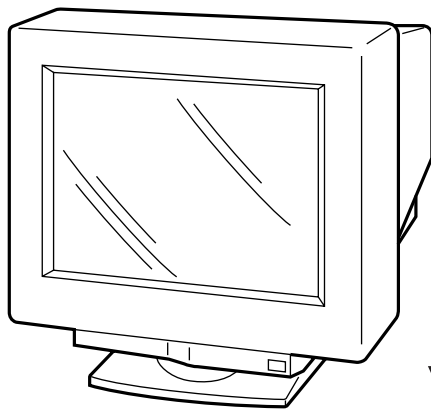


CPD-110GS/110EST

SERVICE MANUAL

REVISED



CPD-110GS

US Model

Canadian Model

Chassis No. SCC-L27A-A

CPD-110EST

AEP Model

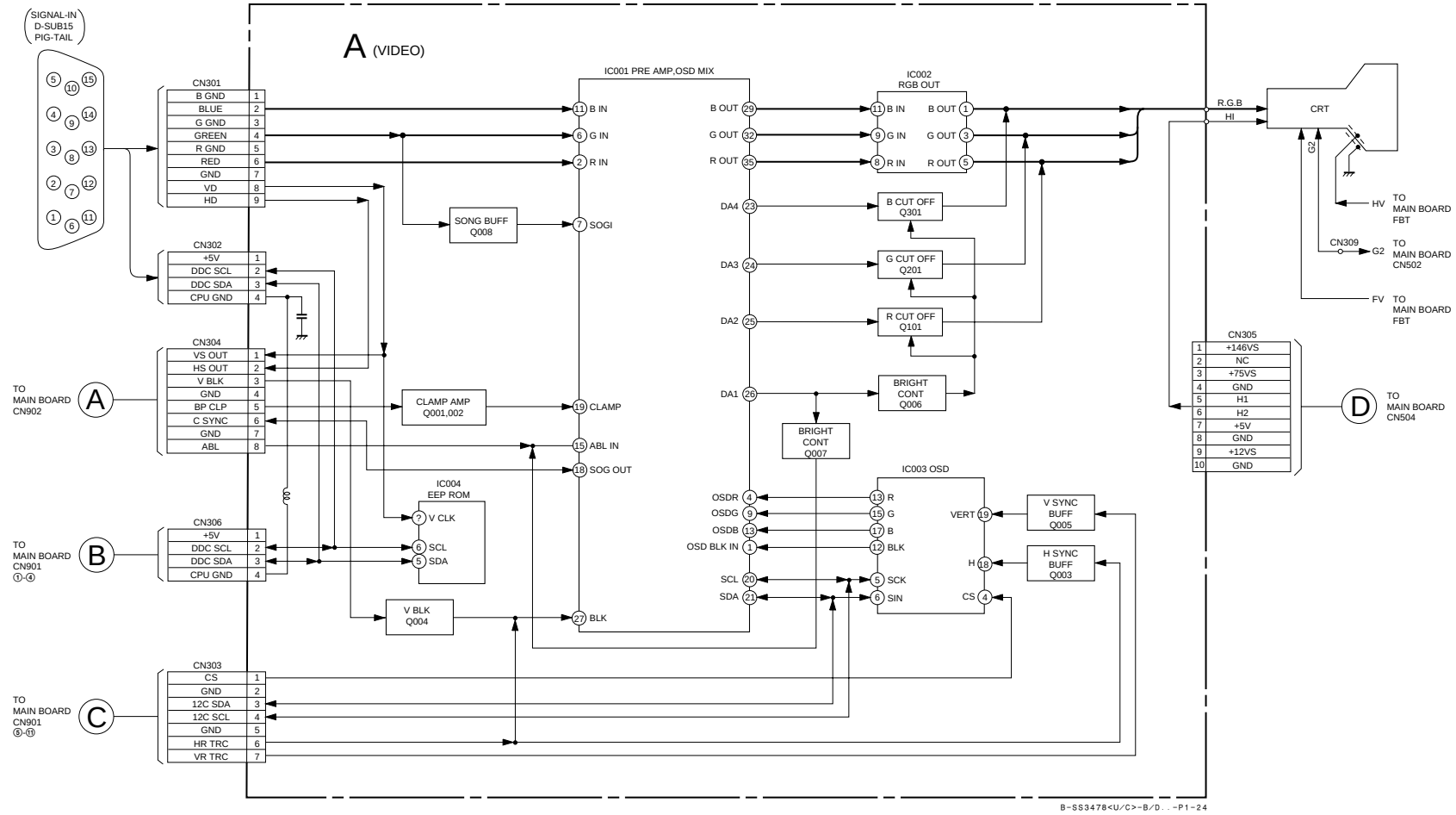
Chassis No. SCC-L27B-A

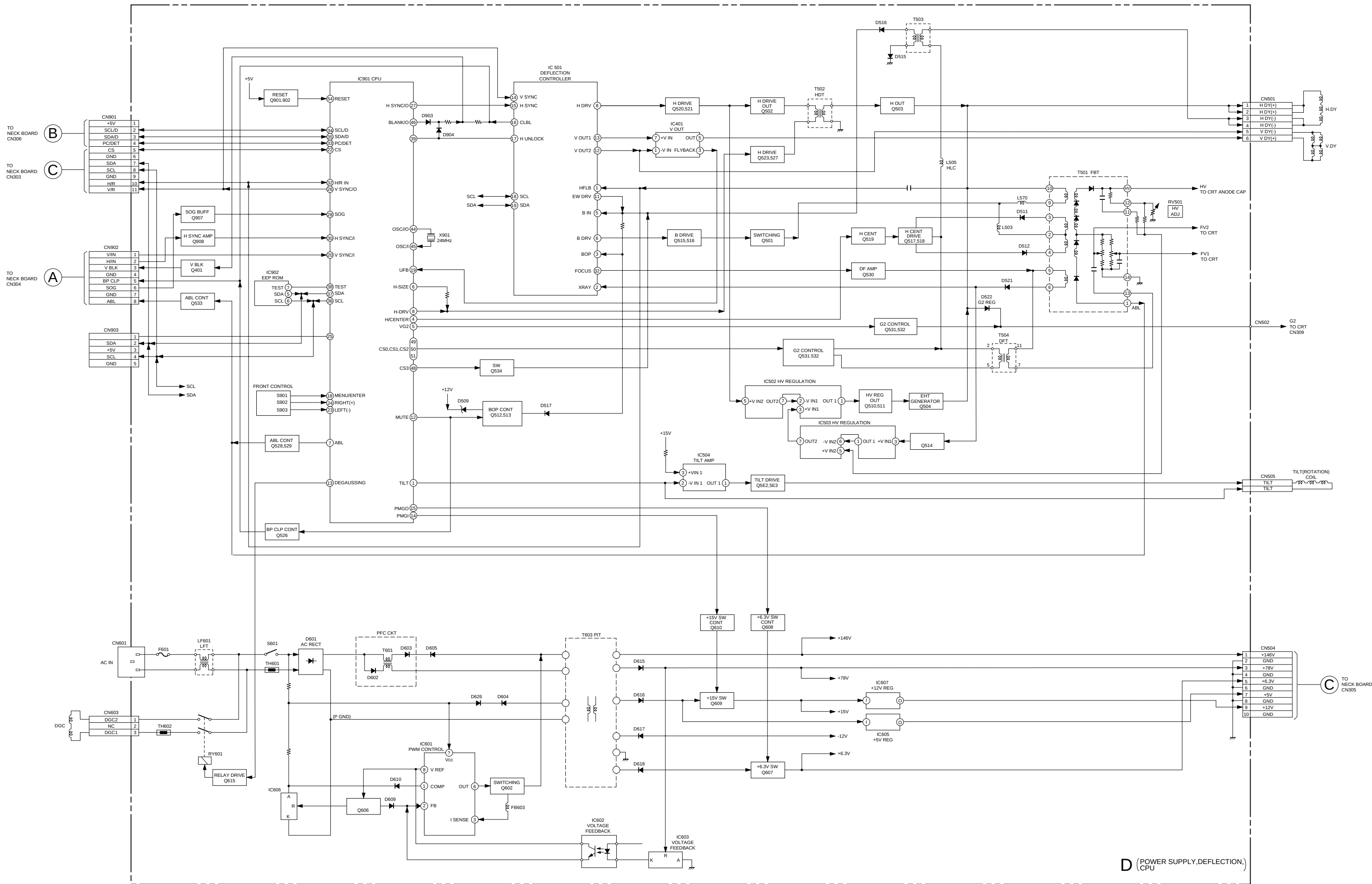
X-110 CHASSIS

SPECIFICATIONS

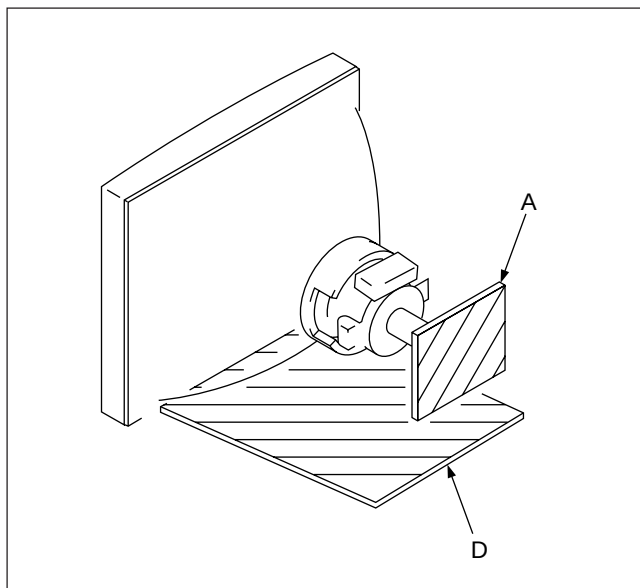
SECTION 5 DIAGRAMS

5-1. BLOCK DIAGRAMS (with FRAME SCHEMATIC DIAGRAM)





5-2. CIRCUIT BOARDS LOCATION



5-3. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS

Note:

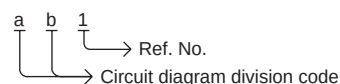
- All capacitors are in μF unless otherwise noted. (pF : μF)
Capacitors without voltage indication are all 50 V.
- Indication of resistance, which does not have one for rating electrical power, is as follows.

Pitch: 5 mm
Rating electrical power 1/4 W (CHIP : 1/10 W)

- All resistors are in ohms.
-  : nonflammable resistor.
-  : fusible resistor.
-  : internal component.
-  : panel designation, and adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
-  : earth-ground.
-  : earth-chassis.
- All voltages are in V.
- Readings are taken with a 10 M Ω digital multimeter.
- Readings are taken with a color-bar signal input.
- Voltage variations may be noted due to normal production tolerances.
- * : Can not be measured.
- Circled numbers are waveform references.
-  : B + bus.
-  : B – bus.
- The components identified by  in this basic schematic diagram have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation.
Should replacement be required, replace only with the value originally used.
- When replacing components identified by , make the necessary adjustments indicated. (See page 3-1)
- When replacing the part in below table, be sure to perform the related adjustment.

- Divided circuit diagram

One sheet of D board circuit diagram is divided into three sheets, each having the code D-a to D-c . For example, the destination (ab1) on the D-a sheet is connected to (ab1) on the D-b sheet.



	Part replaced ()
HV ADJ	RV501

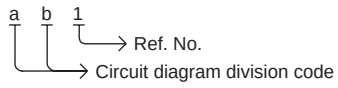
	Part replaced ()	
HV Regulator Circuit Check	D Board	IC502, IC503, C501 C535, C553, C597 C598, R592, R593 R596, RV501, T501 (FBT)
HV Hold-down Circuit Check	D Board	IC501, D521, C585 C599, R598, R599 R5C7, T501 (FBT)
Beam Current Protector Circuit Check	D Board	Q533, D592, C590 C591, C598, R5A5 R5C0, R5C3, L502 T501 (FBT)

Note: The components identified by shading and mark  are critical for safety. Replace only with part number specified.

Note: Les composants identifiés per un tramé et une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- Divided circuit diagram

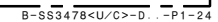
One sheet of D board circuit diagram is divided into three sheets, each having the code D-a to D-c . For example, the destination (ab1) on the D-a sheet is connected to (ab1) on the D-b sheet.



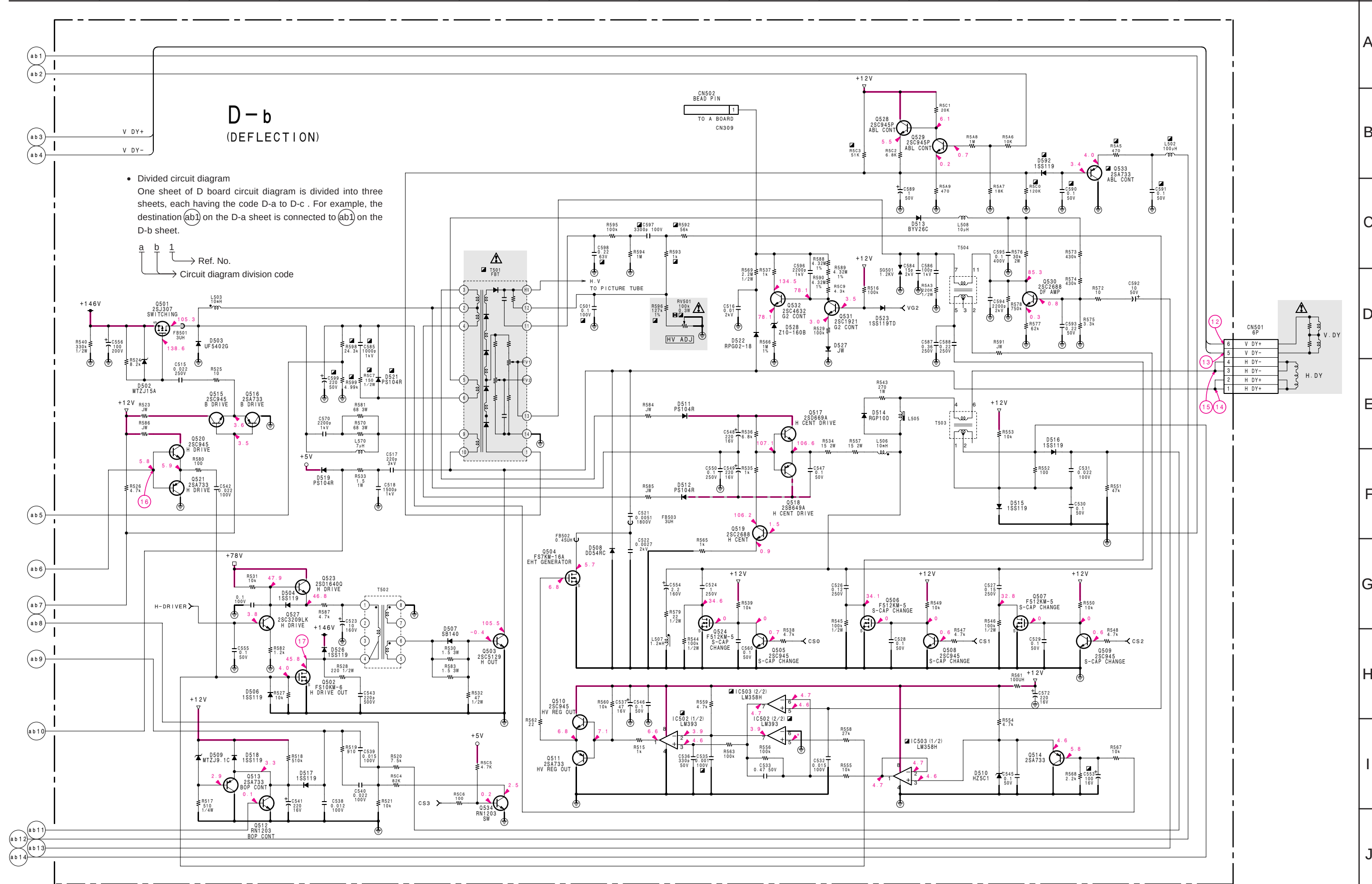
- D BOARD WAVEFORMS

① 3.0 Vp-p (H)	② 3.0 Vp-p (H)	③ 3.4 Vp-p (H)
④ 4.8 Vp-p (V)	⑤ 5.0 Vp-p (H)	⑥ 1.2 Vp-p (24MHz)
⑦ 5.0 Vp-p (H)	⑧ 5.0 Vp-p (V)	⑨ 2.8 Vp-p (V)
⑩ 2.0 Vp-p (V)	⑪ 12.0 Vp-p (H)	⑫ 50.0 Vp-p (V)
⑬ 1.2 Vp-p (V)	⑭ 1k Vp-p (H)	⑮ 60.0 Vp-p (H)
⑯ 12.0 Vp-p (H)	⑰ 100 Vp-p (H)	

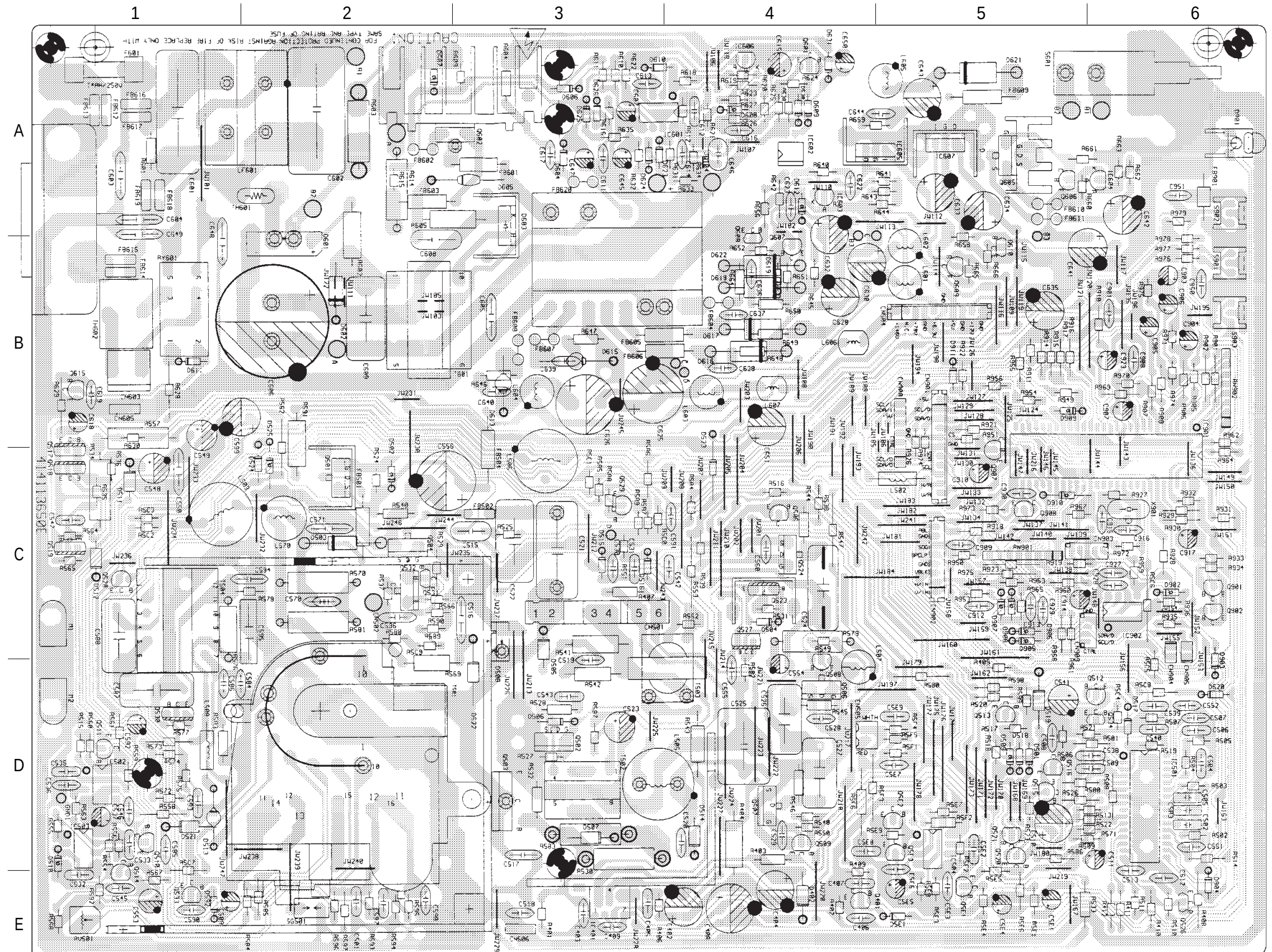
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----



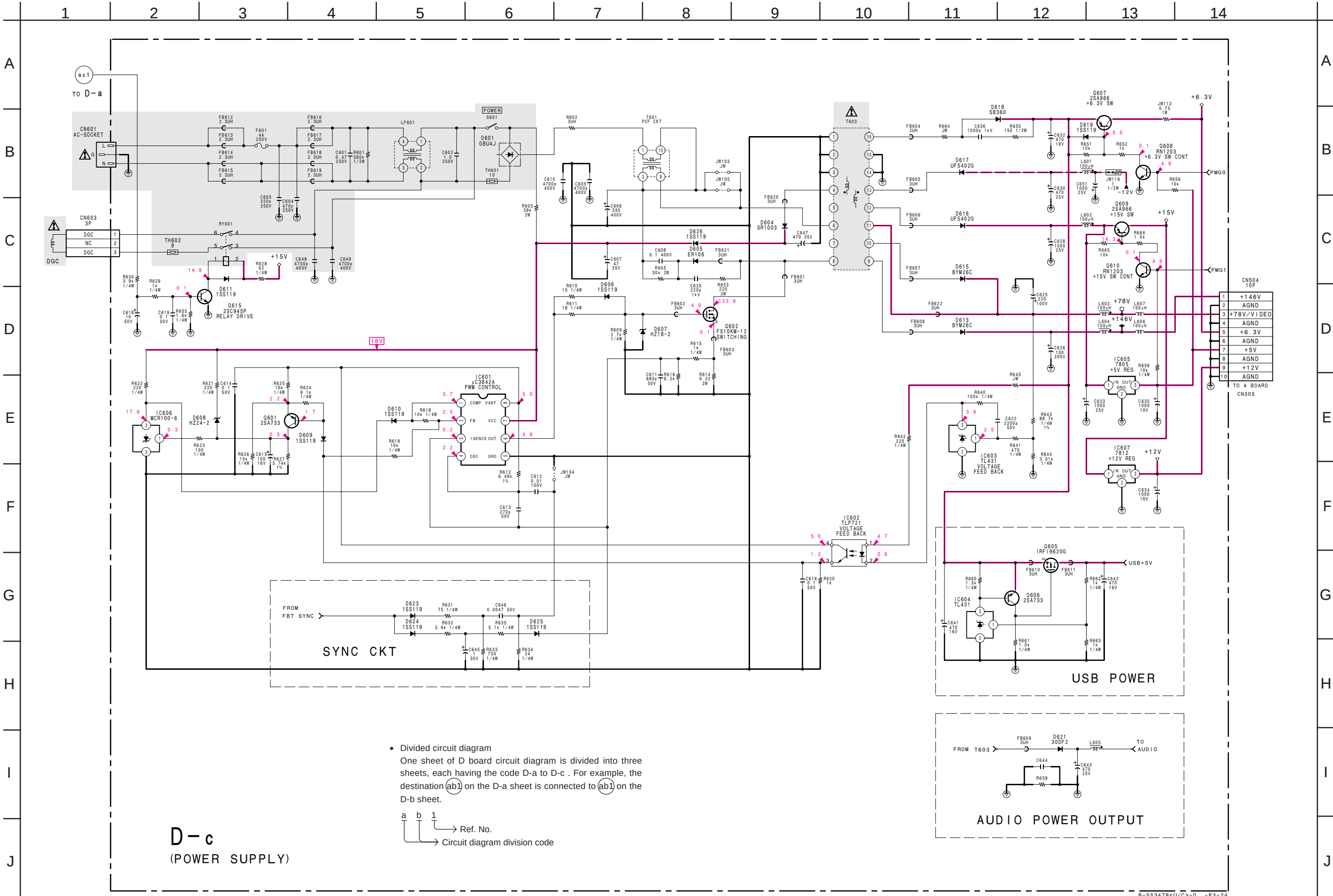
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----



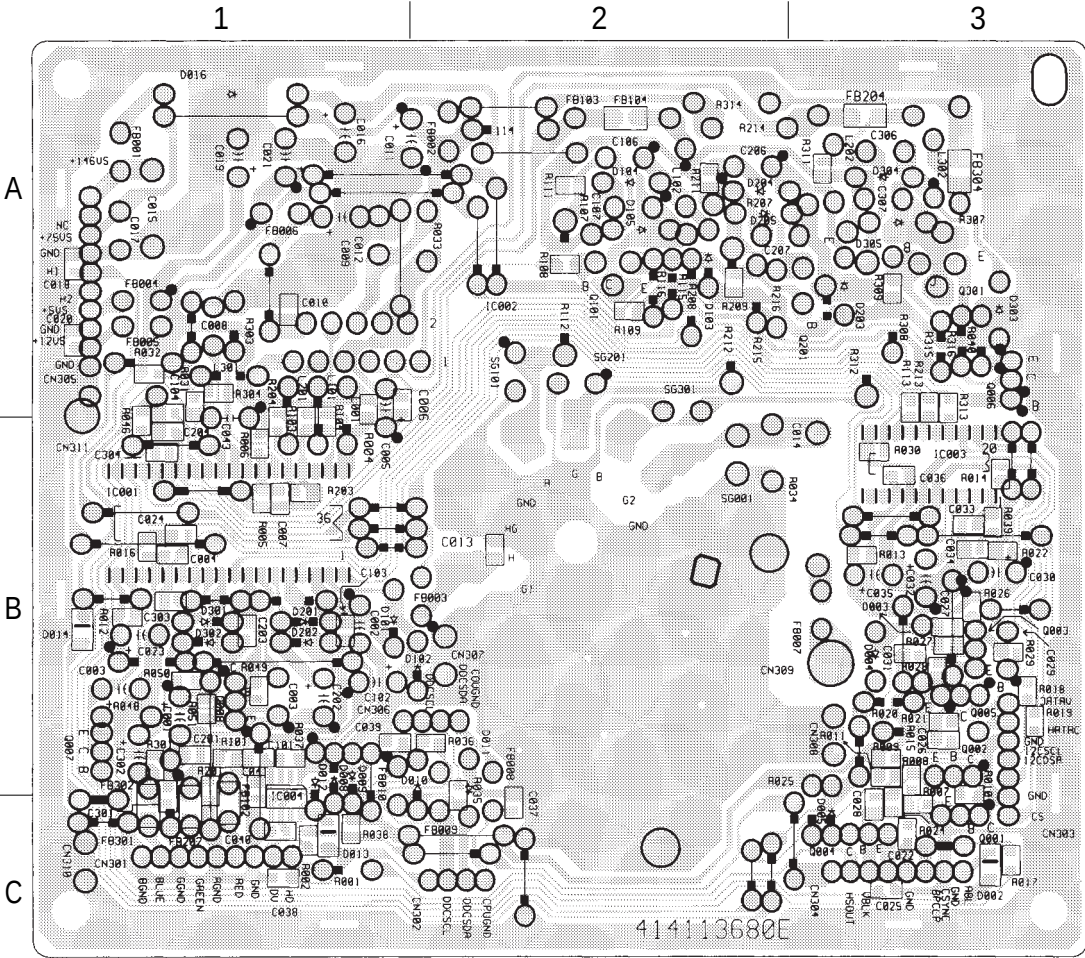
IC		DIODE	
IC401	E-3	D402	E-4
IC501	D-6	D501	D-5
IC502	D-1	D502	C-2
IC503	D-1	D503	C-2
IC504	D-5	D504	C-4
IC601	A-4	D506	D-3
IC602	A-4	D507	D-3
IC603	A-4	D508	C-3
IC605	A-5	D509	D-5
IC606	A-4	D510	D-1
IC607	A-5	D511	C-1
IC901	B-6	D512	C-1
IC902	C-6	D513	D-1
TRANSISTOR		D514	D-4
		D515	C-3
		D516	C-3
Q401	E-4	D517	D-6
Q501	C-2	D518	D-5
Q502	D-3	D519	D-5
Q503	D-3	D520	D-6
Q504	C-2	D521	D-1
Q505	C-4	D522	D-2
Q506	D-4	D523	C-4
Q507	D-4	D592	E-1
Q508	D-4	D601	A-2
Q509	D-4	D604	A-3
Q510	D-1	D605	A-3
Q511	D-1	D606	A-3
Q512	D-6	D607	A-2
Q513	D-5	D608	A-4
Q514	E-1	D609	A-4
Q515	D-5	D610	A-3
Q516	D-5	D611	B-1
Q517	B-1	D612	A-4
Q518	C-1	D613	B-3
Q519	C-1	D615	B-3
Q520	D-5	D616	B-4
Q521	D-5	D617	B-4
Q522	C-4	D618	B-4
Q523	C-4	D626	A-3
Q524	C-4	D901	A-6
Q526	E-6	D902	C-6
Q527	C-4	D903	C-6
Q528	C-1	D904	E-6
Q529	C-3	D905	C-5
Q530	D-1	D906	C-5
Q531	C-2	D907	C-5
Q532	C-2	D908	C-5
Q533	E-1	D909	B-5
Q534	D-6	D910	C-5
Q5E2	D-5	VARIABLE RESISTOR	
Q5E3	D-5		
Q601	A-4		
Q602	A-3	RV501	E-1
Q607	B-4		
Q608	A-4		
Q609	B-5	CRYSTAL	
Q610	B-5		
Q615	B-1		
Q901	C-6	X901	C-6
Q902	C-6		
Q907	C-5		
Q908	C-5		



(3) Schematic Diagram of D-c Board



— A BOARD (Conductor Side) —

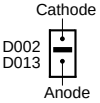


• A BOARD
SEMICONDUCTOR
LOCATION

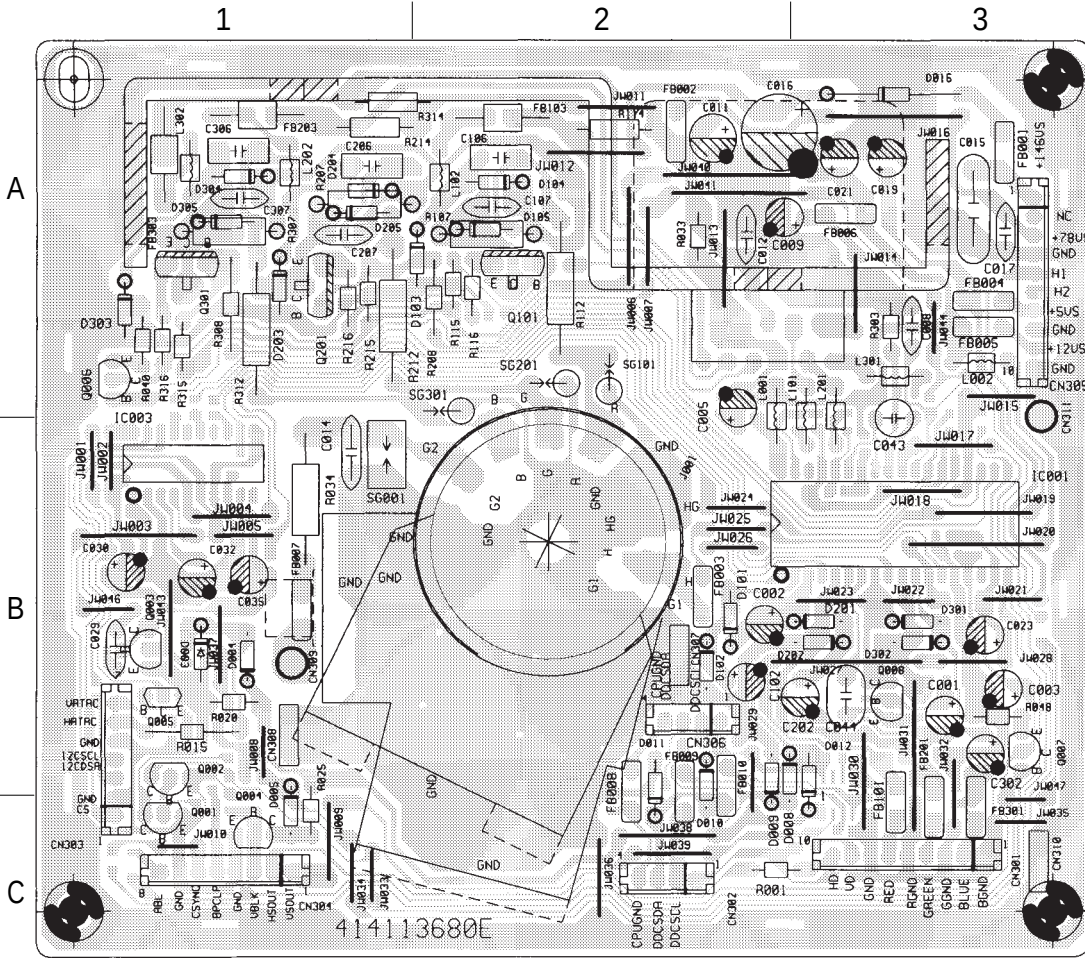
IC	(Conductor Side) (Component Side)	
	(Conductor Side)	(Component Side)
IC001	B-1	B-3
IC002	A-1	
IC003	B-3	B-1
IC004	B-1	

TRANSISTOR		
(Conductor Side) (Component Side)		
(Conductor Side)	(Component Side)	
Q001	C-3	C-1
Q002	B-3	B-1
Q003	B-3	B-1
Q004	C-3	C-1
Q005	B-3	B-1
Q006	A-3	A-1
Q007	B-1	B-3
Q008	B-1	B-3
Q101	A-2	A-2
Q201	A-3	A-1
Q301	A-3	A-1

DIODE		
(Conductor Side) (Component Side)		
(Conductor Side)	(Component Side)	
D002	C-3	
D003	B-3	B-1
D004	B-3	B-1
D005	C-3	C-1
D008	B-1	B-2
D009	B-1	B-2
D010	B-1	B-2
D011	B-2	B-2
D012	B-1	B-3
D013	C-1	
D016	A-1	A-3
D101	B-1	B-2
D103	A-2	A-1
D104	A-2	A-2
D105	A-2	A-2
D201	B-1	B-3
D202	B-1	B-3
D203	A-3	A-1
D204	A-2	A-1
D205	A-2	A-1
D301	B-1	B-3
D302	B-1	B-3
D303	A-3	A-1
D304	A-3	A-1
D305	A-3	A-1

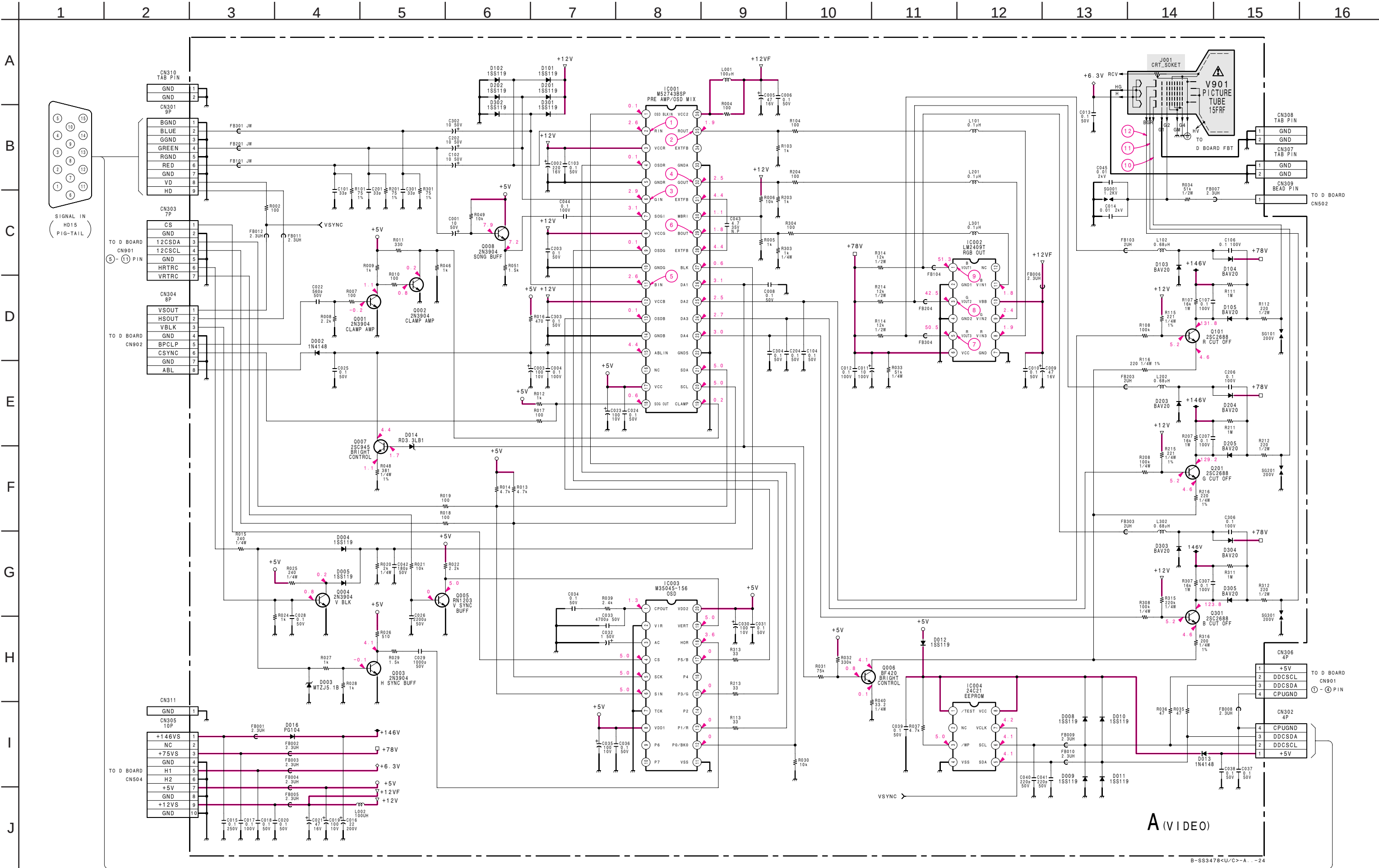


— A BOARD (Component Side) —

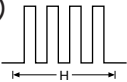
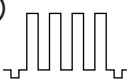
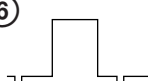
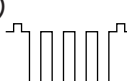
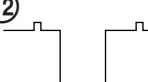


• Pattern of the rear side.

(4) Schematic Diagram of A Board

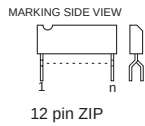


• A BOARD WAVEFORMS

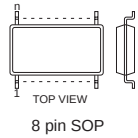
①  0.7 Vp-p (H)	②  3.4 Vp-p (H)
③  1.0 Vp-p (H)	④  3.8 Vp-p (H)
⑤  0.7 V p-p (H)	⑥  3.4 Vp-p (H)
⑦  48.0 Vp-p (H)	⑧  55.0 Vp-p (H)
⑨  48.0 Vp-p (H)	⑩  48.0 Vp-p (H)
⑪  55.0 Vp-p (H)	⑫  48.0 Vp-p (H)

5-4. SEMICONDUCTORS

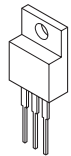
LM2409



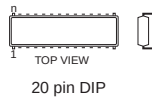
**LM358M
LM393M
24LC16BT/SN
24LC21T/SN**



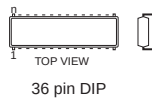
**MCT7812CT
TA7805S**



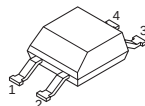
M35045



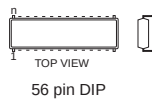
M52743BSP



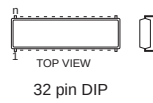
PC123F2



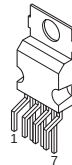
ST72T75



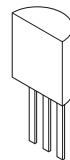
TDA4856



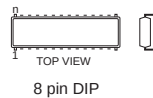
TDA8172



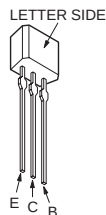
TL431



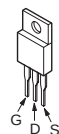
uC3842A



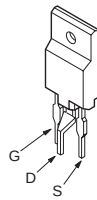
DTC124ESA



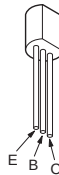
**FS10KM-6
FS10KM-12
FS12KM-5
FS7KM-16A
2SJ449**



IRFI9620G



2N3904



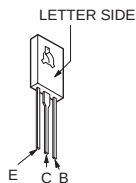
**2SA1221-L
2SC3209LK**



**2SA733-Q
2SC945-P**



**2SB649A
2SC2688-LK
2SD1640Q,R
2SD669A-C**



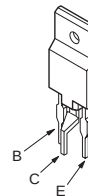
2SC1921



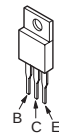
2SC2383-O



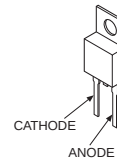
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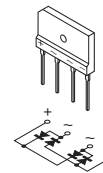
2SC5129



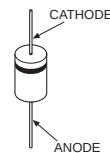
DD54RC



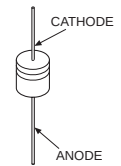
GBU4J



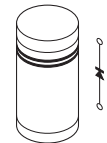
**HZ18-2
MTZJ-T-73-15A
SB140
1N4001
1N4148
31DF6**



**MTZJ-5.1A
MTZJ-5.1B
RD3.3ESB2
RD5.1ESB2
RD9.1ESB3
1SS119-25**



RD3.3LB1



**RGP02-18
RH-1A
30DF2**

