

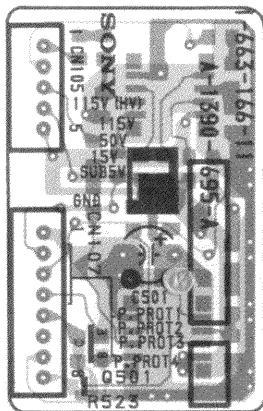
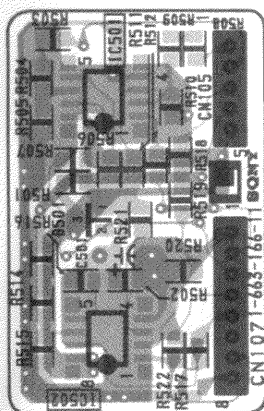
PA BOARD

Function of Semiconductor

D1	RD5.1ES-B2	HV PROTECTOR	IC3	TL082CP	HV. DET. BUFFER, HV LIMIT
D2	1SS119-25TD	HV PROT HOLD	IC4	MC14011BCP	HV DRIVE
D3	1SS119-25TD	IK PROT HOLD	IC5	LM393P	IK. PROT. COMP
D4	1SS119-25TD	HV LIMITTER	IC7	LM393P	REG. OSC. COMP. HV. PROT. BUFFER
D5	1SS119-25TD	G2 DOWN	IC8	LM7912CT	-12V REG
D6	1SS119-25TD	PROTECTOR	IC9	MC14040BCP	OSC-DEV-1
D7	1SS119-25TD	-12V PROTECTOR	IC10	TL082CP	HV REG. DET. HV. REG. CONT
D8	1SS119-25TD	PROTECTOR	IC11	LM7812CT	+12V REG
D9	1SS119-25TD	+12V HOLD	IC12	MC14572UBCP	OSC-DEV-1
D10	EGP10GPKG23	+PIN MOD RECT-1	IC13	TL431CLP	HV REG. REF
D11	1SS119-25TD	+12V PROTECTOR	IC14	uPC4558C	HV. MOD. CONT. HV. MOD. BUFFER
D12	RD3.3ES-B2	REG PROTECTOR	IC15	uPC1394C	PIN. MOD. REG. CONT
D13	EGP10GPKG23	-PIN MOD RECT	IC16	uPC4558C	G2. CONT. R, G2. CONT. G
D14	ERC88M-009	+CENT RECT	IC18	uPC4558C	G2. CONT. B
D15	V06C-T52	+15V RECT			
D16	ERC88M-009	-CENT RECT	Q1	2SC2785TP-HFE	HV. STOP. SW-1
D17	RD13ES-T1B2	REG PROTECTOR	Q2	2SC2785TP-HFE	IK. DETECTOR
D18	1SS119-25TD	-12V HOLD	Q3	2SC2785TP-HFE	BUFFER
D19	RD13ES-B2	HV REG PROTECTOR	Q4	2SA1175TP-HFE	REG. OSC. BUFFER
D20	1SS119-25TD	PROTECTOR	Q5	2SC2785TP-HFE	HV. STOP. DET
D21	ERC88M-009	HEATER RECT	Q6	2SC2785TP-HFE	HV. STOP. SW-2
D22	V06C-T52	SPEED UP	Q7	2SA1175TP-HFE	HV. DRV. BUFFER
D24	V11N-52	G2 RECT	Q11	DTC144ESA	LENS. PROT. SW-1
D25	RD33ESB2	CLAMP	Q12	2SD774-T-34	REG. PULSE. BUFFER-1
D26	1SS119-25TD	BIAS	Q13	2SB734-T-34	REG. PULSE. BUFFER-2
D27	ERC91-02E	REG SW-1	Q14	2SC2785TP-HFE	POWER ON PROTECTOR
D28	ERC91-02E	REG SW-2	Q15	2SA1175TP-HFE	INT. OSC. BUFFER
D29	ERC91-02E	REG SW-3	Q16	2SB648A-C	LOT. PROT. DETECTOR
D30	1SS119-25TD	PROTECTOR	Q17	2SD1878-CA	LOT. CONVERTER
D31	ERC06-15SA	DUMPER-1	Q18	DTC144ESA	LOT. PROT. SW
D32	ERC06-15SA	DUMPER-2	Q19	2SC2688-LK	LOT. DRIVE
D33	ESAD39M-06C	N.POW RECT	Q20	2SC2785TP-HFE	LOT. PROT. BUFFER
D34	1SS119-25TD	SPEED UP	Q21	2SA1175TP-HFE	POWER OFF PROTECTOR
D35	1SS119-25TD	BIAS	Q22	IRFP350LF20	PIN MOD REG
D36	RD13ES-B2	PROTECTOR	Q23	2SA1358-Y	CONV. DRV. CONT-2
D37	RD13ES-B2	PROTECTOR	Q24	2SC2688-LK	CONV. DRV. CONT-1
D38	ERC91-02E	CLAMP	Q25	2SC2785TP-HFE	POWER ON BIAS
D39	1SS119-25TD	CLAMP	Q26	2SD774-T-34	N POW REG DRV-1
D40	1SS119-25TD	H STOP	Q27	2SC3998-CB	HV CONVERTER
D41	1SS119-25TD	PROTECTOR	Q28	IRFIP250	HV REGULATOR
D42	1SS119-25TD	+15V HOLD	Q29	2SK929	HV CONV DRIVE
D43	RD5.1ES-B2	IK PROTECTOR	Q30	2SB734-T-34	N POW REG DRV-2
D44	1SS119-25TD	G2 DOWN R	Q31	2SK523TP-M1	N POW REG PRE DRV
D45	1SS119-25TD	G2 DOWN G	Q32	2SA1175TP-HFE	OFF SPOT SW
D46	1SS119-25TD	G2 DOWN B	Q33	2SC4630LS	G2 CONT. R
D51	1SS119-25TD	LENS PROT R	Q34	2SC2785TP-HFE	ON SPOT SW
D52	1SS119-25TD	LENS PROT G	Q35	2SC2785TP-HFE	G2 DOWN. R
D53	1SS119-25TD	LENS PROT B	Q36	2SA1175TP-HFE	G2 CONT BUFF. R
D54	EGP10GPKG23	-B RECT	Q37	2SA1175TP-HFE	G2 CONT BUFF. G
D55	V06C-T52	PROTECTOR	Q38	DTC144ESA	LENS PROT SW-2
D56	1SS119-25TD	V STOP	Q39	2SA1381-E	-B LIPPLE FILTER
D57	1SS119-25TD	G2 DOWN	Q40	2SC4630LS	G2 CONT. G
D58	1SS119-25TD	CLAMP	Q41	2SC4630LS	G2 CONT. B
			Q42	2SC2785TP-HFE	G2 DOWN. B
IC1	LM393P	HV. PROT. COMP	Q43	2SC2785TP-HFE	G2 DOWN. G
IC2	MC14001BCP	REG. OSC	Q44	2SA1175TP-HFE	G2 CONT BUFF. B

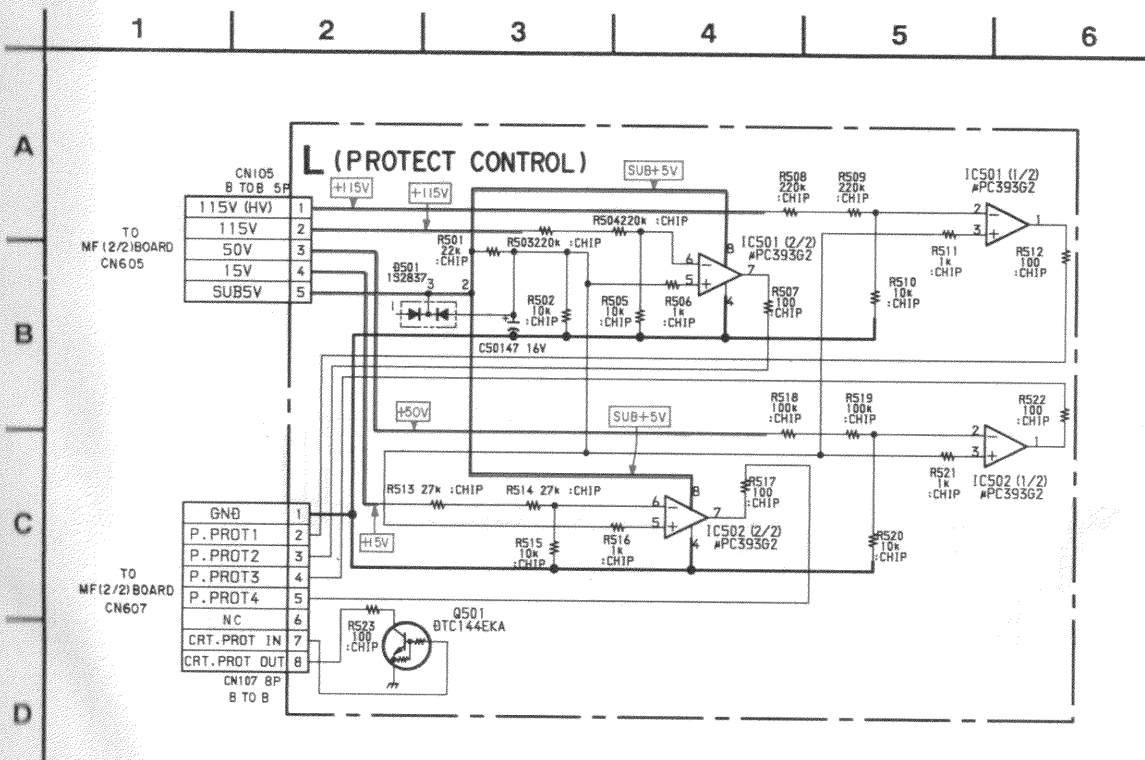


— L BOARD — <Conductor side> — L BOARD — <Component side>



- : Pattern from the side which enables seeing.
- : Pattern of the rear side.

• L (PROTECT CONTROL) DIAGRAM



L BOARD

Function of Semiconductor

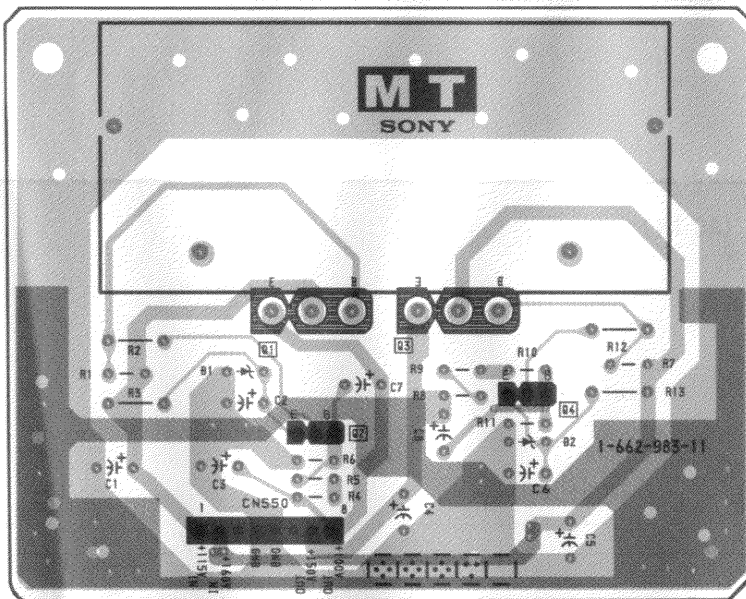
D501	1S2837	DIS CHARGE
IC501	uPC393G2-T2	COMPARATOR-1
IC502	uPC393G2-T2	COMPARATOR-2



MT

(+105/+150V REGULATOR) BOARD

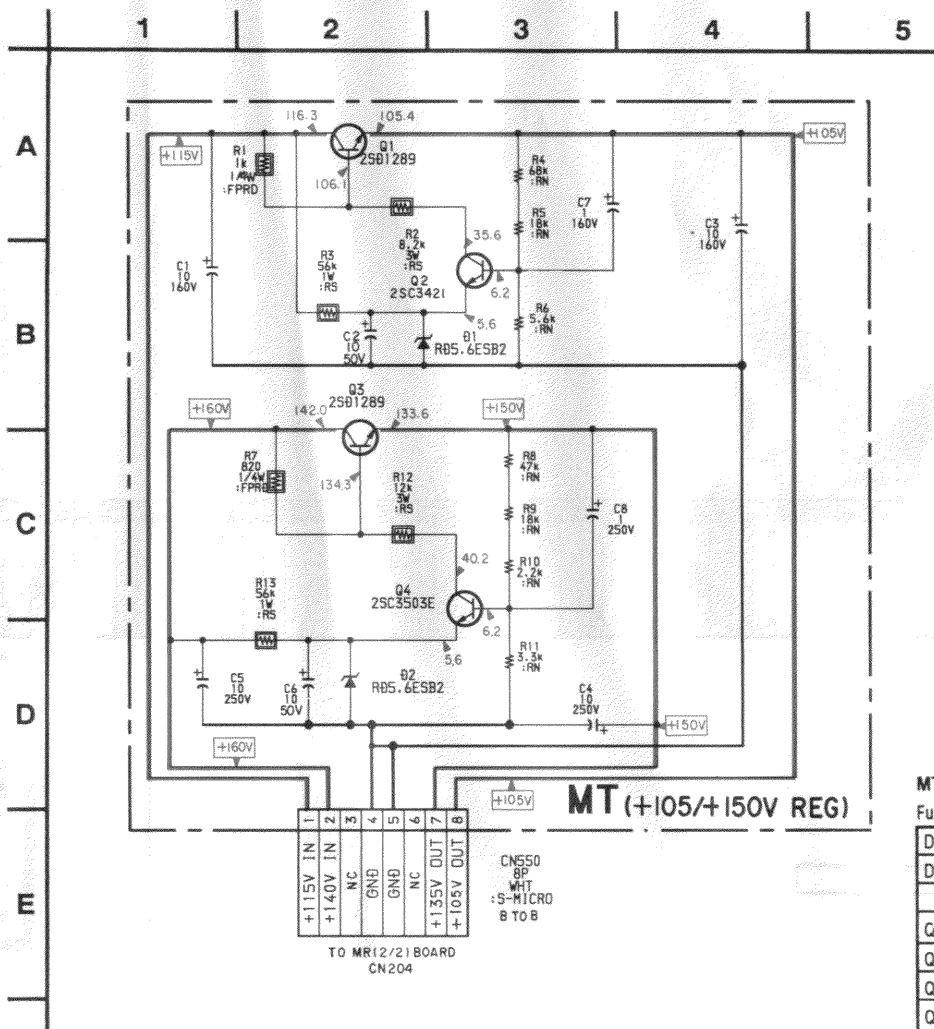
VPH-G70Q/G70QM/G70QMG

— MT BOARD — <Conductor side>



-  : Pattern from the side which enables seeing.
-  : Pattern of the rear side.

• MT (+105/+150V REGULATOR) DIAGRAM

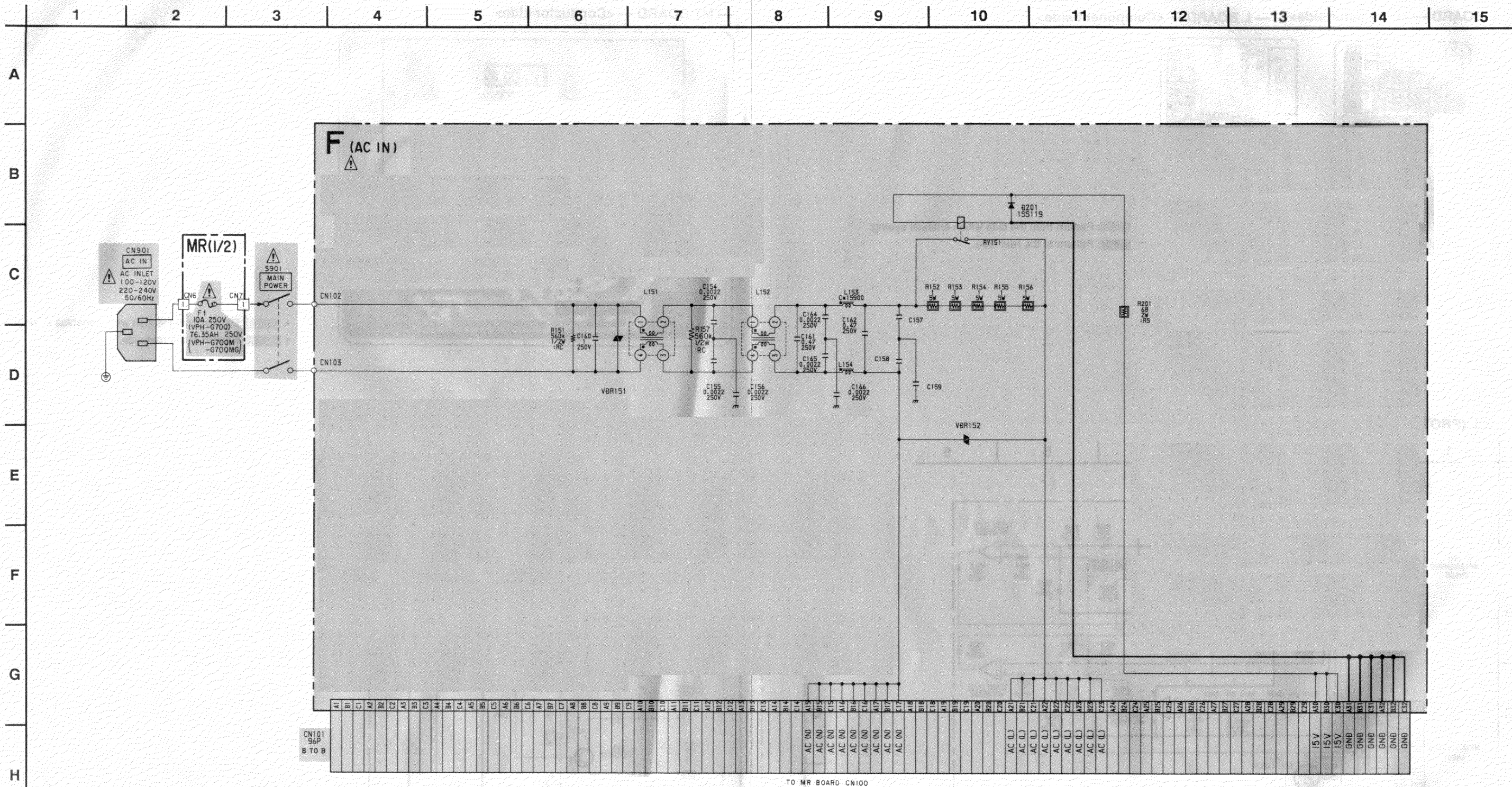


MT BOARD

Function of Semiconductor

D1	RD5.6ES-B2	REFERENCE
D2	RD5.6ES-B2	REFERENCE
Q1	2SD1289-Q	+100V REG.
Q2	2SC3421-Y	FEED BACK
Q3	2SD1289-Q	+135V REG.
Q4	2SC3503-E	FEED BACK

• F (AC IN) DIAGRAM



F BOARD

Function of Semiconductor

D201	1SS119-25TD	PROTECTOR
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Note:

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

Note:

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

Schematic Diagram

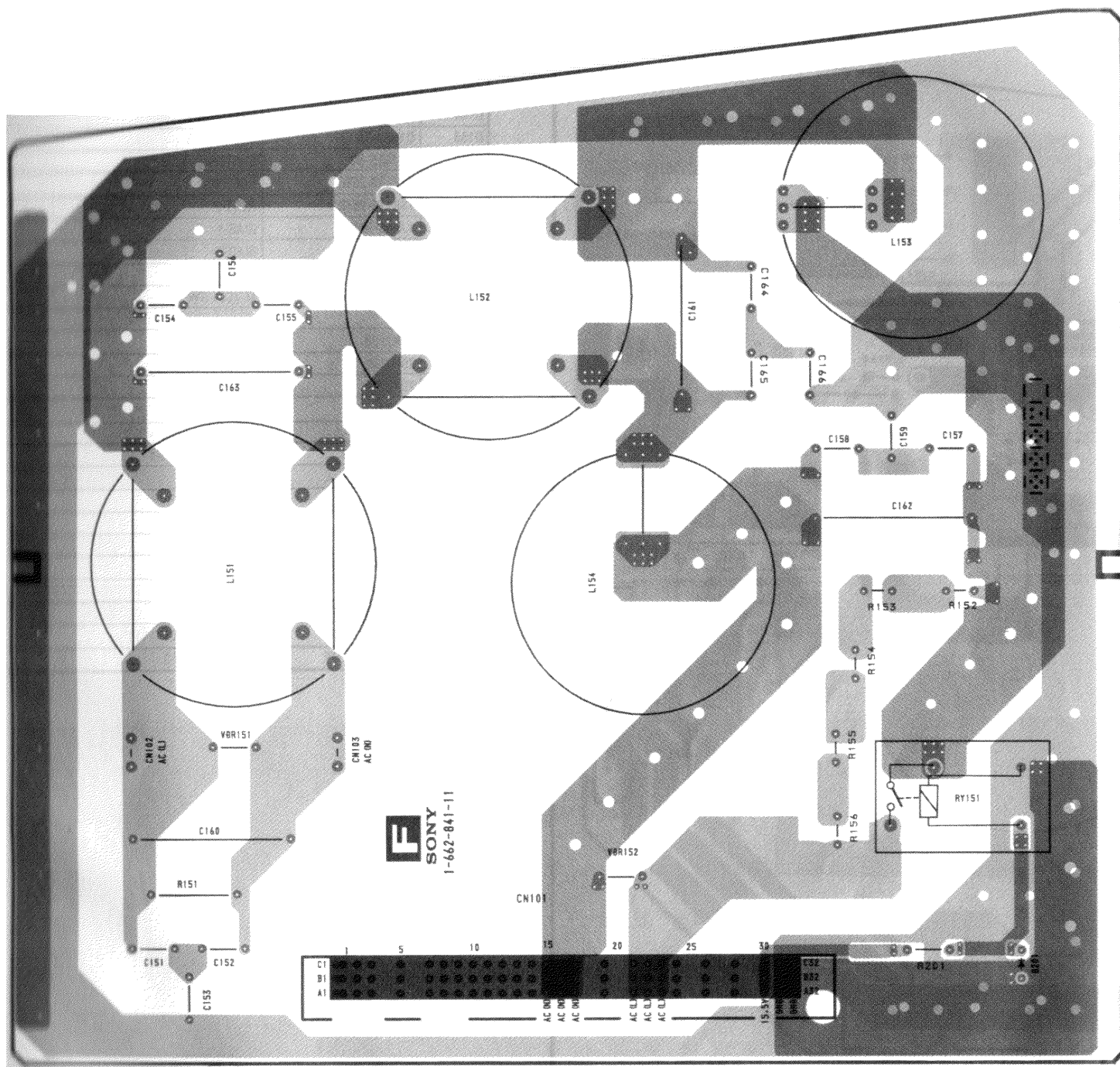
← L MT board

F

(AC IN) BOARD

VPH-G70Q/G70QM/G70QMQ

F BOARD — <Conductor side>



FA

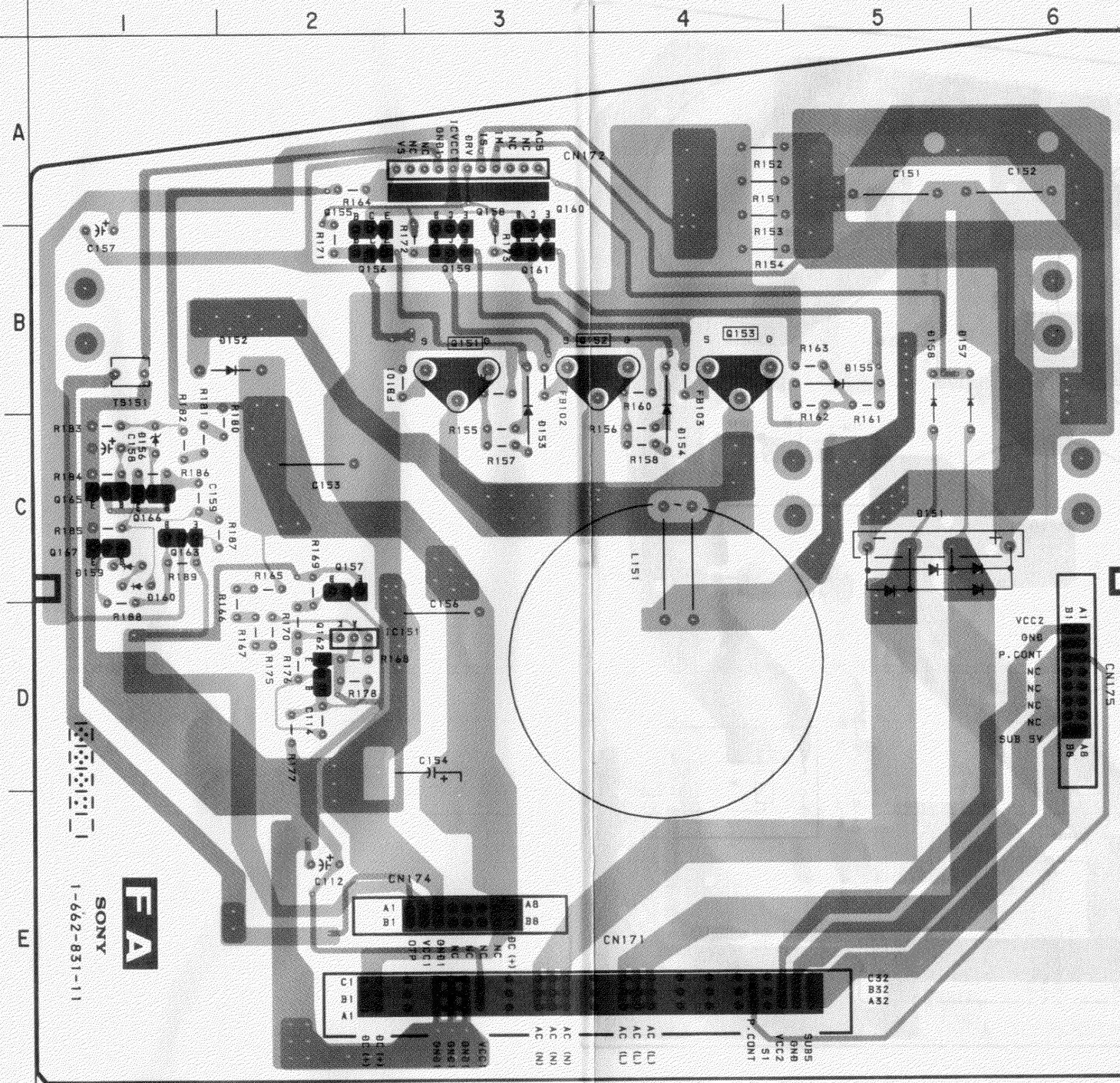
(POWER RECT) BOARD

— FA BOARD — <Conductor side>

FA BOARD

Semiconductors Location

DIODE	
D151	C-5
D152	B-2
D153	C-3
D154	C-4
D155	B-5
D156	C-1
D157	B-5
D158	B-5
D159	C-1
D160	C-1
IC	
IC151	D-2
TRANSISTOR	
Q151	B-3
Q152	B-3
Q153	B-4
Q155	B-2
Q156	B-2
Q157	C-2
Q158	B-3
Q159	B-3
Q160	B-3
Q161	B-3
Q162	D-2
Q163	C-1
Q165	C-1
Q166	C-1
Q167	C-1

**FA BOARD**

Function of Semiconductor

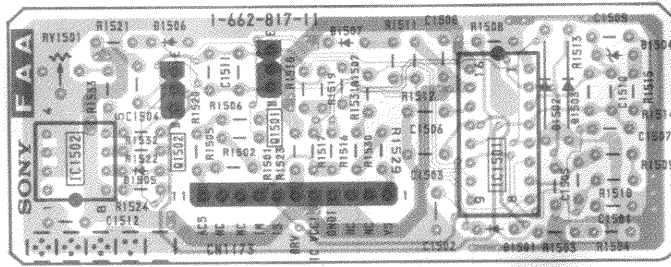
D151	RBV-2506	AC RECT
D152	S16L60	375V RECT
D153	D1NS4-TA	SPEED UP-1
D154	D1NS4-TA	SPEED UP-2
D155	D1NS4-TA	SPEED UP-3
D156	RD10ES-B2	SWITCH
D157	1SS119-25TD	RECT-1
D158	1SS119-25TD	RECT-2
D159	1JH46-TPA3	BIAS-1
D160	1JH46-TPA3	BIAS-2
IC151	uPC1093J-1-T	M.VCC1 SW-2
Q151	2SK2198	CONVERTER-1
Q152	2SK2198	CONVERTER-2
Q153	2SK2198	CONVERTER-3
Q155	2SD882-Q	BUFFER-1
Q156	2SB772-Q	BUFFER-2
Q157	2SB734-T-34	M.VCC1 SWITCH-1
Q158	2SD882-Q	BUFFER-3
Q159	2SB772-Q	BUFFER-4
Q160	2SD882-Q	BUFFER-5
Q161	2SB772-Q	BUFFER-6
Q162	2SC2785TP-HFE	VCC1 REG CONT.
Q163	2SB734-T-34	P.F.C. VCC1 SW-1
Q164	2SC2785TP-HFE	P.F.C. VCC SW2
Q165	2SC2785TP-HFE	P.F.C. OVP SW-1
Q166	2SA1175TP-HFE	P.F.C. OVP SW-2

- Pattern from the side which enables seeing.
- Pattern of the rear side.

FAA

(HIGH VOLTAGE REGULATOR) BOARD

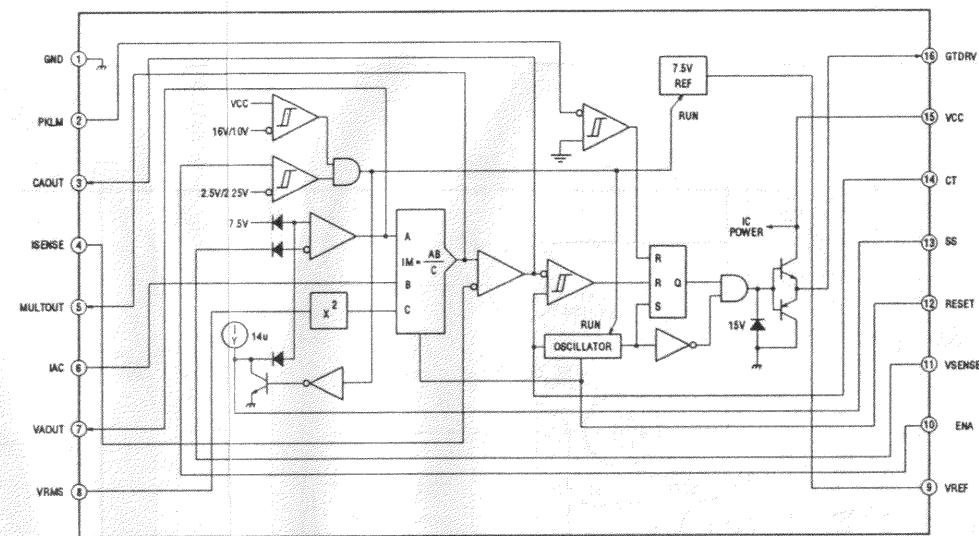
— FAA BOARD — <Conductor side>



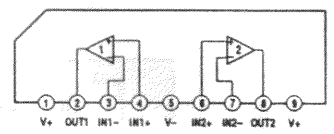
- Pattern from the side which enables seeing.
- Pattern of the rear side.

FAA BOARD IC Block Diagrams

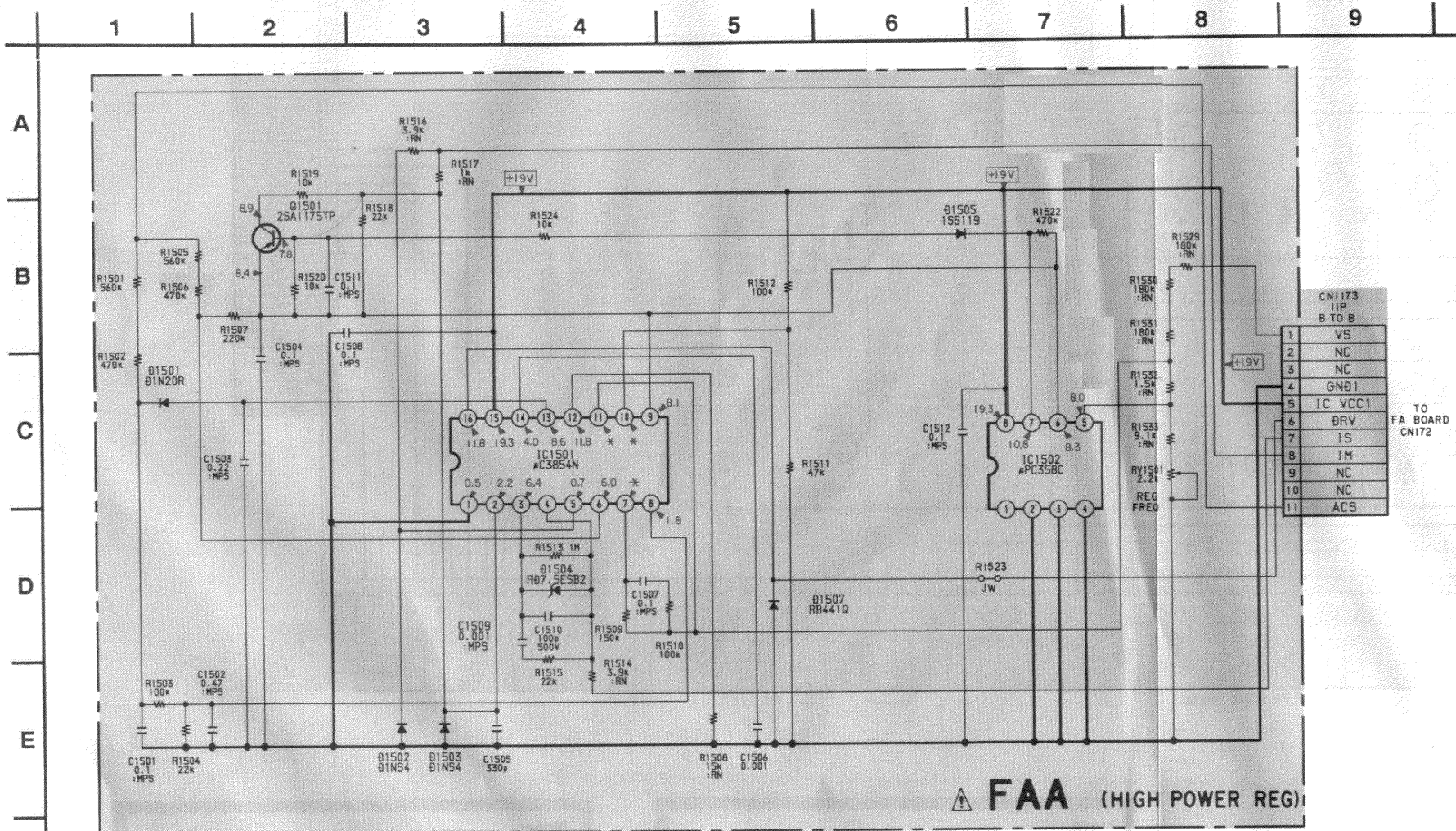
MC3854N (IC1501)



uPC358C (IC1502)



• FAA (HIGH VOLTAGE REGULATOR) DIAGRAM



FAA BOARD

Function of Semiconductor

D1501	D1N20R-TA	DISCHARGE
D1502	D1NS4-TA	LIMITER-1
D1503	D1NS4-TA	LIMITER-2
D1504	RD7.5ES-B2	LIMITER-3
D1505	1SS119-25TD	SWITCH-1
IC1501	uPC3854N	P.F.C. CONT-1
IC1502	uPC358C	P.F.C. CONT-2
Q1501	2SA1175TP-HFE	SWITCH-2

Note:

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

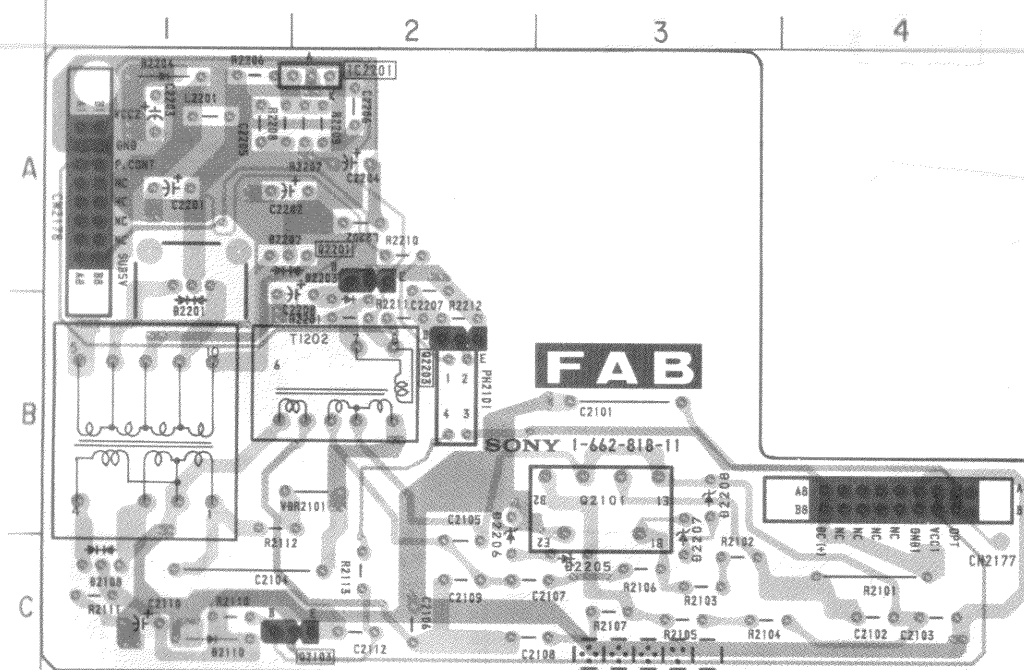
Note:


Les composants identifiés par un trame et une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

FAB

(DC REGULATOR) BOARD

FAB BOARD — <Conductor side>



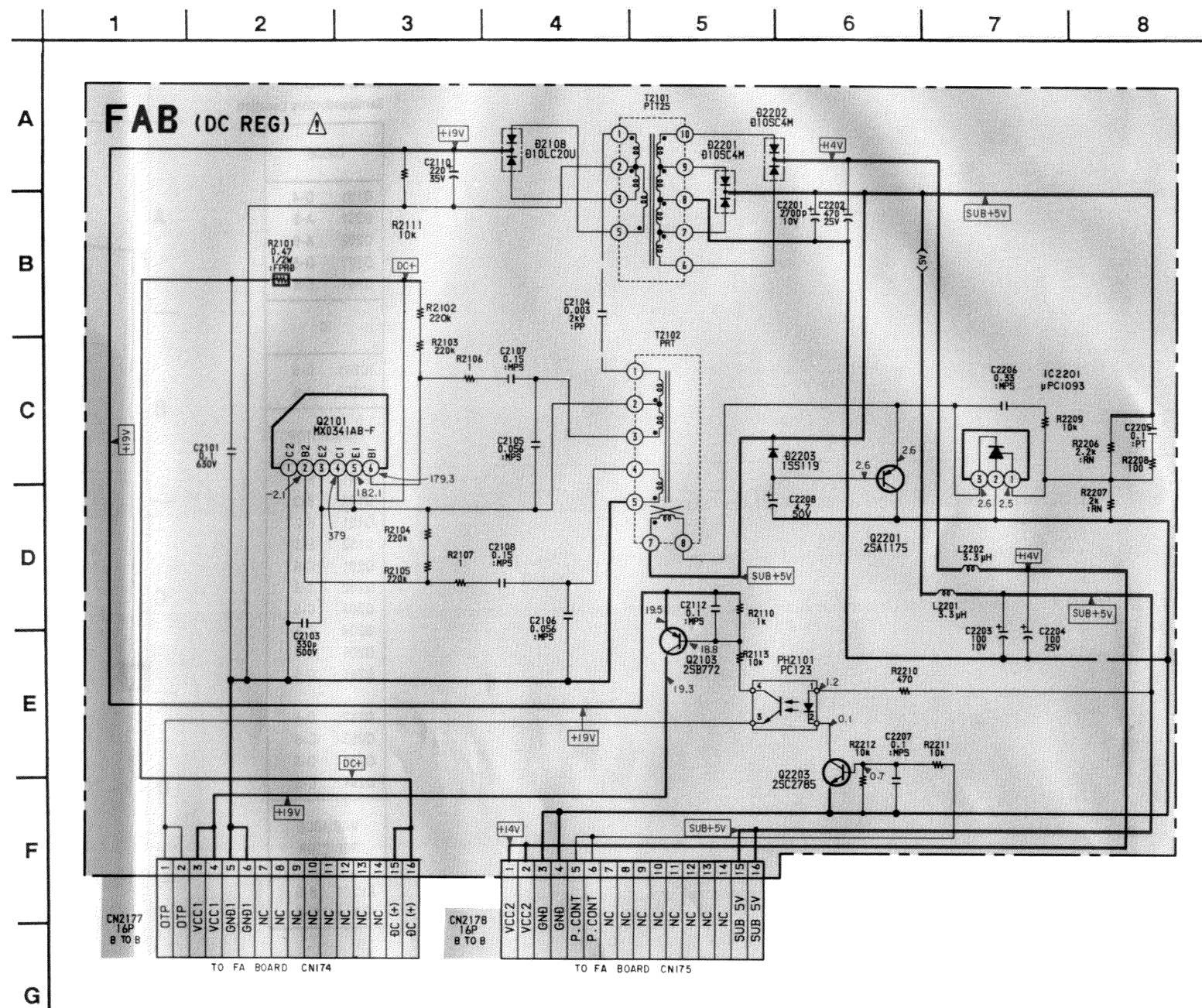
-  : Pattern from the side which enables seeing.
- : Pattern of the rear side.

FAB BOARD

Semiconductors Location

DIODE	
D2108	C-1
D2201	B-1
D2202	A-2
D2203	A-2
IC	
IC2201	A-2
TRANSISTOR	
Q2101	B-3
Q2103	C-2
Q2201	A-2
Q2203	B-2

- **FAB (DC REGULATOR) DIAGRAM**



FAB BOARD

Function of Semiconductor

D2108	D10LC20U	VCC1 RECT
D2201	D10SC4M	SUB 5V RECT
D2202	D10SC4M	VCC2 RECT
D2203	1SS119-25TD	DISCHARGE
IC2201	uPC1093J-1-T	REGULATOR
Q2101	MX034AB-F	CONVERTER
Q2103	2SB772-Q	VCC1. SW
Q2201	2SA1175TP-HFE	SOFT. START
Q2203	2SC2785TP-HFE	P.CONT. SW

Note:

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

Note:

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

GA

(HIGH VOLTAGE REGULATOR) BOARD

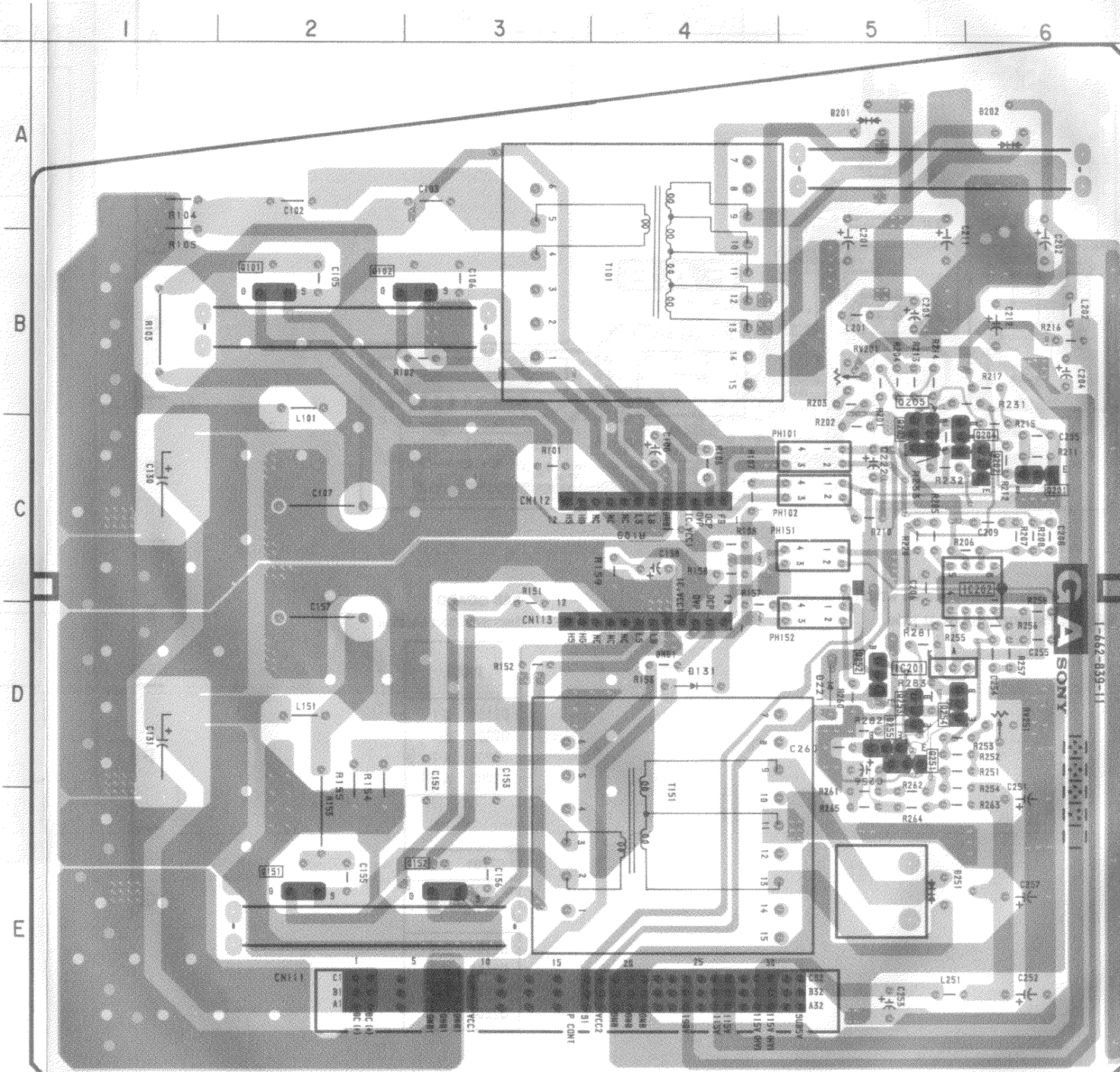
VPH-G70Q/G70QM/G70QMG

— GA BOARD — <Conductor side>

GA BOARD

Semiconductors Location

DIODE	
D131	D-4
D201	A-5
D202	A-6
D221	D-5
D251	E-5
IC	
IC201	D-5
IC202	C-6
TRANSISTOR	
Q101	B-2
Q102	B-3
Q151	E-2
Q152	E-3
Q201	C-6
Q202	C-6
Q203	C-5
Q204	C-5
Q205	C-5
Q251	D-5
Q252	D-5
Q253	D-5
Q254	D-5
Q255	D-5
VARIABLE RESISTOR	
RV201	B-5
RV251	D-6



- : Pattern from the side which enables seeing.
- : Pattern of the rear side.

• GA (HIGH VOLTAGE REGULATOR) DIAGRAM

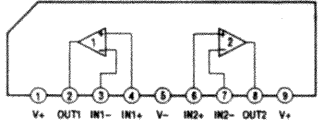
GA BOARD

Function of Semiconductor

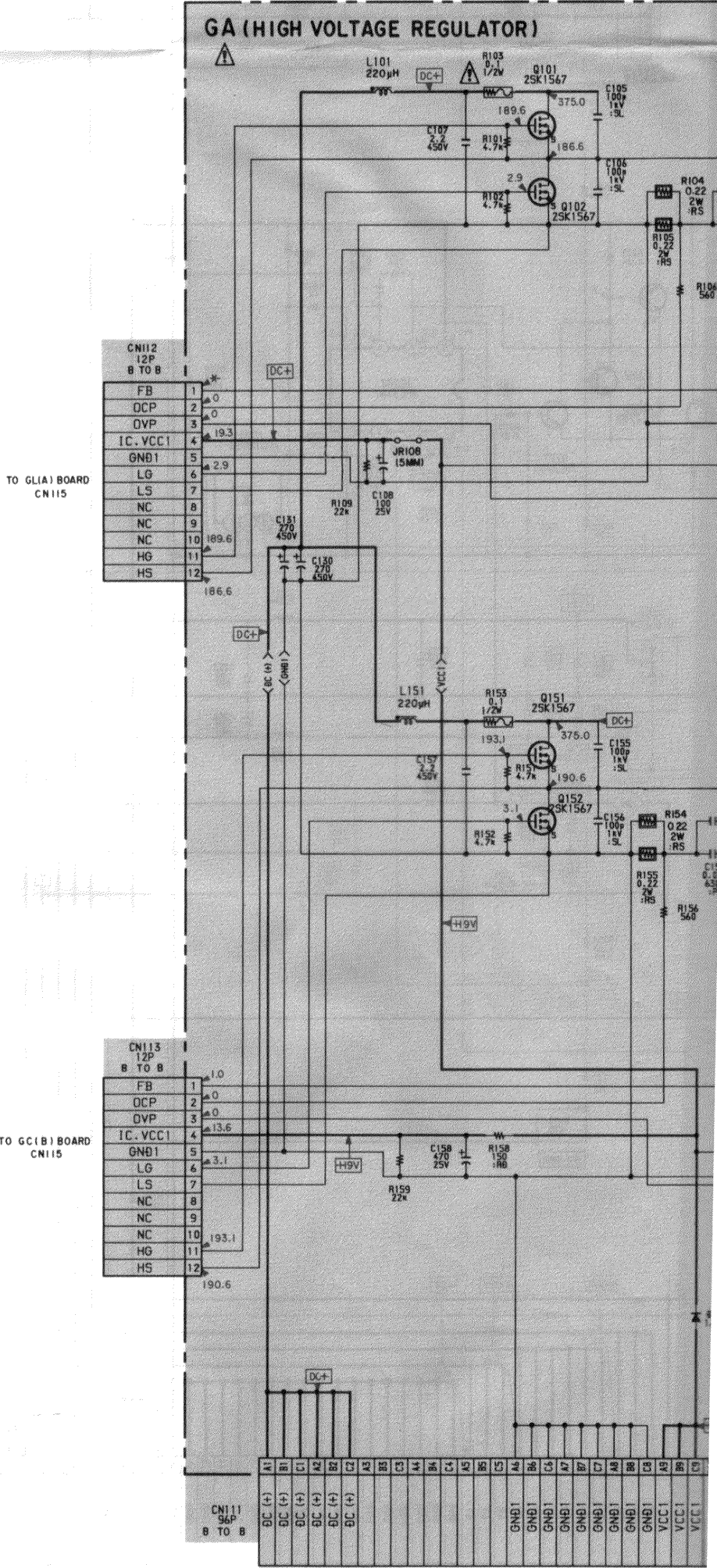
D131	1JH46-TPA3	PROTECTOR-1
D201	F10P40F	115V RECT
D202	FCF10A60	140V RECT
D221	1JH46-TPA3	PROTECTOR-2
D251	F10P40F	115V (HV) RECT
IC201	uPC1093J-1-T	REGULATOR
IC202	uPC358C	F.B. AMP
Q101	2SK1567	CONVERTER-1
Q102	2SK1567	CONVERTER-2
Q151	2SK1567	CONVERTER-3
Q152	2SK1567	CONVERTER-4
Q201	2SC2785TP-HFE	115V OVP. SW-1
Q202	DTA124ESA-TP	115V OVP. SW-2
Q203	2SC2785TP-HFE	115V OVP. SW-3
Q204	2SA1175TP-HFE	115V OVP. SW-4
Q205	2SC2785TP-HFE	115V OVP. SW-5
Q251	2SC2785TP-HFE	115V (HV) OVP. SW-1
Q252	DTA124ESA-TP	115V (HV) OVP. SW-2
Q253	2SC2785TP-HFE	115V (HV) OVP. SW-3
Q254	2SA1175TP-HFE	115V (HV) OVP. SW-4
Q255	2SC2785TP-HFE	115V (HV) OVP. SW-5

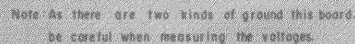
GA BOARD IC Block Diagrams

uPC358C (IC202)



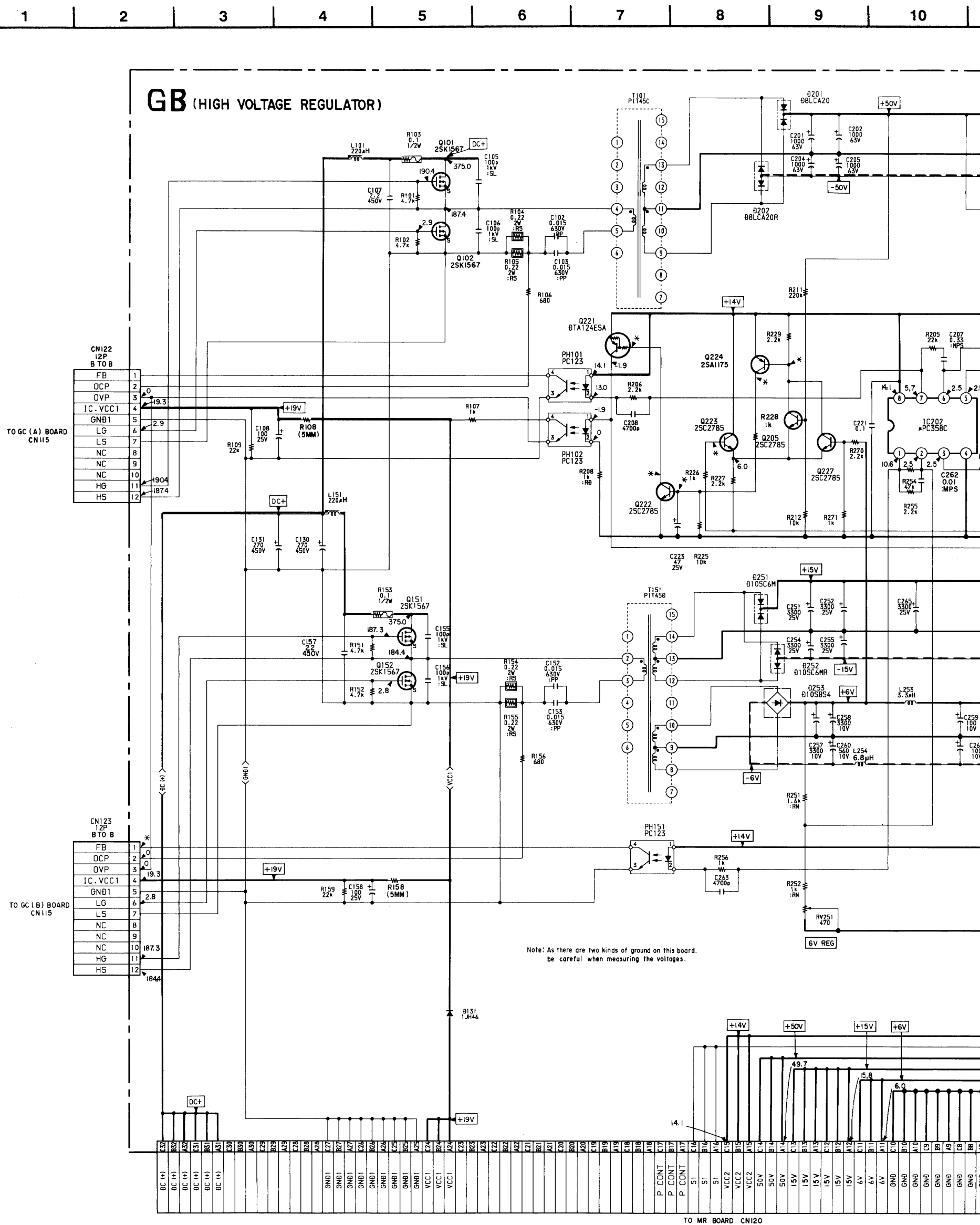
GA (HIGH VOLTAGE REGULATOR)

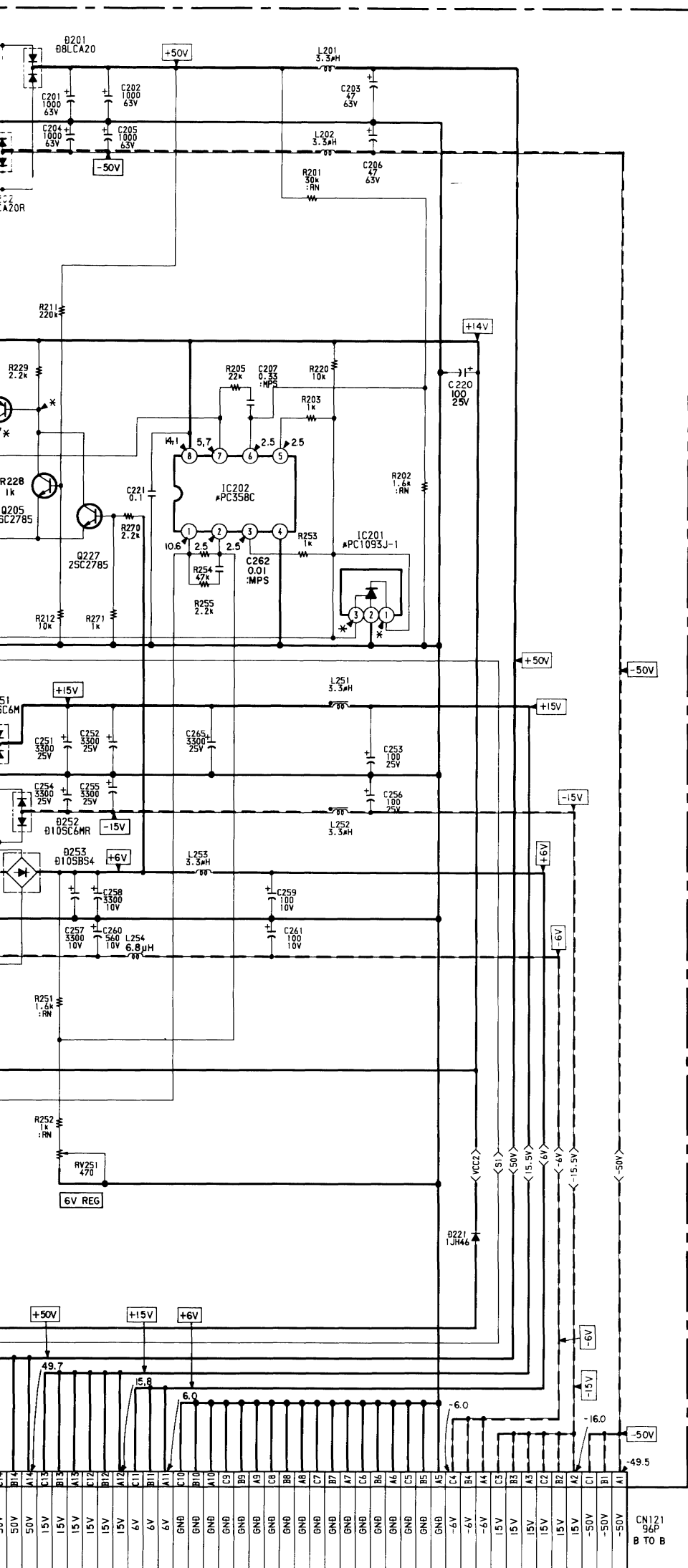




TO MR BOARD CNIIO

• GB (HIGH VOLTAGE REGULATOR) DIAGRAM





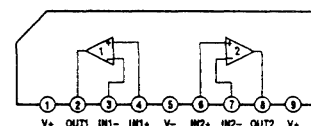
GB BOARD

Function of Semiconductor

D131	1JH46-TPA3	PROTECTOR-1
D201	D8LCA20	+50V RECT
D202	D8LCA20	-50V RECT
D221	1JH46-TPA3	PROTECTOR-2
D251	D10SC6M	115V (HV) RECT
D252	D10SC6MR	-15V RECT
D253	D10SBS4	-6V RECT
IC201	uPC1093J-1-T	REGULATOR
IC202	uPC358C	F.B. AMP
Q101	2SK1567	CONVERTER-1
Q102	2SK1567	CONVERTER-2
Q151	2SK1567	CONVERTER-3
Q152	2SK1567	CONVERTER-4
Q205	2SC2785TP-HFE	OVP. SW-1
Q221	DTA124ESA-TP	OVP. SW-2
Q222	2SC2785TP-HFE	OVP. SW-3
Q223	2SC2785TP-HFE	OVP. SW-4
Q224	2SA1175TP-HFE	OVP. SW-5
Q227	2SC2785TP-HFE	OVP. SW-6

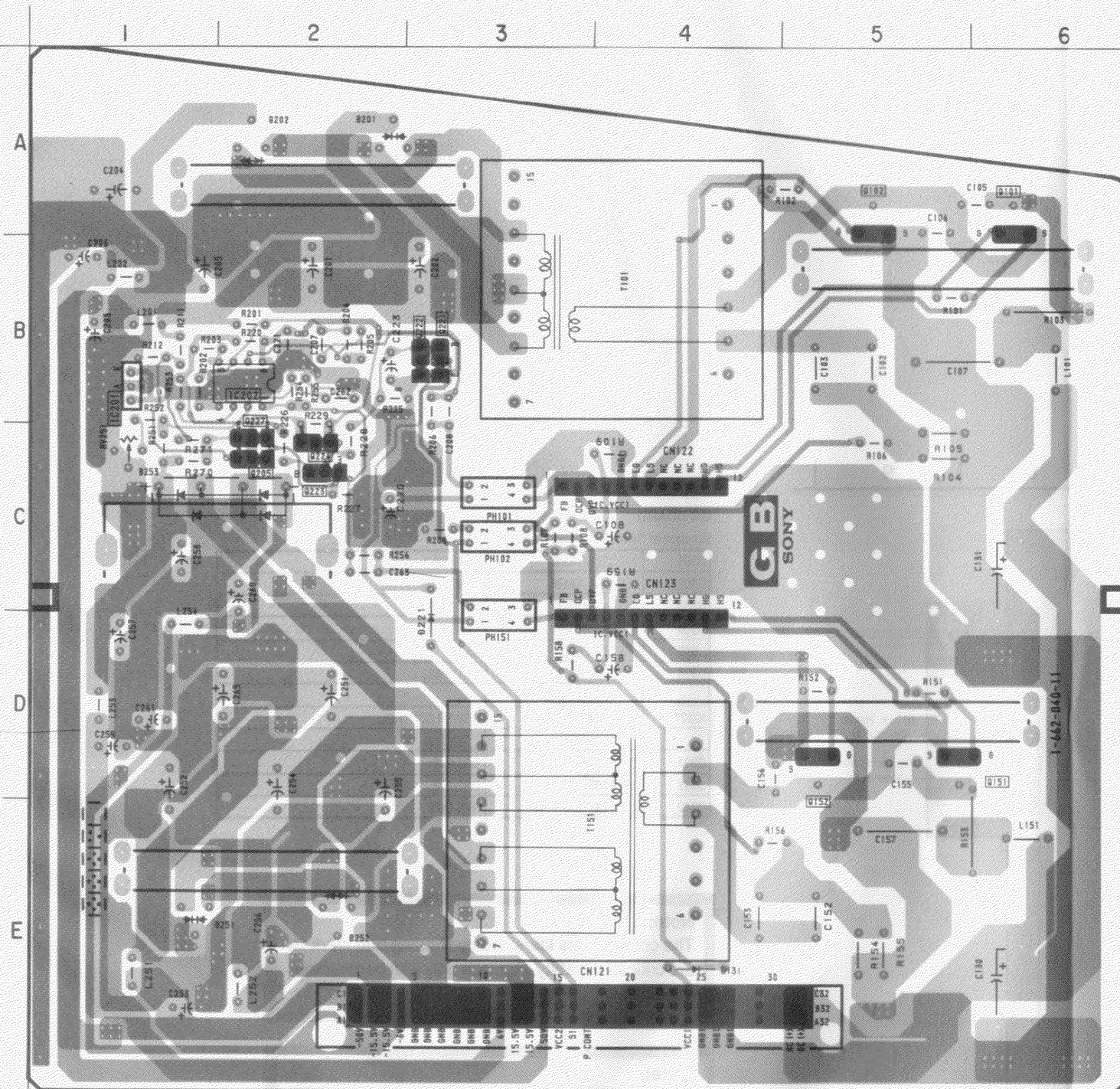
GB BOARD IC Block Diagrams

uPC358C (IC202)



(HIGH VOLTAGE REGULATOR) BOARD

— GB BOARD — <Conductor side>



GB BOARD

Semiconductors Location

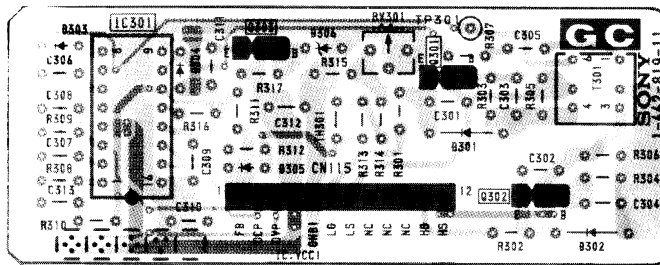
DIODE	
D131	D-4
D201	A-2
D202	A-2
D221	D-3
D251	E-1
D252	E-2
D253	C-1
IC	
IC201	B-1
IC202	B-2
TRANSISTOR	
Q101	A-6
Q102	A-5
Q151	D-5
Q152	D-5
Q205	C-2
Q221	B-3
Q222	B-3
Q223	C-2
Q224	C-2
Q227	C-2
VARIABLE RESISTOR	
RV251	C-1

- **Side pattern** : Pattern from the side which enables seeing.
- **Rear pattern** : Pattern of the rear side.

GC

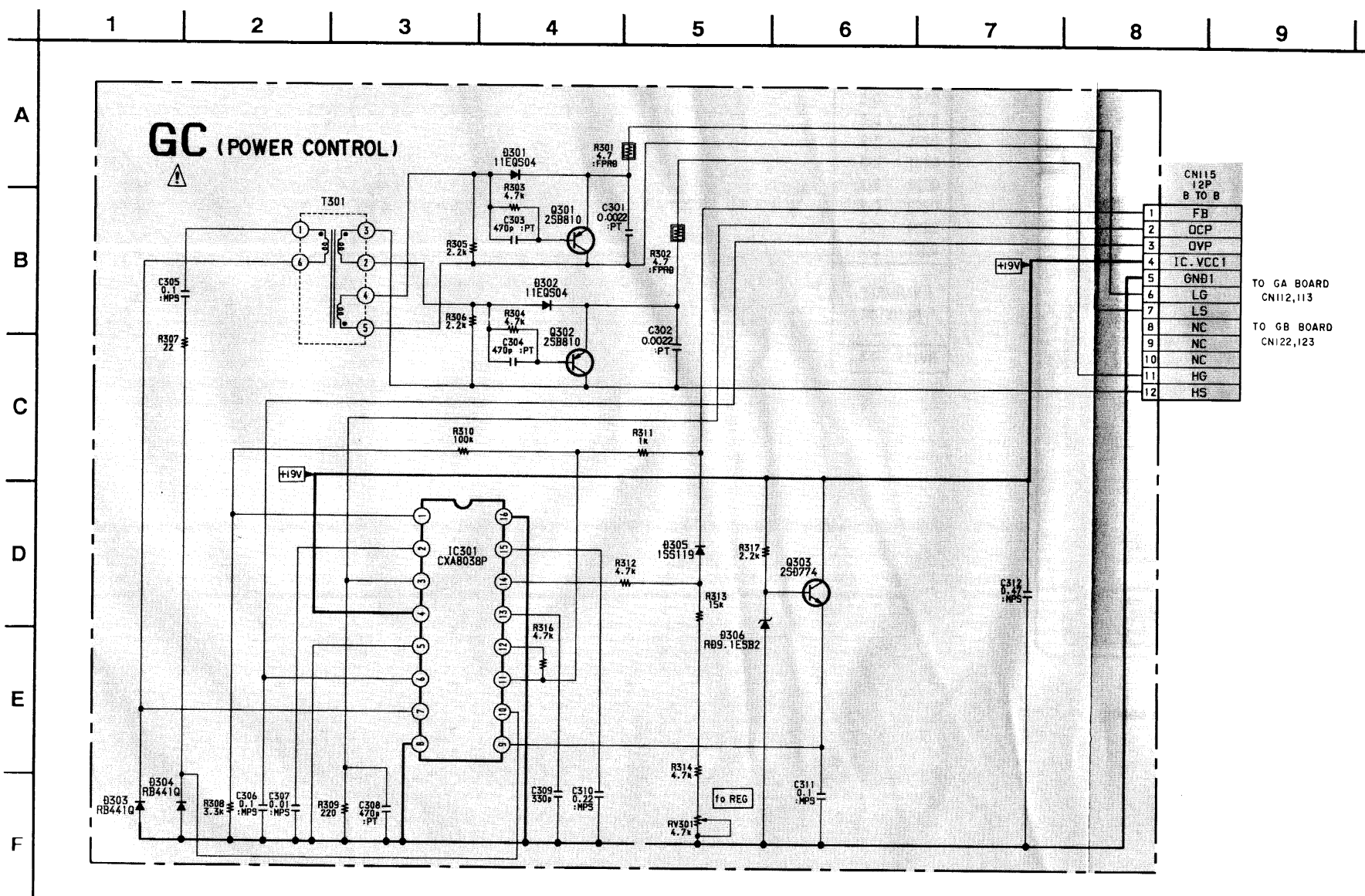
(POWER CONTROL) BOARD

— GC BOARD — <Conductor side>



- Pattern from the side which enables seeing.
- Pattern of the rear side.

• GC (POWER CONTROL) DIAGRAM



GC BOARD

Function of Semiconductor

D301	11EQS04-TA1B	CHARGE-1
D302	11EQS04-TA1B	CHARGE-2
D303	RB441Q-40T-77	LIMITER-1
D304	RB441Q-40T-77	LIMITER-2
D305	1SS119-25TD	GATE
D306	RD9.1ES-B2	+9.1V REG
IC301	CXA8038P	POWER CONTROL
Q301	2SB810TP-H	DRIVE-1
Q302	2SB810TP-H	DRIVE-2
Q303	2SD774-T-34	REG OUT

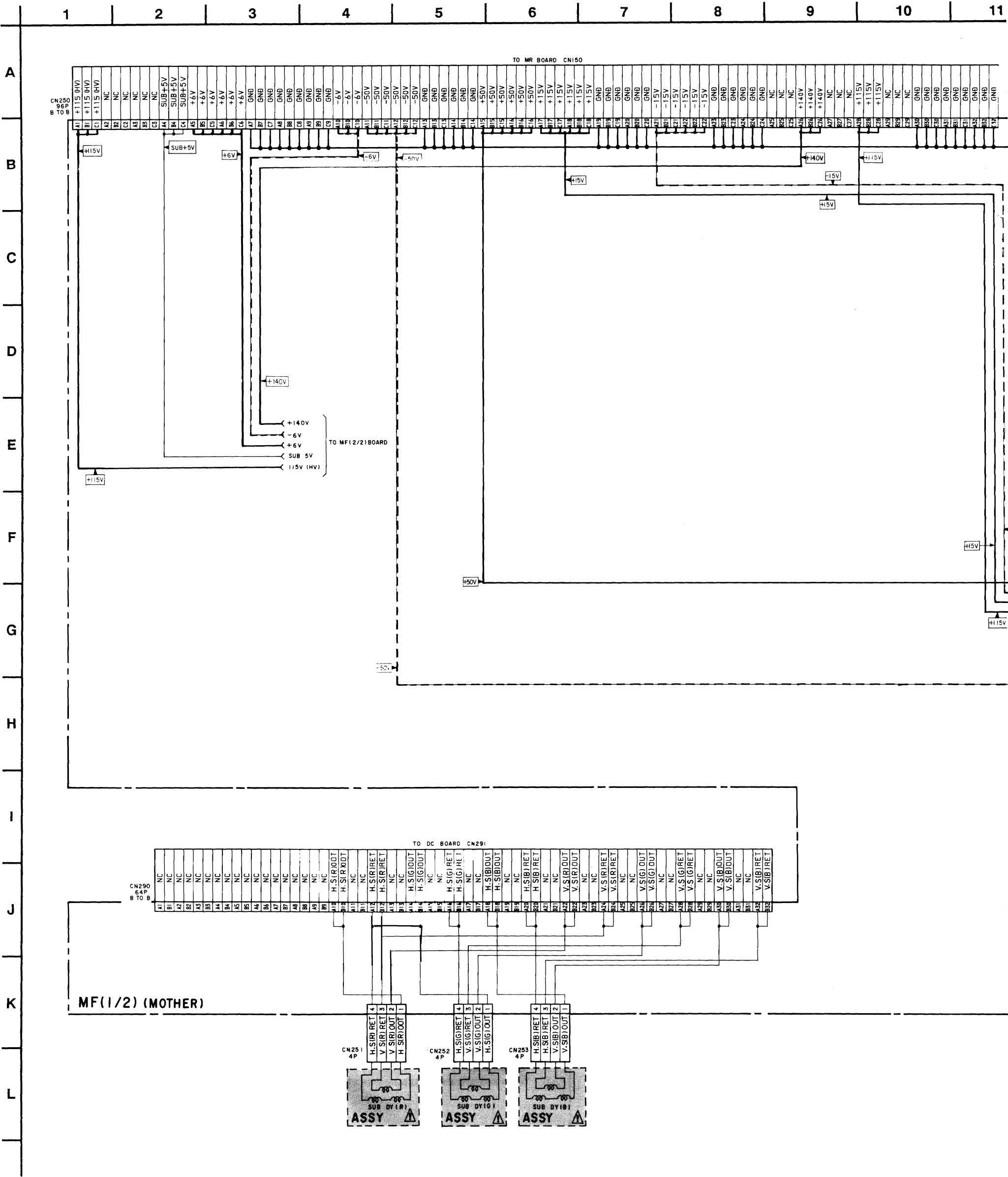
Note:

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

Note:

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

- MF (1/2) (MOTHER) DIAGRAM
- Refer to page 4-235 for Printed Wiring Board

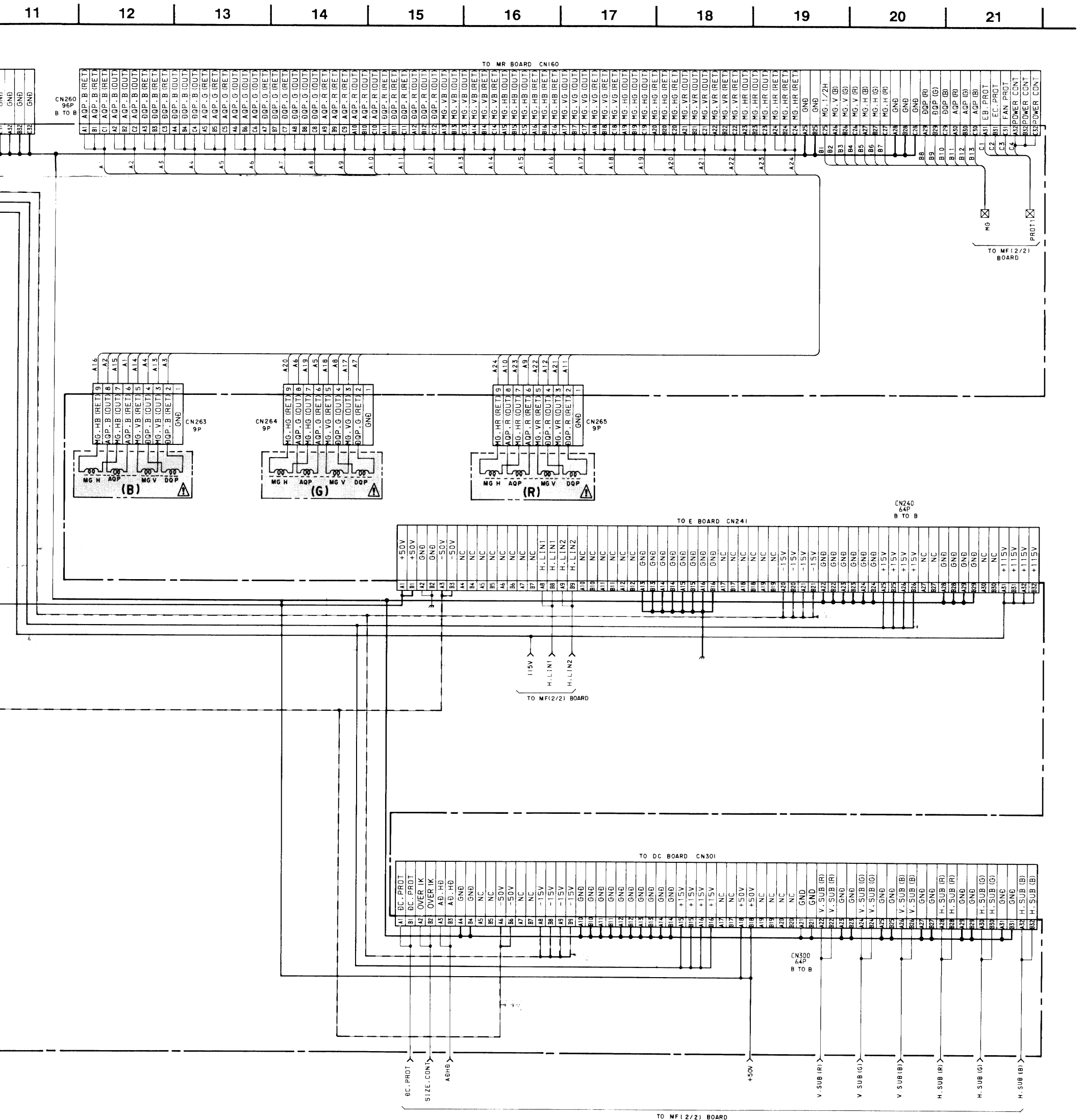


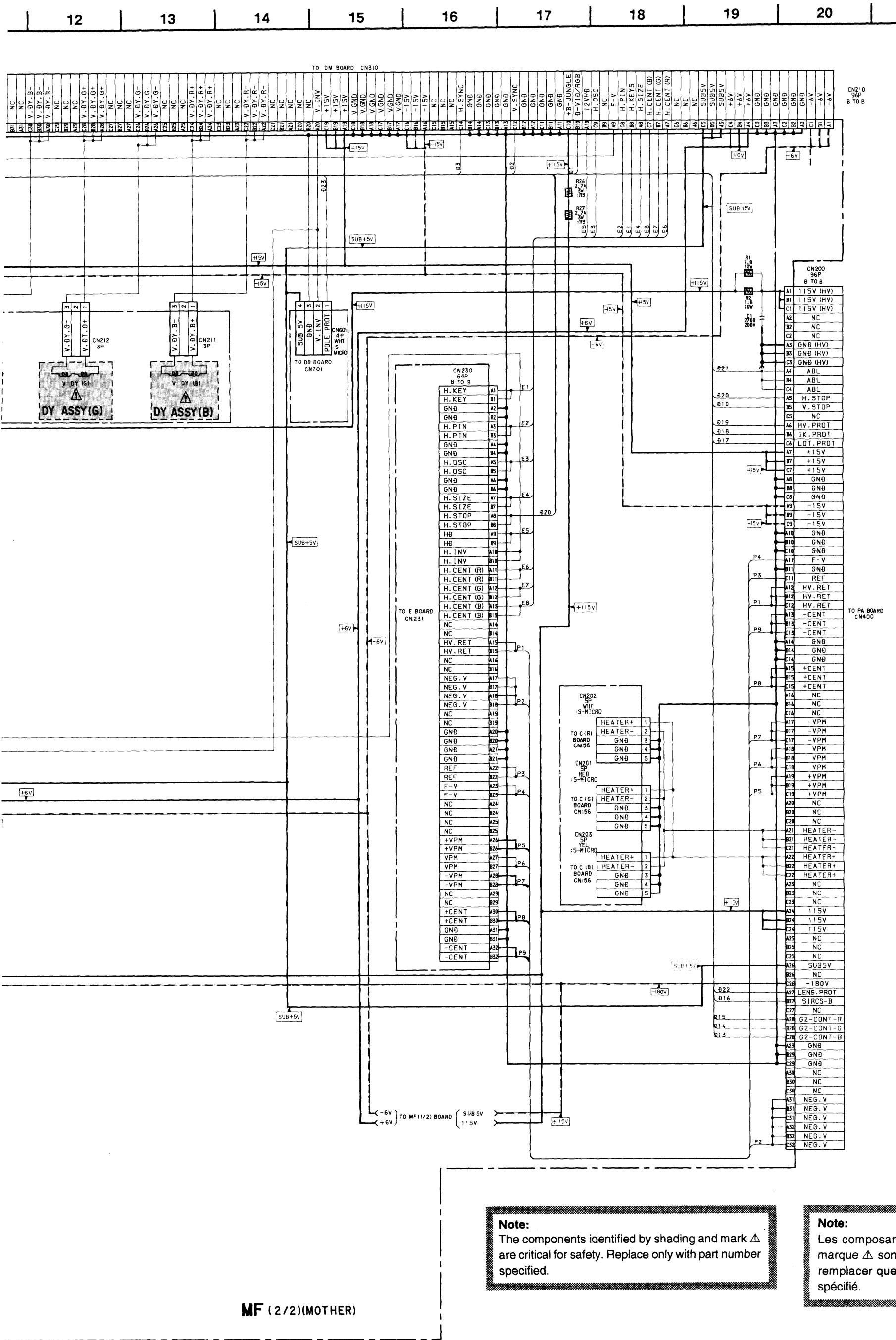
Note:

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Note:

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





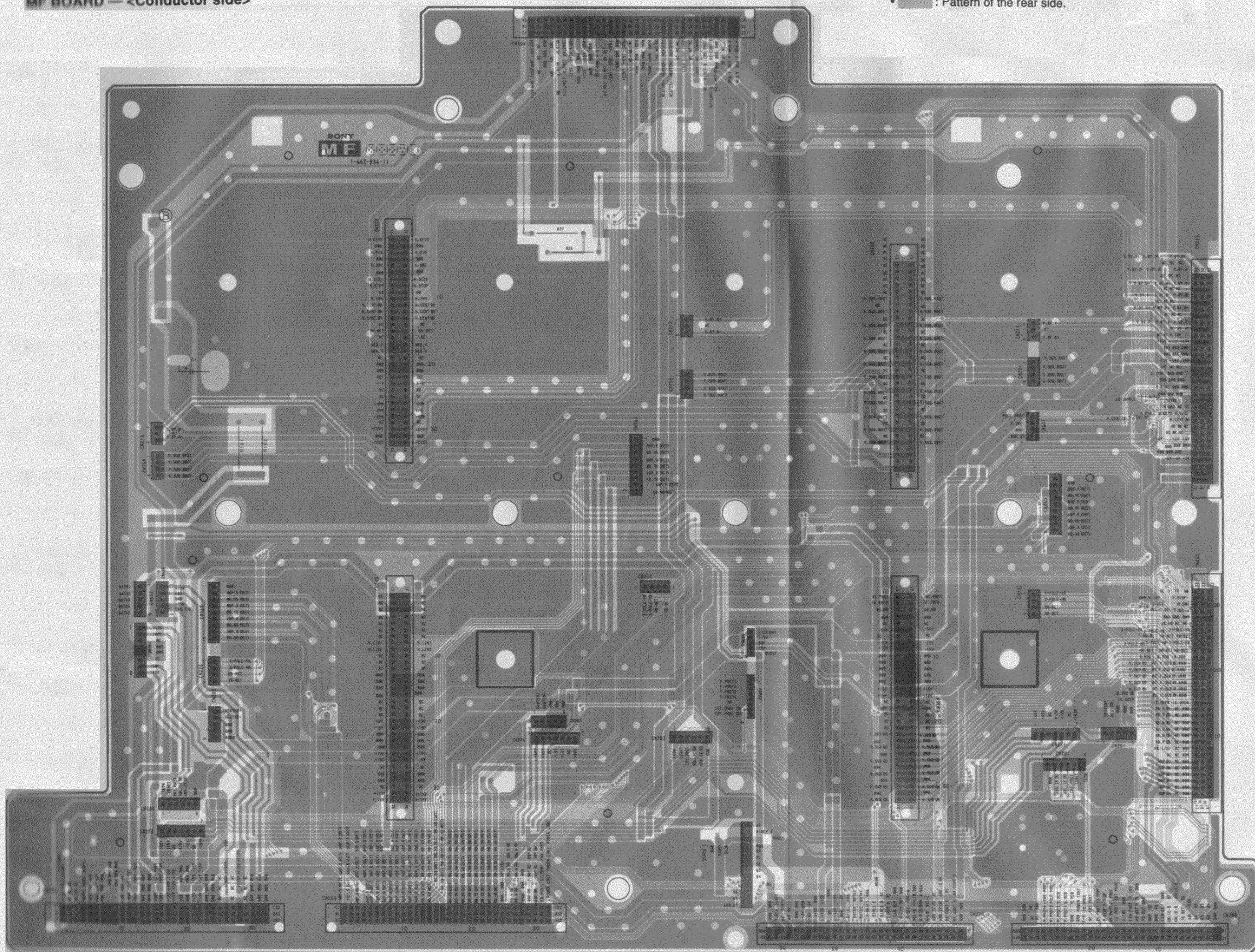


MF

(MOTHER) BOARD

MF BOARD — <Conductor side>

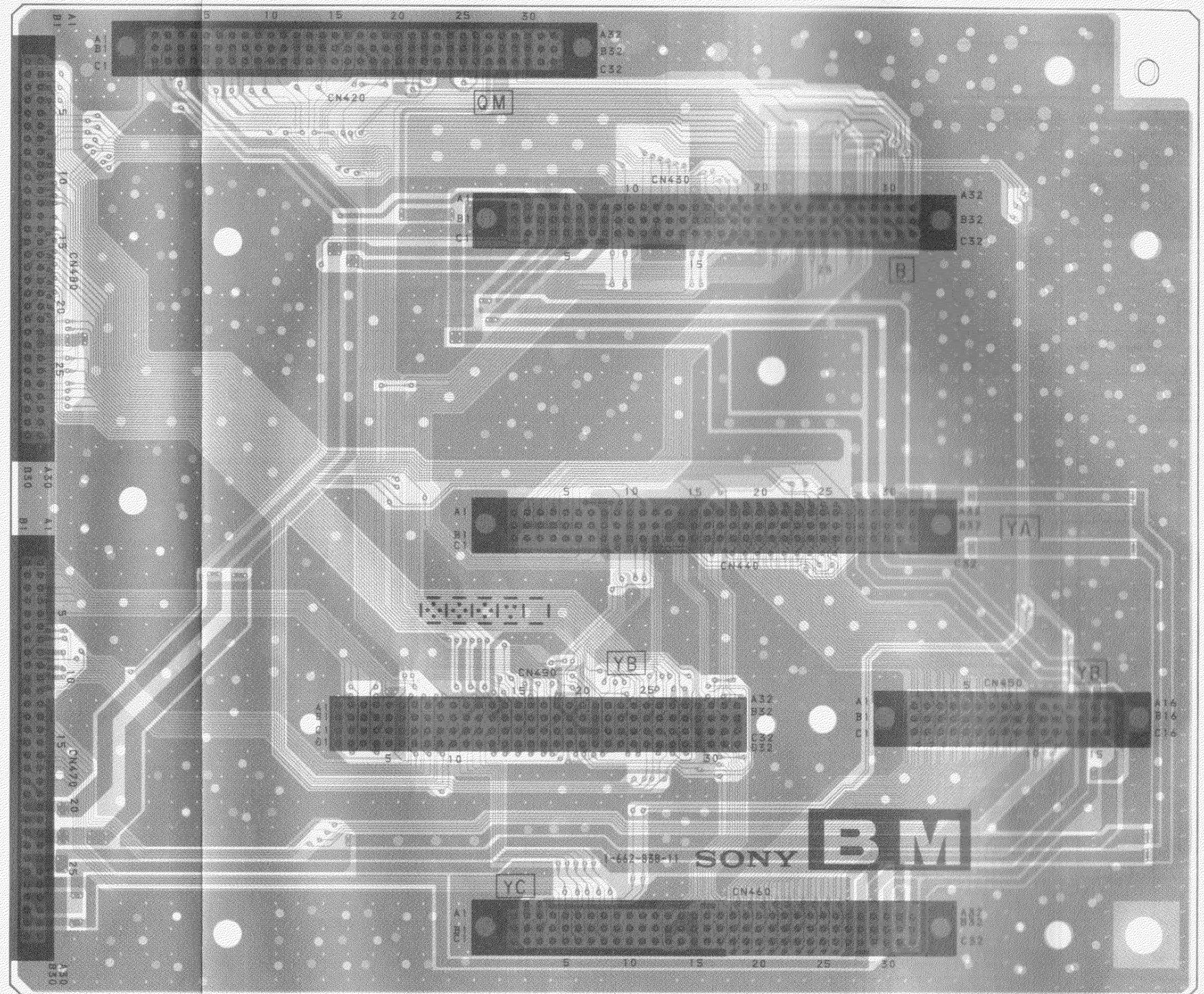
-  : Pattern from the side which enables seeing.
-  : Pattern of the rear side.



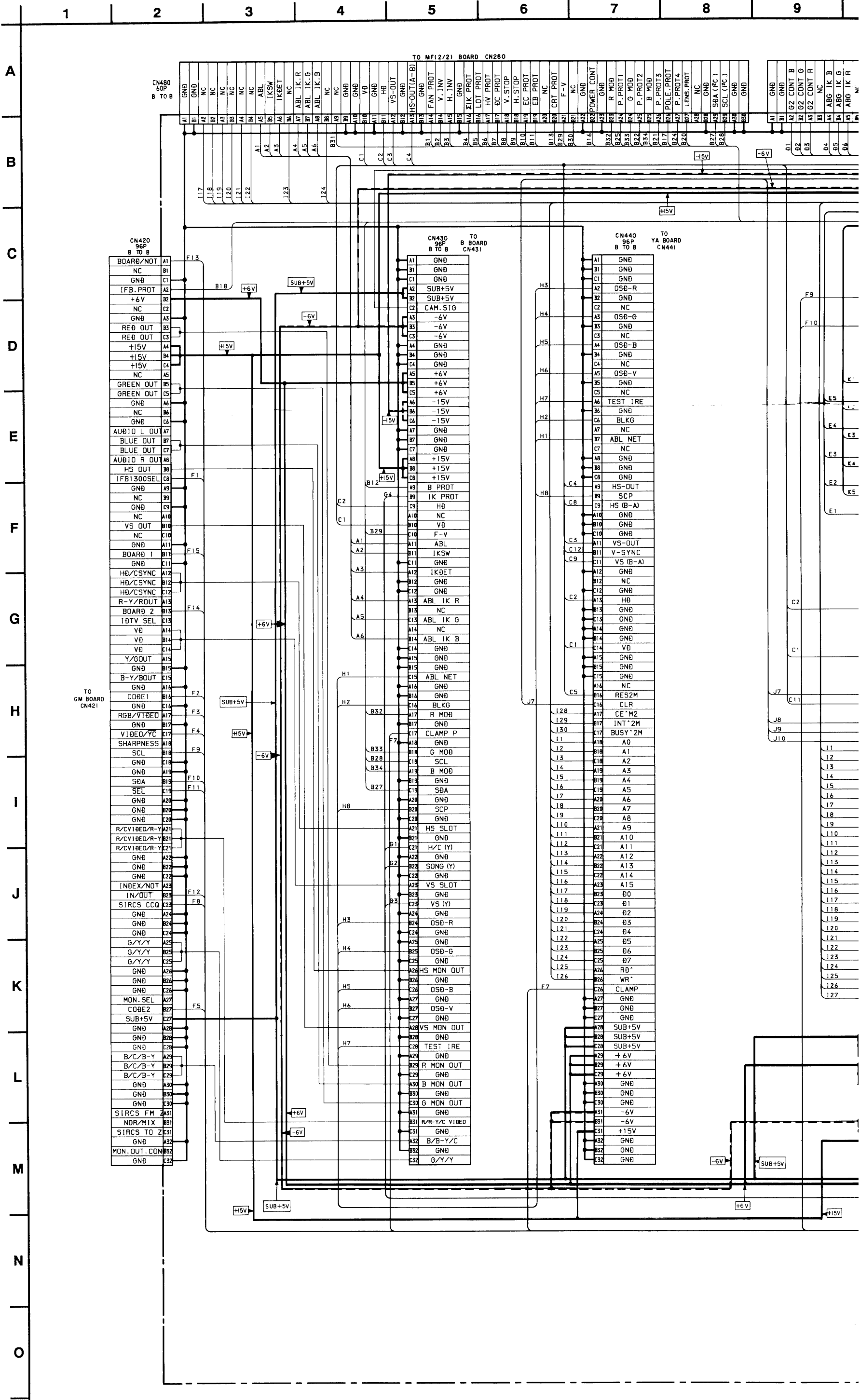
BM

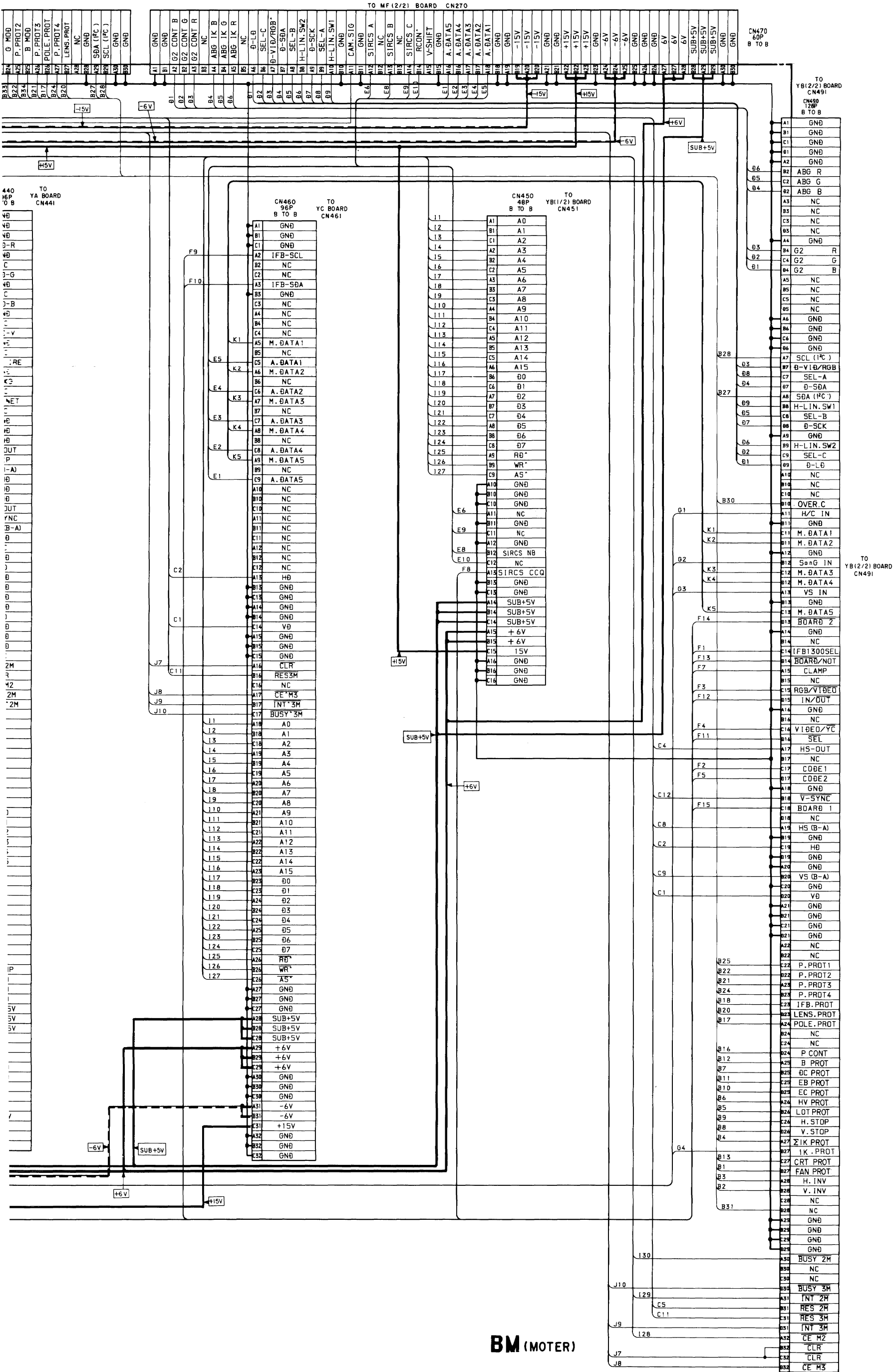
(MOTHER) BOARD

— BM BOARD — <Conductor side>



- : Pattern from the side which enables seeing.
- : Pattern of the rear side.

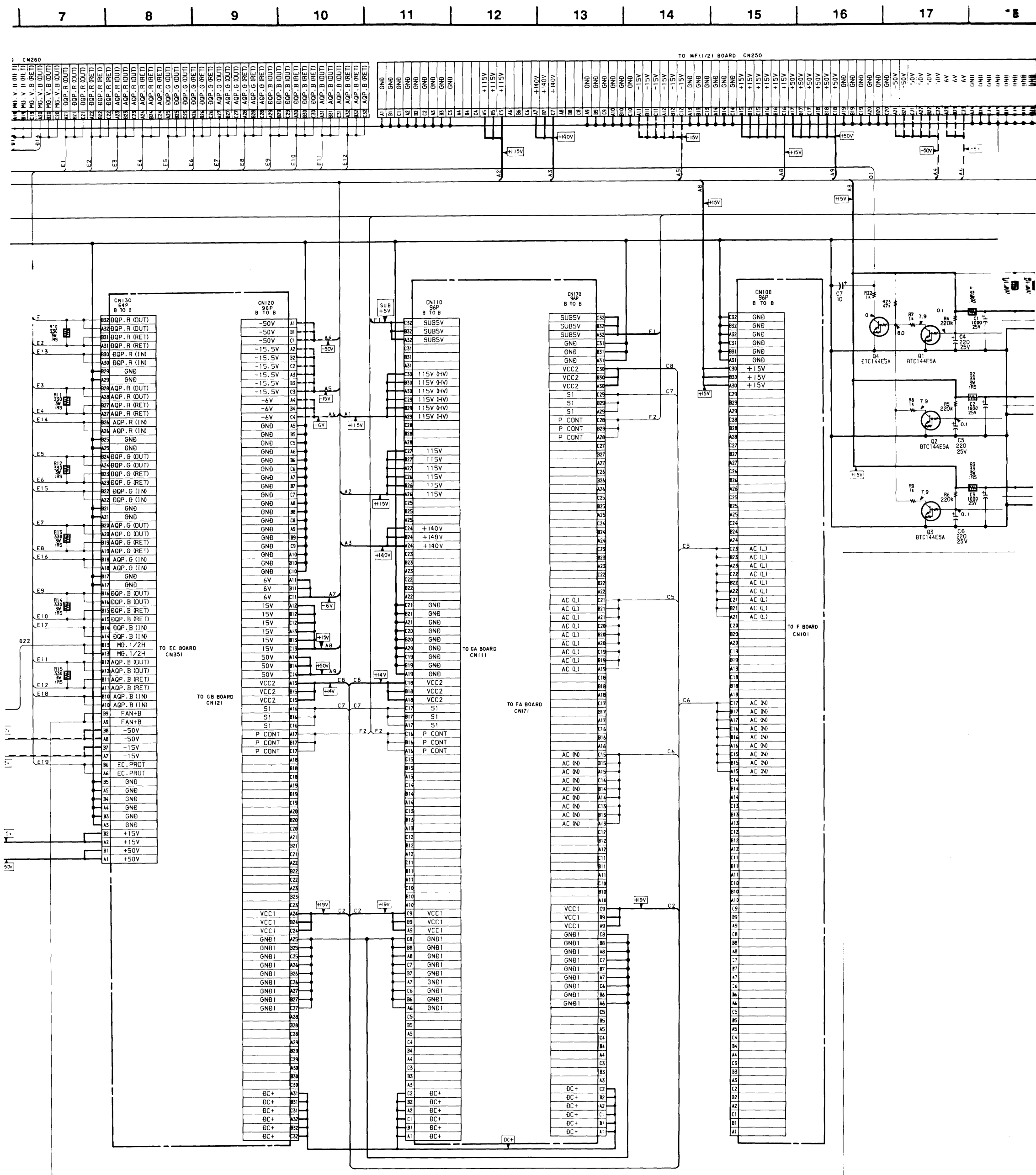




MR BOARD

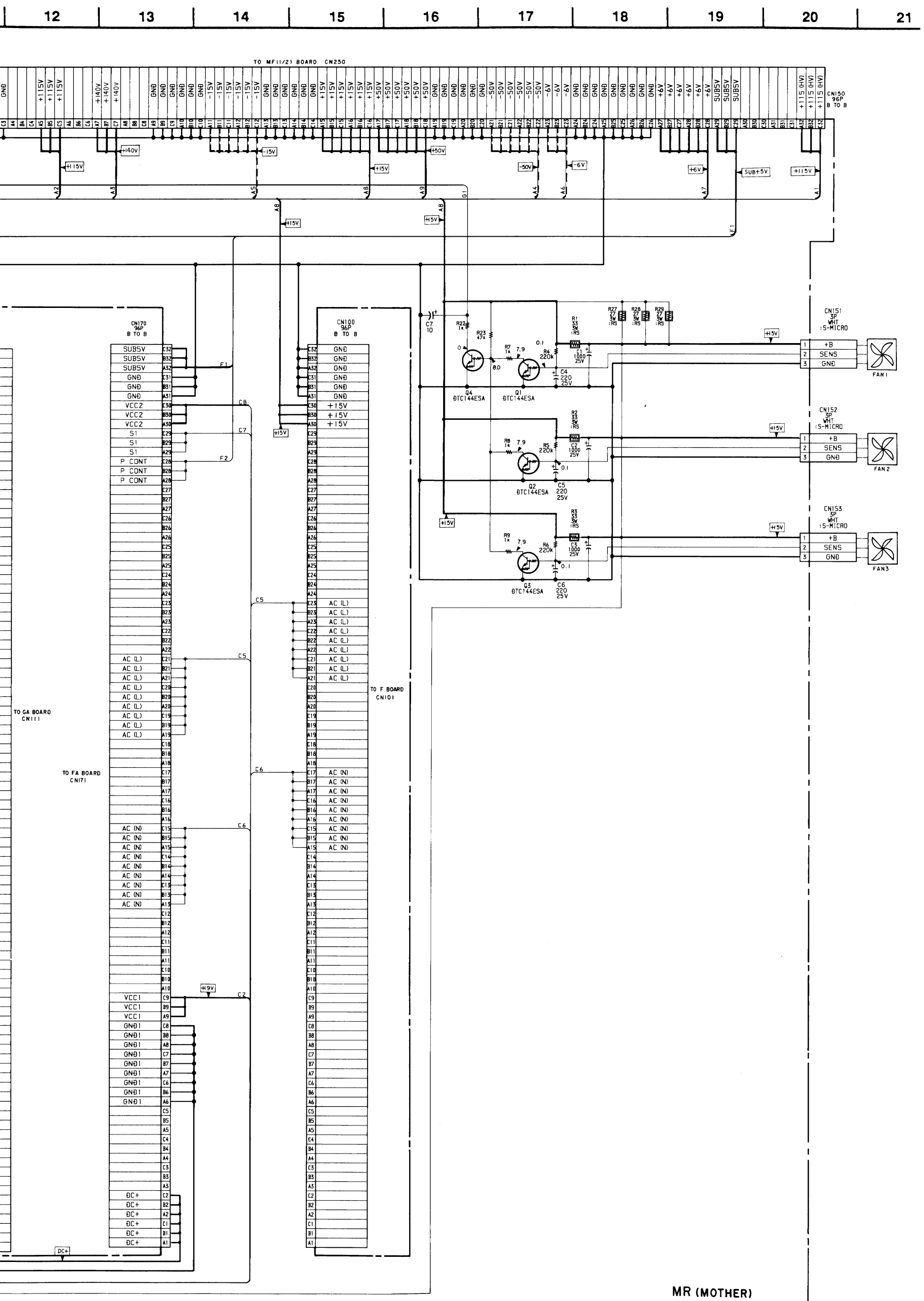
Function of Semiconductor

Q1	DTC144ESA	
Q2	DTC144ESA	
Q3	DTC144ESA	
Q4	DTC144ESA	



Function of Semiconductor

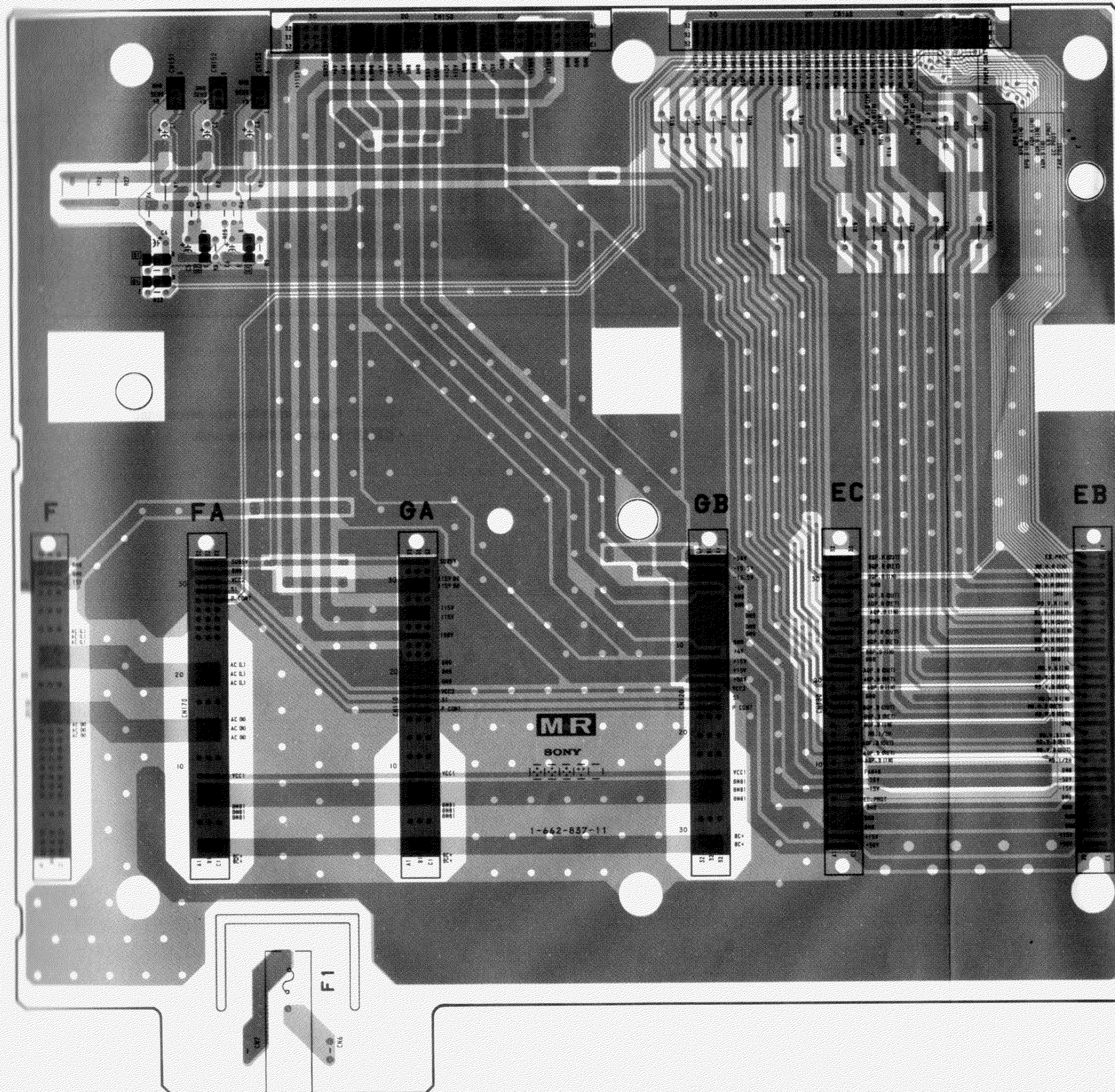
Q1	DTC144ESA	FAN PROT SW-1
Q2	DTC144ESA	FAN PROT SW-2
Q3	DTC144ESA	FAN PROT SW-3
Q4	DTC144ESA	FAN PROT SW-4



MR

(MOTHER) BOARD

— MR BOARD — <Conductor side>

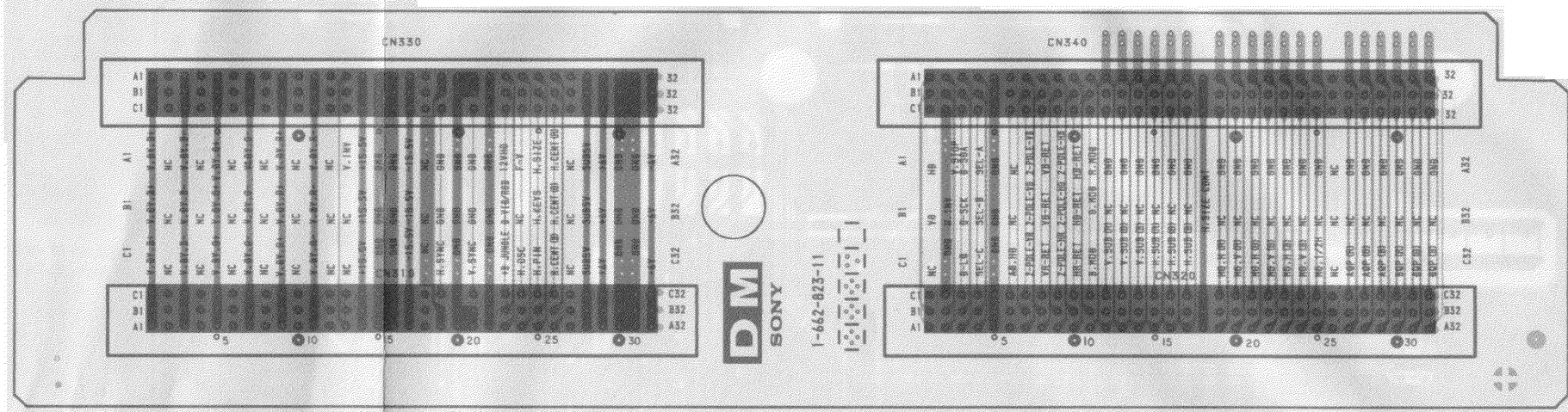


- : Pattern from the side which enables seeing.
- : Pattern of the rear side.

DM

(MOTHER) BOARD

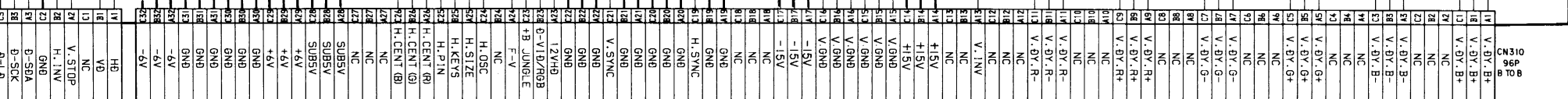
— DM BOARD — <Conductor side>



- : Pattern from the side which enables seeing.
- : Pattern of the rear side.

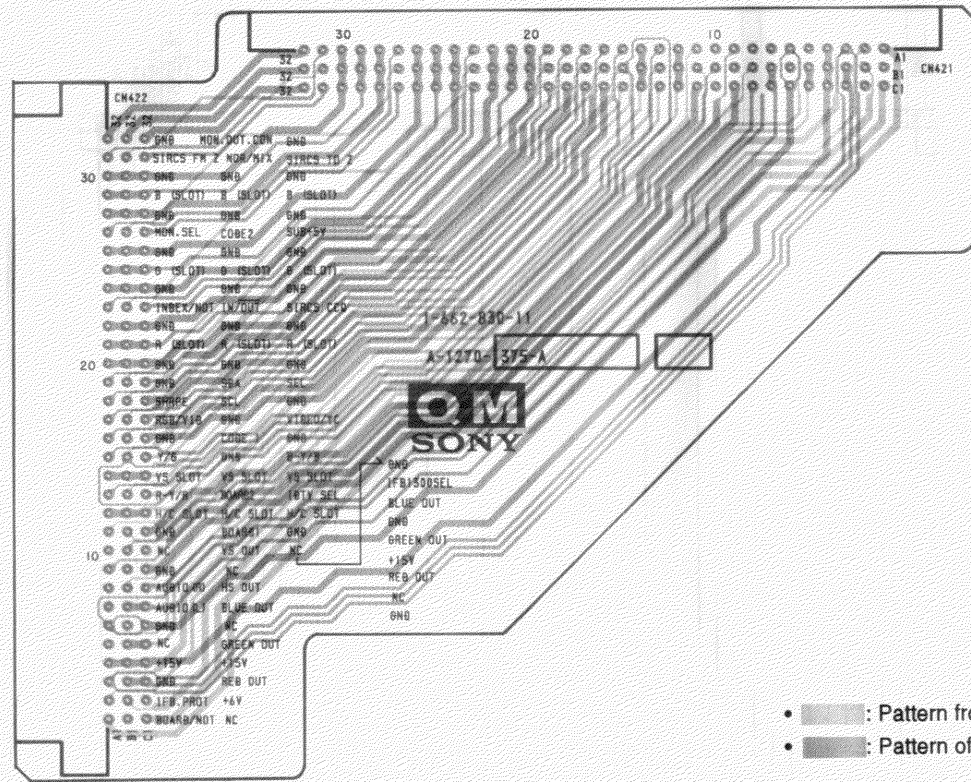
4-249





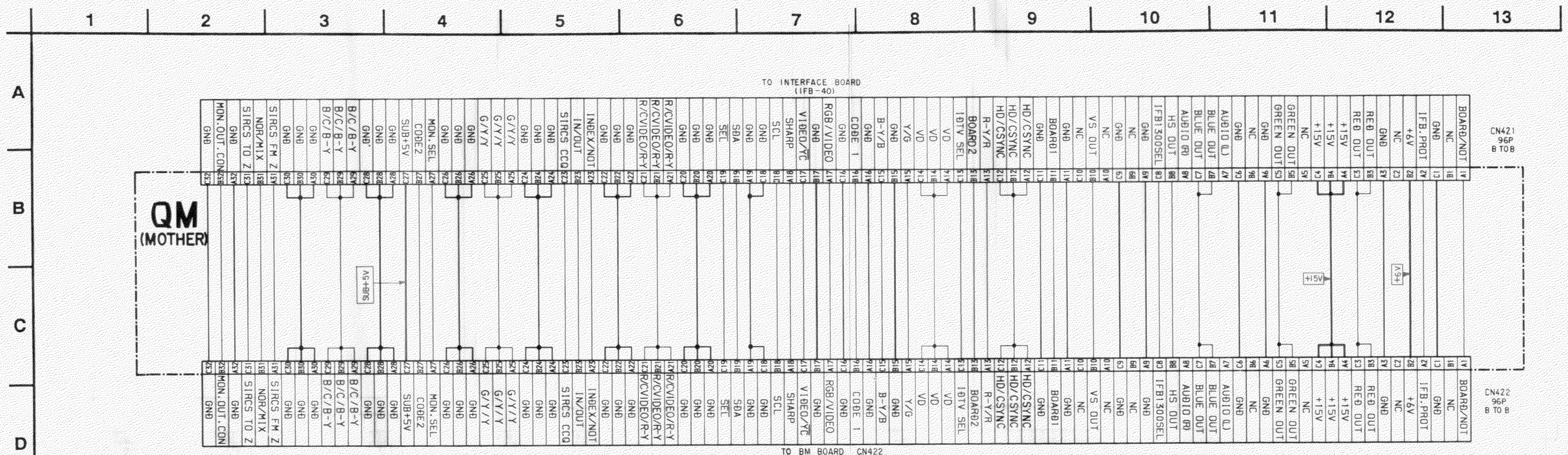
(RELAY) BOARD

— QM BOARD — <Conductor side>



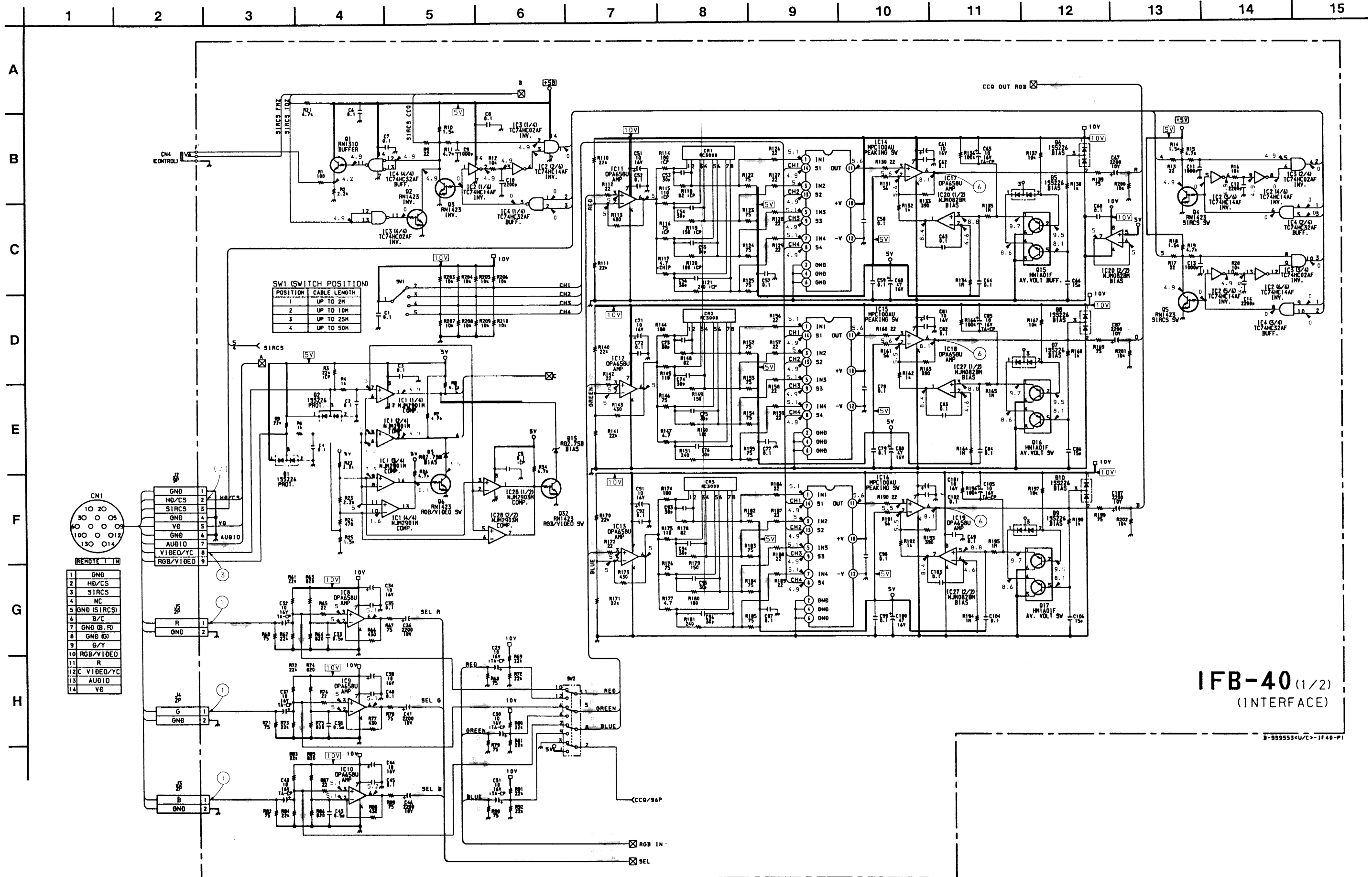
- **Pattern from the side which enables seeing.**
- **Pattern of the rear side.**

- **QM (RELAY) DIAGRAM**

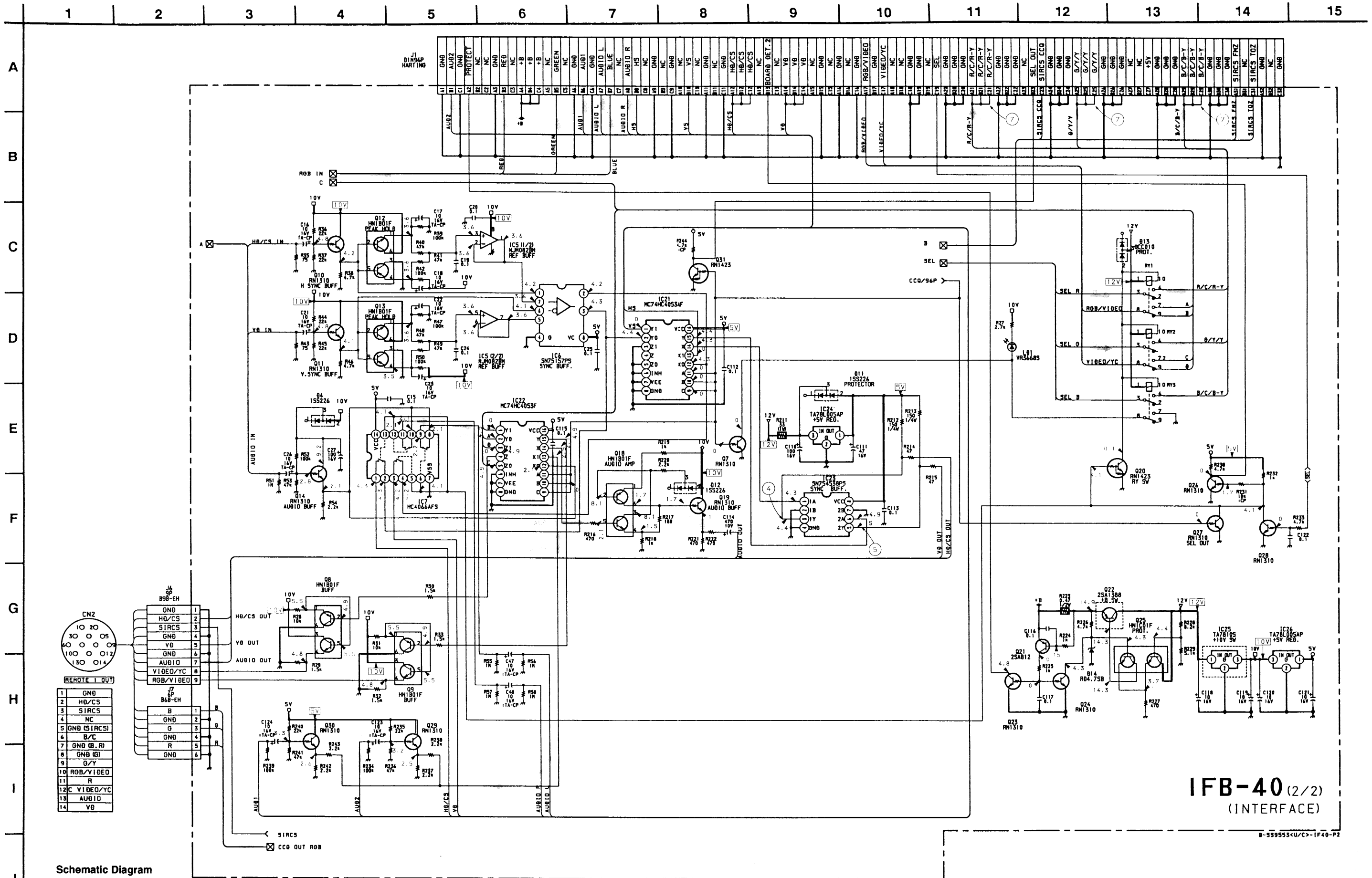


- IFB-40 (1/2) (INTERFACE) DIAGRAM
- Refer to page 4-259 for Printed Wiring Board
- Refer to page 4-261 for Waveforms
- Refer to page 4-261 for IC Block Diagram

VPH-G70Q/G70QM/G70QMG VPH-G70Q/G70QM/G70QMG



- IFB-40 (2/2) (INTERFACE) DIAGRAM
- Refer to page 4-261 for Waveforms
- Refer to page 4-261 for IC Block Diagram



Schematic Diagram