

AV28L2EUGR  
AV28L2EUBL  
AV28L2EUGY

# JVC

# SCHEMATIC DIAGRAMS

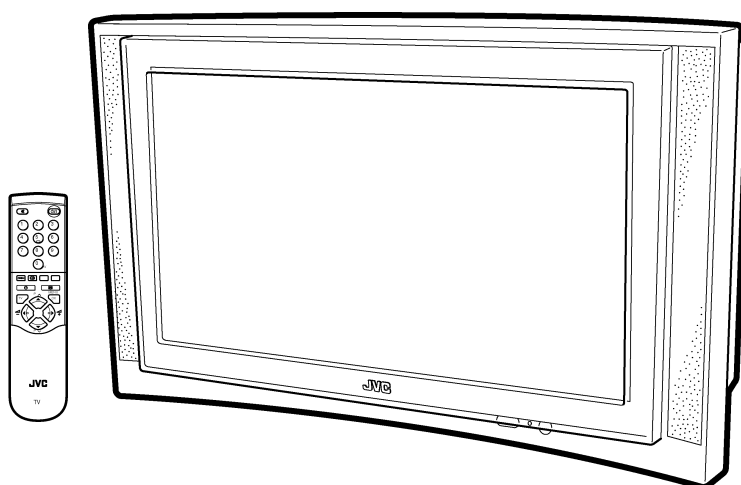
## COLOUR TELEVISION

BASIC CHASSIS

MF

# AV28L2EUGR AV28L2EUBL AV28L2EUGY

CD-ROM No.SML200104



## CONTENTS

■ NOTE ON USING CIRCUIT DIAGRAMS .....	2-1
■ SEMICONDUCTOR SHAPES .....	2-2
■ BLOCK DIAGRAM .....	2-3
■ CIRCUIT DIAGRAMS .....	2-5
■ PATTERN DIAGRAMS .....	2-21

# STANDARD CIRCUIT DIAGRAM

## NOTE ON USING CIRCUIT DIAGRAMS

### 1. SAFETY

The components identified by the  $\Delta$  symbol and shading are critical for safety. For continued safety replace safety critical components only with manufactures recommended parts.

### 2. SPECIFIED VOLTAGE AND WAVEFORM VALUES

The voltage and waveform values have been measured under the following conditions.

- (1) Input signal :PAL Colour bar signal
  - (2) Setting positions of each knob/button and variable resistor :Original setting position when shipped
  - (3) Internal resistance of tester :DC 20k $\Omega$ /V
  - (4) Oscilloscope sweeping time :H  $\Rightarrow$  20 $\mu$ S/div  
:V  $\Rightarrow$  5mS/div  
:Others  $\Rightarrow$  Sweeping time is specified
  - (5) Voltage values :All DC voltage values
- \* Since the voltage values of signal circuit vary to some extent according to adjustments, use them as reference values.

### 3. INDICATION OF PARTS SYMBOL [EXAMPLE]

● In the PW board :R1209 $\rightarrow$ R209

### 4. INDICATIONS ON THE CIRCUIT DIAGRAM

#### (1) Resistors

##### ● Resistance value

- No unit :[ $\Omega$ ]
- K :[K $\Omega$ ]
- M :[M $\Omega$ ]

##### ● Rated allowable power

- No indication :1/16[W]
- Others :As specified

##### ● Type

- No indication :Carbon resistor
- OMR :Oxide metal film resistor
- MFR :Metal film resistor
- MPR :Metal plate resistor
- UNFR :Uninflammable resistor
- FR :Fusible resistor

\*Composition resistor 1/2 [W] is specified as 1/2S or Comp.

#### (2) Capacitors

##### ● Capacitance value

- 1 or higher :[pF]
- less than 1 :[ $\mu$ F]

##### ● Withstand voltage

- No indication :DC50[V]
- AC indicated :AC withstand voltage [V]
- Others :DC withstand voltage [V]

\*Electrolytic Capacitors

47/50[Example]:Capacitance value [ $\mu$ F]/withstand voltage[V]

##### ● Type

- No indication :Ceramic capacitor
- MY :Mylar capacitor
- MM :Metalized mylar capacitor
- PP :Polypropylene capacitor
- MPP :Metalized polypropylene capacitor
- MF :Metalized film capacitor
- TF :Thin film capacitor
- BP :Bipolar electrolytic capacitor
- TAN :Tantalum capacitor

##### (3) Coils

- No unit :[ $\mu$ H]
- Others :As specified

##### (4) Power Supply

- :B1
- :B2
- :9V
- :5V

\*Respective voltage values are indicated

##### (5) Test point

- :Test point
- :Only test point display

##### (6) Connecting method

- :Connector
- :Wrapping or soldering
- :Receptacle

##### (7) Ground symbol

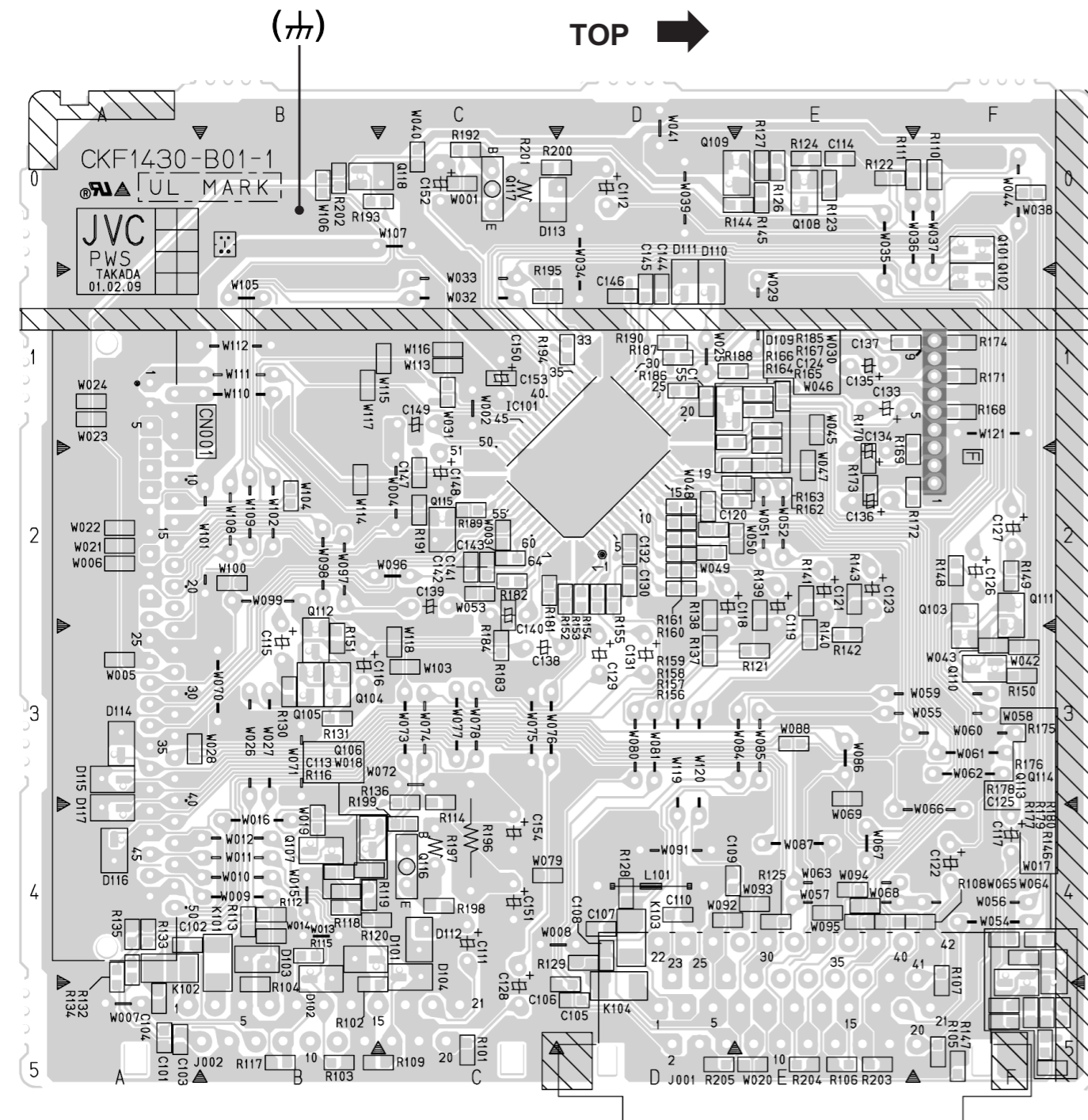
- :LIVE side ground
- :ISOLATED(NEUTRAL) side ground
- :EARTH ground
- :DIGITAL ground

## 5. NOTE FOR REPAIRING SERVICE

This model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE (⊥) side GND and the ISOLATED(NEUTRAL) (≡) side GND. Therefore, care must be taken for the following points.

- (1) Do not touch the LIVE side GND or the LIVE side GND and the ISOLATED(NEUTRAL) side GND simultaneously. If the above caution is not respected, an electric shock may be caused. Therefore, make sure that the power cord is surely removed from the receptacle when, for example, the chassis is pulled out.
- (2) Do not short between the LIVE side GND and ISOLATED(NEUTRAL) side GND or never measure with a measuring apparatus ( oscilloscope, etc.) the LIVE side GND and ISOLATED(NEUTRAL) side GND at the same time. If the above precaution is not respected, a fuse or any parts will be broken.

◇ Since the circuit diagram is a standard one, the circuit and circuit constants may be subject to change for improvement without any notice.



# CONTENTS

**SEMICONDUCTOR SHAPES** ..... 2-2

**BLOCK DIAGRAM** ..... 2-3

**CIRCUIT DIAGRAMS**

**MAIN PWB CIRCUIT DIAGRAM** ..... 2-5

**POWER & DEF PWB CIRCUIT DIAGRAM** ..... 2-9

**100Hz PWB CIRCUIT DIAGRAM** ..... 2-11

**MICON PWB CIRCUIT DIAGRAM** ..... 2-13

**FRONT CONTROL & SIDE CONTROL PWB CIRCUIT DIAGRAM** ..... 2-15

**CRT SOCKET PWB CIRCUIT DIAGRAM** ..... 2-17

**AV SW PWB CIRCUIT DIAGRAM** ..... 2-19

## PATTERN DIAGRAMS

**MAIN PWB PATTERN** ..... 2-21

**POWER & DEF PWB PATTERN** ..... 2-23

**100Hz PWB PATTERN** ..... 2-25

**MICON PWB PATTERN** ..... 2-27

**FRONT CONTROL PWB PATTERN** ..... 2-29

**SIDE CONTROL PWB PATTERN** ..... 2-30

**CRT SOCKET PWB PATTERN** ..... 2-31

**AV SW PWB PATTERN** ..... 2-32

## SEMICONDUCTOR SHAPES

### TRANSISTOR

BOTTOM VIEW	FRONT VIEW				TOP VIEW
					CHIP TR 

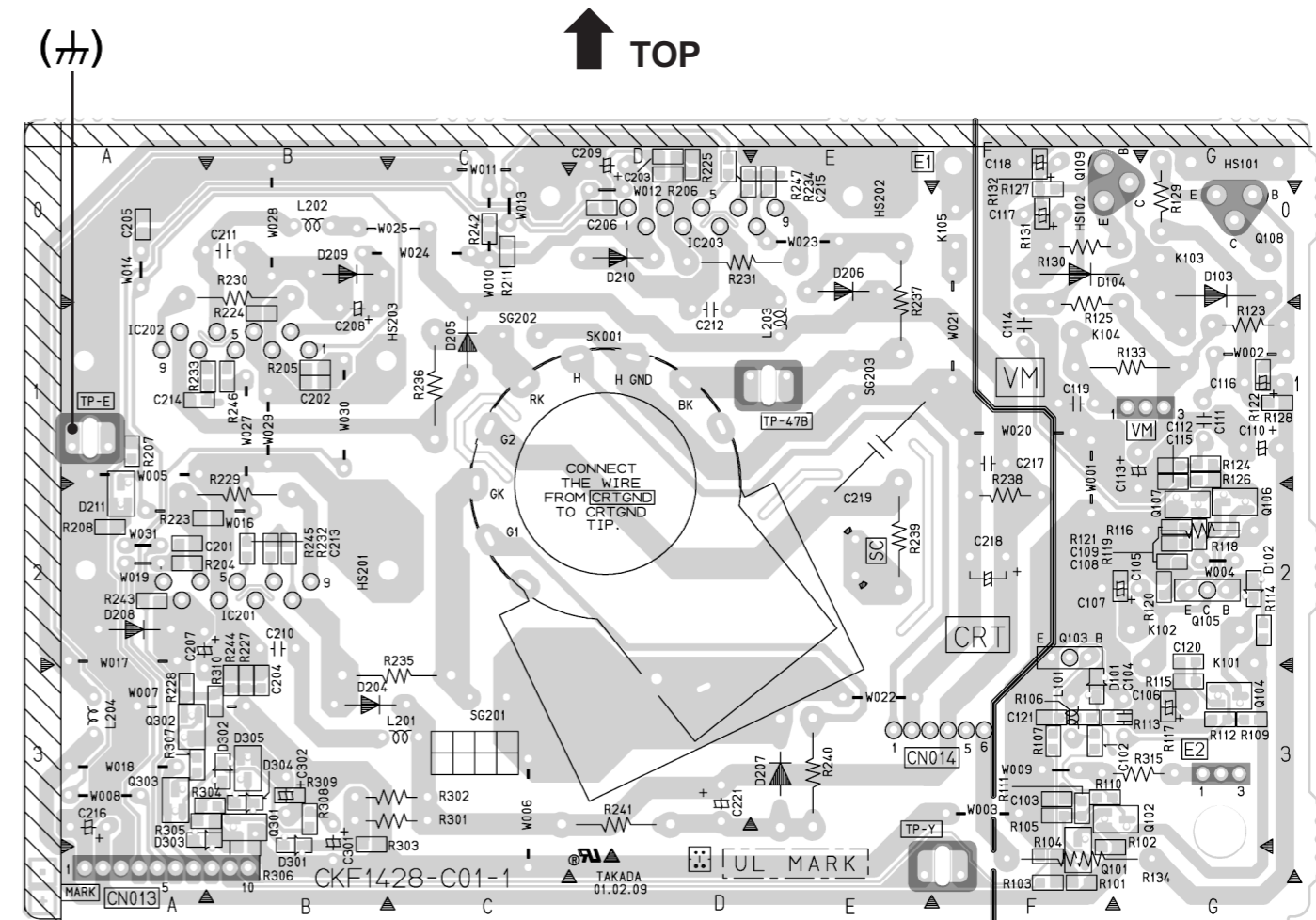
### IC

BOTTOM VIEW	FRONT VIEW		TOP VIEW

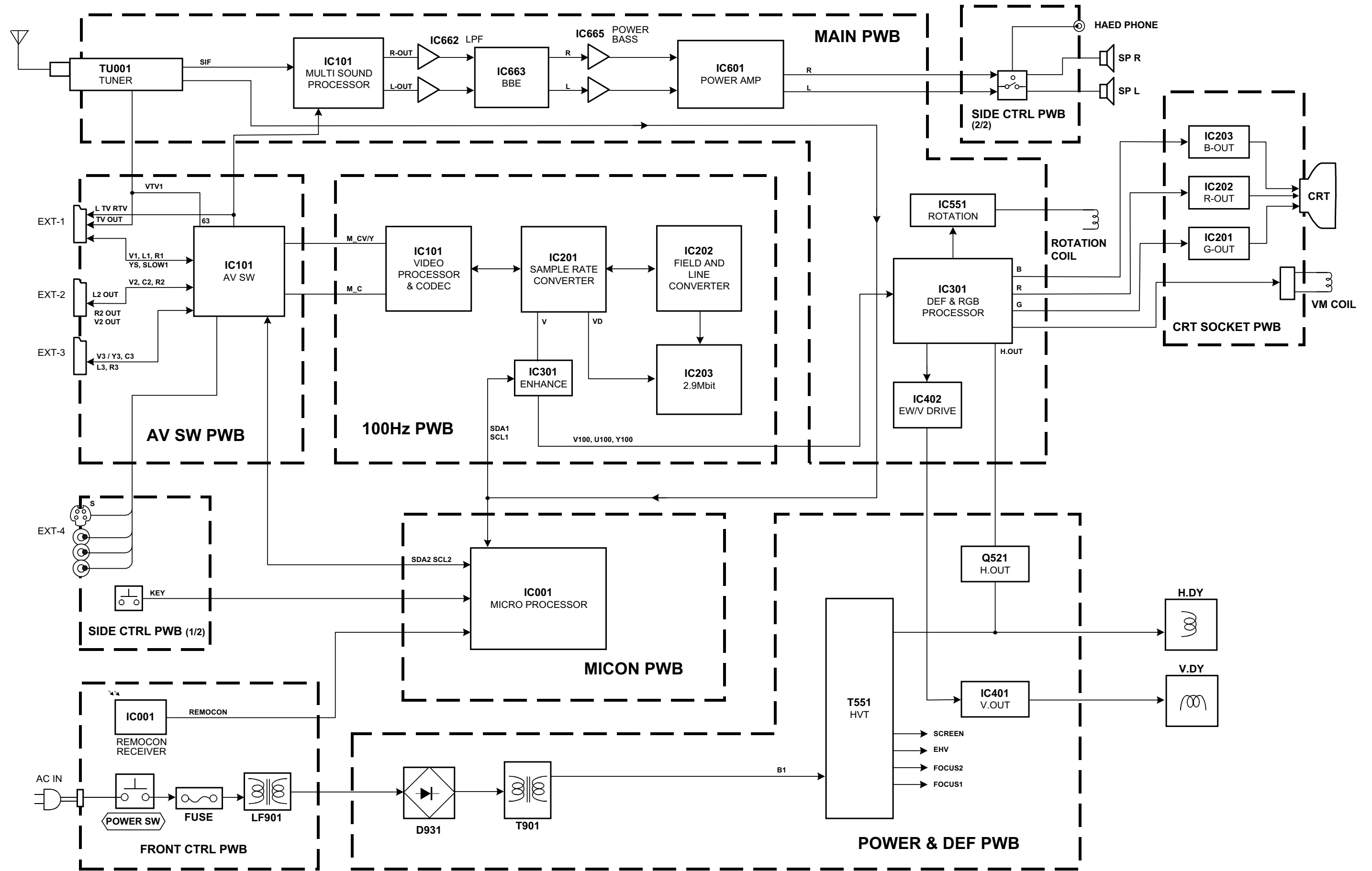
### CHIP IC

TOP VIEW	

## CRT SOCKET PWB PATTERN



# BLOCK DIAGRAM



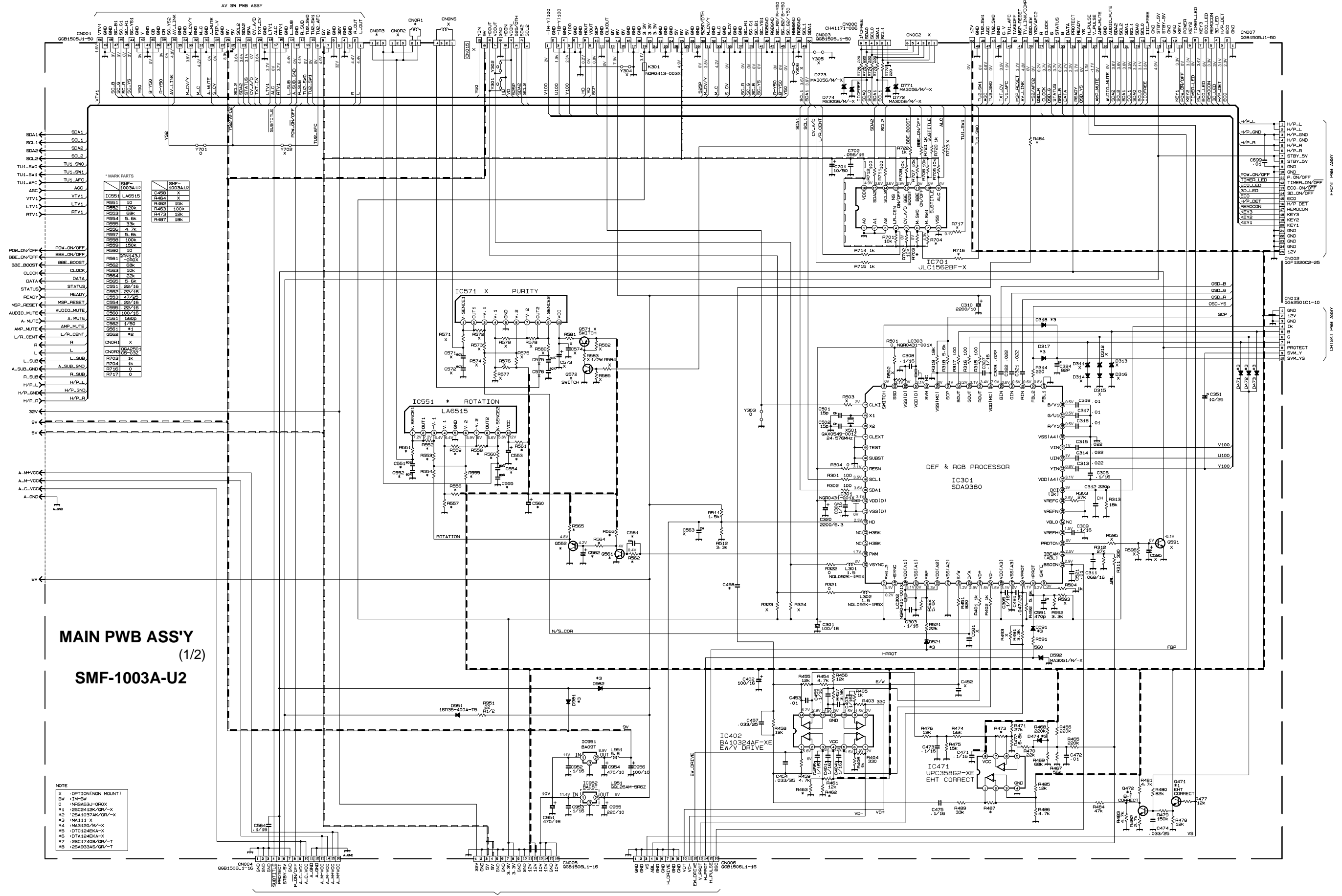
CIRCUIT DIAGRAMS MAIN PWB CIRCUIT DIAGRAM

AV28L2EUGR  
AV28L2EUBL  
AV28L2EUGY

AV28L2EUGR  
AV28L2EUBL  
AV28L2EUGY

100HZ PWB ASSY

MICON PWB ASSY



\* MARK PARTS

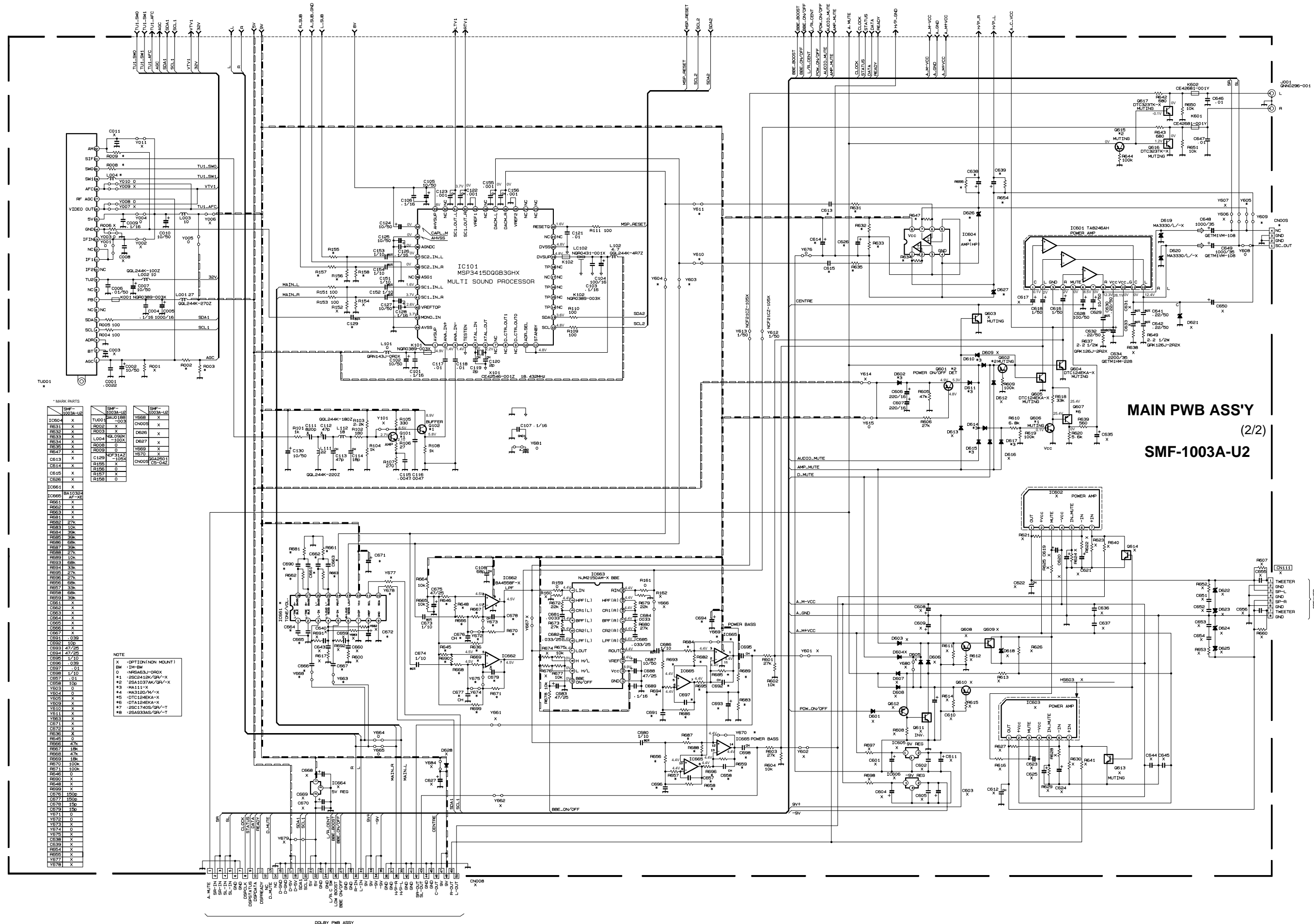
SMF-1003A/U2	SMF-1003A/U2
IC551	LA6515
R551	10
R552	100K
R553	5K
R554	5.6K
R555	2K
R556	4.7K
R557	5.6K
R558	100K
R559	100K
R560	10
R561	1K
R562	68K
R563	10K
R564	2K
R565	5.6K
R566	22/16
R567	22/16
R568	47/25
R569	22/16
R570	100/16
R571	500K
R572	1K
R573	1K
R574	1K
R575	0
R576	0
R577	0
R578	0
R579	0
R580	0
R581	0
R582	0
R583	0
R584	0
R585	0
R586	0
R587	0
R588	0
R589	0
R590	0
R591	0
R592	0
R593	0
R594	0
R595	0
R596	0
R597	0
R598	0
R599	0
R600	0
R601	0
R602	0
R603	0
R604	0
R605	0
R606	0
R607	0
R608	0
R609	0
R610	0
R611	0
R612	0
R613	0
R614	0
R615	0
R616	0
R617	0
R618	0
R619	0
R620	0
R621	0
R622	0
R623	0
R624	0
R625	0
R626	0
R627	0
R628	0
R629	0
R630	0
R631	0
R632	0
R633	0
R634	0
R635	0
R636	0
R637	0
R638	0
R639	0
R640	0
R641	0
R642	0
R643	0
R644	0
R645	0
R646	0
R647	0
R648	0
R649	0
R650	0
R651	0
R652	0
R653	0
R654	0
R655	0
R656	0
R657	0
R658	0
R659	0
R660	0
R661	0
R662	0
R663	0
R664	0
R665	0
R666	0
R667	0
R668	0
R669	0
R670	0
R671	0
R672	0
R673	0
R674	0
R675	0
R676	0
R677	0
R678	0
R679	0
R680	0
R681	0
R682	0
R683	0
R684	0
R685	0
R686	0
R687	0
R688	0
R689	0
R690	0
R691	0
R692	0
R693	0
R694	0
R695	0
R696	0
R697	0
R698	0
R699	0
R700	0
R701	0
R702	0
R703	0
R704	0
R705	0
R706	0
R707	0
R708	0
R709	0
R710	0
R711	0
R712	0
R713	0
R714	0
R715	0
R716	0
R717	0
R718	0
R719	0
R720	0
R721	0
R722	0
R723	0
R724	0
R725	0
R726	0
R727	0
R728	0
R729	0
R730	0
R731	0
R732	0
R733	0
R734	0
R735	0
R736	0
R737	0
R738	0
R739	0
R740	0
R741	0
R742	0
R743	0
R744	0
R745	0
R746	0
R747	0
R748	0
R749	0
R750	0
R751	0
R752	0
R753	0
R754	0
R755	0
R756	0
R757	0
R758	0
R759	0
R760	0
R761	0
R762	0
R763	0
R764	0
R765	0
R766	0
R767	0
R768	0
R769	0
R770	0
R771	0
R772	0
R773	0
R774	0
R775	0
R776	0
R777	0
R778	0
R779	0
R780	0
R781	0
R782	0
R783	0
R784	0
R785	0
R786	0
R787	0
R788	0
R789	0
R790	0
R791	0
R792	0
R793	0
R794	0
R795	0
R796	0
R797	0
R798	0
R799	0
R800	0

MAIN PWB ASS'Y  
(1/2)  
SMF-1003A-U2

NOTE  
X OPTION (NON MOUNT)  
BW IM-BW  
0 NFA523J-ORX  
#1 2SC2412K/GR/-X  
#2 2SA1037AK/GR/-X  
#3 MA111-X  
#4 MA3120/M/-X  
#5 DTC124EKA-X  
#6 DT124EKA-X  
#7 2SC1740S/GR/-T  
#8 2SA933AS/GR/-T

AV28L2EUGR  
AV28L2EUBL  
AV28L2EUGY

AV28L2EUGR  
AV28L2EUBL  
AV28L2EUGY



\* MARK PARTS

REF	QTY	REF	QTY	REF	QTY
IC604	X	IC601	X	IC602	X
IC605	X	IC603	X	IC604	X
IC606	X	IC604	X	IC605	X
IC607	X	IC605	X	IC606	X
IC608	X	IC606	X	IC607	X
IC609	X	IC607	X	IC608	X
IC610	X	IC608	X	IC609	X
IC611	X	IC609	X	IC610	X
IC612	X	IC610	X	IC611	X
IC613	X	IC611	X	IC612	X
IC614	X	IC612	X	IC613	X
IC615	X	IC613	X	IC614	X
IC616	X	IC614	X	IC615	X
IC617	X	IC615	X	IC616	X
IC618	X	IC616	X	IC617	X
IC619	X	IC617	X	IC618	X
IC620	X	IC618	X	IC619	X
IC621	X	IC619	X	IC620	X
IC622	X	IC620	X	IC621	X
IC623	X	IC621	X	IC622	X
IC624	X	IC622	X	IC623	X
IC625	X	IC623	X	IC624	X
IC626	X	IC624	X	IC625	X
IC627	X	IC625	X	IC626	X
IC628	X	IC626	X	IC627	X
IC629	X	IC627	X	IC628	X
IC630	X	IC628	X	IC629	X
IC631	X	IC629	X	IC630	X
IC632	X	IC630	X	IC631	X
IC633	X	IC631	X	IC632	X
IC634	X	IC632	X	IC633	X
IC635	X	IC633	X	IC634	X
IC636	X	IC634	X	IC635	X
IC637	X	IC635	X	IC636	X
IC638	X	IC636	X	IC637	X
IC639	X	IC637	X	IC638	X
IC640	X	IC638	X	IC639	X
IC641	X	IC639	X	IC640	X
IC642	X	IC640	X	IC641	X
IC643	X	IC641	X	IC642	X
IC644	X	IC642	X	IC643	X
IC645	X	IC643	X	IC644	X
IC646	X	IC644	X	IC645	X
IC647	X	IC645	X	IC646	X
IC648	X	IC646	X	IC647	X
IC649	X	IC647	X	IC648	X
IC650	X	IC648	X	IC649	X
IC651	X	IC649	X	IC650	X
IC652	X	IC650	X	IC651	X
IC653	X	IC651	X	IC652	X
IC654	X	IC652	X	IC653	X
IC655	X	IC653	X	IC654	X
IC656	X	IC654	X	IC655	X
IC657	X	IC655	X	IC656	X
IC658	X	IC656	X	IC657	X
IC659	X	IC657	X	IC658	X
IC660	X	IC658	X	IC659	X
IC661	X	IC659	X	IC660	X
IC662	X	IC660	X	IC661	X
IC663	X	IC661	X	IC662	X
IC664	X	IC662	X	IC663	X
IC665	X	IC663	X	IC664	X
IC666	X	IC664	X	IC665	X
IC667	X	IC665	X	IC666	X
IC668	X	IC666	X	IC667	X
IC669	X	IC667	X	IC668	X
IC670	X	IC668	X	IC669	X
IC671	X	IC669	X	IC670	X
IC672	X	IC670	X	IC671	X
IC673	X	IC671	X	IC672	X
IC674	X	IC672	X	IC673	X
IC675	X	IC673	X	IC674	X
IC676	X	IC674	X	IC675	X
IC677	X	IC675	X	IC676	X
IC678	X	IC676	X	IC677	X
IC679	X	IC677	X	IC678	X
IC680	X	IC678	X	IC679	X
IC681	X	IC679	X	IC680	X
IC682	X	IC680	X	IC681	X
IC683	X	IC681	X	IC682	X
IC684	X	IC682	X	IC683	X
IC685	X	IC683	X	IC684	X
IC686	X	IC684	X	IC685	X
IC687	X	IC685	X	IC686	X
IC688	X	IC686	X	IC687	X
IC689	X	IC687	X	IC688	X
IC690	X	IC688	X	IC689	X
IC691	X	IC689	X	IC690	X
IC692	X	IC690	X	IC691	X
IC693	X	IC691	X	IC692	X
IC694	X	IC692	X	IC693	X
IC695	X	IC693	X	IC694	X
IC696	X	IC694	X	IC695	X
IC697	X	IC695	X	IC696	X
IC698	X	IC696	X	IC697	X
IC699	X	IC697	X	IC698	X
IC700	X	IC698	X	IC699	X

NOTE

- X : OPTION (NON MOUNT)
- SW : 1M-SW
- D : NRG63J-GRX
- #1 : SBC2418K/GRV-X
- #2 : SCA1037AK/GRV-X
- #3 : MA111-X
- #4 : HA3120V/M-X
- #5 : DTA124EKA-X
- #6 : SBC1740S/GRV-T
- #8 : SBA933AS/GRV-T

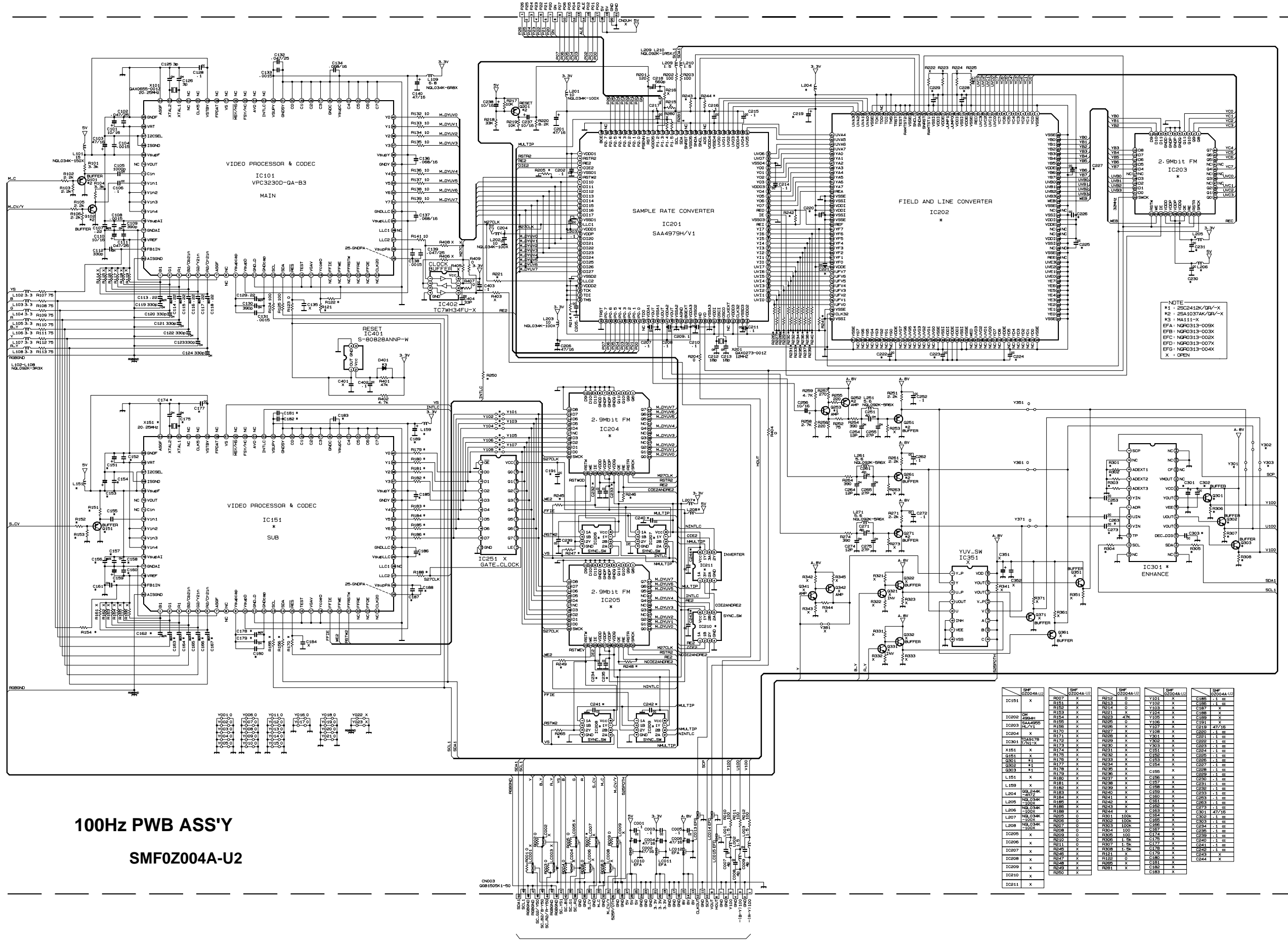
MAIN PWB ASS'Y  
(2/2)  
SMF-1003A-U2



100Hz PWB CIRCUIT DIAGRAM

AV28L2EUGR  
AV28L2EUBL  
AV28L2EUGY

AV28L2EUGR  
AV28L2EUBL  
AV28L2EUGY



100Hz PWB ASS'Y  
SMF0Z004A-U2

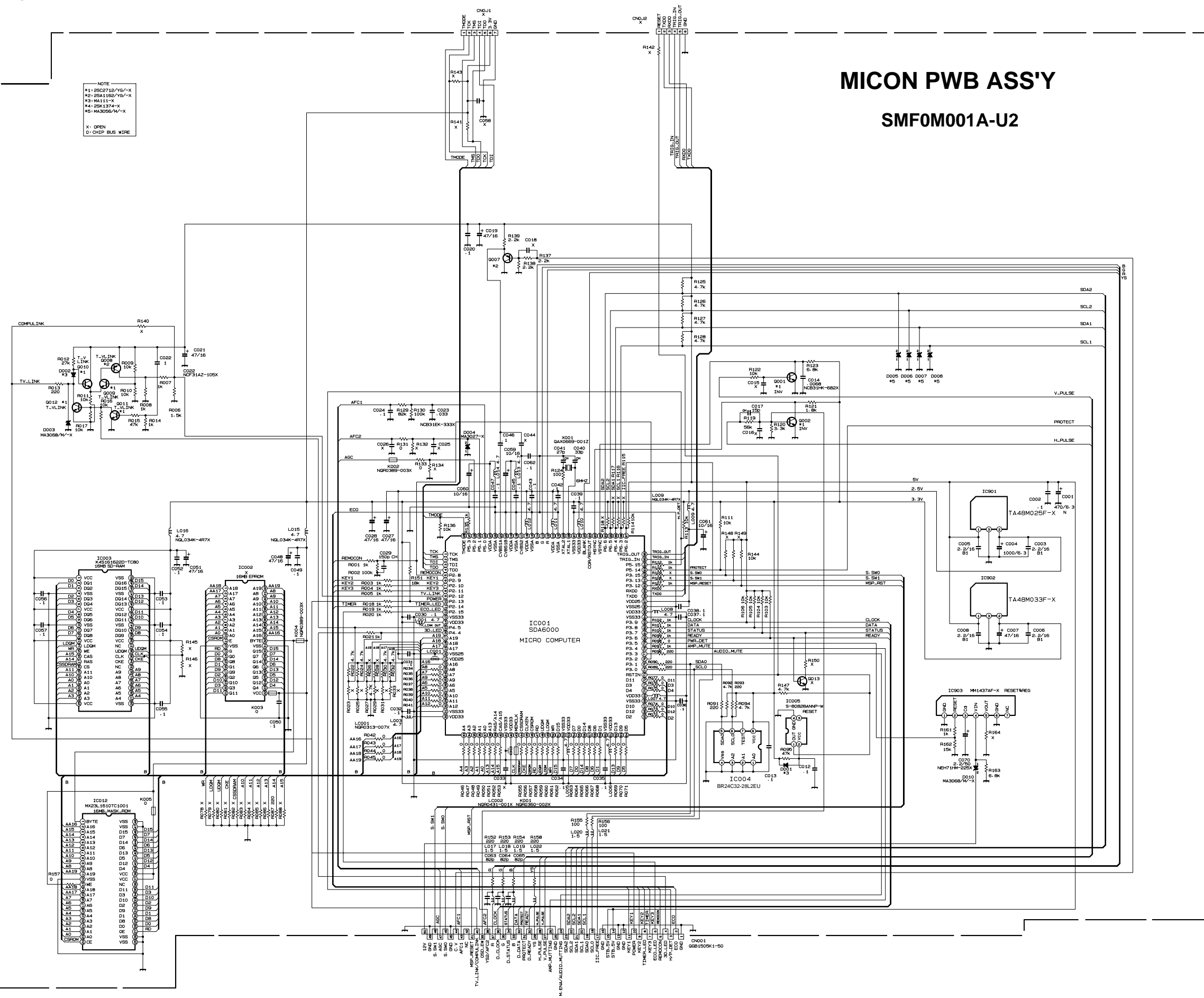
REF	QTY	DESCRIPTION	REF	QTY	DESCRIPTION	REF	QTY	DESCRIPTION	REF	QTY	DESCRIPTION	REF	QTY	DESCRIPTION
IC151	X	VIDEO PROCESSOR & CODEC SUB	R107	X	RES	Y101	X	VIDEO PROCESSOR & CODEC MAIN	IC203	X	2.9Mb1t FM	IC205	X	2.9Mb1t FM
IC208	OH	IC	R108	X	RES	Y102	X	VIDEO PROCESSOR & CODEC MAIN	IC204	X	2.9Mb1t FM	IC301	X	ENHANCE
IC209	OH	IC	R109	X	RES	Y103	X	VIDEO PROCESSOR & CODEC MAIN	IC202	X	FIELD AND LINE CONVERTER	IC251	X	GATE_CLOCK
IC204	X	2.9Mb1t FM	R110	X	RES	Y104	X	VIDEO PROCESSOR & CODEC MAIN	IC201	X	SAMPLE RATE CONVERTER	IC203	X	2.9Mb1t FM
IC205	X	2.9Mb1t FM	R111	X	RES	Y105	X	VIDEO PROCESSOR & CODEC MAIN	IC202	X	FIELD AND LINE CONVERTER	IC204	X	2.9Mb1t FM
IC203	X	2.9Mb1t FM	R112	X	RES	Y106	X	VIDEO PROCESSOR & CODEC MAIN	IC201	X	SAMPLE RATE CONVERTER	IC205	X	2.9Mb1t FM
IC202	X	FIELD AND LINE CONVERTER	R113	X	RES	Y107	X	VIDEO PROCESSOR & CODEC MAIN	IC202	X	FIELD AND LINE CONVERTER	IC201	X	SAMPLE RATE CONVERTER
IC251	X	GATE_CLOCK	R114	X	RES	Y108	X	VIDEO PROCESSOR & CODEC MAIN	IC201	X	SAMPLE RATE CONVERTER	IC202	X	FIELD AND LINE CONVERTER
IC301	X	ENHANCE	R115	X	RES	Y109	X	VIDEO PROCESSOR & CODEC MAIN	IC202	X	FIELD AND LINE CONVERTER	IC201	X	SAMPLE RATE CONVERTER
G181	X	IC	R116	X	RES	Y110	X	VIDEO PROCESSOR & CODEC MAIN	IC201	X	SAMPLE RATE CONVERTER	IC202	X	FIELD AND LINE CONVERTER
G301	X1	IC	R117	X	RES	Y111	X	VIDEO PROCESSOR & CODEC MAIN	IC202	X	FIELD AND LINE CONVERTER	IC201	X	SAMPLE RATE CONVERTER
G302	X1	IC	R118	X	RES	Y112	X	VIDEO PROCESSOR & CODEC MAIN	IC201	X	SAMPLE RATE CONVERTER	IC202	X	FIELD AND LINE CONVERTER
G303	X1	IC	R119	X	RES	Y113	X	VIDEO PROCESSOR & CODEC MAIN	IC202	X	FIELD AND LINE CONVERTER	IC201	X	SAMPLE RATE CONVERTER
L181	X	IND	R120	X	RES	Y114	X	VIDEO PROCESSOR & CODEC MAIN	IC201	X	SAMPLE RATE CONVERTER	IC202	X	FIELD AND LINE CONVERTER
L189	X	IND	R121	X	RES	Y115	X	VIDEO PROCESSOR & CODEC MAIN	IC202	X	FIELD AND LINE CONVERTER	IC201	X	SAMPLE RATE CONVERTER
L204	OH	IND	R122	X	RES	Y116	X	VIDEO PROCESSOR & CODEC MAIN	IC201	X	SAMPLE RATE CONVERTER	IC202	X	FIELD AND LINE CONVERTER
L205	OH	IND	R123	X	RES	Y117	X	VIDEO PROCESSOR & CODEC MAIN	IC202	X	FIELD AND LINE CONVERTER	IC201	X	SAMPLE RATE CONVERTER
L206	OH	IND	R124	X	RES	Y118	X	VIDEO PROCESSOR & CODEC MAIN	IC201	X	SAMPLE RATE CONVERTER	IC202	X	FIELD AND LINE CONVERTER
L207	OH	IND	R125	X	RES	Y119	X	VIDEO PROCESSOR & CODEC MAIN	IC202	X	FIELD AND LINE CONVERTER	IC201	X	SAMPLE RATE CONVERTER
L208	OH	IND	R126	X	RES	Y120	X	VIDEO PROCESSOR & CODEC MAIN	IC201	X	SAMPLE RATE CONVERTER	IC202	X	FIELD AND LINE CONVERTER
IC209	X	IC	R127	X	RES	Y121	X	VIDEO PROCESSOR & CODEC MAIN	IC202	X	FIELD AND LINE CONVERTER	IC201	X	SAMPLE RATE CONVERTER
IC207	X	IC	R128	X	RES	Y122	X	VIDEO PROCESSOR & CODEC MAIN	IC201	X	SAMPLE RATE CONVERTER	IC202	X	FIELD AND LINE CONVERTER
IC208	X	IC	R129	X	RES	Y123	X	VIDEO PROCESSOR & CODEC MAIN	IC202	X	FIELD AND LINE CONVERTER	IC201	X	SAMPLE RATE CONVERTER
IC209	X	IC	R130	X	RES	Y124	X	VIDEO PROCESSOR & CODEC MAIN	IC201	X	SAMPLE RATE CONVERTER	IC202	X	FIELD AND LINE CONVERTER
IC210	X	IC	R131	X	RES	Y125	X	VIDEO PROCESSOR & CODEC MAIN	IC202	X	FIELD AND LINE CONVERTER	IC201	X	SAMPLE RATE CONVERTER
IC211	X	IC	R132	X	RES	Y126	X	VIDEO PROCESSOR & CODEC MAIN	IC201	X	SAMPLE RATE CONVERTER	IC202	X	FIELD AND LINE CONVERTER



# MICON PWB ASS'Y

## SMF0M001A-U2

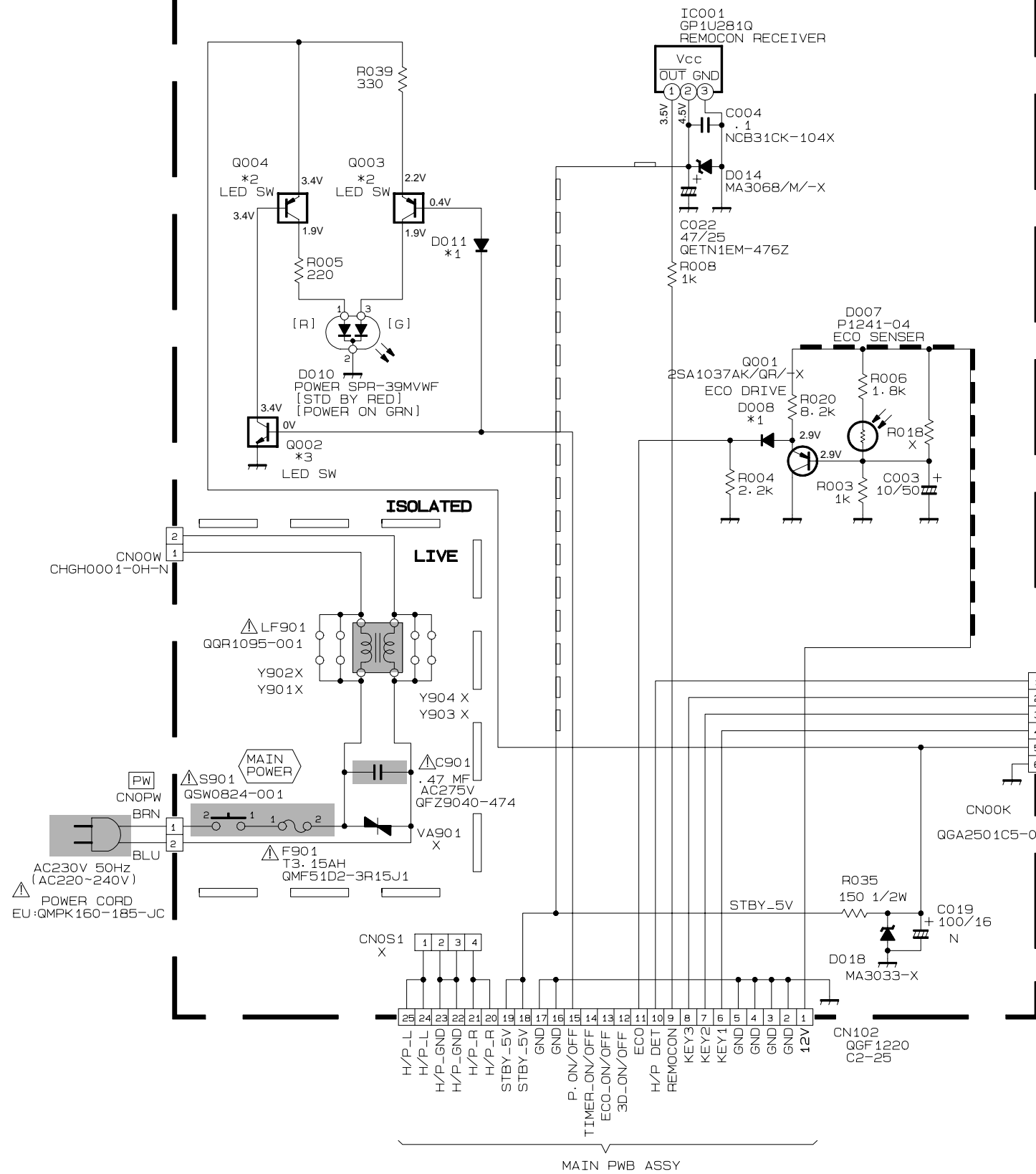
NOTE  
#1: 25C2712/V6~X  
#2: 25A1182/V6~X  
#3: MA111~X  
#4: 25K1374~X  
#5: MA3056/M~X  
X: OPEN  
O: CHIP BUS WIRE



FRONT CONTROL & SIDE CONTROL PWB CIRCUIT DIAGRAM

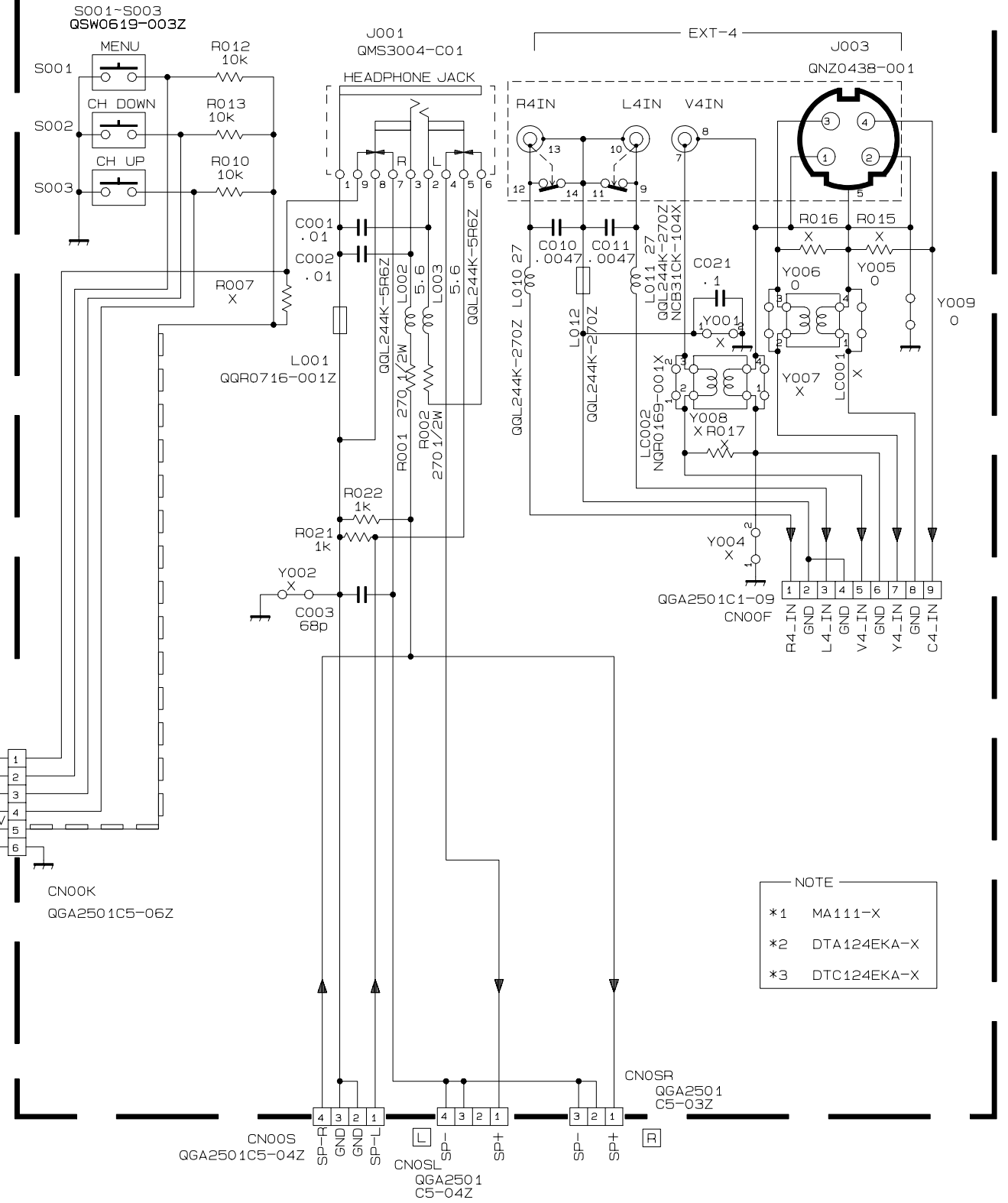
FRONT CONTROL PWB ASS'Y

SMF-8002A-U2



SIDE CONTROL PWB ASS'Y

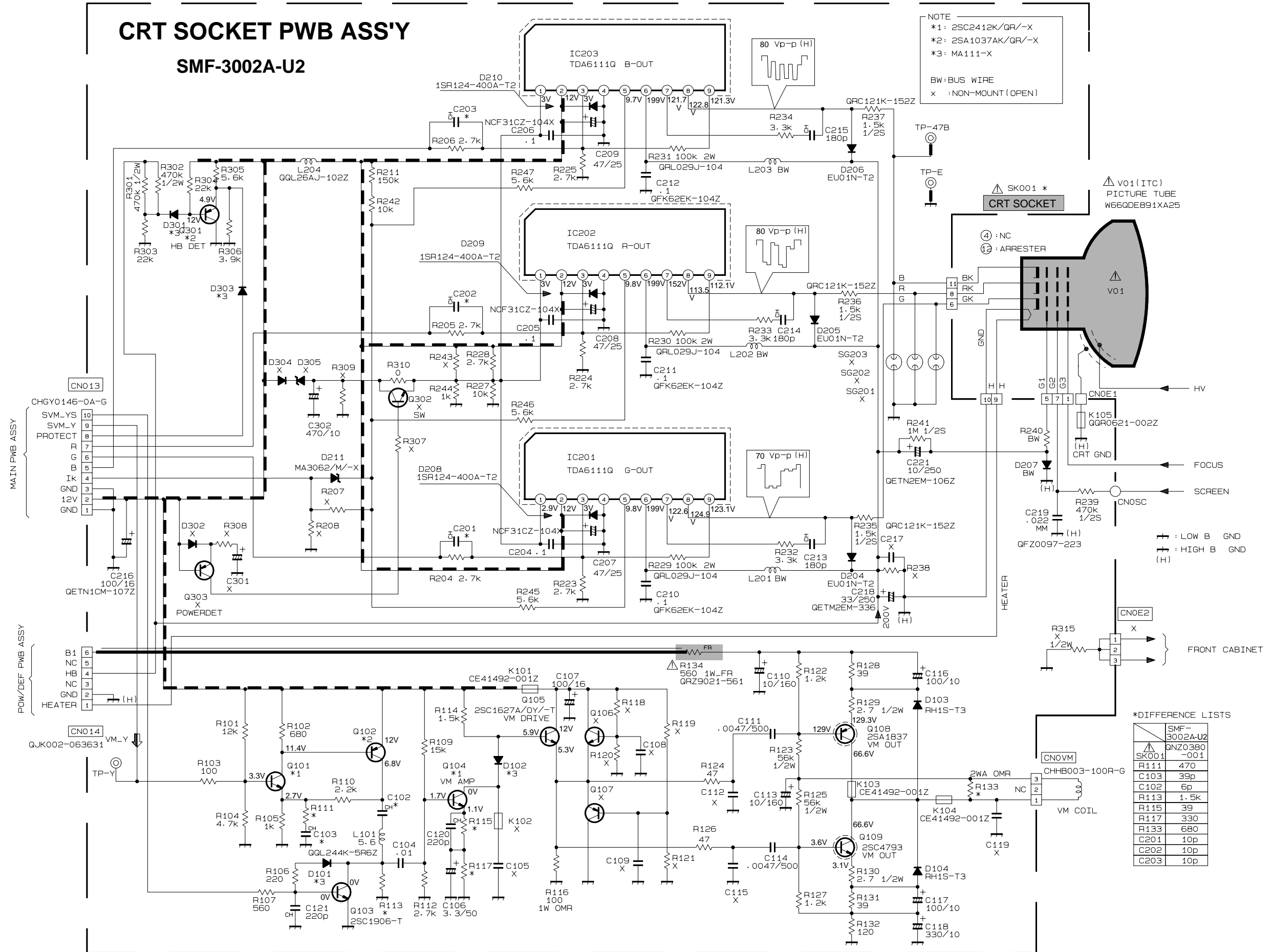
SMF-8102A-U2



# CRT SOCKET PWB ASS'Y

## SMF-3002A-U2

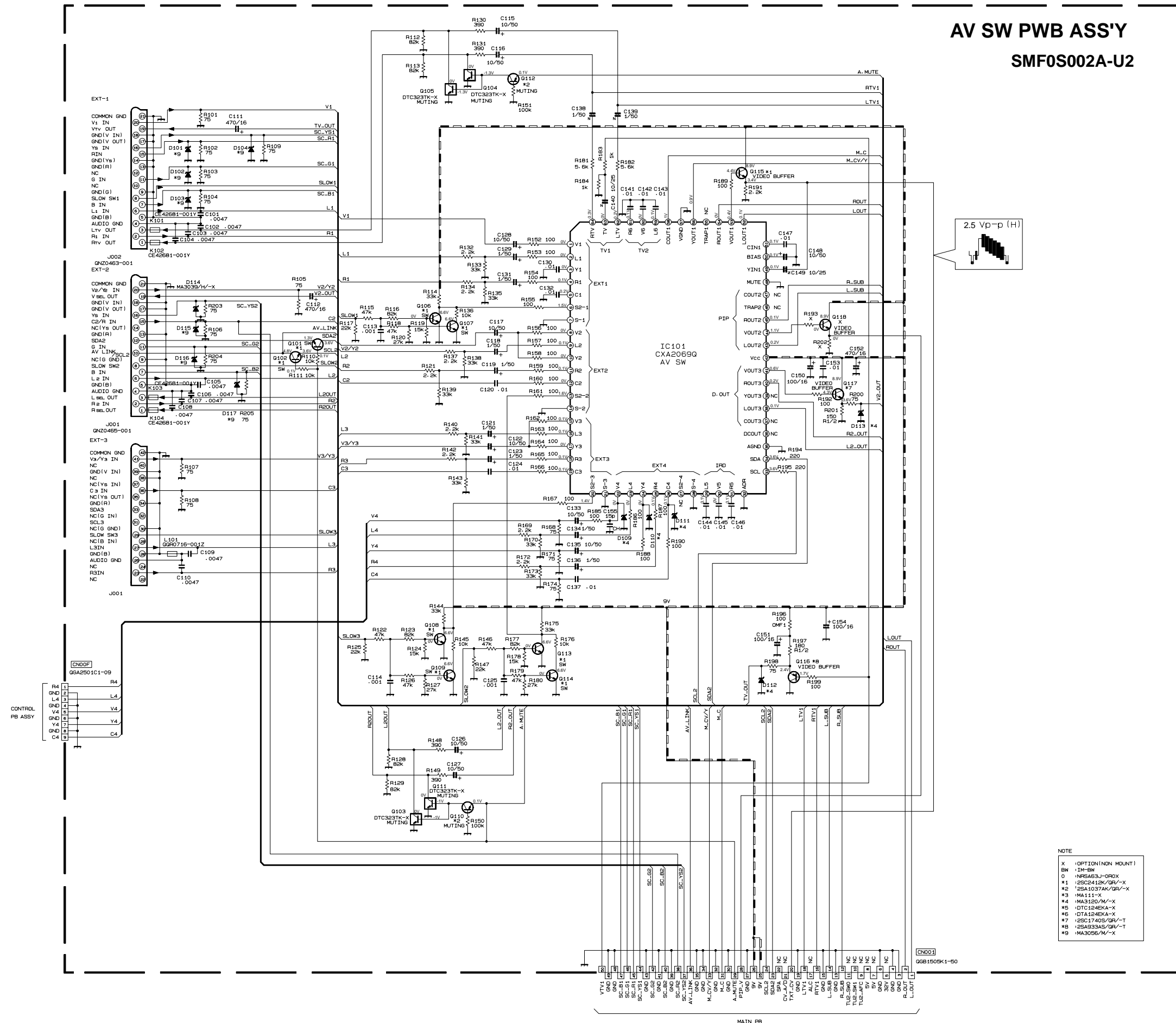
NOTE  
\*1: 2SC2412K/QR/-X  
\*2: 2SA1037AK/QR/-X  
\*3: MA111-X  
BW: BUS WIRE  
X: NON-MOUNT (OPEN)



\*DIFFERENCE LISTS

Part No.	SMF-3002A-U2	QNZ0380-001
SK001	X	
R111	470	
C103	39p	
C102	6p	
R113	1.5k	
R115	39	
R117	330	
R133	680	
C201	10p	
C202	10p	
C203	10p	

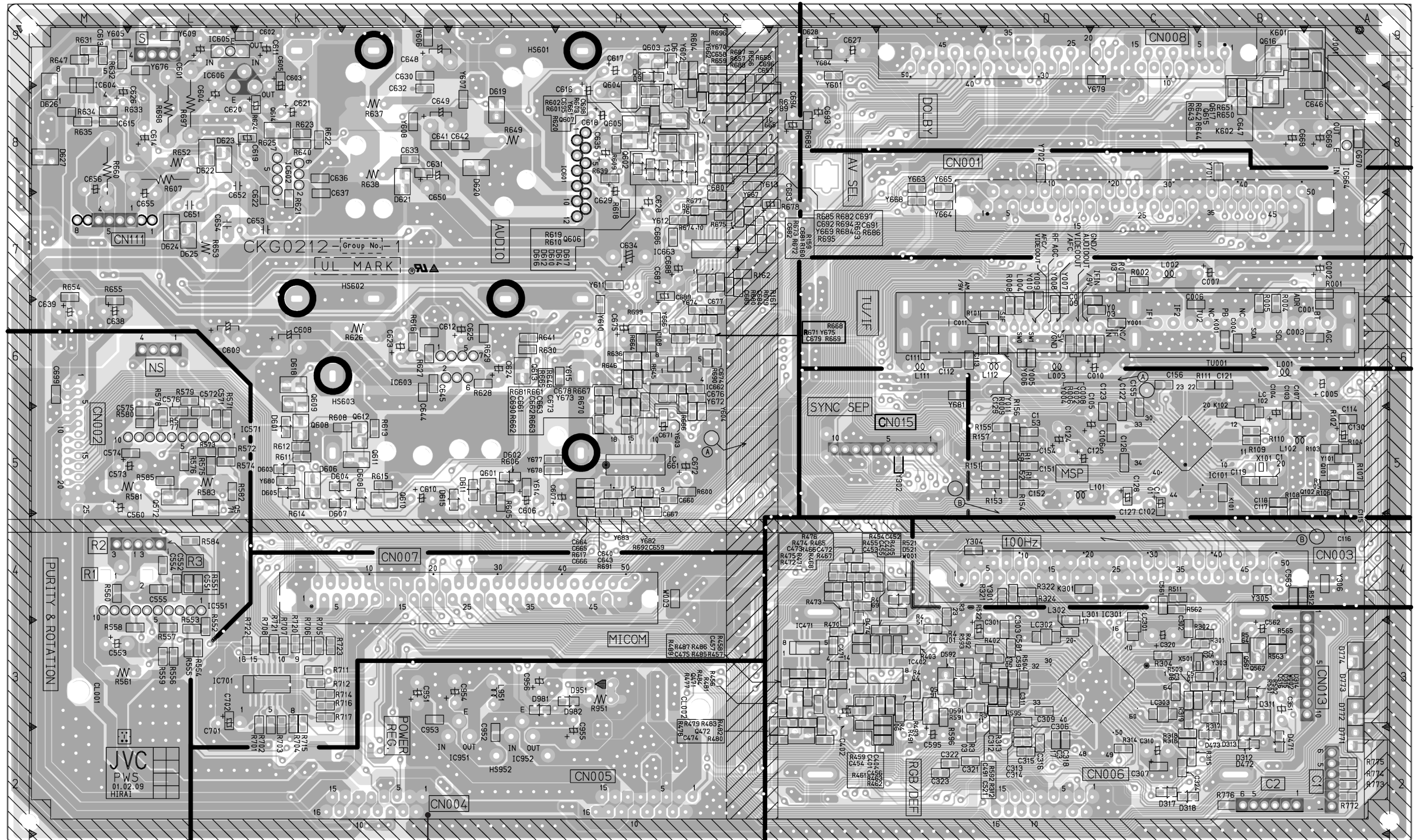
AV SW PWB ASS'Y  
SMF0S002A-U2



PATTERN DIAGRAMS MAIN PWB PATTERN

AV28L2EUGR  
AV28L2EUBL  
AV28L2EUGY

AV28L2EUGR  
AV28L2EUBL  
AV28L2EUGY



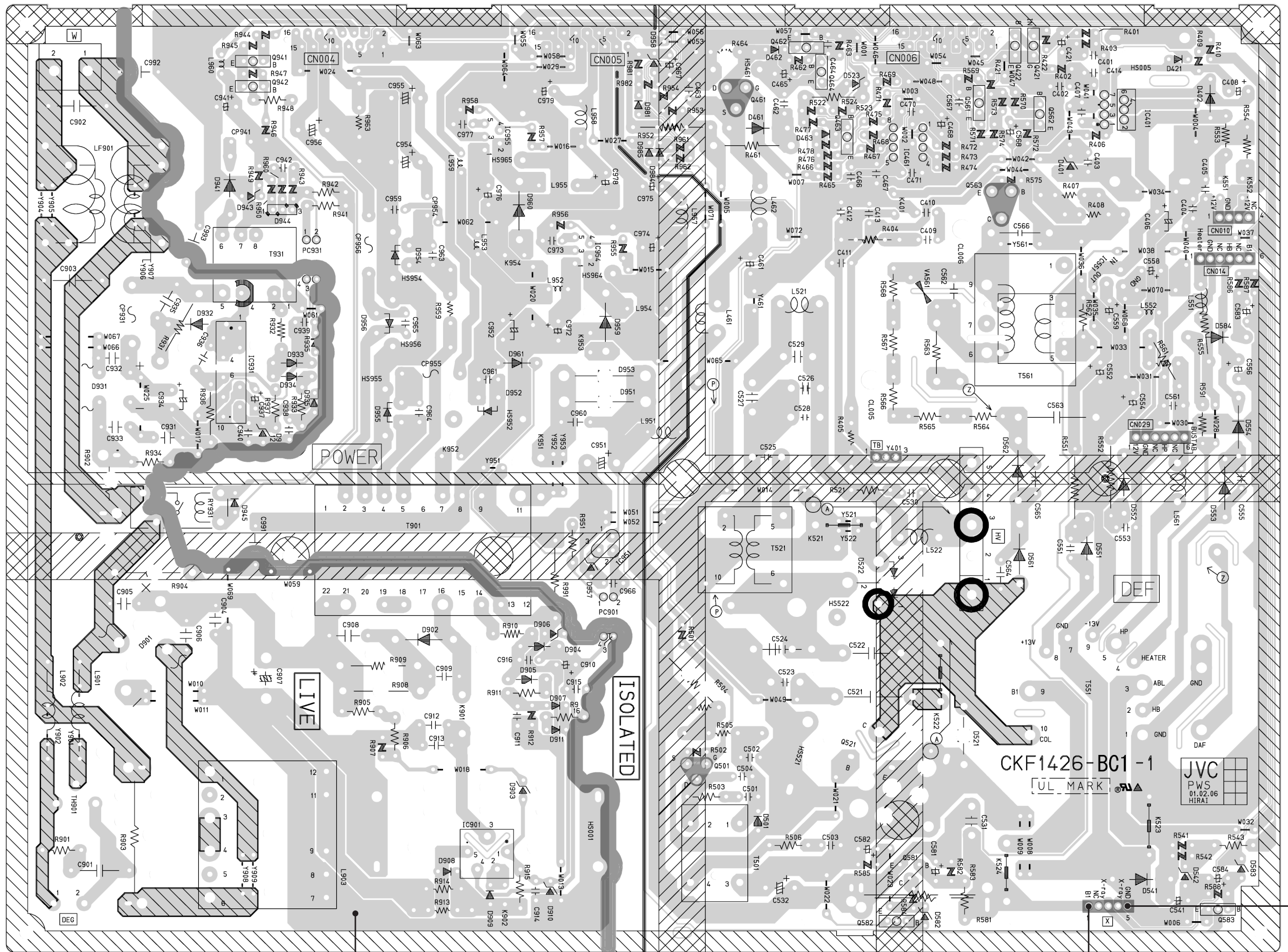
(77)

AV28L2EUGR  
AV28L2EUBL  
AV28L2EUGY

AV28L2EUGR  
AV28L2EUBL  
AV28L2EUGY

POWER & DEF PWB PATTERN

FRONT



No.51778

(T)

2-23

2-24

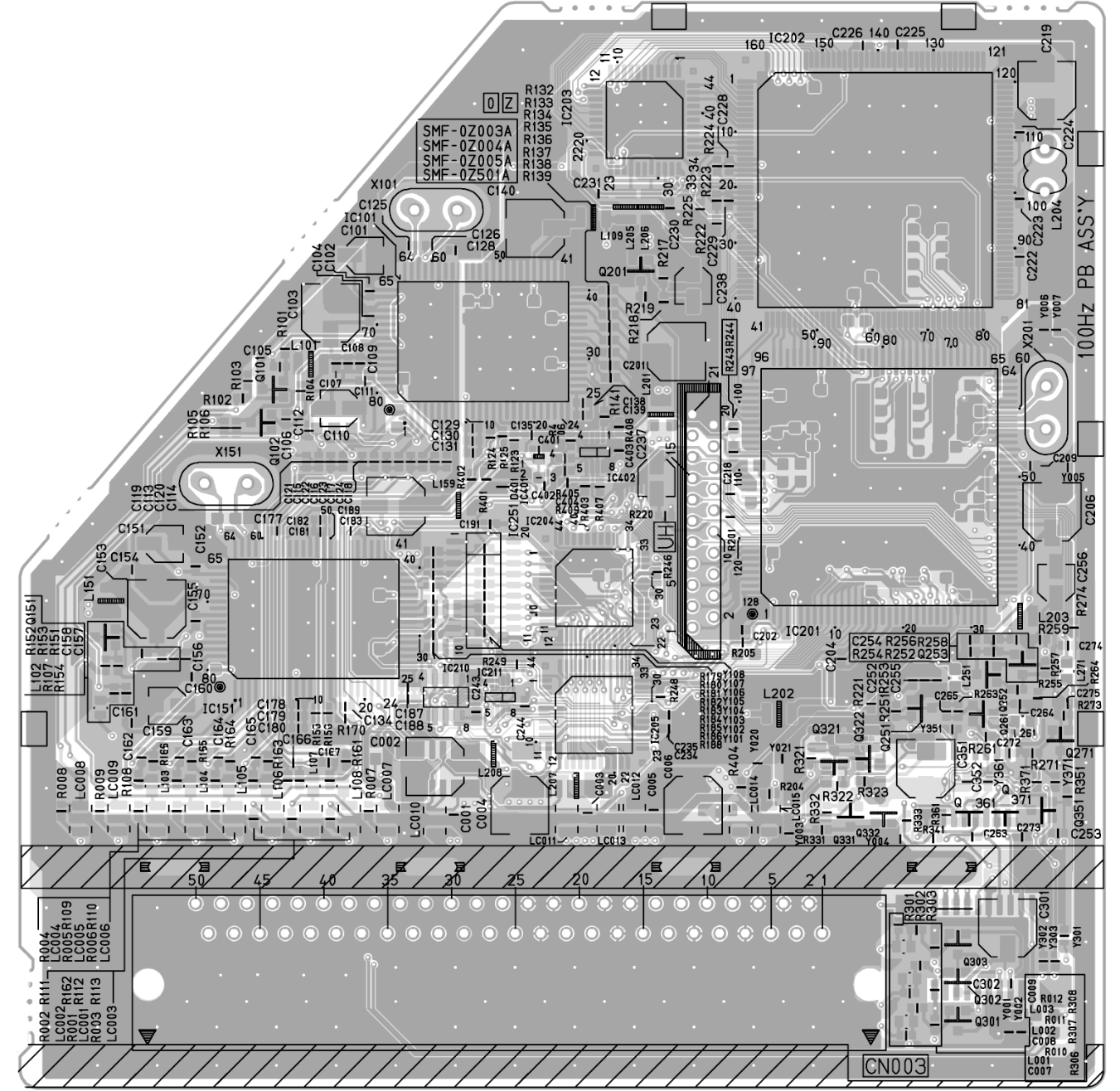
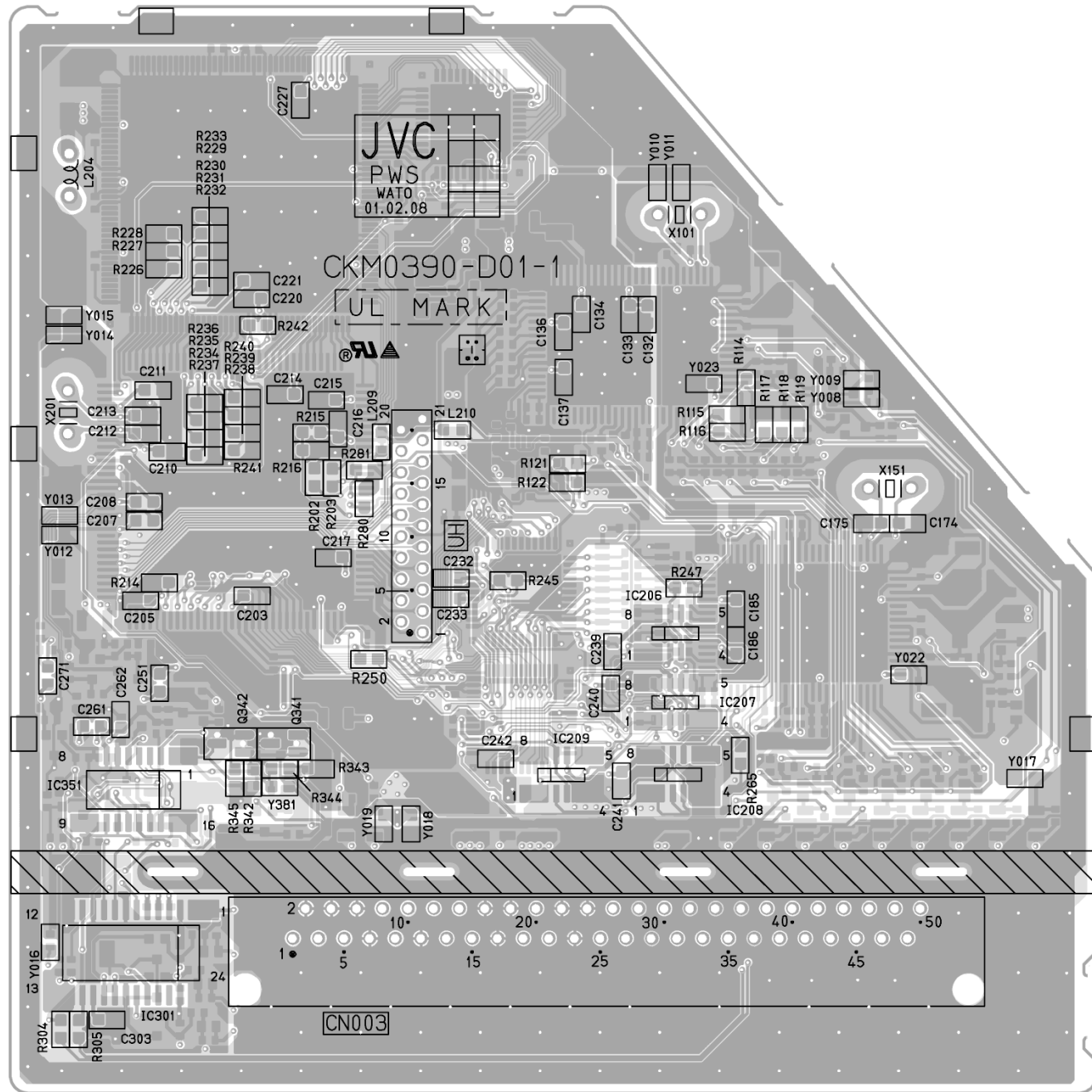
No.51778

TP-91(B1)

TP-E  
(T)

CKF1426-BC1-1  
UL MARK

JVC  
PWS  
01.02.06  
HIRA1

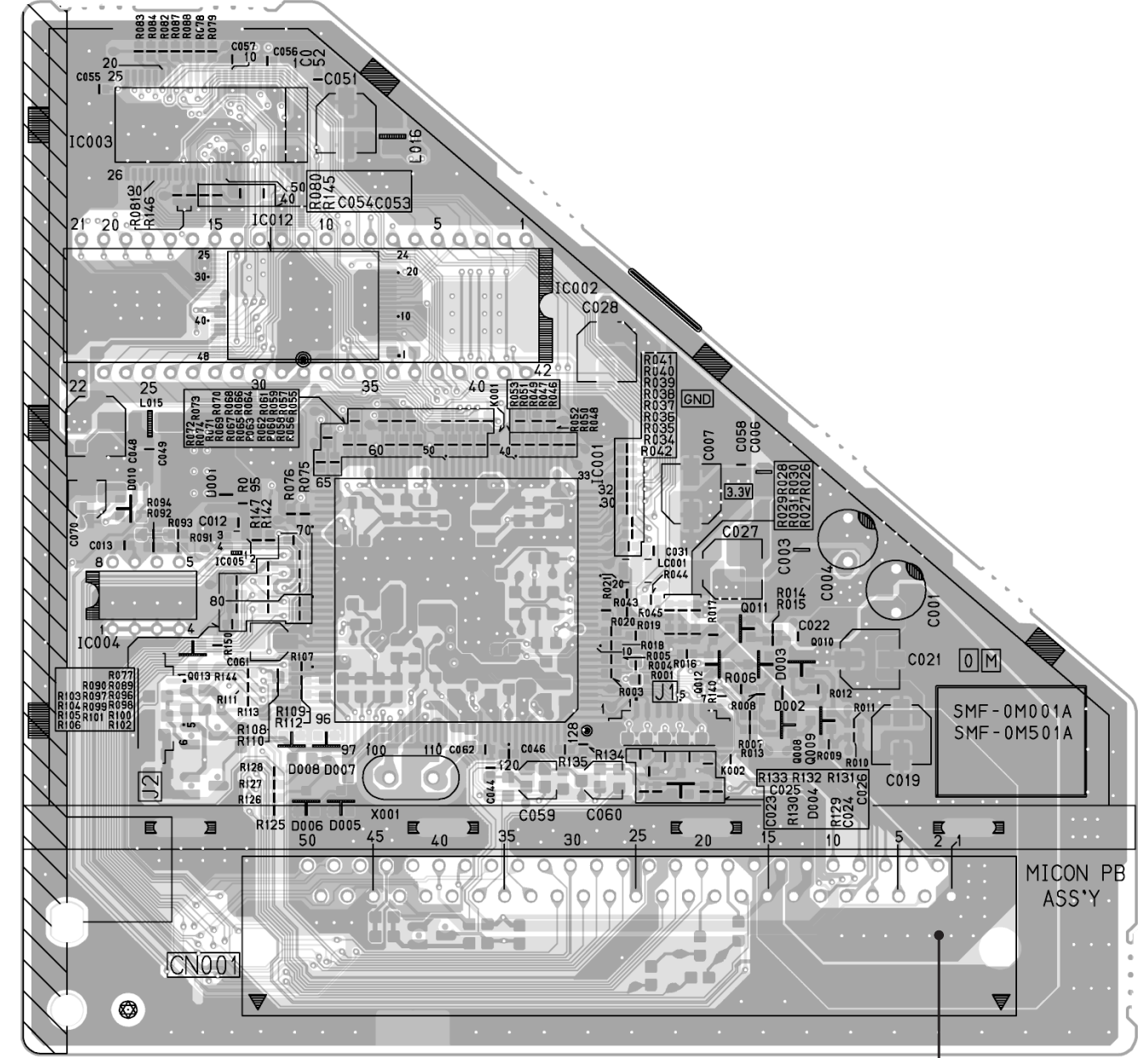
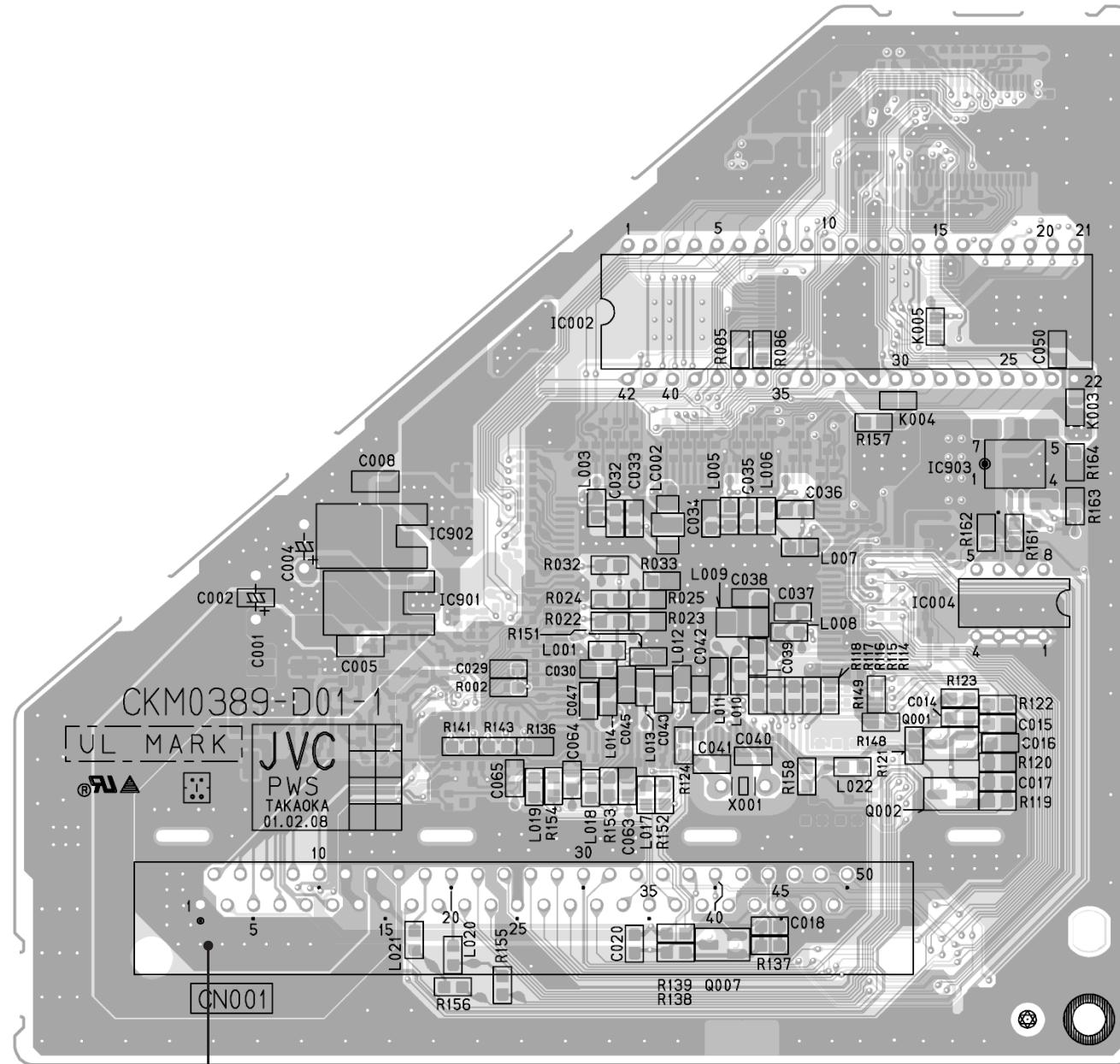


MICON PWB PATTERN (SOLDER SIDE)

AV28L2EUGR  
AV28L2EUBL  
AV28L2EUGY

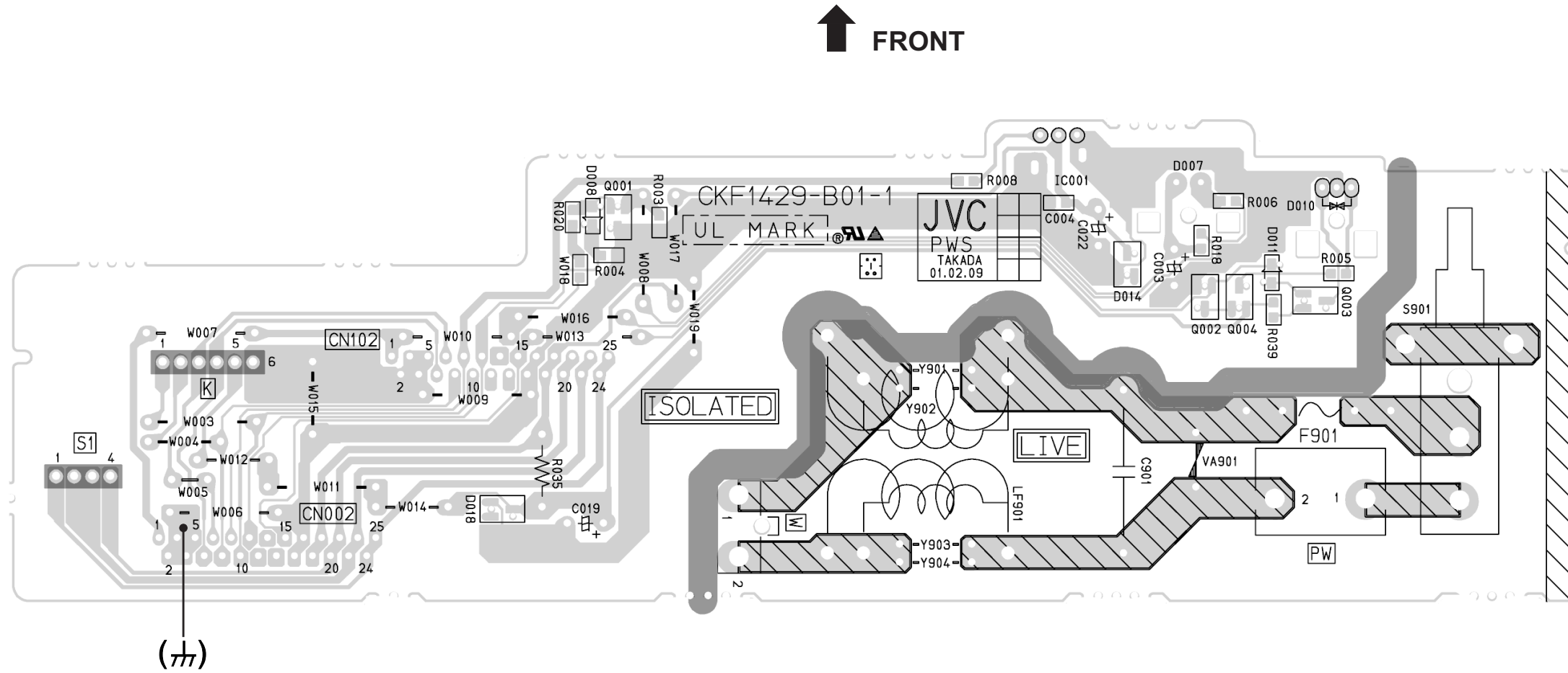
AV28L2EUGR  
AV28L2EUBL  
AV28L2EUGY

MICON PWB PATTERN (PARTS SIDE)

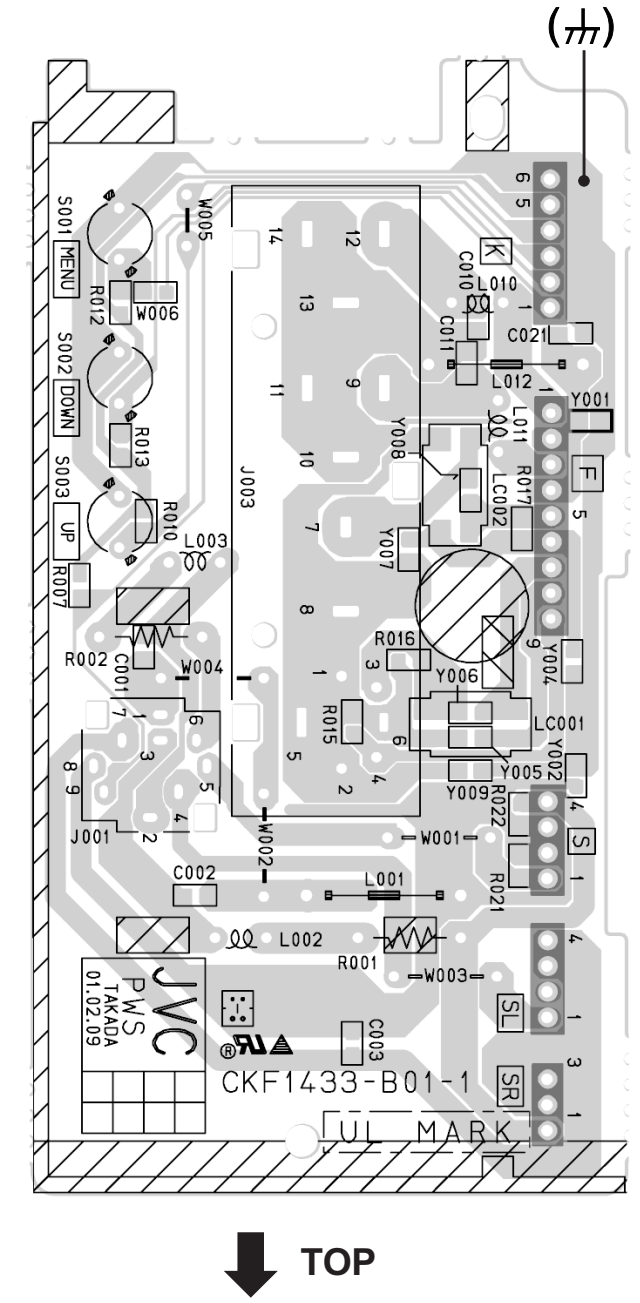




FRONT CONTROL PWB PATTERN



SIDE CONTROL PWB PATTERN



**JVC**

**VICTOR COMPANY OF JAPAN, LIMITED**

HOME AV NETWORK BUSINESS UNIT 12, 3-chome, Moriya-cho, Knagawa-ku, Yokohama, Kanagawa-prefecture, 221-8528, Japan

AV28L2EUGR-U #4  
AV28L2EUGR-U #3  
AV28L2EUGY-U #999



Printed in Japan  
VP 0104  
DP6051