

# 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



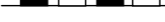
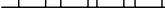
47/50[Example]:Capacitance value [ $\mu$ F]/withstand voltage[V]

- 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



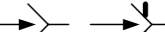
-  :B1
-  :B2
-  :9V
-  :5V

\*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

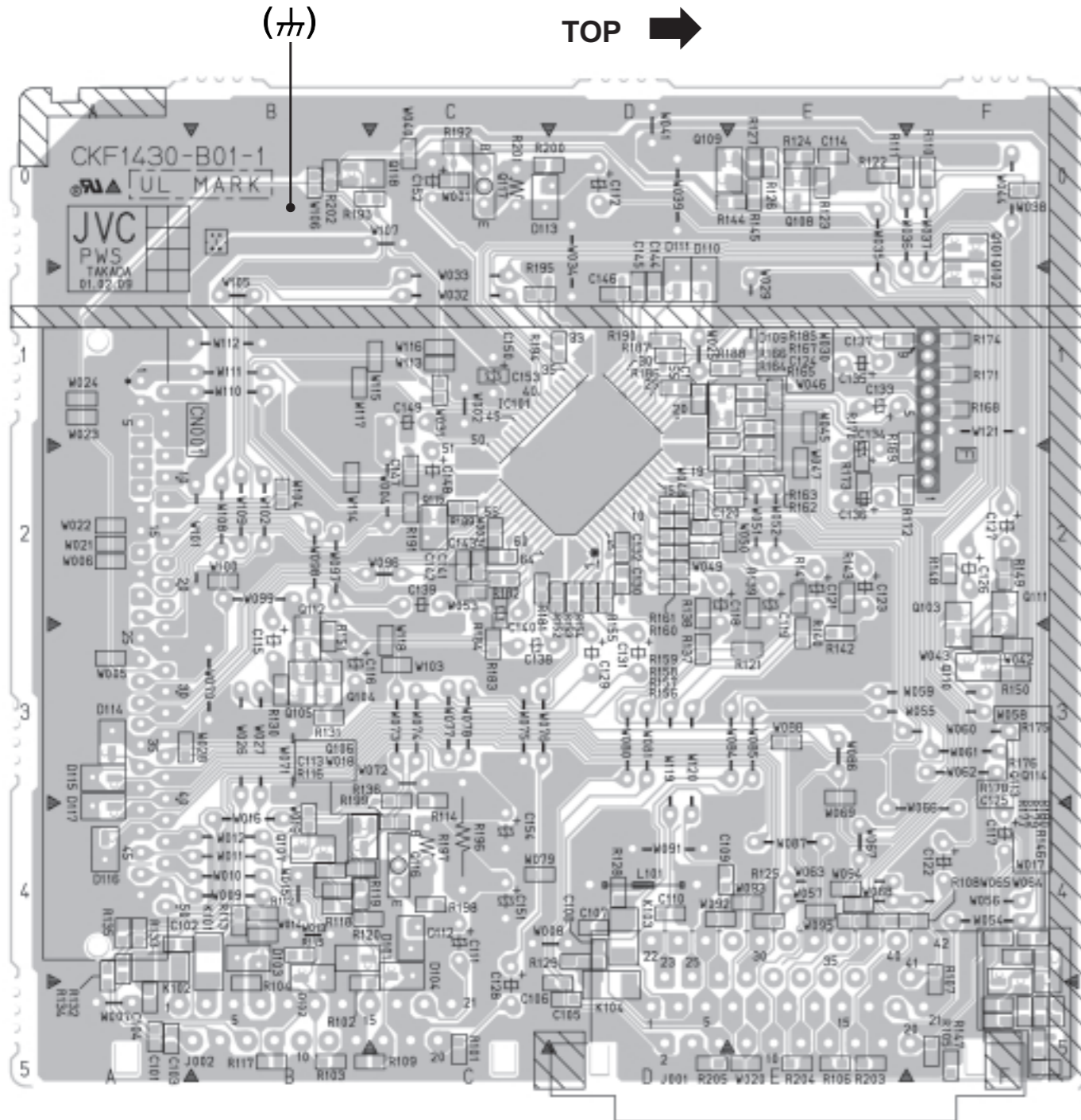
-  :LIVE side ground
-  :ISOLATED(NEUTRAL) side ground
-  :EARTH ground
-  :DIGITAL ground

## 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 ( $\downarrow$ ) side GND and the ISOLATED(NEUTRAL) ( $\rightarrow$ ) 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.



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## SEMICONDUCTOR SHAPES

### TRANSISTOR

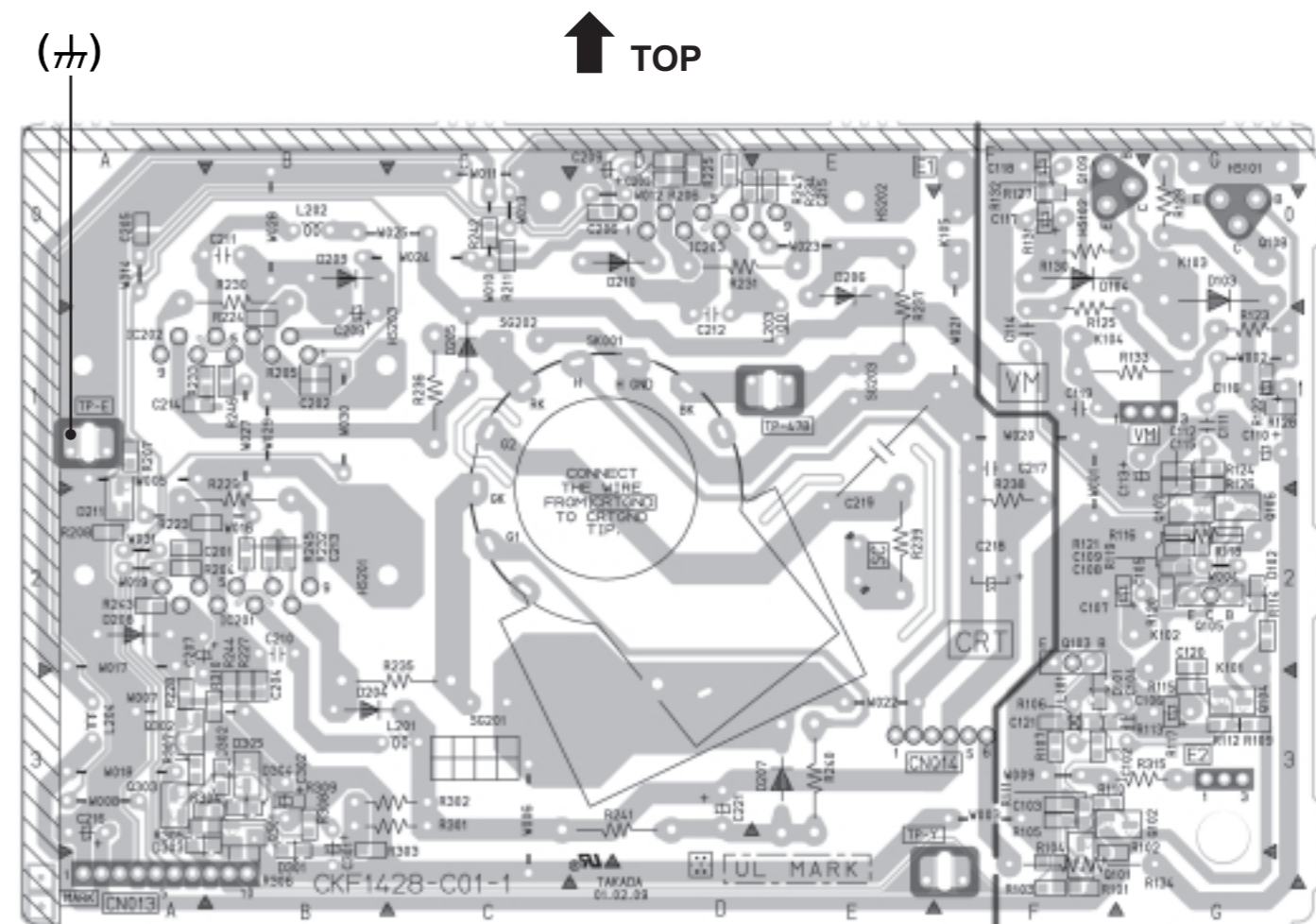
BOTTOM VIEW	FRONT VIEW				TOP VIEW
					CHIP TR 

### IC

BOTTOM VIEW	FRONT VIEW			TOP VIEW

### CHIP IC

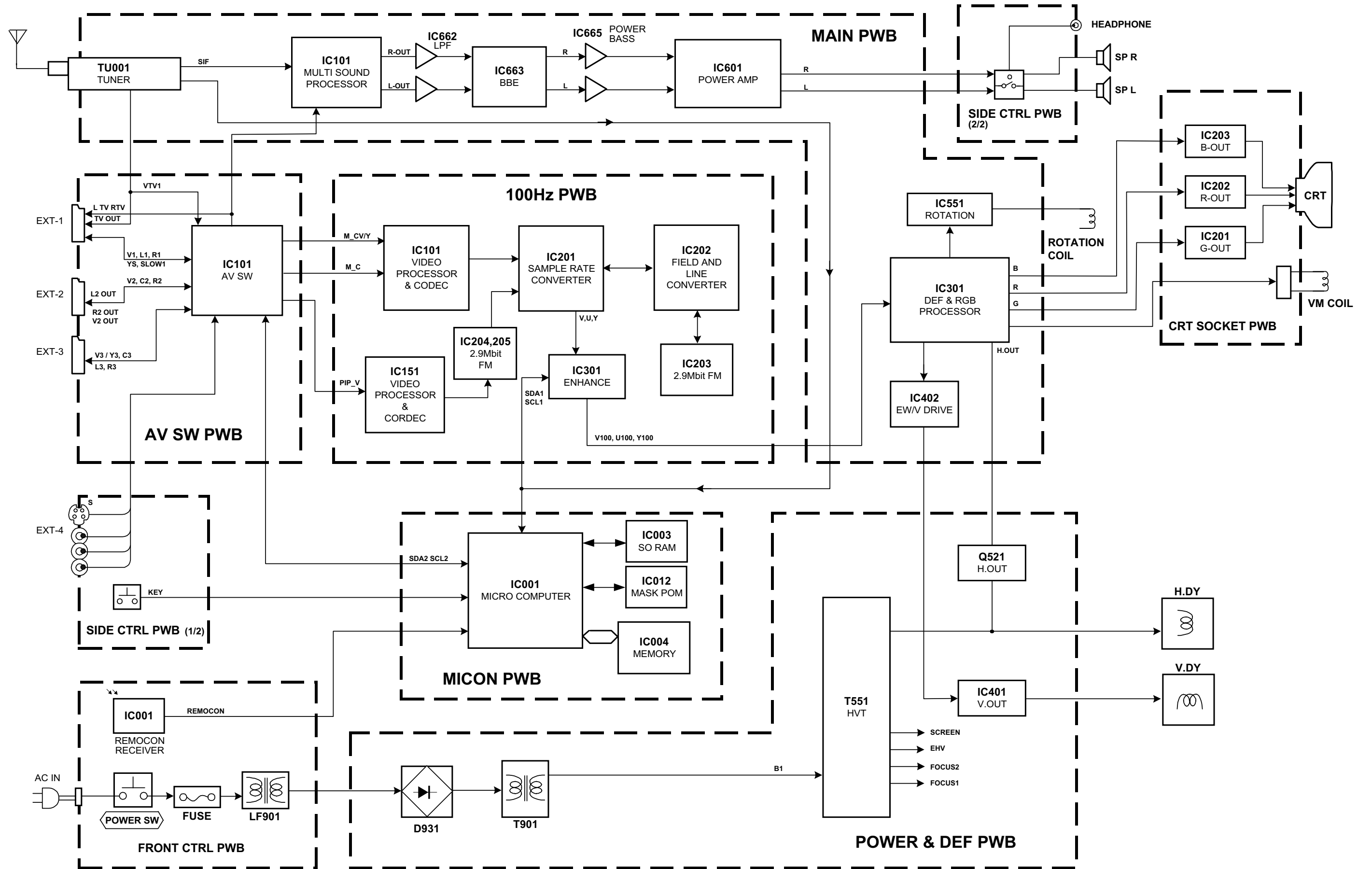
TOP VIEW	



# BLOCK DIAGRAM

AV32L5EKGR  
AV32L5EKBL  
AV32L5EIGR  
AV32L5EIBL

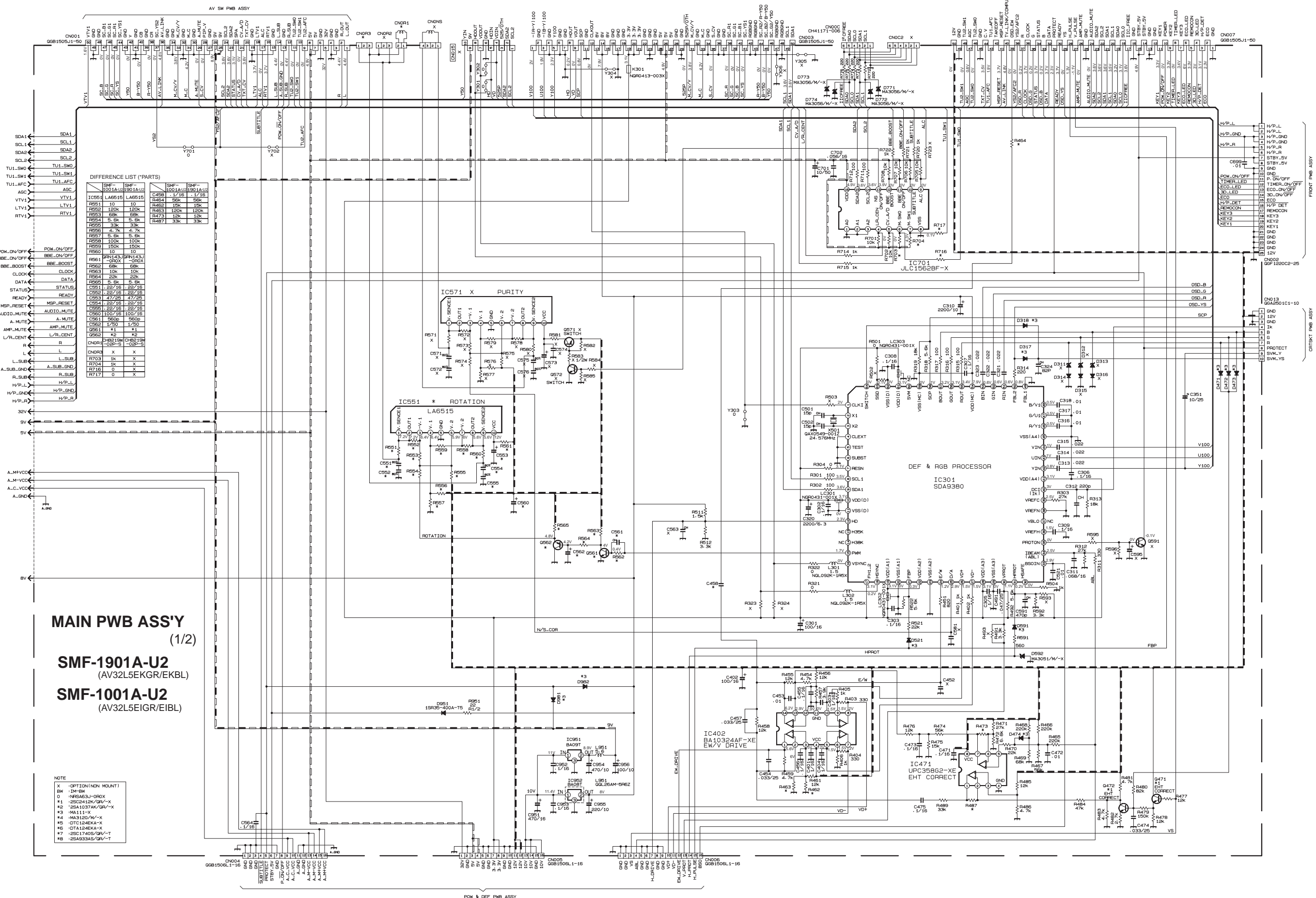
AV32L5EKGR  
AV32L5EKBL  
AV32L5EIGR  
AV32L5EIBL



CIRCUIT DIAGRAMS MAIN PWB CIRCUIT DIAGRAM

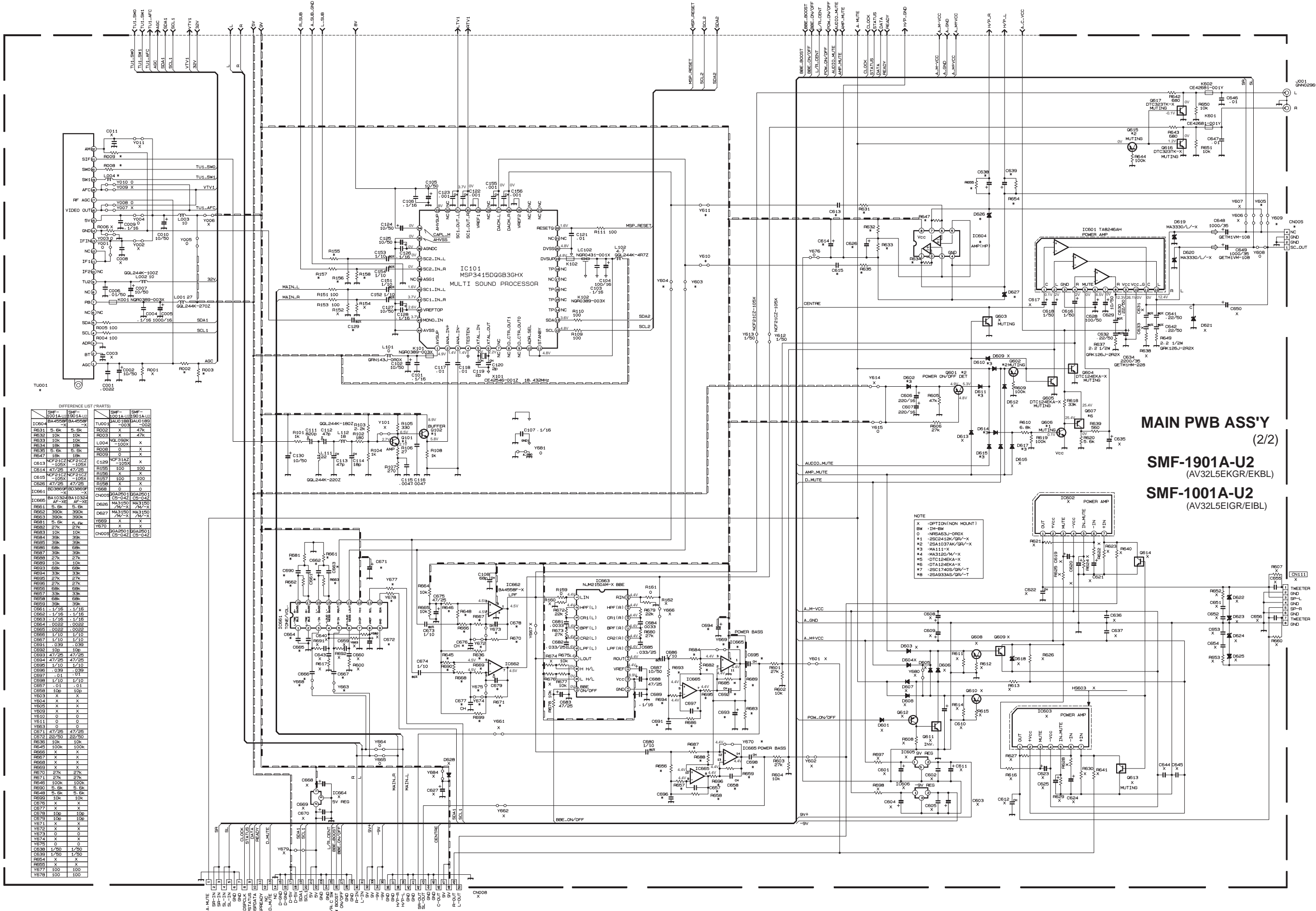
AV32L5EKGR  
AV32L5EKBL  
AV32L5EIGR  
AV32L5EIBL

100HZ PWB ASSY



AV32L5EKGR  
AV32L5EKBL  
AV32L5EIGR  
AV32L5EIBL

AV32L5EKGR  
AV32L5EKBL  
AV32L5EIGR  
AV32L5EIBL



DIFFERENCE LIST (FRAGTS)		
QWP	SMF	SMF
1001A	1901A	1901A
IC604	BA4569P	BA4569P
RE31	5.6K	5.6K
RE32	10K	10K
RE33	10K	10K
RE34	18K	18K
RE35	5.6K	5.6K
RE47	18K	18K
RE48	18K	18K
RE49	18K	18K
RE50	18K	18K
RE51	18K	18K
RE52	18K	18K
RE53	18K	18K
RE54	18K	18K
RE55	18K	18K
RE56	18K	18K
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RE70	18K	18K
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RE94	18K	18K
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RE97	18K	18K
RE98	18K	18K
RE99	18K	18K
RE00	18K	18K

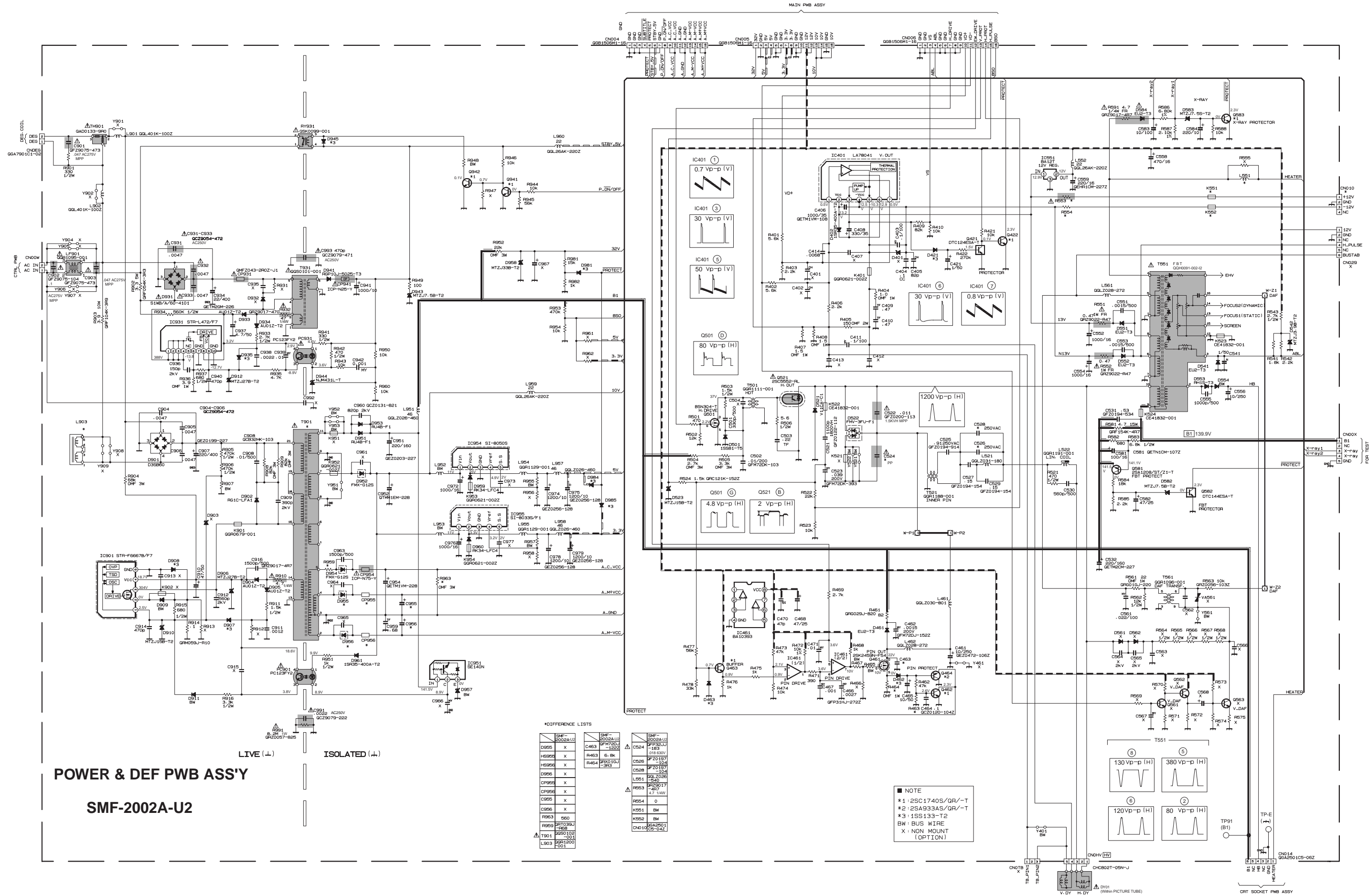
**MAIN PWB ASS'Y**  
(2/2)  
**SMF-1901A-U2**  
(AV32L5EKGR/EKBL)  
**SMF-1001A-U2**  
(AV32L5EIGR/EIBL)

**NOTE**  
X - OPTION (NON MOUNT)  
B# - IN-B#  
O - NFRS#B3J-OROX  
#1 - 2SC2412K/GRV-X  
#2 - 2SA1037AW/GRV-X  
#3 - MA111-X  
#4 - MA312D/W-X  
#5 - DTC124EK-X  
#6 - DTA124EK-X  
#7 - 2SC1740S/GRV-T  
#8 - 2SA1037AW/GRV-T

POWER & DEF PWB CIRCUIT DIAGRAM

AV32L5EKGR  
 AV32L5EKBL  
 AV32L5EIGR  
 AV32L5EIBL

AV32L5EKGR  
 AV32L5EKBL  
 AV32L5EIGR  
 AV32L5EIBL



POWER & DEF PWB ASS'Y  
 SMF-2002A-U2

\*DIFFERENCE LISTS

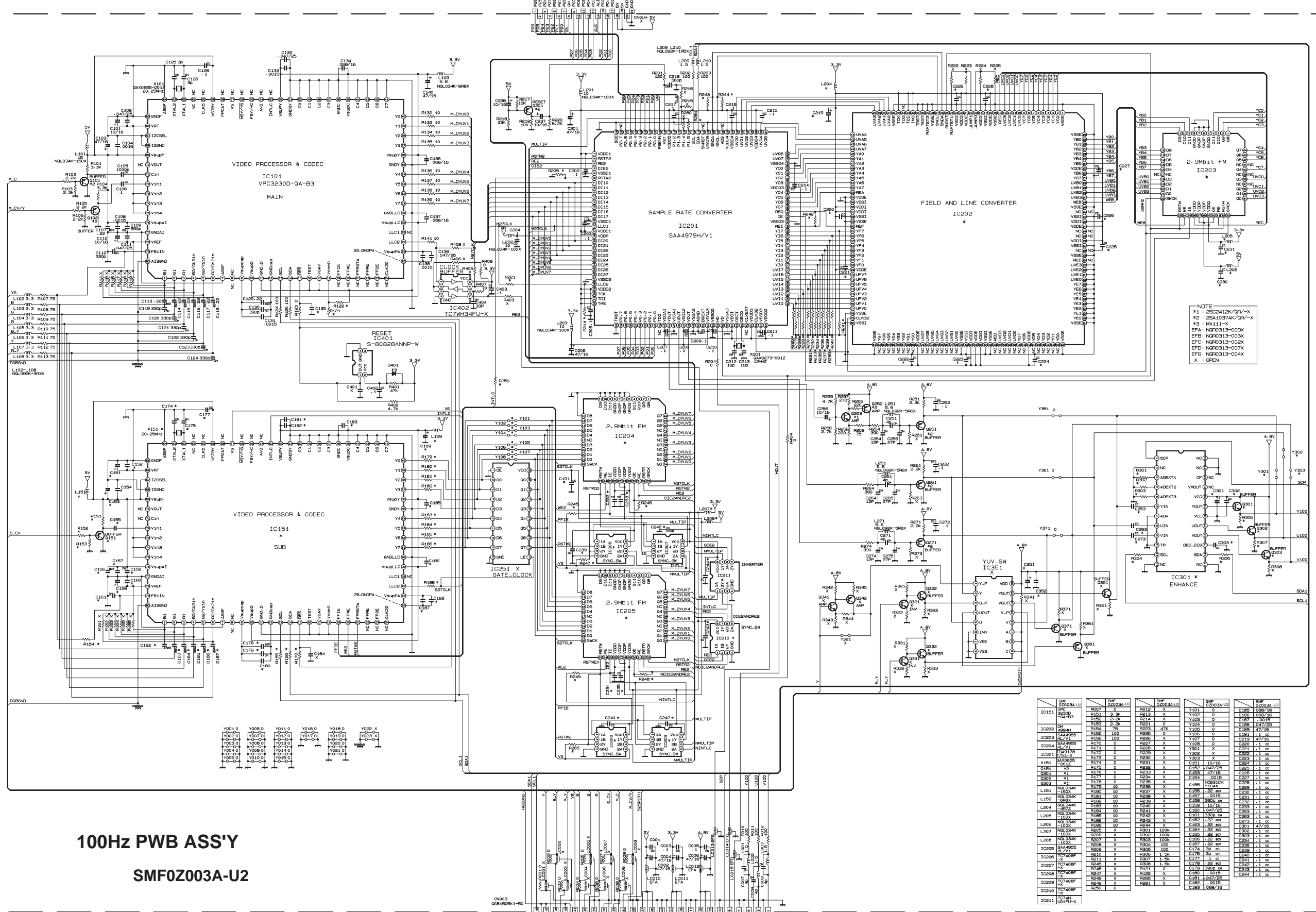
SMF-2002A-U2	SMF-2002A-U2	SMF-2002A-U2
D955 X	C463 2.2K	C524 10K
H5905 X	R463 6.8K	C526 2.2K
H5906 X	R464 20K	L551 1000/10
D956 X		L552 1000/10
CP952 X		L553 1000/10
CP956 X		L554 1000/10
C955 X		L555 1000/10
C956 X		L556 1000/10
R963 560		L557 1000/10
R969 20K		L558 1000/10
R999 100K		L559 1000/10
Y901 1000/10		L560 1000/10
L903 1000/10		L561 1000/10

NOTE  
 \*1: 2SC1740S/GR/-T  
 \*2: 2SA933AS/GR/-T  
 \*3: 1SS133-T2  
 BW: BUS WIRE  
 X: NON MOUNT  
 (OPTION)

100Hz PWB CIRCUIT DIAGRAM

AV32L5EKGR  
AV32L5EKBL  
AV32L5EIGR  
AV32L5EIBL

AV32L5EKGR  
AV32L5EKBL  
AV32L5EIGR  
AV32L5EIBL



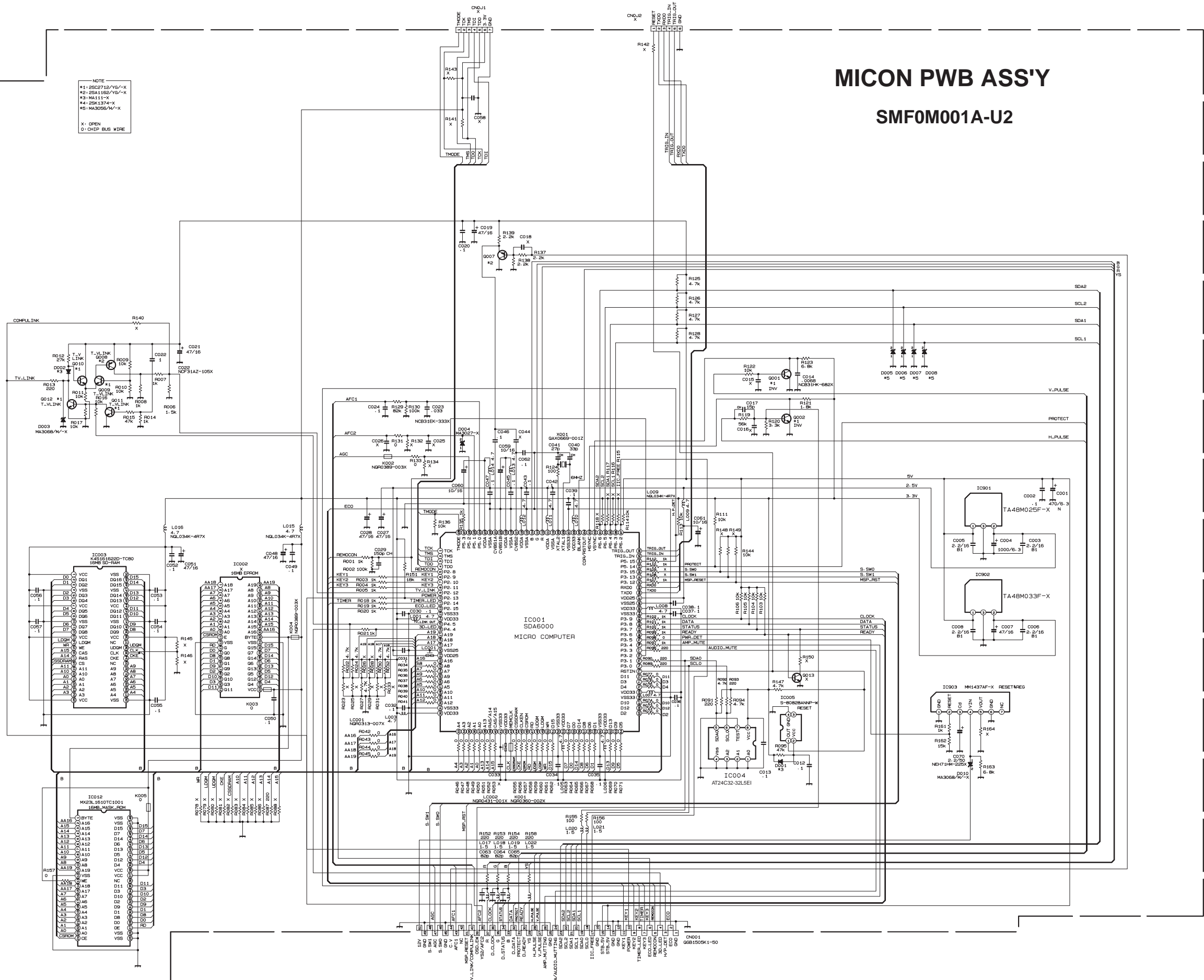
100Hz PWB ASS'Y  
SMF0Z003A-U2

SMF0Z003A-U2	SMF0Z003A-U2	SMF0Z003A-U2	SMF0Z003A-U2	SMF0Z003A-U2
IC151	R007	R112	V101	C188
IC201	R151	R113	V102	C189
IC202	R152	R114	V103	C190
IC203	R153	R115	V104	C191
IC204	R154	R116	V105	C192
IC301	R155	R117	V106	C193
IC401	R156	R118	V107	C194
IC402	R157	R119	V108	C195
IC403	R158	R120	V109	C196
IC404	R159	R121	V110	C197
IC405	R160	R122	V111	C198
IC406	R161	R123	V112	C199
IC407	R162	R124	V113	C200
IC408	R163	R125	V114	C201
IC409	R164	R126	V115	C202
IC410	R165	R127	V116	C203
IC411	R166	R128	V117	C204
IC412	R167	R129	V118	C205
IC413	R168	R130	V119	C206
IC414	R169	R131	V120	C207
IC415	R170	R132	V121	C208
IC416	R171	R133	V122	C209
IC417	R172	R134	V123	C210
IC418	R173	R135	V124	C211
IC419	R174	R136	V125	C212
IC420	R175	R137	V126	C213
IC421	R176	R138	V127	C214
IC422	R177	R139	V128	C215
IC423	R178	R140	V129	C216
IC424	R179	R141	V130	C217
IC425	R180	R142	V131	C218
IC426	R181	R143	V132	C219
IC427	R182	R144	V133	C220
IC428	R183	R145	V134	C221
IC429	R184	R146	V135	C222
IC430	R185	R147	V136	C223
IC431	R186	R148	V137	C224
IC432	R187	R149	V138	C225
IC433	R188	R150	V139	C226
IC434	R189	R151	V140	C227
IC435	R190	R152	V141	C228
IC436	R191	R153	V142	C229
IC437	R192	R154	V143	C230
IC438	R193	R155	V144	C231
IC439	R194	R156	V145	C232
IC440	R195	R157	V146	C233
IC441	R196	R158	V147	C234
IC442	R197	R159	V148	C235
IC443	R198	R160	V149	C236
IC444	R199	R161	V150	C237
IC445	R200	R162	V151	C238
IC446	R201	R163	V152	C239
IC447	R202	R164	V153	C240
IC448	R203	R165	V154	C241
IC449	R204	R166	V155	C242
IC450	R205	R167	V156	C243
IC451	R206	R168	V157	C244
IC452	R207	R169	V158	C245
IC453	R208	R170	V159	C246
IC454	R209	R171	V160	C247
IC455	R210	R172	V161	C248
IC456	R211	R173	V162	C249
IC457	R212	R174	V163	C250
IC458	R213	R175	V164	C251
IC459	R214	R176	V165	C252
IC460	R215	R177	V166	C253
IC461	R216	R178	V167	C254
IC462	R217	R179	V168	C255
IC463	R218	R180	V169	C256
IC464	R219	R181	V170	C257
IC465	R220	R182	V171	C258
IC466	R221	R183	V172	C259
IC467	R222	R184	V173	C260
IC468	R223	R185	V174	C261
IC469	R224	R186	V175	C262
IC470	R225	R187	V176	C263
IC471	R226	R188	V177	C264
IC472	R227	R189	V178	C265
IC473	R228	R190	V179	C266
IC474	R229	R191	V180	C267
IC475	R230	R192	V181	C268
IC476	R231	R193	V182	C269
IC477	R232	R194	V183	C270
IC478	R233	R195	V184	C271
IC479	R234	R196	V185	C272
IC480	R235	R197	V186	C273
IC481	R236	R198	V187	C274
IC482	R237	R199	V188	C275
IC483	R238	R200	V189	C276
IC484	R239	R201	V190	C277
IC485	R240	R202	V191	C278
IC486	R241	R203	V192	C279
IC487	R242	R204	V193	C280
IC488	R243	R205	V194	C281
IC489	R244	R206	V195	C282
IC490	R245	R207	V196	C283
IC491	R246	R208	V197	C284
IC492	R247	R209	V198	C285
IC493	R248	R210	V199	C286
IC494	R249	R211	V200	C287
IC495	R250	R212	V201	C288

# MICON PWB ASS'Y

## SMF0M001A-U2

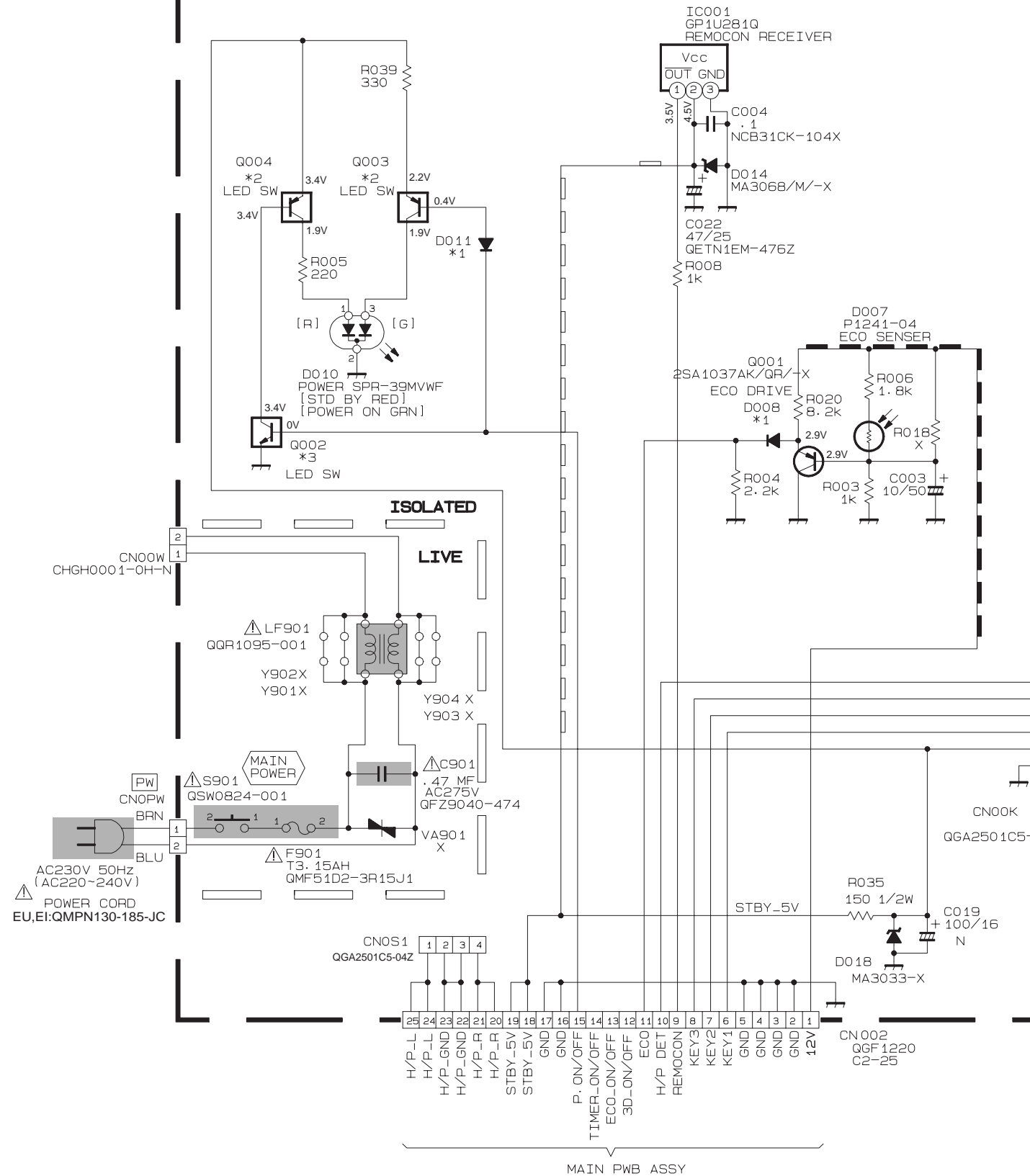
NOTE  
#1: 28C2712/YG/-X  
#2: 28A1182/YG/-X  
#3: M41114-X  
#4: 28K1374-X  
#5: M43056/M/-X  
  
X: OPEN  
O: CHIP BUS WIRE





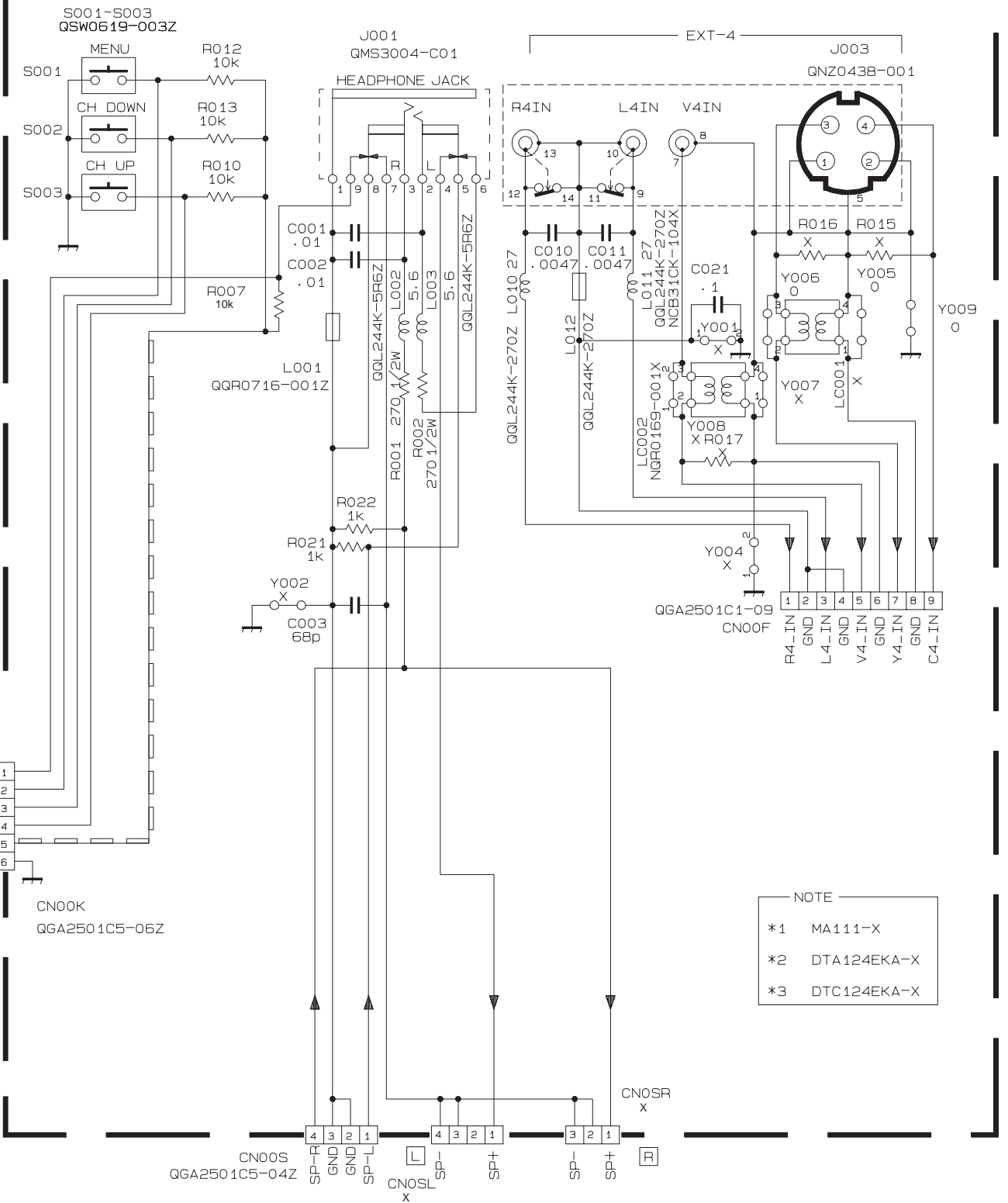
# FRONT CONTROL PWB ASS'Y

SMF-8008A-U2



# SIDE CONTROL PWB ASS'Y

SMF-8108A-U2



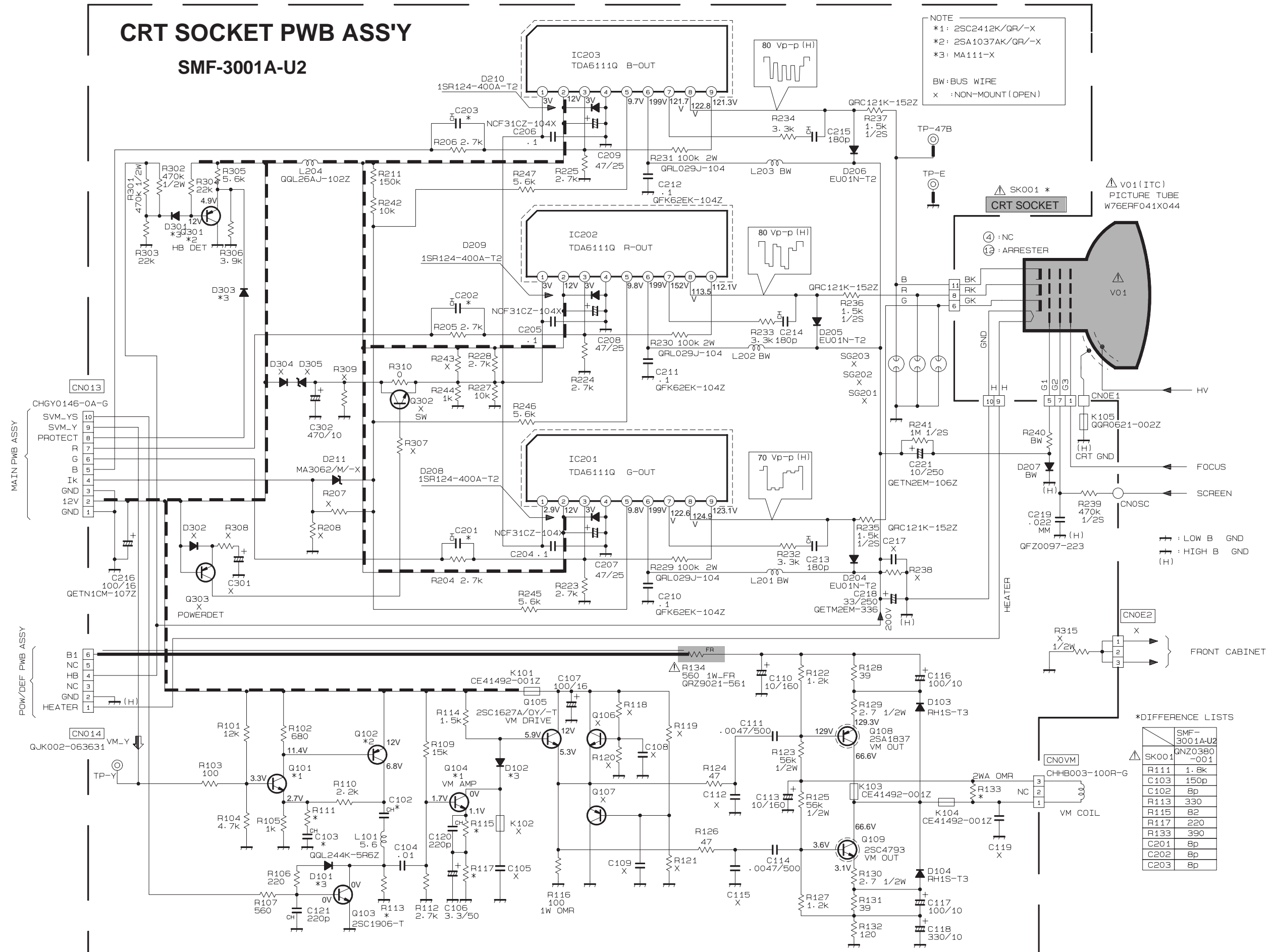
NOTE  
\*1 MA111-X  
\*2 DTA124EKA-X  
\*3 DTC124EKA-X

AV32L5EKGR  
AV32L5EKBL  
AV32L5EIGR  
AV32L5EIBL

# CRT SOCKET PWB ASS'Y

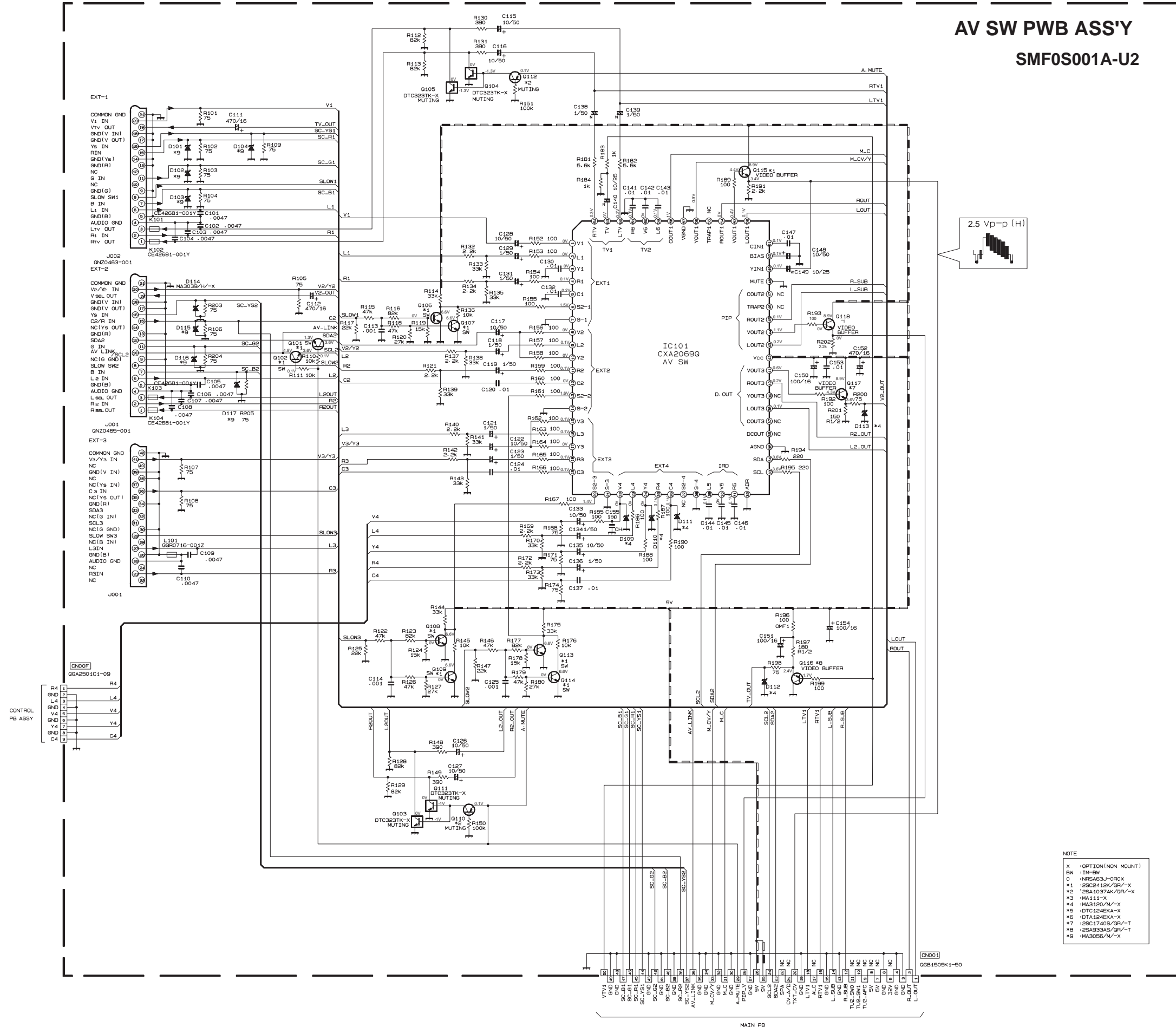
## SMF-3001A-U2

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



\*DIFFERENCE LISTS

Part No.	SMF-3001A-U2
SK001	GNZ0380-001
R111	1.8k
C103	150p
C102	8p
R113	330
R115	82
R117	220
R133	390
C201	8p
C202	8p
C203	8p



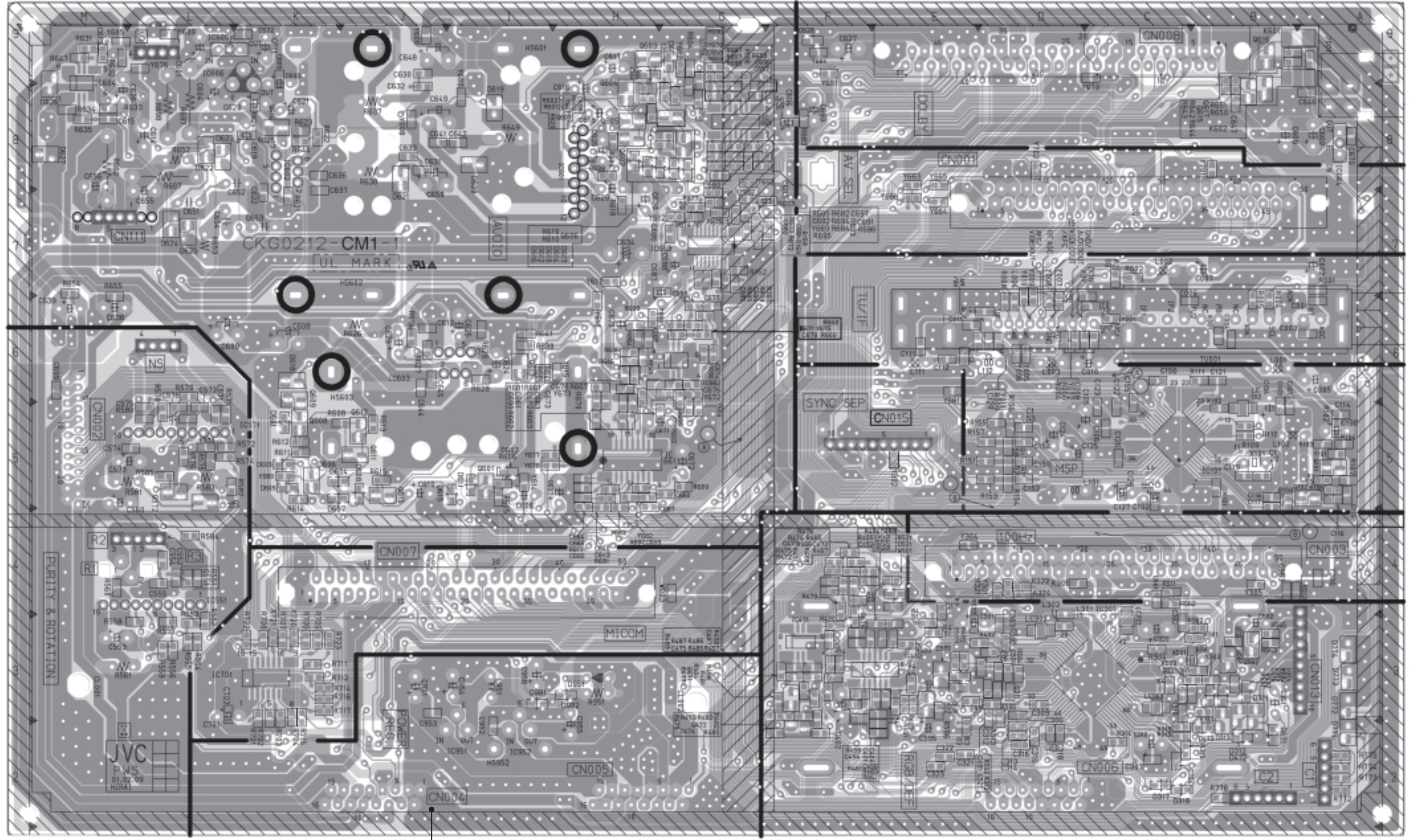
NOTE  
X (OPTION (NON MOUNT))  
BW (IM-BW)  
0 (NFR63J-OROX)  
#1 (2SC2412K/GR/-X)  
#2 (2SA1037AK/GR/-X)  
#3 (MA1111-X)  
#4 (MA3120/M/-X)  
#5 (DTC124EK-A-X)  
#6 (DTA124EK-A-X)  
#7 (2SC1740S/GR/-T)  
#8 (2SA933AS/GR/-T)  
#9 (MA3056/M/-X)

PATTERN DIAGRAMS MAIN PWB PATTERN

AV32L5EKGR  
 AV32L5EKBL  
 AV32L5EIGR  
 AV32L5EIBL

AV32L5EKGR  
 AV32L5EKBL  
 AV32L5EIGR  
 AV32L5EIBL

← FRONT



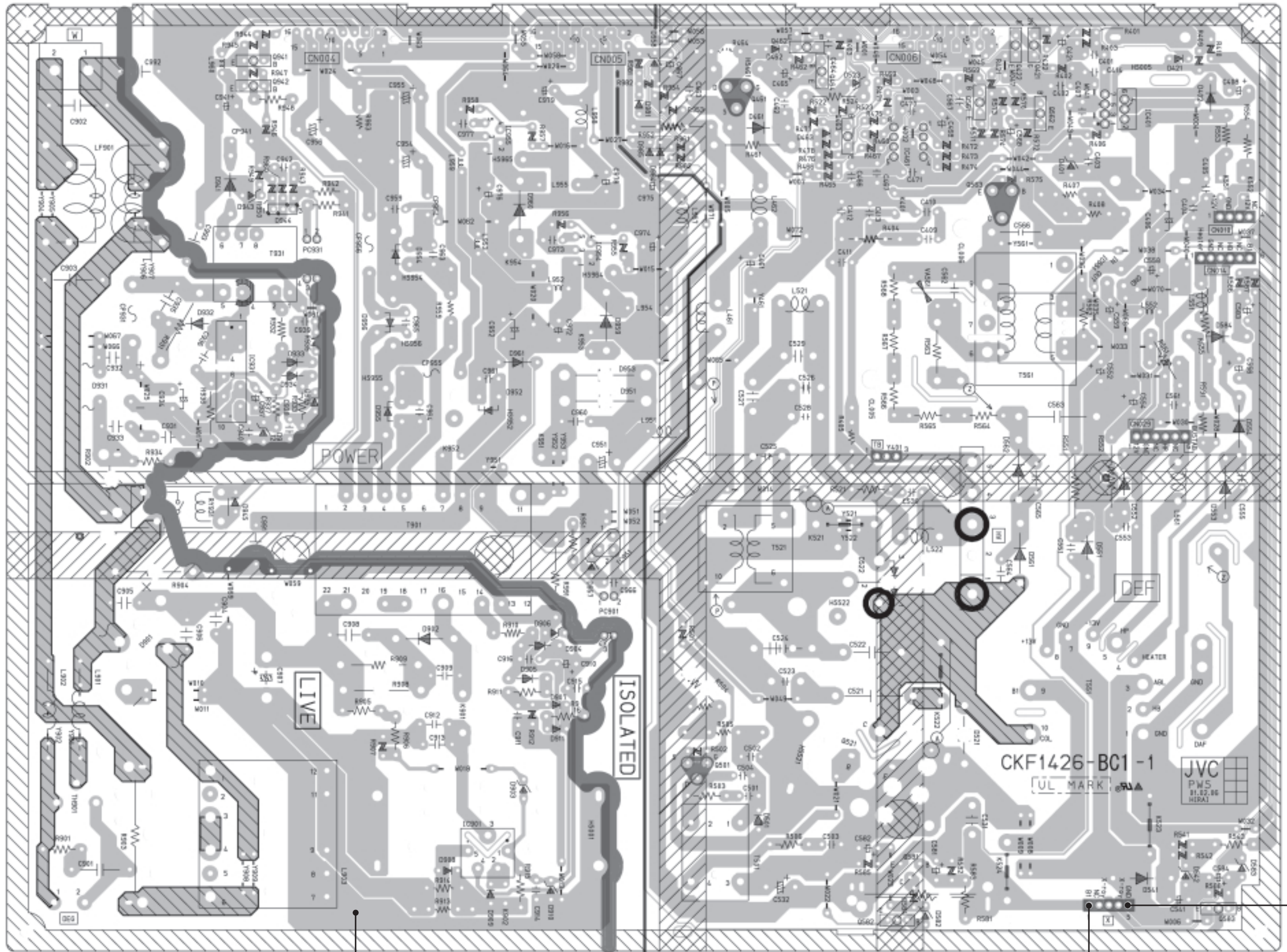
(77)

POWER & DEF PWB PATTERN

AV32L5EKGR  
AV32L5EKBL  
AV32L5EIGR  
AV32L5EIBL

AV32L5EKGR  
AV32L5EKBL  
AV32L5EIGR  
AV32L5EIBL

FRONT



No.51779

(T)

2-23

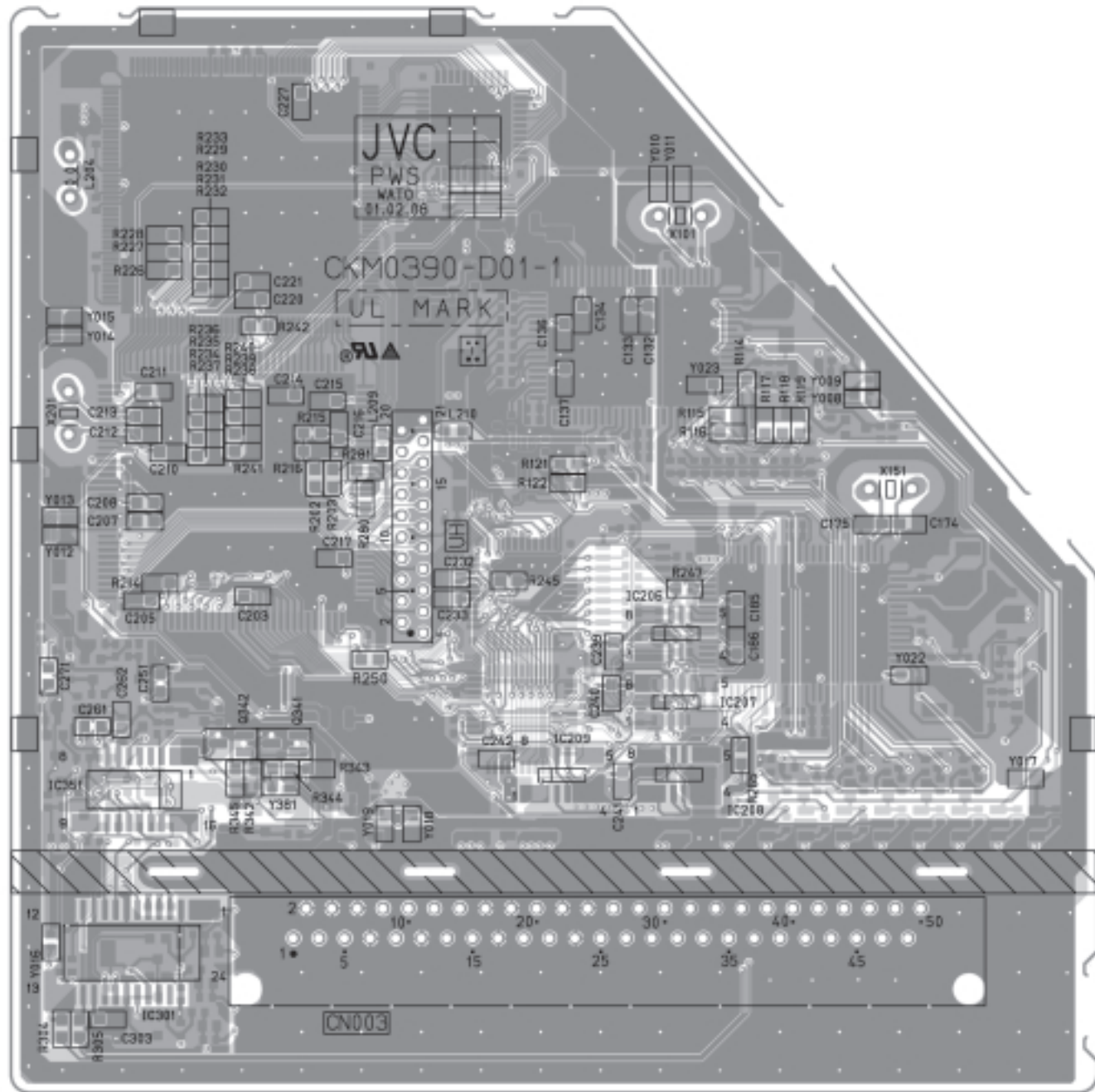
2-24

No.51779

TP-91(B1)

TP-E  
(+)

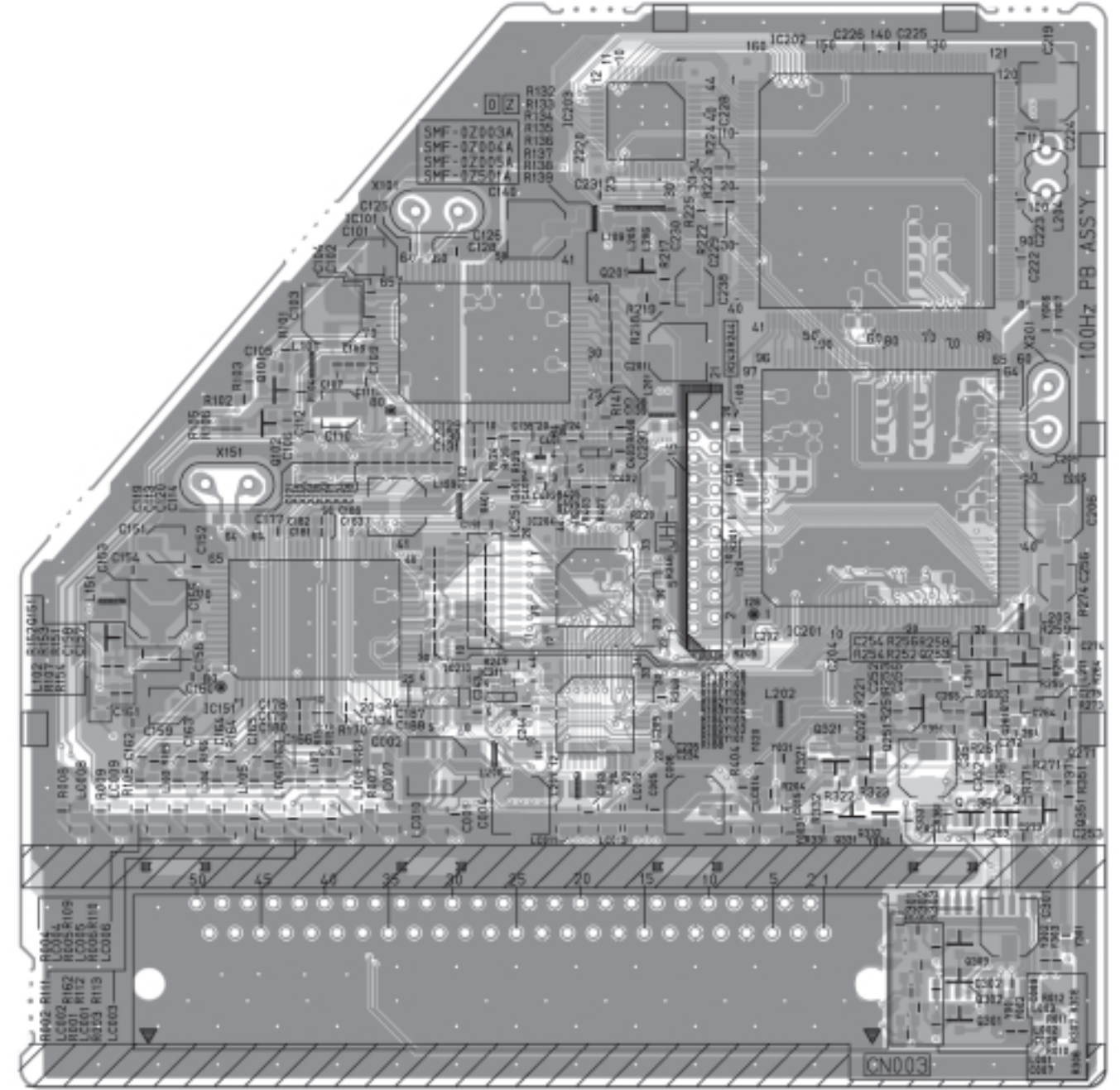
100Hz PWB PATTERN (SOLDER SIDE)



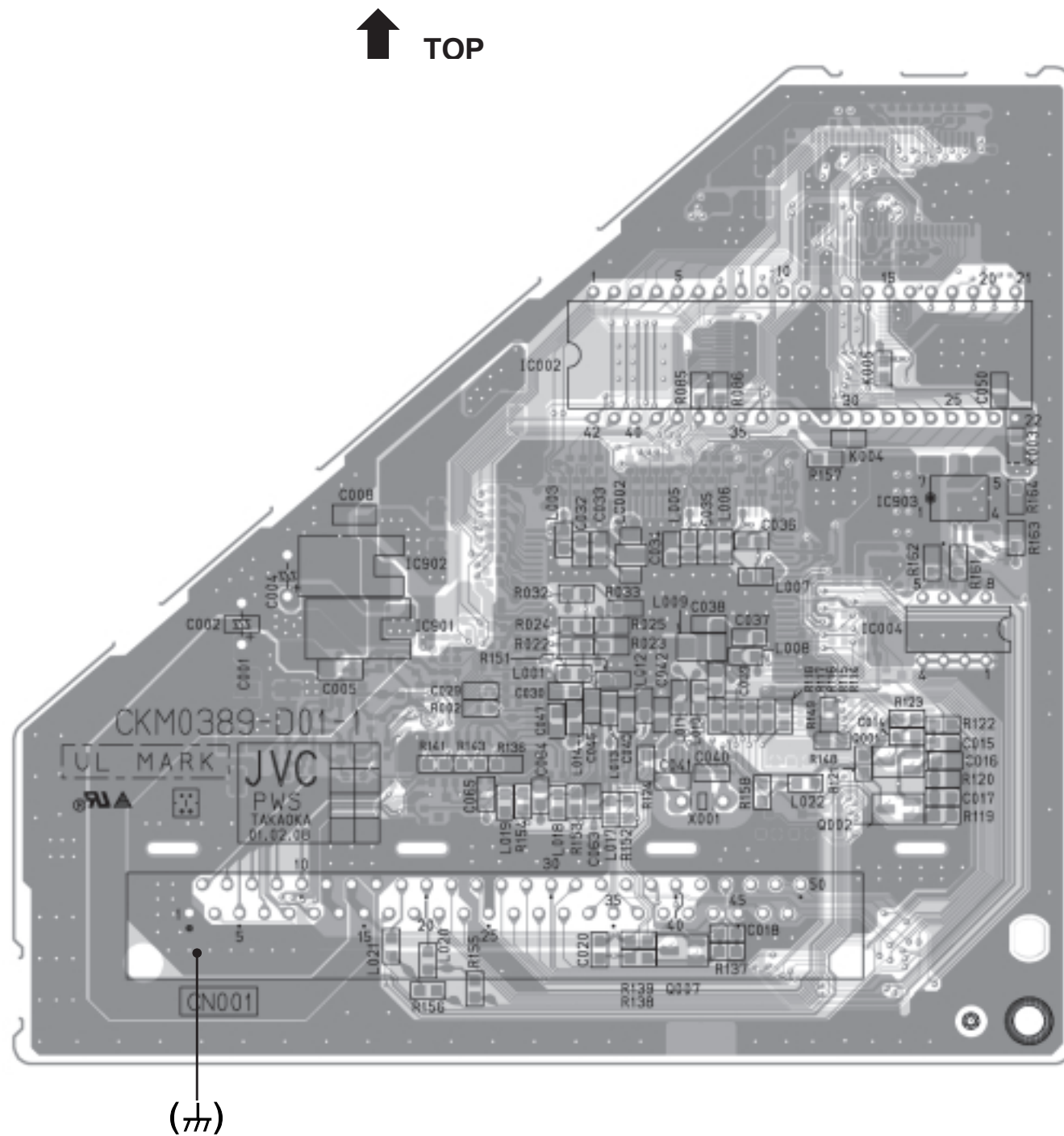
AV32L5EKGR  
AV32L5EKBL  
AV32L5EIGR  
AV32L5EIBL

AV32L5EKGR  
AV32L5EKBL  
AV32L5EIGR  
AV32L5EIBL

100Hz PWB PATTERN (PARTS SIDE)



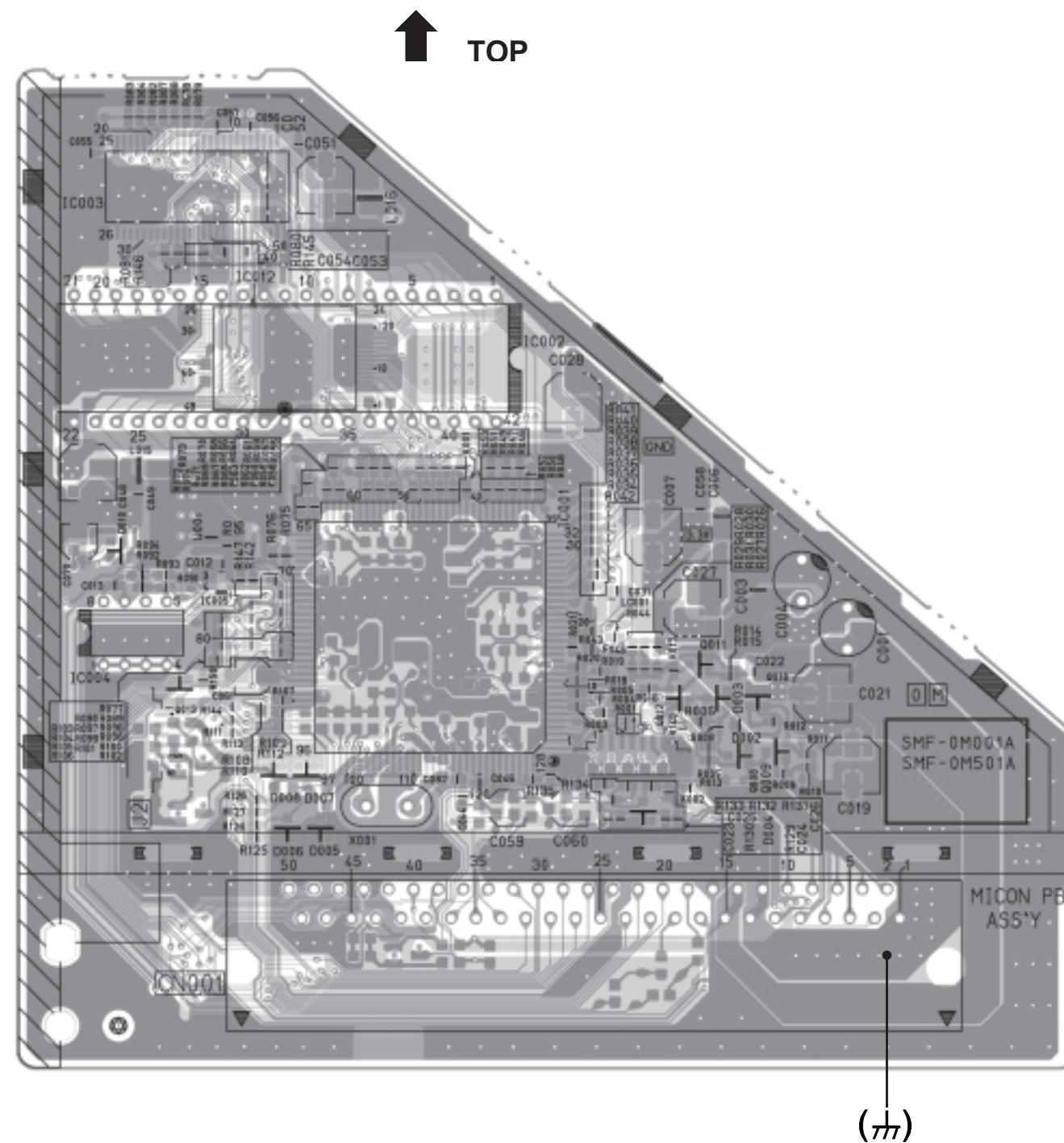
MICON PWB PATTERN (SOLDER SIDE)



AV32L5EKGR  
AV32L5EKBL  
AV32L5EIGR  
AV32L5EIBL

AV32L5EKGR  
AV32L5EKBL  
AV32L5EIGR  
AV32L5EIBL

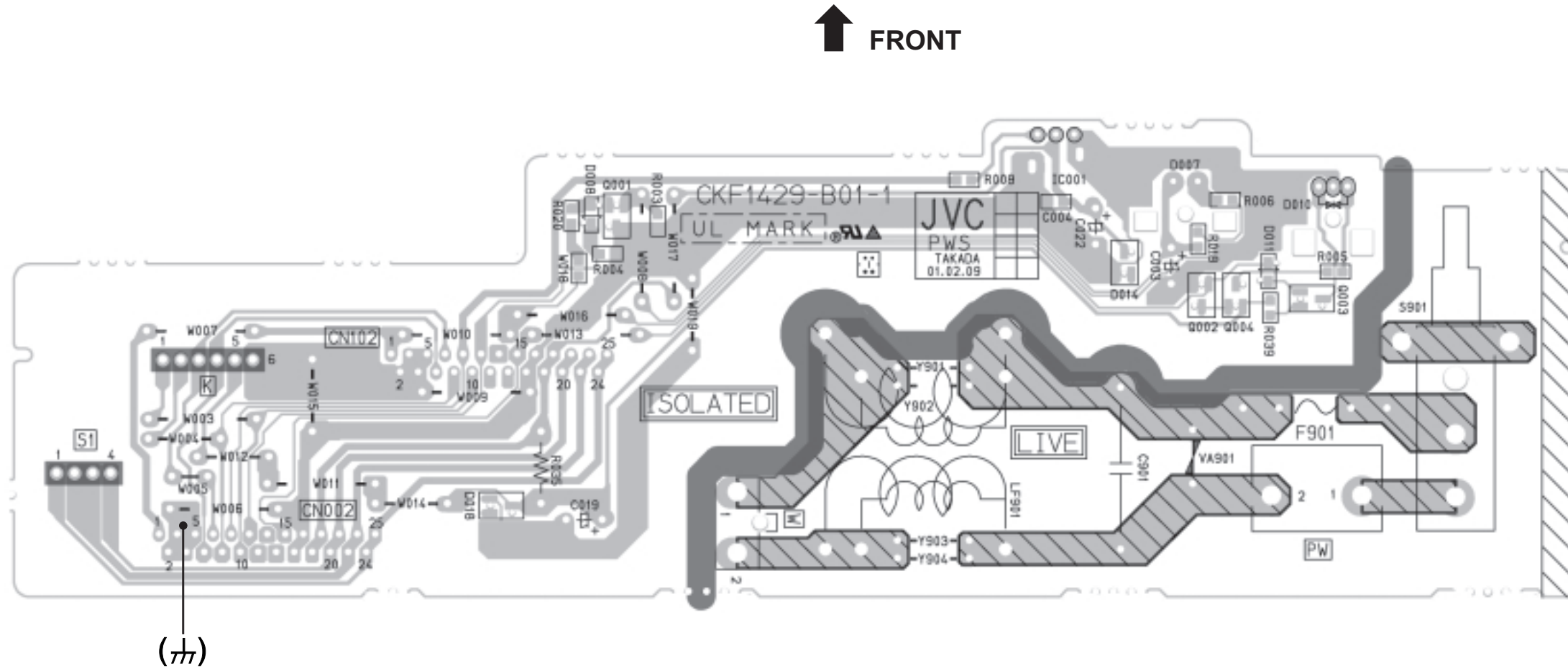
MICON PWB PATTERN (PARTS SIDE)



FRONT CONTROL PWB PATTERN

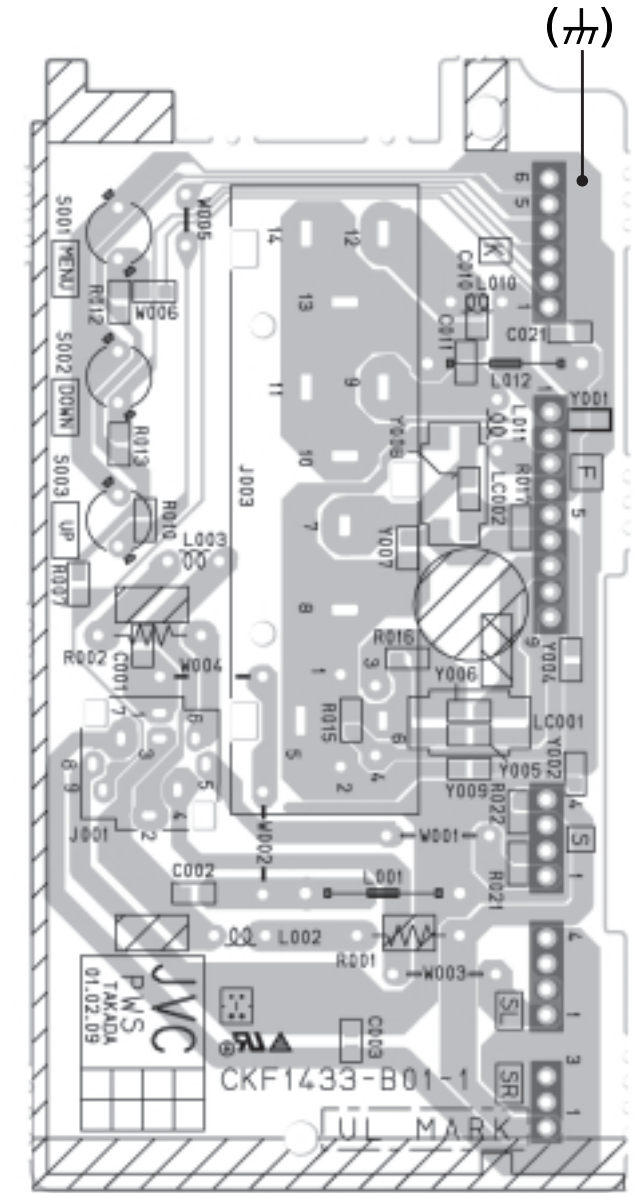
AV32L5EKGR  
 AV32L5EKBL  
 AV32L5EIGR  
 AV32L5EIBL

AV32L5EKGR  
 AV32L5EKBL  
 AV32L5EIGR  
 AV32L5EIBL



↑ FRONT

SIDE CONTROL PWB PATTERN



↓ TOP