

JVC

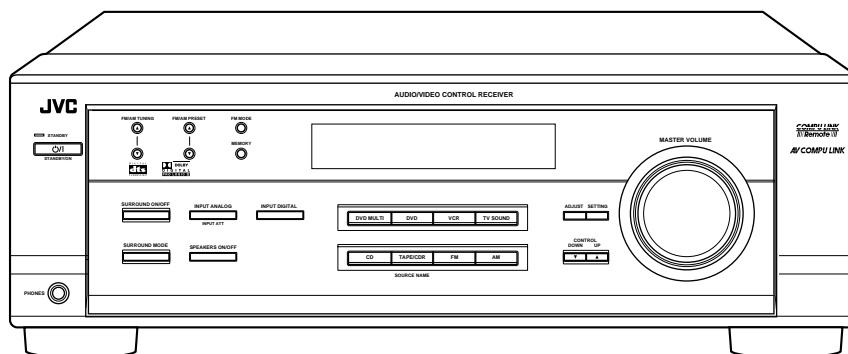
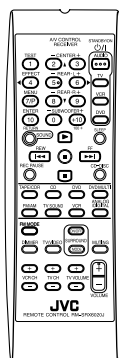
SERVICE MANUAL

AUDIO/VIDEO CONTROL RECEIVER

RX-6022VSL

Area suffix

J ----- U.S.A.



AV COMPU LINK

COMPU LINK
Remote

DIGITAL
ds
SURROUND


DOLBY
DIGITAL
PRO LOGIC II

Model	Color	
	Front panel	Top cover
RX-6020VBK	black	black
RX-6022VSL	silver	silver

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Safety Precautions

1. This design of this product contains special hardware and many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Services should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the product should not be made. Any design alterations of the product should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacture of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the Parts List of Service Manual. Electrical components having such features are identified by shading on the schematics and by () on the Parts List in the Service Manual. The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement parts shown in the Parts List of Service Manual may create shock, fire, or other hazards.
4. The leads in the products are routed and dressed with ties, clamps, tubings, barriers and the like to be separated from live parts, high temperature parts, moving parts and/or sharp edges for the prevention of electric shock and fire hazard. When service is required, the original lead routing and dress should be observed, and it should be confirmed that they have been returned to normal, after re-assembling.

5. Leakage current check (Electrical shock hazard testing)

After re-assembling the product, always perform an isolation check on the exposed metal parts of the product (antenna terminals, knobs, metal cabinet, screw heads, headphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.

Do not use a line isolation transformer during this check.

- Plug the AC line cord directly into the AC outlet. Using a "Leakage Current Tester", measure the leakage current from each exposed metal parts of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground. Any leakage current must not exceed 0.5mA AC (r.m.s.).

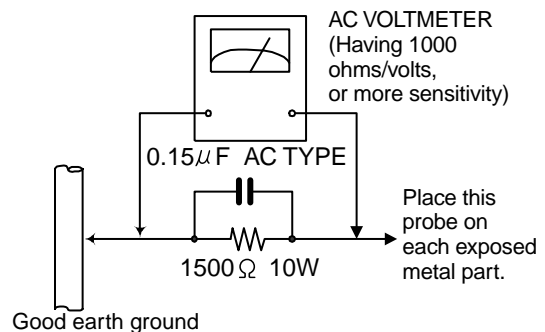
● Alternate check method

Plug the AC line cord directly into the AC outlet. Use an AC voltmeter having, 1,000 ohms per volt or more sensitivity in the following manner. Connect a 1,500 Ω 10W resistor paralleled by a 0.15 μ F AC-type capacitor between an exposed metal part and a known good earth ground.

Measure the AC voltage across the resistor with the AC voltmeter.

Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor.

Now, reverse the plug in the AC outlet and repeat each measurement. Voltage measured any must not exceed 0.75 V AC (r.m.s.). This corresponds to 0.5 mA AC (r.m.s.).







Warning

1. This equipment has been designed and manufactured to meet international safety standards.
2. It is the legal responsibility of the repairer to ensure that these safety standards are maintained.
3. Repairs must be made in accordance with the relevant safety standards.
4. It is essential that safety critical components are replaced by approved parts.
5. If mains voltage selector is provided, check setting for local voltage.

CAUTION

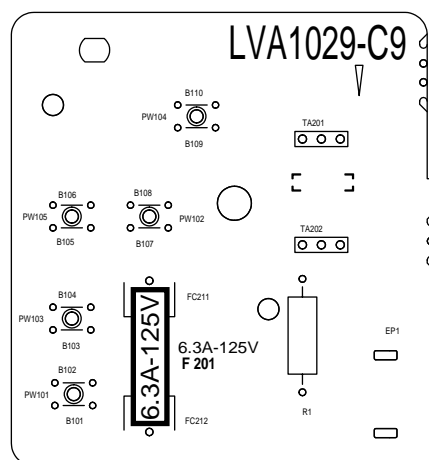
Burrs formed during molding may be left over on some parts of the chassis. Therefore, pay attention to such burrs in the case of preforming repair of this system.

In regard with component parts appearing on the silk-screen printed side (parts side) of the PWB diagrams, the parts that are printed over with black such as the resistor (), diode () and ICP () or identified by the "  " mark nearby are critical for safety.

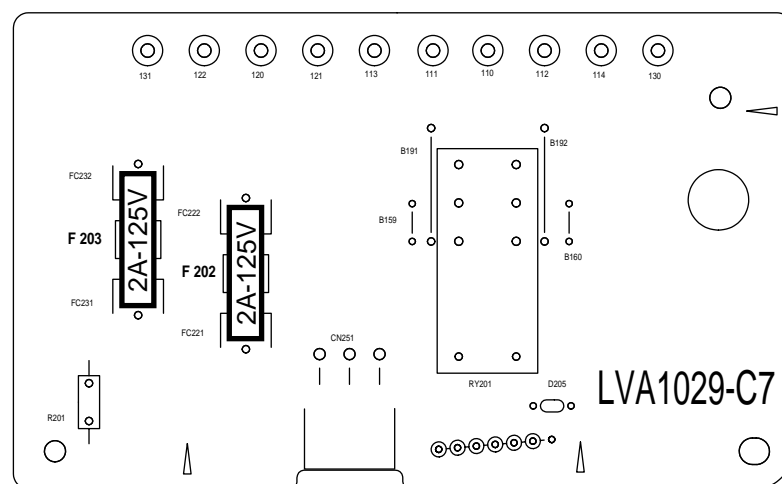
(This regulation does not correspond to J and C version.)

Importance administering point on the safety

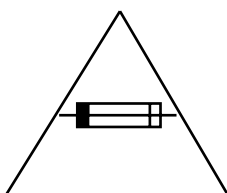
Primary part



Secondary parts



For USA and Canada / pour États - Unis d' Amérique et Canada



Caution: For continued protection against risk of fire, replace only with same type 6.3A/125V for F201, 2A/125V for F202 and F203.

This symbol specifies type of fast operating fuse.

Précaution: Pour éviter risques de feux, remplacez le fusible de sûreté de F201 comme le même type que 6.3A/125V, et 2A/125V pour F202 et F203. Ce sont des fusibles sûretés qui fonctionnent rapide.

Disassembly method

■ Removing the top cover (See Fig.1)

1. Remove the four screws **A** attaching the top cover on both sides of the body.
2. Remove the three screws **B** on the back of the body.
3. Remove the top cover from behind in the direction of the arrow while pulling both sides outward.

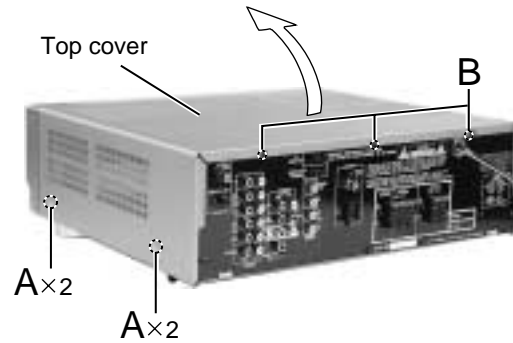


Fig.1

■ Removing the front panel assembly (See Fig.2, 3)

- Prior to performing the following procedure, remove the top cover.
1. Disconnect the card wire from connector CN402 on the audio board and CN201 on the power supply board in the front panel assembly.
 2. Cut off the tie band fixing the harness.
 3. Remove the three screws **C** attaching the front panel assembly.
 4. Remove the four screws **D** attaching the front panel assembly on the bottom of the body. Detach the front panel assembly toward the front.

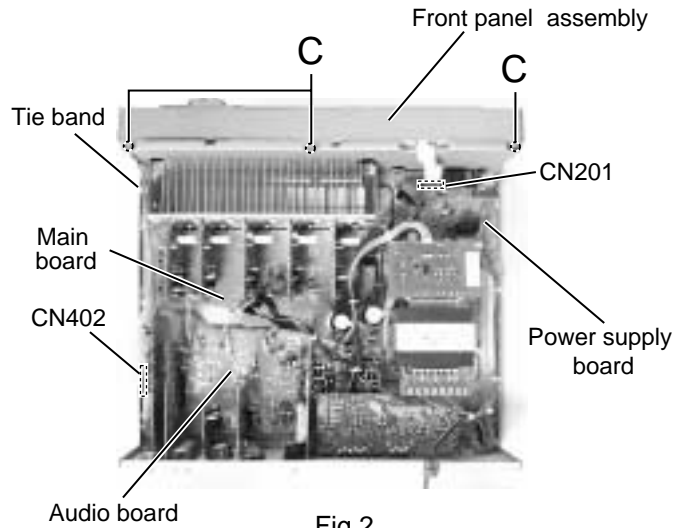


Fig.2

■ Removing the rear panel (See Fig.4)

- Prior to performing the following procedure, remove the top cover.
1. Remove the power cord stopper from the rear panel by moving it in the direction of the arrow.
 2. Remove the nineteen screws **E** attaching the audio input board, DVD board, video board and tuner board to the rear panel on the back of the body.
 3. Remove the four screws **F** attaching the rear panel on the back of the body.

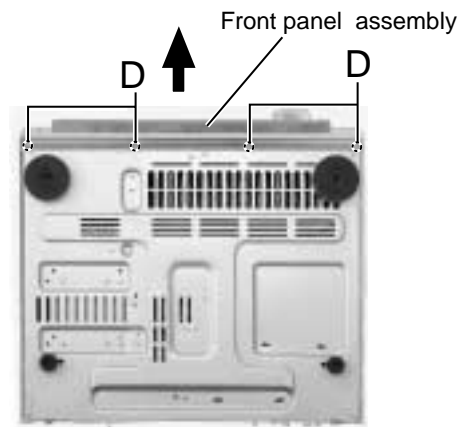


Fig.3

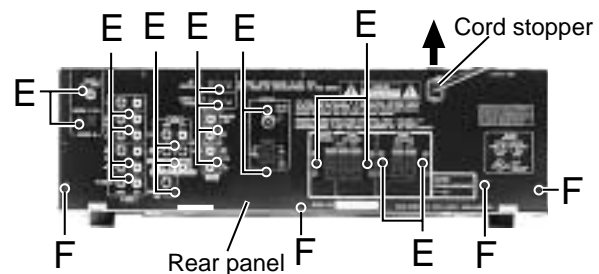


Fig.4

■ Removing the digital signal board / audio input board / DVD board / video board and tuner board on the audio board

(See Fig.5 to 8)

- Prior to performing the following procedure, remove the top cover and the rear panel.

1. Cut off the tie band fixing the harness.
2. Disconnect the digital signal board from connector CN481 on the audio board.
3. Disconnect the audio input board, DVD board and the video board from connector CN421, CN431 and CN441 on the audio board.
4. Disconnect the tuner board from connector CN411 on the audio board.

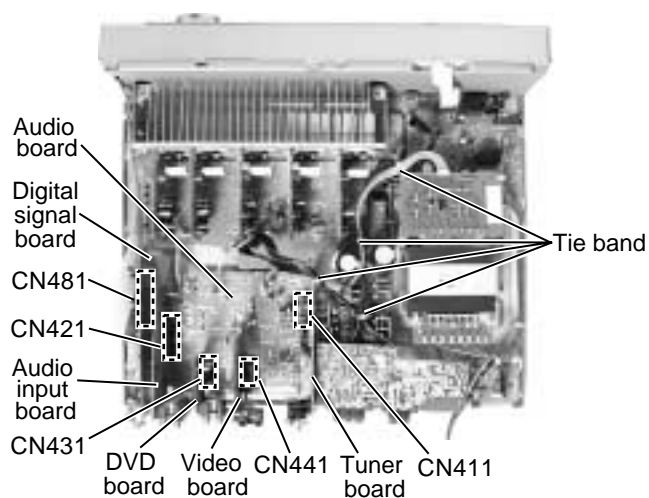


Fig.5

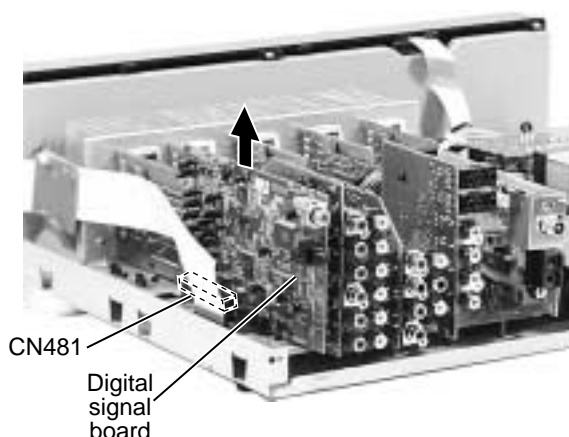


Fig.6

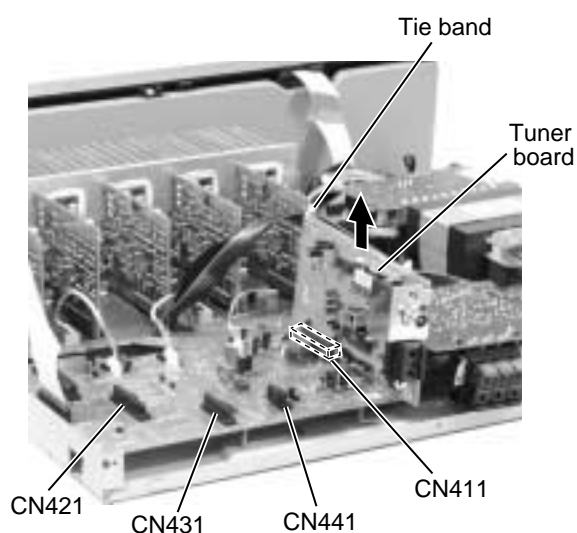


Fig.8

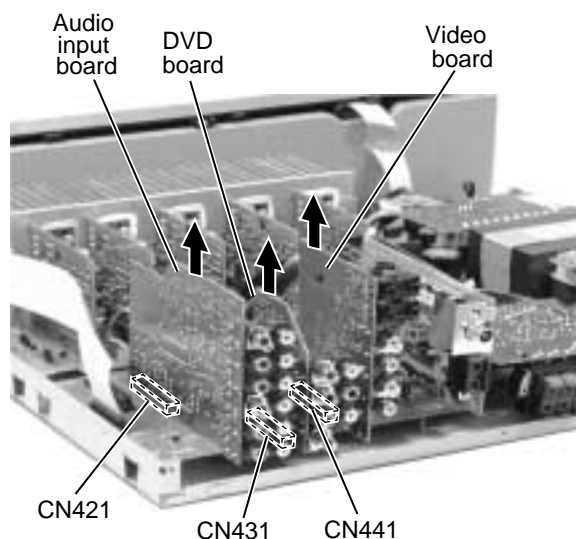


Fig.7

■ Removing the audio board (See Fig.9)

- Prior to performing the following procedure, remove the top cover and the rear panel.
1. Disconnect the card wire from connector CN402 on the audio board.
 2. Disconnect the relay board from the audio board and the power supply board. (CN291, CN491)
 3. Disconnect the harness from connector CN471, CN472, CN473.
 4. Remove the three screws **G** attaching the audio board assembly.
 5. Remove the screw **H** attaching the audio board assembly.

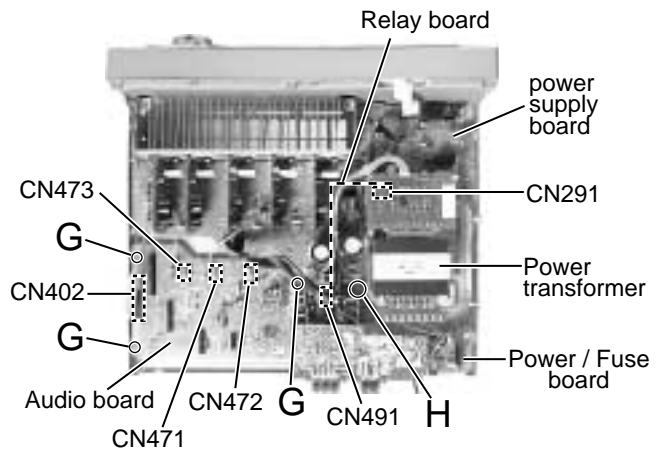


Fig.9

■ Removing the main board (See Fig.10)

- Prior to performing the following procedure, remove the top cover, the rear panel and audio board.
1. Disconnect the harness from connector CN241 and CN203 on the power supply board respectively.
 2. Disconnect the harness from connector CN251 on the power transformer board.
 3. Remove the four screws **I** and the two screws **J** attaching the main board.

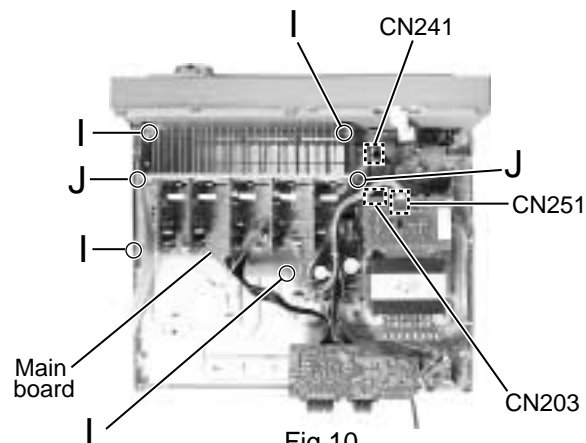


Fig.10

■ Removing the Heat sink (See Fig.11 to 13)

- Prior to performing the following procedure, remove the top cover and main board.
1. Remove the two screws **K** attaching the heat sink to the reverse side of main board.
 2. Disconnect the for connectors with each amp. board, and remove the main board.
 3. Remove the four screws **M** and ten screws **L** attaching the heat sink.

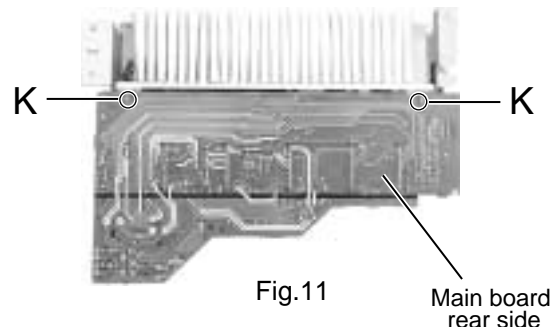


Fig.11

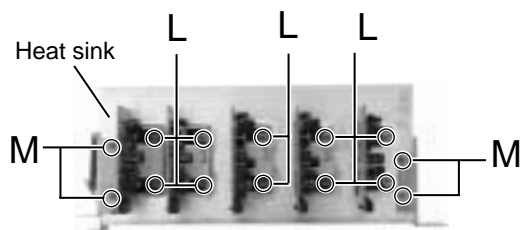


Fig.13

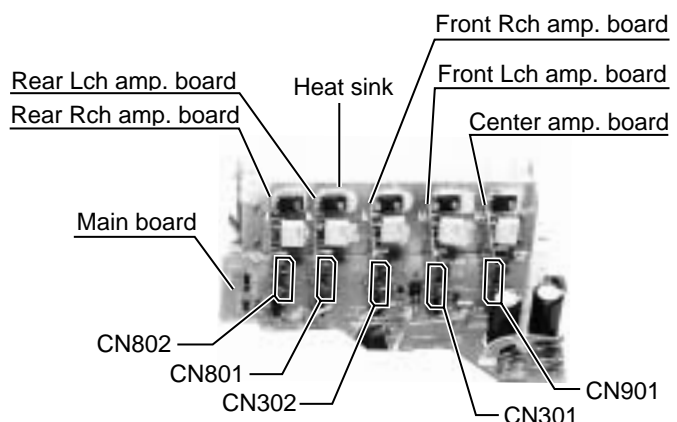


Fig.12

■ Removing the power transformer

(See Fig.14)

- Prior to performing the following procedures, remove the top cover.
1. Cut off the tie band fixing the harness.
 2. Unsolder the two harnesses connected of the power transformer board the solder points.
 3. Unsolder the harness connected to the FW201 of the power transformer board the solder points.
 4. Remove the four screws **N** attaching the power transformer.

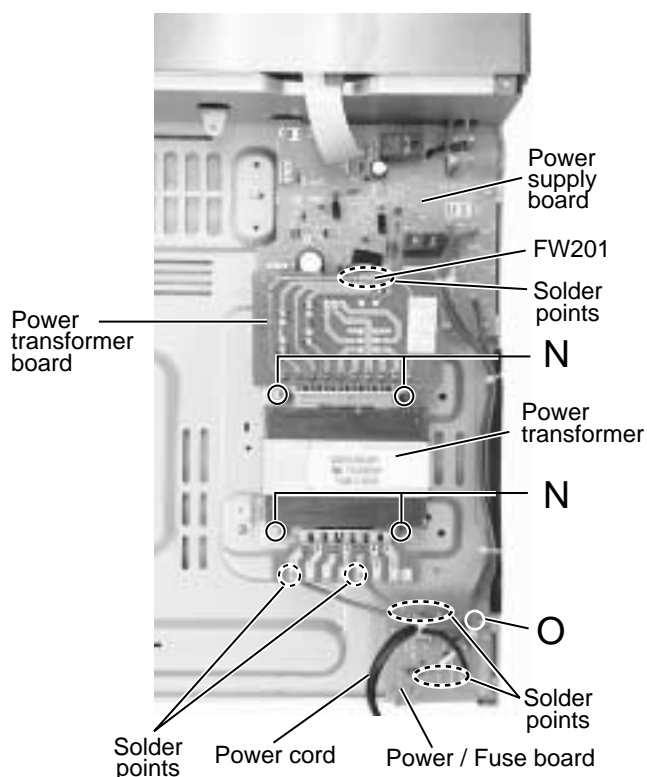


Fig.14

■ Removing the power / fuse board

(See Fig.14)

- Prior to performing the following procedure, remove the top cover and the rear panel.
1. Remove the screw **O** attaching the power / fuse board.
 2. Unsolder the harness connected of the power / fuse board the solder points.

■ Removing the power supply board

(See Fig.15, 16)

- Prior to performing the following procedure, remove the top cover and the front panel.
1. Remove the one nut attaching the headphone jack of the power supply board on the front side of the body.
 2. Disconnect the harness connected to connector CN241, CN201, CN203, and CN291 on the power supply board (If necessary, cut off the tie band fixing the harness on the side of the base chassis).
 3. Remove the three screws **P** attaching the power supply board and pull out the power supply board from the front hook backward.
 4. Unsolder the harness connected of the power / fuse board the three harnesses connected to the power supply board the solder points.

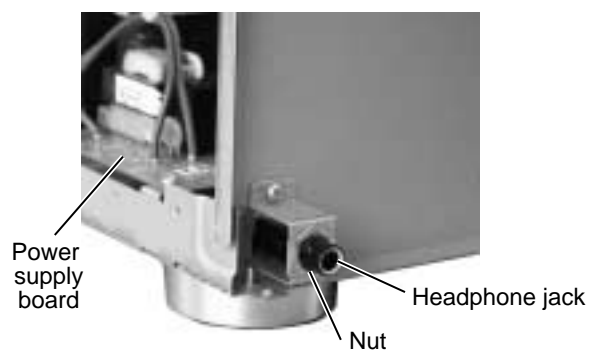


Fig.15

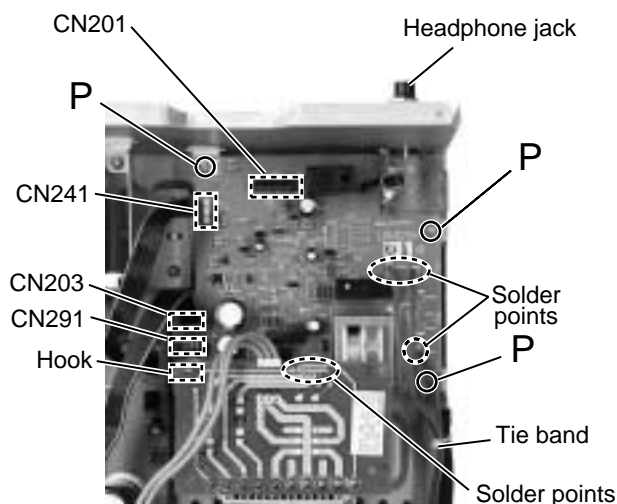


Fig.16

■ Removing the system control board / power switch board (See Fig.17 to 19)

- Prior to performing the following procedure, remove the top cover and the front panel assembly.
1. Pull out the volume knob on the front side of the front panel and remove the nut attaching the system control board.
 2. Remove the two screws **Q** attaching the power switch board.
 3. Disconnect the harness from connector CN714 on the power switch board.
 4. Remove the six screws **R** attaching the system control board on the back of the front panel.
 5. On the back of the front panel, release the six joints by pushing the joint tabs inward. Remove the operation switch panel toward the front.
 6. Release the two hook attaching the system control board.

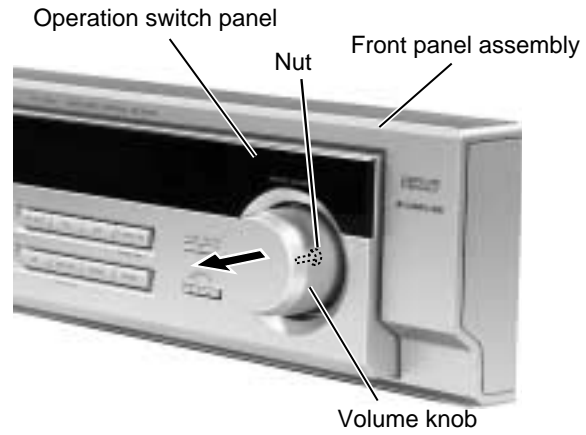


Fig.17

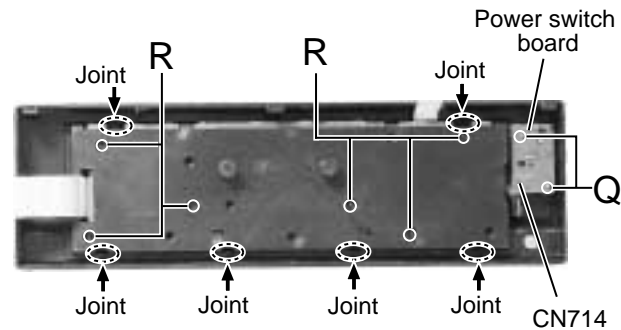


Fig.18

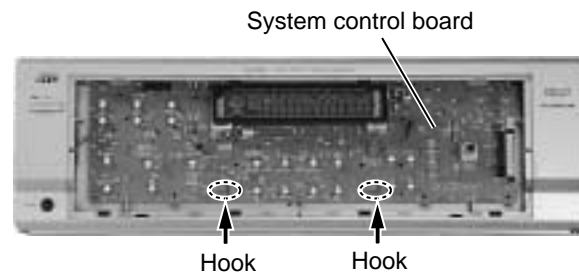


Fig.19

Adjustment method

■ Tuner section

1. Tuner range

FM	87.5MHz~108.0MHz
AM (MW)	530kHz~1710kHz

■ Power amplifier section

Adjustment of idling current

Measurement location	TP301 (Lch) , TP302 (Rch)
Adjustment part	VR301 (Lch) , VR302 (Rch)

Attention

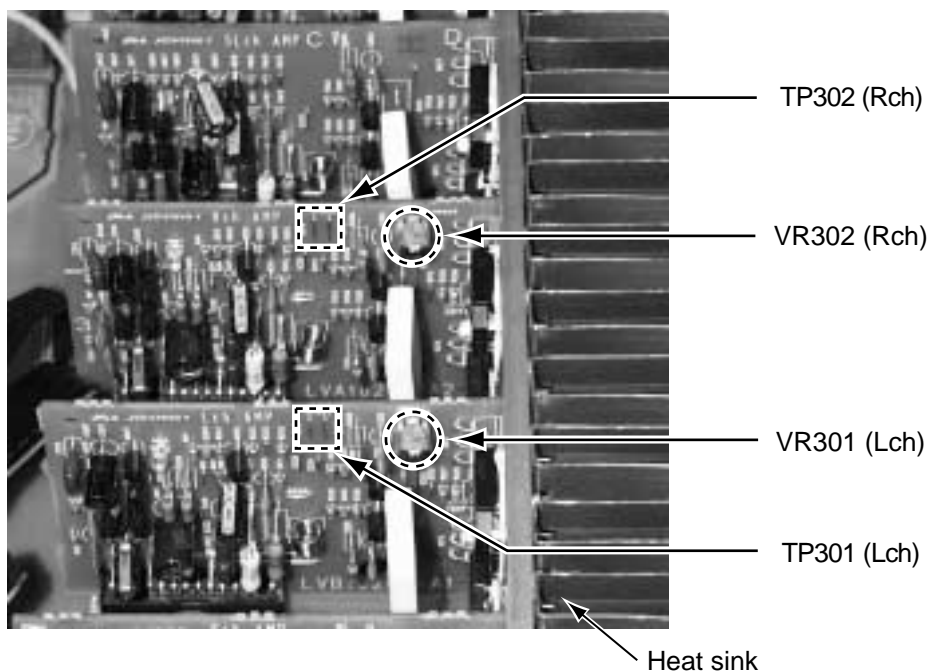
This adjustment does not obtain a correct adjustment value immediately after the amplifier is used (state that an internal temperature has risen).

Please adjust immediately after using the amplifier after turning off the power supply of the amplifier and falling an internal temperature.

<Adjustment method>

1. Set the volume control to minimum during this adjustment. (No signal & No load)
2. Set the surround mode OFF.
3. Turn VR301 and VR302 fully counterclockwise to warm up before adjustment.
If the heat sink is already warm from previous use the correct adjustment can not be made.
4. For L-ch, connect a DC voltmeter between TP301's B216 and B217 (Lch)
and, connect it between TP302's B218 and B219 (Rch).
5. 30 seconds later after power on, adjust VR301 for L-ch, or VR302 for R-ch so that the DC voltmeter value has 2.0mV.

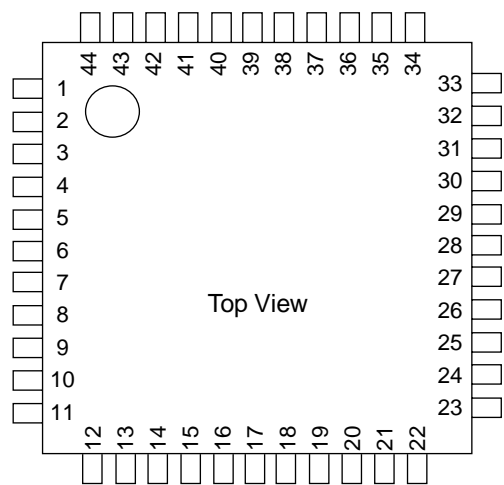
* It is not abnormal though the idling current might not become 0mA even if it is finished to turn variable resistance (VR301, VR302) in the direction of counterclockwise.



Description of major ICs

■ AK4527BVQP (IC601) : A/D,D/A Converter

1.Pin layout



2. Pin function (1/2)

No.	Symbol	I/O	Function
1	SDOS	I	SDTO Source Select Pin (Note 1) "L" : Internal ADC output, "H" : DAUX input
2	OSKS	I	Control Mode Select Pin "L" : 3-wire Serial, "H" : I2C Bus
3	MIS	-	Soft Mute Pin (Note 1), Connect to GND When this pin goes to "H", soft mute cycle is initialized. When returning to "L", the output mute releases.
4	BICK	I	Audio Serial Data Clock Pin
5	LRCK	I/O	Input Channel Clock Pin
6	SDTI1	I	DAC1 Audio Serial Data Input Pin
7	SDTI2	I	DAC2 Audio Serial Data Input Pin
8	SDTI3	I	DAC3 Audio Serial Data Input Pin
9	SDTO	O	Audio Serial Data Output Pin
10	D,AUX	-	Sub Audio Serial Data Input Pin, Connect to GND
11	DFS	-	Double Speed Sampling Mode Pin (Note 1) "L" : Normal Speed, "H" : Double Speed
12	DEMI	-	Connect to GND No internal bonding.
13	DEMO	-	Zero Input Detect Enable Pin, Connect to GND "L" : mode 7 (disable) at parallel mode, zero detect mode is selectable by DZFM2-0 bits at serial mode. "H" : mode 0 (DZF is AND of all six channels)
14	MCKO	-	Output Buffer Power supply Pin, 2.7V~5.5V
15	DVDD	I	Digital Power Supply Pin, 4.5V~5.5V
16	DVSS	-	De-emphasis Pin, 0V
17	PD	I	Power-Down & Reset Pin When "L", the AK4527B is powered-down and the control registers are reset to default state. If the state of P/S or CAD0-1 changes, then the AK4527B must be reset by PDN.
18	XTS	-	Test Pin, Connect to GND This pin should be connected to DVSS.

Pin function (2/2)

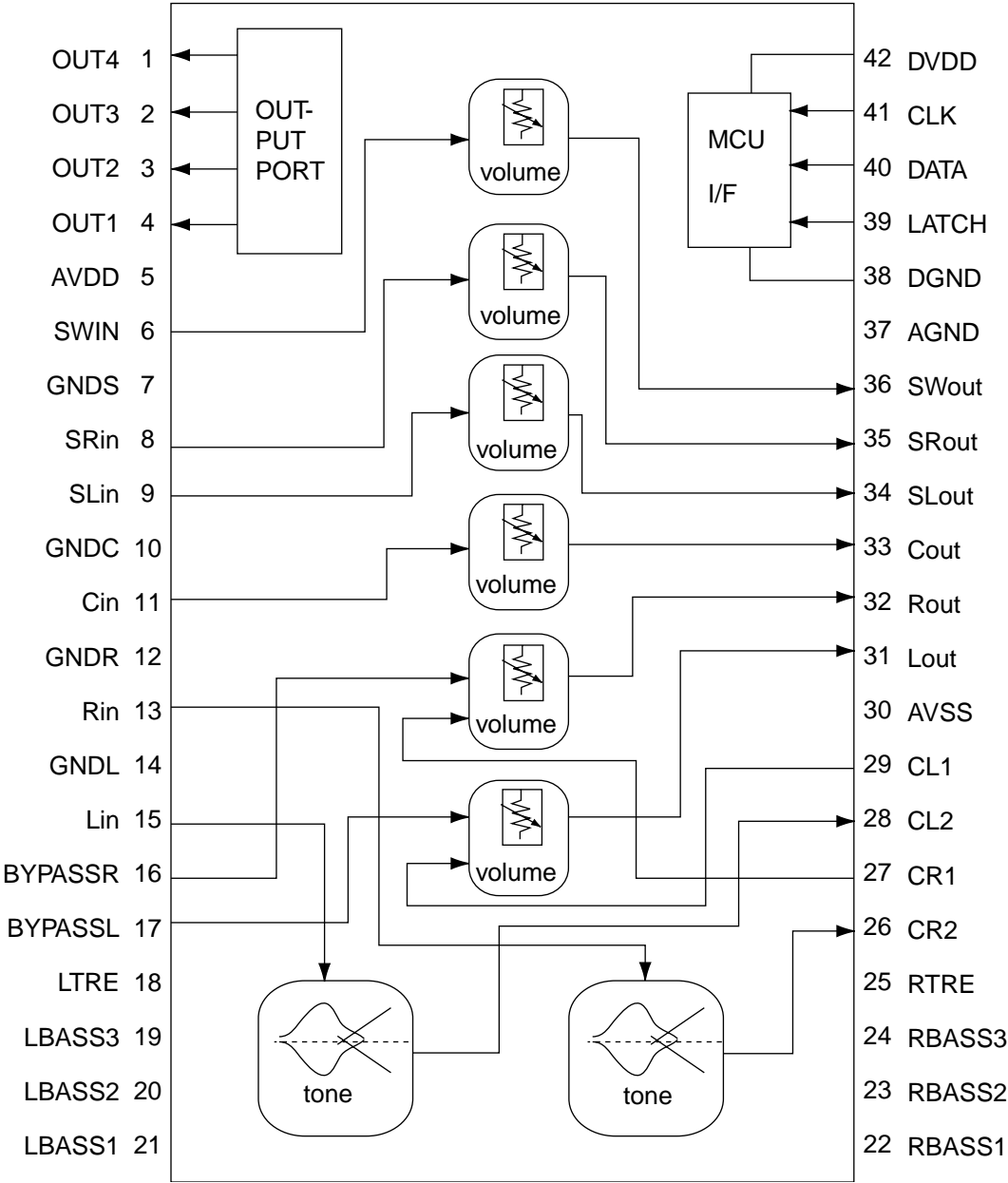
AK4527

No.	Symbol	I/O	Function
19	ICKS	-	Connect to GND No internal bonding.
20	ADIF	-	Analog Input Format Select Pin, Digital Power Supply "H" : Full-differential input, "L" : Single-ended input
21	CAD1	-	Chip Address 1 Pin, Connect to GND
22	CAD0	-	Chip Address 0 Pin, Connect to GND
23	LOUT3	O	DAC3 Lch Analog Output Pin
24	ROUT3	O	DAC3 Rch Analog Output Pin
25	LOUT2	O	DAC2 Lch Analog Output Pin
26	ROUT2	O	DAC2 Rch Analog Output Pin
27	LOUT1	O	DAC1 Lch Analog Output Pin
28	ROUT1	O	DAC1 Rch Analog Output Pin
29	LIN-	I	Lch Analog Negative Input Pin
30	LIN+	I	Lch Analog Positive Input Pin
31	RIN-	I	Rch Analog Negative Input Pin
32	RIN+	I	Rch Analog Positive Input Pin
33	VREFL	-	Zero Input Detect 2 Pin (Note 2), Non Connect When the input data of the group 1 follow total 8192LRCK cycles with "0" input data, this pin goes to "H".
	OVF	O	Analog Input Overflow Detect Pin (Note 3) This pin goes to "H" if the analog input of Lch or Rch is overflows.
34	VCOM	O	Common Voltage Output Pin, AVDD/2 Large external capacitor around 2.2uF is used to reduce power-supply noise.
35	VREFH	-	Positive Voltage Reference Input Pin, AVDD
36	AVDD	-	Analog Power Supply Pin, 4.5V~5.5V
37	AVSS	-	Analog Ground Pin, 0V
38	XTI	-	Zero Input Detect 1 Pin (Note 2), Non connect When the input data of the group 1 follow total 8192 LRCK cycles with "0" input data, this pin goes to "H".
39	XTO	I	Master Clock Input Pin
40	P1S	-	Parallel / Serial Select Pin "L" : Serial control mode, "H" : Parallel control mode
41	$\overline{\text{CS}}$	I	Audio Data Interface Format 0 Pin in parallel mode
	CSN	I	Chip select pin in 3-wire serial control mode This pin should be connected to DVDD at I2C bus control mode
42	DIF1	I	Audio Data Interface Format 1 Pin in parallel mode
	SCL/CCLK	I	Control Data Clock Pin in serial control mode I2C = "L" : CCLK(3-wire Serial), I2C = "H" : SCL(I2C Bus)
43	LOOP0	I	Loopback Mode 0 Pin in parallel control mode Enables digital loop-back from ADC to 3 DACs.
	SAD/CDTI	I/O	Control Data Input Pin in serial control mode I2C = "L" : CDTI(3-wire Serial), I2C = "H" : SDA(I2C Bus)
44	CTD	I	Loopback Mode 1 Pin (Note 1) Enable all 3 DAC channels to be input from SDTI.

- Notes : 1. SDOS, SMUTE, DFS, and LOOP1 pins are ORed with register data if P/S = "L".
 2. The group 1 and 2 can be selected by DZFM2-0 bit if P/S = "L" and DZFM2 = "L".
 3. This pin becomes OVF pin if OVFE bit is set to "1" at serial control mode.
 4. All input pins should not be left floating.

■ M62446FP (IC428) : 6Ch Master volume

1.Block Diagram



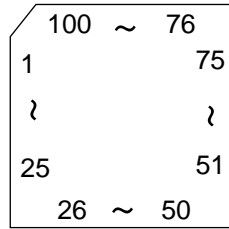
2.Pin Function

M62446FP

Pin No.	Symbol	I/O	Function
1	OUT4	O	BASS BOOST control terminal
2	OUT3	O	SURROUND control terminal
3	OUT2	O	VIDEO 2 control terminal
4	OUT1	O	VIDEO 1 control terminal
5	AVDD	-	Analog positive power supply terminal
6	SW IN	I	SUB Woofer volume signal input terminal
7	A.GND	-	Analog ground terminal
8	RR IN	I	R ch volume signal input terminal for rear speaker
9	RL IN	I	L ch volume signal input terminal for rear speaker
10	A.GND	-	Analog ground terminal
11	C IN	I	Center volume signal input terminal
12	A.GND	-	Analog ground terminal
13	R IN	I	R ch volume signal input terminal
14	A.GND	-	Analog ground terminal
15	L IN	I	L ch volume signal input terminal
16		-	Non connect
17		-	Non connect
18	LTRE	-	Frequency adjustment terminal tone/treble
19	LBASS3	-	Frequency adjustment terminal tone/bass
20	LBASS2	-	Frequency adjustment terminal tone/bass
21	KBASS1	-	Frequency adjustment terminal tone/bass
22	CR2	O	Tone output terminal
23	RBASS2	-	Frequency adjustment terminal tone/bass
24	RBASS3	-	Frequency adjustment terminal tone/bass
25	RTRE	-	Frequency adjustment terminal tone/treble
26	RBASS1	-	Frequency adjustment terminal tone/bass
27	CR1	I	L/R volume input terminal
28	LL2	O	Tone output terminal
29	CL1	I	L/R volume input terminal
30	AVSS	-	Analog negative power supply terminal
31	L OUT	O	L ch output
32	R OUT	O	R ch output
33	C OUT	O	Center volume signal output terminal
34	RL OUT	O	L ch volume signal output terminal for rear speaker
35	RR OUT	O	R ch volume signal output terminal for rear speaker
36	SW OUT	O	SUB Woofer volume signal output terminal
37	A.GND	-	Analog ground terminal
38	D.GND	-	Digital ground terminal
39	VOL LACH	I	Latch input terminal
40	VOL DATA	I	Volume data input terminal
41	VOL CLK	I	Clock input terminal for data transfer
42	DVDD	-	Digital power supply terminal

■ MN101C35DJW (IC701) : System controller

1. Pin layout



2. Pin function (1/2)

Pin No.	Symbol	I/O	Function
1	VOL.JOG IN_1	I	VOL.JOG IN_1
2	VOL.JOG IN_2	I	VOL.JOG IN_2
3	DATA (PLL)	I/O	DATA (PLL)
4	CLK (PLL)	O	CLK (PLL)
5	DE (PLL)	O	DE (PLL)
6	VIDEO S/C DVD	I	VIDEO S/C DVD
7	VIDEO S/C VCR	I	VIDEO S/C VCR
8	VDD	-	Power supply +5V
9	OSC2	I/O	Connecting the crystal oscillator for system clock (8MHz)
10	OSC1	I/O	Connecting the crystal oscillator for system clock (8MHz)
11	VSS	-	Connect to GND
12		-	Connect to GND
13	NC	-	Non connect
14		-	Connect to GND
15		-	Connect to GND
16	KEY IN 1	I	KEY INPUT 1
17	KEY IN 2	I	KEY INPUT 2
18	KEY IN 3	I	KEY INPUT 3
19	KEY IN 4	I	KEY INPUT 4
20	KEY IN 5	I	KEY INPUT 5
21	INH IN	I	INH IN
22	CS 1	I	CHIP SELECT 1
23	CS 2	I	CHIP SELECT 2
24	VREF+	-	Power supply +5V
25	VIDEO S/C DBS	I	VIDEO S/C DBS
26	RESET	I	RESET INPUT
27	CLK (RDS)	O	RDS CLK OUT (RDS)
28	DCS IN	I	DCS INPUT
29	DCS OUT	O	DCS OUTPUT
30	VCR IN	I	AVLINK VCR IN
31	VCR OUT	O	AVLINK VCR OUT
32	DATA (RDS)	I/O	RDS DATA (RDS)
33	PROTECTOR IN	I	PROTECTOR IN
34	RM IN	I	REMOCON INPUT
35	TUNED IN	I	TUNED IN (TUNER)
36	STEREO IN	I	STEREO IN (TUNER)
37	DAVN (RDS)	I	RDS DAVN (RDS)
38	SELF DET	I	SELF DET INPUT
39	COMMAND (DSP)	O	COMMAND (DSP)
40	STATUS (DSP)	I	STATUS (DSP)

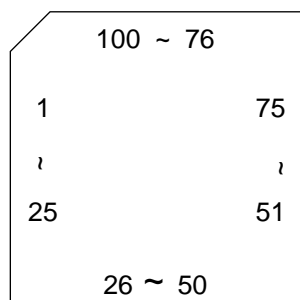
Pin function (2/2)

MN101C35DJW

Pin No.	Symbol	I/O	Function
41	CLK DSP	O	CLK (DSP)
42	READY	O	READY (DSP)
43	RESET	O	RESET (DSP)
44	RY S	O	RELAY SURROUND
45	RY C	O	RELAY CENTER
46	RY L/R1	O	RELAY FRONT 1
47	RY L/R2	O	RELAY FRONT 2
48	RY HP	O	RELAY HEADPHONE
49 ~ 64	GRID16~GRID1	O	FL GRID SIGNAL CONTROL OUT
65 ~ 80	SEG1~SEG16	O	FL SEGMENT SIGNAL CONTROL OUT
81	NC	-	Non connect
82	NC	-	Non connect
83	NC	-	Non connect
84	NC	-	Non connect
85	NC	-	Non connect
86	NC	-	Non connect
87	NC	-	Non connect
88	POWER	-	POWER ON Relay Control
89	S MUTE	O	SOUSE MUTE
90	SW MUTE	O	SUBWOOFER MUTE
91	TU MUTE	O	TUNER MUTE
92	STB LED	O	STANDBY LED
93	SURROUND	O	SURROUND
94	DATA	O	AUDIO SW DATA
95	CLK	O	CLK (AUDIO SW)
96	STB	O	STB (AUDIO SW)
97	LATCH	O	LATCH (VOLUME)
98	DATA	O	VOLUME DATA
99	CLK	O	CLK (VOLUME)
100	VPP	-	VPP

■ UPD784215AGC167 (IC671) : Dital signal controller

1.Pin layout



2.Pin function (1/2)

Pin No.	Symbol	I/O	Function
1~8		-	Non connect
9	VDD	-	Power supply terminal
10	X2	O	Connecting the crystal oscillator for system main clock
11	X1	I	Connecting the crystal oscillator for system main clock
12	VSS	-	Connect to GND
13	XT2	O	Connecting the crystal oscillator for system sub clock
14	XT1	I	Connecting the crystal oscillator for system sub clock
15	RESET	I	System reset signal input
16	AUTODATA	I	Output of DSP to general-purpose port
17	LOCK	I	Output of DSP to general-purpose port
18	DIGITAL0	I	Output of DSP to general-purpose port
19	FORMAT	I	Output of DSP to general-purpose port
20	CHANNEL	I	Output of DSP to general-purpose port
21	ERR	I	Output of DSP to general-purpose port
22	REST IN	I	Reset signal input
23	AVDD	-	Power supply terminal
24	AVREF0	-	Connect to GND
25		-	Connect to GND
26		-	Connect to GND
27		-	Connect to GND
28		-	Connect to GND
29		-	Connect to GND
30		-	Connect to GND
31		-	Connect to GND
32		-	Connect to GND
33	AVSS	-	Connect to GND
34,35		-	Non connect
36	AV REF1	-	Power supply terminal
37	RX	-	Not use
38	TX	-	Not use
39		-	Non connect
40	DSPCOM	I	Communication port from IC701
41	DSPSTS	O	Status communication port to IC701
42	DSPCLK	I	Clock input from IC701
43	DSPRDY	I	Ready signal input from IC701
44		-	Non connect
45	MIDIO IN	I/O	Interface I/O terminal with microcomputer
46	MIDIO OUT	I/O	Interface I/O terminal with microcomputer
47	MICK	O	Interface I/O terminal with microcomputer of clock signal
48	MICS	O	Interface I/O terminal with microcomputer of chip select

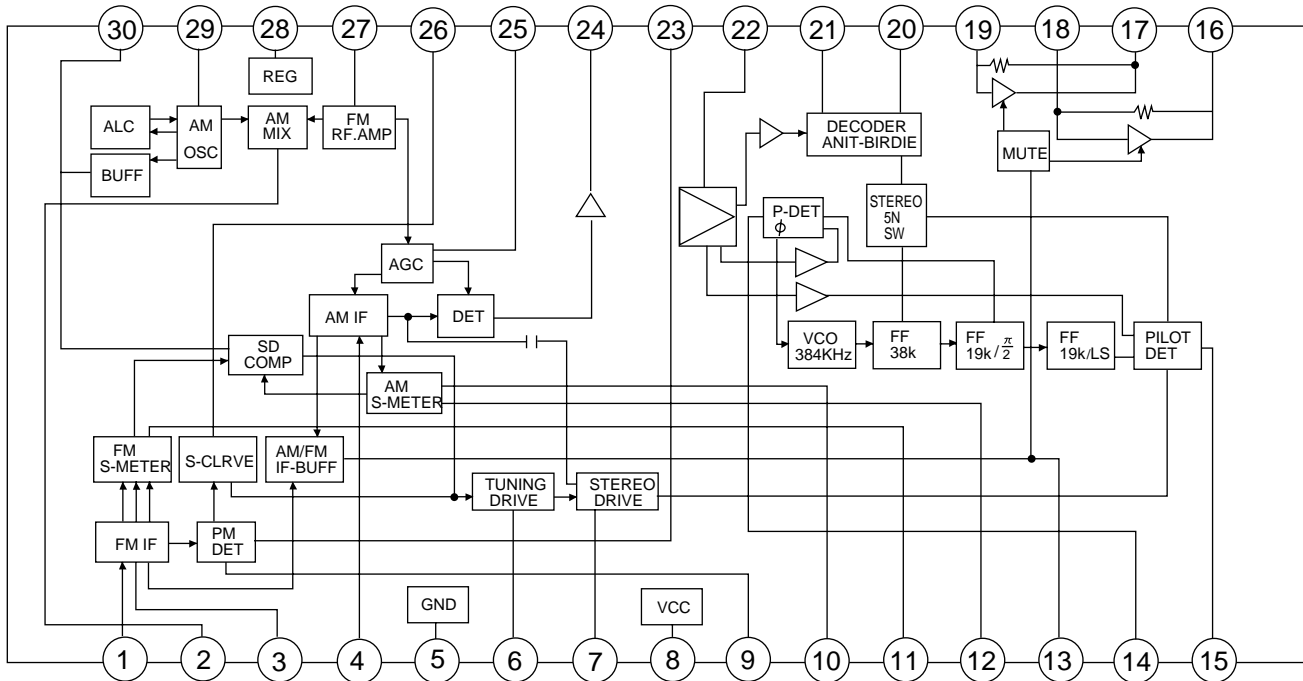
Pin function (2/2)

UPD784215AGC167

Pin No.	Symbol	I/O	Function
49	$\overline{\text{MILP}}$	O	Interface I/O terminal with microcomputer
50	$\overline{\text{MIACK}}$	O	Interface I/O terminal with microcomputer
51		-	Non connect
52		-	Non connect
53	$\overline{\text{DSPRST}}$	O	Reset signal output of DSP
54~63		-	Non connect
64	CODEC OUT	I/O	Interface I/O terminal with microcomputer
65	CODEC IN	I/O	Interface I/O terminal with microcomputer
66	CODEC CLK	O	Interface I/O terminal with microcomputer of clock signal
67	$\overline{\text{CODEC CS}}$	O	Interface I/O terminal with microcomputer of chip select
68	CODEC XTS	-	Non connect
69		-	Non connect
70		-	Non connect
71	$\overline{\text{PD}}$	O	Reset signal output
72	GND	-	Connect to GND
73		-	Non connect
74		-	Non connect
75		-	Non connect
76		-	Non connect
77		-	Non connect
78		-	Non connect
79		-	Non connect
80		-	Non connect
81	VDD	-	Power supply
82		-	Non connect
83		-	Non connect
84	ANA/T-TONE	O	Test tone control
85	LEF-MIX	O	Control at output destination of LFE channel
86		-	Non connect
87	$\overline{\text{D.MUTE}}$	O	Mute of the digital out terminal is controlled
88	$\overline{\text{S.MUTE}}$	O	Mute of the audio signal is controlled
89		-	Non connect
90	ASW1	O	Selection of digital input selector
91	ASW2	O	Selection of digital input selector
92	ASW3	O	Selection of digital input selector
93	ASW4	O	Selection of digital input selector
94	TEST	-	Test terminal
95		-	Non connect
96		-	Non connect
97		-	Non connect
98		-	Non connect
99		-	Non connect
100		-	Non connect

■ LA1838 (IC102) : FM AM IF Amp.&detector, FM MPX Decoder

1. Block Diagram



2. Pin Function

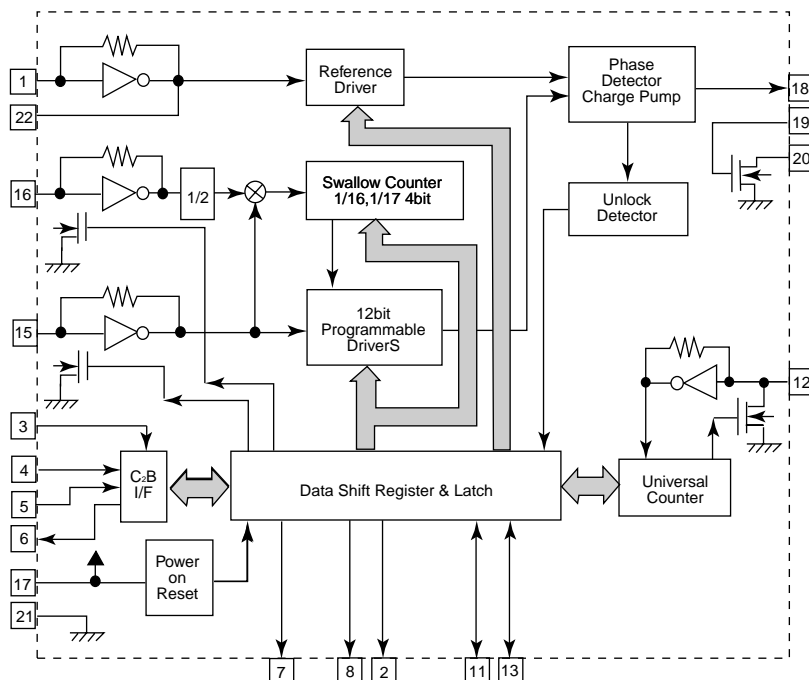
Pin No.	Symbol	I/O	Function	Pin No.	Symbol	I/O	Function
1	FM IN	I	This is an input terminal of FM IF signal.	16	L OUT	O	Left channel signal output.
2	AM MIX	O	This is an out put terminal for AM mixer.	17	R OUT	O	Right channel signal output.
3	FM IF	I	Bypass of FM IF	18	L IN	I	Input terminal of the Left channel post AMP.
4	AM IF	I	Input of AM IF Signal.	19	R IN	I	Input terminal of the Right channel post AMP.
5	GND	—	This is the device ground terminal.	20	RO	O	Mpx Right channel signal output.
6	TUNED	O	When the set is tuning,this terminal becomes "L".	21	LO	O	Mpx Left channel signal output.
7	STEREO	O	Stereo indicator output. Stereo "L", Mono: "H"	22	MPX IN	I	Mpx input terminal
8	VCC	—	This is the power supply terminal.	23	FM OUT	O	FM detection output.
9	FM DET	—	FM detect transformer.	24	AM DET	O	AM detection output.
10	AM SD	—	This is a terminal of AM ceramic filter.	25	AM AGC	I	This is an AGC voltage input terminal for AM
11	FM VSM	O	Adjust FM SD sensitivity.	26	AFC	—	This is an output terminal of voltage for FM-AFC.
12	AM VSM	O	Adjust AM SD sensitivity.	27	AM RF	I	AM RF signal input.
13	MUTE	I/O	When the signal of IF REQ of IC121(LC72131) appear, the signal of FM/AM IF output. //Muting control input.	28	REG	O	Register value between pin 26 and pin28 besides the frequency width of the input signal.
14	FM/AM	I	Change over the FM/AM input. "H" :FM, "L" : AM	29	AM OSC	—	This is a terminal of AM Local oscillation circuit.
15	MONO/ST	O	Stereo : "H", Mono: "L"	30	OSC BUFFER	O	AM Local oscillation Signal output.

■ LC72136N (IC121) : PLL frequency synthesizer

1. Pin layout

XT	1	22	XT
FM/AM	2	21	GND
CE	3	20	LPFOUT
DI	4	19	LPFIN
CLOCK	5	18	PD
DO	6	17	VCC
FM/ST/VCO	7	16	FMIN
AM/FM	8	15	AMIN
	9	14	
	10	13	IFCONT
SDIN	11	12	IFIN

2. Block diagram

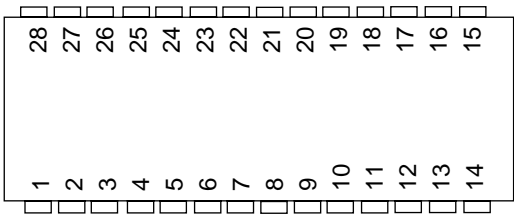


3. Pin function

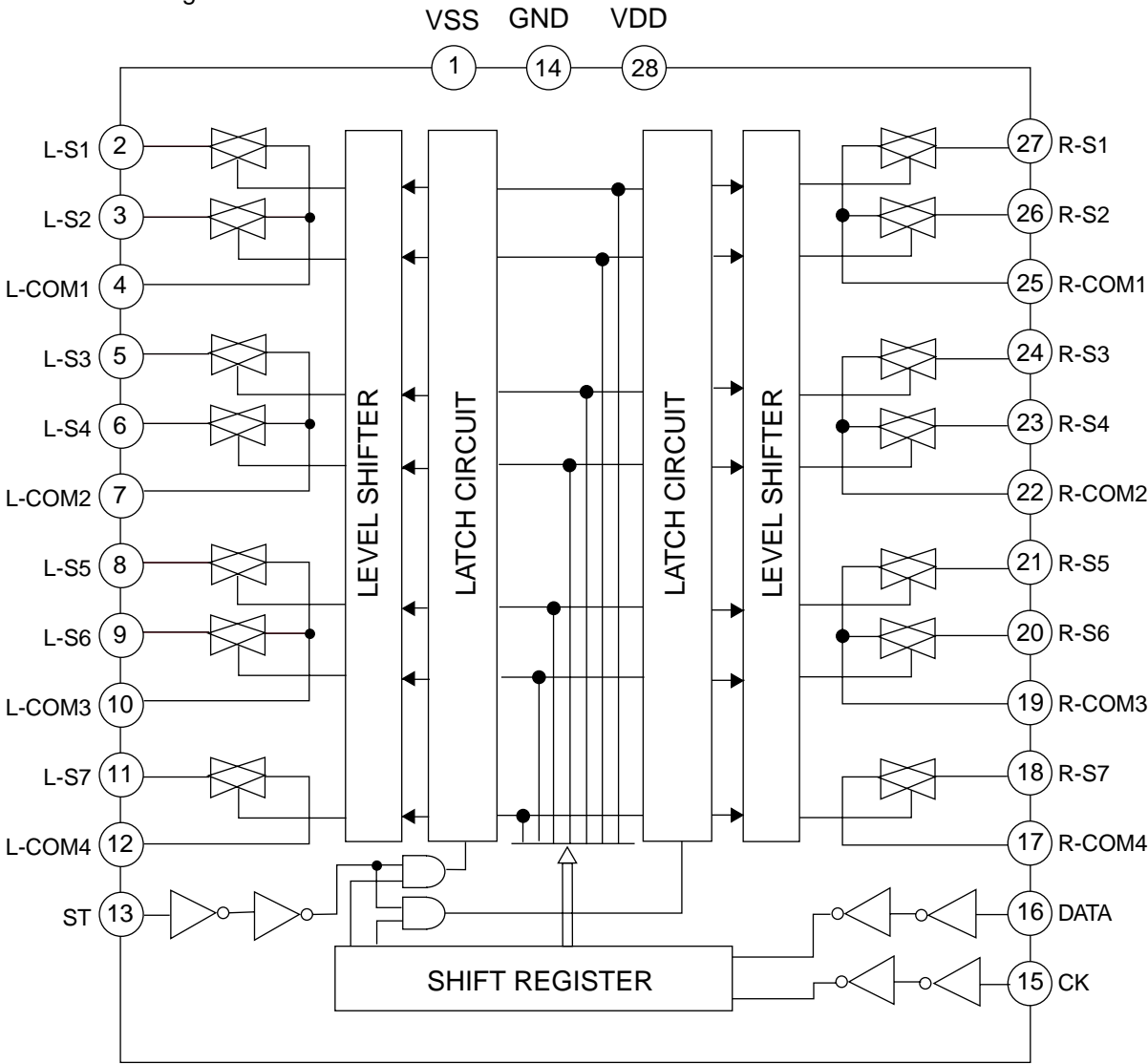
Pin No.	Symbol	I/O	Function	Pin No.	Symbol	I/O	Function
1	XT	I	X'tal oscillator connect (75kHz)	12	IFIN	I	IF counter signal input
2	FM/AM	O	LOW:FM mode	13	IFCONT	O	IF signal output
3	CE	I	When data output/input for 4pin(input) and 6pin(output): H	14		-	Not use
4	DI	I	Input for receive the serial data from controller	15	AMIN	I	AM Local OSC signal output
5	CLOCK	I	Sync signal input use	16	FMIN	I	FM Local OSC signal input
6	DO	O	Data output for Controller Output port	17	VCC	-	Power supply(VDD=4.5-5.5V) When power ON:Reset circuit move
7	FM/ST/VCO	O	"Low": MW mode	18	PD	O	PLL charge pump output(H: Local OSC frequency Height than Reference frequency. L: Low Agreement: Height impedance)
8	AM/FM	O	Open state after the power on reset	19	LPFIN	I	Input for active lowpassfilter of PLL
9	LW	I/O	Input/output port	20	LPFOUT	O	Output for active lowpassfilter of PLL
10	MW	I/O	Input/output port	21	GND	-	Connected to GND
11	SDIN	I/O	Data input/output	22	XT	I	X'tal oscillator(75KHz)

■ TC9162AF (IC423) : Analog switch

1. Pin layout



2. Block diagram



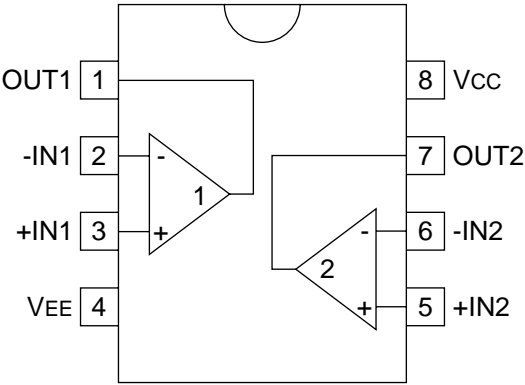
**■ TC9446F-025 (IC631) : Digital signal processor for dolby digital (AC-3)
/ DTS audio decode**

Pin No.	Symbol	I/O	Function
1	RST	I	Reset signal input terminal (L:reset H: normal operation)
2	MIMD	I	Microcomputer interface mode selection input terminal (L:serial H:IC bus)
3	MICS	I	Microcomputer interface chip select input terminal
4	MILP	I	Microcomputer interface latch pulse input
5	MIDIO	I/O	Microcomputer interface data I/O terminal
6	MICK	I	Microcomputer interface clock input terminal
7	MIACK	O	Microcomputer interface acknowledge output terminal
8~11	FI0~3	I	Flag input terminal 0~3
12	IRQ	I	Interrupt input terminal
13	VSS	-	Digital ground terminal
14	LRCKA	I	Audio interface LR clock input terminal A
15	BCKA	I	Audio interface bit clock input terminal A
16~18	SDO0~2	O	Audio interface data output terminal 0
19	SD03	-	Non connect
20	LRCKB	I	Audio interface LR clock input terminal B
21	BCKB	I	Audio interface bit clock input terminal B
22	SDT0	I	Audio interface data input terminal 0
23	SDT1	I	Audio interface data input terminal 1
24	VDD	-	Power supply for digital circuit
25	LRCKOA	O	Audio interface LR clock output terminal A
26	BCKOA	O	Audio interface bit clock output terminal A
27,28	TEST0,1	I	Test input terminal 0/1 (L:test H: normal operation)
29~30	LRCKOB,BCKOB	-	Non connect
31	TXO	O	SPDIF Output
32,33	TEST2,3	I	Test input terminal (L:test H: normal operation)
34	RX	I	SPDIF input terminal
35	VSS	-	Ground terminal for digital circuit
36	TSTSUB0	I	Test sub input terminal 0 (L:test H: normal operation)
37	FCONT	O	VCO Frequency control output terminal
38,39	TSTSUB1,TSTSUB2	I	Test sub input terminal 1,2 (L:test H: normal operation)
40	PDO	O	Phase detect signal output terminal
41	VDDA	-	Power supply for analog circuit
42	PLON	I	Clock selection input terminal (L:external clock H:VCO clock)
43	AMPI	I	amplifier input terminal for LPF
44	AMPO	O	amplifier output terminal for LPF
45	CKI	I	External clock input terminal
46	VSSA	-	Ground terminal for analog circuit
47	CKO	O	DIR Clock output terminal
48	LOCK	O	VCO Lock output terminal
49	VSS	-	Ground terminal for digital circuit
50	WR	O	External SRAM writing signal output terminal
51	OE	O	External SRAM output enable signal output terminal
52	CE	O	External SRAM chip enable signal output terminal
53	VDD	-	Power supply terminal for digital circuit
54~61	IO7~0	I/O	External SRAM data I/O terminal 7~0
62	VSS	-	Ground terminal for digital circuit
63~70	AD0~7	O	External SRAM address output terminal 0~7
71	VDD	-	Power supply terminal for digital circuit
72~80	AD8~16	O	External SRAM address output terminal 8~16
81	VSS	-	Ground terminal for digital circuit
82~89	PO0~7	O	General purpose output terminal 0~7
90	VDDDL	-	Power supply terminal for DLL
91	LPFO	O	LPF output terminal for DLL
92,93	DLON,DLCKS	I	Refer to the undermentioned table
94	SCKO	-	Non connect
95	VSSDL	-	Ground terminal for DLL
96	SCKI	I	External system clock input terminal
97	VSSX	-	Ground terminal for oscillation circuit
98,99	XO,XI	I/O	Oscillation I/O terminal
100	VDDX	-	Power supply terminal for oscillation circuit

DLCKS terminal	DLONterminal	DLL clock setting
L	L	SCKI input (DLL circuit OFF)
L	H	Four times XI clock
H	L	Three times XI clock
H	H	Six times XI clock

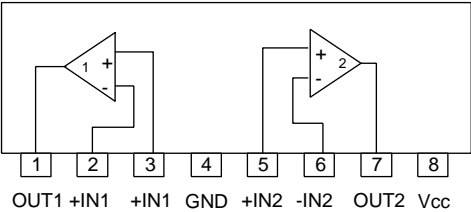
■ BA15218 (IC451) : Ope. amp.

1. Pin layout / Block diagram



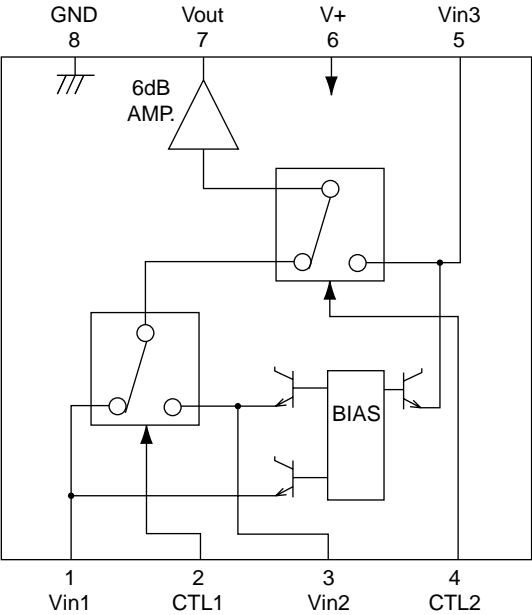
■ BA15218N (IC403) : Dual ope. amp.

1. Pin layout / Block diagram



■ NJM2246D (IC501) : Video switch

1. Pin layout / Block diagram

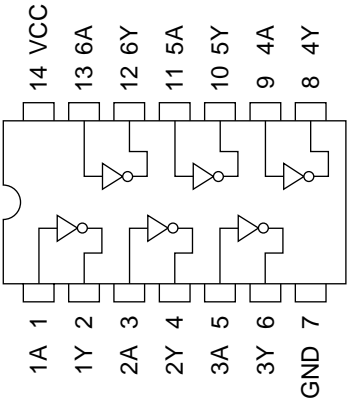


Control input - output signal

CTL 1	CTL 2	Output
L	L	VIN 1
H	L	VIN 2
L/H	H	VIN 3

■ TC74HCU04AF (IC621) : Inverter

1. Pin layout

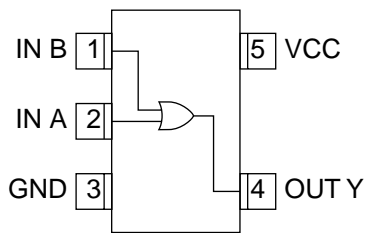


2. Truth value

A	Y
L	H
H	L

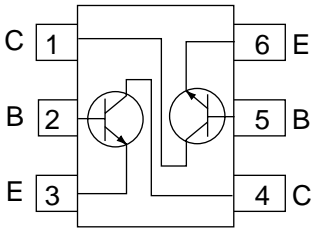
■ **TC7SET32FU (IC672) : Z-Input or gate**

1. Pin layout / Block diagram



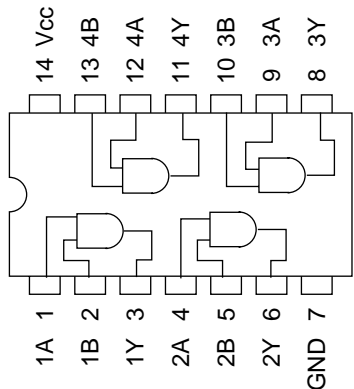
■ **IMX9-W (IC652, IC662, IC682) : Drive IC**

1. Pin layout / Block diagram



■ **TC74HCU08AF (IC611) : Inverter**

1. Pin layout / Block diagram

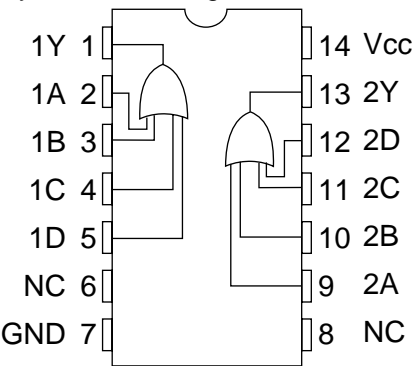


2.The truth value table

A	B	Y
L	L	L
L	H	L
H	L	L
H	H	H

■ **TC74HC4072AF (IC612) : 4-Input gate**

1.Pin layout & block diagram

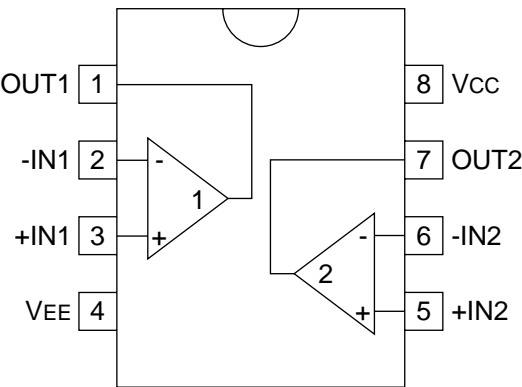


2. Truth table

A	B	C	D	Y
H	X	X	X	H
X	H	X	X	H
X	X	H	X	H
X	X	X	H	H
L	L	L	L	L

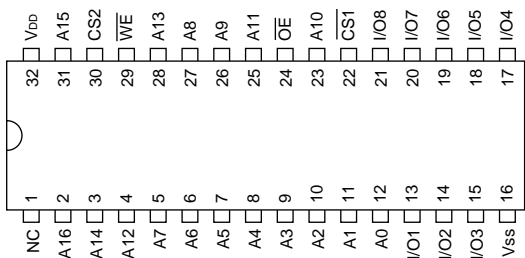
■ **BA15218F (IC 427, 609, 610, 650, 651, 661, 690, 691) : Ope. amp.**

1. Pin layout / Block diagram

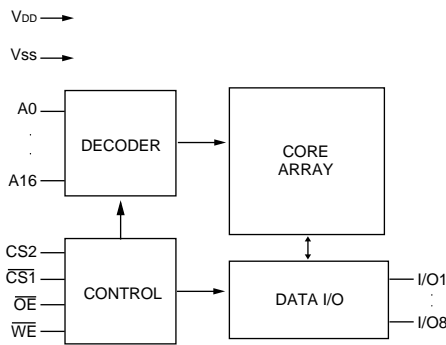


■W24L010AJ-12 (IC641) : SRAM

1. Pin layout



2. Block diagram



3. Pin function

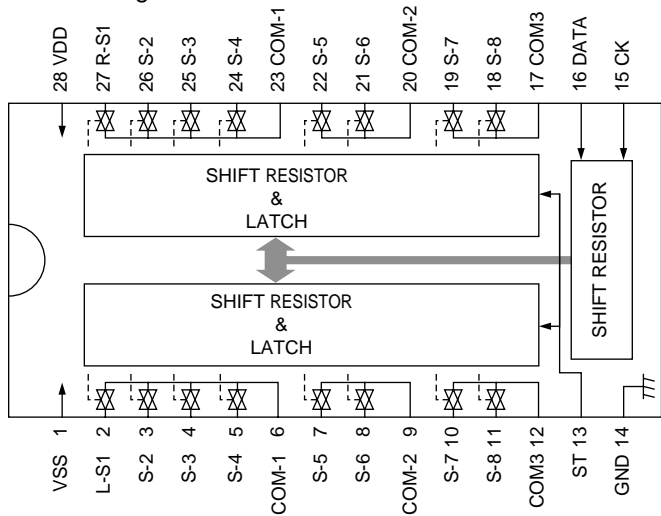
Pin No.	Symbol	Function	Pin No.	Symbol	Function
1	NC	No Connection	17	I/O4	Data Input/Output
2	A16	Address Input	18	I/O5	Data Input/Output
3	A14	Address Input	19	I/O6	Data Input/Output
4	A12	Address Input	20	I/O7	Data Input/Output
5	A7	Address Input	21	I/O8	Data Input/Output
6	A6	Address Input	22	CS1	Chip Select Inputs
7	A5	Address Input	23	A10	Address Input
8	A4	Address Input	24	OE	Output Enable Input
9	A3	Address Input	25	A11	Address Input
10	A2	Address Input	26	A9	Address Input
11	A1	Address Input	27	A8	Address Input
12	A0	Address Input	28	A13	Address Input
13	I/O1	Data Input/Output	29	WE	Write Enable Input
14	I/O2	Data Input/Output	30	CS2	Chip Select Inputs
15	I/O3	Data Input/Output	31	A15	Address Input
16	Vss	Ground	32	VDD	Power Supply

■ TC9164AN (IC402) : Analog switch

1.Function

Switch to On/Off of S1 to S8 by control of LSI.

2. Pin layout & Block Diagram



< M E M O >

RX-6022VSL



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