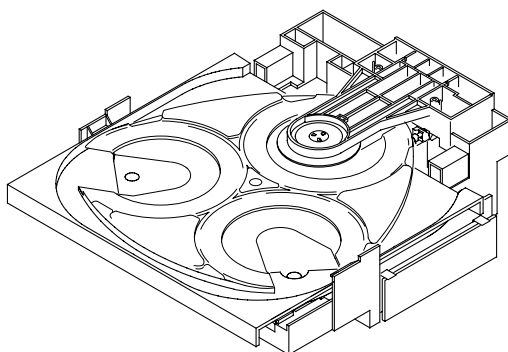




SERVICE MANUAL

CD MECHANISM

BASIC CD MECHANISM : 3ZG-2E3NM

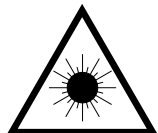
TYPE	BASIC CD MECHANISM
MVSD3NM	3ZG-2E3NM
MVSD3N1DM	3ZG-2E3NM
MVSD3N8M	3ZG-2E3NM

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 mainitulla tavalla saattaa altistaa käyttäjän turvallisuusluokan 1 ylitävälle näkymättömälle lasersäteilylle.

WARNING!

Om apparaten används på annat sätt än vad som specificeras i denna bruksanvisning, kan användaren utsättas för osynlig laserstrålning, 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

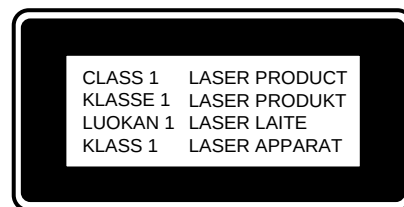
L'utilisation de commandes, réglages ou procédures autres que ceux spécifiés peut entraîner une dangereuse exposition aux radiations.

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.

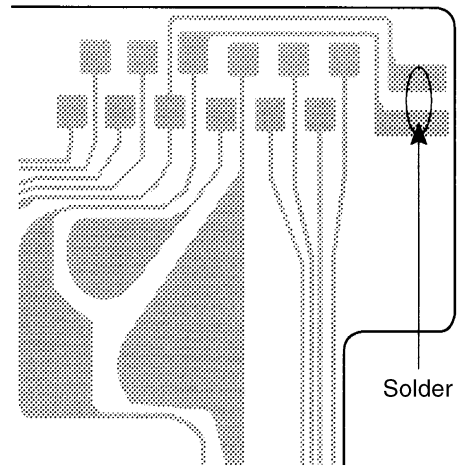


Precaution to replace Optical block (KSS-213F)

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 the right figure.

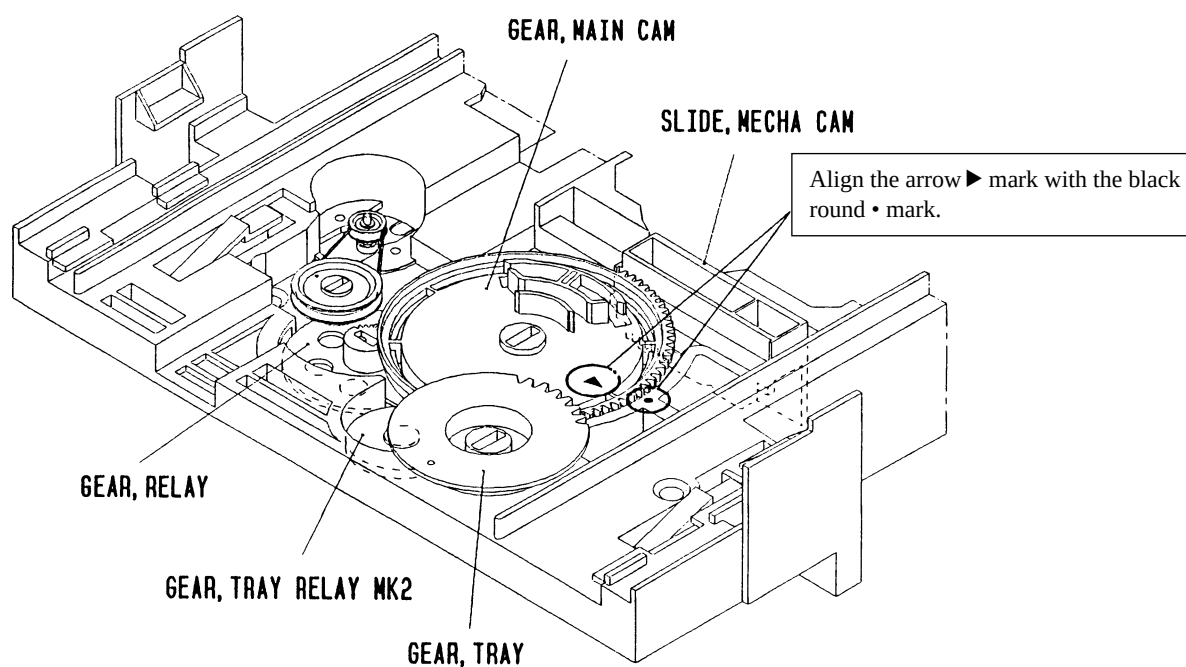
PICK-UP ASSY PWB



How to Adjust the Rotating Phase of the Gear, Main Cam

- 1) Push down the hooking catch of the CHAS. MECH, and remove the TRAY.
- 2) Align the arrow mark of the Gear, Main Cam with the black round mark of the CHAS, MECHA as shown below.
- 3) Confirm that the Slide, Mech Cam is located in the right position, then insert the TRAY gently.

Caution: If the rotating phase of the Gear, Main Cam is incorrectly adjusted, the chucking operation and tray movement will have malfunction.



ELECTRICAL PARTS LIST -1/11 (3CD C.B -1/9)

! = ⚠ SAFTY PARTS
C = Components marked
All components used on this model at the production line are shown in this service manual.
However, please note that not all components will be available as spare parts for after-sales service.
Components marked S and O are designated as spare parts for service and will be stocked at the spare parts centers.
Components marked X and R are not designated as spare parts for after sales service, and will not be stocked at the spare parts centers.

UNIT-NAME		! C	REF-NO	PARTS-NO	PARTS-NAME	SUFFIX&MODEL			
						BZA-4 MVSD3NM	BZA-4 MVSD3N1DM	BZA-4 MVSD3N8M	
3CD	C.B	O	C	0101	87-010-263-040	CAP,E 100-10 M 11L SME	b	c	d
3CD	C.B	O	C	0102	87-010-831-080	C-CAP,U 0.1-16 Z F	b	c	d
3CD	C.B	O	C	0103	87-010-263-040	CAP,E 100-10 M 11L SME	b	c	d
3CD	C.B	O	C	0104	87-010-401-040	CAP,E 1-50 M 11L SME	b	c	d
3CD	C.B	O	C	0105	87-012-286-080	C-CAP,U 0.01-25 K B	b	c	d
3CD	C.B	O	C	0106	87-012-186-080	C-CAP,U 39P-50 J CH	b	c	d
3CD	C.B	O	C	0107	87-010-831-080	C-CAP,U 0.1-16 Z F	b	c	d
3CD	C.B	O	C	0108	87-010-263-040	CAP,E 100-10 M 11L SME	b	c	d
3CD	C.B	O	C	0109	87-010-263-040	CAP,E 100-10 M 11L SME	b	c	d
3CD	C.B	O	C	0110	87-010-831-080	C-CAP,U 0.1-16 Z F	b	c	d
3CD	C.B	O	C	0111	87-012-274-080	C-CAP,U 1000P-50 K B	b	c	d
3CD	C.B	O	C	0112	87-010-263-040	CAP,E 100-10 M 11L SME	b	c	d
3CD	C.B	O	C	0115	87-010-831-080	C-CAP,U 0.1-16 Z F	b	c	d
3CD	C.B	O	C	0201	87-A10-793-080	C-CAP,S 0.12-16 K B	b	c	d
3CD	C.B	O	C	0202	87-012-270-080	C-CAP,U 470P-50 K B	b	c	d
3CD	C.B	O	C	0203	87-012-270-080	C-CAP,U 470P-50 K B	b	c	d
3CD	C.B	O	C	0204	87-010-405-040	CAP,E 10-50 M 11L SME	b	c	d
3CD	C.B	O	C	0205	87-010-831-080	C-CAP,U 0.1-16 Z F	b	c	d
3CD	C.B	O	C	0206	87-012-284-080	C-CAP,U 6800P-50 K B GRM	b	c	d
3CD	C.B	O	C	0207	87-012-286-080	C-CAP,U 0.01-25 K B	b	c	d
						BZA-4 MVSD3NM	BZA-4 MVSD3N1DM	BZA-4 MVSD3N8M	
3CD	C.B	O	C	0208	87-010-400-040	CAP,E 0.47-50 M 11L SME	b	c	d
3CD	C.B	O	C	0209	87-010-831-080	C-CAP,U 0.1-16 Z F	b	c	d
3CD	C.B	O	C	0210	87-010-992-080	C-CAP,S 0.047-25 K B MK212	b	c	d
3CD	C.B	O	C	0211	87-012-284-080	C-CAP,U 6800P-50 K B GRM	b	c	d
3CD	C.B	O	C	0212	87-012-195-080	C-CAP,U 100P-50 J CH	b	c	d
3CD	C.B	O	C	0213	87-016-081-080	C-CAP,S 0.1-16 K R GRM	b	c	d
3CD	C.B	O	C	0214	87-012-174-080	C-CAP,U 12P-50 J CH	b	c	d
3CD	C.B	O	C	0215	87-012-174-080	C-CAP,U 12P-50 J CH	b	c	d
3CD	C.B	O	C	0216	87-010-831-080	C-CAP,U 0.1-16 Z F	b	c	d
3CD	C.B	O	C	0218	87-010-405-040	CAP,E 10-50 M 11L SME	b	c	d
3CD	C.B	O	C	0219	87-010-831-080	C-CAP,U 0.1-16 Z F	b	c	d
3CD	C.B	O	C	0223	87-012-180-080	C-CAP,U 22P-50 J CH	.	c	.
3CD	C.B	O	C	0224	87-010-831-080	C-CAP,U 0.1-16 Z F	b	c	d
3CD	C.B	O	C	0225	87-010-831-080	C-CAP,U 0.1-16 Z F	b	c	d
3CD	C.B	O	C	0302	87-010-405-040	CAP,E 10-50 M 11L SME	b	c	d
3CD	C.B	O	C	0305	87-010-831-080	C-CAP,U 0.1-16 Z F	b	c	d
3CD	C.B	O	C	0308	87-010-221-080	CAP,E 470-10 M SME	b	c	d
3CD	C.B	O	C	0309	87-010-831-080	C-CAP,U 0.1-16 Z F	b	c	d
3CD	C.B	O	C	0310	87-010-263-080	CAP,E 100-10 M 11L SME	b	c	d
3CD	C.B	O	C	0311	87-010-831-080	C-CAP,U 0.1-16 Z F	b	c	d
						BZA-4 MVSD3NM	BZA-4 MVSD3N1DM	BZA-4 MVSD3N8M	
3CD	C.B	O	C	0313	87-012-274-080	C-CAP,U 1000P-50 K B	b	c	d
3CD	C.B	O	C	0314	87-010-831-080	C-CAP,U 0.1-16 Z F	b	c	d
3CD	C.B	O	C	0320	87-010-379-040	CAP,E 22-16 M 11L SME	b	c	d
3CD	C.B	O	C	0401	87-010-405-040	CAP,E 10-50 M 11L SME	b	c	d
3CD	C.B	O	C	0601	87-010-235-080	CAP,E 470-16 M SME	b	c	d
3CD	C.B	O	C	0602	87-A12-390-080	C-CAP,S 1-25 Z F GRM40	b	c	d
3CD	C.B	O	C	0603	87-010-831-080	C-CAP,U 0.1-16 Z F	b	c	d
3CD	C.B	O	C	0604	87-012-195-080	C-CAP,U 100P-50 J CH	b	c	d
3CD	C.B	O	C	0605	87-010-384-040	CAP,E 100-25 M 11L SME	b	c	d
3CD	C.B	O	C	0606	87-A12-390-080	C-CAP,S 1-25 Z F GRM40	b	c	d
3CD	C.B	O	C	0607	87-012-286-080	C-CAP,U 0.01-25 K B	b	c	d
3CD	C.B	O	C	0608	87-010-263-040	CAP,E 100-10 M 11L SME	b	c	d
3CD	C.B	O	C	0609	87-A12-390-080	C-CAP,S 1-25 Z F GRM40	b	c	d
3CD	C.B	O	C	0610	87-010-831-080	C-CAP,U 0.1-16 Z F	b	c	d
3CD	C.B	O	C	0613	87-010-831-080	C-CAP,U 0.1-16 Z F	b	c	d
3CD	C.B	O	C	0614	87-010-831-080	C-CAP,U 0.1-16 Z F	b	c	d
3CD	C.B	O	C	0615	87-010-831-080	C-CAP,U 0.1-16 Z F	b	c	d
3CD	C.B	O	C	0616	87-010-831-080	C-CAP,U 0.1-16 Z F	b	c	d
3CD	C.B	O	C	0703	87-010-805-080	C-CAP,S 1-16 Z F	b	c	d
3CD	C.B	O	C	0704	87-010-805-080	C-CAP,S 1-16 Z F	b	c	d

ELECTRICAL PARTS LIST -2/11 (3CD C.B -2/9)

! = ⚠ SAFTY PARTS
C = Components marked
All components used on this model at the production line are shown in this service manual.
However, please note that not all components will be available as spare parts for after-sales service.
Components marked S and O are designated as spare parts for service and will be stocked at the spare parts centers.
Components marked X and R are not designated as spare parts for after sales service, and will not be stocked at the spare parts centers.

UNIT-NAME		! C	REF-NO	PARTS-NO	PARTS-NAME	SUFFIX&MODEL			
						BZA-4 MVSD3NM	BZA-4 MVSD3N1DM	BZA-4 MVSD3N8M	
3CD	C.B	O	C	0705	87-012-274-080	C-CAP,U 1000P-50 K B	b	c	d
3CD	C.B	O	C	0706	87-012-274-080	C-CAP,U 1000P-50 K B	b	c	d
3CD	C.B	O	C	0707	87-012-274-080	C-CAP,U 1000P-50 K B	b	c	d
3CD	C.B	O	C	0708	87-012-274-080	C-CAP,U 1000P-50 K B	b	c	d
3CD	C.B	O	C	0709	87-010-263-040	CAP,E 100-10 M 11L SME	b	c	d
3CD	C.B	O	C	0710	87-010-260-040	CAP,E 47-25 M 11L SME	b	c	d
3CD	C.B	O	C	0711	87-012-191-080	C-CAP,U 68P-50 J CH	b	c	d
3CD	C.B	O	C	0712	87-012-191-080	C-CAP,U 68P-50 J CH	b	c	d
3CD	C.B	O	C	0713	87-012-191-080	C-CAP,U 68P-50 J CH	b	c	d
3CD	C.B	O	C	0714	87-012-191-080	C-CAP,U 68P-50 J CH	b	c	d
3CD	C.B	O	C	0715	87-010-805-080	C-CAP,S 1-16 Z F	b	c	d
3CD	C.B	O	C	0716	87-010-805-080	C-CAP,S 1-16 Z F	b	c	d
3CD	C.B	O	C	0717	87-010-805-080	C-CAP,S 1-16 Z F	b	c	d
3CD	C.B	O	C	0718	87-010-805-080	C-CAP,S 1-16 Z F	b	c	d
3CD	C.B	O	C	0719	87-010-805-080	C-CAP,S 1-16 Z F	b	c	d
3CD	C.B	O	C	0720	87-010-805-080	C-CAP,S 1-16 Z F	b	c	d
3CD	C.B	O	C	0721	87-010-805-080	C-CAP,S 1-16 Z F	b	c	d
3CD	C.B	O	C	0722	87-010-805-080	C-CAP,S 1-16 Z F	b	c	d
3CD	C.B	O	C	0723	87-010-831-080	C-CAP,U 0.1-16 Z F	b	c	d
3CD	C.B	O	C	0724	87-012-195-080	C-CAP,U 100P-50 J CH	b	c	d
						BZA-4 MVSD3NM	BZA-4 MVSD3N1DM	BZA-4 MVSD3N8M	
3CD	C.B	O	C	0725	87-012-195-080	C-CAP,U 100P-50 J CH	b	c	d
3CD	C.B	O	C	0726	87-012-195-080	C-CAP,U 100P-50 J CH	b	c	d
3CD	C.B	O	C	0727	87-012-195-080	C-CAP,U 100P-50 J CH	b	c	d
3CD	C.B	O	C	0751	87-010-831-080	C-CAP,U 0.1-16 Z F	b	.	d
3CD	C.B	O	C	0752	87-012-274-080	C-CAP,U 1000P-50 K B	b	.	d
3CD	C.B	O	C	0753	87-010-831-080	C-CAP,U 0.1-16 Z F	b	.	d
3CD	C.B	O	C	0754	87-010-260-040	CAP,E 47-25 M 11L SME	b	.	d
3CD	C.B	O	C	0755	87-010-831-080	C-CAP,U 0.1-16 Z F	b	.	d
3CD	C.B	O	C	0756	87-010-831-080	C-CAP,U 0.1-16 Z F	b	.	d
3CD	C.B	O	C	0758	87-010-831-080	C-CAP,U 0.1-16 Z F	b	.	d
3CD	C.B	O	C	0759	87-012-274-080	C-CAP,U 1000P-50 K B	b	.	d
3CD	C.B	O	C	0760	87-012-274-080	C-CAP,U 1000P-50 K B	b	.	d
3CD	C.B	O	C	0761	87-010-831-080	C-CAP,U 0.1-16 Z F	b	.	d
3CD	C.B	O	C	0762	87-010-831-080	C-CAP,U 0.1-16 Z F	b	c	d
3CD	C.B	O	C	0801	87-010-260-040	CAP,E 47-25 M 11L SME	b	c	d
3CD	C.B	O	C	0802	87-010-831-080	C-CAP,U 0.1-16 Z F	b	c	d
3CD	C.B	O	C	0803	87-010-831-080	C-CAP,U 0.1-16 Z F	b	c	d
3CD	C.B	O	C	0804	87-010-831-080	C-CAP,U 0.1-16 Z F	b	c	d
3CD	C.B	O	C	0805	87-010-831-080	C-CAP,U 0.1-16 Z F	b	c	d
3CD	C.B	O	C	0806	87-010-260-040	CAP,E 47-25 M 11L SME	b	c	d
						BZA-4 MVSD3NM	BZA-4 MVSD3N1DM	BZA-4 MVSD3N8M	
3CD	C.B	O	C	0807	87-010-831-080	C-CAP,U 0.1-16 Z F	b	c	d
3CD	C.B	O	C	0808	87-010-831-080	C-CAP,U 0.1-16 Z F	b	c	d
3CD	C.B	O	C	0810	87-A10-706-080	C-CAP,U 0.33-16 Z F	b	c	d
3CD	C.B	O	C	0811	87-010-831-080	C-CAP,U 0.1-16 Z F	b	c	d
3CD	C.B	O	C	0812	87-010-264-040	CAP,E 100-10 M 5L SRE	b	c	d
3CD	C.B	O	C	0813	87-010-831-080	C-CAP,U 0.1-16 Z F	b	c	d
3CD	C.B	O	C	0814	87-010-260-040	CAP,E 47-25 M 11L SME	b	c	d
3CD	C.B	O	C	0815	87-010-831-080	C-CAP,U 0.1-16 Z F	b	c	d
3CD	C.B	O	C	0816	87-010-263-040	CAP,E 100-10 M 11L SME	b	c	d
3CD	C.B	O	C	0817	87-010-831-080	C-CAP,U 0.1-16 Z F	b	c	d
3CD	C.B	O	C	0818	87-010-831-080	C-CAP,U 0.1-16 Z F	b	c	d
3CD	C.B	O	C	0819	87-010-831-080	C-CAP,U 0.1-16 Z F	b	c	d
3CD	C.B	O	C	0820	87-012-172-080	C-CAP,U 10P-50 D CH	b	c	d
3CD	C.B	O	C	0821	87-012-172-080	C-CAP,U 10P-50 D CH	b	c	d
3CD	C.B	O	C	0822	87-010-260-040	CAP,E 47-25 M 11L SME	b	c	d
3CD	C.B	O	C	0823	87-010-378-040	CAP,E 10-16 M 11L SME	b	c	d
3CD	C.B	O	C	0824	87-010-831-080	C-CAP,U 0.1-16 Z F	b	c	d
3CD	C.B	O	C	0825	87-010-831-080	C-CAP,U 0.1-16 Z F	b	c	d
3CD	C.B	O	C	0826	87-010-260-040	CAP,E 47-25 M 11L SME	b	c	d
3CD	C.B	O	C	0827	87-010-831-080	C-CAP,U 0.1-16 Z F	b	c	d

ELECTRICAL PARTS LIST -3/11 (3CD C.B -3/9)

! = ⚠ SAFTY PARTS
C = Components marked
All components used on this model at the production line are shown in this service manual.
However, please note that not all components will be available as spare parts for after-sales service.
Components marked S and O are designated as spare parts for service and will be stocked at the spare parts centers.
Components marked X and R are not designated as spare parts for after sales service, and will not be stocked at the spare parts centers.

UNIT-NAME		! C	REF-NO	PARTS-NO	PARTS-NAME	SUFFIX&MODEL			
						BZA-4 MVSD3NM	BZA-4 MVSD3N1DM	BZA-4 MVSD3N8M	
3CD	C.B	O	C	0828	87-010-831-080	C-CAP,U 0.1-16 Z F	b	c	d
3CD	C.B	O	C	0829	87-012-276-080	C-CAP,U 1500P-50 K B	b	c	d
3CD	C.B	O	C	0830	87-010-831-080	C-CAP,U 0.1-16 Z F	b	c	d
3CD	C.B	O	C	0831	87-010-405-040	CAP,E 10-50 M 11L SME	b	c	d
3CD	C.B	O	C	0832	87-010-260-040	CAP,E 47-25 M 11L SME	b	c	d
3CD	C.B	O	C	0833	87-010-831-080	C-CAP,U 0.1-16 Z F	b	c	d
3CD	C.B	O	C	0834	87-010-831-080	C-CAP,U 0.1-16 Z F	b	c	d
3CD	C.B	O	C	0835	87-010-831-080	C-CAP,U 0.1-16 Z F	b	c	d
3CD	C.B	O	C	0836	87-010-260-040	CAP,E 47-25 M 11L SME	b	c	d
3CD	C.B	O	C	0837	87-010-831-080	C-CAP,U 0.1-16 Z F	b	c	d
3CD	C.B	O	C	0838	87-010-831-080	C-CAP,U 0.1-16 Z F	b	c	d
3CD	C.B	O	C	0839	87-010-322-080	C-CAP,S 100P-50 J CH GRM	b	c	d
3CD	C.B	O	C	0840	87-010-831-080	C-CAP,U 0.1-16 Z F	b	c	d
3CD	C.B	O	C	0841	87-010-831-080	C-CAP,U 0.1-16 Z F	b	c	d
3CD	C.B	O	C	0843	87-012-195-080	C-CAP,U 100P-50 J CH	b	c	d
3CD	C.B	O	C	0844	87-012-195-080	C-CAP,U 100P-50 J CH	b	c	d
3CD	C.B	O	C	0845	87-012-195-080	C-CAP,U 100P-50 J CH	b	c	d
3CD	C.B	O	C	0846	87-012-195-080	C-CAP,U 100P-50 J CH	b	c	d
3CD	C.B	O	C	0847	87-010-322-080	C-CAP,S 100P-50 J CH GRM	b	c	d
3CD	C.B	O	C	0848	87-010-322-080	C-CAP,S 100P-50 J CH GRM	b	c	d
3CD	C.B	O	C	0849	87-010-322-080	C-CAP,S 100P-50 J CH GRM	b	c	d
3CD	C.B	O	C	0850	87-010-322-080	C-CAP,S 100P-50 J CH GRM	b	c	d
3CD	C.B	O	C	0851	87-012-180-080	C-CAP,U 22P-50 J CH	b	c	d
3CD	C.B	O	C	0852	87-012-180-080	C-CAP,U 22P-50 J CH	b	c	d
3CD	C.B	O	C	0853	87-012-188-080	C-CAP,U 47P-50 J CH	b	c	d
3CD	C.B	O	C	0854	87-012-188-080	C-CAP,U 47P-50 J CH	b	c	d
3CD	C.B	O	C	0855	87-012-180-080	C-CAP,U 22P-50 J CH	b	c	d
3CD	C.B	O	C	0856	87-012-180-080	C-CAP,U 22P-50 J CH	b	c	d
3CD	C.B	O	C	0862	87-010-831-080	C-CAP,U 0.1-16 Z F	b	c	d
3CD	C.B	X	C	0864	88-108-000-080	C-JUMPER,U	b	c	.
3CD	C.B	O	C	0865	87-012-286-080	C-CAP,U 0.01-25 K B	b	c	.
3CD	C.B	O	C	0901	87-012-270-080	C-CAP,U 470P-50 K B	b	c	d
3CD	C.B	O	C	0902	87-012-199-080	C-CAP,U 220P-50 J CH	b	c	d
3CD	C.B	O	C	0903	87-012-270-080	C-CAP,U 470P-50 K B	b	c	d
3CD	C.B	O	C	0904	87-010-221-080	CAP,E 470-10 M SME	b	c	d
3CD	C.B	O	C	0905	87-012-180-080	C-CAP,U 22P-50 J CH	b	c	d
3CD	C.B	O	C	0906	87-012-274-080	C-CAP,U 1000P-50 K B	b	c	d
3CD	C.B	O	C	0907	87-010-260-080	CAP,E 47-25 M 11L SME	.	c	.
3CD	C.B	O	C	0908	87-010-831-080	C-CAP,U 0.1-16 Z F	.	c	.
3CD	C.B	O	C	0909	87-010-831-080	C-CAP,U 0.1-16 Z F	b	c	d
3CD	C.B	O	C	0911	87-010-831-080	C-CAP,U 0.1-16 Z F	b	c	d
3CD	C.B	O	CN	0101	87-A60-424-010	CONN,16P V TOC-B	b	c	d
3CD	C.B	O	CN	0402	87-099-199-010	CONN,6P H BLK 6216	b	c	d
3CD	C.B	O	CN	0404	87-099-212-010	CONN,5P V BLK 6216	b	c	d
3CD	C.B	O	CN	0601	87-A60-081-010	CONN,06P H 9604S-06F	.	c	.
3CD	C.B	O	CN	0601	87-A60-079-010	CONN,08P H 9604S-08F	b	.	d
3CD	C.B	O	CN	0801	87-099-201-010	CONN,8P H BLK 6216	b	c	d
3CD	C.B	S	D	0301	87-A40-445-080	ZENER,MTZJ3.9A	b	c	d
3CD	C.B	S	D	0303	87-020-465-080	DIODE,1SS133	b	c	d
3CD	C.B	S	D	0402	87-017-074-080	ZENER,HZS3B3	b	c	d
3CD	C.B	S	D	0601	87-A40-614-040	C-DIODE,SFPB-72	b	c	d
3CD	C.B	S	D	0602	87-017-931-080	ZENER,MTZJ5.6B	b	c	d
3CD	C.B	S	D	0603	87-020-465-080	DIODE,1SS133	b	c	d
3CD	C.B	S	D	0606	87-A40-243-080	ZENER,MTZ J 4.7BT-72	b	c	d
3CD	C.B	S	D	0608	87-020-465-080	DIODE,1SS133	b	c	d
3CD	C.B	S	D	0701	87-A40-235-080	ZENER,MTZJ9.1C	b	c	d
3CD	C.B	S	D	0801	87-A40-003-080	ZENER,MTZJ4.3A	b	c	d
3CD	C.B	S	D	0803	87-020-465-080	DIODE,1SS133	b	c	d
3CD	C.B	S	D	0804	87-020-465-080	DIODE,1SS133	b	c	d
3CD	C.B	S	D	0805	87-020-465-080	DIODE,1SS133	b	c	d

ELECTRICAL PARTS LIST -4/11 (3CD C.B -4/9)

! = ⚠ SAFTY PARTS
 C = Components marked
 All components used on this model at the production line are shown in this service manual.
 However, please note that not all components will be available as spare parts for after-sales service.
 Components marked S and O are designated as spare parts for service and will be stocked at the spare parts centers.
 Components marked X and R are not designated as spare parts for after sales service, and will not be stocked at the spare parts centers.

UNIT-NAME	! C	REF-NO	PARTS-NO	PARTS-NAME	SUFFIX&MODEL		
					BZA-4 MVSD3NM	BZA-4 MVSD3N1DM	BZA-4 MVSD3N8M
3CD C.B		O FB 0601	87-008-474-080	F-BEAD, BL02RN1-R62T2 EMI	b	c	d
3CD C.B		O FB 0602	87-A50-322-080	C-COIL,S BK2125 LM252	b	c	d
3CD C.B		O FB 0603	87-A50-322-080	C-COIL,S BK2125 LM252	b	c	d
3CD C.B		O FB 0604	87-A50-322-080	C-COIL,S BK2125 LM252	b	c	d
3CD C.B		X FB 0605	88-108-000-080	C-JUMPER,U	b	c	d
3CD C.B		O FB 0606	87-A50-322-080	C-COIL,S BK2125 LM252	b	c	d
3CD C.B		X FB 0607	88-108-000-080	C-JUMPER,U	b	.	d
3CD C.B		X FB 0608	88-108-000-080	C-JUMPER,U	b	.	d
3CD C.B		O FB 0801	87-008-372-080	FLTR,EMI BL01 RN1	b	c	d
3CD C.B		O FB 0802	87-008-372-080	FLTR,EMI BL01 RN1	b	c	d
3CD C.B		O FB 0803	87-008-372-080	FLTR,EMI BL01 RN1	b	c	d
3CD C.B		X FB 0901	88-100-000-010	PLATING-JW, 0.58 SN95	.	c	.
3CD C.B		O FB 0902	87-A50-322-080	C-COIL,S BK2125 LM252	b	c	d
3CD C.B		O FB 0903	87-A50-322-080	C-COIL,S BK2125 LM252	b	c	d
3CD C.B		X FB 0904	88-100-000-080	PLATING-JW, 0.58 SN95	.	c	.
3CD C.B		S IC 0101	87-A21-922-040	C-IC,CXA2550N	b	c	d
3CD C.B		S IC 0102	87-017-917-080	C-IC,BU4066BCF	b	c	d
3CD C.B		S IC 0201	87-A21-921-030	C-IC,CXD3068Q	b	c	d
3CD C.B		S IC 0301	87-A21-161-040	C-IC,BA6392FP	b	c	d
3CD C.B		S IC 0401	87-070-289-040	C-IC,BU2092F	b	c	d
3CD C.B					BZA-4 MVSD3NM	BZA-4 MVSD3N1DM	BZA-4 MVSD3N8M
3CD C.B		S IC 0701	87-A21-893-040	C-IC,NJM14558V-TE2	b	c	d
3CD C.B		S IC 0702	87-A21-893-040	C-IC,NJM14558V-TE2	b	.	d
3CD C.B		S IC 0801	87-A21-923-030	C-IC,ES3880	b	c	d
3CD C.B		S IC 0802	87-A21-924-030	C-IC,ES3889	b	c	d
3CD C.B		S IC 0803	87-A21-927-010	C-IC,SST39SF020A	b	c	d
3CD C.B		S IC 0804	87-A21-925-030	C-IC,SM81C256K16D-35	b	c	d
3CD C.B		S IC 0901	87-017-825-010	IC,GP1F32T	.	c	.
3CD C.B		O J 0901	87-009-502-010	JACK,PIN 1P YEL W/O SW	b	c	d
3CD C.B		X JR 0201	88-108-000-080	C-JUMPER,U	b	.	d
3CD C.B		X JR 0202	88-108-000-080	C-JUMPER,U	.	c	.
3CD C.B		X JR 0302	88-108-000-080	C-JUMPER,U	b	c	d
3CD C.B		O JR 0601	87-A50-322-080	C-COIL,S BK2125 LM252	b	c	d
3CD C.B		O JR 0602	87-A50-322-080	C-COIL,S BK2125 LM252	b	c	d
3CD C.B		O L 0301	87-005-432-080	COIL,10UH K FLR50	b	c	d
3CD C.B		O L 0302	87-005-432-080	COIL,10UH K FLR50	b	c	d
3CD C.B		O L 0303	87-005-432-080	COIL,10UH K FLR50	b	c	d
3CD C.B		O L 0602	87-A50-704-010	COIL,68UH CDRI2W875	b	c	d
3CD C.B		O L 0901	87-005-424-080	COIL,2.2UH K FLR50	b	c	d
3CD C.B		O L 0902	87-003-050-080	COIL,47UH K LAL04	b	c	d
3CD C.B		S Q 0101	87-026-609-080	TR,KTA1266GR	b	c	d
3CD C.B					BZA-4 MVSD3NM	BZA-4 MVSD3N1DM	BZA-4 MVSD3N8M
3CD C.B		S Q 0102	87-A30-076-080	C-TR,2SC3052F	b	c	d
3CD C.B		S Q 0103	87-A30-076-080	C-TR,2SC3052F	b	c	d
3CD C.B		S Q 0301	87-A30-520-080	TR,2SC5342Y	b	c	d
3CD C.B		S Q 0302	87-A30-520-080	TR,2SC5342Y	b	c	d
3CD C.B		S Q 0303	87-A30-520-080	TR,2SC5342Y	b	c	d
3CD C.B		S Q 0304	87-A30-520-080	TR,2SC5342Y	b	c	d
3CD C.B		S Q 0305	87-A30-520-080	TR,2SC5342Y	b	c	d
3CD C.B		S Q 0306	87-A30-520-080	TR,2SC5342Y	b	c	d
3CD C.B		S Q 0307	87-A30-520-080	TR,2SC5342Y	b	c	d
3CD C.B		S Q 0308	87-A30-520-080	TR,2SC5342Y	b	c	d
3CD C.B		S Q 0309	87-A30-083-080	TR,CSD1489B	b	c	d
3CD C.B		S Q 0310	87-A30-076-080	C-TR,2SC3052F	b	c	d
3CD C.B		S Q 0311	87-A30-076-080	C-TR,2SC3052F	b	c	d
3CD C.B		S Q 0312	87-A30-076-080	C-TR,2SC3052F	b	c	d
3CD C.B		S Q 0313	87-A30-076-080	C-TR,2SC3052F	b	c	d
3CD C.B		S Q 0402	89-111-625-080	C-TR,2SA1162GR	b	c	d
3CD C.B		S Q 0403	87-A30-076-080	C-TR,2SC3052F	b	c	d
3CD C.B		S Q 0404	87-A30-087-080	C-FET,2SK2158	b	c	d
3CD C.B		S Q 0405	89-111-625-080	C-TR,2SA1162GR	b	c	d
3CD C.B		S Q 0601	87-A30-582-080	TR,CDA1585BC	b	c	d

ELECTRICAL PARTS LIST -5/11 (3CD C.B -5/9)

! = ⚠ SAFTY PARTS
C = Components marked
All components used on this model at the production line are shown in this service manual.
However, please note that not all components will be available as spare parts for after-sales service.
Components marked S and O are designated as spare parts for service and will be stocked at the spare parts centers.
Components marked X and R are not designated as spare parts for after sales service, and will not be stocked at the spare parts centers.

UNIT-NAME	! C	REF-NO	PARTS-NO	PARTS-NAME	SUFFIX&MODEL		
					BZA-4 MVSD3NM	BZA-4 MVSD3N1DM	BZA-4 MVSD3N8M
3CD C.B	S	Q	0602	87-A30-582-080	TR,CDA1585BC	b	d
3CD C.B	S	Q	0603	87-A30-076-080	C-TR,2SC3052F	b	d
3CD C.B	S	Q	0604	87-A30-076-080	C-TR,2SC3052F	b	d
3CD C.B	S	Q	0605	87-A30-083-080	TR,CSD1489B	b	d
3CD C.B	S	Q	0606	87-A30-076-080	C-TR,2SC3052F	b	d
3CD C.B	S	Q	0801	87-A30-083-080	TR,CSD1489B	b	d
3CD C.B	S	Q	0802	89-327-125-080	C-TR,2SC2712GR	b	d
3CD C.B	S	Q	0803	87-A30-087-080	C-FET,2SK2158	b	d
3CD C.B	S	Q	0804	87-A30-076-080	C-TR,2SC3052F	b	d
3CD C.B	S	Q	0805	87-A30-087-080	C-FET,2SK2158	b	d
3CD C.B	S	Q	0806	87-A30-076-080	C-TR,2SC3052F	b	d
3CD C.B	S	Q	0901	89-111-625-080	C-TR,2SA1162GR	b	d
3CD C.B	X	R	0101	88-108-223-080	C-RES,U 22K-1/16W J	b	d
3CD C.B	X	R	0102	88-108-102-080	C-RES,U 1K-1/16W J	b	d
3CD C.B	X	R	0103	88-108-105-080	C-RES,U 1M-1/16W J	b	d
3CD C.B	X	R	0104	88-108-103-080	C-RES,U 10K-1/16W J	b	d
3CD C.B	X	R	0105	88-108-472-080	C-RES,U 4.7K-1/16W J	b	d
3CD C.B	X	R	0106	88-108-472-080	C-RES,U 4.7K-1/16W J	b	d
3CD C.B	X	R	0107	88-108-103-080	C-RES,U 10K-1/16W J	b	d
3CD C.B	X	R	0108	88-108-473-080	C-RES,U 47K-1/16W J	b	d
3CD C.B	X	R	0109	88-108-473-080	C-RES,U 47K-1/16W J	b	d
3CD C.B	X	R	0110	88-108-332-080	C-RES,U 3.3K-1/16W J	b	d
3CD C.B	X	R	0111	88-108-332-080	C-RES,U 3.3K-1/16W J	b	d
3CD C.B	X	R	0114	88-108-100-080	C-RES,U 10-1/16W J	b	d
3CD C.B	X	R	0115	88-108-333-080	C-RES,U 33K-1/16W J	b	d
3CD C.B	X	R	0116	88-108-333-080	C-RES,U 33K-1/16W J	b	d
3CD C.B	X	R	0117	88-108-333-080	C-RES,U 33K-1/16W J	b	d
3CD C.B	X	R	0118	88-108-333-080	C-RES,U 33K-1/16W J	b	d
3CD C.B	X	R	0119	88-108-333-080	C-RES,U 33K-1/16W J	b	d
3CD C.B	X	R	0120	88-108-333-080	C-RES,U 33K-1/16W J	b	d
3CD C.B	X	R	0121	88-108-181-080	C-RES,U 180-1/16W J	b	d
3CD C.B	X	R	0124	88-108-823-080	C-RES,U 82K-1/16W J	b	d
3CD C.B	X	R	0125	88-108-563-080	C-RES,U 56K-1/16W J	b	d
3CD C.B	X	R	0126	88-108-563-080	C-RES,U 56K-1/16W J	b	d
3CD C.B	X	R	0127	88-108-000-080	C-JUMPER,U	b	d
3CD C.B	X	R	0128	88-108-823-080	C-RES,U 82K-1/16W J	b	d
3CD C.B	X	R	0129	88-108-101-080	C-RES,U 100-1/16W J	b	d
3CD C.B	X	R	0130	88-108-000-080	C-JUMPER,U	b	d
3CD C.B	X	R	0134	88-108-000-080	C-JUMPER,U	b	d
3CD C.B	X	R	0137	88-108-103-080	C-RES,U 10K-1/16W J	b	d
3CD C.B	X	R	0138	88-108-223-080	C-RES,U 22K-1/16W J	b	d
3CD C.B	X	R	0201	88-108-103-080	C-RES,U 10K-1/16W J	b	d
3CD C.B	X	R	0202	88-108-103-080	C-RES,U 10K-1/16W J	b	d
3CD C.B	X	R	0203	88-108-103-080	C-RES,U 10K-1/16W J	b	d
3CD C.B	X	R	0204	88-108-103-080	C-RES,U 10K-1/16W J	b	d
3CD C.B	X	R	0205	88-108-103-080	C-RES,U 10K-1/16W J	b	d
3CD C.B	X	R	0206	88-108-103-080	C-RES,U 10K-1/16W J	b	d
3CD C.B	X	R	0207	88-108-104-080	C-RES,U 100K-1/16W J	b	d
3CD C.B	X	R	0208	88-108-472-080	C-RES,U 4.7K-1/16W J	b	d
3CD C.B	X	R	0209	88-108-332-080	C-RES,U 3.3K-1/16W J	b	d
3CD C.B	X	R	0210	88-108-182-080	C-RES,U 1.8K-1/16W J	b	d
3CD C.B	X	R	0211	88-108-333-080	C-RES,U 33K-1/16W J	b	d
3CD C.B	X	R	0212	88-108-103-080	C-RES,U 10K-1/16W J	b	d
3CD C.B	X	R	0213	88-108-104-080	C-RES,U 100K-1/16W J	b	d
3CD C.B	X	R	0214	88-108-000-080	C-JUMPER,U	b	d
3CD C.B	X	R	0215	88-108-103-080	C-RES,U 10K-1/16W J	b	d
3CD C.B	X	R	0216	88-108-332-080	C-RES,U 3.3K-1/16W J	b	d
3CD C.B	X	R	0217	88-108-332-080	C-RES,U 3.3K-1/16W J	b	d
3CD C.B	X	R	0218	88-108-824-080	C-RES,U 820K-1/16W J	b	d
3CD C.B	X	R	0219	88-108-474-080	C-RES,U 470K-1/16W J	b	d

ELECTRICAL PARTS LIST -6/11 (3CD C.B -6/9)

! = ⚠ SAFTY PARTS
C = Components marked
All components used on this model at the production line are shown in this service manual.
However, please note that not all components will be available as spare parts for after-sales service.
Components marked S and O are designated as spare parts for service and will be stocked at the spare parts centers.
Components marked X and R are not designated as spare parts for after sales service, and will not be stocked at the spare parts centers.

UNIT-NAME	! C	REF-NO	PARTS-NO	PARTS-NAME	SUFFIX&MODEL		
					BZA-4 MVSD3NM	BZA-4 MVSD3N1DM	BZA-4 MVSD3N8M
3CD C.B	X R	0220	88-108-105-080	C-RES,U 1M-1/16W J	b	c	d
3CD C.B	X R	0221	88-108-103-080	C-RES,U 10K-1/16W J	b	c	d
3CD C.B	X R	0222	88-108-103-080	C-RES,U 10K-1/16W J	b	c	d
3CD C.B	X R	0223	88-108-103-080	C-RES,U 10K-1/16W J	b	c	d
3CD C.B	X R	0224	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X R	0225	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X R	0226	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X R	0227	88-108-103-080	C-RES,U 10K-1/16W J	b	c	d
3CD C.B	X R	0228	88-108-103-080	C-RES,U 10K-1/16W J	b	c	d
3CD C.B	X R	0229	88-108-000-080	C-JUMPER,U	b	c	d
3CD C.B	X R	0230	88-108-000-080	C-JUMPER,U	b	c	d
3CD C.B	X R	0231	88-108-000-080	C-JUMPER,U	b	c	d
3CD C.B	X R	0232	88-108-000-080	C-JUMPER,U	b	c	d
3CD C.B	X R	0233	88-108-000-080	C-JUMPER,U	b	c	d
3CD C.B	X R	0234	88-108-000-080	C-JUMPER,U	b	c	d
3CD C.B	X R	0235	88-108-102-080	C-RES,U 1K-1/16W J	b	c	d
3CD C.B	X R	0243	88-108-101-080	C-RES,U 100-1/16W J	.	c	.
3CD C.B	X R	0244	88-108-392-080	C-RES,U 3.9K-1/16W J	b	c	d
3CD C.B	X R	0245	88-108-105-080	C-RES,U 1M-1/16W J	b	c	d
3CD C.B	X R	0302	88-128-101-080	C-RES, 100-1/8W J	b	c	d
					BZA-4 MVSD3NM	BZA-4 MVSD3N1DM	BZA-4 MVSD3N8M
3CD C.B	X R	0304	88-128-689-080	C-RES, 6.8-1/8W J	b	c	d
3CD C.B	X R	0305	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X R	0306	88-128-000-080	C-JUMPER,3216	b	c	d
3CD C.B	X R	0308	88-108-223-080	C-RES,U 22K-1/16W J	b	c	d
3CD C.B	X R	0309	88-108-154-080	C-RES,U 150K-1/16W J	b	c	d
3CD C.B	X R	0310	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X R	0311	88-108-332-080	C-RES,U 3.3K-1/16W J	b	c	d
3CD C.B	X R	0312	88-108-562-080	C-RES,U 5.6K-1/16W J	b	c	d
3CD C.B	X R	0313	88-108-103-080	C-RES,U 10K-1/16W J	b	c	d
3CD C.B	X R	0314	88-128-229-080	C-RES, 2.2-1/8W J	b	c	d
3CD C.B	X R	0315	88-108-152-080	C-RES,U 1.5K-1/16W J	b	c	d
3CD C.B	X R	0316	88-108-682-080	C-RES,U 6.8K-1/16W J	b	c	d
3CD C.B	X R	0317	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X R	0318	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X R	0319	88-108-152-080	C-RES,U 1.5K-1/16W J	b	c	d
3CD C.B	X R	0320	88-108-682-080	C-RES,U 6.8K-1/16W J	b	c	d
3CD C.B	X R	0321	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X R	0324	88-108-682-080	C-RES,U 6.8K-1/16W J	b	c	d
3CD C.B	X R	0325	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X R	0326	88-128-339-080	C-RES, 3.3-1/8W J	b	c	d
					BZA-4 MVSD3NM	BZA-4 MVSD3N1DM	BZA-4 MVSD3N8M
3CD C.B	X R	0327	88-108-392-080	C-RES,U 3.9K-1/16W J	b	c	d
3CD C.B	X R	0328	88-108-562-080	C-RES,U 5.6K-1/16W J	b	c	d
3CD C.B	X R	0329	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X R	0330	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X R	0331	88-108-332-080	C-RES,U 3.3K-1/16W J	b	c	d
3CD C.B	X R	0332	88-108-562-080	C-RES,U 5.6K-1/16W J	b	c	d
3CD C.B	X R	0333	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X R	0334	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X R	0335	88-108-473-080	C-RES,U 47K-1/16W J	b	c	d
3CD C.B	X R	0336	88-128-000-080	C-JUMPER,3216	b	c	d
3CD C.B	X R	0337	88-128-229-080	C-RES, 2.2-1/8W J	b	c	d
3CD C.B	X R	0340	88-108-182-080	C-RES,U 1.8K-1/16W J	b	c	d
3CD C.B	X R	0401	88-108-223-080	C-RES,U 22K-1/16W J	b	c	d
3CD C.B	X R	0403	88-108-471-080	C-RES,U 470-1/16W J	b	c	d
3CD C.B	X R	0404	88-108-103-080	C-RES,U 10K-1/16W J	b	c	d
3CD C.B	X R	0405	88-108-471-080	C-RES,U 470-1/16W J	b	c	d
3CD C.B	X R	0406	88-108-471-080	C-RES,U 470-1/16W J	b	c	d
3CD C.B	X R	0407	88-108-471-080	C-RES,U 470-1/16W J	b	c	d
3CD C.B	X R	0408	88-108-103-080	C-RES,U 10K-1/16W J	b	c	d
3CD C.B	X R	0409	88-108-102-080	C-RES,U 1K-1/16W J	b	c	d

ELECTRICAL PARTS LIST -7/11 (3CD C.B -7/9)

! = ⚠ SAFTY PARTS
C = Components marked
All components used on this model at the production line are shown in this service manual.
However, please note that not all components will be available as spare parts for after-sales service.
Components marked S and O are designated as spare parts for service and will be stocked at the spare parts centers.
Components marked X and R are not designated as spare parts for after sales service, and will not be stocked at the spare parts centers.

UNIT-NAME	! C	REF-NO	PARTS-NO	PARTS-NAME	SUFFIX&MODEL		
					BZA-4 MVSD3NM	BZA-4 MVSD3N1DM	BZA-4 MVSD3N8M
3CD C.B	X R	0410	88-108-102-080	C-RES,U 1K-1/16W J	b	c	d
3CD C.B	X R	0411	88-108-103-080	C-RES,U 10K-1/16W J	b	c	d
3CD C.B	X R	0412	88-108-103-080	C-RES,U 10K-1/16W J	b	c	d
3CD C.B	X R	0413	88-108-473-080	C-RES,U 47K-1/16W J	b	c	d
3CD C.B	X R	0414	88-108-332-080	C-RES,U 3.3K-1/16W J	b	c	d
3CD C.B	X R	0415	88-108-103-080	C-RES,U 10K-1/16W J	b	c	d
3CD C.B	X R	0416	88-108-103-080	C-RES,U 10K-1/16W J	b	c	d
3CD C.B	X R	0417	88-108-103-080	C-RES,U 10K-1/16W J	b	c	d
3CD C.B	X R	0418	88-108-272-080	C-RES,U 2.7K-1/16W J	b	c	d
3CD C.B	X R	0419	88-108-122-080	C-RES,U 1.2K-1/16W J	b	c	d
3CD C.B	X R	0420	88-108-682-080	C-RES,U 6.8K-1/16W J	b	c	d
3CD C.B	X R	0422	88-108-182-080	C-RES,U 1.8K-1/16W J	b	c	d
3CD C.B	X R	0423	88-108-222-080	C-RES,U 2.2K-1/16W J	b	c	d
3CD C.B	X R	0424	88-108-682-080	C-RES,U 6.8K-1/16W J	b	c	d
3CD C.B	X R	0601	88-108-471-080	C-RES,U 470-1/16W J	b	c	d
3CD C.B	X R	0602	88-108-471-080	C-RES,U 470-1/16W J	b	c	d
3CD C.B	X R	0603	88-108-152-080	C-RES,U 1.5K-1/16W J	b	c	d
3CD C.B	X R	0604	88-108-152-080	C-RES,U 1.5K-1/16W J	b	c	d
3CD C.B	X R	0605	88-108-102-080	C-RES,U 1K-1/16W J	b	c	d
3CD C.B	X R	0606	88-108-102-080	C-RES,U 1K-1/16W J	b	c	d
3CD C.B	X R	0607	88-108-471-080	C-RES,U 470-1/16W J	b	c	d
3CD C.B	X R	0608	88-108-102-080	C-RES,U 1K-1/16W J	b	c	d
3CD C.B	X R	0609	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X R	0610	88-128-222-080	C-RES, 2.2K-1/8W J	b	c	d
3CD C.B	X R	0611	88-108-102-080	C-RES,U 1K-1/16W J	b	c	d
3CD C.B	X R	0612	88-108-471-080	C-RES,U 470-1/16W J	b	c	d
3CD C.B	X R	0613	88-108-103-080	C-RES,U 10K-1/16W J	b	c	d
3CD C.B	X R	0614	88-128-000-080	C-JUMPER, 3216	b	c	d
3CD C.B	X R	0617	88-108-103-080	C-RES,U 10K-1/16W J	b	c	d
3CD C.B	X R	0620	88-108-223-080	C-RES,U 22K-1/16W J	b	c	d
3CD C.B	X R	0701	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X R	0702	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X R	0703	88-108-102-080	C-RES,U 1K-1/16W J	b	c	d
3CD C.B	X R	0704	88-108-102-080	C-RES,U 1K-1/16W J	b	c	d
3CD C.B	X R	0705	88-108-102-080	C-RES,U 1K-1/16W J	b	c	d
3CD C.B	X R	0706	88-108-102-080	C-RES,U 1K-1/16W J	b	c	d
3CD C.B	X R	0707	88-128-181-080	C-RES, 180-1/8W J	b	c	d
3CD C.B	X R	0708	88-108-103-080	C-RES,U 10K-1/16W J	b	c	d
3CD C.B	X R	0709	88-108-103-080	C-RES,U 10K-1/16W J	b	c	d
3CD C.B	X R	0710	88-108-223-080	C-RES,U 22K-1/16W J	b	c	d
3CD C.B	X R	0711	88-108-223-080	C-RES,U 22K-1/16W J	b	c	d
3CD C.B	X R	0713	88-108-223-080	C-RES,U 22K-1/16W J	b	c	d
3CD C.B	X R	0714	88-108-223-080	C-RES,U 22K-1/16W J	b	c	d
3CD C.B	X R	0715	88-108-273-080	C-RES,U 27K-1/16W J	b	c	d
3CD C.B	X R	0716	88-108-273-080	C-RES,U 27K-1/16W J	b	c	d
3CD C.B	X R	0717	88-108-273-080	C-RES,U 27K-1/16W J	b	c	d
3CD C.B	X R	0718	88-108-273-080	C-RES,U 27K-1/16W J	b	c	d
3CD C.B	X R	0719	88-108-824-080	C-RES,U 820K-1/16W J	b	c	d
3CD C.B	X R	0720	88-108-824-080	C-RES,U 820K-1/16W J	b	c	d
3CD C.B	X R	0721	88-108-824-080	C-RES,U 820K-1/16W J	b	c	d
3CD C.B	X R	0722	88-108-824-080	C-RES,U 820K-1/16W J	b	c	d
3CD C.B	X R	0751	88-108-103-080	C-RES,U 10K-1/16W J	b	.	d
3CD C.B	X R	0752	88-108-473-080	C-RES,U 47K-1/16W J	b	.	d
3CD C.B	X R	0753	88-108-103-080	C-RES,U 10K-1/16W J	b	.	d
3CD C.B	X R	0754	88-108-103-080	C-RES,U 10K-1/16W J	b	.	d
3CD C.B	X R	0755	88-108-223-080	C-RES,U 22K-1/16W J	b	.	d
3CD C.B	X R	0756	88-108-223-080	C-RES,U 22K-1/16W J	b	.	d
3CD C.B	X R	0757	88-108-103-080	C-RES,U 10K-1/16W J	b	.	d
3CD C.B	X R	0758	88-108-103-080	C-RES,U 10K-1/16W J	b	.	d
3CD C.B	X R	0759	88-108-102-080	C-RES,U 1K-1/16W J	b	.	d

ELECTRICAL PARTS LIST -8/11 (3CD C.B -8/9)

! = ⚠ SAFTY PARTS
C = Components marked
All components used on this model at the production line are shown in this service manual.
However, please note that not all components will be available as spare parts for after-sales service.
Components marked S and O are designated as spare parts for service and will be stocked at the spare parts centers.
Components marked X and R are not designated as spare parts for after sales service, and will not be stocked at the spare parts centers.

UNIT-NAME	!	C	REF-NO	PARTS-NO	PARTS-NAME	SUFFIX&MODEL		
						BZA-4 MVSD3NM	BZA-4 MVSD3N1DM	BZA-4 MVSD3N8M
3CD C.B	X	R	0801	88-108-472-080	C-RES,U 4.7K-1/16W J	b	c	d
3CD C.B	X	R	0802	88-108-472-080	C-RES,U 4.7K-1/16W J	b	c	d
3CD C.B	X	R	0803	88-108-472-080	C-RES,U 4.7K-1/16W J	b	c	d
3CD C.B	X	R	0804	88-108-102-080	C-RES,U 1K-1/16W J	b	c	d
3CD C.B	X	R	0805	88-108-472-080	C-RES,U 4.7K-1/16W J	b	c	d
3CD C.B	X	R	0806	88-108-472-080	C-RES,U 4.7K-1/16W J	b	c	d
3CD C.B	X	R	0808	88-108-472-080	C-RES,U 4.7K-1/16W J	b	c	d
3CD C.B	X	R	0809	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X	R	0810	88-108-472-080	C-RES,U 4.7K-1/16W J	b	c	d
3CD C.B	X	R	0811	88-108-271-080	C-RES,U 270-1/16W J	b	c	d
3CD C.B	X	R	0812	88-108-472-080	C-RES,U 4.7K-1/16W J	b	c	d
3CD C.B	X	R	0813	88-108-104-080	C-RES,U 100K-1/16W J	b	c	d
3CD C.B	X	R	0814	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X	R	0815	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X	R	0816	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X	R	0817	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X	R	0818	88-128-120-080	C-RES, 12-1/8W J	b	c	d
3CD C.B	X	R	0819	88-108-103-080	C-RES,U 10K-1/16W J	b	c	d
3CD C.B	X	R	0820	88-108-103-080	C-RES,U 10K-1/16W J	b	c	d
3CD C.B	X	R	0821	88-108-472-080	C-RES,U 4.7K-1/16W J	b	c	d
3CD C.B						BZA-4 MVSD3NM	BZA-4 MVSD3N1DM	BZA-4 MVSD3N8M
3CD C.B	X	R	0822	88-128-101-080	C-RES, 100-1/8W J	b	c	d
3CD C.B	X	R	0823	88-128-120-080	C-RES, 12-1/8W J	b	c	d
3CD C.B	X	R	0824	88-108-102-080	C-RES,U 1K-1/16W J	b	c	d
3CD C.B	X	R	0825	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X	R	0826	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X	R	0827	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X	R	0828	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X	R	0829	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X	R	0830	88-108-103-080	C-RES,U 10K-1/16W J	b	c	d
3CD C.B	X	R	0831	88-108-103-080	C-RES,U 10K-1/16W J	b	c	d
3CD C.B	X	R	0832	88-108-472-080	C-RES,U 4.7K-1/16W J	b	c	d
3CD C.B	X	R	0833	88-108-470-080	C-RES,U 47-1/16W J	b	c	d
3CD C.B	X	R	0834	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X	R	0835	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X	R	0836	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X	R	0837	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X	R	0841	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X	R	0842	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X	R	0843	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X	R	0844	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B						BZA-4 MVSD3NM	BZA-4 MVSD3N1DM	BZA-4 MVSD3N8M
3CD C.B	X	R	0845	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X	R	0846	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X	R	0847	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X	R	0848	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X	R	0849	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X	R	0850	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X	R	0853	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X	R	0854	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X	R	0855	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X	R	0856	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X	R	0857	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X	R	0858	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X	R	0859	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X	R	0860	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X	R	0861	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X	R	0862	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X	R	0863	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X	R	0864	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X	R	0865	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X	R	0866	88-108-101-080	C-RES,U 100-1/16W J	b	c	d

ELECTRICAL PARTS LIST -9/11 (3CD C.B -9/9)

! = ⚠ SAFTY PARTS
C = Components marked
All components used on this model at the production line are shown in this service manual.
However, please note that not all components will be available as spare parts for after-sales service.
Components marked S and O are designated as spare parts for service and will be stocked at the spare parts centers.
Components marked X and R are not designated as spare parts for after sales service, and will not be stocked at the spare parts centers.

UNIT-NAME	! C	REF-NO	PARTS-NO	PARTS-NAME	SUFFIX&MODEL		
					BZA-4 MVSD3NM	BZA-4 MVSD3N1DM	BZA-4 MVSD3N8M
3CD C.B	X R	0867	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X R	0868	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X R	0869	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X R	0870	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X R	0871	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X R	0872	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X R	0873	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X R	0874	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X R	0875	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X R	0876	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X R	0877	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X R	0878	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X R	0879	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X R	0880	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X R	0881	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X R	0882	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X R	0883	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X R	0884	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X R	0885	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X R	0886	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X R	0887	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X R	0888	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X R	0889	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X R	0890	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X R	0891	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X R	0892	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X R	0893	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X R	0894	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X R	0895	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X R	0896	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X R	0897	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X R	0898	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X R	0899	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X R	0900	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X R	0901	88-108-750-080	C-RES,U 75-1/16W J	b	c	d
3CD C.B	X R	0902	88-108-221-080	C-RES,U 220-1/16W J	b	c	d
3CD C.B	X R	0903	88-108-750-080	C-RES,U 75-1/16W J	b	c	d
3CD C.B	X R	0904	88-128-101-080	C-RES, 100-1/8W J	.	c	.
3CD C.B	X R	0905	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X R	0906	88-108-102-080	C-RES,U 1K-1/16W J	b	c	d
3CD C.B	X R	0907	88-108-472-080	C-RES,U 4.7K-1/16W J	b	c	d
3CD C.B	X R	0908	88-108-472-080	C-RES,U 4.7K-1/16W J	b	c	d
3CD C.B	X R	0909	88-108-102-080	C-RES,U 1K-1/16W J	b	c	d
3CD C.B	X R	0910	88-108-472-080	C-RES,U 4.7K-1/16W J	b	c	d
3CD C.B	X R	0911	88-108-472-080	C-RES,U 4.7K-1/16W J	b	c	d
3CD C.B	X R	0912	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X R	0913	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X R	0914	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X R	0915	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X R	0916	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X R	0917	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X R	0918	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	X R	0919	88-108-101-080	C-RES,U 100-1/16W J	b	c	d
3CD C.B	O S	0301	87-036-109-010	SW,MICRO SPPB61	b	c	d
3CD C.B	O S	0302	87-036-109-010	SW,MICRO SPPB61	b	c	d
3CD C.B	O S	0801	87-A90-162-010	SW,SL 1-1-3 SSSU	b	c	d
3CD C.B	X W	6001	89-990-063-310	WIRE,U24X0-6-3/5 F	b	c	.
3CD C.B	O X	0201	87-030-270-080	VIB,XTAL 16.9344MHZ HC-49/U03	b	c	d
3CD C.B	O X	0801	87-A70-125-080	VIB,XTAL 27MHZ 50PPM	b	c	d

ELECTRICAL PARTS LIST - 10/11 (T-T C.B/DRIVE C.B -1/1)

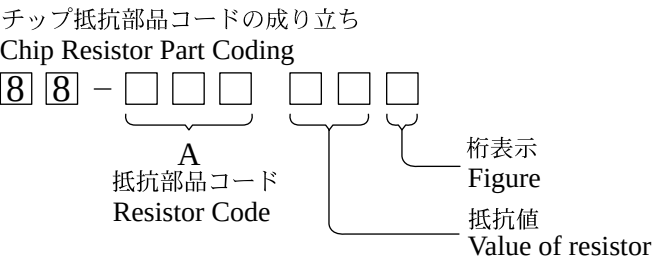
! = ⚠ SAFTY PARTS
C = Components marked
All components used on this model at the production line are shown in this service manual.
However, please note that not all components will be available as spare parts for after-sales service.
Components marked S and O are designated as spare parts for service and will be stocked at the spare parts centers.
Components marked X and R are not designated as spare parts for after sales service, and will not be stocked at the spare parts centers.

UNIT-NAME	! C	REF-NO	PARTS-NO	PARTS-NAME	SUFFIX&MODEL		
					BZG-5 MVSD3NM	BZG-5 MVSD3N1DM	BZG-5 MVSD3N8M
DRIVE C.B	O	M 0001	87-045-363-010	MOT,MDN4RA3ETA1	b	c	e
DRIVE C.B	O	M 0002	87-045-358-010	MOT,RF-310TA 43	b	c	e
DRIVE C.B	O	PIN0003	87-A60-086-010	CONN,6P H6216-11	b	c	e
DRIVE C.B	O	SW 0001	87-A90-042-010	SW,LEAF MSW-17310MVPO	b	c	e
T-T C.B	O	C 0401	87-A11-148-080	CAP,TC U 0.1-50 Z F	b	c	e
T-T C.B	O	CON0401	86-NFZ-675-010	CONN,5P H 6216-11H	b	c	e
T-T C.B	O	PS 0401	87-A90-156-010	SNSR,SG-240	b	c	e
T-T C.B	X	R 0408	88-121-561-080	RES,560-1/8W J	b	c	e
T-T C.B	X	R 0409	88-121-273-080	RES,27K-1/8W J	b	c	e

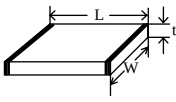
ELECTRICAL PARTS LIST-11/11

- Regarding connectors, they are not stocked as they are not the initial order items.
The connectors are available after they are supplied from connector manufacturers upon the order is received.

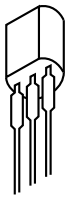
○チップ抵抗部品コード／CHIP RESISTOR PART CODE



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	1005	± 5%	CJ		1.0	0.5	0.35	104
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

TRANSISTOR ILLUSTRATION-1/1



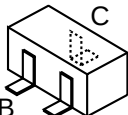
ECB

CDA1585
CSD1489



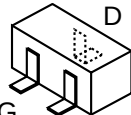
ECB

KTA1266GR
2SC5342



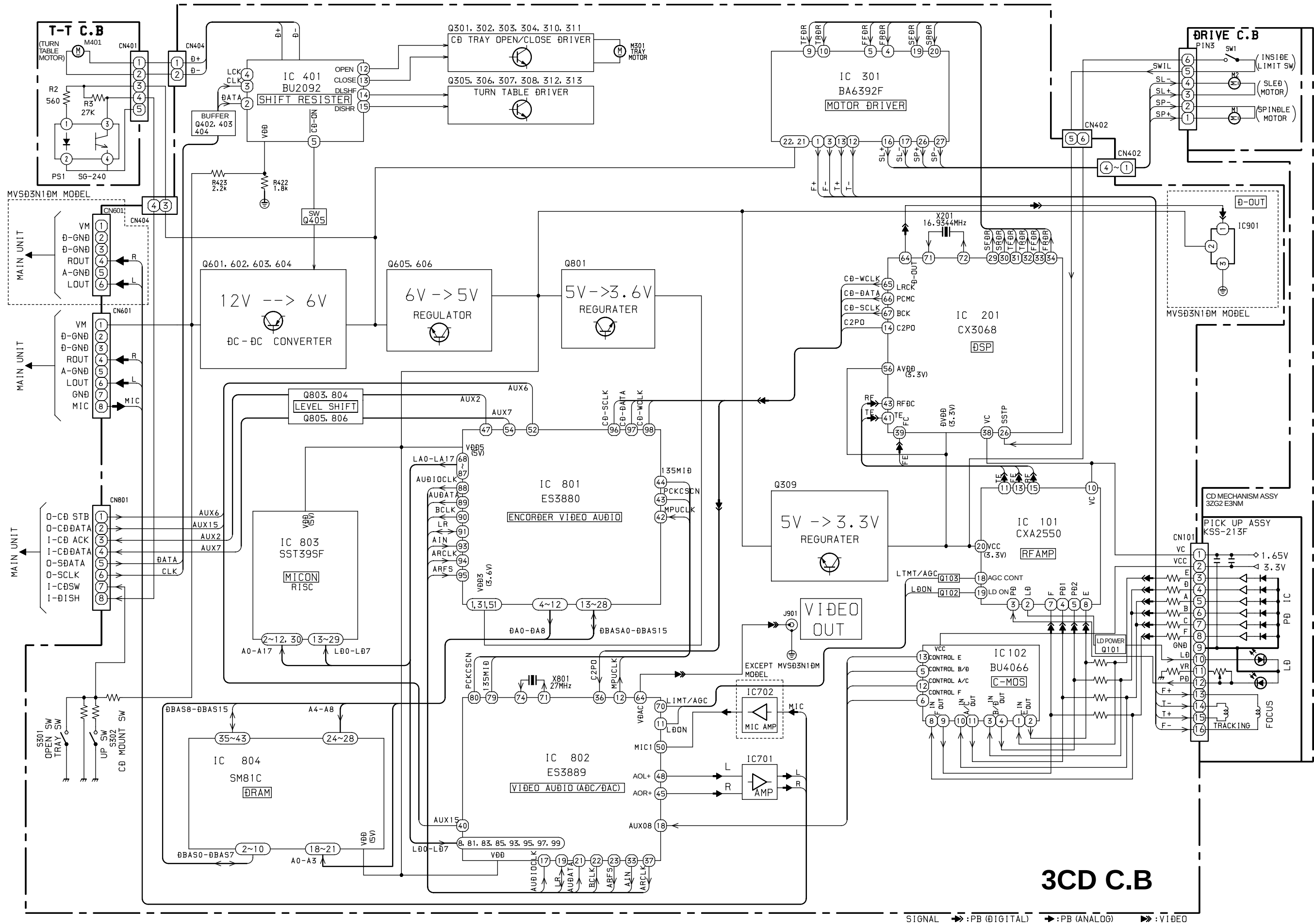
BEC

2SC3052
2SA1162
2SC2712

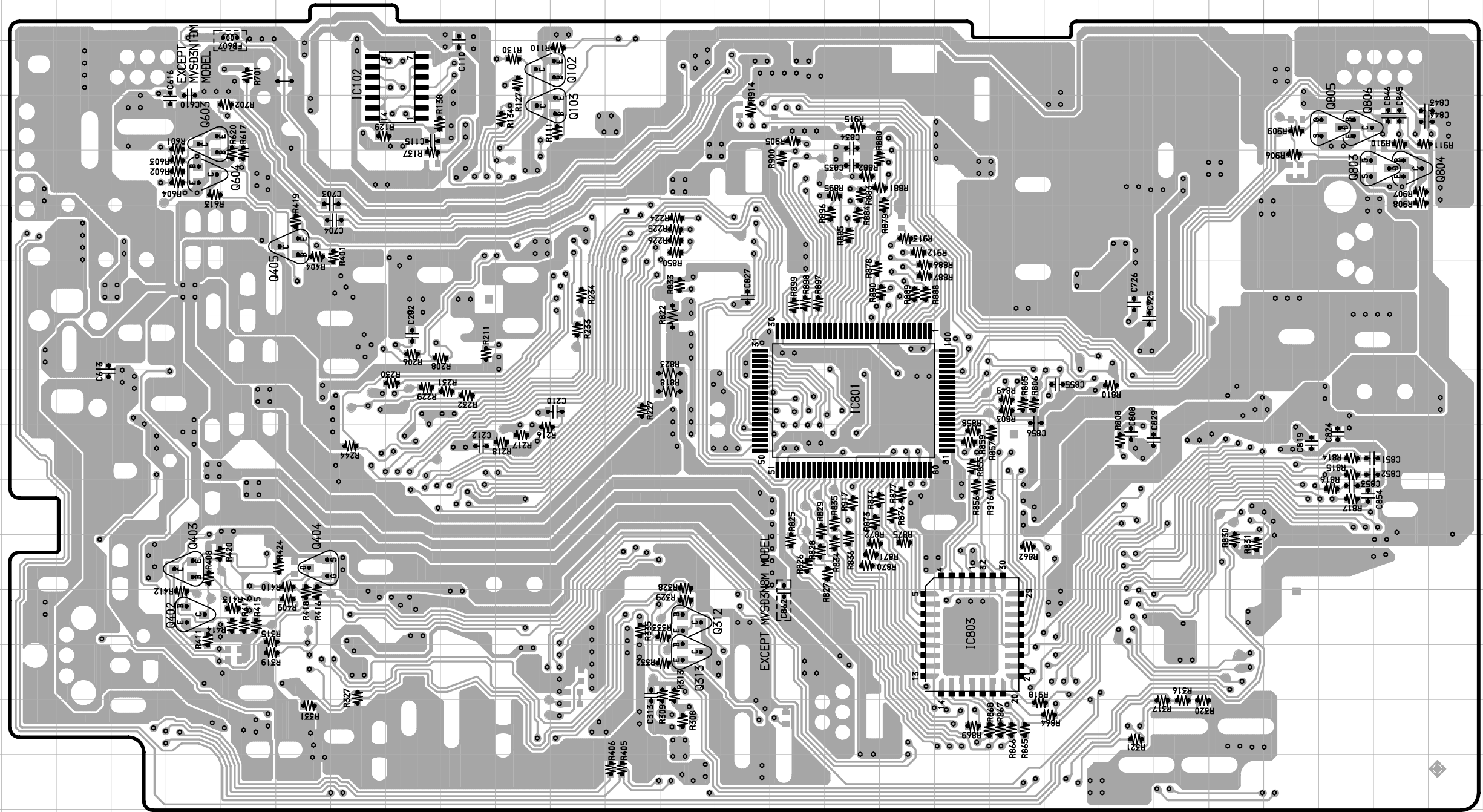


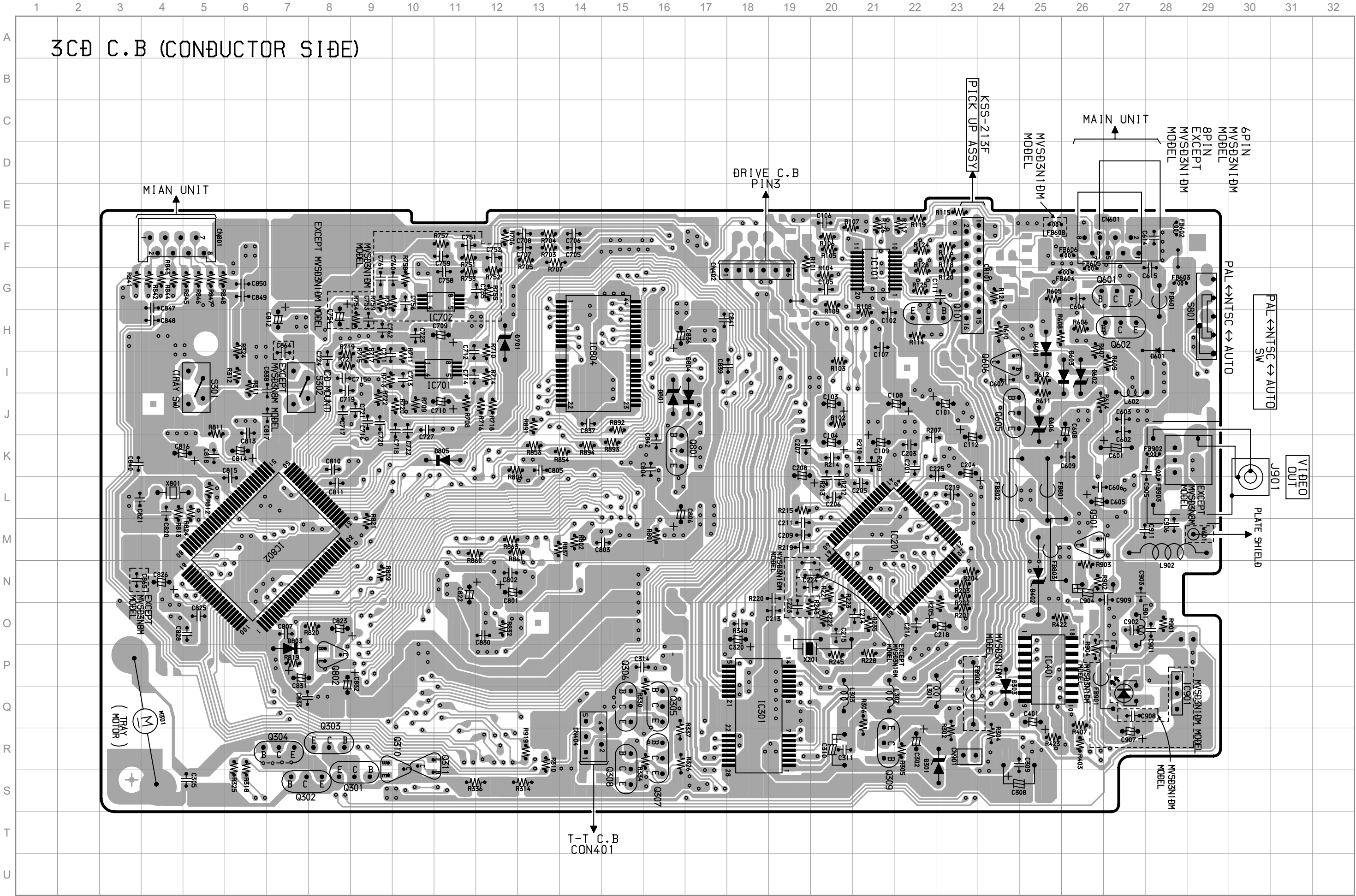
GSD

2SK2158



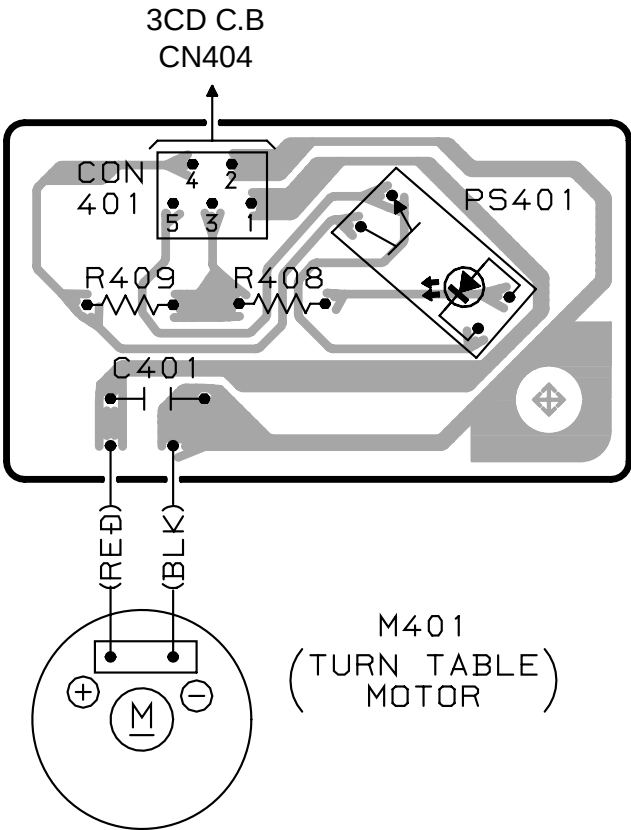
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q
R
S
T
U



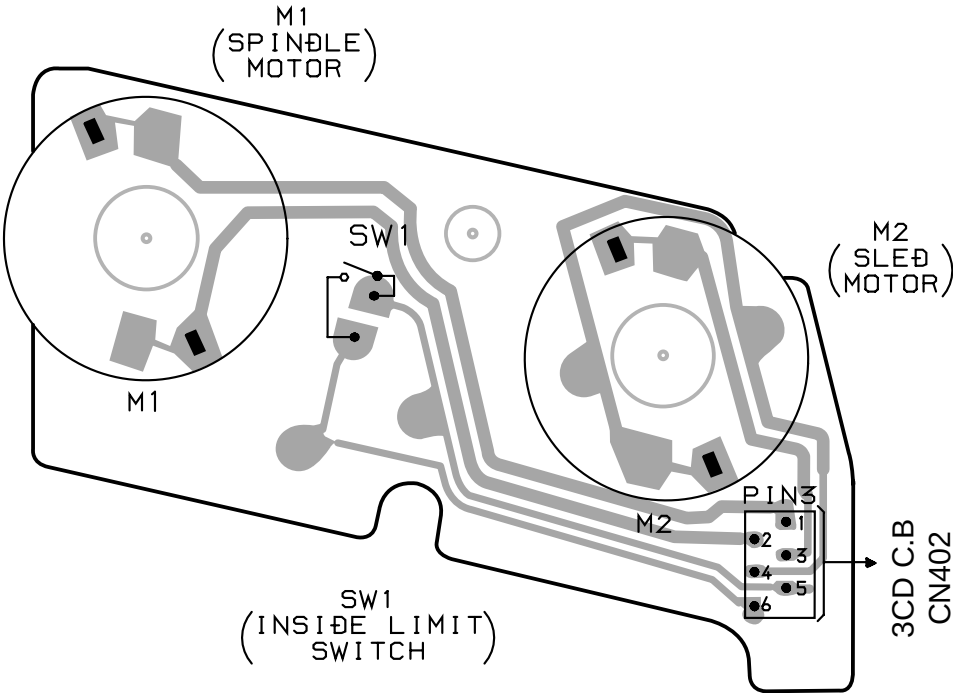


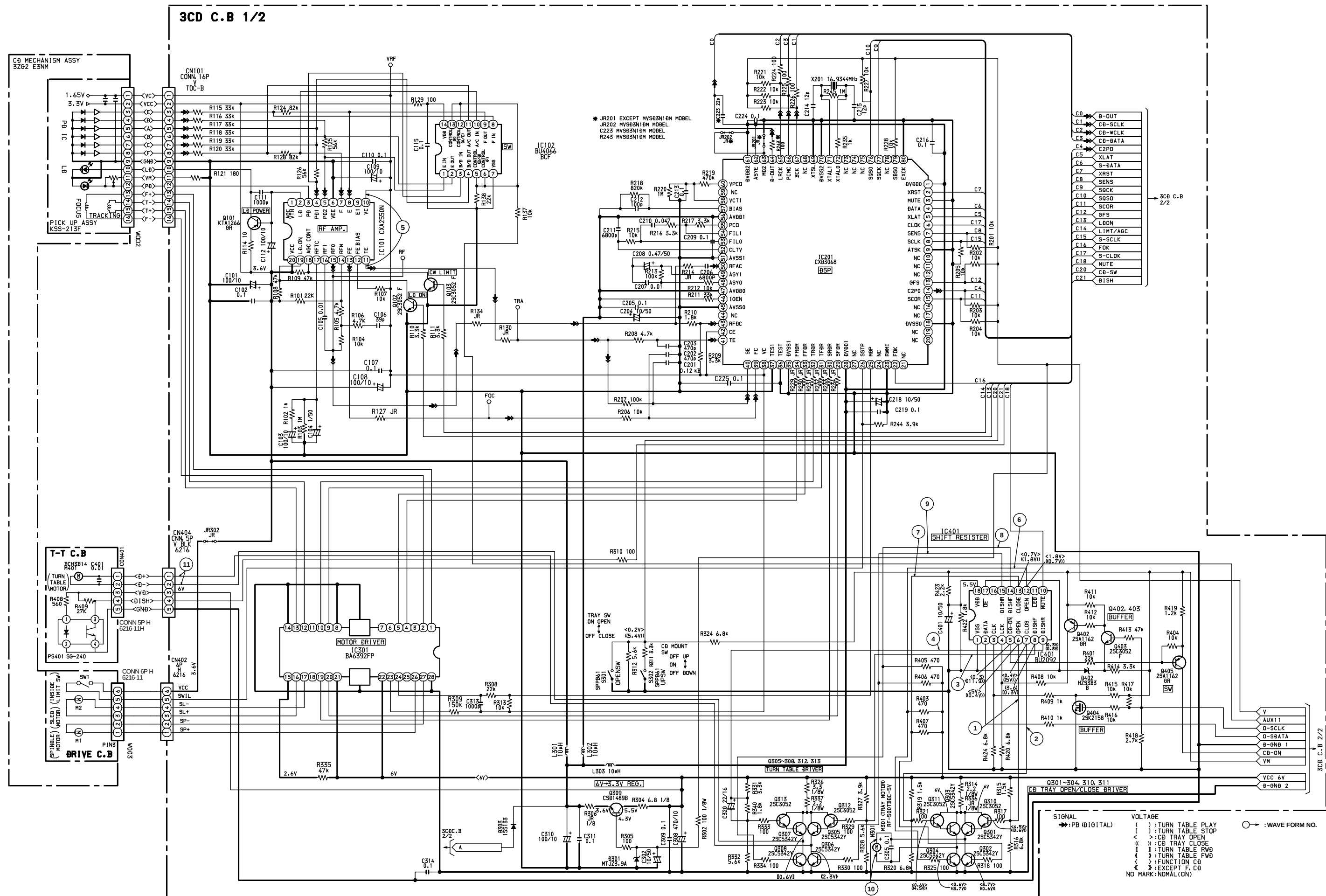
15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
----	----	----	----	----	----	---	---	---	---	---	---	---	---	---

T-T C. B(CONDUCTOR SIDE)

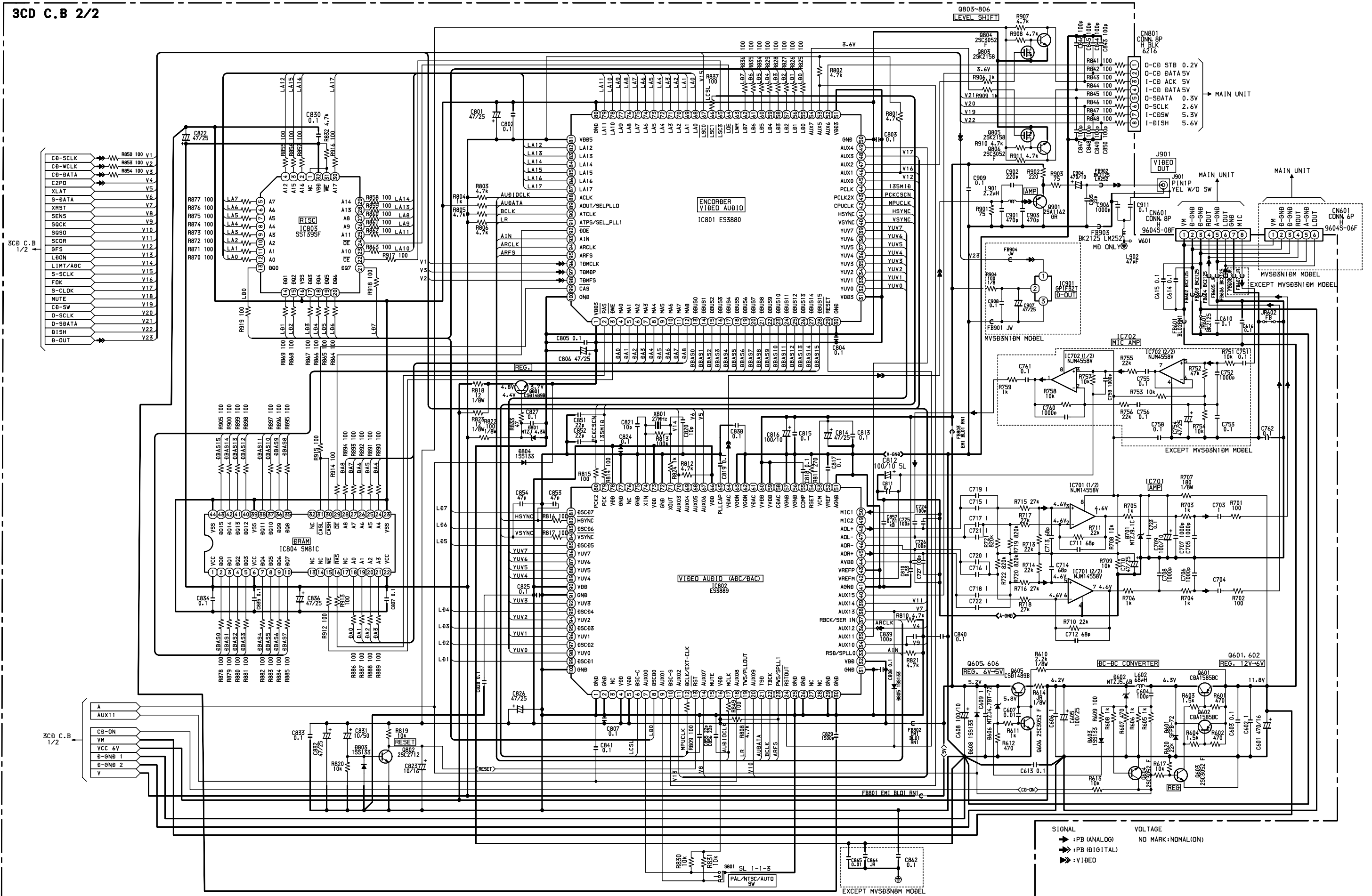


DRIVE C. B(CONDUCTOR SIDE)





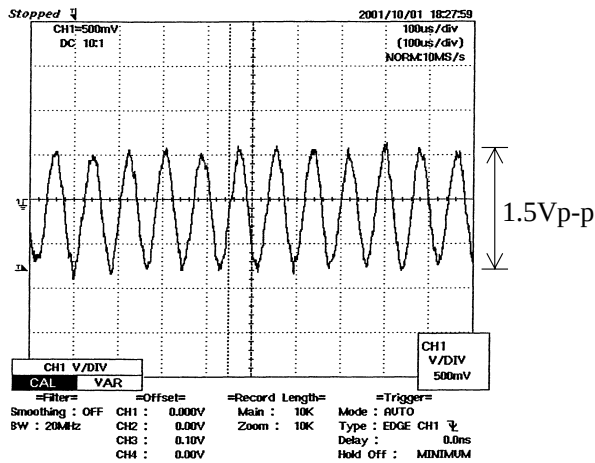
3CD C.B 2/2



WAVE FORM-1/3

⑤ IC101 ⑪ TE ⑩ VC

VOLT/DIV: 500mV
TIME/DIV: 10μs

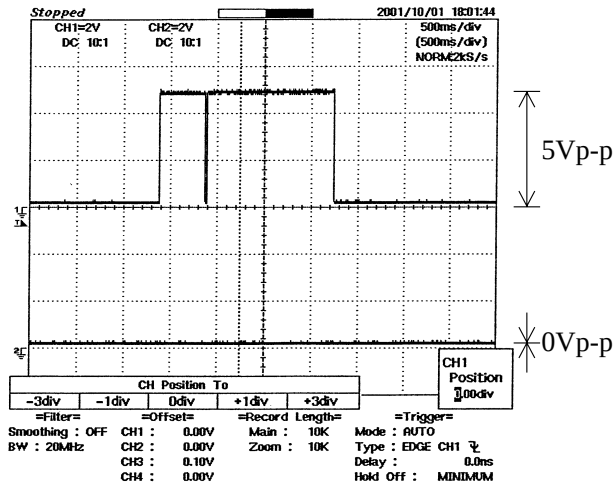


OPEN

① IC401 ⑥ OPEN

VOLT/DIV: 2V
TIME/DIV: 500ms

② IC401 ⑦ CLOS

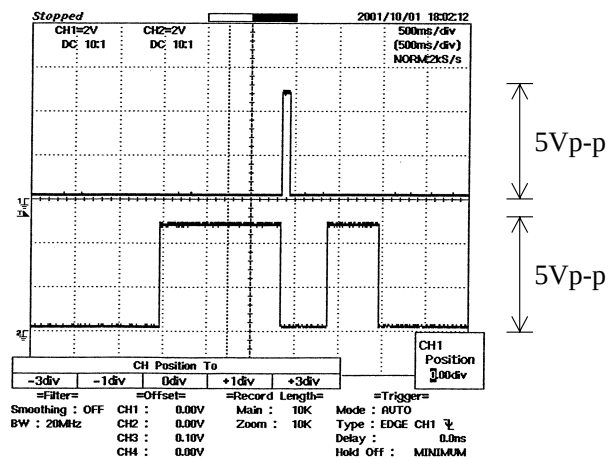


CLOSE

① IC401 ⑥ OPEN

VOLT/DIV: 2V
TIME/DIV: 500ms

② IC401 ⑦ CLOS

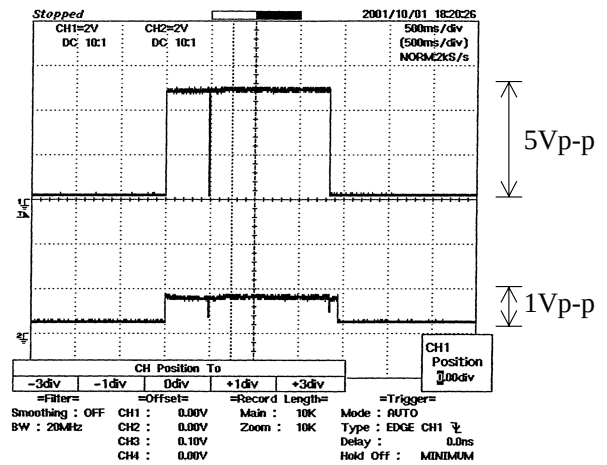


OPEN

① IC401 ⑥ OPEN

VOLT/DIV: 2V
TIME/DIV: 500ms

⑥ IC401 ⑫ OPEN

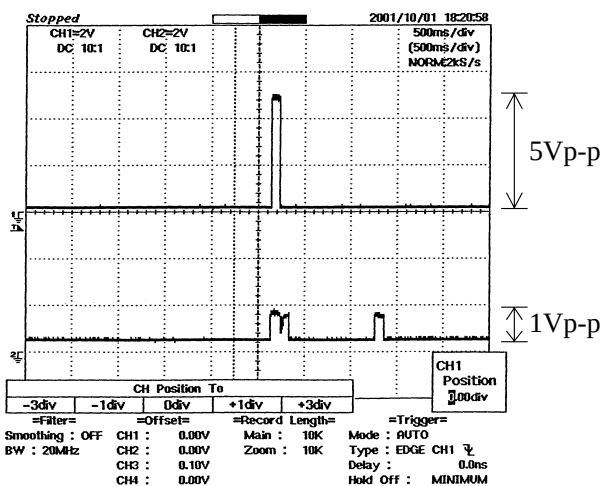


CLOSE

① IC401 ⑥ OPEN

VOLT/DIV: 2V
TIME/DIV: 500ms

⑥ IC401 ⑫ OPEN

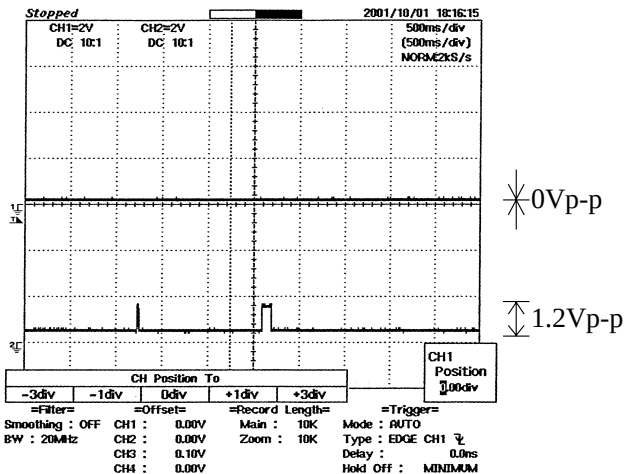


OPEN

② IC401 ⑦ CLOS

VOLT/DIV: 2V
TIME/DIV: 500ms

⑦ IC401 ⑬ CLOS



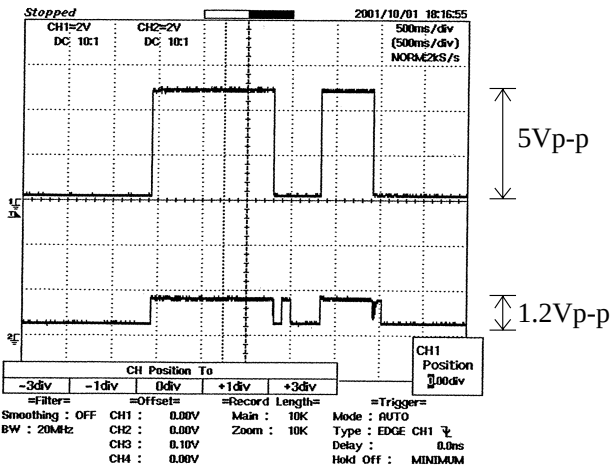
WAVE FORM-2/3

CLOSE

② IC401 ⑦ CLOS

VOLT/DIV: 2V
TIME/DIV: 500ms

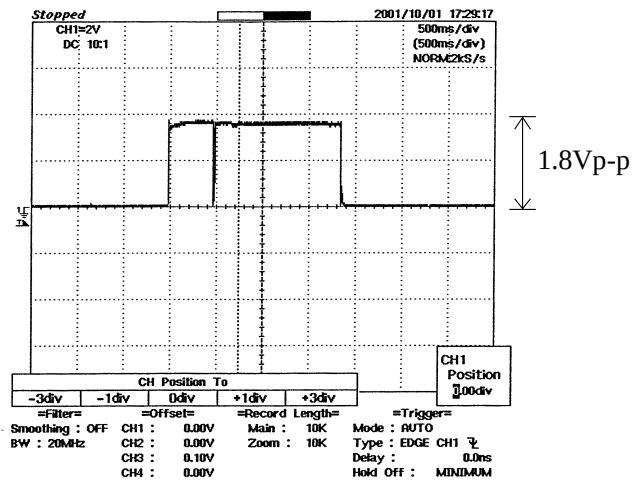
⑦ IC401 ⑬ CLOS



OPEN

⑩ M301 ⊕⊕

VOLT/DIV: 2V
TIME/DIV: 500ms

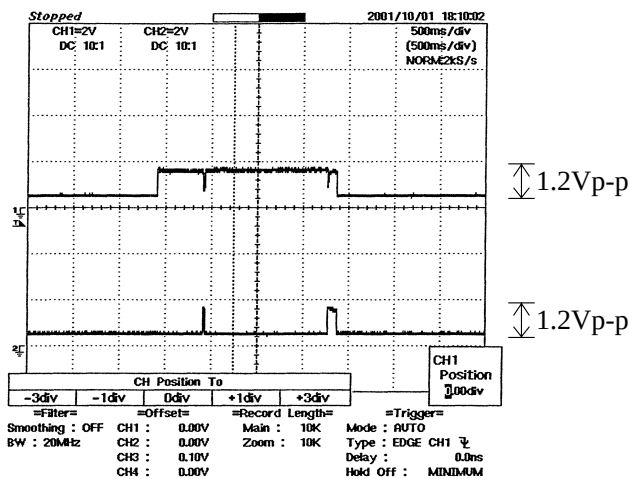


OPEN

⑥ IC401 ⑫ OPEN

VOLT/DIV: 2V
TIME/DIV: 500ms

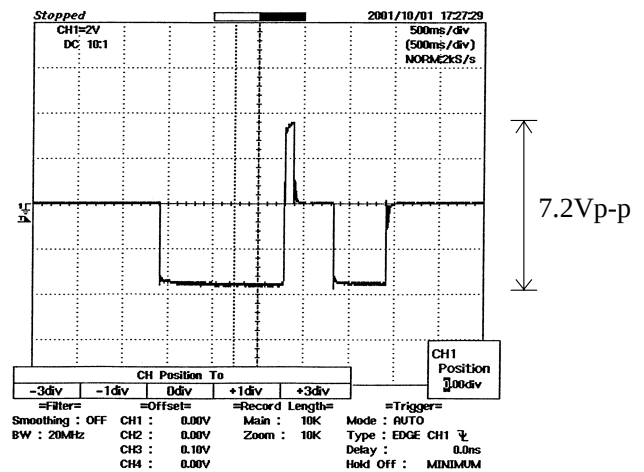
⑦ IC401 ⑬ CLOSE



CLOSE

⑩ M301 ⊕⊕

VOLT/DIV: 2V
TIME/DIV: 500ms

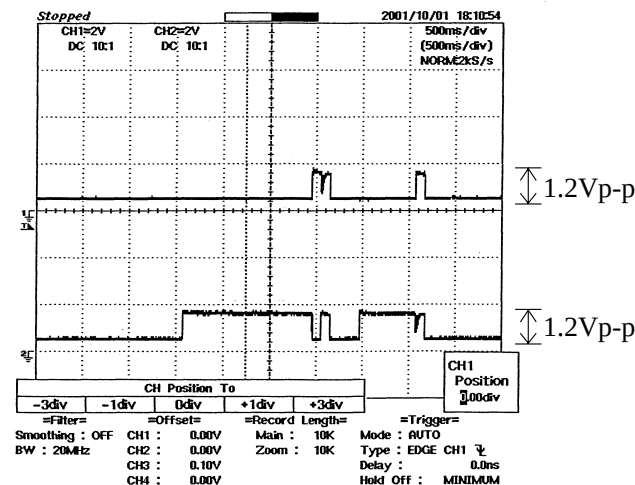


CLOSE

⑥ IC401 ⑫ OPEN

VOLT/DIV: 2V
TIME/DIV: 500ms

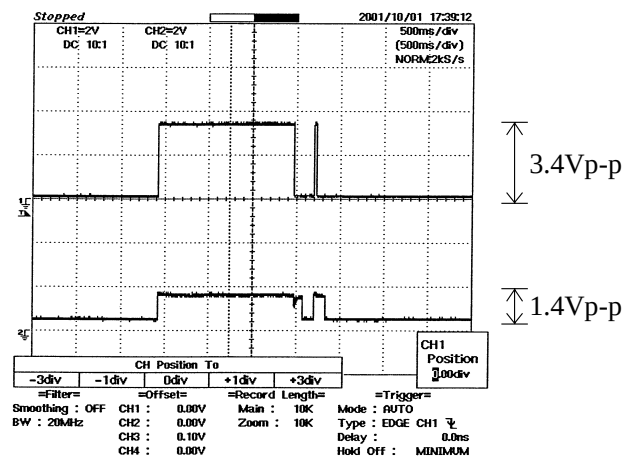
⑦ IC401 ⑬ CLOSE



③ IC401 ⑧ DISHF

VOLT/DIV: 2V
TIME/DIV: 500ms

⑧ IC401 ⑭ DISHF



WAVE FORM-3/3

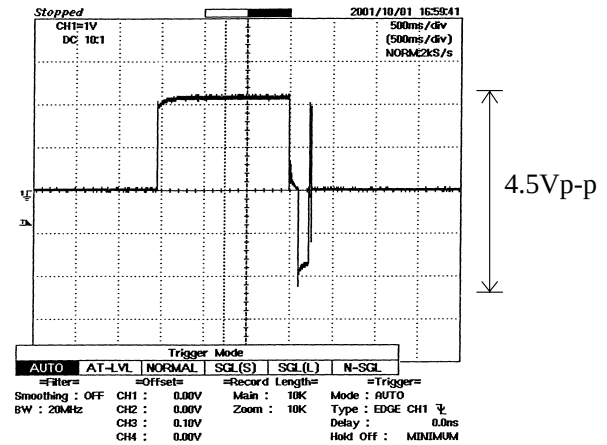
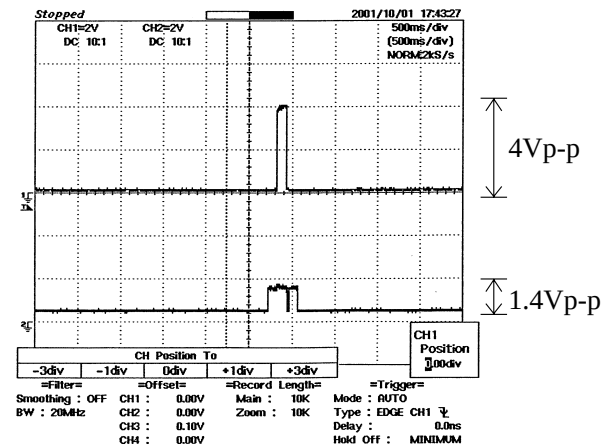
④ IC401 ⑨ DISHR

VOLT/DIV: 2V
TIME/DIV: 500ms

⑨ IC401 ⑮ DISHR

⑪ CN404 ① D+ ② D-
(② PIN : 0 Level)

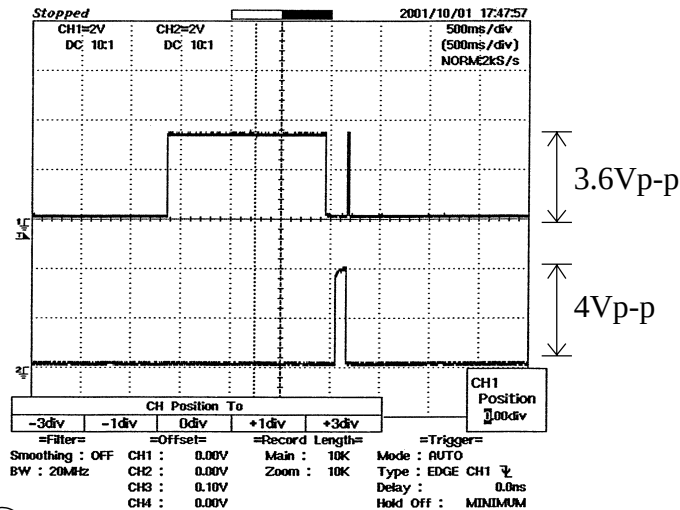
VOLT/DIV: 1V
TIME/DIV: 500ms



③ IC401 ⑧ DISHF

VOLT/DIV: 2V
TIME/DIV: 500ms

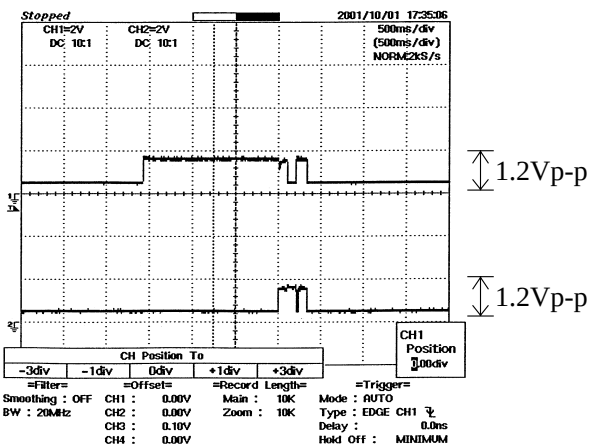
④ IC401 ⑨ DISHR



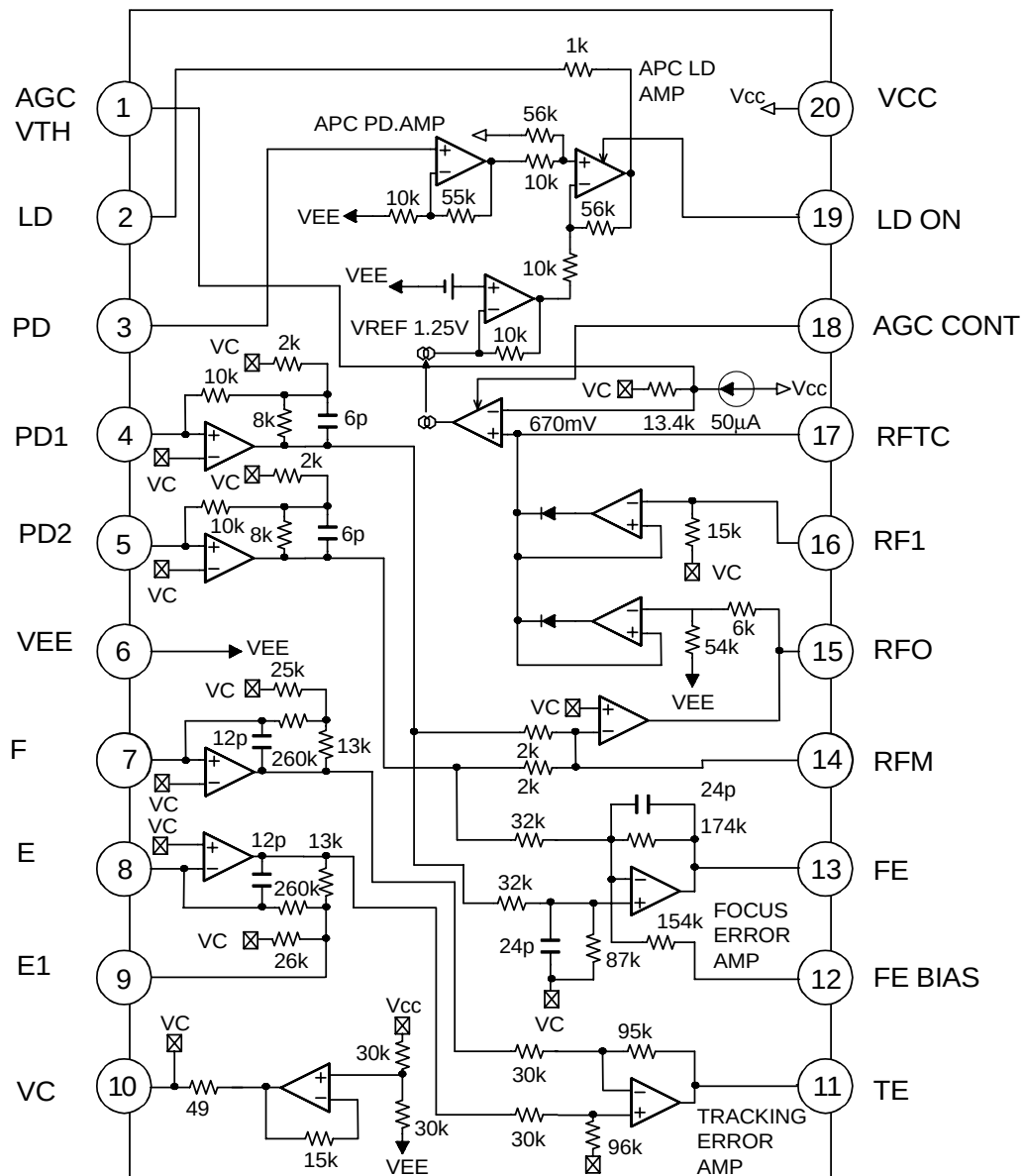
⑧ IC401 ⑭ DISHF

VOLT/DIV: 2V
TIME/DIV: 500ms

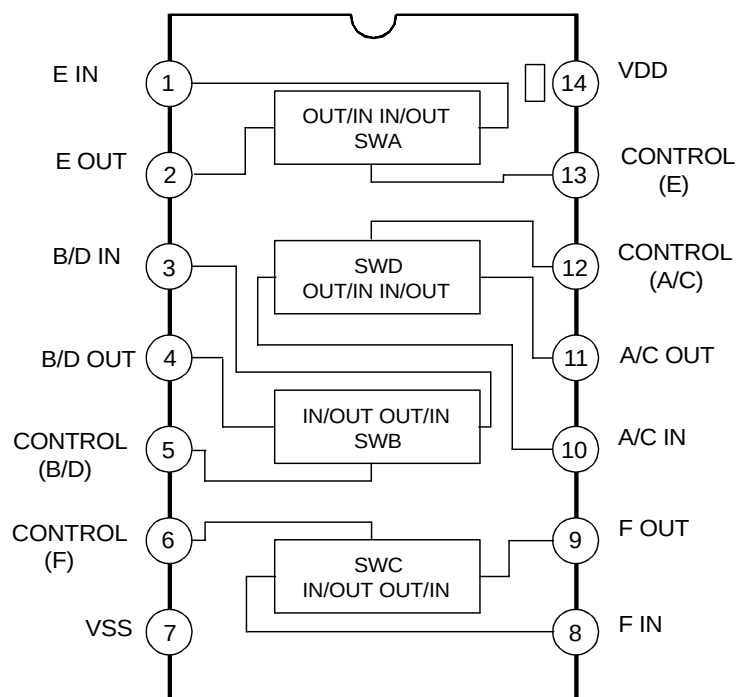
⑨ IC401 ⑮ DISHR



IC BLOCK DIAGRAM-1/2
IC, CXA2550

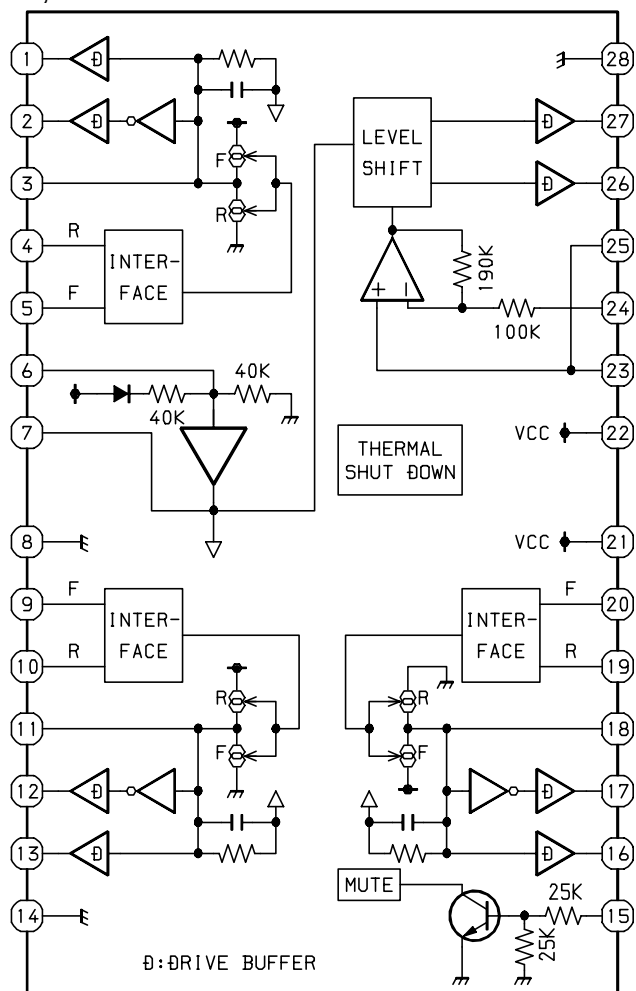


IC, BU4066

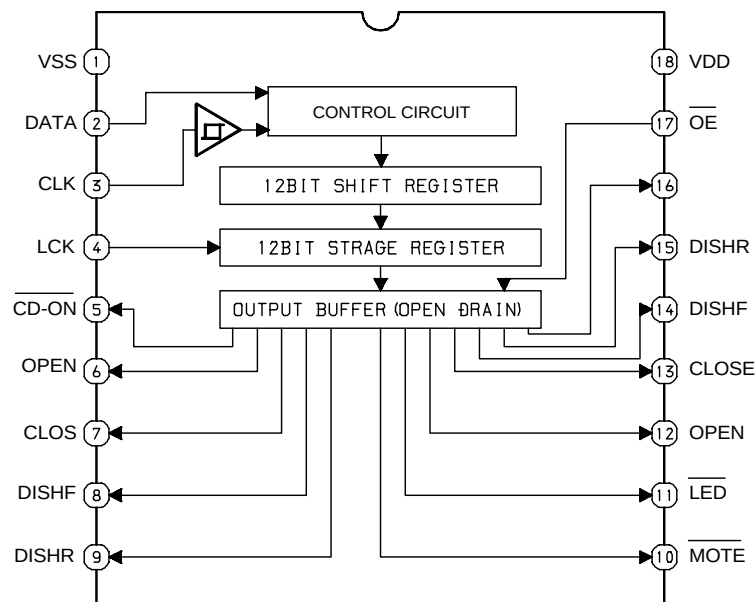


IC BLOCK DIAGRAM-2/2

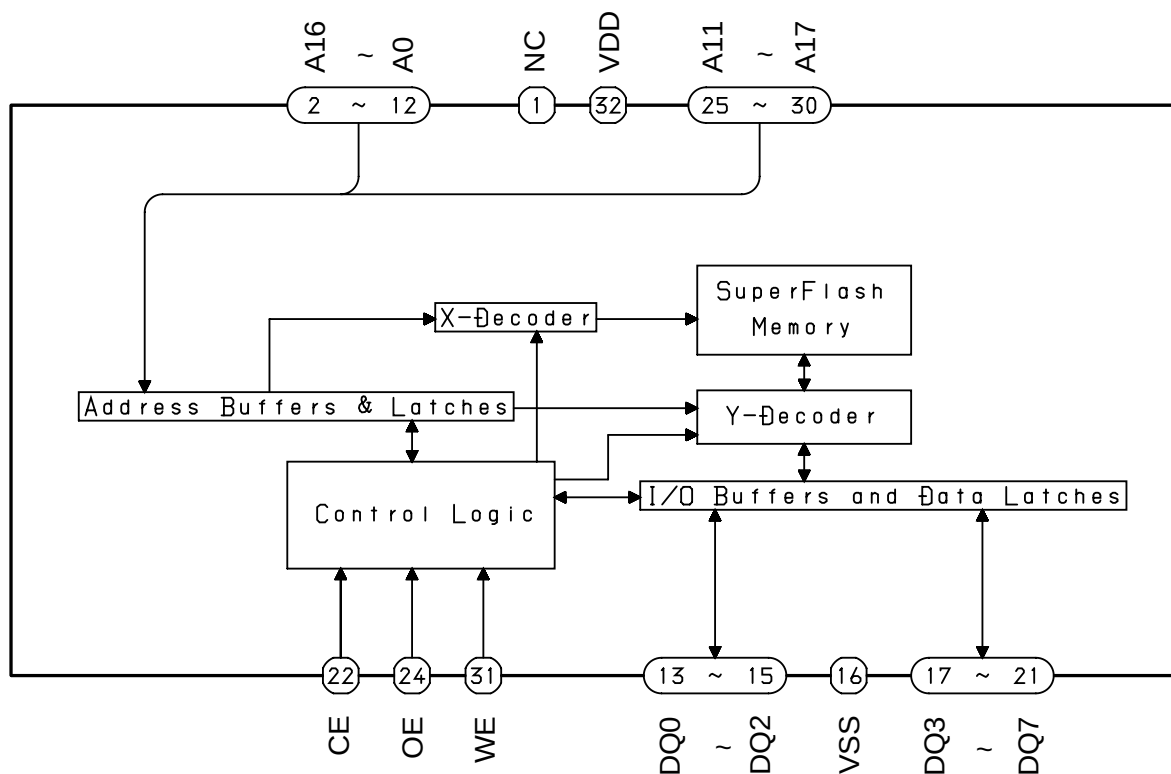
IC, BA6392FP



IC, BU2092



IC, SST39SF



IC DESCRIPTION-1/3 (CXD3068Q)-1/2

Pin No.	Pin Name	I/O	Description
1	DVDD0	—	Digital power supply.
2	XRST	I	System reset. Reset when low.
3	MUTE	I	Mute input (low: off, high: on)
4	DATA	I	Serial data input from CPU.
5	XLAT	I	Latch input from CPU. Serial data is latched at the falling edge.
6	CLOK	I	Serial data transfer clock input from CPU.
7	SENS	O	SENS output to CPU.
8	SCLK	I	SENS serial data readout clock input.
9	ATSK	I/O	Anti-shock input/output.
10	WFCK	O	WFCK output. (Not connected)
11	XUGF	O	XUGF output. MNT0 or RFCK is output by switching with the command. (Not connected)
12	XPCK	O	XPCK output. MNT1 is output by switching with the command. (Not connected)
13	GFS	O	GFS output. MNT2 or XROF is output by switching with the command.
14	C2PO	O	G2PO output. MNT3 or GTOP is output by switching with the command.
15	SCOR	O	Outputs a high signal when either subcode sync S0 or S1 is detected.
16	C4M	O	4.2336MHz output. 1/4 frequency division output for V16M in CAV-W mode or variable pitch mode. (Not connected)
17	WDCK	O	Word clock output. $f = 2Fs$. GRSCOR is output by the command switching. (Not connected)
18	DVSS0	—	Digital GND.
19	COUT	I/O	Track count signal I/O. (Not connected)
20	MIRR	I/O	Mirror signal I/O. (Not connected)
21	DFCT	I/O	Detect signal I/O. (Not connected)
22	FOK	I/O	Focus OK signal I/O.
23	PWMI	I	Spindle motor external control input.
24	LOCK	I/O	GFS is sampled at 460Hz; when GFS is high, this pin outputs a high signal.If GFS is low eight consecutive samples, this pin outputs low. Input when LKIN = 1. (Not connected)
25	MDP	O	Spindle motor servo control output.
26	SSTP	I	Disc innermost track detection signal input.
27	FSTO	O	2/3 frequency division output for XTAI pin. (Not connected)
28	DVDD1	—	Digital power supply.
29	SFDR	O	Sled drive output.
30	SRDR	O	Sled drive output.
31	TFDR	O	Tracking drive output.
32	TRDR	O	Tracking drive output.
33	FFDR	O	Focus drive output.
34	FRDR	O	Focus drive output.
35	DVSS1	—	Digital GND.
36	TEST	I	Test. Normally, GND.
37	TES1	I	Test. Normally, GND.
38	VC	I	Center voltage input.
39	FC	I	Focus error signal input.
40	SE	I	Sled error signal input.

IC DESCRIPTION-1/3 (CXD3068Q)-2/2

Pin No.	Pin Name	I/O	Description
41	TE	I	Tracking error signal input.
42	CE	I	Center servo analog input.
43	RFDC	I	RF signal input.
44	ADIO	O	Test. No connected.
45	AVSS0	—	Analog GND.
46	IGEN	I	Constant current input for operational amplifier.
47	AVDD0	—	Analog power supply.
48	ASYO	O	EFM full-swing output. (low = Vss, high = VDD)
49	ASYI	I	Asymmetry comparator voltage input.
50	RFAC	I	EFM signal input.
51	AVSS1	—	Analog GND.
52	CLTV	I	Multiplier VCO1 control voltage input.
53	FILO	O	Master PLL filter output (slave = digital PLL).
54	FILI	I	Master PLL filter input.
55	PCO	O	Master PLL charge pump output.
56	AVDD1	—	Analog power supply.
57	BIAS	I	Asymmetry circuit constant current input.
58	VCTL	I	Wide-band EFM PLL VCO2 control voltage input.
59	V16M	I/O	Wide-band EFM PLL VCO2 oscillation output. Serves as wide-band EFM PLL clock input by switching with the command. (Not connected)
60	VPCO	O	Wide-band EFM PLL charge pump output.
61	DVDD2	—	Digital power supply.
62	ASYE	I	Asymmetry circuit on/off (low = off, high = on).
63	MD2	I	Digital Out on/off control (low = off, high = on).
64	DOUT	O	Digital Out output.
65	LRCK	O	D/A interface. LR clock output. $f = F_s$
66	PCMD	O	D/A interface. Serial data output (two's complement, MSB first).
67	BCK	O	D/A interface. Bit clock output.
68	EMPH	O	Outputs a high signal when the playback disc has emphasis, and a low signal when there is no emphasis. (Not connected)
69	XTSL	I	Crystal selection input. Low when the crystal is 16.9344MHz; high when it is 33.8688MHz.
70	DVSS2	—	Digital GND.
71	XTAL1	I	Crystal oscillation circuit input. When the master clock is input externally, input it from this pin.
72	XTAL0	O	Crystal oscillation circuit output.
73	SOUT	O	Serial data output in servo block. (Not connected)
74	SOCK	O	Serial data readout clock output in servo block. (Not connected)
75	XOLT	O	Serial data latch output in servo block. (Not connected)
76	SQSO	O	Sub-Q 80-bit, PCM peak or level data outputs. CD TEXT data output.
77	SQCK	I	SQSO readout clock input.
78	SCSY	I	GRSCOR resynchronization input. (Not connected)
79	SBSO	O	Sub-Q P to W serial output.
80	EXCK	I	SBSO readout clock input.

IC DESCRIPTION-2/3 (ES3880)-1/2

Pin No.	Pin Name	I/O	Description
1	VDD3	—	Voltage supply for 3.3 V.
2	RAS	O	DRAM row address strobe. (active low)
3	DWE	O	DRAM write enable. (active low)
4-12	MA0-MA8	O	DRAM multiplexed row and column address bus.
13-28	DBUS0-DBUS15	I/O	DRAM data bus.
29	RESET	I	System reset. (active low)
30	GND	—	Ground.
31	VDD3	—	Voltage supply for 3.3 V.
32-39	YUV0-YUV7	O	Y is luminance, UV are chrominance data bus for screen video interface. YUV [7: 0] for 8-bit YUV mode.
40	VSNC	I/O	Vertical sync for screen video interface, programmable for rising or falling edge.
41	HSNC	I/O	Horizontal sync for screen video interface, programmable for rising or falling edge.
42	CPUCLK	I	RISC and system clock input. CPUCLK is used only if SEL_PLL [1: 0] = 00.
43	PCLK2X	I/O	Pixel clock; two times the actual pixel clock for screen video interface.
44	PCLK	I/O	Pixel clock qualifier in for screen video interface.
45-49	AUX0-AUX4	I/O	Auxiliary control pins. (AUX0 and AUX1 are open collectors)
50	GND	—	Ground.
51	VDD3	—	Voltage supply for 3.3 V.
52	AUX6	I/O	Auxiliary control pins.
53	AUX5	I/O	Auxiliary control pins.
54	AUX7	I/O	Auxiliary control pins.
55-62	LD0-LD7	I/O	RISC interface data bus.
63	LWR	O	RISC interface write enable. (active low) (Not connected)
64	LOE	O	RISC interface output enable. (active low)
65-67	LCS3-LCS0	O	RISC interface chip select. (active low)
68-79	LA0-LA11	O	RISC interface address bus.
80	GND	—	Ground.
81	VDD5	—	Digital supply voltage for 5 V.
82-87	LA12-LA17	O	RISC interface address bus.
88	ACLK	I/O	Master clock for external audio DAC. (8.192 MHz, 11.2896 MHz, 12.288 MHz, 16.9344MHz, and 18.432 MHz)
89	AOUT/SELPLL1	O	Dual-purpose pin. AOUT is the audio interface serial data output.
		I	Pins SEL_PLL [1: 0] select phase-lock loop (PLL) clock frequency CPUCLK for the Visba: 00 = bypass PLL. 01 = 54 MHz PLL. 10 = 67.5 MHz PLL. 11 = 81 MHz PLL.
90	ATCLK	I/O	Audio transmit bit clock.

IC DESCRIPTION-2/3 (ES3880)-2/2

Pin No.	Pin Name	I/O	Description
91	ATPS/SEL_PLL1	O	Dual-purpose pin. ATFS is the audio interface transmit frame sync.
		I	Pins SEL_PLL [1: 0] select phase-lock loop (PLL) clock frequency CPUCLK for the Visba. See the SEL_PLL0 pin above for the settings.
92	DOE	O	Dual purpose pin: DRAM output enable. (active low)
93	AIN	I	Audio interface serial data input.
94	ARCLK	I	Audio receive bit clock.
95	ARFS	I	Audio interface receive frame sync.
96	TDMCLK	I	TDM interface serial clock.
97	TDMDP	I	TDM interface serial data receive.
98	TDMFS	I	TDM interface frame sync.
99	CAS	O	DRAM column address strobe bank 0. (active low)
100	GND	—	Ground.

IC DESCRIPTION-3/3 (ES3889)-1/3

Pin No.	Pin Name	I/O	Description
1, 2	GND	I	Ground.
3	NC	—	No connect.
4	GND	I	Ground.
5	VDD	I	Voltage supply, 5V.
6	OSC_C	I	Clock for programming to access internal registers.
7	AUX0	I/O	Servo Forward or Control Pin.
8	DSC_D0	I/O	Data for programming to access internal registers.
9	AUX1	I/O	Servo Reverse or Control Pin.
10	DSC_S	I	Strobe for programming to access internal registers.
11	AUX2	I/O	Servo LDON or Control Pin.
12	DCLK/EXT_CLK	O	Dual-purpose pin DCLK is the MPEG decoder clock.
		I	EXT_CLK is the external clock EXT_CLK is an input during bypass PLL mode.
13	RST	I	Video reset. (active low)
14	AUX7	I/O	Servo BRKM/Sense or Control Pin/VFD_DI.
15	MUTE	O	Audio mute. (Not connected)
16	VDD	I	Voltage supply, 5V.
17	MCLK	I	Audio master clock.
18	AUX8	I/O	Servo Mute/Open or Control Pin/VFD_CLK.
19	TWS/PLLOUT	I	Dual-purpose pin TWS is the transmit audio frame sync.
		O	SPLL_OUT is the select PLL output.
20	AUX9	I/O	Servo SQC0 or Control Pin.
21	TSD	I	Transmit audio data input.
22	TBCK	I	Transmit audio bit clock.
23	PWS/SPLL1	O	Dual-purpose pin RWS is the receive audio frame sync.
		I	Pins SEL_PLL [1:0] select the PLL clock frequency for the DCLK output.
			SEL_PLL1 SEL_PLL0 DCLK
			0 0 Bypass PLL (input mode)
			0 1 27MHz (output mode)
24	RSTOUT	O	Reset output. (active-low)
		I	Ground.
25, 26	GND	—	No connect.
27, 28	NC	I	Ground.
29-31	VDD	I	Voltage supply, 5V.
32	RSD/SPLL0	O	Dual-purpose pin. RSD is the receive audio data input.
		I	SEL_PLL0 along with SEL_PLL1 select the PLL clock frequency for the DCLK output. See the table for pin number 23.
33	AUX10	I/O	Servo SQCK or Contrtol pin.
34	AUX11	I/O	3880 IRQ or Interrupt Output or Control Pin.
35	AUX12	I/O	CD C2PO or Interrupt Input or Control Pin.

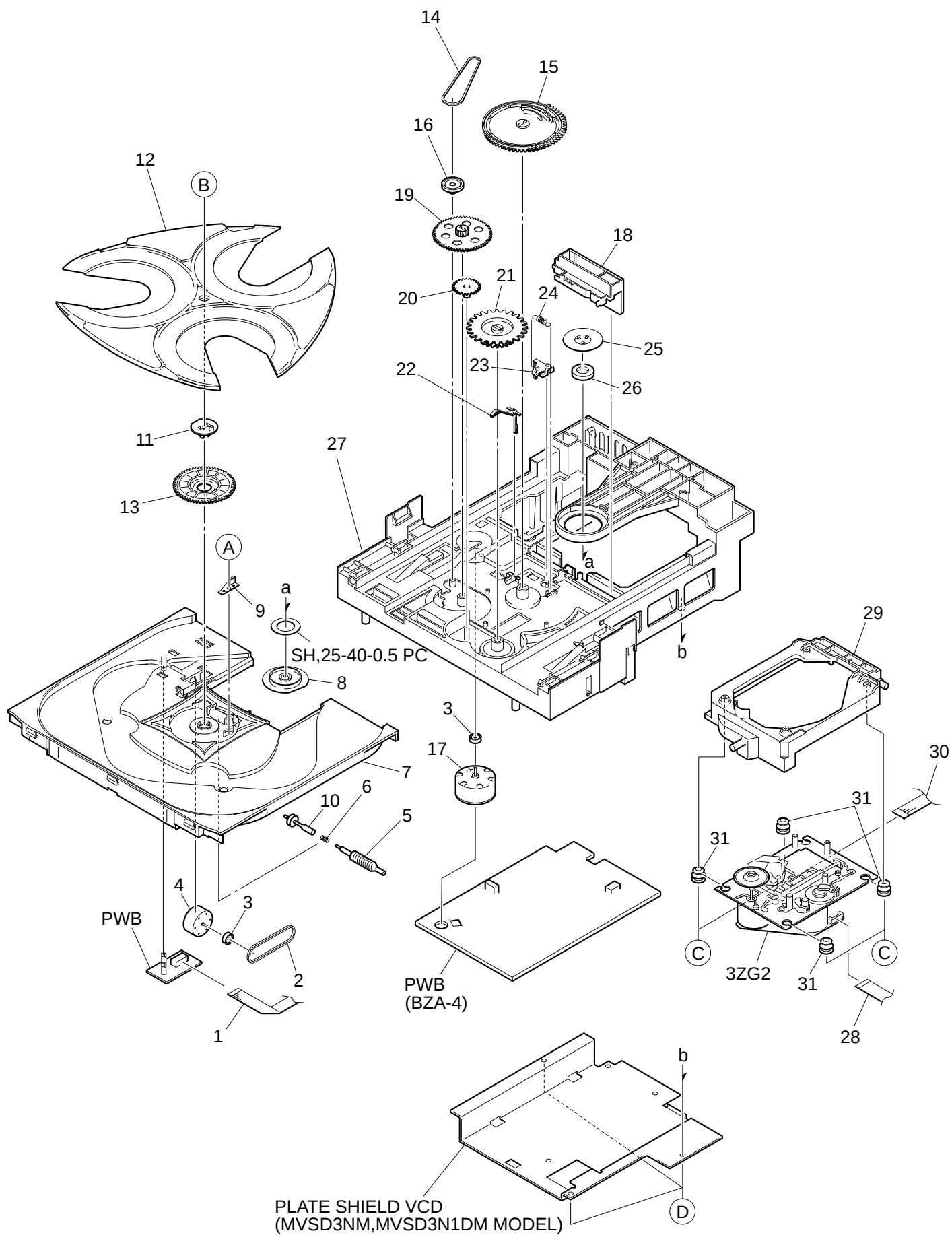
IC DESCRIPTION-3/3 (ES3889)-2/3

Pin No.	Pin Name	I/O	Description
37	PBCK/SER_IN	O	Dual-purpose pin. RBCK is the receive audio bit clock.
		I	SER_IN is the serial input DSC mode. 0 – Parallel DSC mode. 1 – Serial DSC mode.
38	AUX13	I/O	Serial Interrupt/CD-Mute or Control Pin.
39	AUX14	I/O	Servo SCOR (SOS1) or Interrupt Input or Control Pin.
40	AUX15	I/O	Interrupt Input or Control Pin.
41	AGND	I	Audio Analog Ground.
42	VREFM	I	ADC Common Mode Reference (CMR) buffer output. CMR is approximately 2.25V. Bypass to analog ground with 47μF electrolytic in parallel with 0.1μF.
43	VREFP	I	DAC and ADC maximum reference. Bypass to VCMR with 10μF in parallel with 0.1μF.
44	AVDD	I	Analog VCC, 5V.
45, 46	AOR+, AOR–	O	Right channel output.
47, 48	AOL–, AOL+	O	Left channel output.
49	MIC2	I	Microphone input1. (Not connected)
50	MIC1	I	Microphone input2.
51	AGND	I	Audio Analog Ground.
52	VREF	I	Internal resistor divider generates Common Mode Reference (CMR) voltage. Bypass to analog ground with 0.1μF.
53	VCM	I	DAC and ADC minimum reference. Bypass to VCMR with 10μF in parallel with 0.1μF.
54	RSET	I	Full scale DAC current adjustment.
55	COMP	I	Compensation Pin.
56, 57	VGND	I	Video Analog Ground.
58	CDAC	O	Modulated chrominance output. (Not connected)
59, 60	VVDD	I	Video VCC, 5V.
61	YDAC	O	Y luminance data bus for screen video port. (Not connected)
62, 63	VGND	I	Video Analog Ground.
64	VDAC	O	Composite video output.
65	PLLCAP	I	Audio CAP.
66	VDD	I	Voltage supply, 5V.
67	AUX6	I/O	Servo XLAT or Control Pin / VFD_DO.
68	AUX5	I/O	Servo Data or Control Pin.
69	AUX4	I/O	Servo CCW/Close or Control Pin. (Not connected)
70	AUX3	I/O	Servo CW/Limit or Control Pin.
71	XOUT	O	Crystal output.
72	GND	I	Ground.
73	VDD	I	Voltage supply, 5V.
74	XIN	I	27MHz crystal input.
75	GND	I	Ground.
76	NC	—	No connect.
77	GND	I	Ground.

IC DESCRIPTION-3/3 (ES3889)-3/3

Pin No.	Pin Name	I/O	Description
78	VDD	I	Voltage supply, 5V.
79	PCK	I/O	13.5MHz pixel clock.
80	PCK2	I/O	27MHz. (2 times pixel clock)
81	DSC_D1	I/O	Data for programming to access internal registers.
82	HSYNC	O	Horizontal sync. (active-low)
83	DSC_D2	I/O	Data for programming to access internal registers.
84	$\overline{\text{VSYNC}}$	O	Vertical sync. (active-low)
85	DSC_D3	I/O	Data for programming to access internal registers.
86-89	YUV[0-3]	I	YUV data bus for screen video port.
90	VDD	I	Voltage supply, 5V.
91	GND	I	Ground.
92	YUV4	I	YUV data bus for screen video port.
93	DSC_D4	I/O	Data for programming to access internal registers.
94	YUV5	I	YUV data bus for screen video port.
95	DSC_D5	I/O	Data for programming to access internal registers.
96	YUV6	I	YUV data bus for screen video port.
97	DSC_D6	I/O	Data for programming to access internal registers.
98	YUV7	I	YUV data bus for screen video port.
99	DSC_D7	I/O	Data for programming to access internal registers.
100	GND	I	Ground.

MECHANICAL EXPLODED VIEW-1/1



MECANICAL PARTS LIST -1/1

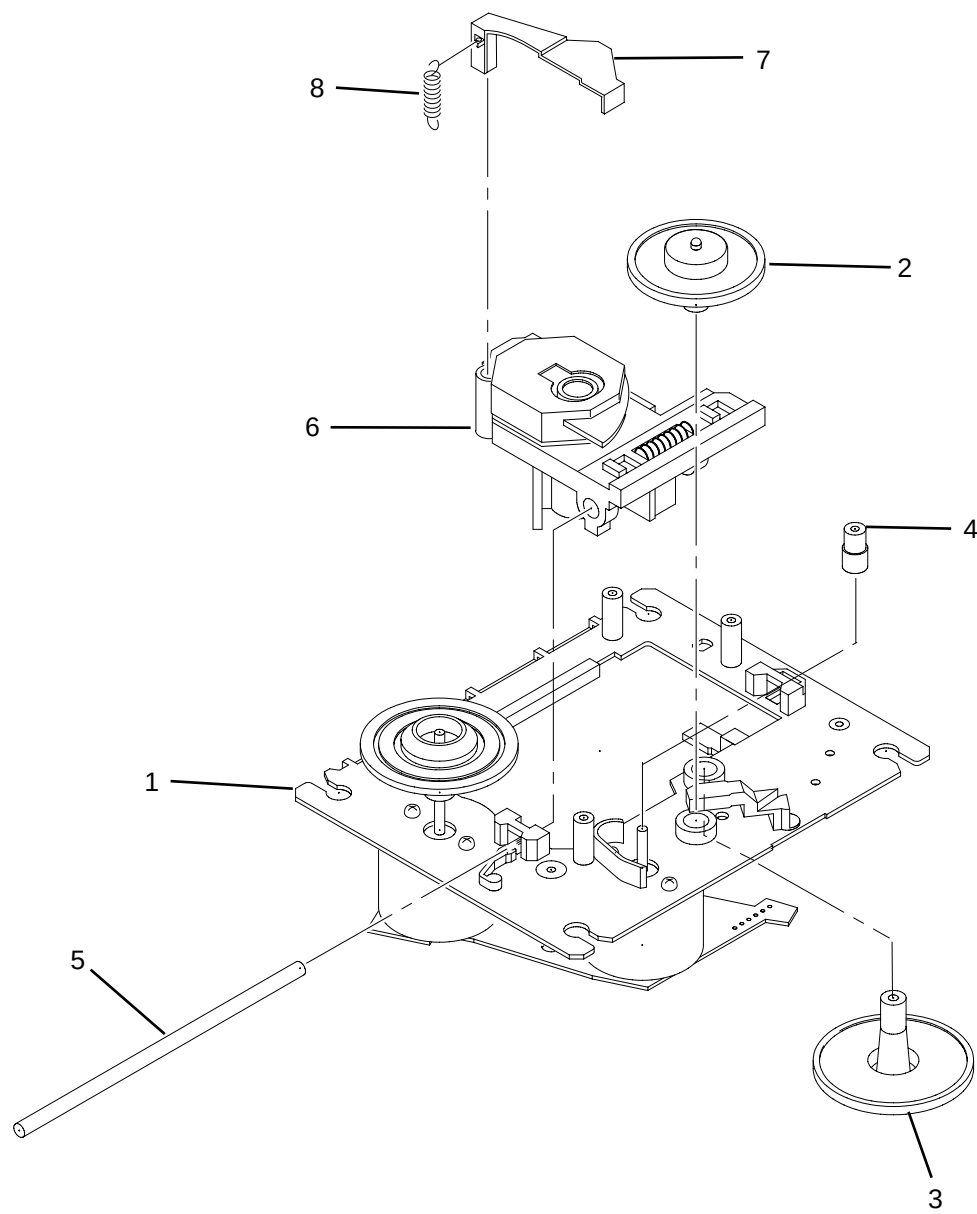
! = ⚠ SAFTY PARTS
C = Components marked
All components used on this model at the production line are shown in this service manual.
However, please note that not all components will be available as spare parts for after-sales service.
Components marked S and O are designated as spare parts for service and will be stocked at the spare parts centers.
Components marked X and R are not designated as spare parts for after sales service, and will not be stocked at the spare parts centers.

UNIT-NAME	!	C	REF-NO	PARTS-NO	PARTS-NAME	SUFFIX&MODEL		
						BZG-5 MVSD3NM	BZG-5 MVSD3N1DM	BZG-5 MVSD3N8M
ELECTRICAL		O	1	84-ZG1-672-010	F-CABLE,5P 1.25 210MM WHITE N	b	c	e
CD TRANSPORT		O	2	84-ZG1-225-010	BELT,SQ1.0-63.3	b	c	e
CD TRANSPORT		O	3	84-ZG1-267-010	PULLEY,LOAD MO 8	b	c	e
ELECTRICAL		O	4	87-045-364-010	MOT,BCH3B	b	c	e
CD TRANSPORT		O	5	84-ZG1-238-010	GEAR,WORM N	b	c	e
CD TRANSPORT		O	6	84-ZG1-248-010	SPR-C,WORM	b	c	e
CD TRANSPORT		O	7	8A-ZG1-001-010	TRAY,NO3 BLU	b	c	e
CD TRANSPORT		O	8	84-ZG1-291-110	HLDR,MAGNET 4 NAT	b	.	.
CD TRANSPORT		O	8	84-ZG1-291-210	HLDR,MAGNET 4 NAT	.	.	e
CD TRANSPORT		O	8	84-ZG1-283-110	HLDR,MAGNET V 4	.	c	.
CD TRANSPORT		O	9	84-ZG1-259-010	SPR-P,WORM	b	c	e
CD TRANSPORT		O	10	84-ZG1-239-210	PULLY,WORM N	b	c	e
CD TRANSPORT		O	11	84-ZG1-224-010	LEVER,TT	.	c	.
CD TRANSPORT		O	11	84-ZG1-288-010	LEVER,TT NAT	b	.	e
CD TRANSPORT		O	12	8A-ZG1-002-110	TURN TABLE,NO1 BLU	b	c	e
CD TRANSPORT		O	13	84-ZG1-269-010	GEAR,MAIN TT 4	b	c	e
CD TRANSPORT		O	14	84-ZG1-209-010	BELT,SQ1.8-117.7	b	c	e
CD TRANSPORT		O	15	84-ZG1-203-410	GEAR,MAIN CAM	b	.	e
CD TRANSPORT		O	15	8A-ZG1-218-010	GEAR,MAIN CAM BLU 4	.	c	.
CD TRANSPORT		O	16	84-ZG1-207-010	PULLEY,RELAY	b	c	e
						BZG-5 MVSD3NM	BZG-5 MVSD3N1DM	BZG-5 MVSD3N8M
ELECTRICAL		O	17	87-045-305-010	MOT,RF-500TB	b	c	e
CD TRANSPORT		O	18	84-ZG1-216-310	SLIDE,MECHA CAM YEL	.	c	.
CD TRANSPORT		O	18	84-ZG1-204-310	SLIDER,MECHA CAM	b	.	e
CD TRANSPORT		O	19	84-ZG1-274-010	GEAR,RELAY 8	b	c	e
CD TRANSPORT		O	20	81-ZG1-291-110	GEAR,TRAY RELAY NO3	b	c	e
CD TRANSPORT		O	21	84-ZG1-205-210	GEAR,TRAY (*)	b	c	e
CD TRANSPORT		O	22	83-ZG3-213-010	LVR,SW	b	c	e
CD TRANSPORT		O	23	84-ZG1-266-010	LEVER,CAN 8	b	c	e
CD TRANSPORT		O	24	84-ZG1-211-010	SPR-E,CAM S	b	c	e
CD TRANSPORT		O	25	81-ZG1-255-110	PLATE,MAGNET MK2	b	.	e
CD TRANSPORT		O	25	84-ZG1-285-010	PLATE,MAGNET BLK	.	c	.
CD TRANSPORT		O	26	83-ZG3-604-010	RING,MAG 2	b	c	e
CD TRANSPORT		O	27	84-ZG1-249-610	CHAS,MECHA F	.	c	.
CD TRANSPORT		O	27	8A-ZG1-217-210	CHAS,MECHA F NAT	b	.	e
ELECTRICAL		O	28	84-ZG1-630-010	CABLE FFC 6P-1.25	b	c	e
CD TRANSPORT		O	29	84-ZG1-287-010	HLDR,MECHA NAT	b	.	e
CD TRANSPORT		O	29	84-ZG1-212-210	HLDR,MECHA NO2	.	c	.
ELECTRICAL		O	30	85-NFT-611-110	FF-CABLE 16P-1.0	b	c	e
CD TRANSPORT		O	31	80-CD3-214-010	CUSH CD A	b	c	e
CD TRANSPORT		O	A	87-067-981-010	BVT2+3-6 BLK	b	c	e
						BZG-5 MVSD3NM	BZG-5 MVSD3N1DM	BZG-5 MVSD3N8M
CD TRANSPORT		O	B	87-B10-331-010	VF+3-6 BLK	b	c	e
CD TRANSPORT		O	C	81-ZG1-271-010	S-SCREW,MECH REAR	b	c	e
CD TRANSPORT		O	D	87-067-579-010	BVT2+3-8 W/O SLOT	b	c	.

COLOR NAME TABLE

Basic color symbol	Color	Basic color symbol	Color	Basic color symbol	Color
B	Black	C	Cream	D	Orange
G	Green	H	Gray	L	Blue
LT	Transparent Blue	N	Gold	P	Pink
R	Red	S	Silver	ST	Titan Silver
T	Brown	V	Violet	W	White
WT	Transparent White	Y	Yellow	YT	Transparent Yellow
LM	Metallic Blue	LL	Light Blue	GT	Transparent Green
LD	Dark Blue	DT	Transparent Orange	GM	Metallic Green
YM	Metallic Yellow	DM	Metallic Orange	PT	Transparent Pink
LA	Aqua Blue	GL	Light Green	HT	Transparent Gray
HM	Metallic Gray	NH	Champagne Gold	M	Wood Pattern

MECHANISM EXPLODED VIEW 1/1 (3ZG-2 E3NM)



CD MECHANISM PARTS LIST-1/1 (3ZG-2)

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	83-ZG2-262-010		CHAS ASSY,E3
2	83-ZG2-235-010	0E	GEAR,A3
3	83-ZG2-205-210	0E	GEAR,B
4	83-ZG2-236-010	0E	GEAR,MOTOR 3
5	83-ZG2-253-110	0E	SHAFT,SLIDE 5
6	87-A90-836-010	2Y	PICKUP,KSS-213F
7	83-ZG2-245-510	1A	LEVER,SHUTTER(*)
8	83-ZG2-250-210	0E	SPR-E,SHT 2

OTHER PARTS LIST -1/2 (BZA-4)

! = ⚠ SAFETY PARTS
C = Components marked
All components used on this model at the production line are shown in this service manual.
However, please note that not all components will be available as spare parts for after-sales service.
Components marked S and O are designated as spare parts for service and will be stocked at the spare parts centers.
Components marked X and R are not designated as spare parts for after sales service, and will not be stocked at the spare parts centers.

UNIT-NAME	! C REF-NO	PARTS-NO	PARTS-NAME	SUFFIX&MODEL		
				BZA-4 MVSD3NM	BZA-4 MVSD3N1DM	BZA-4 MVSD3N8M
ASSY CODE	X	A8-BZA-492-030	BZA-4 MVSD3NM	b	.	.
ASSY CODE	X	A8-BZA-493-030	BZA-4 MVSD3NDM	.	c	.
ASSY CODE	X	A8-BZA-498-030	BZA-4 MVSD3N8M	.	.	d
CPU	X	8B-NHY-202-010	PLATE,SHLD VCD	b	c	.
PWB, 3VCD	X	8B-ZA4-601-010	PWB,COMB VSD3DM 2M	b	c	d
PWB, 3VCD	X	8B-ZA4-603-010	PWB,LED	b	c	d
PWB, 3VCD	X	8B-ZA4-602-010	PWB,MAIN VSD3DM	b	c	d

OTHER PARTS LIST -2/2 (BZG-5)

! = ⚠ SAFTY PARTS
C = Components marked
All components used on this model at the production line are shown in this service manual.
However, please note that not all components will be available as spare parts for after-sales service.
Components marked S and O are designated as spare parts for service and will be stocked at the spare parts centers.
Components marked X and R are not designated as spare parts for after sales service, and will not be stocked at the spare parts centers.

UNIT-NAME	! C REF-NO	PARTS-NO	PARTS-NAME	SUFFIX&MODEL		
				BZG-5 MVSD3NM	BZG-5 MVSD3N1DM	BZG-5 MVSD3N8M
ASSY CODE	X	M8-BZG-59J-030	BZG-5 MVSD3N1DM	.	C	.
ASSY CODE	X	M8-BZG-59H-030	BZG-5 MVSD3NM	b	.	e
CD MECHANISM	X	M8-3ZG-275-030	3ZG-2 E3NM	b	c	e
CD TRANSPORT	X	84-ZG1-242-010	CUSH-G 8-6-1	b	c	e
CD TRANSPORT	X	84-426-949-010	LBL,SERIAL NO	b	c	e
CD TRANSPORT	X	8B-ZG5-204-010	PLATE,SHIELD VCD	b	c	.
CD TRANSPORT	X	8A-ZG1-214-110	SH, 25-40-0.5 PC	b	c	e
ELECTRICAL	X	A8-BZA-493-030	BZA-4 MVSD3NDM	.	C	.
ELECTRICAL	X	A8-BZA-492-030	BZA-4 MVSD3NM	b	.	e
ELECTRICAL	X	80-XV1-218-010	CUSH-S,PWB	b	c	.
ELECTRICAL	X	8Z-NB6-230-010	PLATE,SHLD RF S	b	c	.
PWB	X	84-ZG1-605-010	PWB,COMBI T-T (28M)	b	c	e
PWB	X	84-ZG1-606-010	PWB,T-T	b	c	e

アイワ株式会社
AIWA CO.,LTD.

〒110-8710 東京都台東区池之端1-2-11 ☎03(3827)3111 (代表)

2-11, IKENOHATA 1-CHOME, TAITO-KU, TOKYO 110-8710, JAPAN TEL:03 (3827) 3111