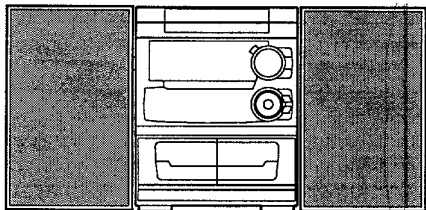


aiwa



NSX-S303 NSX-S307



COMPACT DISC STEREO
CASSETTE RECEIVER

- BASIC TAPE MECHANISM : 6ZM-3 YPR1N
- BASIC CD MECHANISM : 4ZG-1 Z3DSHNM

- TYPE :EZ,K

REVISION PUBLISHING

SYSTEM	SPEAKER	CD - CASSEIVER
NSX-S303 (TYPE : EZ,K)	SX - NS302	CX - NS303
NSX-S307 (TYPE : EZ)	SX - NS303	CX - NS307

•This Service Manual is the "Revision Publishing" and replaces Simple Manual NSX-S303/307. (S/M Code No. 09-982-248-4FE)

•If requiring information about the CD mechanism, see Service Manual of 4ZG-1, S/M Code No. 09-983-249-30T.

SPECIFICATIONS

<FM Tuner section>

Tuning range 87.5 MHz to 108 MHz
Usable sensitivity (IHF) 13.2 dBf
Antenna terminals 75 ohms (unbalanced)

<MW Tuner section>

Tuning range 531 kHz to 1602 kHz (9 kHz step)
 530 kHz to 1710 kHz (10 kHz step)
Usable sensitivity 350 μ V/m
Antenna Loop antenna

<LW Tuner section>

Tuning range 144 kHz to 290 kHz
Usable sensitivity 1400 μ V/m
Antenna Loop antenna

<Amplifier section>

Power output Rated : 30 W + 30 W (6 ohms, T.H.D.1%, 1kHz/DIN 45500)
 Reference : 37 W + 37 W (6 ohms, T.H.D. 10 %, 1 kHz/DIN 45324)
Total harmonic distortion DIN MUSIC POWER : 80 W + 80 W
 0.1 % (15 W, 1 kHz, 6 ohms, DIN AUDIO)
Inputs VIDEO/AUX : 500 mV
Outputs SPEAKERS: accept speakers of 6 ohms or more
 SURROUND SPEAKERS : accept speakers of 8 ohms to 16 ohms
 SUPER WOOFERS : 1.3V
 PHONES (stereo jack) : accepts headphones of 32 ohms or more

<Cassette deck section>

Track format 4 tracks, 2 channels stereo
Frequency response 50 Hz - 10000 Hz
Recording system AC bias
Heads Deck 1 : Playback head x 1
 Deck 2 : Recording/playback/erase head x 1

<Compact disc player section>

Laser Semiconductor laser ($\lambda = 780$ nm)
D-A converter 1 bit dual
Signal-to-noise ratio 85 dB (1 kHz, 0 dB)
Harmonic distortion 0.05% (1 kHz, 0 dB)
Wow and flutter Unmeasurable

<Speaker system SX-NS302>

Cabinet type 2 way, bass reflex (magnetic shielded type)
Speakers Woofer : 120 mm cone type
 Tweeter : 10 mm ceramic type
Impedance 6 ohms
Output sound pressure level 87 dB/W/m
Dimensions (W x H x D) 235 x 324 x 250 mm
Weight 3.2 kg

<Speaker system SX-NS303> (307EZ only)

Cabinet type 3 way, bass reflex (magnetic shielded type)
Speakers Woofer : 120 mm cone type
 Tweeter : 30 mm ceramic type
 Super Tweeter : 30 mm ceramic type
Impedance 6 ohms
Output sound pressure level 87 dB/W/m
Dimensions (W x H x D) 235 x 324 x 250 mm
Weight 3.2 kg

<General>

Power requirements 230 V AC, 50Hz
Power consumption 110W
Dimensions of main unit (W x H x D) 260 x 330 x 346 mm
Weight of main unit 6.0 kg

• Design and specifications are subject to change without notice.

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs laser. Therefore, be sure to follow carefully the instructions below when servicing.

WARNING!!

WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION. BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 30cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.



- Caution: Invisible laser radiation when open and interlocks defeated avoid exposure to beam.
- Advarsel: Usynlig laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

VAROITUS!

Laiteen Käyttäminen muulla kuin tässä käyttöohjeessa mainituilla tavalla saattaa altistaa käyttäjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.

WARNING!

Om apparaten används på annat sätt än vad som specificeras i denna bruksanvisning, kan användaren utsättas för osynlig laserstråling, som överskrider gränsen för laserklass 1.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

ATTENTION

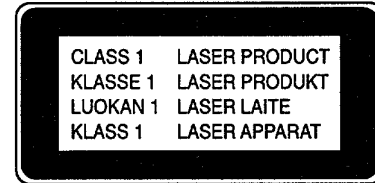
L'utilisation de commandes, réglages ou procédures autres que ceux spécifiés peut entraîner une dangereuse exposition aux radiations.

ADVARSEL!

Usynlig laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

This Compact Disc player is classified as a CLASS 1 LASER product.

The CLASS 1 LASER PRODUCT label is located on the rear exterior.

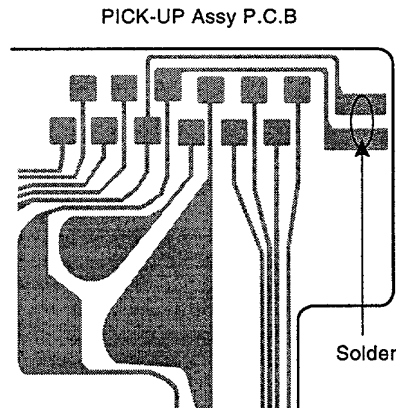


Precaution to replace Optical block

(KSS – 213F)

Body or clothes electrostatic potential could ruin laser diode in the optical block. Be sure ground body and workbench, and use care the clothes do not touch the diode.

- 1) After the connection, remove solder shown in right figure.



NOTE ON BEFORE STARTING REPAIR

1. Forced discharge of electrolytic capacitor of power supply block

When repair is going to be attempted in the set that uses relay circuit in the power supply block, electric potential is kept charged across the electrolytic capacitors (C101, 102) even though AC power cord is removed. If repair is attempted in this condition, the secondary defect can occur.

In order to prevent the secondary trouble, perform the following measures before starting repair work.

Discharge procedure

- ① Remove the AC power cord.
- ② Connect a discharging resistor at an end of lead wire that has clips at both ends. Connector the other end of the lead wire to metal chassis.
- ③ Contact the other end of the discharging resistor to the positive (+) side (+VH) of C101. (For two seconds)
- ④ Contact the same end of the discharging resistor as step ③ to the negative (-) side (-VH) of C102 in the same way. (For two seconds)
- ⑤ Check that voltage across C101 and C102 has decreased 1 V or less using a multimeter or an oscilloscope.

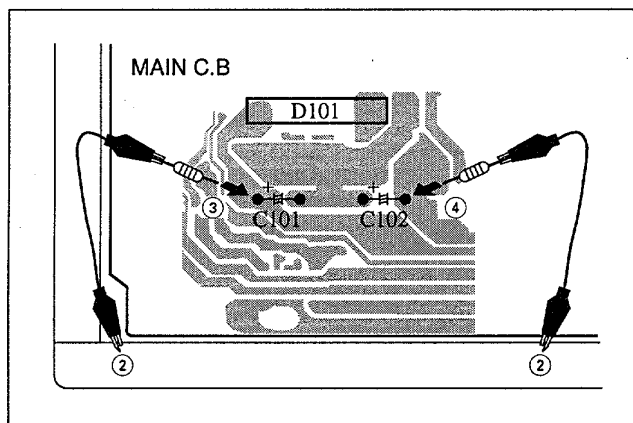


Fig-1

Select a discharging resistor referring to the following table.

Charging voltage (V) (C101, 102)	Discharging resistor (Ω)	Rated power (W)	Parts number
25-48	100	3	87-A00-247-090
49-140	220	5	87-A00-232-090

Note: The reference numbers (C101, C102) of the electrolytic capacitors can change depending on the models. Be sure to check the reference numbers of the charging capacitor on schematic diagram before starting the discharging work.

2. Check items before exchanging the MICROCOMPUTER

Be sure to check the following items before exchanging the MICROCOMPUTER. Exchange the MICROCOMPUTER after confirming that the MICROCOMPUTER is surely defective.

2-1. Regarding the HOLD terminal of the MICROCOMPUTER

When the HOLD terminal (INPUT) of the MICROCOMPUTER is "H", the MICROCOMPUTER is judged to be operating correctly. When this terminal is "L", the main power cannot be turned on. Therefore, be sure to check the terminal voltage of the HOLD terminal before exchange.

When the MICROCOMPUTER is not defective, the HOLD terminal can also go "L" when the POWER AMPLIFIER has any abnormalities that triggers the abnormality detection circuit on the MAIN C. B. that sets the HOLD terminal to "L".

• Good or no good judgment of the MICROCOMPUTER

- ① Turn on the AC main power.
- ② Confirm that the main power is turned on and the HOLD terminal of the MICROCOMPUTER keeps the "H" level or not.
- ③ When the HOLD terminal is "L" level, the abnormality detection circuit is judged to be working correctly and the MICROCOMPUTER is judged to be good.

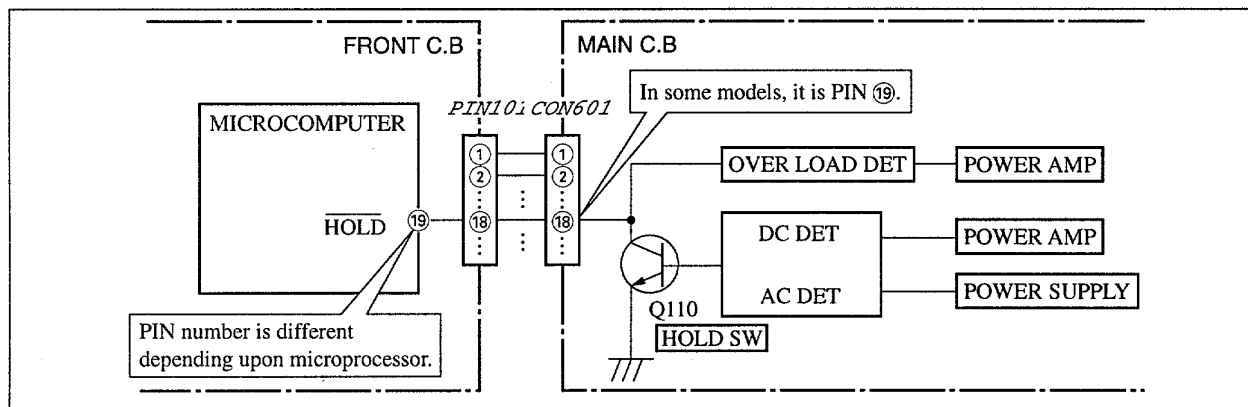


Fig-2-1

In such a case, check also if the POWER AMPLIFIER circuit or power supply circuit has any abnormalities or not.

2-2. Regarding reset

There are cases that the machine does not work correctly because the MICROCOMPUTER is not reset even though the AC power cord is re-inserted, or the software reset (pressing the STOP key + POWER key) is performed.

When the above described phenomenon occurs, it can lead to wrong judgment as if the MICROCOMPUTER is defective and to exchange the MICROCOMPUTER. In such a case, perform the forced-reset by the following procedure and check good or no good of the MICROCOMPUTER.

- ① Remove the AC power cord.

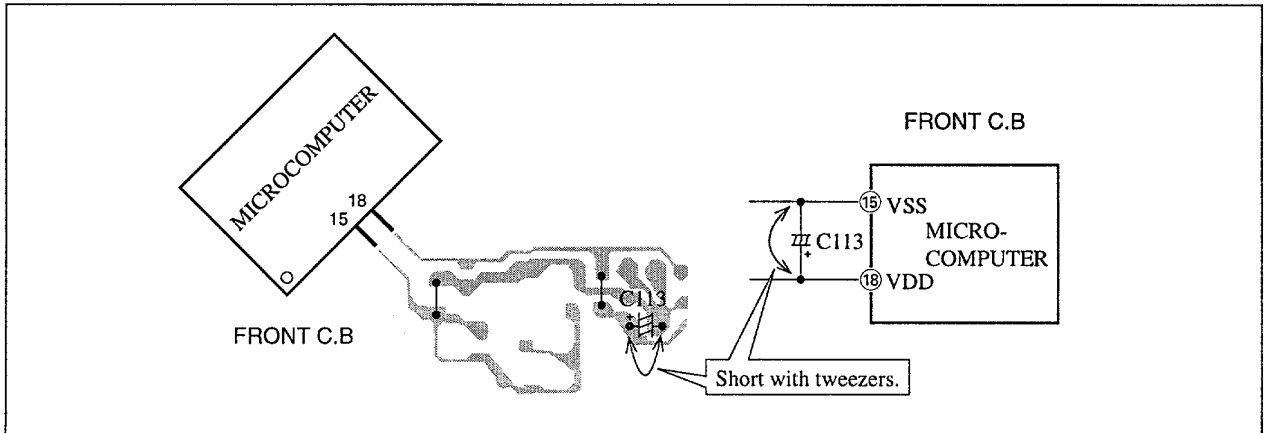


Fig-2-2

- ② Short the both ends of the electrolytic capacitor C113 that is connected to VDD of the MICROCOMPUTER with tweezers.
- ③ Connect the AC power cord again. If the MICROCOMPUTER returns to the normal operation, the MICROCOMPUTER is good.

Note: The reference number or MICROCOMPUTER pin number of transistor (Q110) and electrolytic capacitor (C113) can change depending on the models. Be sure to check the reference numbers on schematic diagram before starting the discharging work.

2-3. Confirmation of soldering state of MICROCOMPUTER

Check the soldering state of the MICROCOMPUTER in addition to the above described procedures. Be sure to exchange the MICROCOMPUTER after surely confirming that the trouble is not caused by poor soldering but the MICROCOMPUTER itself.

ELECTRICAL MAIN PARTS LIST

If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

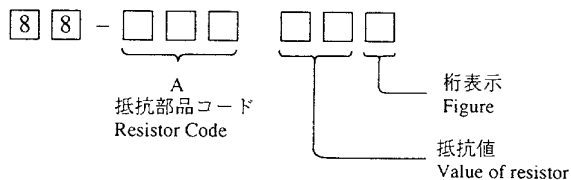
REF. NO.	PART NO.	KANRI NO.	DESCRIPTION	REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
IC				C207	87-010-546-080		CAP, ELECT 0.33-50V
				C208	87-010-546-080		CAP, ELECT 0.33-50V
	87-020-454-010	IC, DN6851		C209	87-018-133-080		CAPACITOR, CER 4700P-16V
	87-A20-083-010	IC, BA3835S		C210	87-018-133-080		CAPACITOR, CER 4700P-16V
	88-NF8-635-010	IC, UPD780228GF-035-3		C211	87-010-404-080		CAP, ELECT 4.7-50V
	87-NF8-614-010	IC, SPS-442-1-W					
	87-017-889-010	IC, NJM4558LD		C212	87-010-404-080		CAP, ELECT 4.7-50V
				C213	87-010-260-080		CAP, ELECT 47-25V
	87-A20-715-010	IC, M62439SP		C214	87-010-260-080		CAP, ELECT 47-25V
	87-070-127-110	IC, LC72131 D		C215	87-018-131-080		CAP, TC-U 1000P-50K
	87-A20-913-010	IC, LA1837NL		C216	87-018-131-080		CAP, TC-U 1000P-50K
	87-A20-502-010	IC, BU1920<307EZ>					
				C219	87-010-544-080		CAP, ELECT 0.1-50V
				C220	87-010-544-080		CAP, ELECT 0.1-50V
TRANSISTOR				C221	87-018-211-080		CAP, CER 0.01-50
				C222	87-018-211-080		CAP, CER 0.01-50
	89-213-702-010	TR, 2SB1370 (1.8W)		C223	87-018-134-080		CAP, TC-U 0.01-16
	89-333-317-880	TR, 2SC3331 (0.5W)					
	87-A30-198-080	TR, KTC3199GR		C224	87-018-134-080		CAP, TC-U 0.01-16
	87-A30-196-080	TR, 2SC4115SRS		C229	87-018-123-080		CAP, CER 220P-50V
	89-113-187-880	TR, 2SA1318 (0.5W)		C230	87-018-123-080		CAP, CER 220P-50V
				C234	87-018-134-080		CAP, TC-U 0.01-16
	87-A30-197-080	TR, KTA1267GR		C235	87-018-209-080		CAP, CER 0.1-50V
	87-026-219-080	TR, DTA144ES (0.3W)					
	87-A30-087-080	C-PET, 2SK2158		C236	87-018-209-080		CAP, CER 0.1-50V
	87-A30-074-080	C-TR, RT1P 141C		C255	87-018-115-080		CAP, CER 47P-50V
	87-A30-071-080	C-TR, RT1N 144C		C256	87-018-115-080		CAP, CER 47P-50V
				C257	87-018-119-080		CAP, CER 100P-50V
	87-A30-073-080	C-TR, RT1N 141C		C258	87-018-119-080		CAP, CER 100P-50V
	87-026-263-080	C-TR, RN1410					
	87-A30-076-080	C-TR, 2SC3052F		C301	87-018-131-080		CAP, CER 1000P-50V
	87-A30-190-080	TR, CC5551		C302	87-018-131-080		CAP, CER 1000P-50V
	87-A30-215-010	TR, 2SD2025		C303	87-018-131-080		CAP, CER 1000P-50V
				C304	87-018-131-080		CAP, CER 1000P-50V
	87-A30-214-010	TR, 2SB1344		C307	87-010-263-080		CAP, ELECT 100-10V
	87-A30-159-080	C-TR, KTA1298Y					
	87-A30-091-080	FET, 2SJ460		C308	87-010-263-080		CAP, ELECT 100-10V
	87-A30-090-080	FET, 2SK2541		C309	87-018-115-080		CAP, CER 47P-50V
	89-112-964-580	TR, 2SA1296Y 0.75W 120M		C310	87-018-115-080		CAP, CER 47P-50V
				C315	87-010-374-080		CAP, ELECT 47-10V
	87-026-218-080	TR, DTC144ES (0.2W)		C317	87-010-546-080		CAP, ELECT 0.33-50V
	87-026-214-080	TR, DTA114YS (0.3W)					
	89-305-352-380	TR, 2SC535 (B/C)		C318	87-010-546-080		CAP, ELECT 0.33-50V
	87-A30-164-080	TR, CSC2001K		C320	87-018-209-080		CAP, TC-U 0.1-50 FZ
	87-A30-092-080	FET, 2SK439E/F		C321	87-018-209-080		CAP, TC-U 0.1-50 FZ
				C360	87-010-401-080		CAP, ELECT 1-50V
	87-026-269-080	TR, DTA114ES		C361	87-010-374-080		CAP, ELECT 47-10V
DIODE				C401	87-010-401-080		CAP, ELECT 1-50V
				C402	87-010-401-080		CAP, ELECT 1-50V
	87-070-274-080	DIODE, 1N4003 SEM		C403	87-018-118-080		CAP, TC-U 82P-50 B
	87-070-178-090	DIODE, 1N5402-BD54		C404	87-018-118-080		CAP, TC-U 82P-50 B
	87-A40-435-080	ZENER, MTZJ30D		C411	87-010-405-080		CAP, ELECT 10-50V
	87-A40-470-080	DIODE, 1SS254					
	87-A40-345-080	ZENER, MTZJ10C		C412	87-010-405-080		CAP, ELECT 10-50V
				C452	87-010-382-080		CAP, ELECT 22-25V
	87-017-932-080	ZENER, MTJ6.2B		C458	87-018-131-080		CAP, CER 1000P-50V
	87-A40-466-080	ZENER, MTZJ2.7A		C459	87-018-128-080		CAP, CERA-SOL SS 560P
	87-A40-234-080	ZENER, MTZJ5.6A		C461	87-018-126-080		CAP, TC-U 390P-50 B
				C462	87-018-126-080		CAP, TC-U 390P-50 B
				C601	87-018-195-080		CAP, CER 1200P-16V
				C602	87-018-195-080		CAP, CER 1200P-16V
				C611	87-010-545-080		CAP, ELECT 0.22-50V
				C612	87-010-545-080		CAP, ELECT 0.22-50V
				C613	87-010-545-080		CAP, ELECT 0.22-50V
				C614	87-010-545-080		CAP, ELECT 0.22-50V
				C615	87-018-104-080		CAP, TC-U 10P-50 SL
				C616	87-010-408-080		CAP, ELECT 47-50V
				C617	87-010-408-080		CAP, ELECT 47-50V
				C701	87-010-404-080		CAP, ELECT 4.7-50V
				C702	87-018-134-080		CAPACITOR, TC-U 0.01-16
				C703	87-018-134-080		CAPACITOR, TC-U 0.01-16
				C704	87-018-131-080		CAP, CER 1000P-50V
				C705	87-018-131-080		CAP, CER 1000P-50V
				C706	87-018-131-080		CAP, CER 1000P-50V
				C707	87-010-112-080		CAP, ELECT 100-16V
				C709	87-010-248-080		CAP, ELECT 220-10V
				C710	87-010-112-080		CAP, ELECT 100-16V
				C712	87-018-149-080		CAP, TC-U 15P-50 CH
MAIN C.B							
C101	87-010-917-090	CAP, E 3300-50 M SMG					
C104	87-A10-627-090	CAP, E 2200-50 M SMG					
C105	87-018-127-080	CAP, CER 470P-50V					
C106	87-010-408-080	CAP, ELECT 47-50V					
C107	87-010-384-080	CAP, ELECT 100-25V					
C108	87-010-381-080	CAP, ELECT 330-16V					
C109	87-010-383-080	CAP, ELECT 33-25V					
C110	87-010-383-080	CAP, ELECT 33-25V					
C111	87-010-430-080	CAP, ELECT 100-63					
C112	87-010-263-080	CAP, ELECT 100-10V					
C113	87-010-403-080	CAP, ELECT 3.3-50V					
C114	87-010-374-080	CAP, ELECT 47-10V					
C122	87-010-383-080	CAP, ELECT 33-25V					
C123	87-010-383-080	CAP, ELECT 33-25V					
C124	87-018-134-080	CAPACITOR, TC-U 0.01-16					
C130	87-018-131-080	CAP, CER 1000P-50V					

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION	REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C713	87-018-149-080		CAP,TC-U 15P-50 CH	L771	87-A50-266-010		COIL, FM DET-2N(TOK)
C714	87-010-112-080		CAP, ELECT 100-16V	L772	87-A90-733-010		FLTR,PCFAZH-450 (TOK)
C715	87-018-119-080		CAP, CER 100P-50V	L801	87-005-847-080		COIL, 2.2UH(CECS)
C733	87-018-195-080		CAP, CER 1200P-16V	L941	87-A50-020-010		COIL, ANT LW(COI)
C746	87-018-134-080		CAPACITOR,TC-U 0.01-16	L942	87-A50-019-010		COIL,OSC LW(COI)
C752	87-018-143-080		CAP,TC-U 4.7P-50 CH	L981	87-NF4-651-010		COIL, AM PACK2N(TOM)
C753	87-010-408-080		CAP, ELECT 47-50V	R223	87-A00-258-080		RES,M/F 0.22-1W J
C756	87-018-134-080		CAPACITOR,TC-U 0.01-16	R224	87-A00-258-080		RES,M/F 0.22-1W J
C757	87-018-134-080		CAPACITOR,TC-U 0.01-16	R249	87-A00-258-080		RES,M/F 0.22-1W J
C758	87-010-112-080		CAP, ELECT 100-16V	R250	87-A00-258-080		RES,M/F 0.22-1W J
C759	87-018-134-080		CAPACITOR,TC-U 0.01-16	SFR451	87-A90-432-080		SFR,30K H NVZ6TLTA
C761	87-010-404-080		CAP, ELECT 4.7-50V	SFR452	87-A90-432-080		SFR,30K H NVZ6TLTA
C762	87-010-400-080		CAP, ELECT 0.47-50V	TC942	87-011-221-080		CAP, TRIMMER 30P
C763	87-010-401-080		CAP, ELECT 1-50V	W101	83-NE2-618-110		F-CABEL,5P-2.5
C764	87-010-401-080		CAP, ELECT 1-50V	X701	87-A70-061-010		VIB,XTAL 4.500MHZ CSA-309
C765	87-018-115-080		CAP, CER 47P-50V	X851	89-KT1-608-010		X,TAL,4.332MHZ<307EZ>
C766	87-010-407-080		CAP, ELECT 33-50V				
C768	87-018-208-080		CAP 0.047-50F				
C769	87-010-403-080		CAP, ELECT 3.3-50V	FRONT C.B			
C770	87-018-134-080		CAPACITOR,TC-U 0.01-16				
C771	87-010-406-080		CAP, ELECT 22-50		88-911-091-110		FF-CABLE,11P 1.25
C774	87-010-405-080		CAP, ELECT 10-50V		88-913-321-110		FF-CABLE,13P 1.25 320MM
C783	87-018-199-080		CAP, CER 3300P	C36	88-906-251-110		FF-CABLE,6P 1.25
C784	87-018-199-080		CAP, CER 3300P	C37	87-010-322-080		C-CAP,S 100P-50 CH
C785	87-010-405-080		CAP, ELECT 10-50V		87-010-322-080		C-CAP,S 100P-50 CH
C786	87-010-405-080		CAP, ELECT 10-50V	C38	87-010-322-080		C-CAP,S 100P-50 CH
C787	87-018-196-080		CAP, CER 1500P-16V	C39	87-010-322-080		C-CAP,S 100P-50 CH
C788	87-018-196-080		CAP, CER 1500P-16V	C40	87-010-322-080		C-CAP,S 100P-50 CH
C789	87-010-403-080		CAP, ELECT 3.3-50V	C41	87-010-322-080		C-CAP,S 100P-50 CH
C790	87-010-403-080		CAP, ELECT 3.3-50V	C42	87-010-322-080		C-CAP,S 100P-50 CH
C801	87-018-134-080		CAP,TC-U 0.01-16	C43	87-010-322-080		C-CAP,S 100P-50 CH
C802	87-018-134-080		CAPA,TC-U 0.01-16	C44	87-010-322-080		C-CAP,S 100P-50 CH
C803	87-018-134-080		CAPACITOR,TC-U 0.01-16	C45	87-010-322-080		C-CAP,S 100P-50 CH
C804	87-018-134-080		CAPACITOR,TC-U 0.01-16	C46	87-012-156-080		C-CAP,S 220P-50 CH
C808	87-018-134-080		CAPACITOR,TC-U 0.01-16	C150	87-010-196-080		CHIP CAPACITOR,0.1-25
C809	87-018-134-080		CAPACITOR,TC-U 0.01-16	C151	87-010-196-080		CHIP CAPACITOR,0.1-25
C810	87-018-134-080		CAPACITOR,TC-U 0.01-16	C152	87-010-196-080		CHIP CAPACITOR,0.1-25
C811	87-018-134-080		CAPACITOR,TC-U 0.01-16	C153	87-010-196-080		CHIP CAPACITOR,0.1-25
C812	87-010-408-080		CAP, ELECT 47-50V	C154	87-010-196-080		CHIP CAPACITOR,0.1-25
C813	87-018-131-080		CAP, CER 1000P-50V	C201	87-018-205-080		CAP, CBRA-SOL 0.022
C851	87-018-123-080		CAP, CER 220P-50V<307EZ>	C202	87-010-198-080		CAP, CHIP 0.022
C852	87-018-123-080		CAP, CER 220P-50V<307EZ>	C203	87-010-198-080		CAP, CHIP 0.022
C853	87-018-127-080		CAP, CER 470P-50V<307EZ>	C204	87-012-140-080		CAP 470P
C855	87-010-405-080		CAP, ELECT 10-50V<307EZ>	C205	87-010-316-080		C-CAP,S 33P-50 CH
C856	87-010-405-080		CAP, ELECT 10-50V<307EZ>	C206	87-010-318-080		C-CAP,S 47P-50 CH
C857	87-018-134-080		CAPACITOR,TC-U 0.01-16<307EZ>	C207	87-010-312-080		C-CAP,S 15P-50 CH
C858	87-018-109-080		CAP, CER 22P-50V<307EZ>	C208	87-010-196-080		CHIP CAPACITOR,0.1-25
C859	87-018-109-080		CAP, CER 22P-50V<307EZ>	C209	87-010-494-040		CAP,E 1-50 GAS
C860	87-018-134-080		CAP,TC-U 0.01-16<307EZ>	C210	87-A10-189-040		CAP,E 220-10
C921	87-018-134-080		CAP,TC-U 0.01-16	C211	87-010-194-080		CAP, CHIP 0.047
C922	87-018-099-080		CAP CERA 3.9P-50	C212	87-010-555-040		CAP,E 100-10 GAS
C923	87-018-102-080		CAP,TC-U 6.8P-50 SL	C213	87-010-196-080		CHIP CAPACITOR,0.1-25
C924	87-014-049-080		CAP,PP 470P-100 J	C214	87-010-405-040		CAP,E 10-50
C937	87-018-134-080		CAP,TC-U 0.01-16	C215	87-012-156-080		C-CAP,S 220P-50 CH
C938	87-018-134-080		CAP,TC-U 0.01-16	C216	87-012-156-080		C-CAP,S 220P-50 CH
CF801	87-008-423-010		CERAMIC FLTR,SPE10.7	C217	87-010-197-080		CAP, CHIP 0.01 DM
CF802	82-785-747-010		CF MS2 GHY R	C218	87-010-555-040		CAP,E 100-10 GAS
CON602	87-099-194-010		CONN,6P 6216V	C250	87-010-196-080		CHIP CAPACITOR,0.1-25
FB311	87-008-372-080		FILTER, EMI BL OIRNI	C307	87-015-686-040		CAP,E 22-25 M 7L SRA
FB606	87-008-372-080		FILTER, EMI BL OIRNI	C354	87-010-196-080		CHIP CAPACITOR,0.1-25
FFE801	A8-6ZA-195-130		6ZA-1 YFEENM	C355	87-010-196-080		CHIP CAPACITOR,0.1-25
J201	87-A60-488-010		JACK,DIA6.3 BLK ST W/SW KM16AT	C401	87-010-405-040		CAP,E 10-50
J202	87-033-240-010		TERMINAL,SP 4P32SV1-05	C402	87-010-405-040		CAP,E 10-50
J203	87-A60-547-010		JACK,PIN 4P R/W/B<EXCEPT K>	C404	87-010-194-080		CAP, CHIP 0.047
J601	87-A60-398-010		JACK,PIN 2P R/W HSP-242V24	C405	87-010-246-040		CAP,E 47-35 SME
J801	87-033-230-010		TERMINAL,ANT AJ-2016	C406	87-010-197-080		CAP, CHIP 0.01 DM
L201	87-003-383-010		COIL,1UH-S	CON102	87-099-015-010		CONN,13P 6216V
L202	87-003-383-010		COIL,1UH-S	CON301	87-099-013-010		CONN,11P 6216 V
L451	87-007-342-010		COIL,OSC 85K BIAS	FL401	88-NF8-603-010		FL,SVA-11MM12
L701	87-005-847-080		COIL,2.2UH(CECS)	LED208	87-070-281-080		LED,SLZ736A-25-S-T1

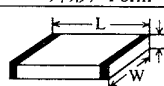
REF. NO.	PART NO.	KANRI NO.	DESCRIPTION	REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
LED209	87-070-281-080		LED,SLZ736A-25-S-T1				
LED210	87-070-281-080		LED,SLZ736A-25-S-T1				
LED211	87-070-281-080		LED,SLZ736A-25-S-T1				
LED213	87-070-281-080		LED,SLZ736A-25-S-T1				
S401	87-A90-680-080		SW,TACT KSM0612BTS				
S402	87-A90-680-080		SW,TACT KSM0612BTS				
S403	87-A90-680-080		SW,TACT KSM0612BTS				
S404	87-A90-680-080		SW,TACT KSM0612BTS				
S405	87-A90-680-080		SW,TACT KSM0612BTS				
S406	87-A90-680-080		SW,TACT KSM0612BTS				
S407	87-A90-680-080		SW,TACT KSM0612BTS				
S408	87-A90-680-080		SW,TACT KSM0612BTS				
S409	87-A90-680-080		SW,TACT KSM0612BTS				
S410	87-A90-680-080		SW,TACT KSM0612BTS				
S411	87-A90-680-080		SW,TACT KSM0612BTS				
S412	87-A90-680-080		SW,TACT KSM0612BTS				
S413	87-A90-680-080		SW,TACT KSM0612BTS				
S414	87-A90-680-080		SW,TACT KSM0612BTS				
S415	87-A90-680-080		SW,TACT KSM0612BTS				
S416	87-A90-680-080		SW,TACT KSM0612BTS				
S417	87-A90-680-080		SW,TACT KSM0612BTS				
S418	87-A90-680-080		SW,TACT KSM0612BTS				
S419	87-A90-680-080		SW,TACT KSM0612BTS				
S420	87-A90-680-080		SW,TACT KSM0612BTS				
S421	87-A90-680-080		SW,TACT KSM0612BTS				
S423	87-A90-680-080		SW,TACT KSM0612BTS				
S424	87-A90-680-080		SW,TACT KSM0612BTS<307EZ>				
S425	87-A90-680-080		SW,TACT KSM0612BTS				
S426	87-A90-680-080		SW,TACT KSM0612BTS<307EZ>				
S427	87-A90-680-080		SW,TACT KSM0612BTS<307EZ>				
SW201	87-A90-535-010		SW,RTRY EC16B24304				
SW202	88-NF8-615-010		SW,RTRY EC16B24204L=25				
X201	87-A70-075-080		VIB,CER 4.19MHZ CRHF				
				AC1 C.B			
				△ F101	87-035-223-010		FUSE,1.25AT
				△ FC1	87-A90-505-080		FUSE CLAMP,TP00351-51
				△ FC2	87-A90-505-080		FUSE CLAMP,TP00351-51
				△ PT101	88-NF8-608-010		PT,8NF-BE
				△ T1	87-A60-317-010		TERMINAL, 1P MSC
				△ T2	87-A60-317-010		TERMINAL, 1P MSC
				AC2 C.B			
				△ PR001	87-026-681-080		PROTECTOR,5A 60V 491
				△ PR002	87-026-681-080		PROTECTOR,5A 60V 491
				DECK C.B			
				CON105	87-099-753-019		CONN,11P H 9604
				CON301	86-ZM3-604-219		CON ASSY,3P-PB
				CON351	86-ZM3-605-119		CON ASSY,8P-RPB
				SFR1	87-024-581-089		SFR,3.3K DIA 6H
				SOL1	82-ZM1-618-410		SOL ASSY,27
				SOL2	82-ZM1-618-410		SOL ASSY,27
				SW1	87-A90-248-010		SW,MICRO ESE11SH2CX0
				SW2	87-A90-248-010		SW,MICRO ESE11SH2CX0
				SW3	87-A90-248-010		SW,MICRO ESE11SH2CX0
				SW4	87-A90-248-010		SW,MICRO ESE11SH2CX0
				SW5	87-A90-248-010		SW,MICRO ESE11SH2CX0
				W1	82-ZM3-601-019		RBN-CORD,4P-75

○ チップ抵抗部品コード / CHIP RESISTOR PART CODE

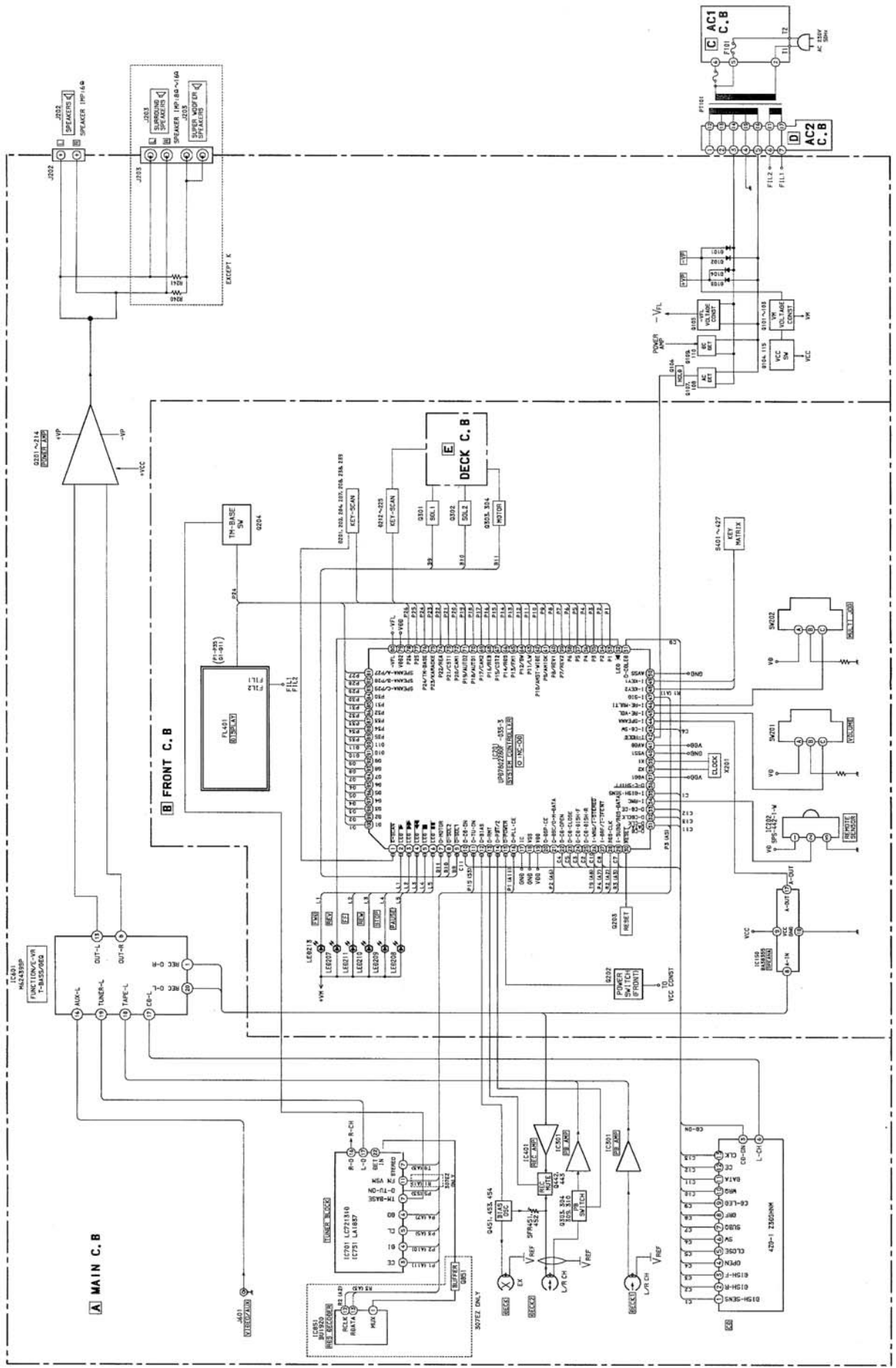
チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding



チップ抵抗
Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法 / Dimensions (mm)			抵抗コード : A Resistor Code: A	
				外形 / Form	L	W		t
1/16W	1608	±5%	CJ		1.6	0.8	0.45	108
1/10W	2125	±5%	CJ		2	1.25	0.45	118
1/8W	3216	±5%	CJ		3.2	1.6	0.55	128

BLOCK DIAGRAM (MAIN / FRONT)



1

2

3

4

5

6

7

8

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10

11

12

13

14

A

B

C

D

E

F

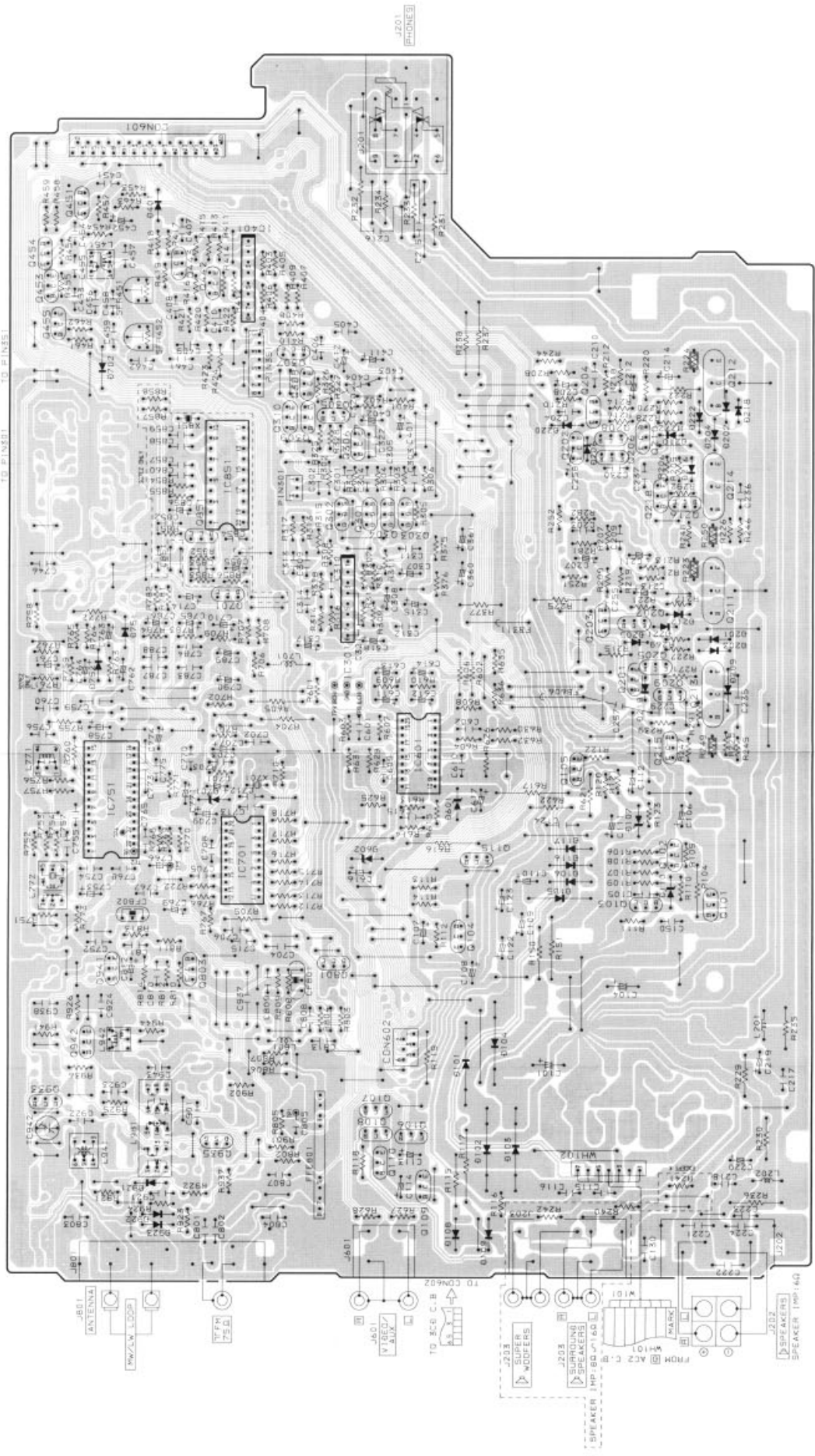
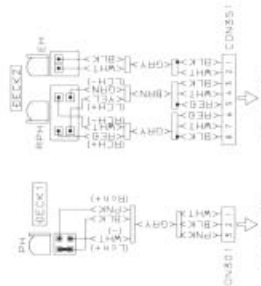
G

H

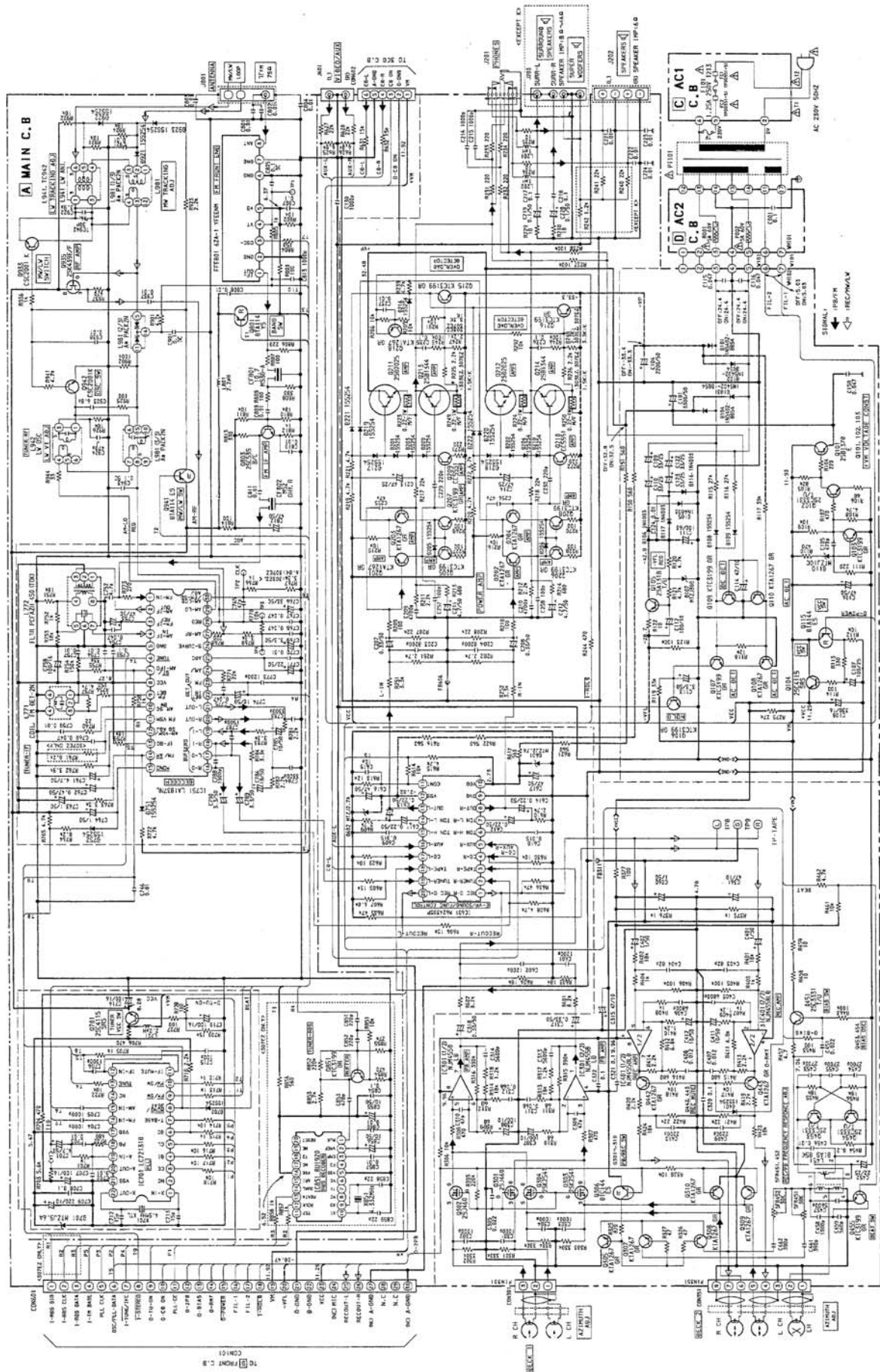
I

J

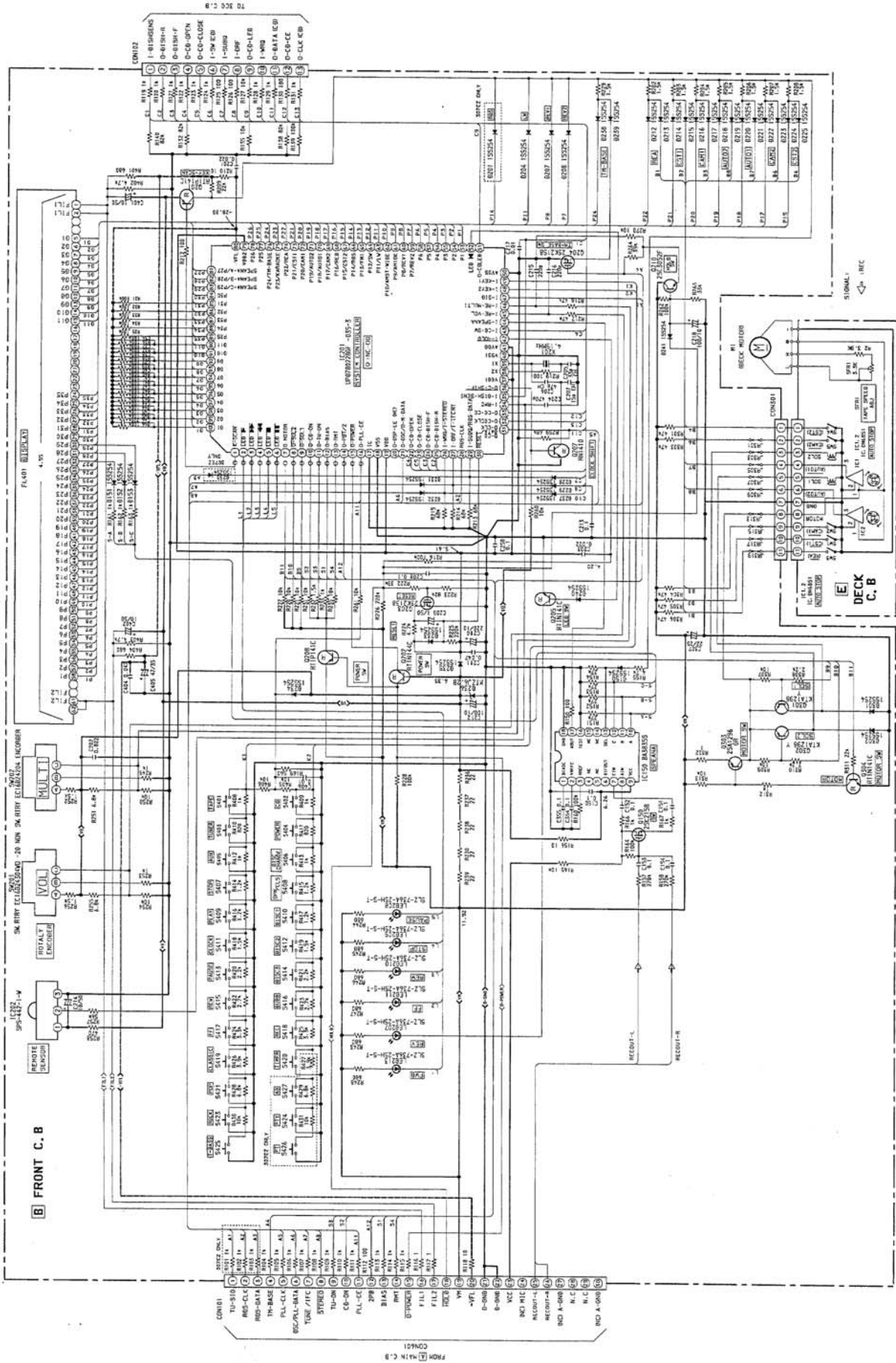
A MAIN C.B.



SCHEMATIC DIAGRAM - 1 (MAIN)

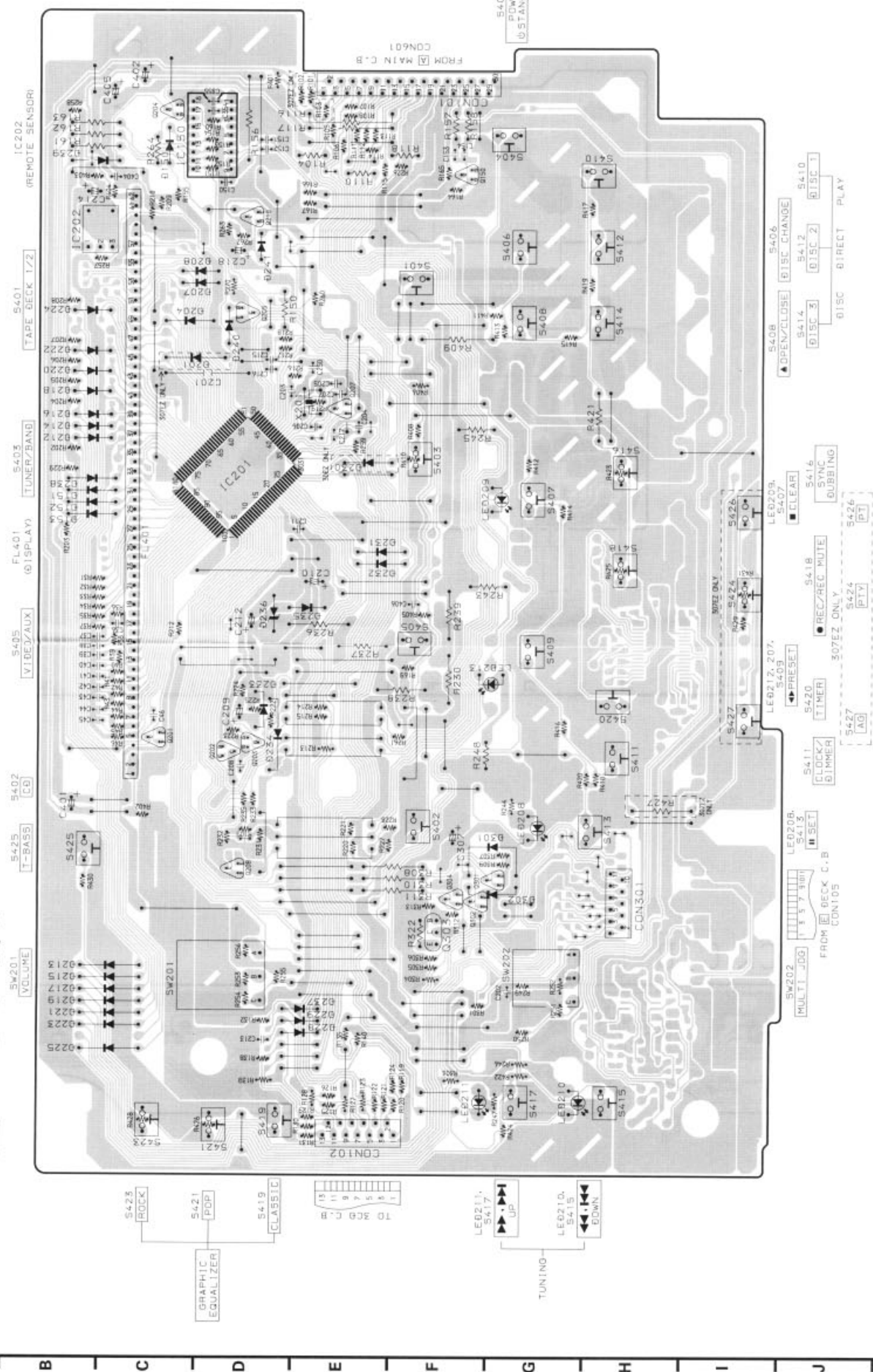


SCHEMATIC DIAGRAM - 2 (FRONT)

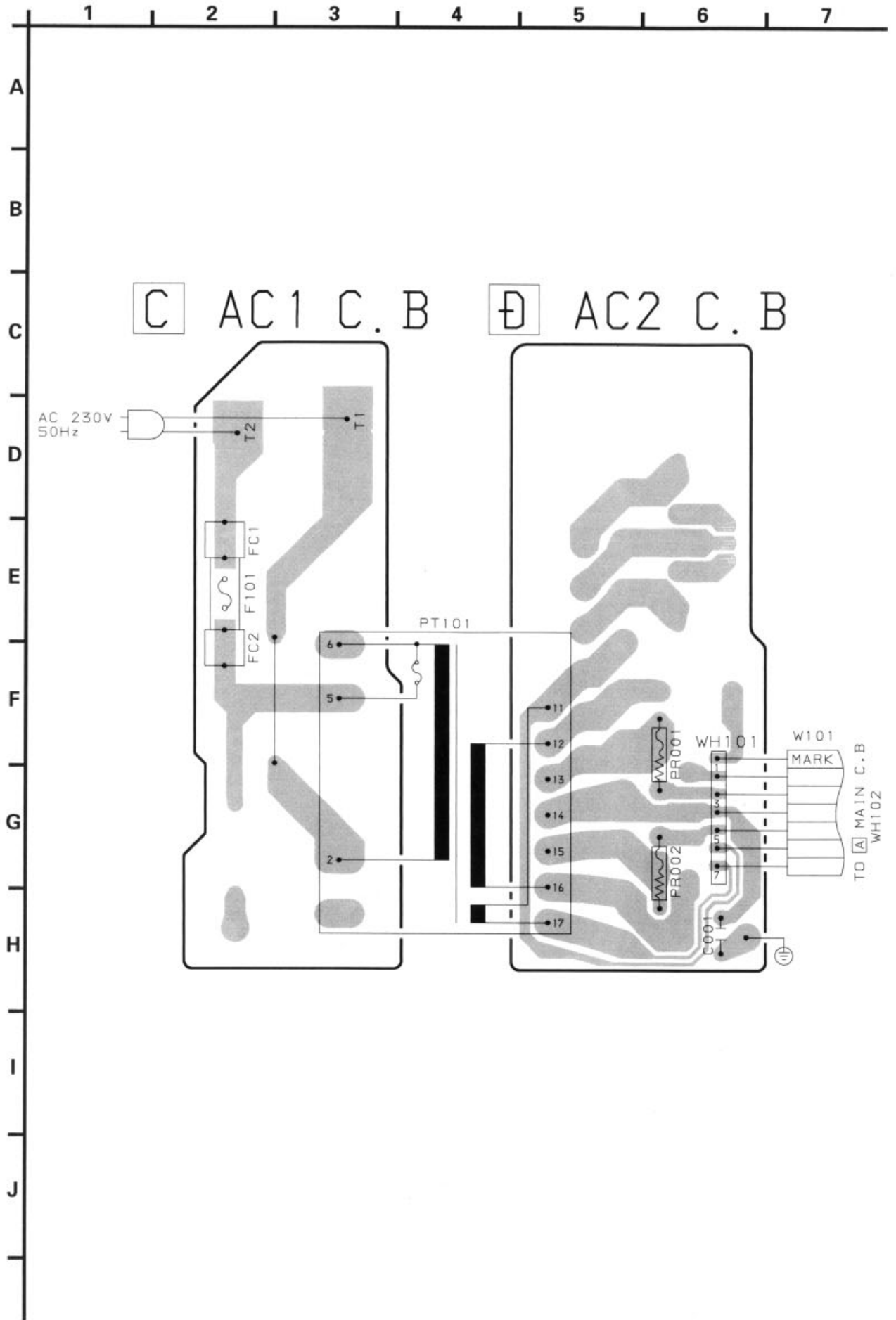


1 2 3 4 5 6 7 8 9 10 11 12 13 14

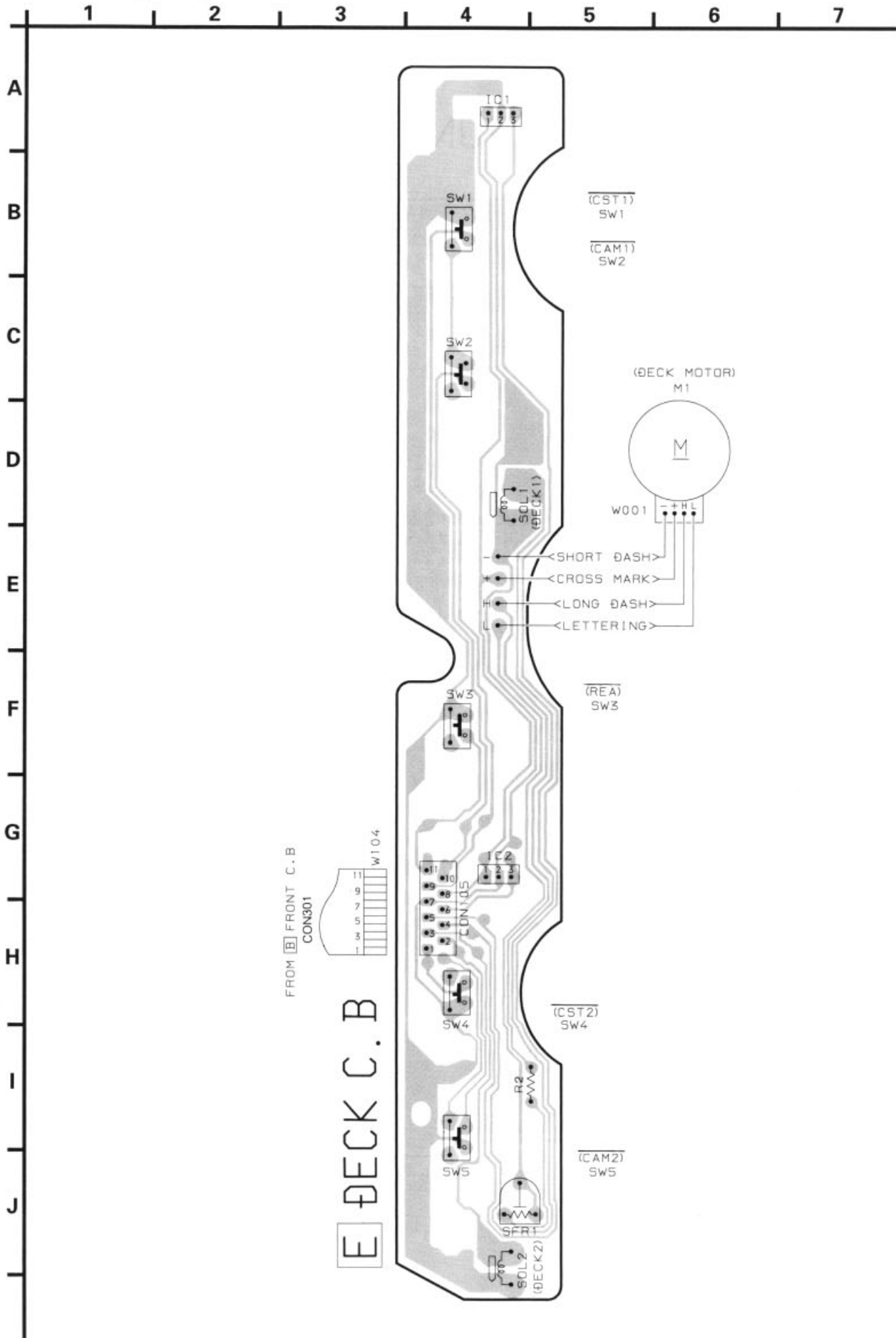
B FRONT C.B



WIRING - 3 (AC)



WIRING - 4 (DECK)



FROM [B] FRONT C. B
CON301

E DECK C. B

TRANSISTOR ILLUSTRATION



E C B

C2C2001K



E C B

2SC535
CC5551



B C E

2SB1370



E C B

DTC144ES
DTA114YS
DTA114ES
DTA144ES



B C E

2SA1296



B C E

2SD2025
2SB1344



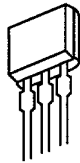
E C B

2SC3331
2SA1318



E C B

KTA1267
KTC3199



B C E

2SC4115S



S D G

2SJ460



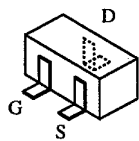
S D G

2SK2541

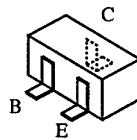


G S D

2SK439



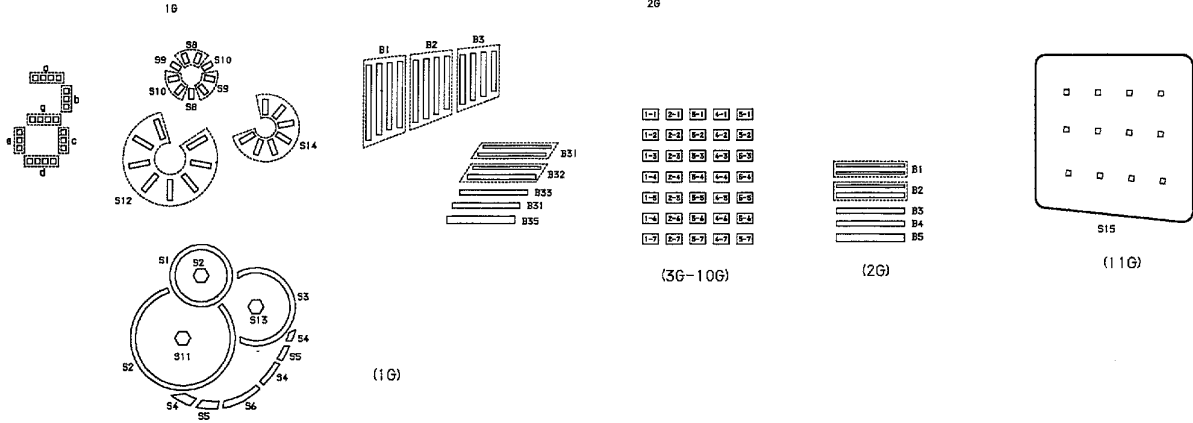
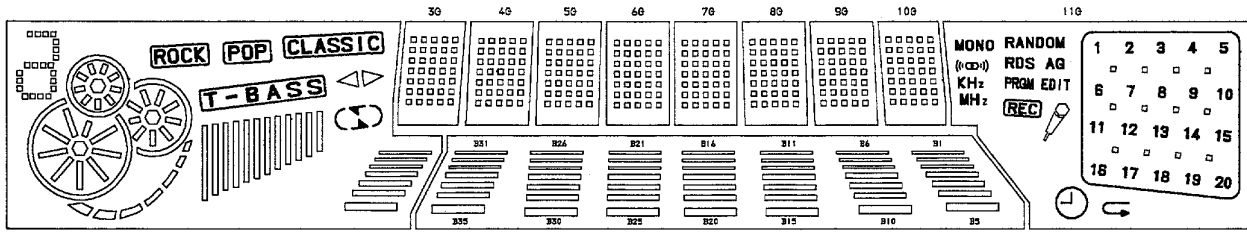
2SK2158



RN1410 RT1N144C
RT1N141C RT1P141C
KTA1298Y 2SC3052F

FL GRID ASSIGNMENT AND ANODE CONNECTION

GRID ASSIGNMENT



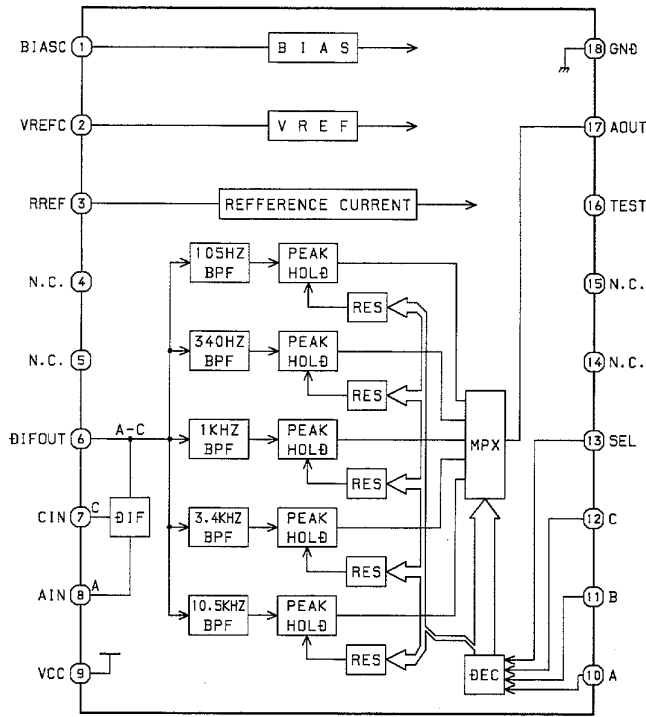
ANODE CONNECTION

	1G	2G	3G-10G	11G
P1	a, g, d	B35	1-1	MONO
P2	b	B30	2-1	((∞∞))
P3	c	B25	3-1	KHz
P4	e	B20	4-1	MHz
P5	S1	B15	5-1	
P6	S7	B10	1-2	RANDOM
P7	S8	B5	2-2	
P8	S9	B34	3-2	
P9	S10	B29	4-2	
P10	S2	B24	5-2	EDIT
P11	S11	B19	1-3	REC
P12	S12	B14	2-3	
P13	S3	B9	3-3	
P14	S13	B4	4-3	
P15	S14	B33	5-3	S15
P16	S4	B28	1-4	20
P17	S5	B23	2-4	19
P18	S6	B18	3-4	18

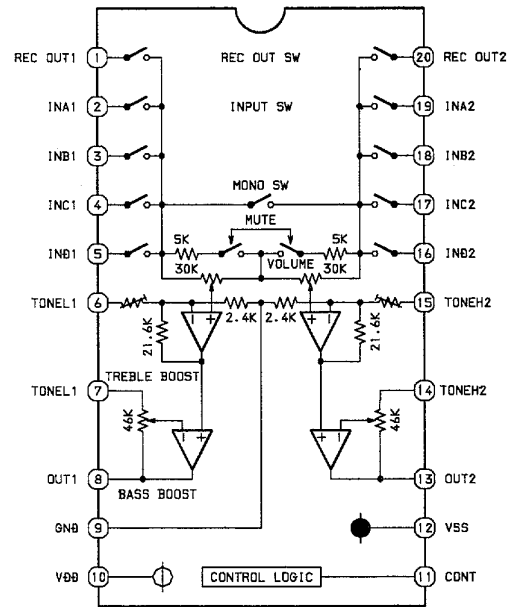
	1G	2G	3G-10G	11G
P19	ROCK	B13	4-4	17
P20	POP	B8	5-4	16
P21	CLASSIC	B3	1-5	15
P22		B32	2-5	14
P23		B27	3-5	13
P24		B22	4-5	12
P25		B17	5-5	11
P26		B12	1-6	10
P27	T-BASS	B7	2-6	9
P28	B1	B2	3-6	8
P29	B2	B31	4-6	7
P30	B3	B26	5-6	6
P31	B31	B21	1-7	5
P32	B32	B16	2-7	4
P33	B33	B11	3-7	3
P34	B34	B6	4-7	2
P35	B35	B1	5-7	1

IC BLOCK DIAGRAM

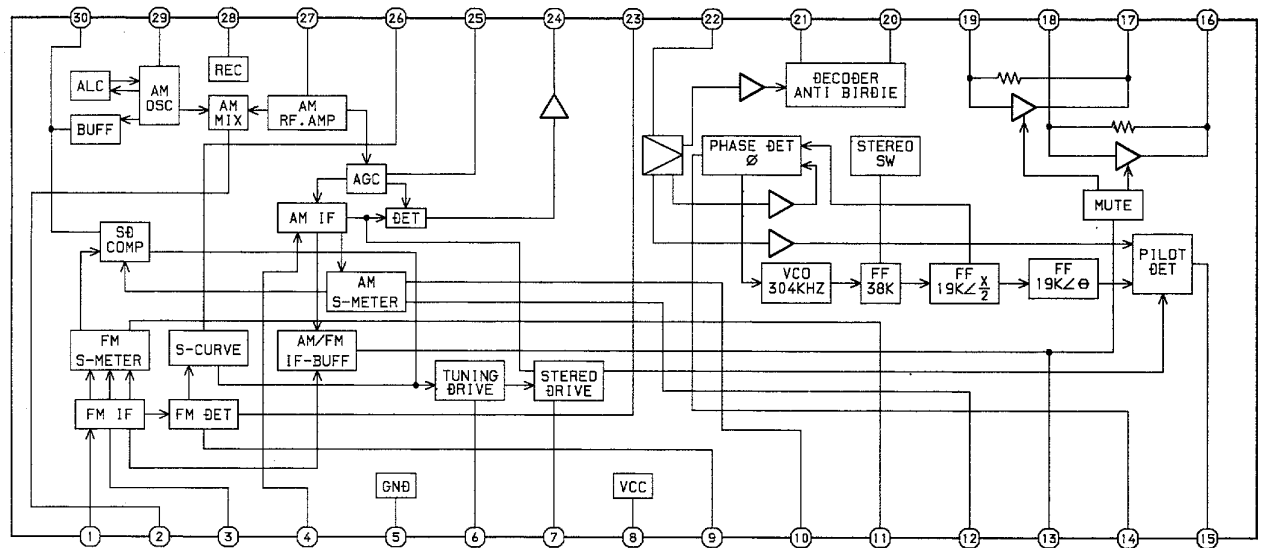
IC, BA3835S



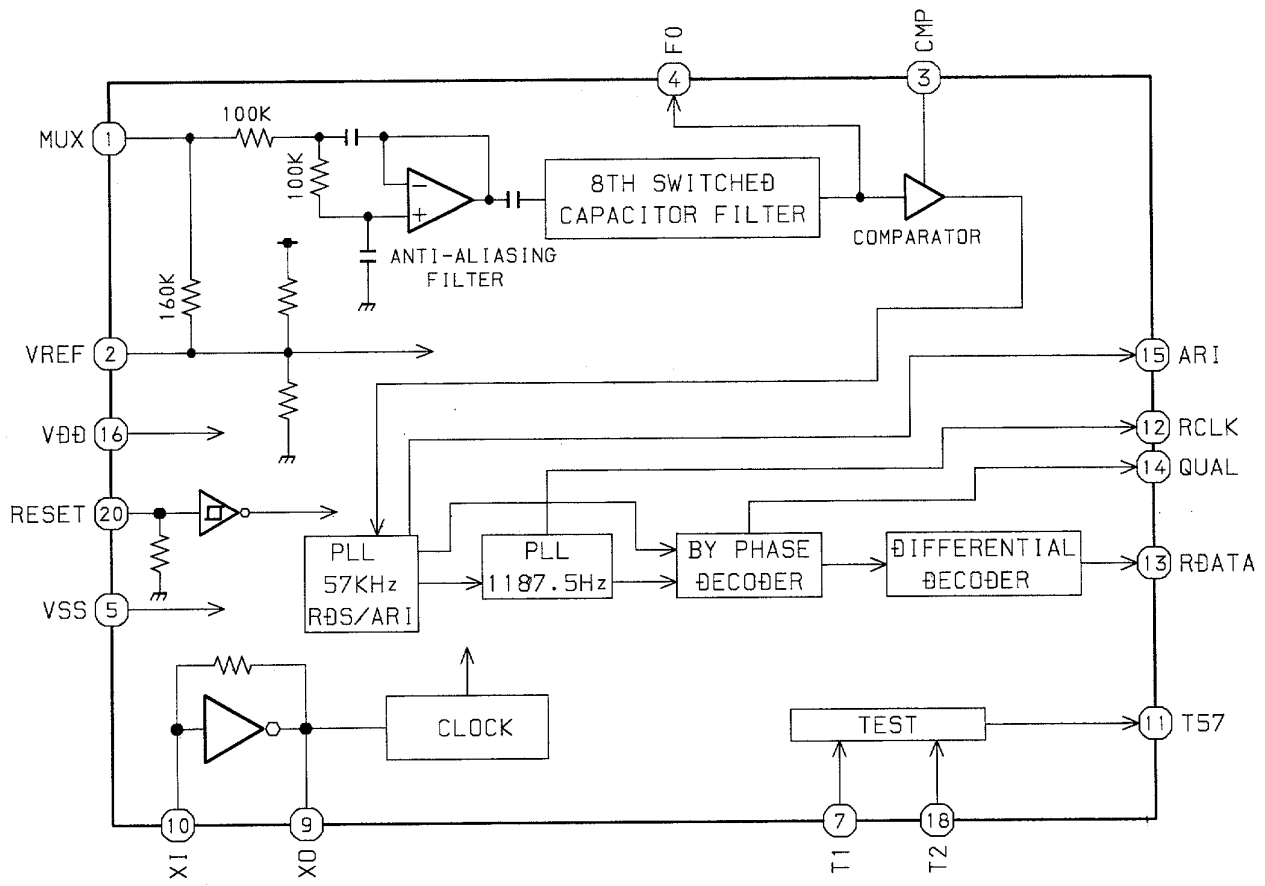
IC, M624398P



IC, LA1837



IC, BU1920 <307EZ only>



IC DESCRIPTION

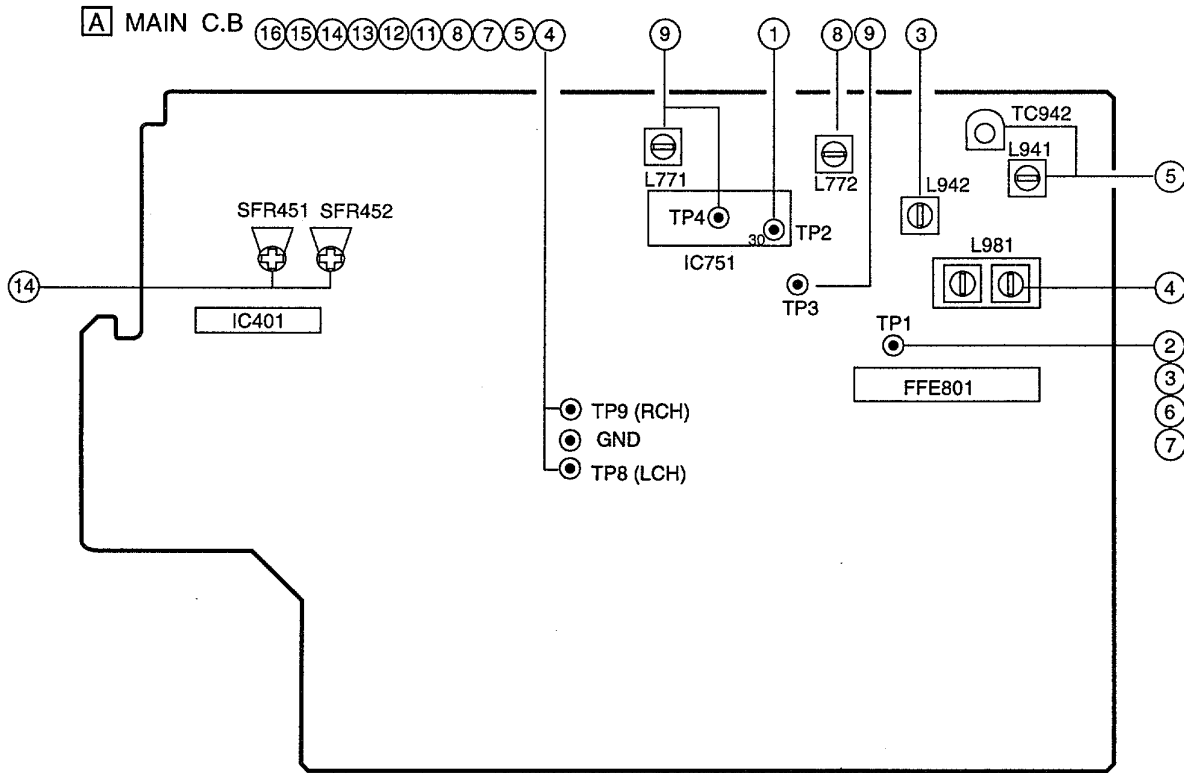
IC, μ PD780228

Pin No.	Pin Name	I/O	Description
1	$\overline{\text{K-SCAN}}$	O	Key scan output.
2	$\overline{\text{LED}} \blacktriangleright$	O	\blacktriangleright LED $\overline{\text{ON/OFF}}$ output.
3	$\overline{\text{LED}} \blacktriangleright\blacktriangleright$	O	$\blacktriangleright\blacktriangleright$ LED $\overline{\text{ON/OFF}}$ output.
4	$\overline{\text{LED}} \blacktriangleleft\blacktriangleleft$	O	$\blacktriangleleft\blacktriangleleft$ LED $\overline{\text{ON/OFF}}$ output.
5	$\overline{\text{LED}} \blacksquare$	O	\blacksquare LED $\overline{\text{ON/OFF}}$ output.
6	$\overline{\text{LED}} \parallel$	O	\parallel LED $\overline{\text{ON/OFF}}$ output.
7	O-MOTOR	O	DECK MOTOR $\overline{\text{ON/OFF}}$ output.
8	$\overline{\text{O-SOL2}}$	O	DECK 2 solenoid output.
9	$\overline{\text{O-SOL1}}$	O	DECK 1 solenoid output.
10	O-CD.ON	O	CD power $\overline{\text{ON/OFF}}$ output.
11	O-TU.ON	O	Tuner power $\overline{\text{ON/OFF}}$ output.
12	O-BIAS	O	DECK bias $\overline{\text{ON/OFF}}$ output.
13	O-RMT	O	DECK2 REC MUTE output.
14	O-PB1/2	O	Playback DECK1 and DECK2 switch output.
15	$\overline{\text{O-POWER}}$	O	System power supply $\overline{\text{ON/OFF}}$ output.
16	O-PLL.CE	O	PLL IC chip enable output.
17	IC	-	Internal connection.(Connected to GND.)
18	VSS	-	GND.
19	VDD	-	Power supply input.
20	O-DSP.CE(NC)	O	DSP IC chip enable logic.(Not connected.)
21	O-DSC/O-M-DATA	O	E-VR & SOUND & FUNCTION IC data output/ Main PLL shift register data output.
22	O-CD.OPEN	O	CD tray open data output.
23	O-CD.CLOSE	O	CD tray close data output.
24	O-CD.DISH.F	O	CD turntable forward rotation output.
25	O-CD.DISH.R	O	CD turntable reverse rotation output.
26	I-WRQ/ $\overline{\text{I-STEREO}}$	I	CD WRQ input/Tuner stereo input.
27	I-DRF/ $\overline{\text{I-IFCNT}}$	I	CD DRF input/Tune IF count serial data input.
28	RDS CLK	I	Tuner RDS clock input.
29	I-SUBQ/RDS-DATA	I	CD SUBQ data input/RDS data input.
30	RESET	-	System reset.
31	O-CD DATA/O-CLK	O	CD data output/Main PLL shift register clock output.
32	O-CDCLK	O	CD clock output.
33	O-CD.CE	O	CD enable output.
34	I-RMC	I	System remote control input.
35	I-DISH.SENS	I	CD turntable photo sensor input.
36	$\overline{\text{O-C.SHIFT}}$	O	Micon clock shift output.
37	VDD1	-	Power supply input.
38,39	X2,X1	-/I	4.19MHz oscillator circuit.
40	VSS1	-	GND.
41	AVDD	-	Power supply input.
42	$\overline{\text{I-HOLD}}$	I	Power failure detected input "H" to stop clock and main memory.
43	I-CD.SW	I	CD mecha switch input.

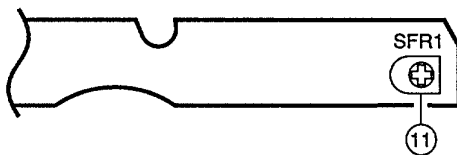
Pin No.	Pin Name	I/O	Description
44	I-SPEANA	I	A/D input for spectrum analyser display.
45	I-RE.VOL	I	Volume jog AD input.
46	I-RE.MULTI	I	Multi jog AD input.
47	I-SIG	I	RDS Tuner signal input.
48,49	I-KEY2,1	I	Key2,1 input.
50	AVSS	-	GND.
51	O-CDLED	O	CD flash window LED ON/OFF output.
52	LED ◀	O	◀ LED switch ON/OFF output.
53~58	P1~P6	O	FL segment P1~6 output.
59	P7/REV2	I/O	FL segment P7 output / REV2 data input.
60	P8/REV1	I/O	FL segment P8 output / REV1 data input.
61	P9/AM10K	I/O	FL segment P7 output / AM10K data input.
62	P10/AMSTWIDE	I/O	FL segment P10 output / AMSTWIDE data input.
63	P11/LW	I/O	FL segment P11 output / LW mode data input.
64	P12/SW	I/O	FL segment P12 output / SW mode data input.
65	P13/FM1	I/O	FL segment P13 output / FM1 data input.
66	P14/RDS	I/O	FL segment P14 output / RDS data input.
67	P15/CST2	I/O	FL segment P15 output / DECK2 cassette detect switch data input.
68	P16/REB	I/O	FL segment P16 output / DECK2 side B record OK switch data input.
69	P17/CAM2	I/O	FL segment P17 output / DECK2 CAM switch data input.
70	P18/AUTO1	I/O	FL segment P18 output / DECK1 AUTO stop switch data input.
71	P19/AUTO2	I/O	FL segment P19 output / DECK2 AUTO stop switch data input.
72	P20/CAM1	I/O	FL segment P20 output / DECK1 CAM stop switch data input.
73	P21/CST1	I/O	FL segment P21 output / DECK1 cassette detect switch data input.
74	P22/REA	I/O	FL segment P22 output / DECK2 side A record OK switch data input.
75	P23/KARAOKE	I/O	FL segment P23 output / KARAOKE data input.
76	P24/TM-BASE	I/O	FL segment P24 output / TM-BASE data input.
77,78	P25,P26	I/O	FL segment P25,P26 output.
79	VDD2	-	Power supply input.
80	-VFL	-	Power supply for FL display.
81	SPEANA-A/P27	O	FL segment P27 output / Spectrum analyser band switching data output.
82	SPEANA-B/P28	O	FL segment P28 output / Spectrum analyser band switching data output.
83	SPEANA-C/P29	O	FL segment P29 output / Spectrum analyser band switching data output.
84~89	P30~P35	O	FL segment P30~35 output.
90~100	G10~G1	O	FL grid G10~1 output.

Pin No.	Pin Name	I/O	Description																								
1	XIN	I/O	A crystal oscillator (4.5MHz) is connected between these pins.																								
22	XOUT																										
2	NC	-	Not used.																								
3	CE	I	To enable the IC. Active "H".																								
4	DI	I	Digital data input from CPU (μ PD780228) when relevant key is operated. Active "H".																								
5	CL	I	To clock in the data DI.																								
6	DO	O	Digital data output to CPU (μ PD780228).																								
7	T-BASE	O	Outputs a reference clock signal (8Hz) for the clock.																								
8	MONO / BEAT	O	Outputs "H" when MONO / BEAT is switched.																								
9	$\overline{\text{FM}} / \overline{\text{SW}}$	O	Output "L" or "H" as follows: <table border="1" style="margin-left: 20px;"> <thead> <tr> <th colspan="2">2 BAND</th> <th colspan="3">3 BAND</th> <th colspan="3">3 BAND</th> </tr> <tr> <th>AM</th> <th>FM</th> <th>LW</th> <th>MW</th> <th>FM</th> <th>MW</th> <th>SW</th> <th>FM</th> </tr> </thead> <tbody> <tr> <td>H</td> <td>L</td> <td>H</td> <td>H</td> <td>L</td> <td>H</td> <td>L</td> <td>L</td> </tr> </tbody> </table>	2 BAND		3 BAND			3 BAND			AM	FM	LW	MW	FM	MW	SW	FM	H	L	H	H	L	H	L	L
2 BAND		3 BAND			3 BAND																						
AM	FM	LW	MW	FM	MW	SW	FM																				
H	L	H	H	L	H	L	L																				
10	$\overline{\text{MW}} / \overline{\text{SW}}$	O	Outputs "L" or "H" as follows: <table border="1" style="margin-left: 20px;"> <thead> <tr> <th colspan="2">2 BAND</th> <th colspan="3">3 BAND</th> <th colspan="3">3 BAND</th> </tr> <tr> <th>AM</th> <th>FM</th> <th>LW</th> <th>MW</th> <th>FM</th> <th>MW</th> <th>SW</th> <th>FM</th> </tr> </thead> <tbody> <tr> <td>L</td> <td>L</td> <td>H</td> <td>L</td> <td>L</td> <td>L</td> <td>H</td> <td>L</td> </tr> </tbody> </table>	2 BAND		3 BAND			3 BAND			AM	FM	LW	MW	FM	MW	SW	FM	L	L	H	L	L	L	H	L
2 BAND		3 BAND			3 BAND																						
AM	FM	LW	MW	FM	MW	SW	FM																				
L	L	H	L	L	L	H	L																				
11	IF-MUTE	O	To control internal counter.																								
12	IF-IN	I	General purpose counter input.																								
13	$\overline{\text{TUNE}}$	I	Receives "L" when station is tuned.																								
14	NC	-	Not used.																								
15	AM-IN	I	Receives the AM local oscillator frequency signal.																								
16	FM-IN	I	Receives the FM local oscillator frequency signal.																								
17	VDD	-	Supply power to IC (+5V).																								
18	PD	O	PLL charge pump output.																								
19	A-IN	I	The MOS transistor for PLL active low pass filter.																								
20	A-OUT	O																									
21	VSS	-	Ground.																								

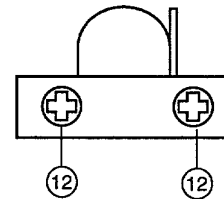
ADJUSTMENT <TUNER / DECK>



E DECK C.B



DECK-1 P, DECK-2 R / P / E HEAD



< TUNER SECTION >

1. Clock Check
 - Settings : • Test point : TP2
 - Method : Set to MW 1602kHz and check that the test point is 2052kHz \pm 45Hz.
2. MW VT Check
 - Settings : • Test point : TP1
 - Method : Set to MW 1602kHz and MW 531kHz and check that the test point is less than 8.0V(1602kHz) and more than 0.6V(531kHz).
3. LW VT Adjustment
 - Settings : • Test point : TP1
 - Adjustment location : L942
 - Method : Set to LW 144kHz and adjust L942 so that the test point becomes 1.3V \pm 0.05V. Then set to LW 290kHz and check that the test point is less than 8.0V.
4. MW Tracking Adjustment
 - Settings : • Test point : TP8(Lch), TP9(Rch)
 - Adjustment location :
 - L981 999kHz
 - Method : The level at 999kHz is adjusted to MAX by L981.
5. LW Tracking Adjustment
 - Settings : • Test point : TP8(Lch), TP9(Rch)
 - Adjustment location :
 - L941 144kHz
 - TC942 290kHz
 - Method : Set up TC942 to center before adjustment. The level at 144kHz is adjusted to MAX by L941. Then the level at 290kHz is adjusted to MAX by TC942.

6. FM VT Check

Settings : • Test point : TP1

Method : Set to FM 108.0MHz and check that the test point is less than 8.0V(303EZ,K,307EZ),less than 9.5V(V).
Set to FM 87.5MHz(303EZ,K,307EZ),65.0MHz(V) and check that the test point is more than 0.5V (303EZ,K,307EZ),more than 1.0V(V).

7. FM Tracking Check

Settings : • Test point : TP8(Lch), TP9(Rch)

Method : Set to FM 98.0MHz and check that the test point is less than 10.0dB(303EZ,K,307EZ),less than 6.0dB(V).

8. MW IF Adjustment

Settings : • Test point : TP8(Lch), TP9(Rch)

• Adjustment location :
L772 450kHz

9. DC Balance / Mono Distortion Adjustment

Settings : • Test point : TP3, TP4

• Adjustment location : L771
• Input level : 54dB

Method : Set to FM 98.0MHz and adjust L771 so that the voltage between TP3 and TP4 becomes $0V \pm 0.04V$.
Next, check that the distortion is less than 1.3%

10. Auto Stop Level Check

MW

Settings : • Input level : 52dB

Method : Set to MW 999kHz and check that the test point is 70~62dB.

FM

Settings : • Input level : 25dB

Method : Set to FM 98.0MHz and check that the test point is 25dB \pm 10dB.

< DECK SECTION >

11. Tape Speed Adjustment

Settings : • Test tape : TTA-100

• Test point : TP8,TP9
• Adjustment location : SFR1

Method : Play back the test tape and adjust SFR1 so that the frequency counter reads $3000Hz \pm 5Hz$.

12. Head Azimuth Adjustment

Settings : • Test tape : TTA-330

• Test point : TP8,TP9
• Adjustment location : Head azimuth
adjustment screw

Method : Play back the 8kHz signal of the test tape and adjust screw so that the output becomes maximum.
Next, perform on each FWD PLAY and REV PLAY mode.

13. PB Frequency Response Check (DECK 1, DECK 2)

Settings : • Test tape : TTA-330

• Test point : TP8,TP9

Method : Play back the 315Hz and 8kHz signals of the test tape and check that the output ratio of the 8kHz signal with respect to that of the 315Hz signal is within 5dB.

14. REC/PB Frequency Response Adjustment

Settings : • Test tape : TTA-602

• Test point : TP8,TP9
• Input signal : 1kHz / 8kHz
• Adjustment location : SFR451
SFR452

Method : Apply a 1kHz signal and REC mode.
Then adjust OSC attenuator so that the output level at the TP8,TP9 becomes 8~10mV. Record and play back the 1kHz and 8kHz signals and adjust SFRs so that the output of the 8kHz signals becomes $0dB \pm 0.5dB$ with respect to that of the 1kHz signal.

15. PB Sensitivity Check

Settings : • Test tape : TTA-200

• Test point : TP8,TP9

Method : Playback the test tape and check that the output level of the test point is $110mV \pm 3.0dB$.

16. REC/PB Sensitivity Check

Settings : • Test tape : TTA-602

• Test point : TP8,TP9
• Input signal : 1kHz

Method : Apply a 1kHz signal and REC mode. Then adjust OSC attenuator so that the output level at the TP8,TP9 becomes 80~100mV. Record and play back the 1kHz signals and check that the output is $-2.0dB \pm 3.5dB$.

PRACTICAL SERVICE FIGURE

<TUNER SECTION>

<FM SECTION>

IHF Sensitivity :
(THD 3%) Less than 11dB
 [at 87.5MHz]
 Less than 10.0dB
 [at 98.0/108.0MHz]

S/N 50dB Quieting sensitivity :
(Stereo) Less than 38dB
 [at 98.0MHz]

Signal to noise ratio : More than 72dB (mono)
 More than 66dB (stereo)
 [at 98.0MHz]

Distortion : Less than 1.2% (mono)
 Less than 2.0% (stereo)
 [at 98.0MHz]

Stereo separation : More than 14dB
 [at 98.0MHz]

Intermediate frequency : 10.7MHz

<MW SECTION>

Sensitivity : Less than 60dB
(S/N 20 dB) [at 603kHz]
 Less than 58dB
 [at 999 / 1404kHz]

Signal to noise ratio : More than 36dB (mono)
 More than 34dB (stereo)
 [at 999kHz]

Distortion : Less than 1.5% (mono)
 Less than 4.0% (stereo)
 [at 999kHz]

Stereo separation : More than 15dB
 [at 999kHz]

Intermediate frequency : 450kHz

<LW SECTION>

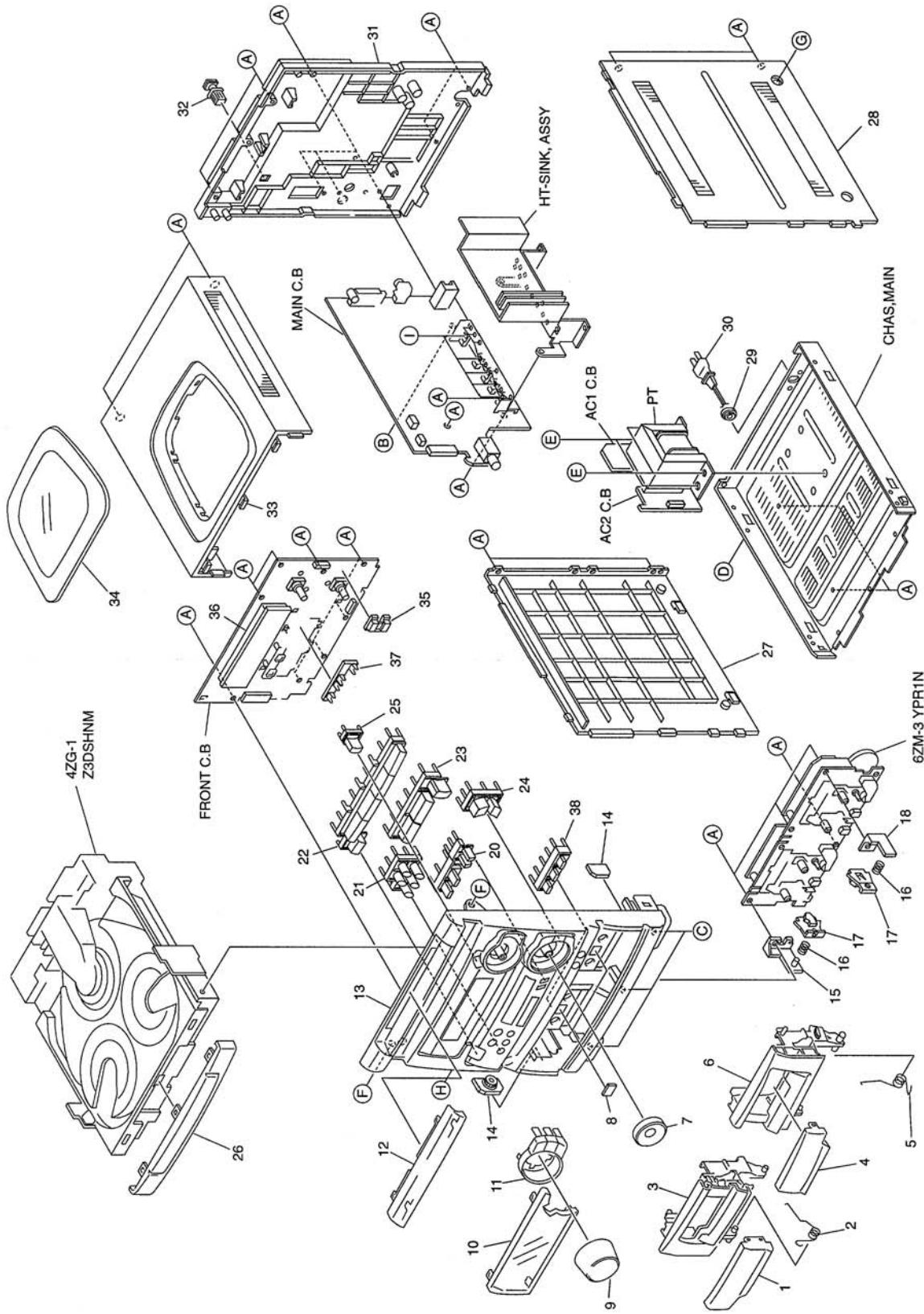
Sensitivity : Less than 70dB (144kHz)
(S/N 20dB) Less than 66dB (198kHz/290kHz)
Intermediate frequency : 450kHz

<DECK SECTION>

Tape speed : 3000Hz ± 45Hz
Wow & flutter : Less than 0.25% (R.M.S)

Take-up torque : 30 ~ 55g-cm (FWD, REV)
F.F & REW torque : 75 ~ 180g-cm (F.F,REW)
Back tension : 2 ~ 7g-cm
PB Output level : 2.8V ± 3.0dB (SP 2V)
Distortion (REC/PB) : Less than 2.0% (NORM)
Noise level (PB) : Less than 25mV (NORM)
Noise level (REC/PB) : Less than 30mV(NORM)
Erasing ratio : More than 60dB (at 125Hz,NORM)
Test tape : NORM : TTA-602

MECHANICAL EXPLODED VIEW 1 / 1

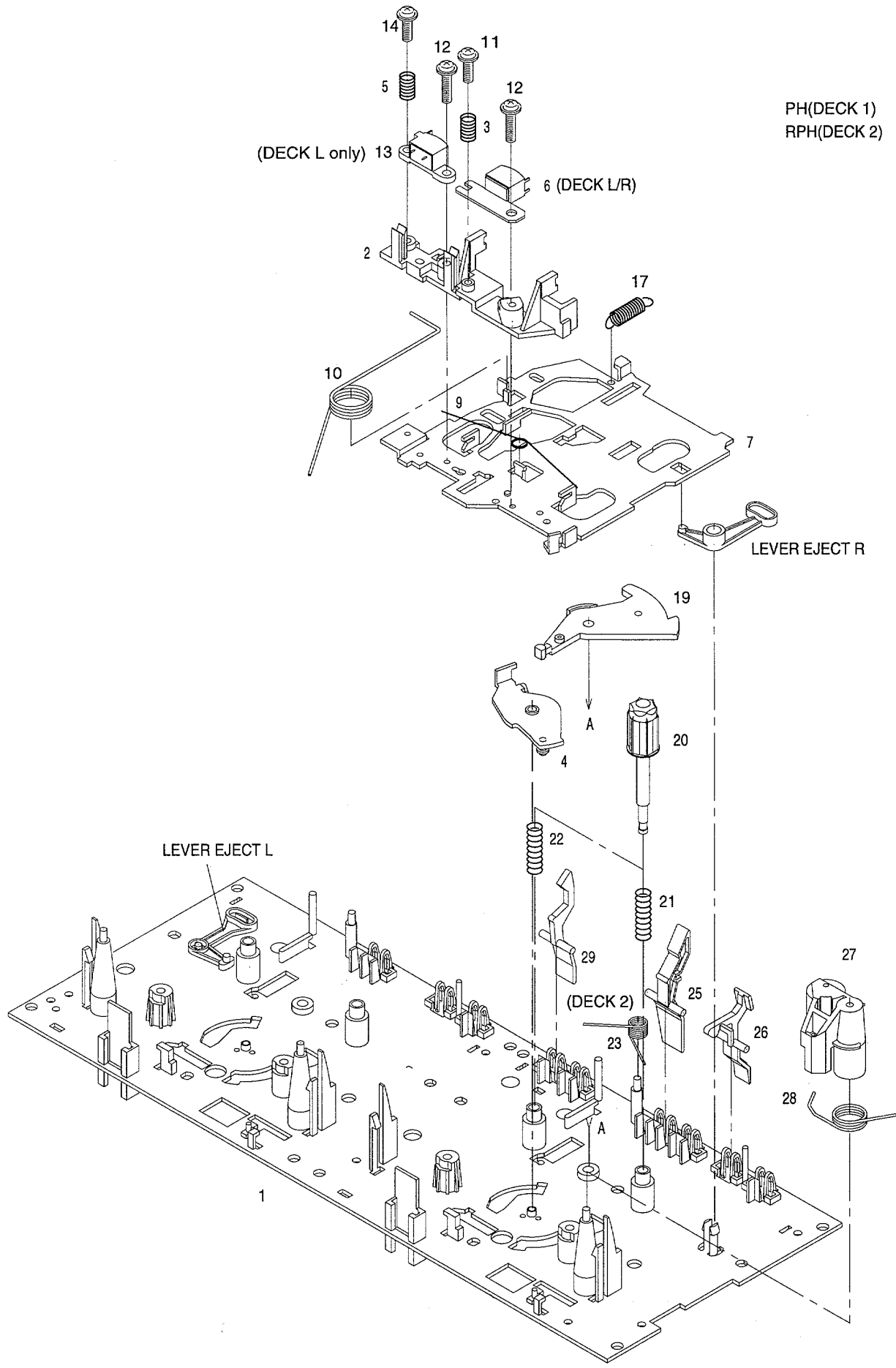


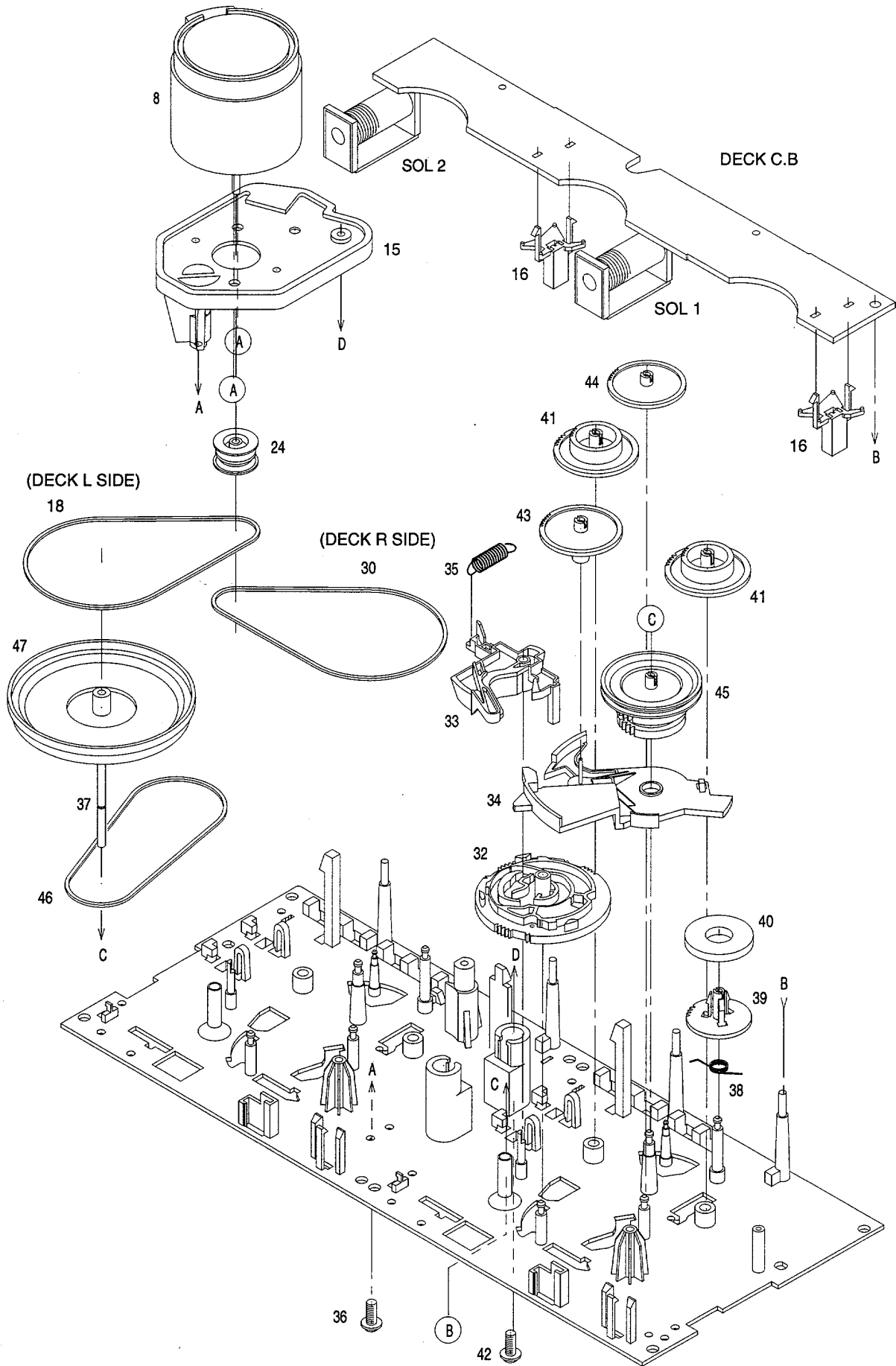
MECHANICAL PARTS LIST 1 / 1

If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION	REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	87-NB8-012-010		WINDOW,CASS 1	30	87-050-034-010		AC CORD ASSY,E<303EZ,307EZ>
2	82-NF5-218-010		SPR-T,EJECT 1 (SIN)	30	87-A80-023-010		AC CORD,ASSY K 3P W<303K>
3	88-NF8-044-010		BOX,CASS 1 1WAY	31	88-NF8-034-010		CABI,REAR EZSTNE<303EZ>
4	87-NB8-013-010		WINDOW,CASS 2	31	88-NF8-039-010		CABI,REAR EZSTNE S307<307EZ>
5	82-NF5-219-010		SPR-T,EJECT 2 (SIN)	31	88-NF8-035-010		CABI,REAR KSTNE<303K>
6	88-NF8-043-010		BOX,CASS 2 1WAY	32	84-ZG1-245-210		CAP,OPTICAL
7	88-NF8-016-010		KNOB,RTRY JOG	33	87-NF9-055-010		PANEL, TOP
8	81-532-080-010		LABEL, CASS. COMPT	34	86-NF2-001-010		WINDOW, TOP
9	87-NB8-015-010		KNOB,RTRY VOL	35	88-NF8-207-010		GUIDE, FF
10	88-NF8-023-010		WINDOW, DISPLAY E<307EZ>	36	88-NF8-205-010		GUIDE, FL
10	88-NF8-024-010		WINDOW, DISPLAY K<303K,303EZ>	37	88-NF8-208-010		GUIDE, PLAY 1WAY
11	87-NB8-021-110		KEY, GEQ	38	88-NF8-015-110		KEY, RDS<307EZ>
12	87-NB8-009-010		WINDOW, CD	A	87-067-703-010		TAPPING SCREW, BVT2+3-10
13	88-NF8-003-010		CABI, FR E<307EZ>	B	87-NF4-224-010		S-SCREW, IT3B+3-8 CU
13	88-NF8-045-010		CABI, FR K<303K,303EZ>	C	87-067-688-010		BVTT+3-6
14	87-NF8-220-010		DMPR, 150	D	87-721-096-410		QT2+3-10 GLD
15	87-NF4-216-010		HLDR, LOCK 1	E	87-078-019-010		S-SCREW, IT+4-6
16	86-NF9-224-010		SPR-C, LOCK	F	87-721-097-410		QT2+3-12 GLD
17	82-NF5-229-010		PLATE, LOCK	G	87-067-641-010		UTT2+3-8(W/O SLOT)BL
18	87-NF4-217-010		HLDR, LOCK 2	H	87-723-096-410		QT2+3-10W/O SLOT BL
20	88-NF8-006-110		KEY, REC	I	87-067-579-010		TAPPING SCREW, BVT2+3-8
21	88-NF8-014-110		KEY, CD				
22	88-NF8-007-010		KEY, FUNCTION				
23	88-NF8-019-010		KEY, PLAY 1WAY ASSY				
24	88-NF8-013-010		KEY, ASSY FF				
25	87-NB8-022-010		KEY, T-BASS				
26	88-NF8-046-010		PANEL, TRAY				
27	87-NB8-005-010		PANEL, LEFT				
28	88-NF8-047-010		PANEL, RIGHT 2				
29	87-085-185-010		BUSHING, AC CORD (E)				

TAPE MECHANISM EXPLODED VIEW 1 / 1



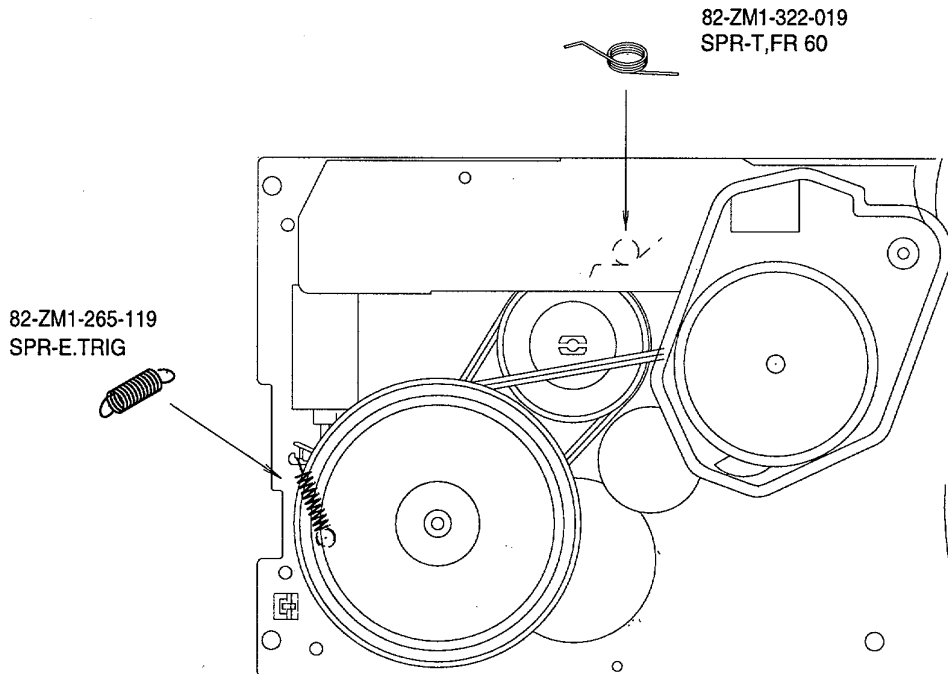
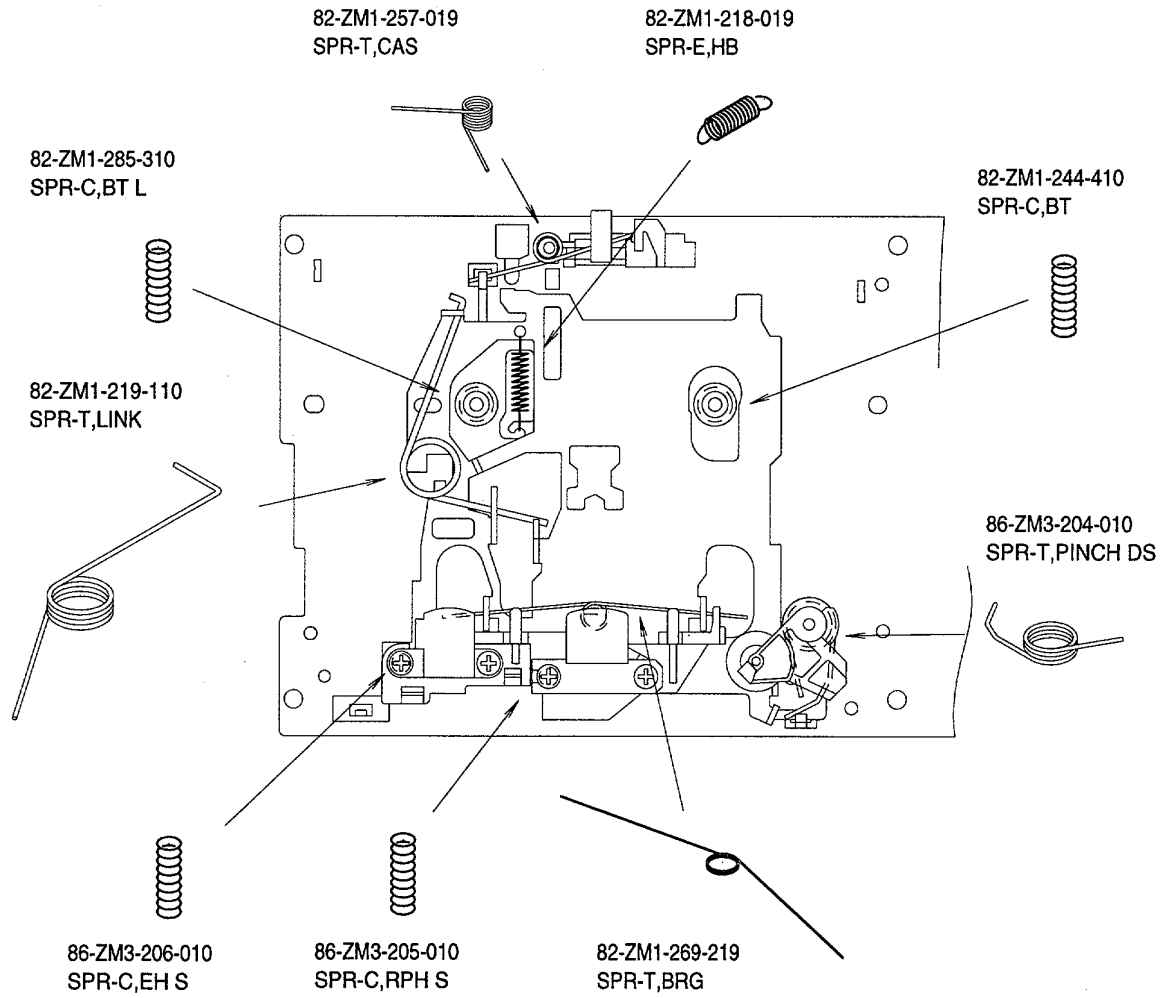


TAPE MECHANISM PARTS LIST 1 / 1

If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION	REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	86-ZM3-212-010		CHAS ASSY, SS	26	82-ZM1-243-019		LVR, STOP
2	86-ZM3-202-010		BASE, HEAD S	27	82-ZM1-344-119		LVR ASSY, PINCH
3	86-ZM3-205-010		SPR-C, RPH S	28	86-ZM3-204-010		SPR-T, PINCHDS
4	82-ZM1-333-210		PLATE, LINK 2	29	82-ZM1-240-119		LVR, REC (DECK 2)
5	86-ZM3-206-010		SPR-C, EH S	30	86-ZM3-210-010		BELT, PS
6	87-A90-403-019		HEAD, RPH MS15R	31	82-ZM1-223-010		GEAR, PLAY
7	86-ZM3-201-010		CHAS, HEAD S	32	82-ZM3-305-019		GEAR, CAM M2
8	87-045-347-019		MOT, SHU2L 70 (M1)	33	82-ZM1-227-319		LVR, TRIG
9	82-ZM1-269-219		SPR-T, BRG	34	82-ZM3-306-110		LVR, FR M2
10	82-ZM3-323-119		SPR-T, LINK	35	82-ZM1-265-119		SPR-E, TRIG
11	86-ZM3-209-010		S-SCREW, ASIMUTHS	36	85-ZM3-203-019		S-SCREW MOTOR M3
12	86-ZM3-207-010		S-SCREW, RPH	37	82-ZM1-236-019		CAPSTAN N 2-41.5
13	87-A90-404-019		HEAD, EH LE15B	37	82-ZM1-239-019		CAPSTAN N 2.2-41.7
14	86-ZM3-208-010		S-SCREW, EH	38	82-ZM1-322-019		SPR-T, FR60
15	86-ZM3-203-010		HLDR, MOTS	39	82-ZM1-220-219		GEAR, IDLER
16	82-ZM1-245-210		HLDR, IC	40	82-ZM3-616-019		RING MAGNET 4
17	82-ZM1-218-019		SPR-E, HB	41	82-ZM1-216-319		GEAR, REEL
18	86-ZM3-211-010		BELT, RS	42	85-ZM3-213-010		S-SCREW, HLDR MOT 3
19	82-ZM1-222-219		LVR, PLAY	43	82-ZM1-225-219		GEAR, FR
20	82-ZM1-217-419		REBL, TABLE	44	82-ZM1-226-019		GEAR, REW
21	82-ZM1-244-519		SPR-C, BT	45	82-ZM3-333-210		SLIP DISK ASSY 2
22	82-ZM1-285-410		SPR-C, BT L	46	82-ZM1-338-010		BELT FR4
23	82-ZM1-257-019		SPR-T, CAS	47	82-ZM1-349-019		FLY-WHL RW (DECK L)
24	82-ZM3-221-010		PULLEY, MOT 2M	47	82-ZM3-331-019		FLY-WHL R2W (DECK R)
25	82-ZM1-242-019		LE=VR, CAS	A	87-251-071-417		U+2.6-4
				B	80-ZM6-243-019		SH, 1.75-3.6-0.5 SLT

SPRING APPLICATION POSITION

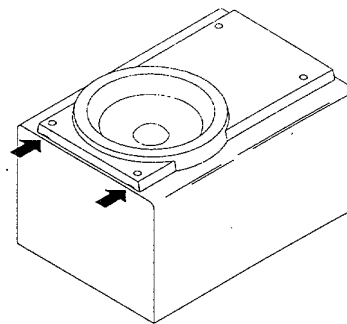


SPEAKER DISASSEMBLY INSTRUCTIONS

Type.1

矢印の位置にマイナスドライバーを差し込んで、パネルを外します。各々のスピーカーユニットのビスを取り、スピーカーユニットを外してください。

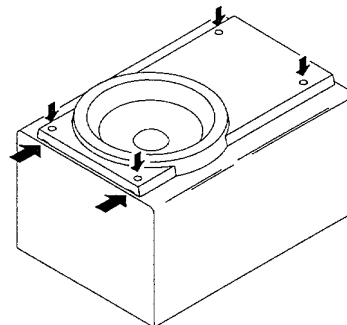
Insert a flat-bladed screwdriver into the position indicated by the arrows and remove the panel. Remove the screws of each speaker unit and then remove the speaker units.



Type.2

グリルフレームを外し、4個のゴムキャップをマイナスドライバーで端の方から持ち上げて外すと中にビスが有りますので、ビスを取り外します。矢印の位置にマイナスドライバーを差し込んで、パネルを外します。各々のスピーカーユニットのビスを取り、スピーカーユニットを外してください。

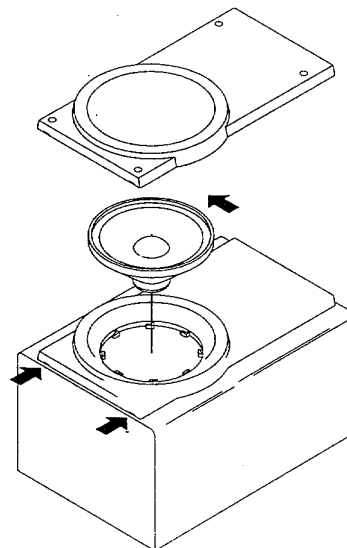
Remove the grill frame and four pieces of rubber caps by pulling out with a flat-bladed screwdriver. Remove the screws from hole where installed rubber caps. Insert a flat-bladed screwdriver into the position indicated by the arrows and remove the panel. Remove the screws of each speaker unit and then remove the speaker units.



Type.3

矢印の位置にマイナスドライバーを差し込んで、パネルを外します。各々のスピーカーユニットの凹にマイナスドライバーを差し込んで、反時計方向に回転させスピーカーユニットを外してください。スピーカーユニット交換後は時計方向にクリック音がするまで、回転させて取り付けます。

Insert a flat-bladed screwdriver into the position indicated by the arrows and remove the panel. Turn the speaker unit to counter-clockwise direction while inserting a flat-bladed screwdriver into one of the hollows around speaker unit, and then remove the speaker unit. After replacing the speaker unit, install it turning to clockwise direction until "click" sound comes out.



SPEAKER PARTS LIST (SX-NS302)

If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	86-NS5-012-010		BADGE, AIWA 35
2	87-NS7-611-010		CORD, SPKR
3	87-NSH-612-010		SPKR, CERAMIC ASSY
4	88-NSJ-001-010		PANEL, FR
5	88-NSJ-601-010		SPKR, 120

SPEAKER PARTS LIST (SX-NS303)

If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	87-NS7-611-010		CORD, SPKR
2	87-NSH-612-010		SPKR, CERAMIC ASSY
3	88-NSC-608-010		SPKR, CERAMIC ASSY
4	88-NSJ-001-010		PANEL, FR
5	88-NSJ-601-010		SPKR, 120

ACCESSORIES / PACKAGE LIST

If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	88-NF8-916-010		IB, E(9L)E 307<307EZ>
1	88-NF8-906-010		IB, E(EGFSDI)E<303EZ>
1	88-NF8-905-010		IB, K(E)E<K>
2	87-006-225-010		AM LOOP ANT NC2
3	87-NF6-635-010		RC UNIT, RC-7AS06
4	87-043-106-010		WIRE, FM ANT (Z)

REFERENCE NAME LIST

ELECTRICAL SECTION

DESCRIPTION	REFERENCE NAME
ANT	ANTENNAS
C-	CHIP
C-CAP	CAP, CHIP
C-CAP TN	CAP, CHIP TANTALUM
C-COIL	COIL, CHIP
C-DI	DIODE, CHIP
C-DIODE	DIODE, CHIP
C-FET	FET, CHIP
C-FOTR	FILTER, CHIP
C-JACK	JACK, CHIP
C-LED	LED, CHIP
C-RES	RES, CHIP
C-SFR	SFR, CHIP
C-SLIDE SW	SLIDE SWITCH, CHIP
C-SW	SWITCH, CHIP
C-TR	TRANSISTOR, CHIP
C-VR	VOLUME, CHIP
C-ZENER	ZENER, CHIP
CAP, CER	CAP, CERA-SOL
CAP, E	CAP, ELECT
CAP, M/F	CAP, FILM
CAP, TC	CAP, CERA-SOL
CAP, TC-U	CAP, CERA-SOL SS
CAP, TN	CAP, TANTALUM
CERA FIL	FILTER, CERAMIC
CF	FILTER, CERAMIC
DL	DELAY LINE
E/CAP	CAP, ELECT
FILT	FILTER
FLTR	FILTER
FUSE RES	RES, FUSE
MOT	MOTOR
P-DIODE	PHOTO DIODE
P-SNSR	PHOTO SENSER
P-TR	PHOTO TRANSISTOR
POLY VARI	VARIABLE CAPACITOR
PPCAP	CAP, PP
PT	POWER TRANSFORMER
PTR, RES	PTR, MELF
RC	REMOTE CONTROLLER
RES NF	RES, NON-FLAMMABLE
RESO	RESONATOR
SHLD	SHIELD
SOL	SOLENOID
SPKR	SPEAKER
SW, LVR	SWITCH, LEVER
SW, RTRY	SWITCH, ROTARY
SW, SL	SWITCH, SLIDE
TC CAP	CAP, CERA-SOL
THMS	THERMISTOR
TR	TRANSISTOR
TRIMER	CAP, TRIMMER
TUN-CAP	VARIABLE CAPACITOR
VIB, CER	RESONATOR, CERAMIC
VIB, XTAL	RESONATOR, CRYSTAL
VR	VOLUME
ZENER	DIODE, ZENER

MECHANICAL SECTION

DESCRIPTION	REFERENCE NAME
ADHESHIVE	SHEET ADHESHIVE
AZ	AZIMUTH
BAR-ANT	BAR-ANTENNA
BAT	BATTERY
BATT	BATTERY
BRG	BEARING
BTN	BUTTON
CAB	CABINET
CASS	CASSETTE
CHAS	CHASSIS
CLR	COLLAR
CONT	CONTROL
CRSR	CURSOR
CU	CUSHION
CUSH	CUSHION
DIR	DIRECTION
DUBB	DUBBING
FL	FRONT LOADING
FLY-WHL	FLYWHEEL
FR	FRONT
FUN	FUNCTION
G-CU	G-CUSHION
HDL	HANDOL
HIMERON	CLOTH
HINGE, BAT	HINGE, BATTERY
HLDR	HOLDER
HT-SINK	HEAT SINK
IB	INSTRUCTION BOOKLET
IDLE	IDLER
IND, L-R	INDICATOR, L-R
KEY, CONT	KEY, CONTROL
KEY, PRGM	KEY, PROGRAM
KNOB, SL	KNOB, SLIDE
LBL	LABEL
LID, BATT	LID, BATTERY
LID, CASS	LID, CASSETTE
LVR	LEVER
P-SP	P-SPRING
PANEL, CONT	PANEL, CONTROL
PANEL, FR	PANEL, FRONT
PRGM	PROGRAM
PULLY, LOAD MO	PULLY, LOAD MOTOR
RBN	RIBBON
S-	SPECIAL
SEG	SEGMENT
SH	SHEET
SHLD-SH	SHIELD-SHEET
SL	SLIDE
SP	SPRING
SP-SCREW	SPECIAL-SCREW
SPACER, BAT	SPACER, BATTERY
SPR	SPRING
SPR-P	P-SPRING
SPR-PC-PUSH	P-SPRING, C-PUSH
T-SP	T-SPRING
TERM	TERMINAL
TRIG	TRIGGER
TUN	TUNING
VOL	VOLUME
W	WASHER
WHL	WHEEL
WORM-WHL	WORM-WHEEL

サービス技術ニュース	
番号	連絡内容
G-	-
G-	-
G-	-

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