

JVC

SCHEMATIC DIAGRAMS

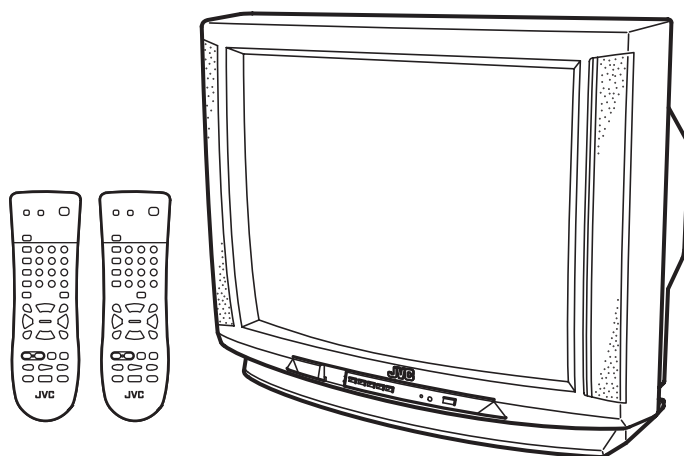
COLOR TELEVISION

AV-27D104/RA, AV-27D104/SA,
AV-27D304/RA, AV-27D304/SA,
AV-27430/RA, AV-27430/SA,
AV-27432/RA, AV-27432/SA

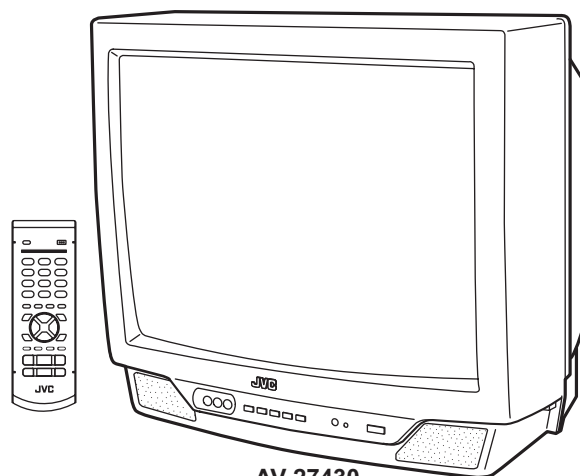
BASIC CHASSIS

FE2

CD-ROM No.SML200304



AV-27D104
AV-27D304



AV-27430
AV-27432

AV-27D104/RA, AV-27D104/SA, AV-27D304/RA, AV-27D304/SA AV-27430/RA, AV-27430/SA, AV-27432/RA, AV-27432/SA

STANDARD CIRCUIT DIAGRAM

■ NOTE ON USING CIRCUIT DIAGRAMS

1.SAFETY

The components identified by the  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 | : 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 Ω /V |
| (4)Oscilloscope sweeping time | :H $\Rightarrow$ 20 μ 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	: [Ω]
K	: [k Ω]
M	: [M Ω]

- 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	: [μ F]

- Withstand voltage

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

* Electrolytic Capacitors

47/50[Example]:Capacitance value [μ F]/withstand voltage[V]

- Type

No indication	: Ceramic 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	: [μ H]
Others	: As specified

(4)Power Supply

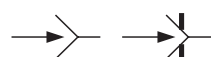
	: B1		: B2 (12V)
	: 9V		: 5V

* Respective voltage values are indicated

(5)Test point

	: Test point		: Only test point display
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(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.

NOTE

- ◇ Due improvement in performance, some part numbers show in the circuit diagram may not agree with those indicated in the part list.
When ordering parts, please use the numbers that appear in the Parts List.

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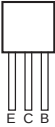
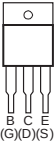
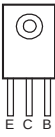
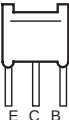
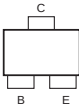
 MAIN PWB PATTERN 2-9

CHANNEL CHART (US)2-11

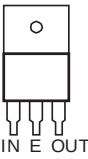
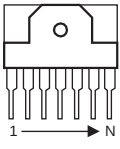
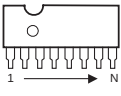
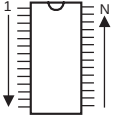
CHANNEL CHART (CA)..... 2-12

SEMICONDUCTOR SHAPES

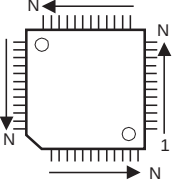
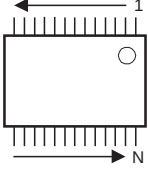
TRANSISTOR

BOTTOM VIEW	FRONT VIEW				TOP VIEW
					

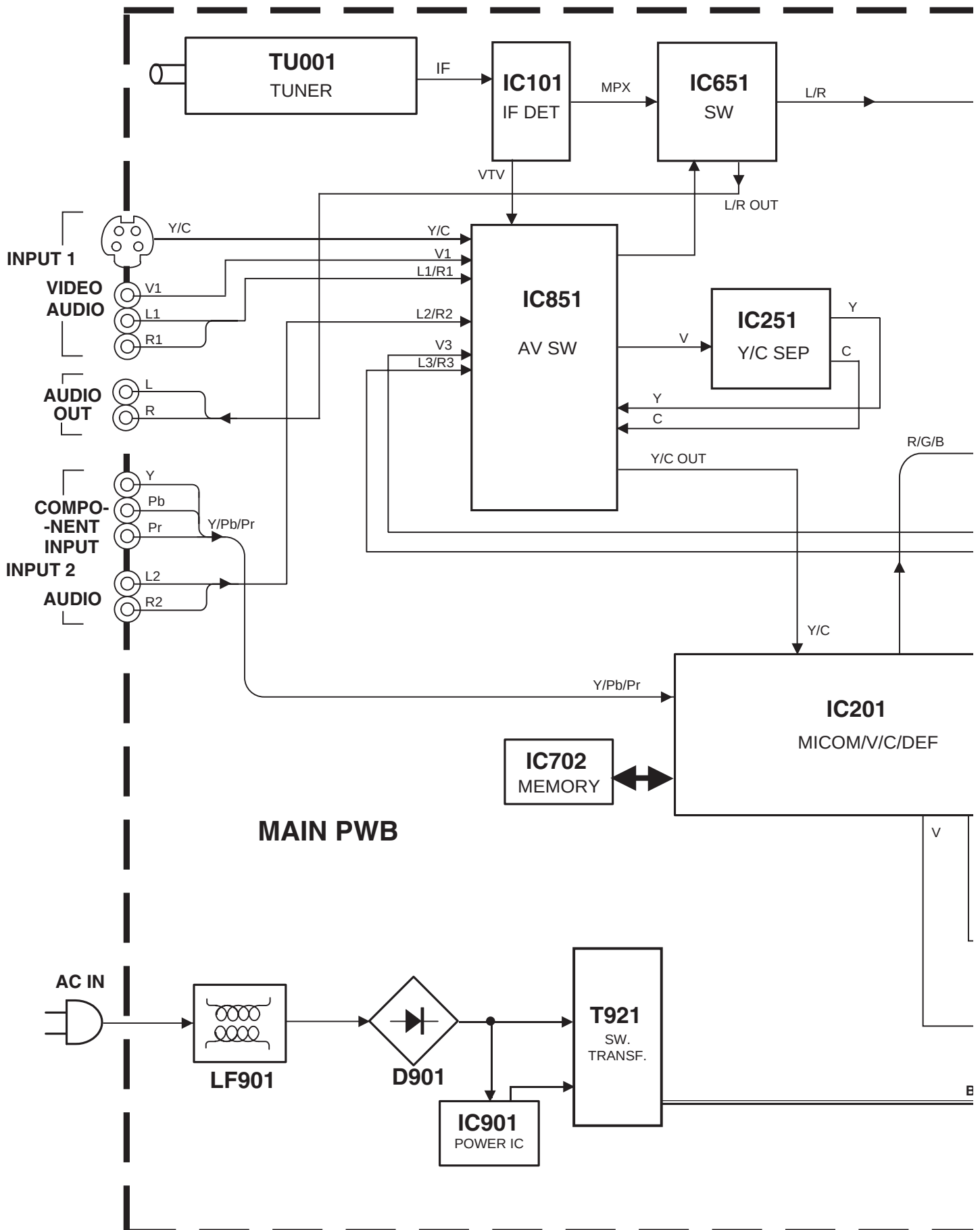
IC

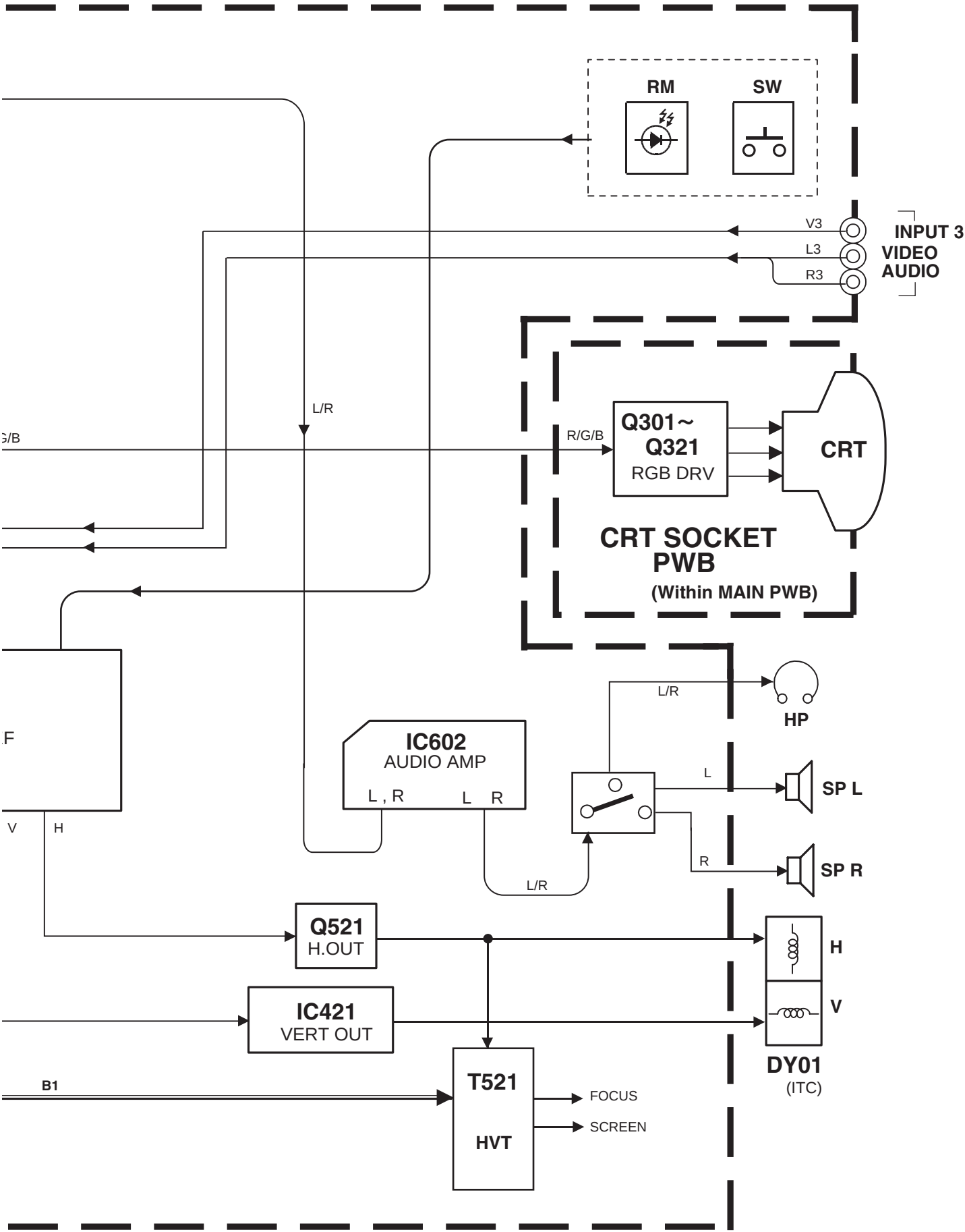
BOTTOM VIEW	FRONT VIEW			TOP VIEW
				

CHIP IC

TOP VIEW		
		

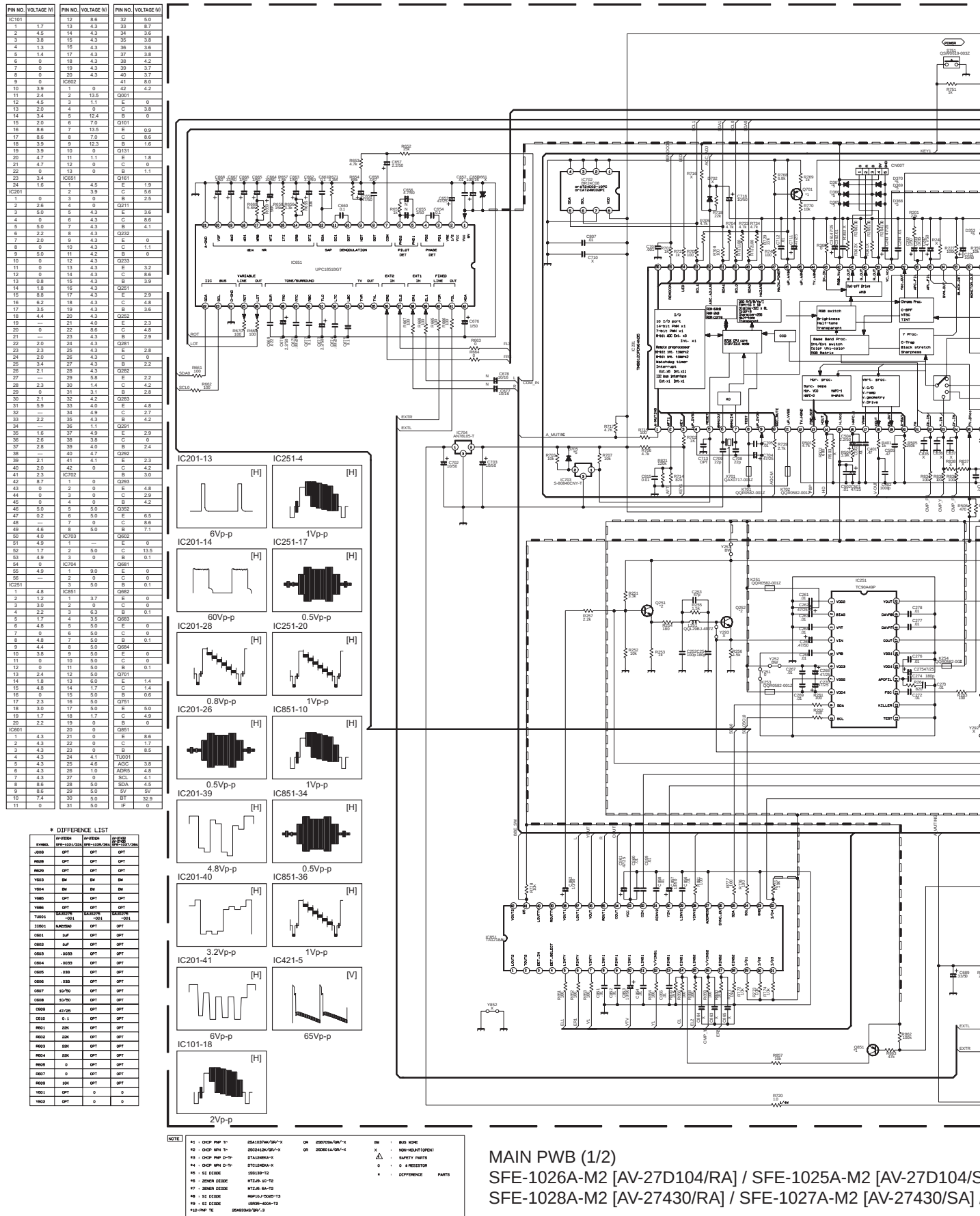
BLOCK DIAGRAM

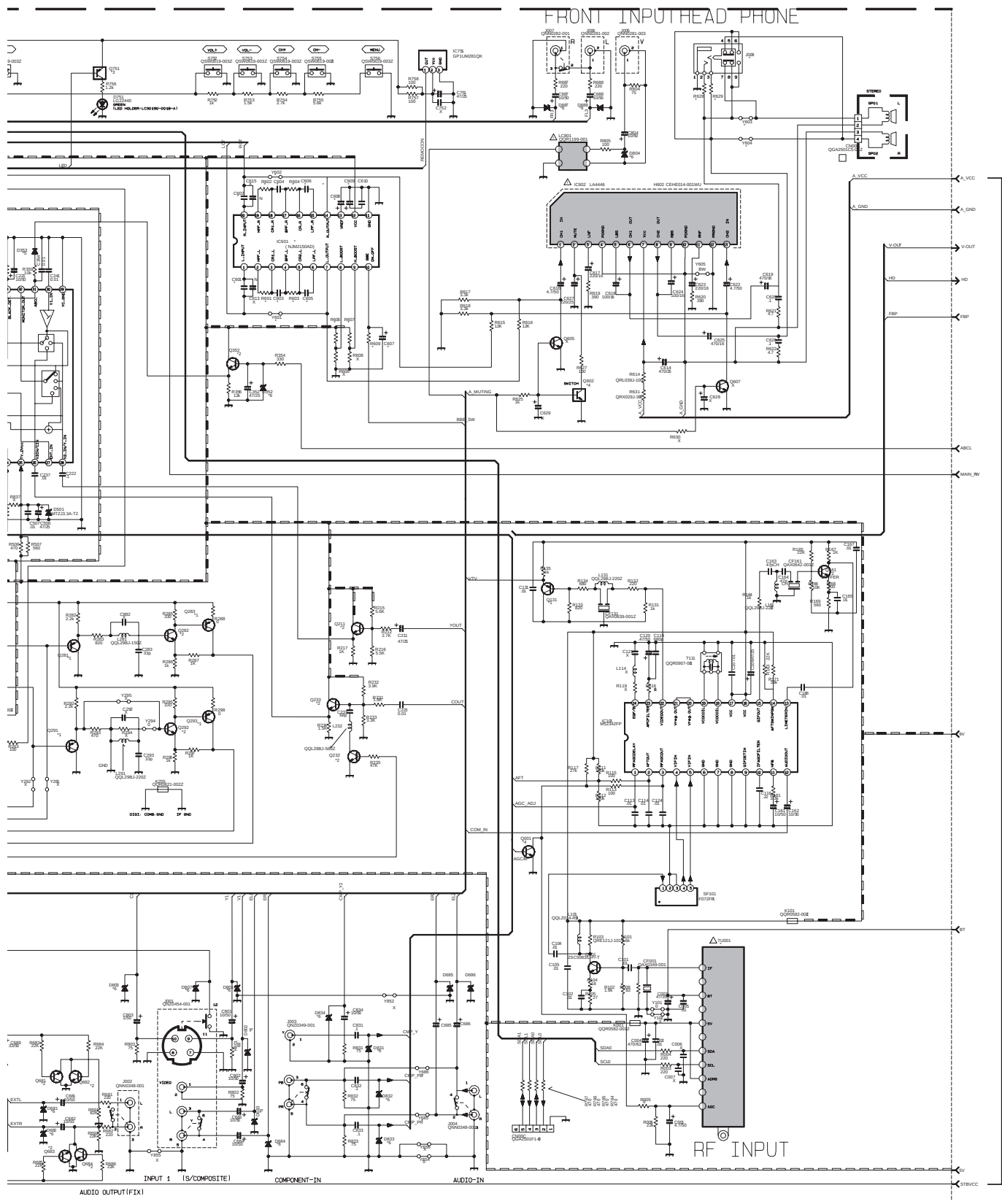




CIRCUIT DIAGRAMS

MAIN PWB CIRCUIT DIAGRAM (1/2) SHEET 1





SHEET 2

4/SA / SFE-1022A-M2 [AV-27D304/RA] / SFE-1021A-M2 [AV-20D304/SA]
A / SFE-1030A-M2 [AV-27432/RA] / SFE-1029A-M2 [AV-27432/SA]

MAIN PWB CIRCUIT DIAGRAM (2/2) SHEET 2

* DIFFERENCE LIST

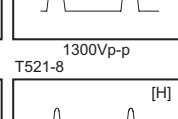
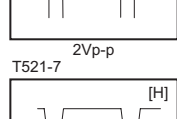
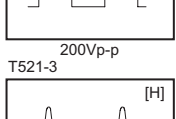
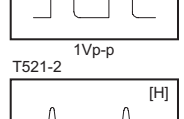
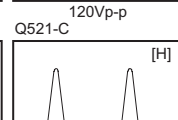
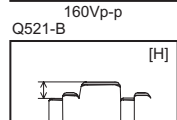
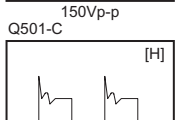
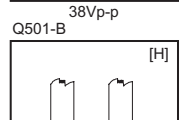
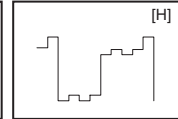
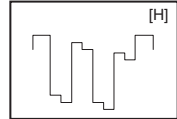
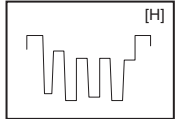
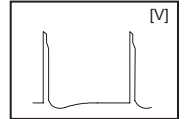
SYMBOL	AV-27430SA AV-27430RA SFE-1027A	AV-27430RA AV-27430RA SFE-1028A	AV-27D104SA AV-27D104RA SFE-1025A	SYMBOL	AV-27D104SA AV-27D104RA SFE-1025A	AV-27D104SA AV-27D104RA SFE-1025A	AV-27D104SA AV-27D104RA SFE-1025A
Y521	OPT	OPT	IM-BW	R528	10K 1/2 W	10K 1/2 W	
Y522	OPT	OPT	IM-BW	C530	0FLCBK -1042	0FLCBK -1042	
R522	0RE121J -681V	0RE121J -681V	OPT	V01	AB820N81X 001	AB820N81X 002	AB820N81X 001
C524	0C832K -951Z	0C832K -951Z	OPT				
R402	4.7K	4.7K	10K				
C404	2200P	2200P	1000P				
C408	10P	10P	OPT				
T521	0G0128-001	0G0128-001	0G0128-001				
L521	0G01027-004	0G01027-004	OPT				
R511	1.8K 2W	1.8K 2W	2.7K 3W				
R512	1.8K 2W	1.8K 2W	3.3K 3W				
R524	220K 1/2W	220K 1/2W	330K 1/2W				
R527	1.0 1W	1.0 1W	0.82 1W				
R533	0R20032 -2841X	0R20032 -2841X	0R20032 -2841X				
C522	0F20198-133	0F20198-133	0F20198-562				
C523	0F20197-564	0F20197-564	0F20197-534				
C521	OPT	OPT	0C20325-821				
T521	0G01018-001	0G01018-001	0G01018-001				
C520	0C20340-332	0C20340-332	0C20340-222				
C509	0NDC31HJ -182X	0NDC31HJ -182X	0NDC31HJ -182X				
V01	AB820N81X 001	AB820N81X 001	AB820N81X 001				
L01	0E41329 -000B	0E41329 -000B	0E41329 -000B				
C505	0A7901C1 -08	0A7901C1 -08	0A7901C1 -08				
DY01	ITC	ITC	0G00011-001				
R408	OPT	OPT	15K				

IC421-3,6

Q301-C

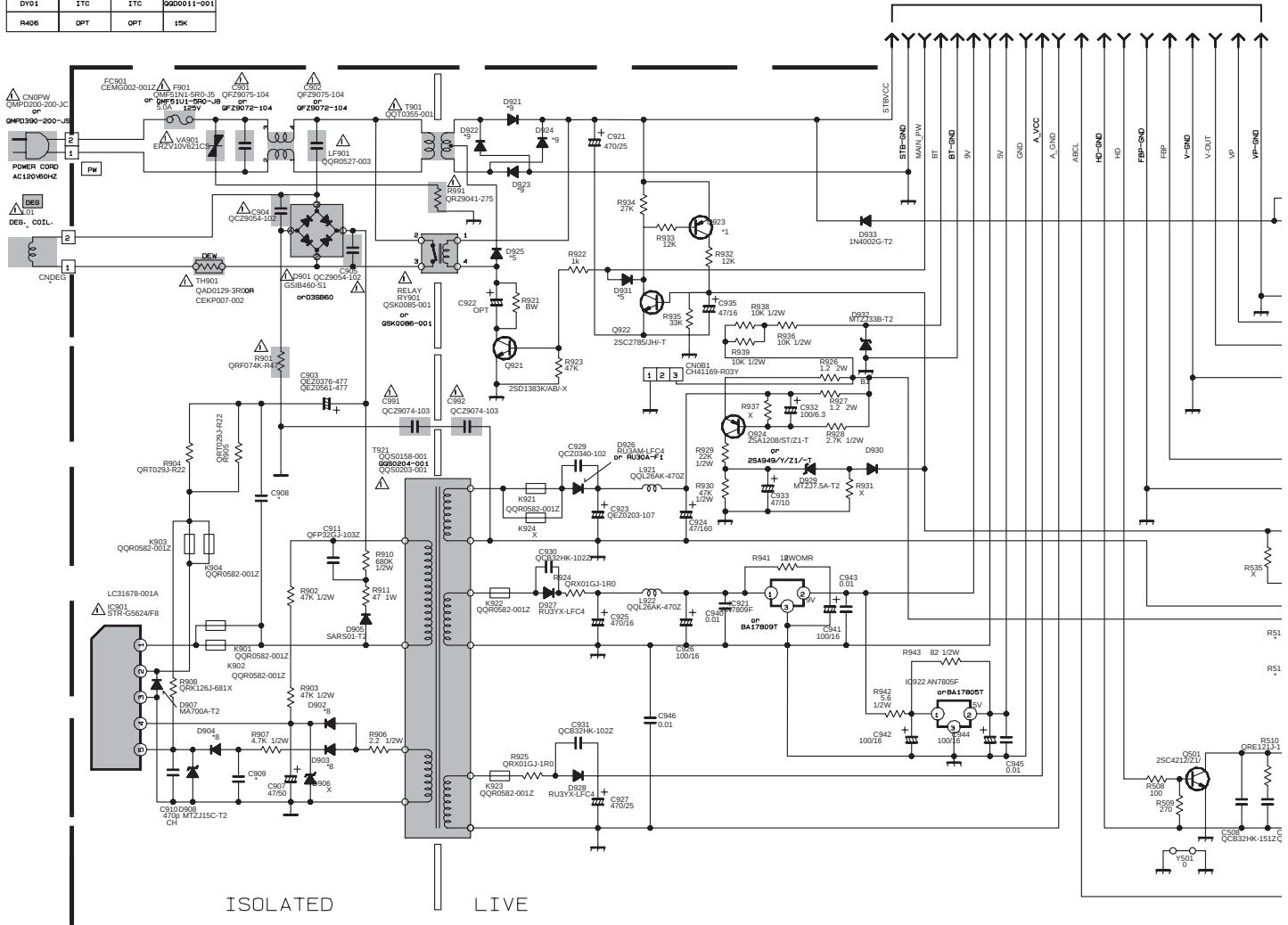
Q311-C

Q321-C



PIN NO.	VOLTAGE (V)	PIN NO.	VOL
IC421		2	
1	4.2	3	
2	27.2	IC922	
3	2.0	1	
4	0	2	
5	16.1	3	
6	28.3	Q301	
7	4.2	E	
IC901		C	
1	139.0	B	
2	0	Q311	
3	0	E	
4	32.1	C	
5	1.5	B	
IC921		Q321	
1	11.4	E	

SHEET 1



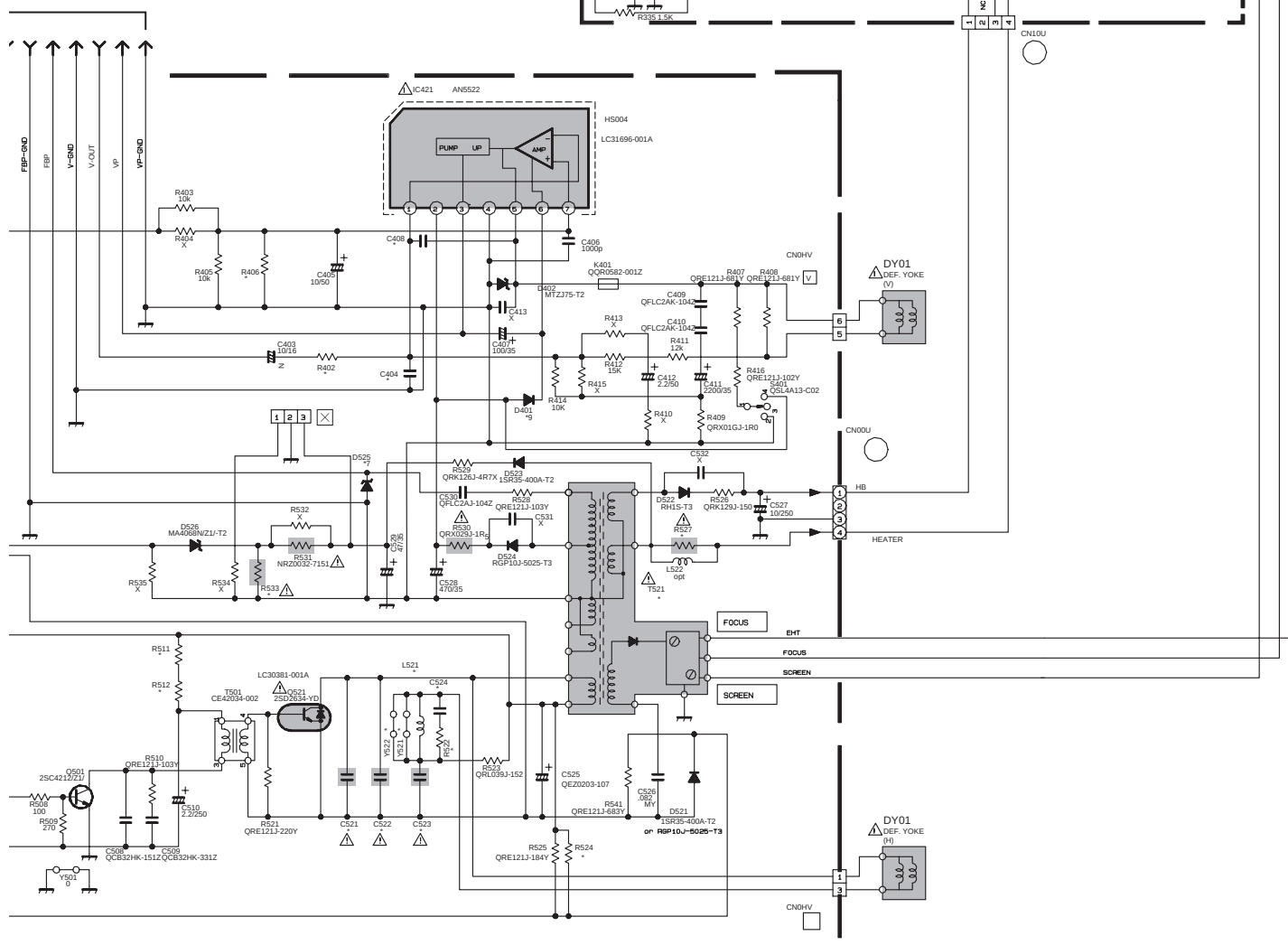
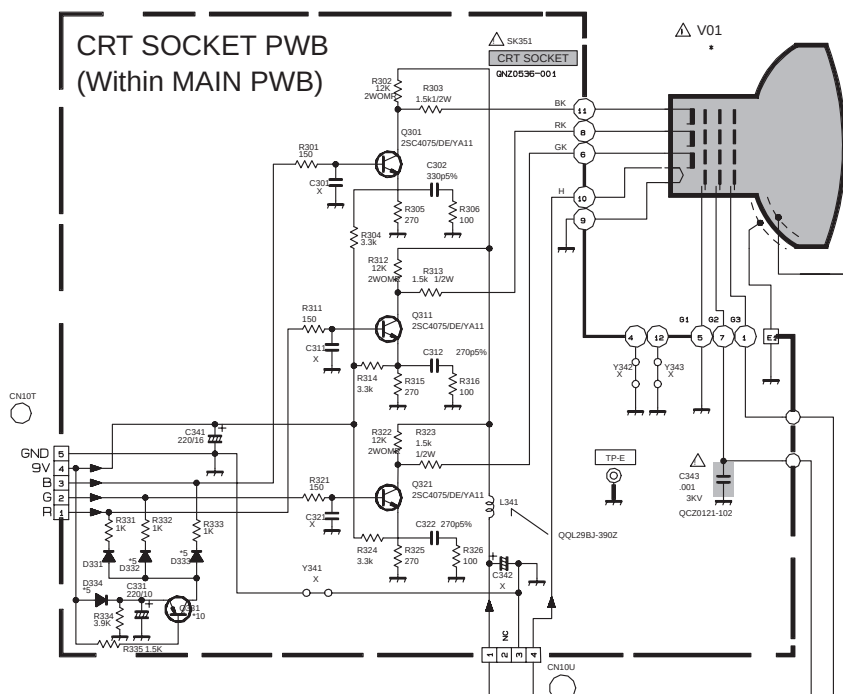
NOTE

#1	CHIP PNP TR	2SA1037AK/GR/-X	BW	BUS WIRE
#2	CHIP NPN TR	2SC2412K/GR/-X	X	NON-MOUNT (OPEN)
#3	CHIP PNP D-TR	DTA154EKA-X		
#4	CHIP NPN D-TR	DTA154EKA-X		
#5	SI DIODE	1S6133-T2	0	0 Ω RESISTOR
#6	ZENER DIODE	MTZJ6-1C-T2	*	DIFFERENCE PARTS
#7	ZENER DIODE	MTZJ6-6A-T2		
#8	SI DIODE	R0P10J-5025-T3		
#9	SI DIODE	1SR35-400A-T2		
#10	PNP TR	2SA933AS/GR/-T		

MAIN PWB (2/2)

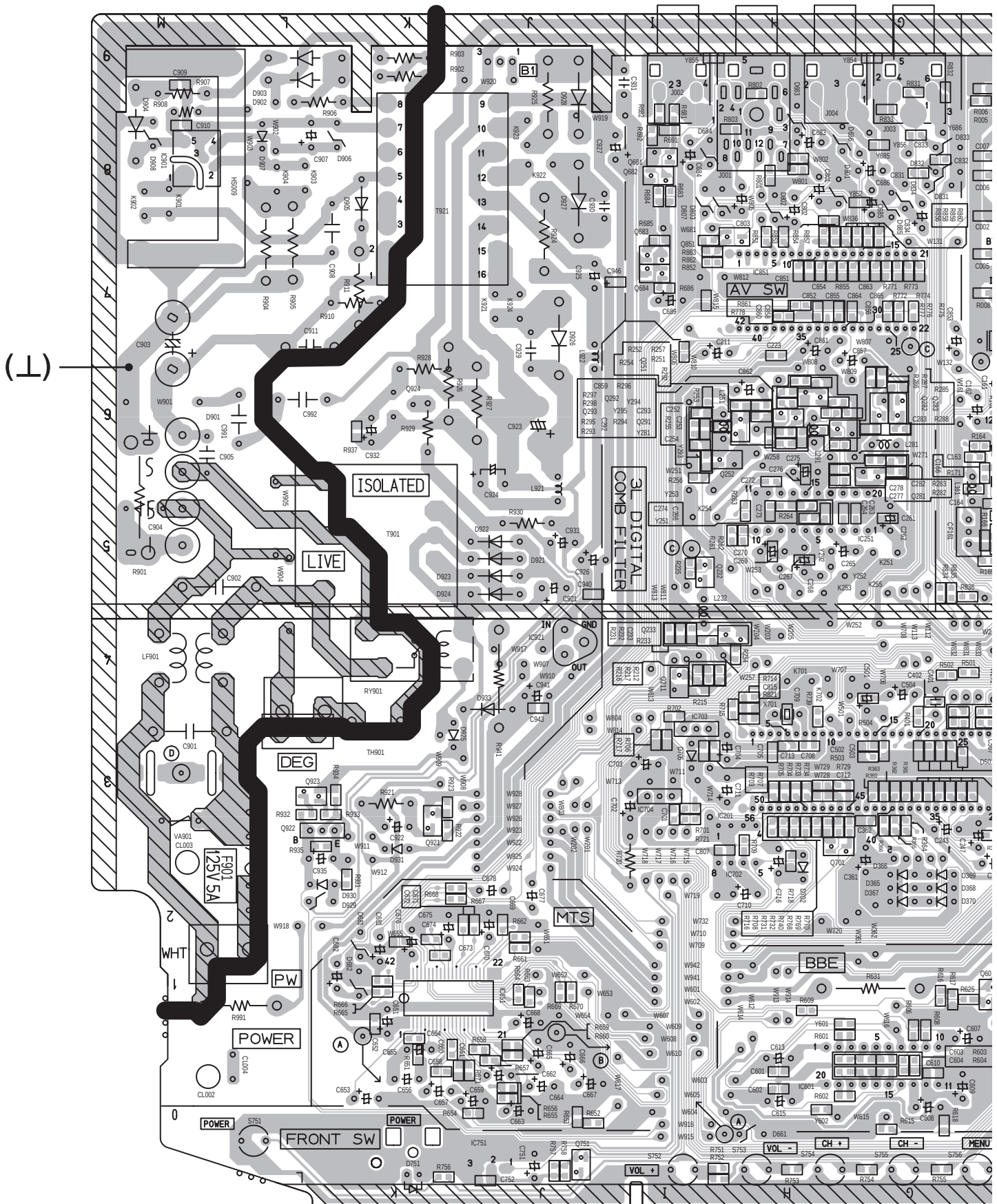
SFE-1026A-M2 [AV-27D104/RA] / SFE-1025A-M2
SFE-1028A-M2 [AV-27430/RA] / SFE-1027A-M2 [

'VOLTAGE (V)	PIN NO.	VOLTAGE (V)	PIN NO.	VOLTAGE (V)	PIN NO.	VOLTAGE (V)
	2	9.0	C	167.3	C	0.6
4.2	3	0	B	2.0	B	1.2
27.2	IC922		Q331		Q922	
2.0	1	7.3	E	8.0	E	0
0	2	0	C	-0.4	C	9.0
16.1	3	4.8	B	8.6	B	0
28.3	Q301		Q501		Q923	
4.2	E	1.7	E	0	E	9.0
	C	159.9	C	66.5	C	0
139.0	B	2.2	B	0.2	B	9.0
0	Q311		Q521		Q924	
0	E	1.7	E	0	E	133.7
32.1	C	165.0	C	135	C	0
1.5	B	2.1	B	0	B	133.3
	Q321		Q921			
11.4	E	1.5	E	0		



E-1025A-M2 [AV-27D104/SA] / SFE-1022A-M2 [AV-27D304/RA] / SFE-1021A-M2 [AV-20D304/SA]
-1027A-M2 [AV-27430/SA] / SFE-1030A-M2 [AV-27432/RA] / SFE-1029A-M2 [AV-27432/SA]

PATTERN DIAGRAMS MAIN PWB PATTERN





CHANNEL CHART (US)

MODE		BAND	CHANNEL		TUNER BAND
TV	CATV		REAL	DISP.	
○	○	VL	02		I
			03		
			04		
			05		
			06		
		VH	07		II
			08		
			09		
			10		
			11		
			12		
			13		
×	○	MID	A	14	I
			B	15	
			C	16	
			D	17	
			E	18	
			F	19	
			G	20	
			H	21	
			I	22	
		SUPER	J	23	II
			K	24	
			L	25	
			M	26	
			N	27	
			O	28	
			P	29	
			Q	30	
			R	31	
			S	32	
			T	33	
			U	34	
			V	35	
			W	36	
		HYPER	W+1	37	IV
			W+2	38	
			W+3	39	
			W+4	40	
			W+5	41	
			W+6	42	
			W+7	43	
			W+8	44	
			W+9	45	
			W+10	46	
			W+11	47	
			W+12	48	
			W+13	49	
			W+14	50	
			W+15	51	
			W+16	52	
			W+17	53	
			W+18	54	
			W+19	55	
			W+20	56	
			W+21	57	
			W+22	58	
			W+23	59	
			W+24	60	
			W+25	61	
			W+26	62	
			W+27	63	
			W+28	64	
		ULTRA	W+29	65	
			W+30	66	
			W+31	67	
			W+32	68	
			W+33	69	
			W+34	70	

MODE		BAND	CHANNEL		TUNER BAND
TV	CATV		REAL	DISP.	
×	○	ULTRA	W+35	71	IV
			W+36	72	
			W+37	73	
			W+38	74	
			W+39	75	
			W+40	76	
			W+41	77	
			W+42	78	
			W+43	79	
			W+44	80	
			W+45	81	
			W+46	82	
			W+47	83	
			W+48	84	
			W+49	85	
			W+50	86	
			W+51	87	
			W+52	88	
			W+53	89	
			W+54	90	
			W+55	91	
			W+56	92	
			W+57	93	
			W+58	94	
			W+59	100	
			W+60	101	
			W+61	102	
			W+62	103	
			W+63	104	
			W+64	105	
			W+65	106	
			W+66	107	
			W+67	108	
			W+68	109	
			W+69	110	
			W+70	111	
		W+71	112		
		W+72	113		
		W+73	114		
		W+74	115		
		W+75	116		
		W+76	117		
		W+77	118		
		W+78	119		
		W+79	120		
		W+80	121		
		W+81	122		
		W+82	123		
W+83	124				
W+84	125				
		SUB MID	A-8	01	I
			A-4	96	
			A-3	97	
			A-2	98	
			A-1	99	
○	×	UHF	14 }	69	IV
TOTAL 180CH { VHF 124CH { UHF 56CH					
NOTE: TO RECEIVE THE SUBSCRIPTION OR PREMIUM PROGRAMMING FROM CERTAIN CABLE COMPANIES. SPECIAL ADAPTERS MAY BE REQUIRED.					

CHANNEL CHART (CA)

MODE		BAND	CHANNEL		TUNER BAND
TV	CATV		REAL	DISP.	
○	○	VL	02		I
			03		
			04		
			05		
			06		
		VH	07		II
			08		
			09		
			10		
			11		
			12		
			13		
		MID	A	14	
			B	15	
			C	16	
			D	17	
			E	18	
			F	19	
			G	20	
			H	21	
			I	22	
×	○	SUPER	J	23	III
			K	24	
			L	25	
			M	26	
			N	27	
			O	28	
		HYPER	P	29	
			Q	30	
			R	31	
			S	32	
			T	33	
			U	34	
			V	35	
			W	36	
			W+1	37	
			W+2	38	
			W+3	39	
			W+4	40	
			W+5	41	
			W+6	42	
			W+7	43	
			W+8	44	
			W+9	45	
			W+10	46	
			W+11	47	
			W+12	48	
			W+13	49	
			W+14	50	
			W+15	51	
			W+16	52	
			W+17	53	
			W+18	54	
			W+19	55	
			W+20	56	
			W+21	57	
			W+22	58	
			W+23	59	
			W+24	60	
			W+25	61	
			W+26	62	
			W+27	63	
			W+28	64	
		ULTRA	W+29	65	IV
			W+30	66	
			W+31	67	
			W+32	68	
			W+33	69	
			W+34	70	

MODE		BAND	CHANNEL		TUNER BAND
TV	CATV		REAL	DISP.	
×	○	ULTRA	W+35	71	IV
			W+36	72	
			W+37	73	
			W+38	74	
			W+39	75	
			W+40	76	
			W+41	77	
			W+42	78	
			W+43	79	
			W+44	80	
			W+45	81	
			W+46	82	
			W+47	83	
			W+48	84	
			W+49	85	
			W+50	86	
			W+51	87	
			W+52	88	
			W+53	89	
			W+54	90	
			W+55	91	
			W+56	92	
			W+57	93	
			W+58	94	
			W+59	100	
			W+60	101	
			W+61	102	
			W+62	103	
			W+63	104	
			W+64	105	
			W+65	106	
			W+66	107	
			W+67	108	
			W+68	109	
			W+69	110	
		W+70	111		
		W+71	112		
		W+72	113		
		W+73	114		
		W+74	115		
		W+75	116		
		W+76	117		
		W+77	118		
		W+78	119		
		W+79	120		
W+80	121				
W+81	122				
W+82	123				
W+83	124				
W+84	125				
		SUB MID	A-8	01	I
			A-4	96	
			A-3	97	II
			A-2	98	
			A-1	99	
○	×	UHF	14 } 69		IV
TOTAL 180CH { VHF 124CH { UHF 56CH					
NOTE: TO RECEIVE THE SUBSCRIPTION OR PREMIUM PROGRAMMING FROM CERTAIN CABLE COMPANIES. SPECIAL ADAPTERS MAY BE REQUIRED.					

JVC SERVICE & ENGINEERING COMPANY OF AMERICA **DIVISION OF JVC AMERICAS CORP.**

www.jvcservice.com(US Only)

JVC CANADA INC.

Head office : 21 Finchdene Square Scarborough, Ontario M1X 1A7

(416)293-1311

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