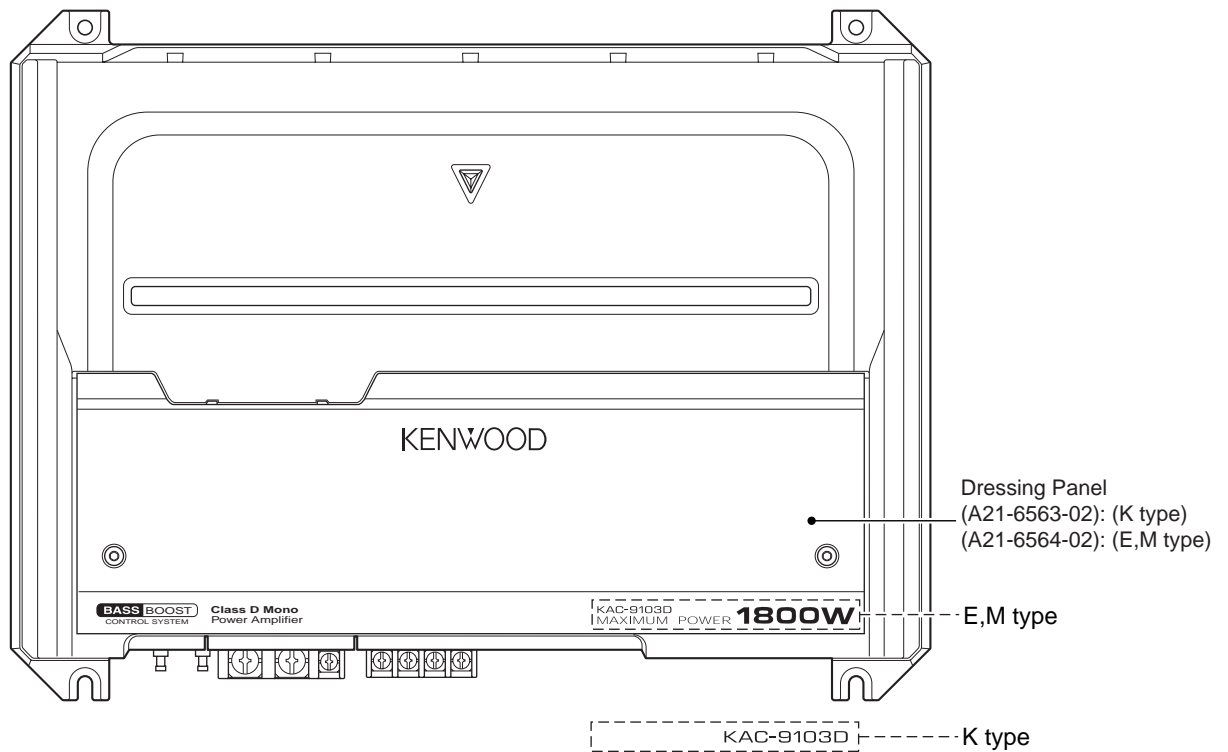
# KAC-9103D

## SERVICE MANUAL

# KENWOOD

Kenwood Corporation

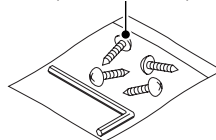
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B53-0471-00 (N) 957



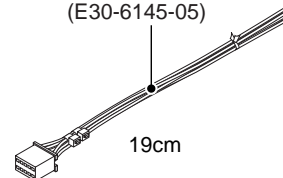
Accessories  
(W01-1606-05) x2



Screw set  
(N99-1794-05)

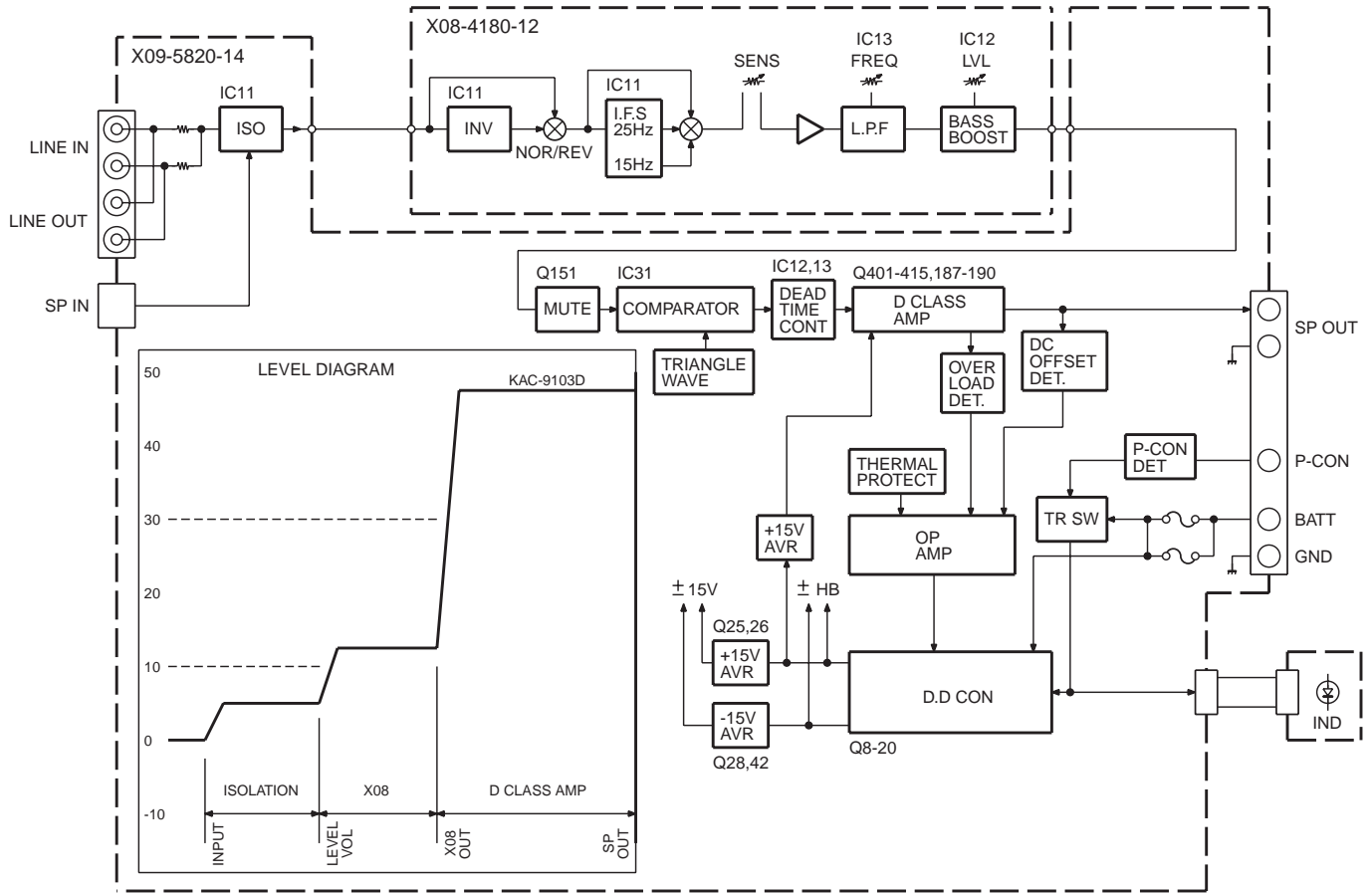


Connecting cord assy  
(E30-6145-05)



# KAC-9103D

## BLOCK DIAGRAM



## COMPONENTS DESCRIPTION

### ● PREAMPLIFIER UNIT (X08-4180-12)

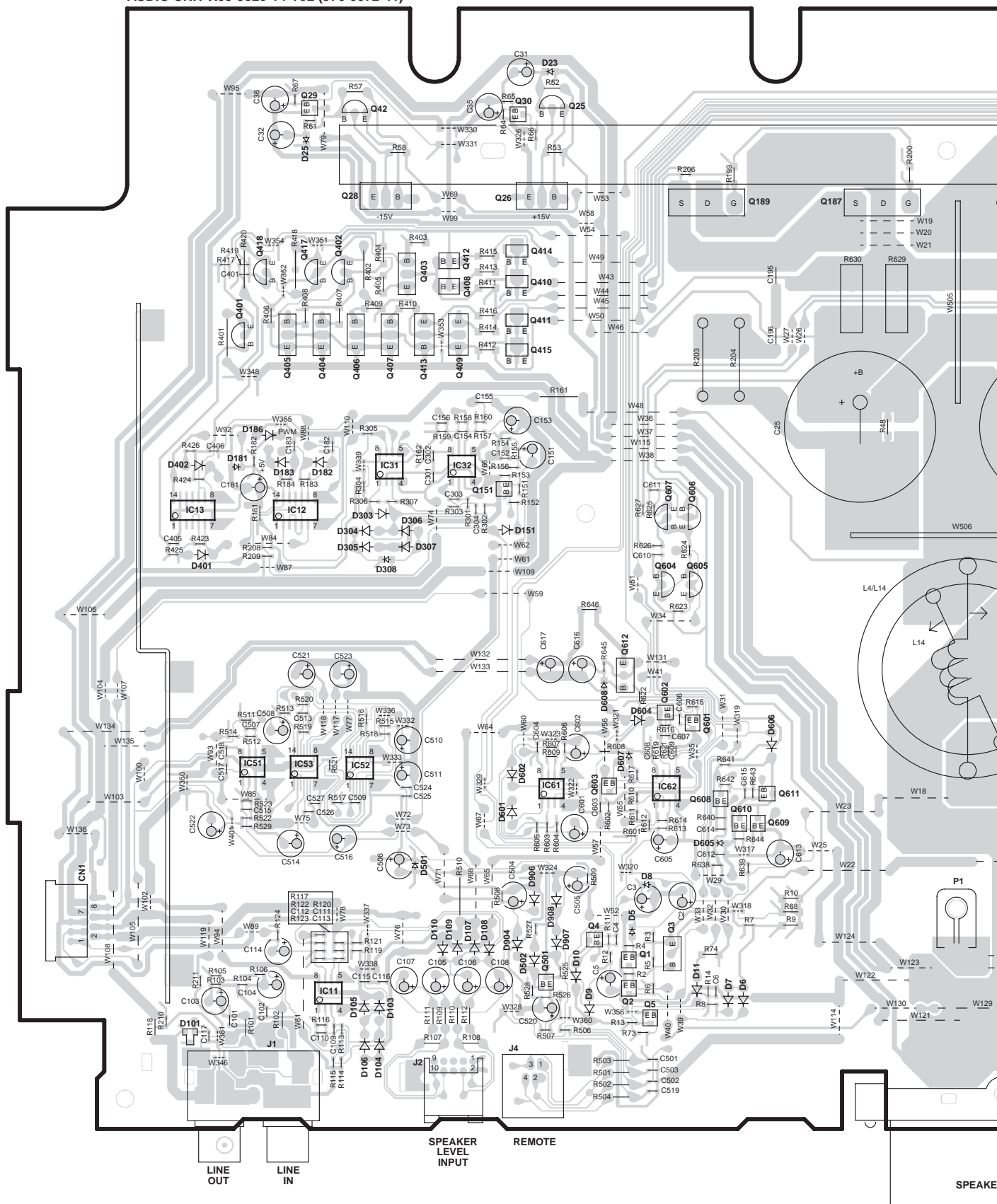
Ref. No.	Application / Function	Operation / Condition / Compatibility
IC11 (1/2)	INFRA SONIC FILTER	Cutting super-low area of voice signals
IC11 (2/2)	INVERTER	Reversing voice signal phase
IC12 (1/2)	OP AMP	Voltage amplification, buffer
IC12 (2/2)	BASS BOOST	High-boost (variable levels)
IC13	LOW PASS FILTER	Cutting high range of voice signal
IC14,15	BASS BOOST	High-boost (variable levels)

### ● AUDIO UNIT (X09-5820-14)

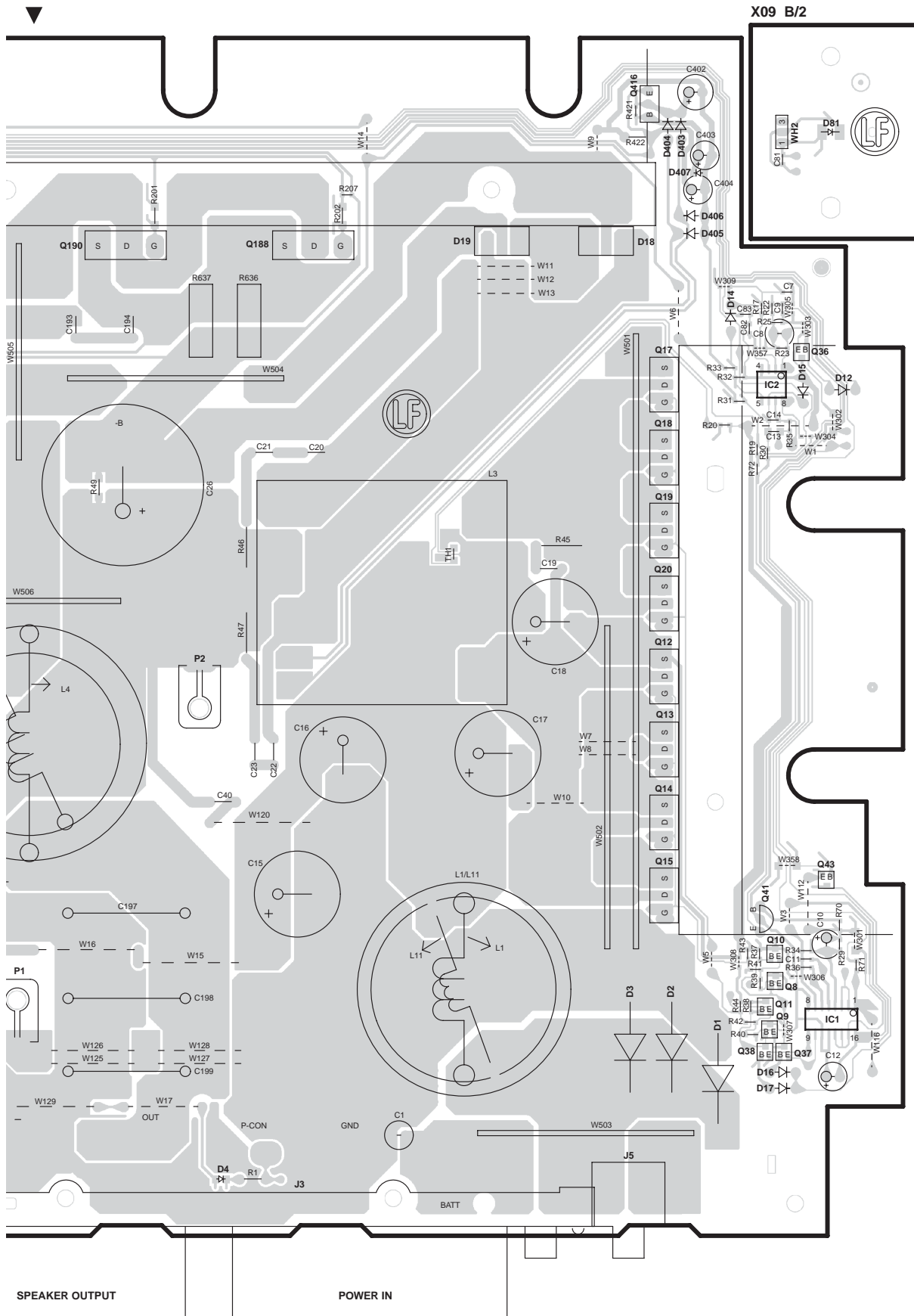
Ref. No.	Application / Function	Operation / Condition / Compatibility
IC1	DC/DC converter IC	Create drive signal for switching element
IC2 (1/2)	Differential amplifier	Detection of temperature, DC, and excess current and hold protection for a certain time
IC2 (2/2)	Differential amplifier	Containing excess voltage of $\pm B$
IC11	Isolation amplifier	Prevention of noise by the electric potential difference of GND
IC12,13	NAND	Generation and forming of Dclass section reversal waveform and dead time
IC31	Comparator	Digitalize signal by comparing analog signal and triangular wave
IC32 (1/2)	Triangular wave generation	Reference signal generation for converting analog signals to digital signals
IC32 (2/2)	Error amplifier	Error compensation by feedback from output
IC61,62	Comparator	Detection of short-circuiting of SP output and determine excess current for triggering protection
Q1~3	PCON switch	Turns on the circuit when ON-signal is impressed on PCON
Q4,5	Mute	Mute drive signal generation, Turn LED off
Q8~11	Gate drive	DC/DC converter FET gate drive
Q12~14 Q18~20	DC/DC converter	DC/DC converter switching
Q25,26,28	AVR	$\pm 15V$ AVR
Q29,30	Tracking when $\pm 15V$ AVR is OFF	Adjusts '-15V' AVR falling to '+15V' AVR falling
Q36	DC/DC converter ON/OFF control	Stops DC/DC converter switching when protection is triggered
Q37,38	DC/DC converter pulse ON/OFF control	ON/OFF of DC/DC converter drive waveform
Q41	4.4V AVR	Vref 5V reference AVR
Q42	AVR	$\pm 15V$ AVR
Q43	DC/DC converter ON/OFF control	Stops DC/DC converter switching when protection is triggered
Q151	Mute	Turning off voice signal
Q187~190	Electric power amplification	Dclass large current switching
Q401~409 Q411~414	Pulse amplification and rectifying	Generation of signal for driving Dclass final FET
Q416	15V AVR	Integration AVR for obtaining Dclass High+B
Q417,418	Control of ON/OFF of electric power amplification section	Makes the electric power amplification section non-operative for 1.2 seconds when the power is turned on and when protection is triggered
Q601,602	Comparator	Detection of short-circuiting of SP output and determine excess current for triggering protection
Q603	DC/DC converter control	Convey IC62 ⑦ pin output, result of excess current detection, to IC2 and stop the DC/DC converter
Q604~607	Electric current and voltage conversion	Conversion of current to voltage of the current flowing to final
Q608~611	Latch circuit	Detection and holding of output excess voltage
Q612	FAN +B	When P-CON is ON, fan is rotated

# KAC-9103D PC BOARD (FOIL SIDE VIEW)

AUDIO UNIT X09-5820-14 A/2 (J76-0072-41)



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

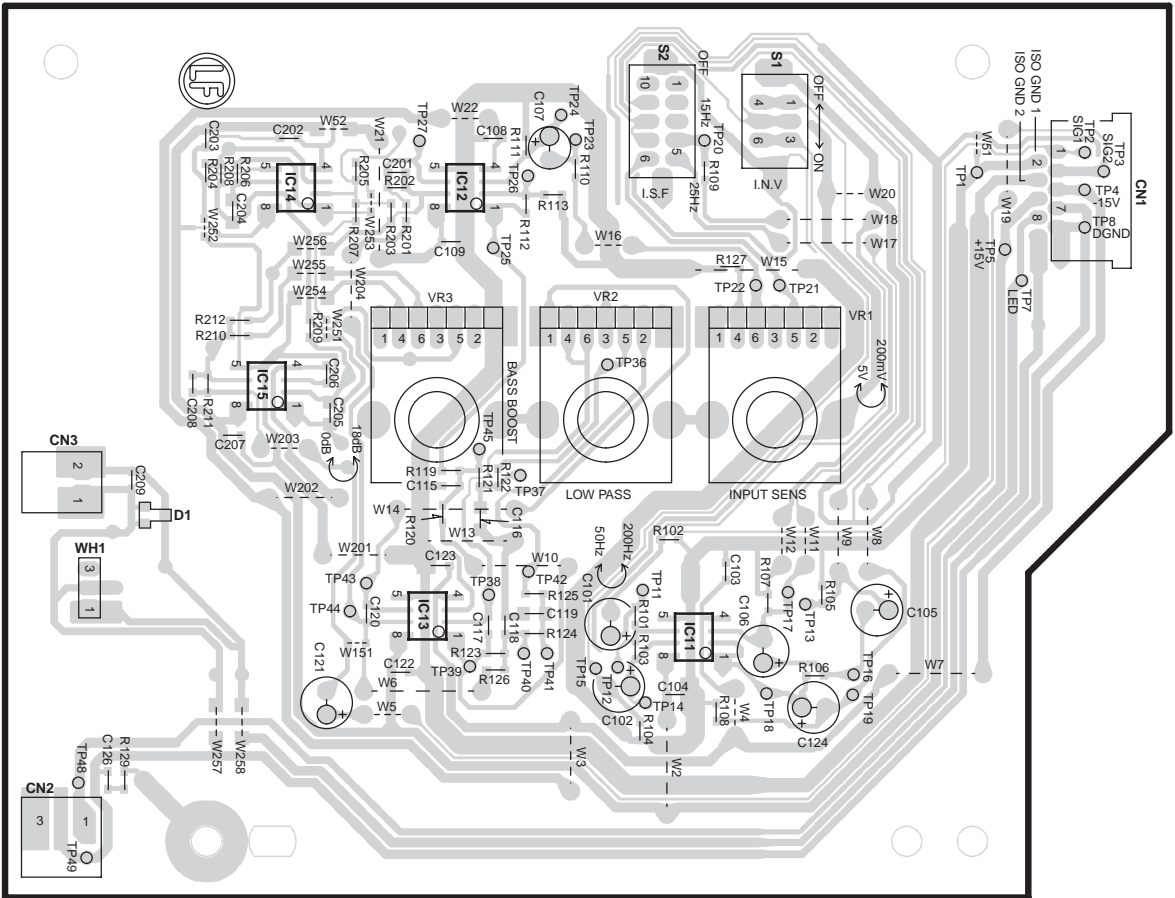


X09-5820-14

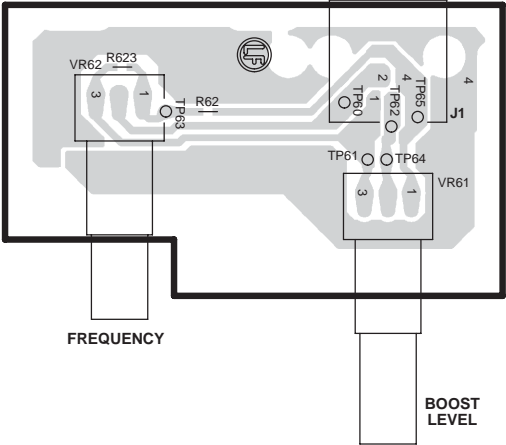
Ref. No.	Address
IC1	6I
IC2	3I
IC11	6B
IC12	4B
IC13	4B
IC31	4C
IC32	4C
IC61	5C
IC62	5D
Q1	6D
Q2	6D
Q3	6D
Q4	6D
Q5	6D
Q8	6I
Q9	6I
Q10	5I
Q11	6I
Q12	4H
Q13	4H
Q14	5H
Q18	3H
Q19	3H
Q20	4H
Q25	2C
Q26	2C
Q28	2B
Q29	2B
Q30	2C
Q36	3I
Q37	6I
Q38	6I
Q41	5I
Q42	2C
Q43	5I
Q151	4C
Q187	2E
Q188	2G
Q189	2D
Q190	2F
Q401	3B
Q402	3B
Q403	3C
Q404	3B
Q405	3B
Q406	3B
Q407	3C
Q408	3C
Q409	3C
Q411	3C
Q412	3C
Q413	3C
Q414	3C
Q416	2H
Q417	3B
Q418	3B
Q601	5D
Q602	5D
Q603	5D
Q604	4D
Q605	4D
Q606	4D
Q607	4D
Q608	5D
Q609	5D
Q610	5D
Q611	5D
Q612	4D

# KAC-9103D PC BOARD (FOIL SIDE VIEW)

PREAMPLIFIER UNIT X08-4180-12 A/2 (J76-0068-12)



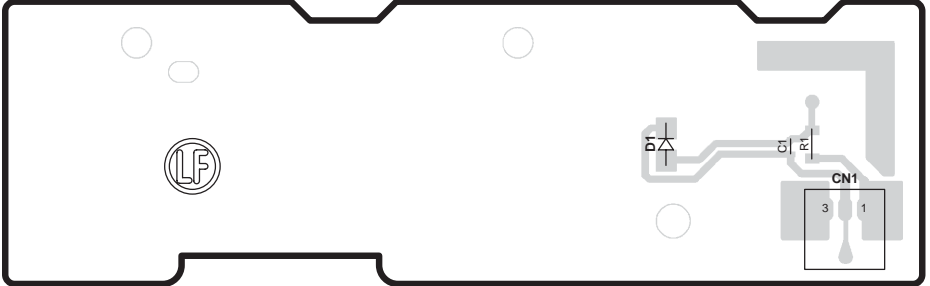
X08 B/2



X08-4180-12

Ref. No.	Address
IC11	3N
IC12	2M
IC13	3M
IC14	2L
IC15	3L

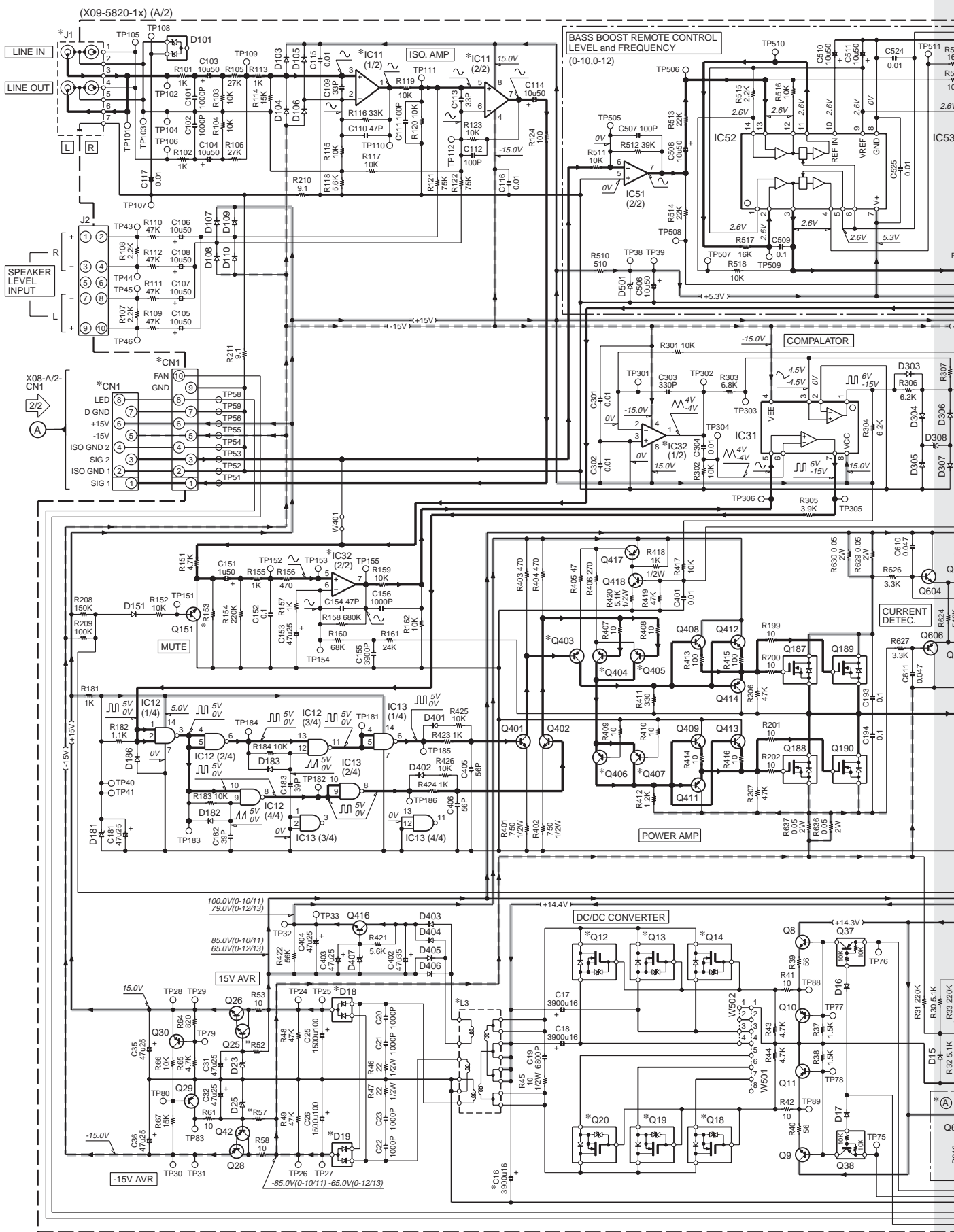
PREAMPLIFIER UNIT X08-4360-10 (J76-0379-02)



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

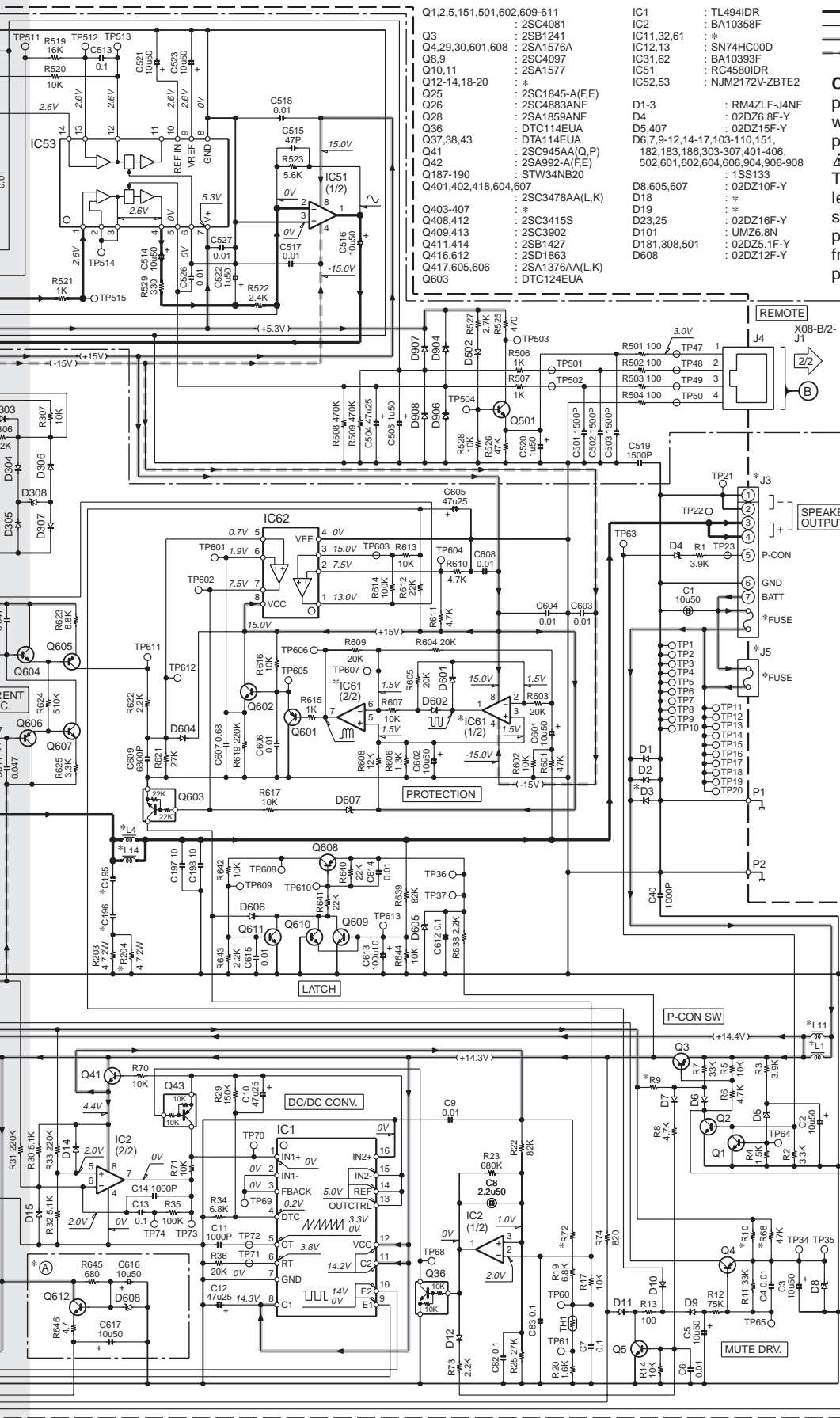
# KAC-9103D

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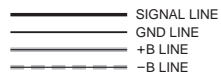




# KAC-9103D



- Q1,2,5,151,501,602,609-611 : 2SC4081  
 Q3 : 2SB1241  
 Q4,29,30,601,608 : 2SA1576A  
 Q8,9 : 2SC4097  
 Q10,11 : 2SA1577  
 Q12-14,18-20 : \*  
 Q25 : 2SC1845-A(F,E)  
 Q26 : 2SC4883ANF  
 Q28 : 2SA1859ANF  
 Q36 : DTC114EUA  
 Q37,38,43 : DTA114EUA  
 Q41 : 2SC945AA(Q,P)  
 Q42 : 2SA992-A(F,E)  
 Q187-190 : STW34NB20  
 Q401,402,418,604,607 : 2SC3478AA(L,K)  
 Q403-407 : \*  
 Q408,412 : 2SC3415S  
 Q409,413 : 2SC3902  
 Q411,414 : 2SB1427  
 Q416,612 : 2SD1863  
 Q417,605,606 : 2SA1376AA(L,K)  
 Q603 : DTC124EUA
- IC1 : TL494IDR  
 IC2 : BA10358F  
 IC1,1,32,61 : \*  
 IC12,13 : SN74HC00D  
 IC31,62 : BA10393F  
 IC51 : RC4580IDR  
 IC52,53 : NJM2172V-ZBTE2
- D1-3 : RM4ZLF-J4NF  
 D4 : 02DZ6.8F-Y  
 D5,407 : 02DZ15F-Y  
 D6,7,9-12,14-17,103-110,151,182,183,186,303-307,401-406,502,601,602,604,606,904,906-908 : 1SS133  
 D8,605,607 : 02DZ10F-Y  
 D18 : \*  
 D19 : \*  
 D23,25 : 02DZ16F-Y  
 D101 : UMZ6.8N  
 D181,308,501 : 02DZ5.1F-Y  
 D608 : 02DZ12F-Y

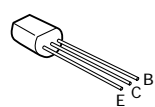


**CAUTION :** For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list).  
 △ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are 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.

MODEL NAME	UNIT NO.	C16	C195	CNI	D3	D18	D19	FUSE	IC1,32,61	J1	J3	J5	L1,4	L3	L11,14	Q12,13	Q14	Q003	R2,7	R8,8	R72,R153	
KAC-9103D(K/WE)	0-1	YES	3900P	E41-2447-05(BP)	YES	FCH20A20	FRH20A20	30A X 2	RC1890DR	E63-0921-05	E70-0838-05	YES	YES	L18-0778-04	—	2SK3652-F	2SA1859E-F-KEN	51K 47K	37K	YES	330 15K	
KAC-9103D(K)	0-11	—	—	E41-2447-05(BP)	YES	FCH20A20	FRH20A20	30A X 2	RC1890DR	E63-0921-05	E70-0838-05	YES	YES	L18-0778-04	—	2SK3652-F	2SA1352E-F-KEN	51K 47K	47K	YES	330 15K	
KAC-9103D(K/WE)	0-12	—	—	E41-2447-05(BP)	—	FCH10A20	FRH10A20	40A	RC4580DR	E63-0921-05	E70-0838-05	—	—	L18-0778-04	—	2SK3652-F	2SA1352E-F-KEN	33K 15K	33K	—	620 6.8K	
KAC-9103D(K)	0-13	—	—	6800P	E41-2447-05(BP)	—	FCH10A20	FRH10A20	40A	RC4580DR	E63-0921-05	E70-0838-05	—	—	L18-0778-04	—	2SK3652-F	2SA1352E-F-KEN	33K 15K	33K	—	620 6.8K
KAC-9103D(K/WE)	0-14	YES	3900P	E41-27183-05(OP)	YES	FCH20A20	FRH20A20	30A X 2	BA1560RF	E63-0921-05	E70-0838-05	YES	YES	L18-0778-05	—	2SK60NF06FP	2SA1352E-F-KEN	51K 47K	47K	YES	330 15K	

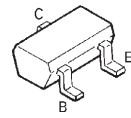
2SA992-A  
 2SC1845-A



2SA1576A



2SC4081



KAC-9103D (1/2)



# KAC-9103D

1

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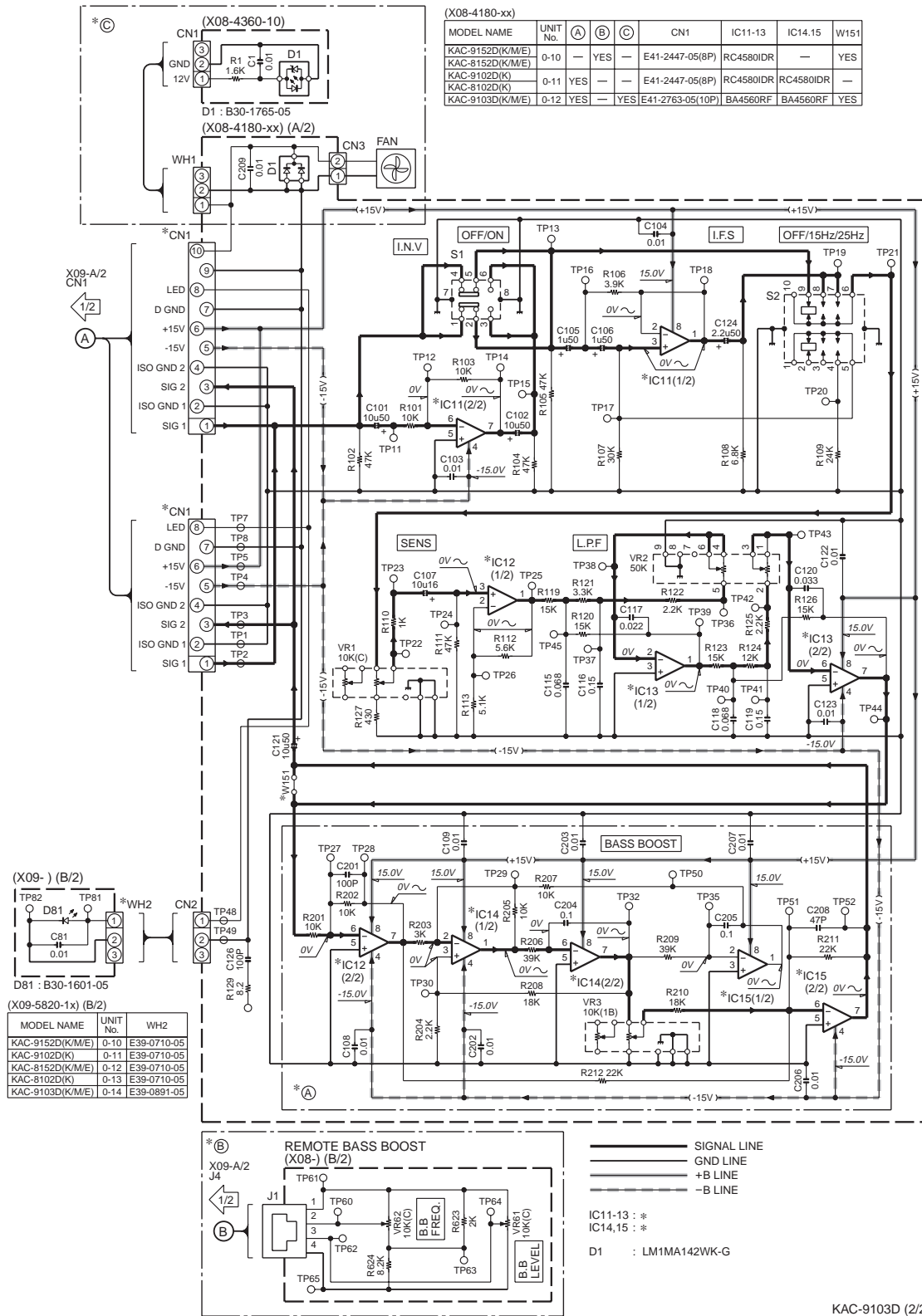
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KAC-9103D (2/2)

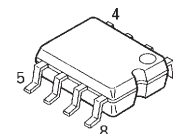
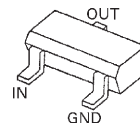
**CAUTION :** For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list).

⚠ 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.

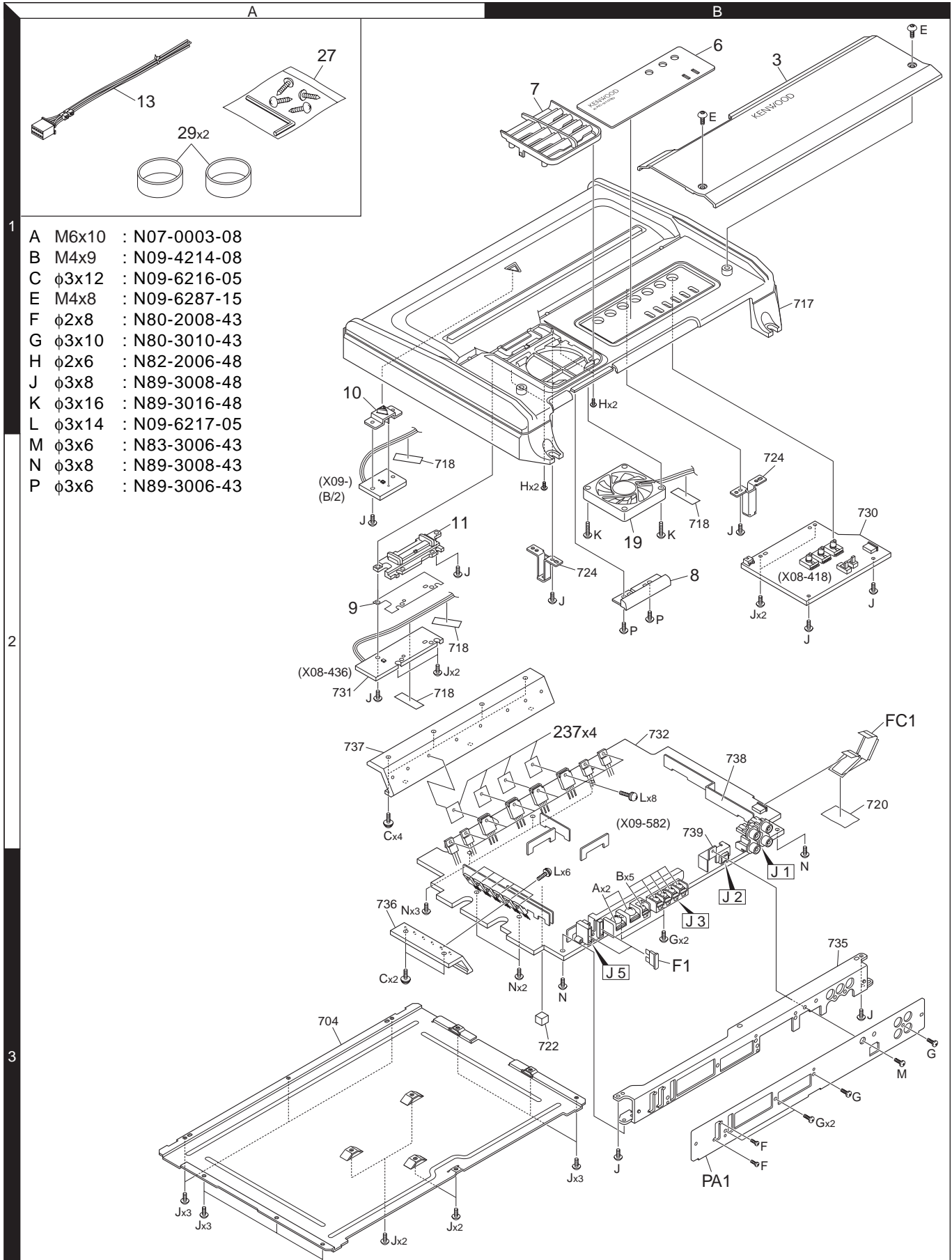
DTA114EUA  
 DTC114EUA  
 DTC124EUA

BA10358F



# KAC-9103D

## 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.	Added	New	Parts No.	Description	Destination
<b>KAC-9103D</b>					
3	1B	*	A21-6563-02	DRESSING PANEL	K E1M1
3	1B	*	A21-6564-02	DRESSING PANEL	
PA1	3B	*	A64-4079-02	PANEL	
6	1B	*	B03-5085-02	DRESSING PLATE	
7	1B		B07-3193-02	ESCUTCHEON	
8	2B		B07-3194-03	ESCUTCHEON	
9	2A		B11-2006-04	REFLECTION SHEET	
10	1A		B19-2324-03	LIGHTING BOARD	
11	2A		B19-2419-02	LIGHTING BOARD	KE1 E1 M1
-		*	B64-3509-00	INSTRUCTI.MANUAL (ENG.FRE.SPA.)	
-		*	B64-3510-00	INSTR.MANUAL (GER.DUT.ITA.POR.)	
-		*	B64-3511-00	INSTRU.MANUAL (ENG.T-CHI.S-CHI)	
13	1A		E30-6145-05	CONNECTING CORD ASSY	
FC1	2B	*	E39-0885-05	FLAT CABLE	
19	2B		F09-1885-15	FAN	K E1 M1
△ F1	3B		F52-0015-05	FUSE (BLADE TYPE) 30A	
-		*	H54-3877-03	ITEM CARTON CASE	
-		*	H54-3878-03	ITEM CARTON CASE	
-		*	H54-3879-03	ITEM CARTON CASE	
27	1A		N99-1794-05	SCREW & WRENCH KEY SET	
A	3B		N07-0003-08	SCREW (M6X10)	
B	3B		N09-4214-08	SCREW (M4X9)	
C	2A		N09-6216-05	TAPTITE SCREW (3X12)	
E	1B		N09-6287-15	DRESSED SCREW (M4X8)	
F	3B		N80-2008-43	PAN HEAD TAPTITE SCREW	
G	3B		N80-3010-43	PAN HEAD TAPTITE SCREW	
H	1B		N82-2006-48	BINDING HEAD TAPTITE SCREW	
J	3A		N89-3008-48	BINDING HEAD TAPTITE SCREW	
K	2B		N89-3016-48	BINDING HEAD TAPTITE SCREW	
P	2B		N89-3006-43	BINDING HEAD TAPTITE SCREW	
29	1A		W01-1606-05	ACCESSORIES	
<b>PREAMPLIFIER UNIT (X08-4180-12)</b>					
C101,102			CD04BJ1H100M	ELECTRO 10UF 50WV	
C103,104			CK73GB1H103K	CHIP C 0.010UF K	
C105,106			CD04BJ1H010M	ELECTRO 1.0UF 50WV	
C107			CD04AS1V100M	ELECTRO 10UF 35WV	
C108,109			CK73GB1H103K	CHIP C 0.010UF K	
C115			CK73GB1H683K	CHIP C 0.068UF K	
C116			CK73FB1E154K	CHIP C 0.15UF K	
C117			CK73GB1H223K	CHIP C 0.022UF K	
C118			CK73GB1H683K	CHIP C 0.068UF K	
C119			CK73FB1E154K	CHIP C 0.15UF K	
C120			CK73GB1H333K	CHIP C 0.033UF K	
C121			CD04BJ1H100M	ELECTRO 10UF 50WV	
C122,123			CK73GB1H103K	CHIP C 0.010UF K	
C124			CD04BJ1H2R2M	ELECTRO 2.2UF 50WV	
C126			CC73GCH1H101J	CHIP C 100PF J	
C201			CC73GCH1H101J	CHIP C 100PF J	
C202,203			CK73GB1H103K	CHIP C 0.010UF K	
C204,205			CK73FB1E104K	CHIP C 0.10UF K	

Ref. No.	Added	New	Parts No.	Description	Destination
C206,207			CK73GB1H103K	CHIP C 0.010UF K	
C208			CC73GCH1H470J	CHIP C 47PF J	
C209			CK73GB1H103K	CHIP C 0.010UF K	
CN1		*	E41-2763-05	FLAT CABLE CONNECTOR	
CN2			E41-1700-05	PIN ASSY	
CN3			E41-1699-05	PIN ASSY	
WH1			E39-0710-05	WIRING HARNESS	
R101			RK73GB2A103J	CHIP R 10K J 1/10W	
R102			RK73GB2A473J	CHIP R 47K J 1/10W	
R103			RK73GB2A103J	CHIP R 10K J 1/10W	
R104,105			RK73GB2A473J	CHIP R 47K J 1/10W	
R106			RK73GB2A392J	CHIP R 3.9K J 1/10W	
R107			RK73GB2A303J	CHIP R 30K J 1/10W	
R108			RK73GB2A682J	CHIP R 6.8K J 1/10W	
R109			RK73GB2A243J	CHIP R 24K J 1/10W	
R110			RK73GB2A102J	CHIP R 1.0K J 1/10W	
R111			RK73GB2A473J	CHIP R 47K J 1/10W	
R112			RK73GB2A562J	CHIP R 5.6K J 1/10W	
R113			RK73GB2A512J	CHIP R 5.1K J 1/10W	
R119,120			RK73GB2A153J	CHIP R 15K J 1/10W	
R121			RK73GB2A332J	CHIP R 3.3K J 1/10W	
R122			RK73GB2A222J	CHIP R 2.2K J 1/10W	
R123			RK73GB2A153J	CHIP R 15K J 1/10W	
R124			RK73GB2A123J	CHIP R 12K J 1/10W	
R125			RK73GB2A222J	CHIP R 2.2K J 1/10W	
R126			RK73GB2A153J	CHIP R 15K J 1/10W	
R127			RK73GB2A431J	CHIP R 430 J 1/10W	
R129			RK73GB2A8R2J	CHIP R 8.2 J 1/10W	
R201,202			RK73GB2A103J	CHIP R 10K J 1/10W	
R203			RK73GB2A302J	CHIP R 3.0K J 1/10W	
R204			RK73GB2A222J	CHIP R 2.2K J 1/10W	
R205			RK73GB2A103J	CHIP R 10K J 1/10W	
R206			RK73GB2A393J	CHIP R 39K J 1/10W	
R207			RK73GB2A103J	CHIP R 10K J 1/10W	
R208			RK73GB2A183J	CHIP R 18K J 1/10W	
R209			RK73GB2A393J	CHIP R 39K J 1/10W	
R210			RK73GB2A183J	CHIP R 18K J 1/10W	
R211,212			RK73GB2A223J	CHIP R 22K J 1/10W	
VR1			R31-0238-05	VARIABLE RESISTOR	
VR2			R31-0241-05	VARIABLE RESISTOR 50K(C),2	
VR3			R31-0244-05	VARIABLE RESISTOR 10KX2,B	
W51			R92-1252-05	CHIP R 0 OHM J 1/16W	
W52			RK73EB2E000J	CHIP R 0.0 J 1/4W	
W251-253			R92-1252-05	CHIP R 0 OHM J 1/16W	
W254-258			RK73EB2E000J	CHIP R 0.0 J 1/4W	
S1			S62-0873-05	SLIDE SWITCH	
S2			S62-0874-05	SLIDE SWITCH	
D1			LM1MA142WK-G	DIODE	
IC11-15			BA4560RF	ANALOGUE IC	
<b>PREAMPLIFIER UNIT (X08-4360-10)</b>					
D1			B30-1765-05	LED (BLUE,SEDE LIGHT)	
C1			CK73GB1H103K	CHIP C 0.010UF K	

E1 : KAC-9103D (Europe) K : KAC-9103D (North America) M1 : KAC-9103D (Other Areas)

△ Indicates safety critical components.

# KAC-9103D

## PARTS LIST

### PREAMPLIFIER UNIT (X08-4360-10)

Ref. No.	Add	New	Parts No.	Description	Destination
CN1			E41-1700-05	PIN ASSY	
R1			RK73EB2E162J	CHIP R 1.6K J 1/4W	
<b>AUDIO UNIT (X09-5820-14)</b>					
D81			B30-1743-05	LED (RED LED)	
C1			C90-5557-05	ELECTRO 10UF 25WV	
C2,3			CD04BJ1H100M	ELECTRO 10UF 50WV	
C4			CK73GB1H103K	CHIP C 0.010UF K	
C5			CD04BJ1H100M	ELECTRO 10UF 50WV	
C6			CK73GB1H103K	CHIP C 0.010UF K	
C7			CK73GB1H104K	CHIP C 0.10UF K	
C8			C90-5563-05	ELECTRO 2.2UF 50WV	
C9			CK73GB1H103K	CHIP C 0.010UF K	
C10			CD04BJ1E470M	ELECTRO 47UF 25WV	
C11			CK73GB1H102K	CHIP C 1000PF K	
C12			CD04BJ1E470M	ELECTRO 47UF 25WV	
C13			CK73FB1E104K	CHIP C 0.10UF K	
C14			CK73GB1H102K	CHIP C 1000PF K	
C16-18			CD04BC1C392M	ELECTRO 3900UF 16WV	
C19			CQ92FM1H682J	MYLAR 6800PF J	
C20-23			CQ92FM1H102J	MYLAR 1000PF J	
C25,26			C90-5688-05	ELECTRO 1500UF 100WV	
C31,32			CD04BJ1E470M	ELECTRO 47UF 25WV	
C35,36			CD04BJ1E470M	ELECTRO 47UF 25WV	
C40			CQ92FM1H102J	MYLAR 1000PF J	
C81			CK73GB1H103K	CHIP C 0.010UF K	
C82,83			CK73GB1H104K	CHIP C 0.10UF K	
C101,102			CK73GB1H102K	CHIP C 1000PF K	
C103-108			CD04BJ1H100M	ELECTRO 10UF 50WV	
C109			CC73GCH1H330J	CHIP C 33PF J	
C110			CC73GCH1H470J	CHIP C 47PF J	
C111,112			CC73GCH1H101J	CHIP C 100PF J	
C113			CC73GCH1H330J	CHIP C 33PF J	
C114			CD04BJ1H100M	ELECTRO 10UF 50WV	
C115-117			CK73GB1H103K	CHIP C 0.010UF K	
C151			CD04BJ1H010M	ELECTRO 1.0UF 50WV	
C152			CK73GB1H104K	CHIP C 0.10UF K	
C153			CD04BJ1E470M	ELECTRO 47UF 25WV	
C154			CC73GCH1H470J	CHIP C 47PF J	
C155			CQ92FM1H392J	MYLAR 3900PF J	
C156			CK73GB1H102K	CHIP C 1000PF K	
C181			CD04BJ1E470M	ELECTRO 47UF 25WV	
C182,183			CC73GCH1H390J	CHIP C 39PF J	
C193,194			CF92FV2A104J	MF-C 0.10UF J	
C195,196			CQ92FM1H392J	MYLAR 3900PF J	
C197,198			C91-2267-05	MP-F 10UF J	
C301,302			CK73GB1H103K	CHIP C 0.010UF K	
C303			CC73GCH1H331J	CHIP C 330PF J	
C304			CK73GB1H103K	CHIP C 0.010UF K	
C401			CK73GB1H103K	CHIP C 0.010UF K	
C402			CD04BJ1H470M	ELECTRO 47UF 50WV	
C403,404			CD04BJ1E470M	ELECTRO 47UF 25WV	
C405,406			CC73GCH1H560J	CHIP C 56PF J	
C601,602			CD04BJ1H100M	ELECTRO 10UF 50WV	

Ref. No.	Add	New	Parts No.	Description	Destination
C603,604			CK73GB1H103K	CHIP C 0.010UF K	
C605			CD04BJ1E470M	ELECTRO 47UF 25WV	
C606			CK73GB1H103K	CHIP C 0.010UF K	
C607			CK73FB1C684K	CHIP C 0.68UF K	
C608			CK73GB1H103K	CHIP C 0.010UF K	
C609			CK73GB1H682K	CHIP C 6800PF K	
C610,611			CK73GB1H473K	CHIP C 0.047UF K	
C612			CK73FB1E104K	CHIP C 0.10UF K	
C613			CD04BJ1A101M	ELECTRO 100UF 10WV	
C614,615			CK73GB1H103K	CHIP C 0.010UF K	
C616,617			CD04BJ1H100M	ELECTRO 10UF 50WV	
CN1		*	E41-2763-05	FLAT CABLE CONNECTOR	
J1			E63-0921-05	PIN JACK	
J2			E58-1031-05	RECTANGULAR RECEPTACLE	
J3			E70-0838-05	SCREW TERMINAL BOARD	
WH2		*	E39-0891-05	WIRING HARNESS 3P 130MM	
237	2B	*	F20-2353-04	INSULATING SHEET	
J5			J13-0602-05	FUSE HOLDER	
L1			L33-2256-25	CHOKE COIL 10.9UH	
L3			L19-0778-05	TRANSFORMER FOR CONVERTER	
L4		*	L33-2257-25	CHOKE COIL 67.6UH	
G	3B		N80-3010-43	PAN HEAD TAPTITE SCREW	
L	2B		N09-6217-05	TAPTITE SCREW (3X14)	
M	3B		N83-3006-43	PAN HEAD TAPTITE SCREW	
N	3A		N89-3008-43	BINDING HEAD TAPTITE SCREW	
R1			RD14BB2C392J	RD 3.9K J 1/6W	
R2			RK73GB2A332J	CHIP R 3.3K J 1/10W	
R3			RK73GB2A392J	CHIP R 3.9K J 1/10W	
R4			RK73GB2A152J	CHIP R 1.5K J 1/10W	
R5			RK73GB2A103J	CHIP R 10K J 1/10W	
R6			RK73GB2A472J	CHIP R 4.7K J 1/10W	
R7			RK73GB2A333J	CHIP R 33K J 1/10W	
R8			RK73GB2A472J	CHIP R 4.7K J 1/10W	
R9			RK73EB2E513J	CHIP R 51K J 1/4W	
R10			RK73EB2E473J	CHIP R 47K J 1/4W	
R11			RK73GB2A333J	CHIP R 33K J 1/10W	
R12			RK73GB2A753J	CHIP R 75K J 1/10W	
R13			RK73GB2A101J	CHIP R 100 J 1/10W	
R14			RK73GB2A103J	CHIP R 10K J 1/10W	
R17			RK73GB2A103J	CHIP R 10K J 1/10W	
R19			RK73GB2A682J	CHIP R 6.8K J 1/10W	
R20			RK73GB2A162J	CHIP R 1.6K J 1/10W	
R22			RK73GB2A823J	CHIP R 82K J 1/10W	
R23			RK73GB2A684J	CHIP R 680K J 1/10W	
R25			RK73GB2A273J	CHIP R 27K J 1/10W	
R29			RK73GB2A154J	CHIP R 150K J 1/10W	
R30			RK73GB2A512J	CHIP R 5.1K J 1/10W	
R31			RK73GB2A224J	CHIP R 220K J 1/10W	
R32			RK73GB2A512J	CHIP R 5.1K J 1/10W	
R33			RK73GB2A224J	CHIP R 220K J 1/10W	
R34			RK73GB2A682J	CHIP R 6.8K J 1/10W	
R35			RK73GB2A104J	CHIP R 100K J 1/10W	

E1 : KAC-9103D (Europe) K : KAC-9103D (North America) M1 : KAC-9103D (Other Areas)

△ Indicates safety critical components.

## PARTS LIST

### AUDIO UNIT (X09-5820-14)

Ref. No.	Add	New	Parts No.	Description	Destination	Ref. No.	Add	New	Parts No.	Description	Destination
R36			RK73GB2A203J	CHIP R 20K J 1/10W		R208			RK73GB2A154J	CHIP R 150K J 1/10W	
R37,38			RK73GB2A152J	CHIP R 1.5K J 1/10W		R209			RK73GB2A104J	CHIP R 100K J 1/10W	
R39,40			RK73GB2A560J	CHIP R 56 J 1/10W		R210,211			RK73GB2A9R1J	CHIP R 9.1 J 1/10W	
R41,42			RK73GB2A100J	CHIP R 10 J 1/10W		R301,302			RK73GB2A103J	CHIP R 10K J 1/10W	
R43,44			RK73GB2A472J	CHIP R 4.7K J 1/10W		R303			RK73GB2A682J	CHIP R 6.8K J 1/10W	
R45			RD14DB2H100J	SMALL-RD 10 J 1/2W		R304			RK73GB2A622J	CHIP R 6.2K J 1/10W	
R46,47			RD14DB2H220J	SMALL-RD 22 J 1/2W		R305			RK73GB2A392J	CHIP R 3.9K J 1/10W	
R48,49			RK73EB2E473J	CHIP R 47K J 1/4W		R306			RK73GB2A622J	CHIP R 6.2K J 1/10W	
R52			RD14BB2C473J	RD 47K J 1/6W		R307			RK73GB2A103J	CHIP R 10K J 1/10W	
R53			RK73EB2E100J	CHIP R 10 J 1/4W		R401,402			RD14DB2H751J	SMALL-RD 750 J 1/2W	
R57			RD14BB2C473J	RD 47K J 1/6W		R403,404			RK73EB2E471J	CHIP R 470 J 1/4W	
R58			RK73EB2E100J	CHIP R 10 J 1/4W		R405			RK73EB2E470J	CHIP R 47 J 1/4W	
R61			RK73GB2A100J	CHIP R 10 J 1/10W		R406			RK73EB2E271J	CHIP R 270 J 1/4W	
R64			RK73GB2A821J	CHIP R 820 J 1/10W		R407-410			RK73EB2E100J	CHIP R 10 J 1/4W	
R65			RK73GB2A472J	CHIP R 4.7K J 1/10W		R411			RK73EB2E331J	CHIP R 330 J 1/4W	
R66			RK73GB2A103J	CHIP R 10K J 1/10W		R412			RK73EB2E122J	CHIP R 1.2K J 1/4W	
R67			RK73GB2A153J	CHIP R 15K J 1/10W		R413			RK73EB2E101J	CHIP R 100 J 1/4W	
R68			RK73EB2E473J	CHIP R 47K J 1/4W		R414			RK73EB2E100J	CHIP R 10 J 1/4W	
R70,71			RK73GB2A103J	CHIP R 10K J 1/10W		R415			RK73EB2E101J	CHIP R 100 J 1/4W	
R72			RK73GB2A331J	CHIP R 330 J 1/10W		R416			RK73EB2E100J	CHIP R 10 J 1/4W	
R73			RK73GB2A222J	CHIP R 2.2K J 1/10W		R417			RK73GB2A103J	CHIP R 10K J 1/10W	
R74			RK73EB2E821J	CHIP R 820 J 1/4W		R418			RD14DB2H102J	SMALL-RD 1.0K J 1/2W	
R101,102			RD14BB2C102J	RD 1.0K J 1/6W		R419			RK73GB2A473J	CHIP R 47K J 1/10W	
R103,104			RK73GB2A103J	CHIP R 10K J 1/10W		R420			RD14DB2H512J	SMALL-RD 5.1K J 1/2W	
R105,106			RK73GB2A273J	CHIP R 27K J 1/10W		R421			RK73GB2A562J	CHIP R 5.6K J 1/10W	
R107,108			RD14BB2C222J	RD 2.2K J 1/6W		R422			RD14BB2C563J	RD 56K J 1/6W	
R109-112			RD14BB2C473J	RD 47K J 1/6W		R423,424			RK73GB2A102J	CHIP R 1.0K J 1/10W	
R113			RK73GB2A102J	CHIP R 1.0K J 1/10W		R425,426			RK73GB2A103J	CHIP R 10K J 1/10W	
R114			RK73GB2A153J	CHIP R 15K J 1/10W		R601			RK73GB2A473J	CHIP R 47K J 1/10W	
R115			RK73GB2A103J	CHIP R 10K J 1/10W		R602			RK73GB2A103J	CHIP R 10K J 1/10W	
R116			RK73GB2A333J	CHIP R 33K J 1/10W		R603-605			RK73GB2A203J	CHIP R 20K J 1/10W	
R117			RN73GH1J103D	CHIP R 10K D 1/16W		R606			RK73GB2A132J	CHIP R 1.3K J 1/10W	
R118			RD14BB2C562J	RD 5.6K J 1/6W		R607			RK73GB2A103J	CHIP R 10K J 1/10W	
R119,120			RN73GH1J103D	CHIP R 10K D 1/16W		R608			RK73GB2A123J	CHIP R 12K J 1/10W	
R121,122			RK73GB2A753J	CHIP R 75K J 1/10W		R609			RK73GB2A203J	CHIP R 20K J 1/10W	
R123			RN73GH1J103D	CHIP R 10K D 1/16W		R610,611			RK73GB2A472J	CHIP R 4.7K J 1/10W	
R124			RK73GB2A101J	CHIP R 100 J 1/10W		R612			RK73GB2A223J	CHIP R 22K J 1/10W	
R151			RK73GB2A472J	CHIP R 4.7K J 1/10W		R613			RK73GB2A103J	CHIP R 10K J 1/10W	
R152			RK73GB2A103J	CHIP R 10K J 1/10W		R614			RK73GB2A104J	CHIP R 100K J 1/10W	
R153			RK73GB2A153J	CHIP R 15K J 1/10W		R615			RK73GB2A102J	CHIP R 1.0K J 1/10W	
R154			RK73GB2A224J	CHIP R 220K J 1/10W		R616,617			RK73GB2A103J	CHIP R 10K J 1/10W	
R155			RK73GB2A102J	CHIP R 1.0K J 1/10W		R619			RK73GB2A224J	CHIP R 220K J 1/10W	
R156			RK73GB2A471J	CHIP R 470 J 1/10W		R621			RK73GB2A273J	CHIP R 27K J 1/10W	
R157			RK73GB2A102J	CHIP R 1.0K J 1/10W		R622			RK73GB2A222J	CHIP R 2.2K J 1/10W	
R158			RK73GB2A684J	CHIP R 680K J 1/10W		R623			RK73GB2A682J	CHIP R 6.8K J 1/10W	
R159			RK73GB2A103J	CHIP R 10K J 1/10W		R624			RK73GB2A514J	CHIP R 510K J 1/10W	
R160			RK73GB2A683J	CHIP R 68K J 1/10W		R625-627			RK73GB2A332J	CHIP R 3.3K J 1/10W	
R161		*	R92-5129-05	CARBON FILM R 24K J 1/4W		R629,630			R92-5086-05	METAL-PLATE 0.05 J 2W	
R162			RK73GB2A103J	CHIP R 10K J 1/10W		R636,637			R92-5086-05	METAL-PLATE 0.05 J 2W	
R181			RK73EB2E102J	CHIP R 1.0K J 1/4W		R638			RK73GB2A222J	CHIP R 2.2K J 1/10W	
R182			RK73GB2A112J	CHIP R 1.1K J 1/10W		R639			RK73GB2A823J	CHIP R 82K J 1/10W	
R183,184			RK73GB2A103J	CHIP R 10K J 1/10W		R640,641			RK73GB2A223J	CHIP R 22K J 1/10W	
R199-202			RK73EB2E100J	CHIP R 10 J 1/4W		R642			RK73GB2A103J	CHIP R 10K J 1/10W	
R203,204			RS14KB3D4R7JP	FL-PROOF RS 4.7 J 2W		R643			RK73GB2A222J	CHIP R 2.2K J 1/10W	
R206,207			RK73GB2A473J	CHIP R 47K J 1/10W		R644			RK73GB2A103J	CHIP R 10K J 1/10W	

E1 : KAC-9103D (Europe) K : KAC-9103D (North America) M1 : KAC-9103D (Other Areas)

△ Indicates safety critical components.



# KAC-9103D

## PARTS LIST

### AUDIO UNIT (X09-5820-14)

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
R645			RK73GB2A681J	CHIP R 680 J 1/10W		Q1,2			2SC4081	TRANSISTOR	
R646			RK73EB2E4R7J	CHIP R 4.7 J 1/4W		Q3			2SB1241	TRANSISTOR	
W301,302			RK73EB2E000J	CHIP R 0.0 J 1/4W		Q4			2SA1576A	TRANSISTOR	
W303-309			R92-1252-05	CHIP R 0 OHM J 1/16W		Q5			2SC4081	TRANSISTOR	
W317,318			R92-1252-05	CHIP R 0 OHM J 1/16W		Q8,9			2SC4097	TRANSISTOR	
W319			RK73EB2E000J	CHIP R 0.0 J 1/4W		Q10,11			2SA1577	TRANSISTOR	
W320-323			R92-1252-05	CHIP R 0 OHM J 1/16W		Q12-14			STP60NF06FP	FET	
W326			RK73EB2E000J	CHIP R 0.0 J 1/4W		Q18-20			STP60NF06FP	FET	
W329			R92-1252-05	CHIP R 0 OHM J 1/16W		Q25			2SC1845-A(F,E)	TRANSISTOR	
W330,331			RK73EB2E000J	CHIP R 0.0 J 1/4W		Q26			2SC4883ANF	TRANSISTOR	
W337			R92-1252-05	CHIP R 0 OHM J 1/16W		Q28			2SA1859ANF	TRANSISTOR	
W338			RK73EB2E000J	CHIP R 0.0 J 1/4W		Q29,30			2SA1576A	TRANSISTOR	
W339			R92-1252-05	CHIP R 0 OHM J 1/16W		Q36			DTC114EUA	DIGITAL TRANSISTOR	
W346			R92-1252-05	CHIP R 0 OHM J 1/16W		Q37,38			DTA114EUA	DIGITAL TRANSISTOR	
W348			RK73EB2E000J	CHIP R 0.0 J 1/4W		Q41			2SC945AA(Q,P)	TRANSISTOR	
W350			RK73EB2E000J	CHIP R 0.0 J 1/4W		Q42			2SA992-A(F,E)	TRANSISTOR	
W351-357			R92-1252-05	CHIP R 0 OHM J 1/16W		Q43			DTA114EUA	DIGITAL TRANSISTOR	
W358			RK73EB2E000J	CHIP R 0.0 J 1/4W		Q151			2SC4081	TRANSISTOR	
W361			R92-1252-05	CHIP R 0 OHM J 1/16W		Q187-190			STW34NB20	FET	
W401			R92-1252-05	CHIP R 0 OHM J 1/16W		Q401,402			2SC3478AA(L,K)	TRANSISTOR	
D1-3			RM4ZLF-J4NF	DIODE		Q403-407			2SA1352E/F-KEN	TRANSISTOR	
D4			02DZ6.8F-Y	ZENER DIODE		Q408			2SC3415S	TRANSISTOR	
D5			02DZ15F-Y	ZENER DIODE		Q409			2SC3902	TRANSISTOR	
D6,7			1SS133	DIODE		Q411			2SB1427	TRANSISTOR	
D8			02DZ10F-Y	ZENER DIODE		Q412			2SC3415S	TRANSISTOR	
D9-12			1SS133	DIODE		Q413			2SC3902	TRANSISTOR	
D14-17			1SS133	DIODE		Q414			2SB1427	TRANSISTOR	
D18			FCH20A20	DIODE		Q416			2SD1863	TRANSISTOR	
D19			FRH20A20	DIODE		Q417			2SA1376AA(L,K)	TRANSISTOR	
D23			02DZ16F-Y	ZENER DIODE		Q418			2SC3478AA(L,K)	TRANSISTOR	
D25			02DZ16F-Y	ZENER DIODE		Q601			2SA1576A	TRANSISTOR	
D101			UMZ6.8N	ZENER DIODE		Q602			2SC4081	TRANSISTOR	
D103-110			1SS133	DIODE		Q603			DTC124EUA	DIGITAL TRANSISTOR	
D151			1SS133	DIODE		Q604			2SC3478AA(L,K)	TRANSISTOR	
D181			02DZ5.1F-Y	ZENER DIODE		Q605,606			2SA1376AA(L,K)	TRANSISTOR	
D182,183			1SS133	DIODE		Q607			2SC3478AA(L,K)	TRANSISTOR	
D186			1SS133	DIODE		Q608			2SA1576A	TRANSISTOR	
D303-307			1SS133	DIODE		Q609-611			2SC4081	TRANSISTOR	
D308			02DZ5.1F-Y	ZENER DIODE		Q612			2SD1863	TRANSISTOR	
D401-406			1SS133	DIODE		TH1			NT732ATTD103J	THERMISTOR	
D407			02DZ15F-Y	ZENER DIODE							
D601,602			1SS133	DIODE							
D604			1SS133	DIODE							
D605			02DZ10F-Y	ZENER DIODE							
D606			1SS133	DIODE							
D607			02DZ10F-Y	ZENER DIODE							
D608			02DZ12F-Y	ZENER DIODE							
IC1			TL494IDR	ANALOGUE IC							
IC2			BA10358F	ANALOGUE IC							
IC11			BA4560RF	ANALOGUE IC							
IC12,13			SN74HC00D	MOS-IC							
IC31			BA10393F	ANALOGUE IC							
IC32			BA4560RF	ANALOGUE IC							
IC61			BA4560RF	ANALOGUE IC							
IC62			BA10393F	ANALOGUE IC							

E1 : KAC-9103D (Europe) K : KAC-9103D (North America) M1 : KAC-9103D (Other Areas)

△ Indicates safety critical components.

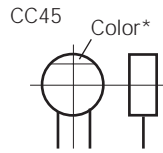


## PARTS LIST

### CAPACITORS

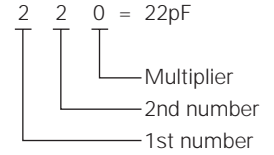
$\frac{C}{1} \frac{C}{2} \frac{45}{3} \frac{TH}{4} \frac{1H}{5} \frac{220}{6} \frac{J}{7}$

- 1 = Type ... ceramic, electrolytic, etc.
- 2 = Shape ... round, square, etc.
- 3 = Temp. coefficient
- 4 = Voltage rating
- 5 = Value
- 6 = Tolerance



#### • Capacitor value

- 010 = 1pF
- 100 = 10pF
- 101 = 100pF
- 102 = 1000pF = 0.001μF
- 103 = 0.01μF



#### • Temperature coefficient

1st Word	C	L	P	R	S	T	U
Color*	Black	Red	Orange	Yellow	Green	Blue	Violet
ppm/°C	0	-80	-150	-220	-330	-470	-750

2nd Word	G	H	J	K	L
ppm/°C	±30	±60	±120	±250	±500

Example : CC45TH = -470±60ppm/°C

#### • Tolerance (More than 10pF)

Code	C	D	G	J	K	M	X	Z	P	No code
(%)	±0.25	±0.5	±2	±5	±10	±20	+40 -20	+80 -20	+100 -0	More than 10μF : -10~+50 Less than 4.7μF : -10~+75

#### (Less than 10pF)

Code	B	C	D	F	G
(pF)	±0.1	±0.25	±0.5	±1	±2

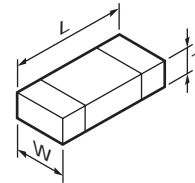
#### • Voltage rating

2nd word \ 1st word	A	B	C	D	E	F	G	H	J	K	V
0	1.0	1.25	1.6	2.0	2.5	3.15	4.0	5.0	6.3	8.0	-
1	10	12.5	16	20	25	31.5	40	50	63	80	35
2	100	125	160	200	250	315	400	500	630	800	-
3	1000	1250	1600	2000	2500	2150	4000	5000	6300	8000	-

#### • Chip capacitors

- (EX)  $\frac{C}{1} \frac{C}{2} \frac{73}{3} \frac{F}{4} \frac{SL}{5} \frac{1H}{6} \frac{000}{7} \frac{J}{8}$  → Refer to the table above.
- (Chip) (CH, RH, UJ, SL)
- 1 = Type
  - 2 = Shape
  - 3 = Dimension
  - 4 = Temp. coefficient
  - 5 = Voltage rating
  - 6 = Value
  - 7 = Tolerance
- (EX)  $\frac{C}{1} \frac{K}{2} \frac{73}{3} \frac{F}{4} \frac{F}{5} \frac{1H}{6} \frac{000}{7} \frac{Z}{8}$
- (Chip) (B, F)

#### • Dimension



#### Chip capacitor

Code	L	W	T
Empty	5.6±0.5	5.0±0.5	Less than 2.0
A	4.5±0.5	3.2±0.4	Less than 2.0
B	4.5±0.5	2.0±0.3	Less than 2.0
C	4.5±0.5	1.25±0.2	Less than 1.25
D	3.2±0.4	2.5±0.3	Less than 1.5
E	3.2±0.2	1.6±0.2	Less than 1.25
F	2.0±0.3	1.25±0.2	Less than 1.25
G	1.6±0.2	0.8±0.2	Less than 1.0
H	1.0±0.05	0.5±0.05	0.5±0.05

#### Chip resistor

Code	L	W	T
E	3.2±0.2	1.6±0.2	1.0
F	2.0±0.3	1.25±0.2	1.0
G	1.6±0.2	0.8±0.2	0.5±0.1
H	1.0±0.05	0.5±0.05	0.35±0.05

#### • Rating wattage

Code	Wattage	Code	Wattage	Code	Wattage
1J	1/16W	2C	1/6W	3A	1W
2A	1/10W	2E	1/4W	3D	2W
2B	1/8W	2H	1/2W		

### RESISTORS

#### • Chip resistor (Carbon)

- (EX)  $\frac{R}{1} \frac{D}{2} \frac{73}{3} \frac{E}{4} \frac{B}{5} \frac{2B}{6} \frac{000}{7} \frac{J}{8}$
- (Chip) (B, F)

#### • Carbon resistor (Normal type)

- (EX)  $\frac{R}{1} \frac{D}{2} \frac{14}{3} \frac{B}{4} \frac{B}{5} \frac{2C}{6} \frac{000}{7} \frac{J}{8}$

- 1 = Type
- 2 = Shape
- 3 = Dimension
- 4 = Temp. coefficient
- 5 = Rating wattage
- 6 = Value
- 7 = Tolerance

# KAC-9103D

## SPECIFICATIONS

### CEA-2006

RMS Watts per channel @ 4Ω, 1% THD+N ..... 500W x 1  
Signal to Noise Ratio (Reference: 1W into 4Ω) ..... 94dBA

### Audio Section

Max Power Output ..... 1800W  
Rated Power Output (+B=14.4V)  
(4Ω) (20Hz~200Hz, 0.5% THD) ..... 500W x 1  
(4Ω) (DIN45324, +B=14.4V) ..... 500W x 1  
(2Ω) (100Hz, 1.1% THD) ..... 900W x 1  
(1Ω) ..... ≥900W x 1  
Frequency Response (+0, -3dB) ..... 5Hz~200Hz  
Sensitivity (rated output)  
MAX ..... 0.2V  
MIN ..... 5.0V  
Input Impedance ..... 10kΩ  
Signal to Noise Ratio ..... 100dB

Low Pass Filter Frequency (-24dB/oct.) ... 50~200Hz (variable)  
Infrasonic Filter Frequency (-18dB/oct.) ..... 15/25Hz  
Phase Inverter ..... 0° (Normal)/180° (Reverse)  
Bass Boost Circuit ..... 0~+18dB (variable)  
Bass Boost Frequency ..... 40Hz

### General

Operating Voltage ..... 14.4V (11~16V allowable)  
Current Consumption ..... 60A  
Installation Size (W x H x D)  
..... 380 x 64 x 286mm (14-15/16 x 2-1/2 x 11-1/4 inch)  
Weight ..... 4.1kg (9.0 lbs)

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

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## INSTALLATION

