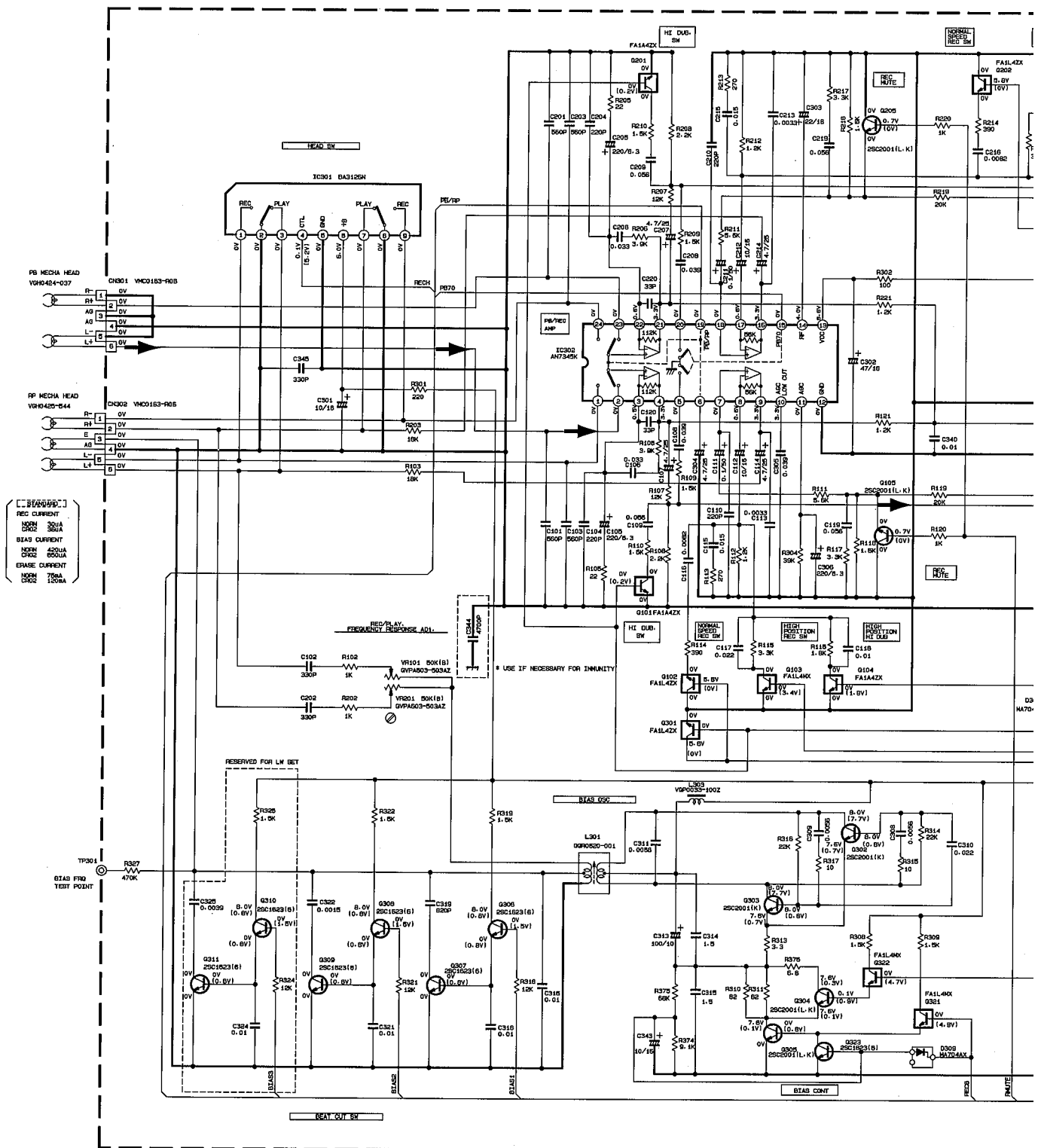


Head Amplifier & Mechanism Control Section

7
6
5
4
3
2
1



[STANDARD]
REC CURRENT
NOM 300A
C202 300A
BIAS CURRENT
NOM 400A
C202 400A
ERASE CURRENT
NOM 700A
C202 700A

NOTES
1. VOLTAGES ARE DC-MEASURED WITH A DIGITAL VOLT METER OR OSCILLOSCOPE WITHOUT INPUT SIGNAL. () IS INVERT MODE
2. UNLESS OTHERWISE SPECIFIED
ALL RESISTANCE VALUES ARE IN OHM(Ω).
ALL CAPACITORS ARE CERAMIC CAPACITOR
ALL CAPACITANCE VALUES ARE IN μ F(μ F).
ALL INDUCTANCE VALUES ARE IN μ H(μ H).
ALL E-CAPACITORS ARE SHOWN IN THE FORM OF CAPACITANCE (μ F)/RATED VOLTAGE (V).
PP PLYPROPYLENE CAPACITOR

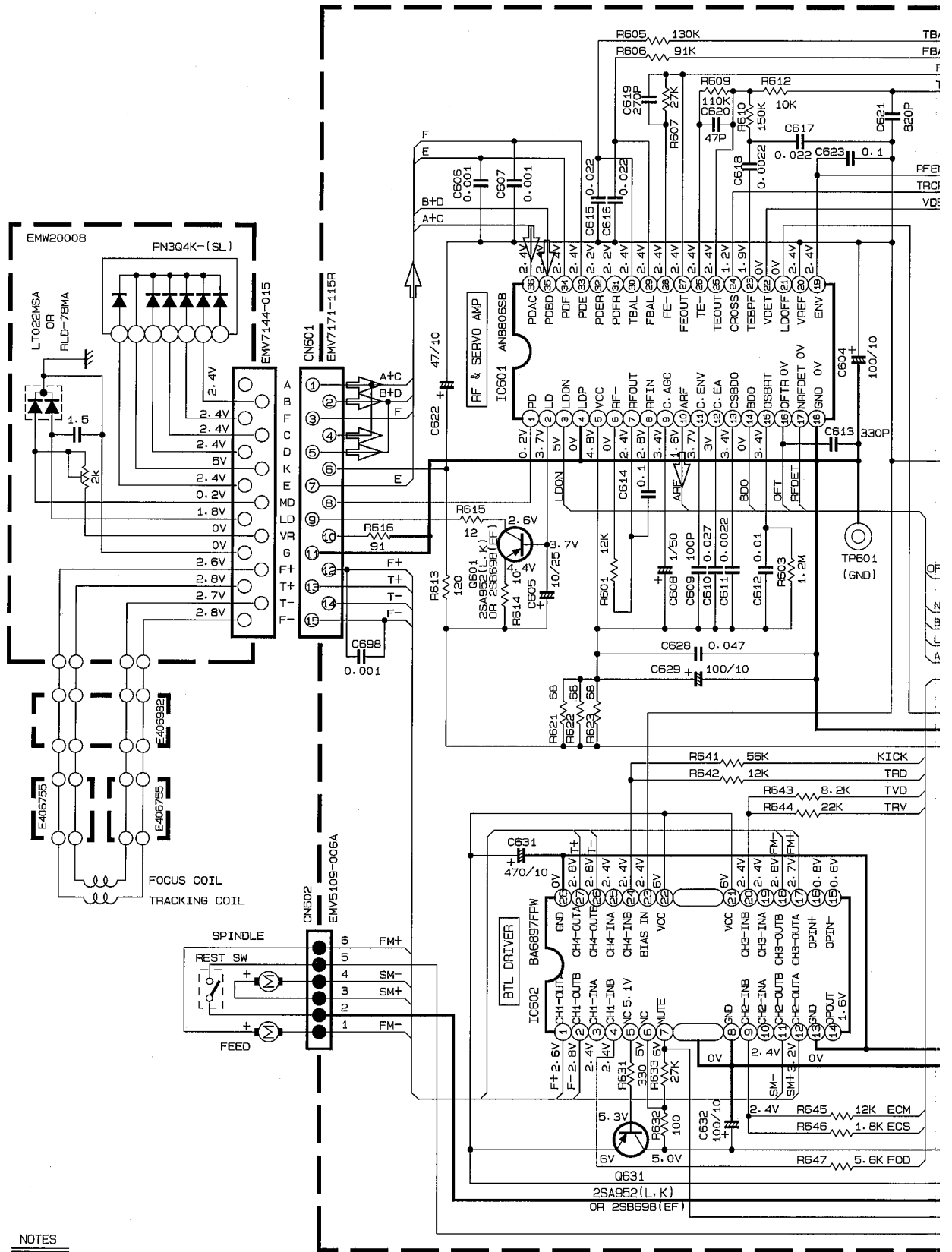
TABLE 1. DIGITAL TR LIST

PART. NO	CONSTRUCTION	REF. NO		
FN14K	47K	Q318	FA14K	Q317
FA14Z	10K	Q104/Q201 Q104/Q204	FA14K	Q103/Q203 Q318 Q320/Q321/Q322
FA14Z	47K	Q102/Q202 Q301		

A B C D E

CD Servo Control Section

7
6
5
4
3
2
1



NOTES

1. VOLTAGES ARE DC-MEASURED WITH A DIGITAL VOLT METER
2. UNLESS OTHERWISE SPECIFIED, RESISTORS ARE 1/6W ±5% CARBON RESISTOR.
 ALL RESISTANCE VALUES ARE IN OHM (Ω).
 ALL CAPACITORS ARE CERAMIC CAPACITOR OR MYLAR CAPACITOR.
 ALL CAPACITANCE VALUES ARE IN # F(P=PF).
 ALL E-CAPACITORS ARE SHOWN IN THE FORM OF CAPACITANCE (#F)/RATED VOLTAGE (V).

A B C D E

CD Changer Control Section

7
6
5
4
3
2
1

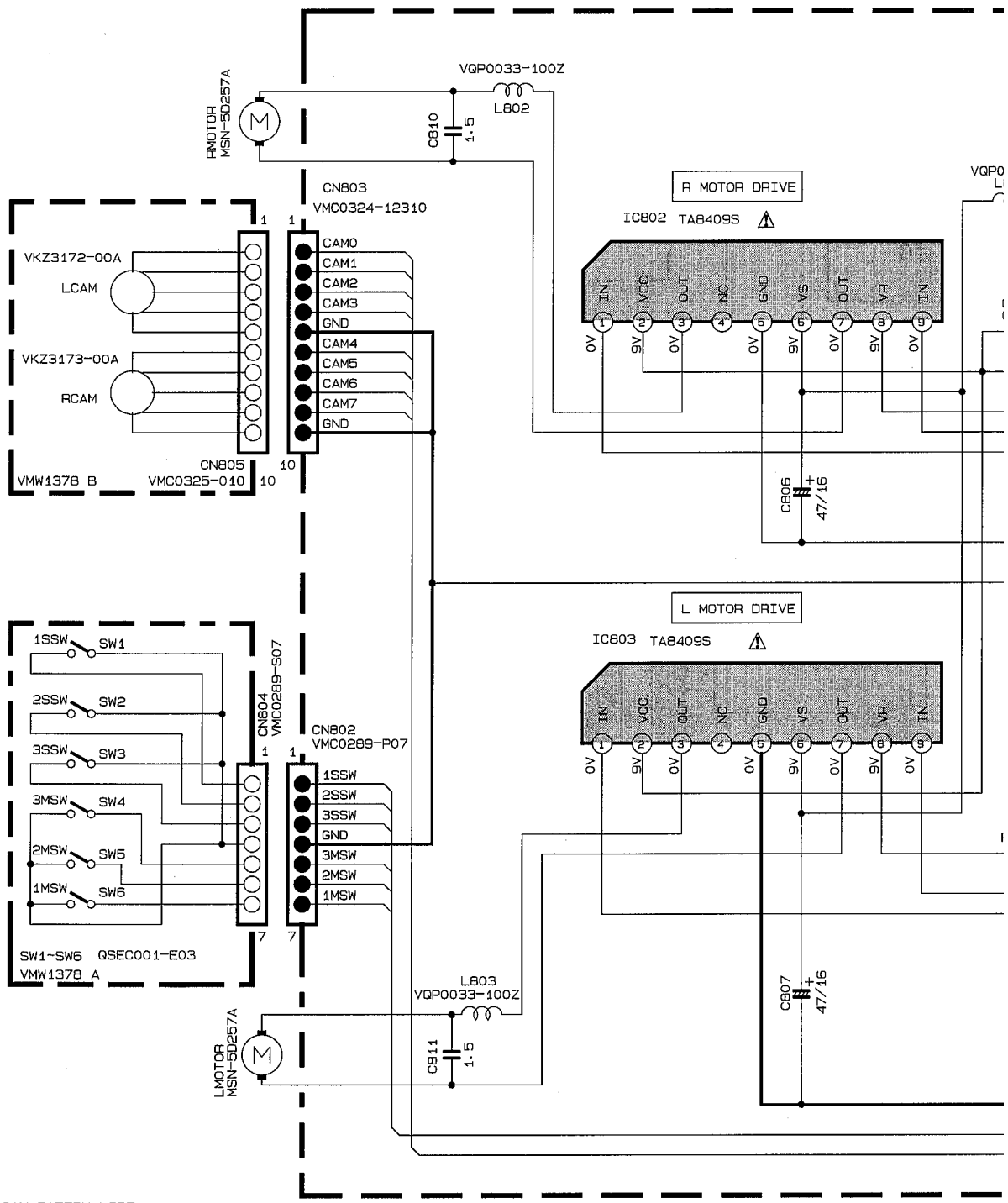


TABLE 1 CAM PATTERN LIST

CAM NO. POSITION	LCAM			RCAM				POSITION		
	0	1	2	3	4	5	6		7	
MAIN TRAY1	0	1	1	1	0	1	1	1	0	EMERGENCY
SUB TRAY1	0	0	1	1	0	1	1	0	0	TRAY1 STAND-BY
CAMR 1	0	1	0	1	0	1	0	1	0	TRAY1 CHACKING
MAIN TRAY2	1	0	0	1	0	1	0	0	1	TRAY2 STAND-BY
SUB TRAY2	1	1	1	0	0	0	1	1	1	TRAY2 CHACKING
CAMR 2	1	0	1	0	0	0	1	0	1	TRAY3 STAND-BY
MAIN TRAY3	1	1	0	0	0	0	1	1	1	TRAY3 CHACKING
SUB TRAY3	1	0	0	0	0	0	0	0	0	
OFF	1	1	1	1	0	1	1	1	1	OFF

0=0V
1=5V

NOTES

- VOLTAGES ARE DC-MEASURED WITH A DIGITAL VOLT METER OR OSCILLOSCOPE WITHOUT INPUT SIGNAL. CONDITION — DISC 1 CD STOP MODE.
- UNLESS OTHERWISE SPECIFIED, RESISTORS ARE 1/6W ±5% C. ALL RESISTANCE VALUES ARE IN OHM(Ω). ALL CAPACITORS ARE CERAMIC CAPACITOR OR MYLAR CAP. ALL CAPACITANCE VALUES ARE IN μF(P=pF). ALL INDUCTANCE VALUES ARE IN μH(m=mH). ALL E-CAPACITORS ARE SHOWN IN THE FORM OF CAPACITANCE.

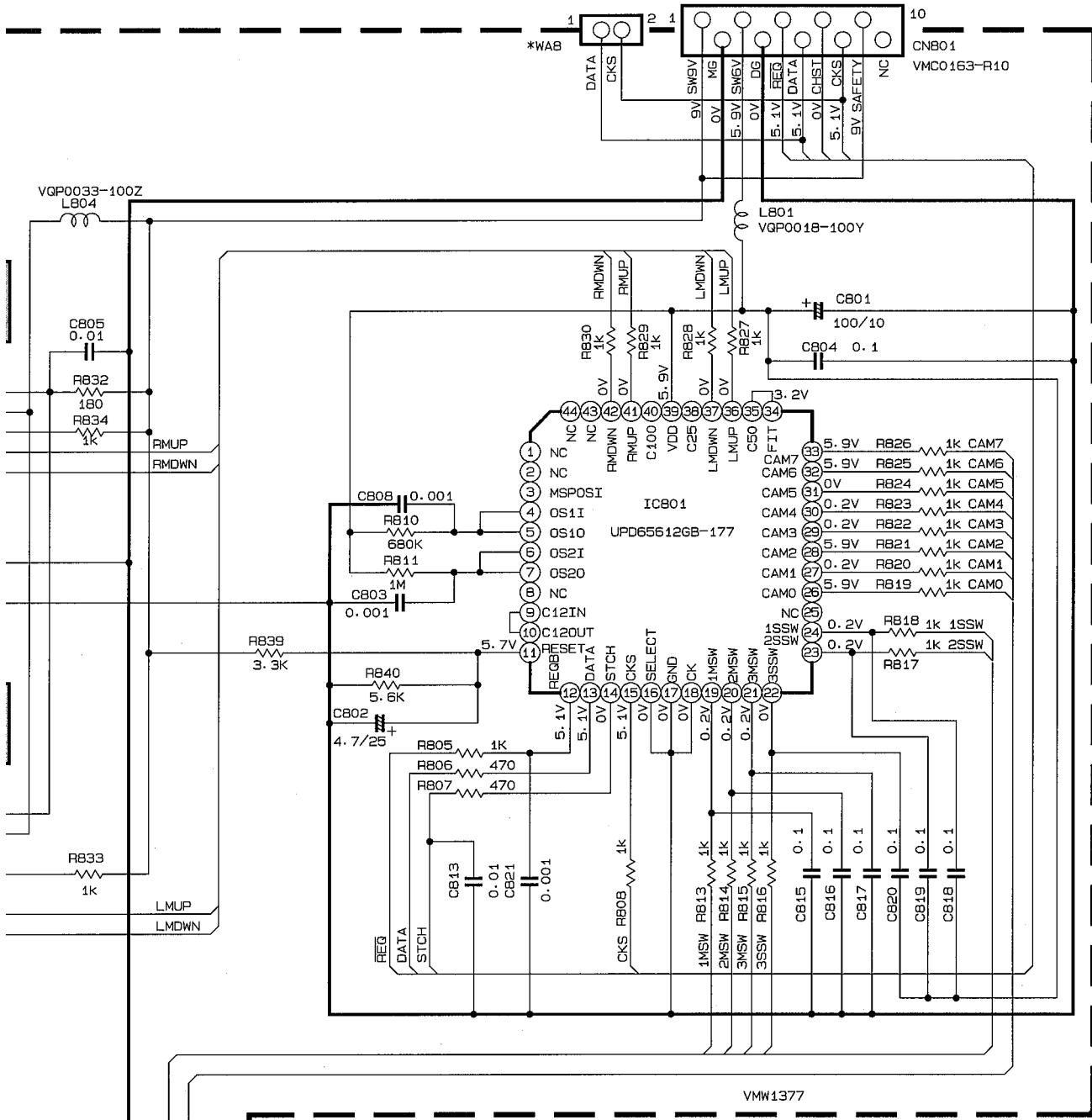
A

B

C

D

E



- Ⓛ UNFLAMMABLE CARBON RESISTOR
- Ⓜ METAL FILM RESISTOR
- Ⓞ OXIDE METAL FILM RESISTOR
- Ⓛ ±20% LOW LEAK CURRENT ELECTROLYTIC CAPACITOR
- Ⓜ NON-POLARISED ELECTROLYTIC CAPACITOR
- Ⓟ POLYPROPYLENE CAPACITOR
- Ⓢ POLYSTYROL CAPACITOR

⚠ Parts are safety assurance parts.
When replacing those parts make sure to use the specified one.

VOLT METER

/GW ±5% CARBON RESISTOR.

YLAR CAPACITOR.

CAPACITANCE (μF)/RATED VOLTAGE (V).

F

G

H

I

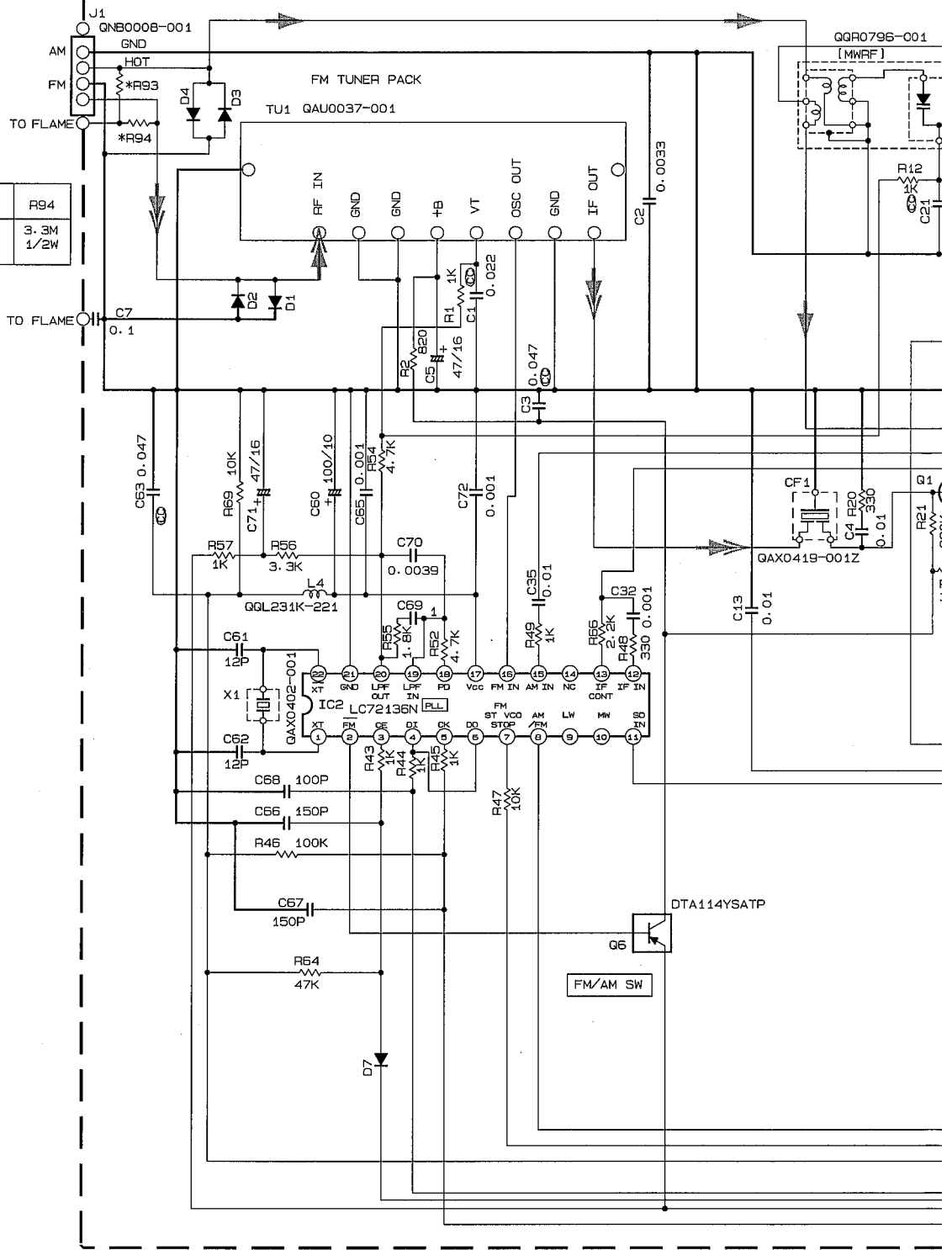
J

■ Tuner Section

FOR J.C.U.A

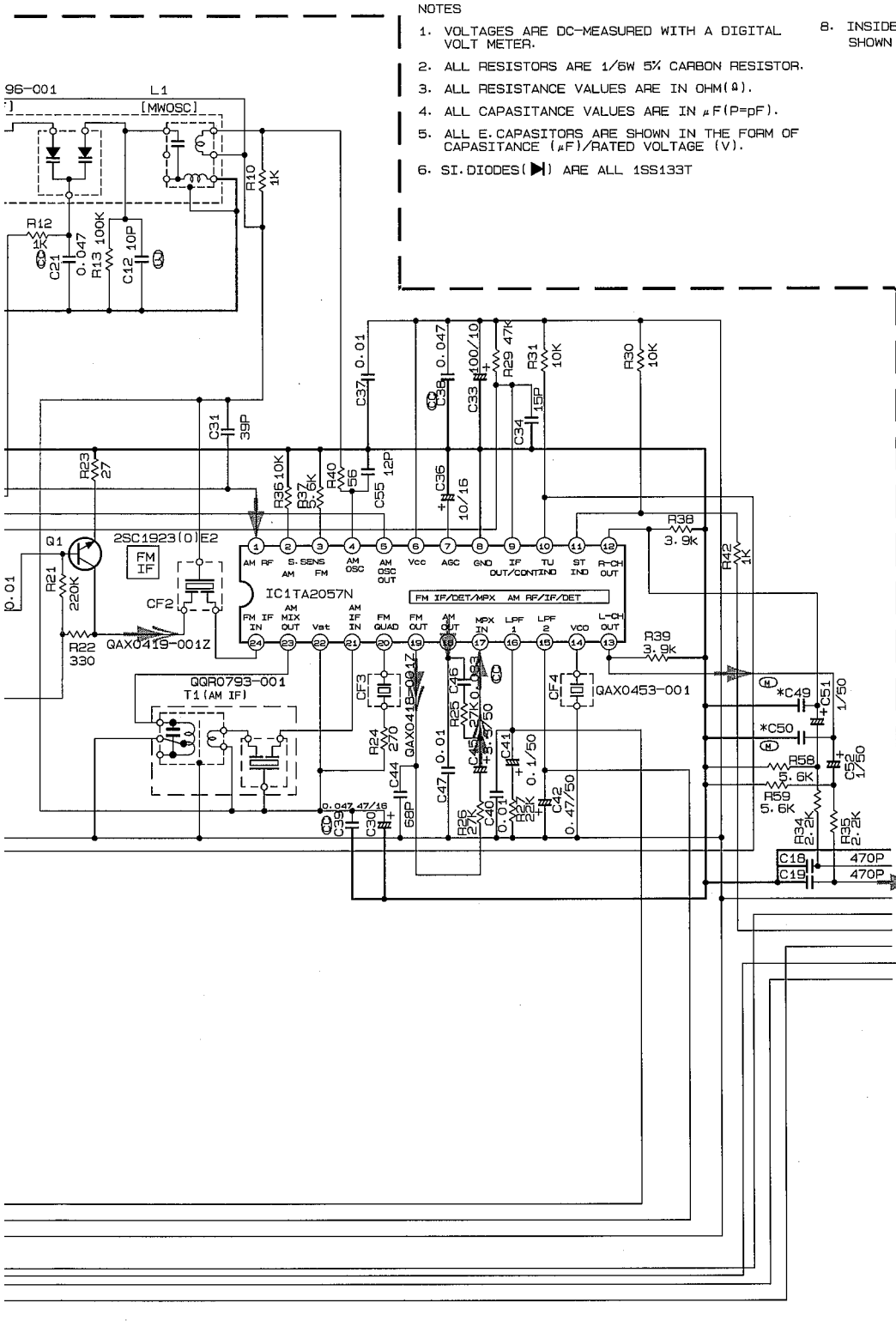
*MARK

	R93	R94
J&C	3.3M 1/2W	3.3M 1/2W



CONDITION	PIN NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
IC1	FM NO SIGNAL	2.0	0.5	0	2.0	6.2	6.2	0	0	0.2	6.2	5.8	1.0	1.0	5.5	4.8	4.8	1.4	0	1.3	1.1	2.0	2.0	6.2	2.0
	FM 60dB STEREO	2.0	0.5	0	2.0	6.2	6.2	1.1	0	0.2	0	0	1.0	1.0	5.5	4.8	4.8	1.4	0	1.4	1.1	2.0	2.0	6.2	2.0
	AM NO SIGNAL	2.0	0.5	0	2.0	6.0	6.2	0	0	0.2	6.2	5.8	1.0	1.0	5.7	2.9	0	1.4	1.4	1.5	1.5	2.0	2.0	6.2	2.0
IC2	FM NO SIGNAL	3.1	0	0.9	5.2	5.2	5.2	4.8	4.8	0	0	0	0	0	0	0	3.1	6.2	1.0	1.0	2.0	0	3.0		
	FM																								
	AM																								

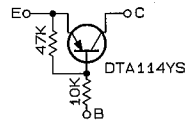
A B C D E



NOTES

1. VOLTAGES ARE DC-MEASURED WITH A DIGITAL VOLT METER.
2. ALL RESISTORS ARE 1/6W 5% CARBON RESISTOR.
3. ALL RESISTANCE VALUES ARE IN OHM(Ω).
4. ALL CAPACITANCE VALUES ARE IN μ F(P=pF).
5. ALL E-CAPACITORS ARE SHOWN IN THE FORM OF CAPACITANCE (μ F)/RATED VOLTAGE (V).
6. SI-DIODES (\blacktriangleright) ARE ALL 1SS133T

8. INSIDE OF DIGITAL TRANSISTORS ARE SHOWN AS FOLLOWS.



*MARK

	C49	C50
J, C	0.039	0.039
U	0.039	0.039
A	0.027	0.027

- TUNER GND
- TUNER R
- TUNER L
- TUNER +B
- DATA
- MPX
- CLOCK
- PERIOD
- Vt/FM+B

Tr. NO.	Q1			Q6		
PIN NO.	E	C	B	E	C	B
FM 87.5MHZ NO SIGNAL	0	7.8	0.8	9.1	9.0	0
AM 531KHZ NO SIGNAL	0	0.4	0.4	9.1	0.4	9.0



F

G

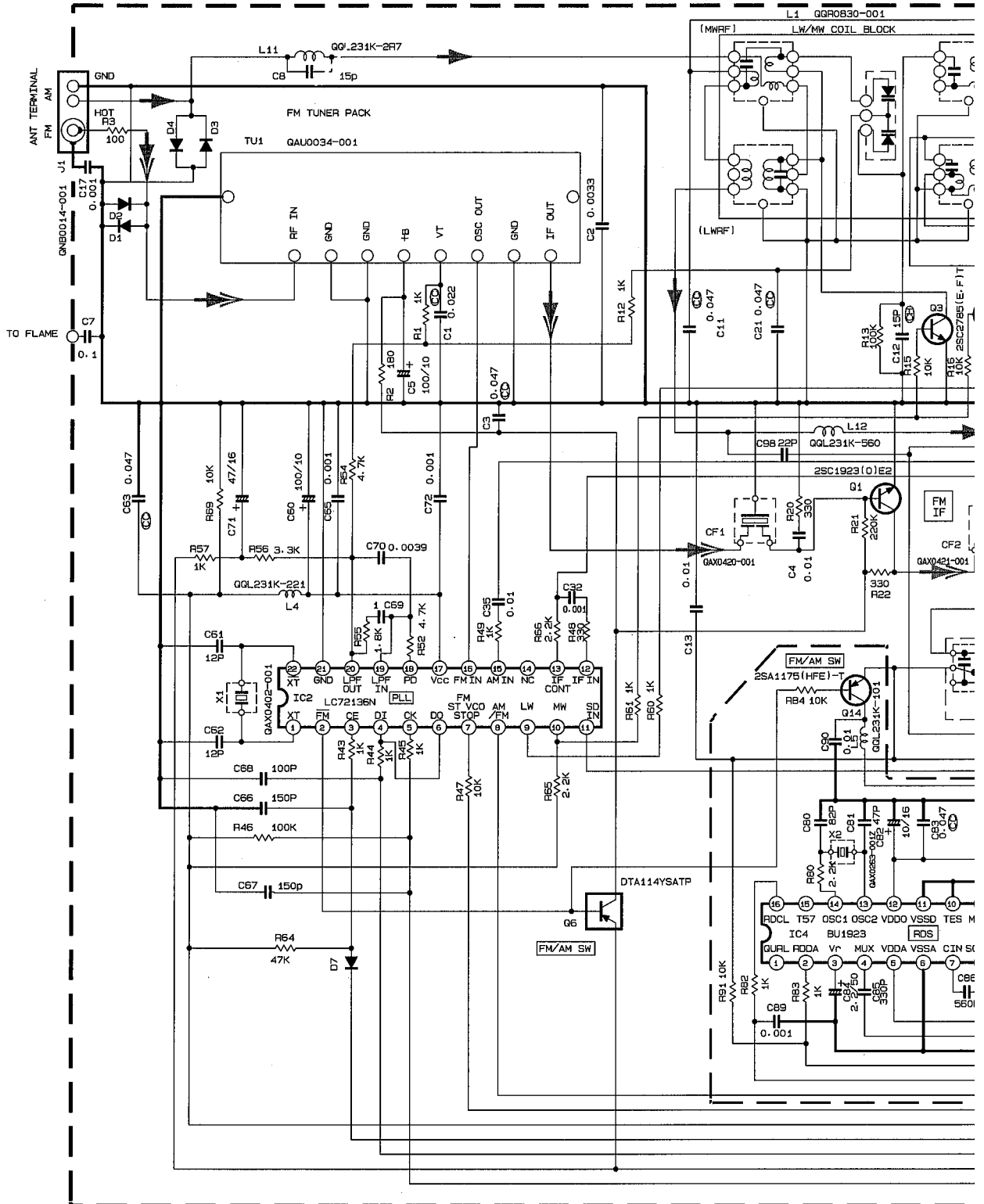
H

I

J

■ Tuner Section

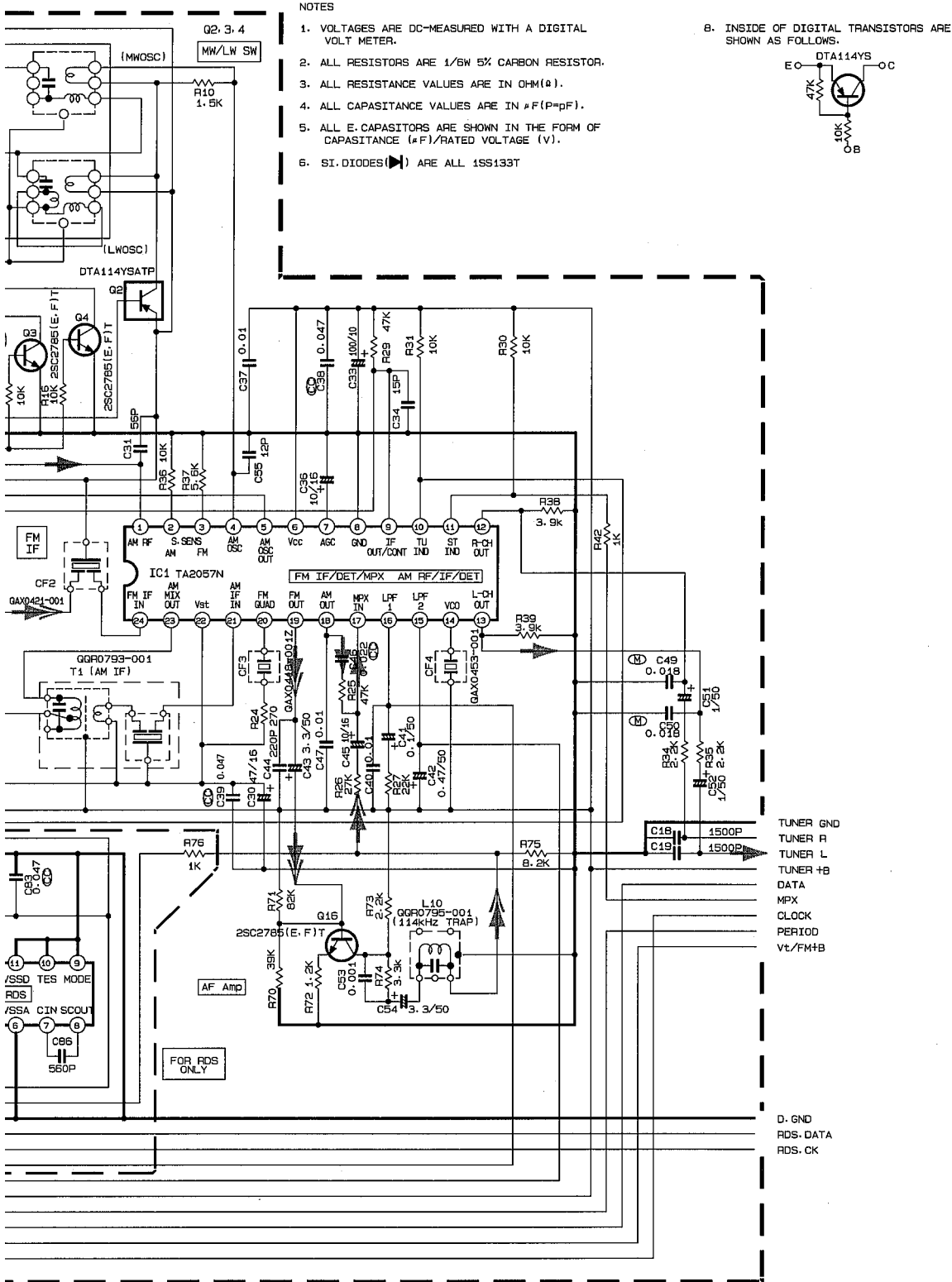
FOR B.E.EN



	CONDITION	PIN NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
IC1	FM NO SIGNAL		2.0	0.6	0	2.0	6.3	6.3	0	0	0.3	6.3	6.0	1.1	1.1	5.6	4.9	4.9	1.4	0	1.3	1.2	2.0	2.0	6.3	2.0
	FM 60dB STEREO		2.0	0.6	0	2.0	6.3	6.3	1.1	0	0.3	0	0	1.1	1.1	5.6	5.1	4.9	1.4	0	1.5	1.2	2.0	2.0	6.3	2.0
	AM NO SIGNAL		2.0	0.6	0	2.0	6.0	5.2	0	0	0.3	6.3	6.0	1.1	1.1	5.8	2.9	0	1.4	1.4	1.5	1.6	2.0	2.0	6.3	2.0
IC2	FM NO SIGNAL		3.1	0	0.9	5.3	5.5	5.3	4.9	4.9	2.0	4.8	6.3	0	0	0	0	3.1	6.2	1.0	1.0	4.6	0	3.0		

Tr NO.	
PIN NO.	
FM 87.5MHz NO SIGNAL	
AM 522kHz NO SIGNAL	
Tr NO.	
PIN NO.	
AM 522kHz NO SIGNAL	
AM 144kHz NO SIGNAL	

A B C D E



NO.	Q1			Q6			Q16		
NO.	E	C	B	E	C	B	E	C	B
NO SIGNAL	0	7.8	0.8	9.0	0.8	0	1.0	3.5	1.6
WITH SIGNAL	0	0	0	9.0	0	8.9	1.0	3.5	1.6

NO.	Q2			Q3			Q4		
NO.	E	C	B	E	C	B	E	C	B
NO SIGNAL	2.0	2.0	0.1	0	0	0.7	0	0	0.7
WITH SIGNAL	2.0	2.0	2.0	0	0	0.1	0	0	0.1

F

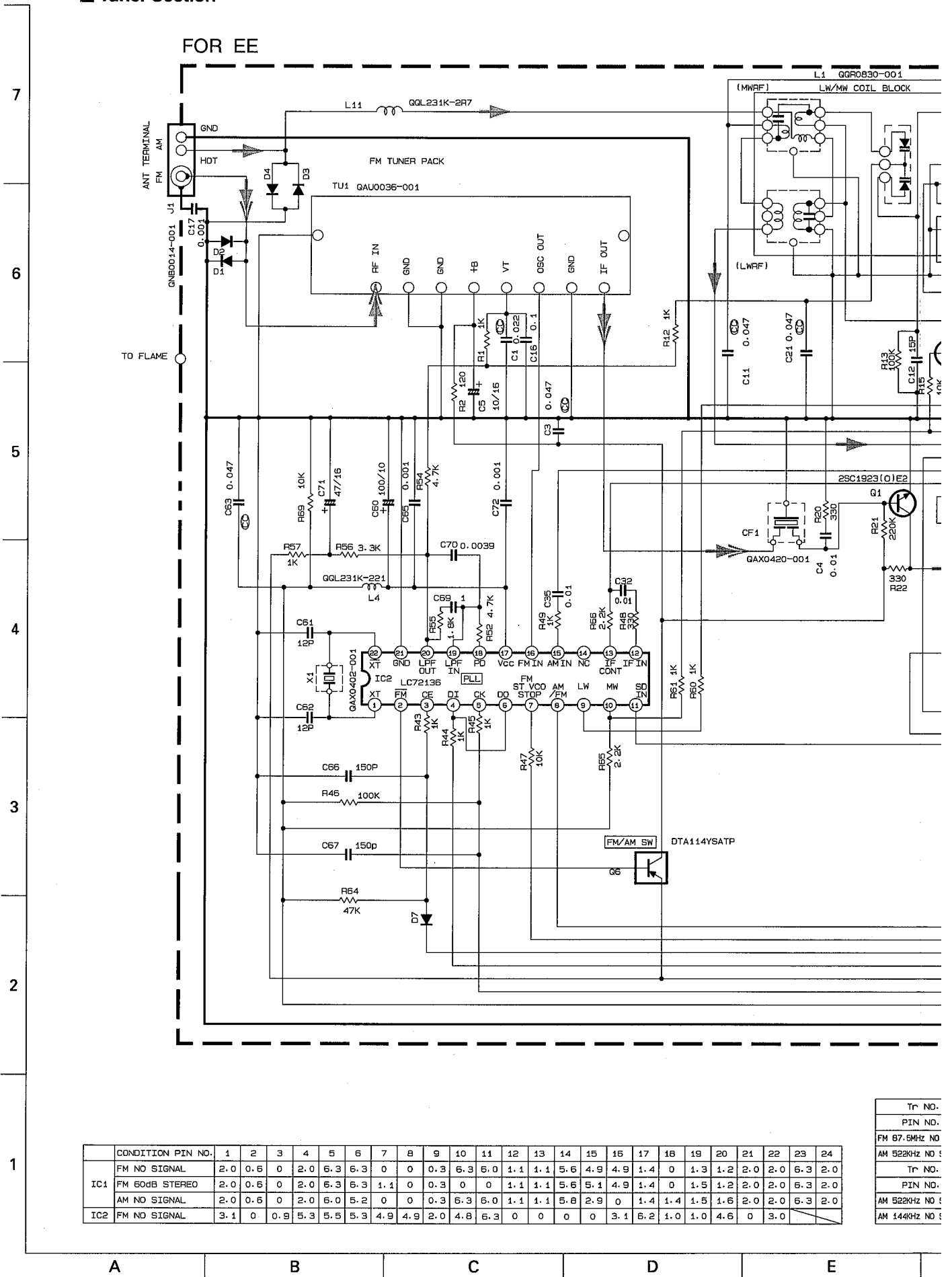
G

H

I

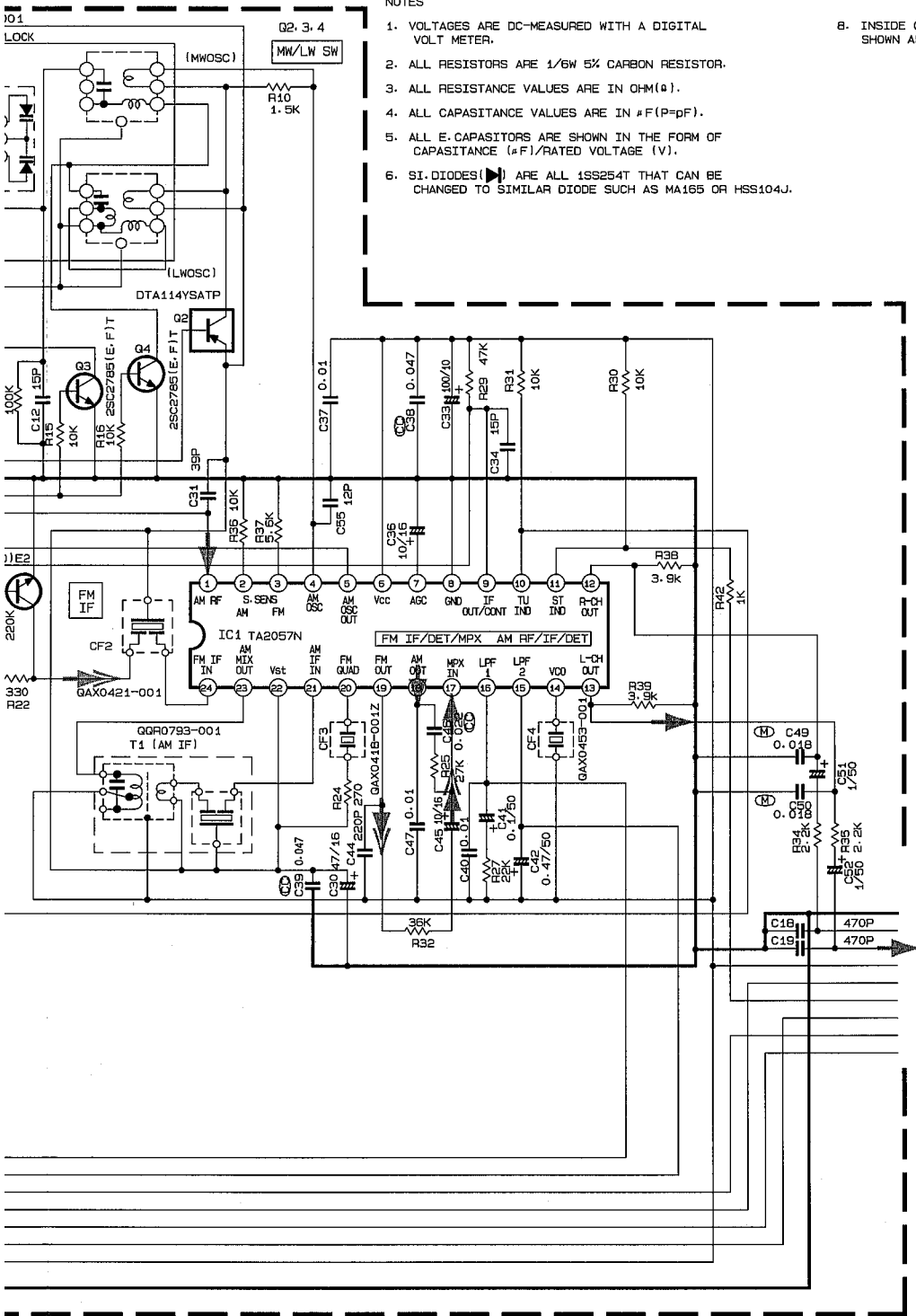
J

■ Tuner Section



CONDITION	PIN NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
IC1	FM NO SIGNAL	2.0	0.6	0	2.0	6.3	6.3	0	0	0.3	6.3	6.0	1.1	1.1	5.6	4.9	4.9	1.4	0	1.3	1.2	2.0	2.0	6.3	2.0
	FM 60dB STEREO	2.0	0.6	0	2.0	6.3	6.3	1.1	0	0.3	0	0	1.1	1.1	5.6	5.1	4.9	1.4	0	1.5	1.2	2.0	2.0	6.3	2.0
	AM NO SIGNAL	2.0	0.6	0	2.0	6.0	5.2	0	0	0.3	6.3	6.0	1.1	1.1	5.8	2.9	0	1.4	1.4	1.5	1.6	2.0	2.0	6.3	2.0
IC2	FM NO SIGNAL	3.1	0	0.9	5.3	5.5	5.3	4.9	4.9	2.0	4.8	6.3	0	0	0	0	3.1	6.2	1.0	1.0	4.6	0	3.0		
	AM 522KHz NO S																								

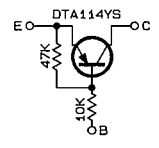
Tr NO.	
PIN NO.	
FM 87.5MHz NO S	
AM 522KHz NO S	
Tr NO.	
PIN NO.	
AM 522KHz NO S	
AM 144KHz NO S	



NOTES

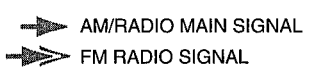
1. VOLTAGES ARE DC-MEASURED WITH A DIGITAL VOLT METER.
2. ALL RESISTORS ARE 1/6W 5% CARBON RESISTOR.
3. ALL RESISTANCE VALUES ARE IN OHM(Ω).
4. ALL CAPACITANCE VALUES ARE IN #F(P=pF).
5. ALL E. CAPASITORS ARE SHOWN IN THE FORM OF CAPACITANCE (#F/RATED VOLTAGE (V)).
6. SI. DIODES(▶) ARE ALL 1SS254T THAT CAN BE CHANGED TO SIMILAR DIODE SUCH AS MA165 OR HSS104J.

6. INSIDE OF DIGITAL TRANSISTORS ARE SHOWN AS FOLLOWS.



Tr. NO.	Q1			Q6		
PIN NO.	E	C	B	E	C	B
87.5MHz NO SIGNAL	0	7.8	0.8	9.0	8.9	0
522kHz NO SIGNAL	0	0	0	9.0	0	8.9

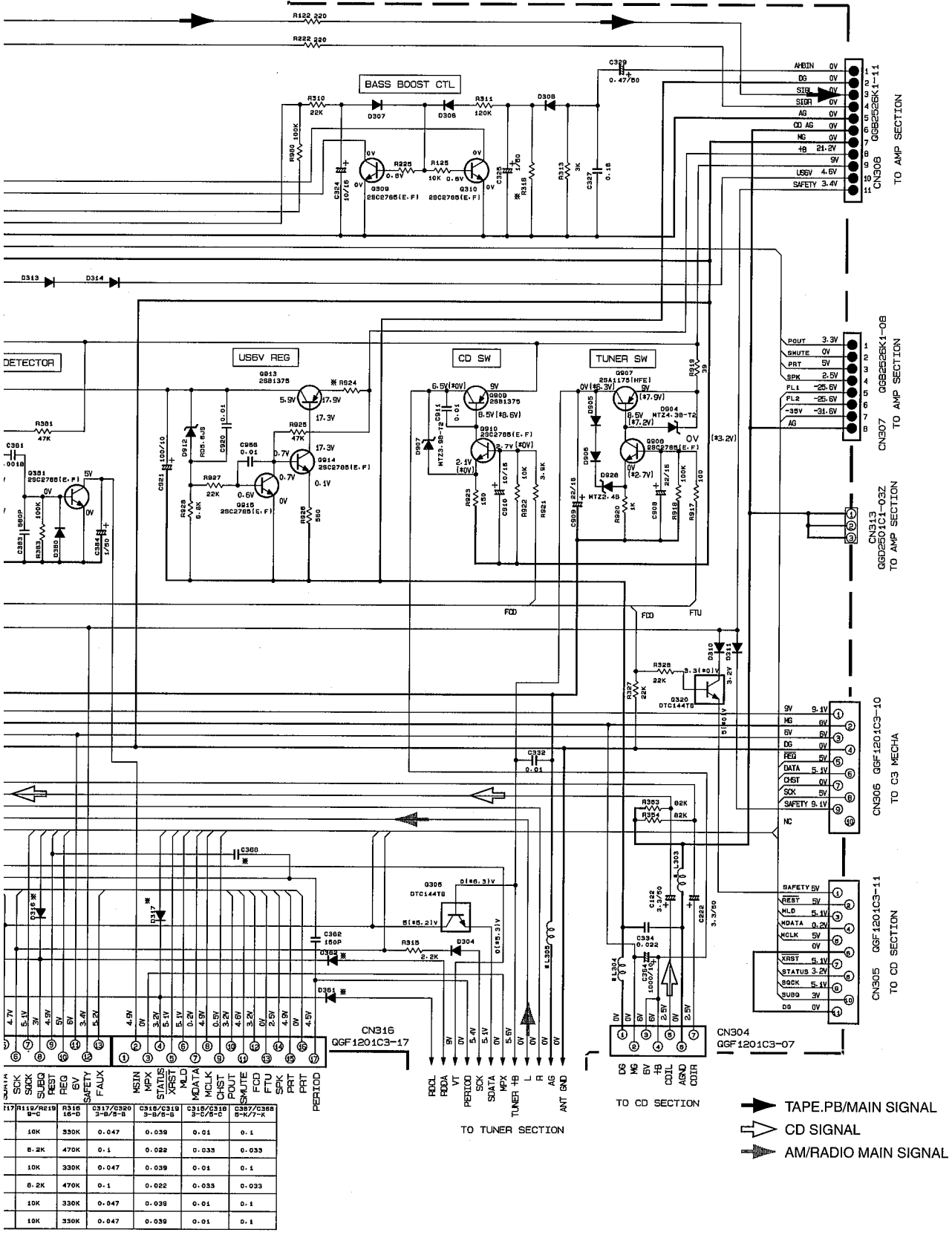
Tr. NO.	Q2			Q3			Q4		
PIN NO.	E	C	B	E	C	B	E	C	B
522kHz NO SIGNAL	2.0	2.0	0.1	0	0	0.7	0	0	0.7
144kHz NO SIGNAL	2.0	2.0	2.0	0	0	0.1	0	0	0.1



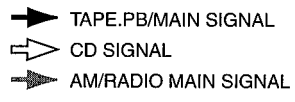
F G H I J

NOTES

1. VOLTAGE ARE DC-MEASURED WITH A DIGITAL VOLT METER OR OSCILLOSCOPE WITHOUT INPUT SIGNAL. (IGNITION -- CD MODE) VOLTAGE VALUE MARKED + IS IN TUNER POSITIVE.
2. UNLESS OTHERWISE SPECIFIED, RESISTORS ARE 1/8W ±5% CARBON RESISTORS. ALL RESISTANCE VALUES ARE IN OHMS.
3. ALL CAPACITANCE VALUES ARE IN OHMS.
4. ALL CAPACITANCE VALUES ARE IN μF=10⁻⁶.
5. ALL CAPACITORS ARE SHOWN IN THE FORM OF CAPACITANCE [μF]/RATED VOLTAGE [V].
6. ALL DIODES ARE 100V3A SHOWN IN THE FORM OF CAPACITANCE [μF]/RATED VOLTAGE [V].
7. ALL NPN TRANSISTORS ARE 2SC3301(S,T) OR 2SC2705(E,F).



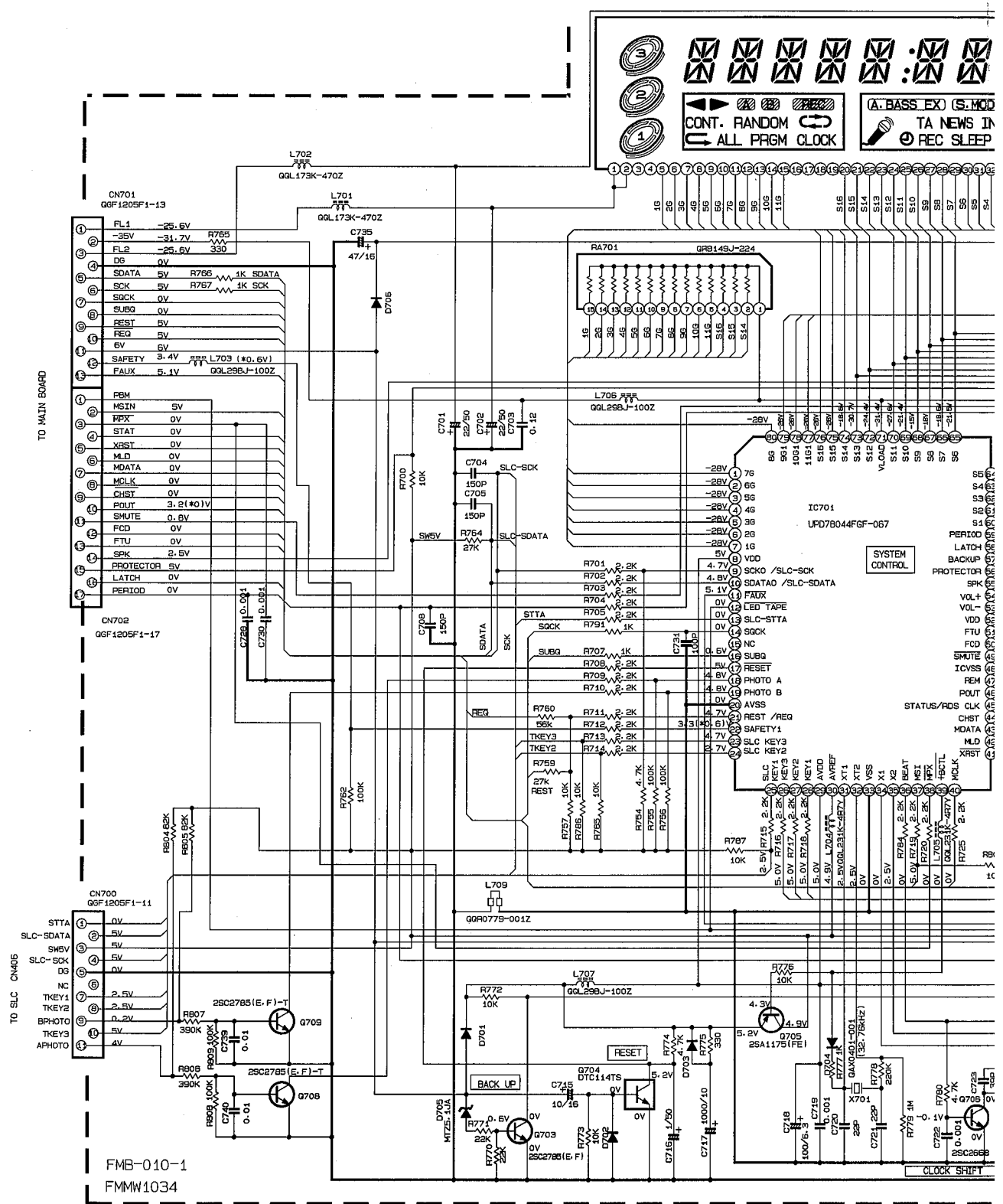
DATA	SCK	SOCK	SUBQ	REST	REG	EV	SAFETY	FAULT	MSIN	MPX	STATUS	XRSST	MDATA	MCLK	CHST	PRUTE	SKUTE	FCD	SPK	PRT	PRT	PERIOD		
117	R116/R210	R116	R210	C317/C320	C317	C320	C318/C319	C318	C319	C316/C318	C316	C318	C317/C319	C317	C319	C316/C318	C316	C318	C317/C319	C317	C319	C316/C318	C316	C318
10K	330K	0.047	0.039	0.01	0.1																			
5.2K	470K	0.1	0.022	0.033	0.033																			
10K	330K	0.047	0.039	0.01	0.1																			
5.2K	470K	0.1	0.022	0.033	0.033																			
10K	330K	0.047	0.039	0.01	0.1																			
10K	330K	0.047	0.039	0.01	0.1																			



F G H I J

System CPU & Operation Switch Sec

7
6
5
4
3
2
1



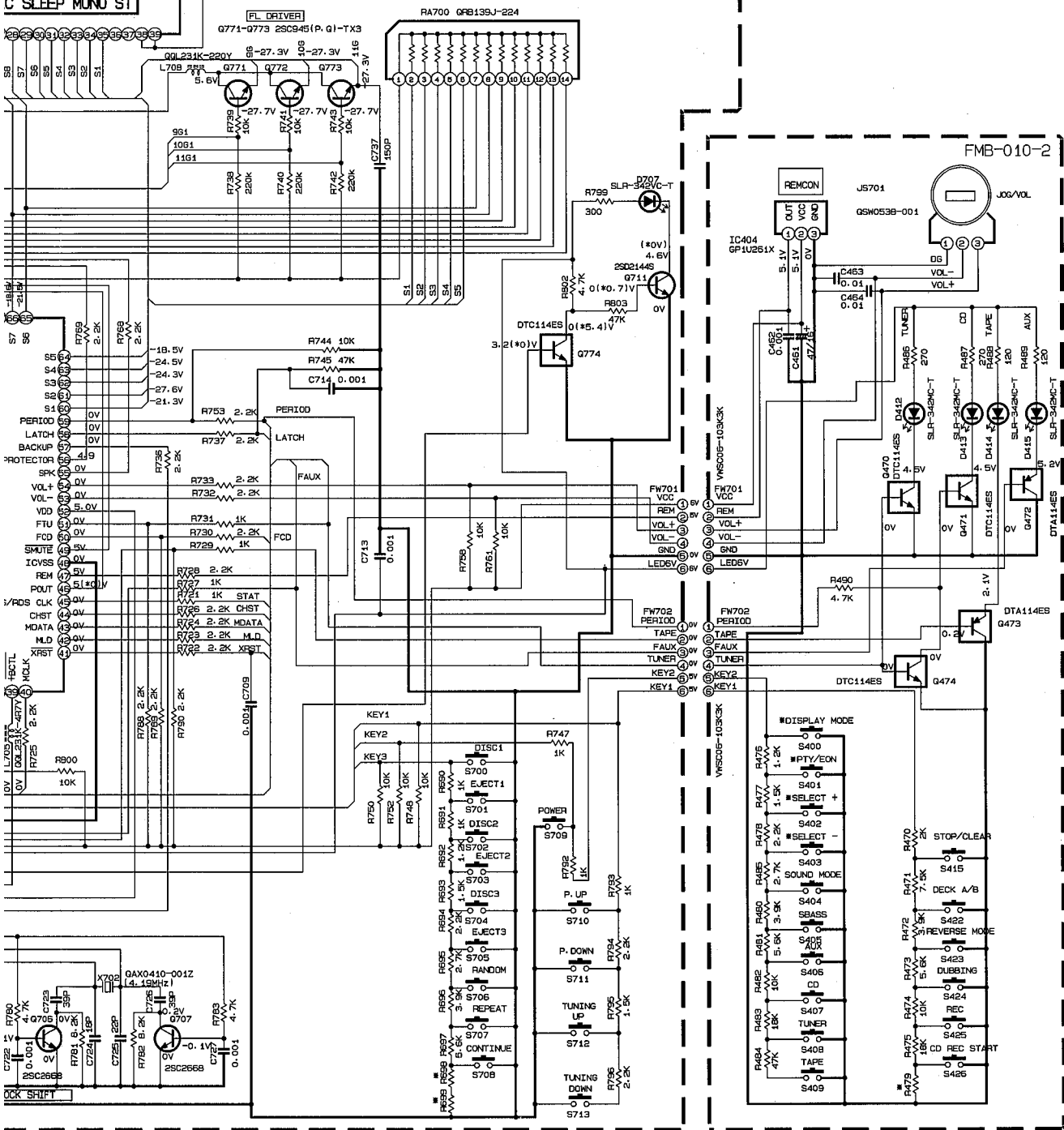
MARK

MODEL	VERSIONS	R479 19-M	R698 15-L	R699 15-M	S400/401/402/403 15-K
MX-D302T	J. C	47K	—	—	—
	U. UB. UR. US UT. UX. A	—	—	—	—
	B. E. EN	47K	75K	—	—
	EE	—	18K	10K	—
CA-D352TR	B. E. EN	47K	18K	10K	USE

A B C D E



(X) S.MODE R.D.S
NEWS INFO EOS
C SLEEP MONO ST



NOTES

1. VOLTAGES ARE DC-MEASURED WITH A DIGITAL VOLT METER OR OSCILLOSCOPE WITHOUT INPUT SIGNAL.
CONDITION — TAPE FB MODE
VOLTAGE VALUE MARKED * IS IN STANDBY POSITION.
2. UNLESS OTHERWISE SPECIFIED
RESISTORS ARE 1/8W ±5% CARBON RESISTOR.
ALL RESISTANCE VALUES ARE IN OHM(S).
ALL CAPACITORS ARE CERAMIC CAPACITOR OR MYLAR CAPACITOR.
ALL CAPACITANCE VALUES ARE IN #F(P=PF).
ALL INDUCTANCE VALUES ARE IN #H(M=MH).
ALL E-CAPACITORS ARE SHOWN IN THE FORM OF CAPACITANCE (#F1)/RATED VOLTAGE (V).
ALL DIODES ARE 1SS133

F

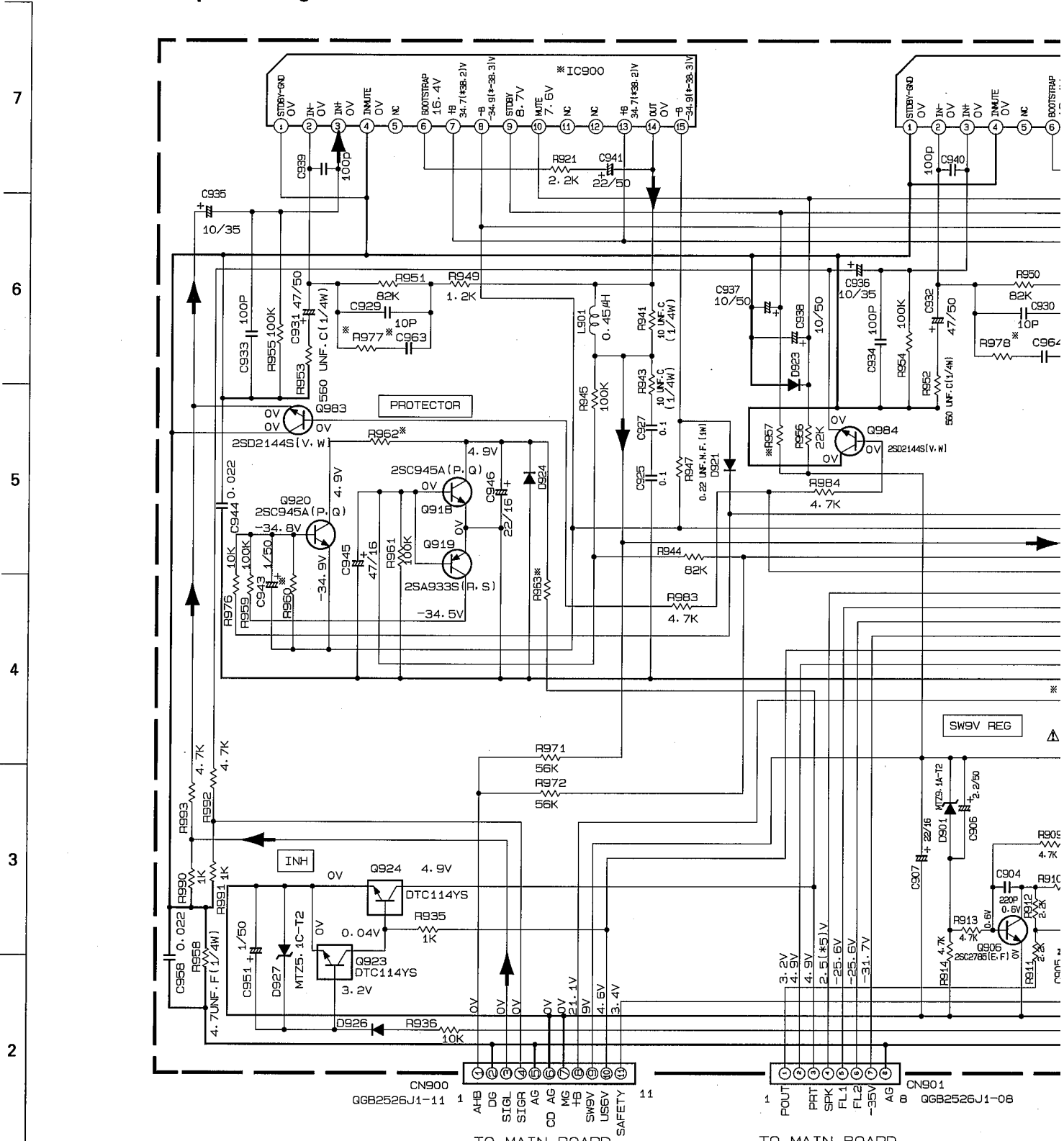
G

H

I

J

Power Amplifier & Regulator Section



*MARK

VERSION	C947/948/949/950 18-B	C971/C972 18-B	D908/909/910/911 18-H	IC900/901 6-B/13-B	L971/972 17-B	R957 9-E	R954/965 17-D	R982 12-H	R973/R974 19-B	C963 C964	R977 R978	R962 4-E
B. E. EN	0.022	0.0027	1N5401-TM	TDA7295	GGR0797-001	1K	680	B120	4.7	0.0068	180K	10K
U. UB. UR. US UT. UX. A. EE	—	—	1N5401-TM	TDA7295	—	1K	680	B120	—	0.0068	180K	10K
J. C	—	—	10E2-FD	TDA7294	—	10K	680 F. RES (1/4W)	22 F. RES (1/4W)	—	0.015	100K	5.6K

A B C D E

1

2

3

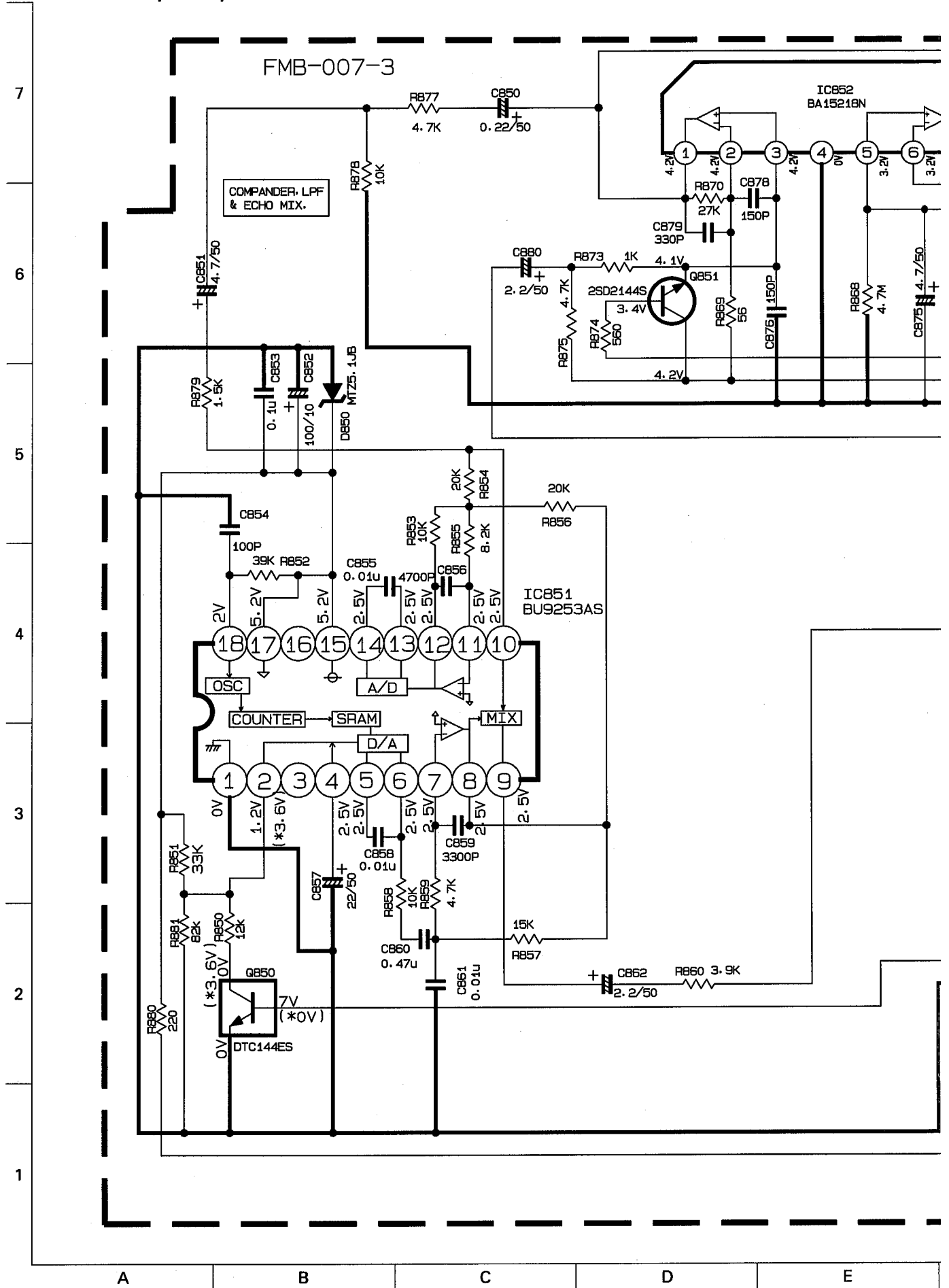
4

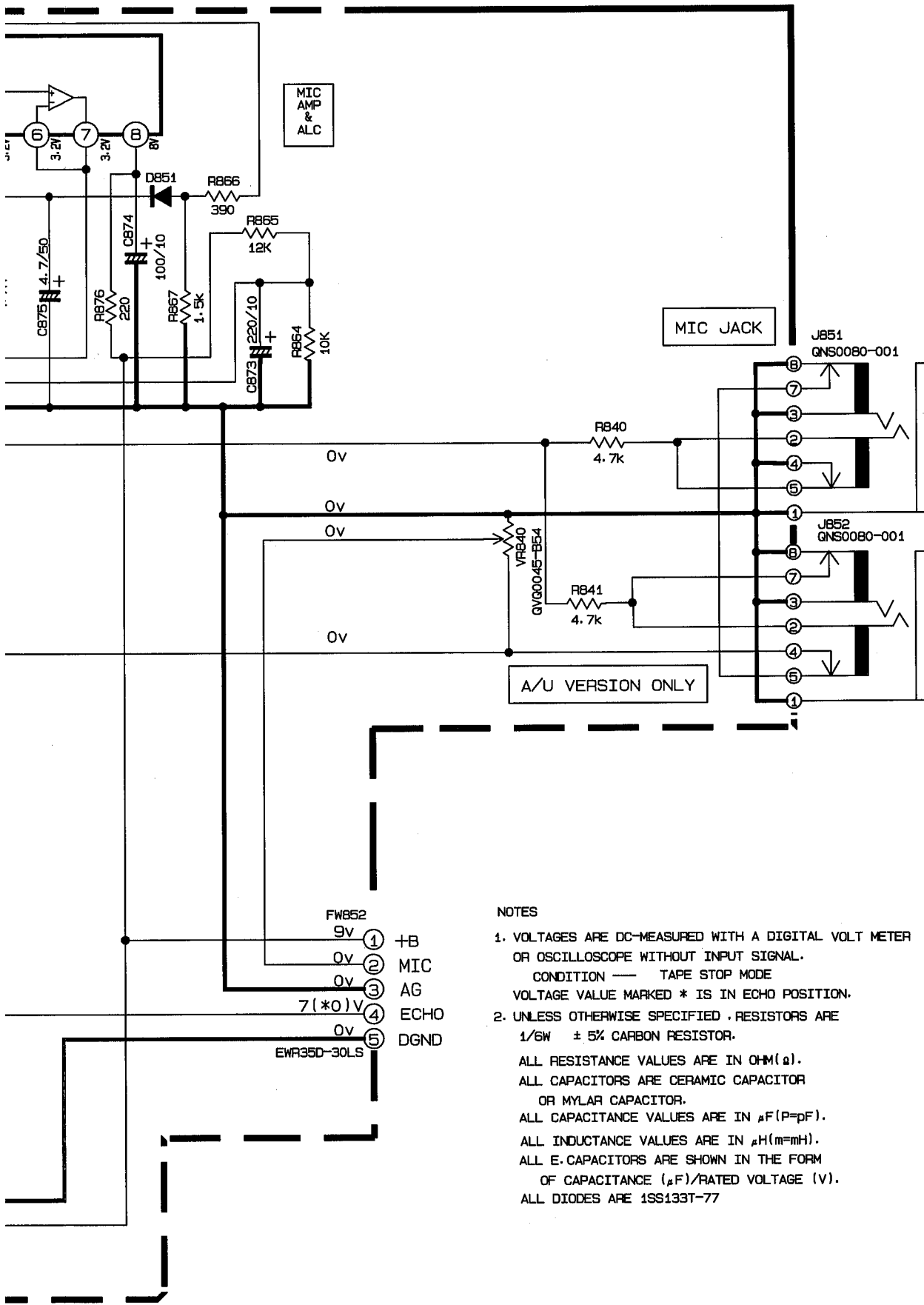
5

6

7

■ Mic Input Amplifier Section





NOTES

1. VOLTAGES ARE DC-MEASURED WITH A DIGITAL VOLT METER OR OSCILLOSCOPE WITHOUT INPUT SIGNAL.
CONDITION — TAPE STOP MODE
VOLTAGE VALUE MARKED * IS IN ECHO POSITION.
2. UNLESS OTHERWISE SPECIFIED, RESISTORS ARE 1/6W ± 5% CARBON RESISTOR.
ALL RESISTANCE VALUES ARE IN OHM(Ω).
ALL CAPACITORS ARE CERAMIC CAPACITOR OR MYLAR CAPACITOR.
ALL CAPACITANCE VALUES ARE IN μF(P=pF).
ALL INDUCTANCE VALUES ARE IN μH(m=mH).
ALL E. CAPACITORS ARE SHOWN IN THE FORM OF CAPACITANCE (μF)/RATED VOLTAGE (V).
ALL DIODES ARE 1SS133T-77

F

G

H

I

J

