■ LSI PIN DISCRIPTION (LSI端子機能表)

● YM3436DK (XG948E00) DIR2 (Digital Format Interface Receiver)

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	DAUX	I	Auxiliary input for audio data	23	/RST	I	System reset
2	HDLT	O	Asynchronous buffer operation flag	24	VDDA		Power supply for VCO
3	DOUT	O	Audio data output	25	CTLN	I	VCO control input N
4	VFL	O	Parity flag output	26	PCO	O	PLL phase comparison output
5	OPT	O	Fs×1 Synchronous output for DAC	27	NC		No connection
6	SYNC	O	Fs×1 Synchronous output for DSP	28	CTLP	I	VCO control input P
7	MCC	O	Fs×64 Bit clock output	29	VSSA		Ground for VCO
8	WC	O	Fs×128 Word clock output	30	/TS		Test pin
9	MCB	O	Fs×128 Bit clock output	31	KM2	I	Clock mode switching input 2
10	MCA	O	Fs×256 Bit clock output	32	KM0	I	Clock mode switching input 0
11	SKSY	I	Clock synchronization control input	33	FS1	O	Channel status sampling frequency display output 1
12	XI	I	Crystal oscillator connection for external clock	34	FS0	O	Channel status sampling frequency display output 0
13	XO	O	Crystal oscillator connection	35	CSM	I	Channel status output method select
14	P256	O	VCO oscillating clock connection	36	EXTW	I	External synchronous auxiliary input word clock
15	VSS		Ground	37	DDIN	I	EIAJ (AES/EBU) data input
16	/LOCK	O	PLL lock flag	38	LR	O	PLL word clock output
17	TST2		Test pin 2	39	VDD		Power supply
18	DIM1	I	Data input mode select 1	40	ERR	O	Data error flag output
19	DIM0	I	Data input mode select 0	41	EMP	O	Channel status emphasis control data
20	DOM1	I	Data output mode select 1	42	CD0	O	3-wire type microcomputer interface data
21	DOM0	I	Data output mode select 0	43	CCX	I	3-wire type microcomputer interface clock
22	KM1	I	Clock mode switching input 1	44	CLD	I	3-wire type microcomputer interface load

• YSF210 (XK280A00) 8 time Over Sampling Digital Filter

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	XO	O	System clock	13	OBIT1	I	Output bit selection
2	XI	I		14	OBIT2	I	
3	Vss2		Ground				
4	BCI	I	Bit clock				
5	SDSY	I	L/R select and input timing				
6	IBIT1	I	Input bit selection	15	NC	—	No connection
7	IBIT2	I		16	ASY	I	Synchronous/Asynchronous system clock selection
8	IBIT3	I		17	Vss1		Ground
				18	BCO	O	Bit clock of DLO, DRO
				19	WCO	O	Word clock of DLO, DRO
9	MUTE	I	Mute	20	SHL	O	Deglich signal of L/R channel
10	NC	—	No connection	21	DRO	O	Output data of R channel
11	SDI	I	Input data	22	NC	—	No connection
12	VDD2		Power supply	23	DLO	O	Output data of L channel
				24	VDD1		Power supply

Input bit selection

	22 bit	20 bit	18 bit	16 bit	AV-DSP	MEL
IBIT1	H	L	H	L	H	L
IBIT2	H	H	L	L	H	H
IBIT3	H	H	H	H	L	L

Output bit selection

	22 bit	20 bit	18 bit	no output
OBIT1	H	L	H	L
OBIT2	H	H	L	L

● YM3437C-F (XM530A00) DIT2 (Digital Format Interface Transmitter)

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	VSS		Ground	9	MUTE	I	Mute
2	MCLK	I	Master clock	10	VFL	I	Validity flag
3	DM0	I	DIN/BCLK/WCLK format select 0	11	CCK/SCB	I	C,U bit clock input/C bit data input
4	DM1	I	DIN/BCLK/WCLK format select 1 DM1,DM0=0,0: DSP,LDSP(64bit, LSB first) DM1,DM0=0,1: stereo DSP(64bit, MSB first) DM1,DM0=1,0: DSP2(128bit, MSB first) DM1,DM0=1,1: BB(64bit, MSB first)	12	CIN/UDB	I	C,U bit data input/U bit data input
5	/RST	I	System reset	13	CLD/AUX	I	End of C, U bit input/16,20bit/24bit select
6	WCIN	I	Word clock input	14	CTR/BLK	I	32 bit counter reset/Top of block
7	DIN	I	Digital audio serial data input	15	CSM	I	Channel status input mode select CSM=0: Asynchronous mode CSM=1: Synchronous mode
8	VDD		Power supply	16	DOUT	O	Digital interface formatted data output

• AK5390-VP (XQ199A00) ADC (Analog Digital Converter)

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	AGND		Analog ground	15	SCLK	I	Serial data clock
2	AINL	I	Left channel analog input	16	SDATA	O	Serial data output
3	ZEROL	I	Zero level output for left channel	17	FSYNC	I/O	Frame synch. clock
4	VA+	I	Positive analog power supply	18	VD+		Positive digital power supply (+)
5	VA-	I	Negative analog power supply	19	DGND		Digital ground
6	APD		Analog power down	20	CLK	I	Master clock
7	ACAL		Analog calibration	21	OCLK	O	Clock output
8	NC		No connection	22	NC		No connection
9	DACL	O	Digital calibration	23	ICLK	I	Master clock input
10	DPD	I	Digital power down	24	LGND		Logic ground
11	TST	I	Test pin	25	VL+		Positive logic power supply
12	CMODE	I	Master clock select (L: CLK=256fs, H:CLK=384fs)	26	ZEROR	I	Zero level output for right channel
13	SMODE	I	Interface clock select (L: slave mode, H: master mode)	27	AINR	I	Right channel analog input
14	L//R	I	Input channel select	28	VREF+	O	Reference voltage (+)

● SED1335F0B (XQ595A00) LCDC (LCD Controller)

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	VA5	O	VRAM address bus	31	XD2	O	X driver data bus
2	VA4	O		32	XD1	O	
3	VA3	O		33	XD0	O	
4	VA2	O		34	XECL	O	X driver enable chain clock
5	VA1	O		35	XSCL	O	X driver shift clock
6	VA0	O		36	VSS		Ground
7	VR/W	O	VRAM write strobe	37	LP	O	Latch pulse
8	/VCE	O	VRAM chip enable	38	WF	O	Frame signal
9	NC			39	YDIS	O	LCD power down
10	/RES	I	Reset	40	YD	O	Scan start pulse
11	NC			41	YSCL	O	Scan shift clock
12	NC			42	VD7	I/O	VRAM data bus
13	/RD	I	80: Read strobe, 68: E clock	43	VD6	I/O	
14	/WR	I	80: Write strobe, 68: Read/Write	44	VD5	I/O	
15	SEL2	I	CPU 80/68 bus select	45	VD4	I/O	
16	SEL1	I		46	VD3	I/O	
17	OSC1	I	Clock	47	VD2	I/O	
18	OSC2	O		48	VD1	I/O	
19	/CS	I	Chip select	49	VD0	I/O	
20	A0	I	Data bus signal discrimination	50	VA15	O	VRAM address bus
21	VDD		Power supply	51	VA14	O	
22	D0	I/O	Data bus	52	VA13	O	
23	D1	I/O		53	VA12	O	
24	D2	I/O		54	VA11	O	
25	D3	I/O		55	VA10	O	
26	D4	I/O		56	VA9	O	
27	D5	I/O		57	VA8	O	
28	D6	I/O		58	VA7	O	
29	D7	I/O		59	VA6	O	
30	XD3	O	X driver data bus	60	NC		

• YSS228-F (XQ962A00) DSP3 (Digital Signal Processor)

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	VSS		Ground	81	VSS		Ground
2	XI	I	System master clock input(60M or 30MHz)	82	DB13	I/O	
3	XO	O	System master clock output(60M or 30MHz)	83	DB14	I/O	
4	VDD		Power supply	84	DB15	I/O	
5	/SYNCI	I	System synch. signal input	85	DB16	I/O	
6	/SYNCO	O	System synch. signal output	86	DB17	I/O	
7	CKI	I	System clock input (30MHz)	87	DB18	I/O	
8	CKO	O	System clock output (30MHz)	88	DB19	I/O	
9	CKSEL	I	System master clock select(0:60MHz,1:30MHz)	89	DB20	I/O	
10	VSS		Ground	90	DB21	I/O	
11	MCKS	I	Master clock for serial I/O(128xFs)	91	DB22	I/O	Parallel data bus
12	/SSYNC	I	Synch. signal for serial I/O	92	DB23	I/O	
13	/IC	I	Initial clear	93	DB24	I/O	
14	/TEST	I	Test mode setting	94	DB25	I/O	
15	BTYP	I	CPU data bus 8/16 bit select(0:8,1:16)	95	DB26	I/O	
16	/IRQ	O	Interrupt request	96	DB27	I/O	
17	TRIG	I/O	Trigger signal	97	DB28	I/O	
18	VDD		Power supply	98	DB29	I/O	
19	VSS		Ground	99	DB30	I/O	
20	/CS	I	Chip select	100	DB31	I/O	
21	/DS	I	Data strobe	101	TIMO/DBOE	I/O	Timing signal/Parallel data bus control
22	R/W	I	Read/Write select	102	VSS		Ground
23	CA7	I		103	VDD		Power supply
24	CA6	I		104	DA00	I/O	
25	CA5	I		105	DA01	I/O	
26	CA4	I	CPU address bus	106	DA02	I/O	
27	CA3	I		107	DA03	I/O	
28	CA2	I		108	DA04	I/O	
29	CA1	I		109	DA05	I/O	
30	CA0/CD15	I/O	CPU address/data bus	110	DA06	I/O	
31	CD14	I/O		111	DA07	I/O	External memory data bus
32	CD13	I/O		112	DA08	I/O	
33	CD12	I/O		113	DA09	I/O	
34	CD11	I/O		114	DA10	I/O	
35	CD10	I/O	CPU data bus	115	DA11	I/O	
36	CD09	I/O		116	DA12	I/O	
37	CD08	I/O		117	DA13	I/O	
38	CD07	I/O		118	DA14	I/O	
39	CD06	I/O		119	DA15	I/O	
40	VSS		Ground	120	VSS		Ground
41	VDD		Power supply	121	VDD		Power supply
42	CD05	I/O		122	DA16	I/O	
43	CD04	I/O		123	DA17	I/O	
44	CD03	I/O	CPU data bus	124	DA18	I/O	
45	CD02	I/O		125	DA19	I/O	
46	CD01	I/O		126	DA20	I/O	
47	CD00	I/O		127	DA21	I/O	
48	/DTACK	O	DTACK signal output	128	DA22	I/O	
49	SI0	I		129	DA23	I/O	External memory data bus
50	SI1	I		130	DA24	I/O	
51	SI2	I		131	DA25	I/O	
52	SI3	I	Serial data input	132	DA26	I/O	
53	SI4	I		133	DA27	I/O	
54	SI5	I		134	DA28	I/O	
55	SI6	I		135	DA29	I/O	
56	SI7	I		136	DA30	I/O	
57	VSS		Ground	137	DA31	I/O	
58	VDD		Power supply	138	VDD		Power supply
59	SO0	O		139	VSS		Ground
60	SO1	O		140	A00	O	
61	SO2	O		141	A01	O	
62	SO3	O	Serial data output	142	A02	O	
63	SO4	O		143	A03	O	
64	SO5	O		144	A04	O	
65	SO6	O		145	A05	O	
66	SO7	O		146	A06	O	External memory address bus
67	DB00	I/O		147	A07	O	
68	DB01	I/O		148	A08	O	
69	DB02	I/O		149	A09	O	
70	DB03	I/O		150	A10	O	
71	DB04	I/O		151	A11	O	
72	DB05	I/O	Parallel data bus	152	A12	O	
73	DB06	I/O		153	A13	O	
74	DB07	I/O		154	A14	O	
75	DB08	I/O		155	A15/RAS	O	External memory address bus/Row address strobe
76	DB09	I/O		156	A16/CAS	O	External memory address bus/Column address strove
77	DB10	I/O		157	A17/CE	O	External memory address bus/Chip enable
78	DB11	I/O		158	/WE	O	External memory write enable
79	DB12	I/O		159	/OE	O	External memory output enable
80	VDD		Power supply	160	VDD		Power supply

• HD6437034F20 <SH7034> (XT198A00) CPU for IC003 on the MAIN Circuit board

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	PB14	I	Port B	57	/WRL	O	Write strobe-Low
2	PB15	I	Port B	58	/WRH	O	Write strobe-High
3	VSS1	-	Ground	59	/RD	O	Read strobe
4	AD0	I/O	Data bus	60	PA7	O	Port A
5	AD1	I/O		61	VSS7	-	Ground
6	AD2	I/O		62	PA8	O	Port A
7	AD3	I/O		63	PA9	O	Port A
8	AD4	I/O		64	TIOCA1	O	Input capture/output compare
9	AD5	I/O		65	TIOCB1	O	Input capture/output compare
10	AD6	I/O		66	PA12	O	Port A
11	AD7	I/O		67	TCLKB	I	Timer clock
12	VSS2	-	Ground	68	PA14	O	Port A
13	AD8	I/O	Data bus	69	/DREQ1	I	DMA transfer request
14	AD9	I/O	Data bus	70	VCC3	-	Power supply
15	VCC1	-	Power supply	71	CK	O	System clock
16	AD10	I/O	Data bus	72	VSS8	-	Ground
17	AD11	I/O		73	EXTAL	I	System clock
18	AD12	I/O		74	XTAL	I	System clock
19	AD13	I/O		75	VCC4	-	Power supply
20	AD14	I/O		76	NMI	I	Non-maskable interrupt request
21	AD15	I/O		77	VCC(VPP)	-	Power supply
22	VSS3	-	Ground	78	/WDTOVF	O	Watch dog timer overflow
23	A0	O	Address bus	79	/RES	I	Reset
24	A1	O		80	MD0	I	Mode select
25	A2	O		81	MD1	I	
26	A3	O		82	MD2	I	
27	A4	O		83	VCC5	-	Power supply
28	A5	O		84	VCC6	-	Power supply
29	A6	O		85	AVCC	-	Power supply (Analog)
30	A7	O		86	AVREF	I	Reference voltage
31	VSS4	-	Ground	87	AN0	I	Analog input
32	A8	O	Address bus	88	PC1	I	Port C
33	A9	O		89	PC2	I	
34	A10	O		90	PC3	I	
35	A11	O		91	AVSS	-	Ground (Analog)
36	A12	O		92	PC4	I	Port C
37	A13	O		93	PC5	I	
38	A14	O		94	PC6	I	
39	A15	O		95	PC7	I	
40	VSS5	-	Ground	96	VSS9	-	Ground
41	A16	O	Address bus	97	PB0	I	Port B
42	A17	O	Address bus	98	PB1	O	Port B
43	VCC2	-	Power supply	99	VCC7	-	Power supply
44	A18	O	Address bus	100	TIOCA3	I	Input capture/output compare
45	A19	O		101	PB3	O	Port B
46	A20	O		102	TIOCA4	O	Input capture/output compare
47	A21	O		103	PB5	O	Port B
48	/CS0	O	Chip select	104	TCLKC	I	Timer clock
49	/CS1	O		105	TCLKD	I	Timer clock
50	/CS2	O		106	VSS10	-	Ground
51	/CS3	O		107	RxD0	I	Receiving data 0
52	VSS6	-	Ground	108	TxD0	O	Transmitting data 0
53	TIOCA0	O	Input capture/output compare	109	RxD1	I	Receiving data 1
54	PA1	O	Port A	110	TxD1	O	Transmitting data 1
55	/CS6	O	Chip select	111	PB12	O	Port B
56	/WAIT	O	Wait	112	SCK1	I	Serial clock

● HD6437034F20 <SH7034> (XT198A00) CPU for IC205 on the SUB Circuit Board

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	PB14	I	Port B	57	/WRL	O	Write strobe-Low
2	PB15	I	Port B	58	PA5	O	Port A
3	VSS1	-	Ground	59	PA6	O	
4	AD0	I/O	Data bus	60	PA7	O	
5	AD1	I/O		61	VSS7	-	Ground
6	AD2	I/O		62	PA8	O	Port A
7	AD3	I/O		63	PA9	O	
8	AD4	I/O		64	PA10	O	
9	AD5	I/O		65	PA11	O	
10	AD6	I/O		66	TCLKA	I	Timer clock
11	AD7	I/O		67	TCLKB	I	Timer clock
12	VSS2	-	Ground	68	PA14	O	Port A
13	AD8	I/O	Data bus	69	PA15	O	Port A
14	AD9	I/O	Data bus	70	VCC3	-	Power supply
15	VCC1	-	Power supply	71	CK	O	System clock
16	AD10	I/O	Data bus	72	VSS8	-	Ground
17	AD11	I/O		73	EXTAL	I	System clock
18	AD12	I/O		74	XTAL	I	System clock
19	AD13	I/O		75	VCC4	-	Power supply
20	AD14	I/O		76	NMI	I	Non-maskable interrupt request
21	AD15	I/O		77	VCC(VPP)	-	Power supply
22	VSS3	-	Ground	78	/WDTOVF	O	Watch dog timer overflow
23	A0	O	Address bus	79	/RES	I	Reset
24	A1	O		80	MD0	I	Mode select
25	A2	O		81	MD1	I	
26	A3	O		82	MD2	I	
27	A4	O		83	VCC5	-	Power supply
28	A5	O		84	VCC6	-	Power supply
29	A6	O		85	AVCC	-	Power supply (Analog)
30	A7	O		86	AVREF	I	Reference voltage
31	VSS4	-	Ground	87	AN0	I	Analog input
32	A8	O	Address bus	88	AN1	I	
33	A9	O		89	AN2	I	
34	A10	O		90	AN3	I	
35	A11	O		91	AVSS	-	Ground (Analog)
36	A12	O		92	AN4	I	Analog input
37	A13	O		93	AN5	I	
38	A14	O		94	AN6	I	
39	A15	O		95	AN7	I	
40	VSS5	-	Ground	96	VSS9	-	Ground
41	A16	O	Address bus	97	PB0	O	Port B
42	A17	O	Address bus	98	PB1	O	Port B
43	VCC2	-	Power supply	99	VCC7	-	Power supply
44	A18	O	Address bus	100	PB2	O	Port B
45	A19	O		101	PB3	O	
46	A20	O		102	PB4	O	
47	A21	O		103	PB5	O	
48	/CS0	O	Chip select	104	PB6	O	
49	/CS1	O		105	PB7	O	
50	/CS2	O		106	VSS10	-	Ground
51	/CS3	O		107	RxD0	I	Receiving data 0
52	VSS6	-	Ground	108	TxD0	O	Transmitting data 0
53	PA0	I	Port A	109	RxD1	I	Receiving data 1
54	PA1	O		110	TxD1	O	Transmitting data 1
55	PA2	O		111	PB12	O	Port B
56	/CS7	O	Chip select	112	PB13	O	Port B

● **PCM69AP-3** (XM051A00) **DAC** (Digital to Analog Converter)

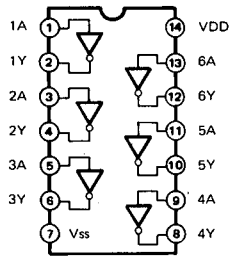
PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	Vcc		Analog power supply	9	DGND		Digital Ground
2	COML		V-common, channel L	10	DATAR	I	Data input, channel R
3	OUTL	O	Current output, channel L	11	BCK	I	Bit clock
4	SRV		Servo filter	12	SCLK	I	System clock
5	REF		Reference filter	13	WDCK	I	Word clock
6	OUTR	O	Current output, channel R	14	DATAL	I	Data input, channel L
7	COMR		V-common, channel R	15	TP1		Test pin
8	AGND		Analog ground	16	VDD		Digital power supply

● **PCM1702P** (XN136A00) **DAC** (Digital to Analog Converter)

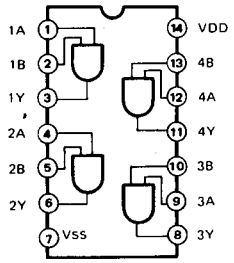
PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	DATA	I	Serial data input	9	+Vcc		Analog power supply (+5V)
2	CLOCK	I	Bit clock	10	BPO DC	I/O	BPO decouple
3	+Vdd		Digital power supply (+5V)	11	I OUT	O	Current output
4	DGND	I	Digital ground	12	AGND		Analog ground
5	-Vdd		Digital power supply (-5V)	13	AGND		Analog ground
6	LE	I	Latch enable	14	SERVO DC	I/O	Servo decouple
7	NC		Reserved	15	REF DC	I/O	Ref. decouple
8	NC		Reserved	16	-Vcc		Analog power supply (-5V)

■ IC BLOCK DIAGRAM (ICブロック図)

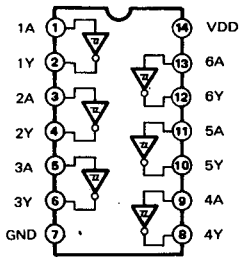
- **TC74HCU04AP** (IG142200)
- **HD74HC04P** (IR000410)
- **SN74HCU04NSR** (XC723A00)
- **SN74HC04NSR** (XD830A00)
  Hex Inverter



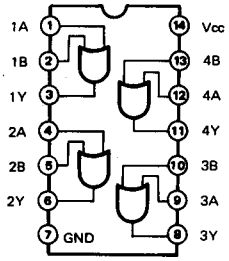
- **SN74HC08NSR** (XD831A00)
  Quad 2 Input AND



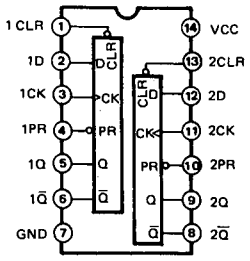
- **SN74HC14N** (IR001450)
  Hex Inverter



- **SN74HC32NSR** (XD833A00)
  Quad 2 Input OR

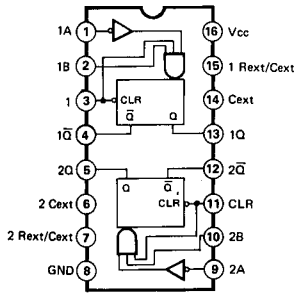


- **SN74HC74NSR** (XC726A00)
  Dual D-Type Flip-Flop

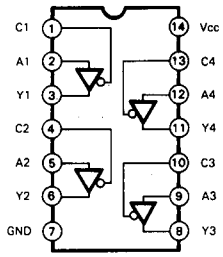


INPUTS				OUTPUTS	
PR	CLR	CLK	D	Q	Q̄
L	H	X	X	H	L
H	L	X	X	L	H
L	L	X	X	H	H
H	H	↑	H	H	L
H	H	↑	L	L	H
H	H	L	X	Q_0	$\bar{Q}_0$

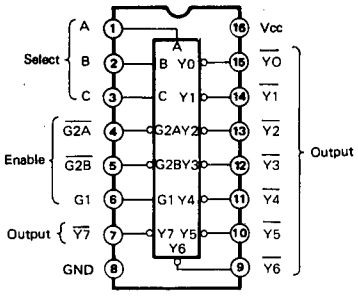
- **HD74HC123AP** (IR012310)
  Dual Retriggerable Single Shot



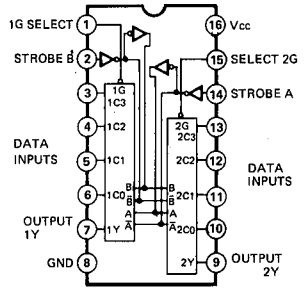
- **SN74HC125NSR** (XH218A00)
  Quad 3-State Bus Buffer



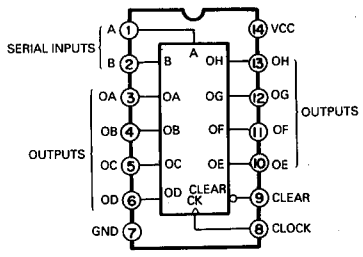
- **SN74HC138NSR** (XD835A00)
  3 to 8 Demultiplexer



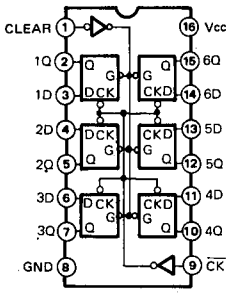
- **SN74HC153NSR4-1S** (IR017450)
  Dual 4 to 1 Data Selectors



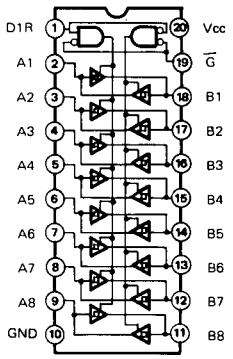
- **TC74HC164AF** (XQ967A00)
  8-Bit Shift Register



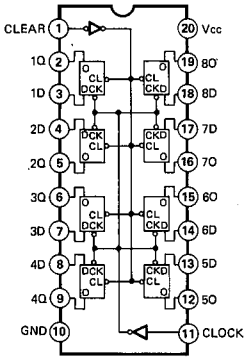
- **SN74HC174N** (IR017450)
  Hex D-Type Flip-Flop



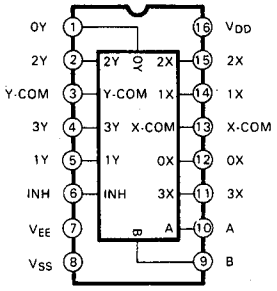
- **SN74HC245N** (IR024550)
  SN74HC245NSR (XD838A00)
  Octal 3-State Bus Transceiver



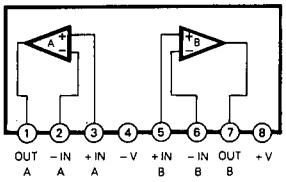
- **SN74HC273N** (IR027350)
  SN74HC273NSR (XH223A00)
  Octal D-Type Flip-Flop



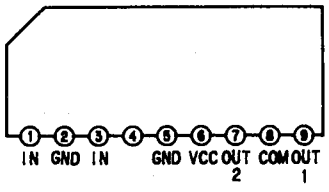
- **TC4052BP** (XA053A00)
  Differential 4-Channel
  Multiplexer/Demultiplexer



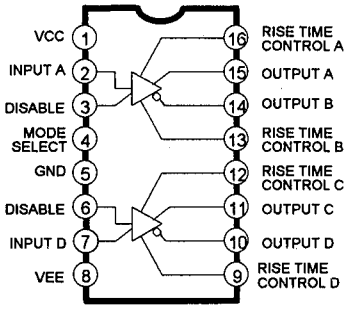
- **NJM4556AL** (XP844A00)
- **NJM2082M(T1)** (XN797A00)
- **NJM2068L-D** (XM356A00)
  Dual Operational Amplifier



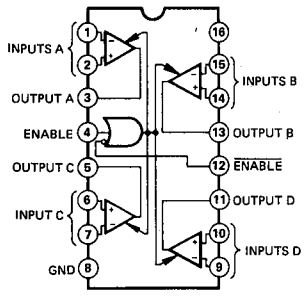
- **TA7291S** (XF557A00)
  Motor Driver



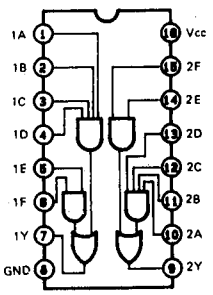
- **MC26LS30D** (XL334A00)
  Line Driver



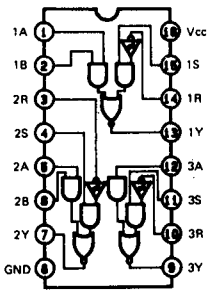
- **DS26C32ATM** (XQ544A00)
  Line Receiver



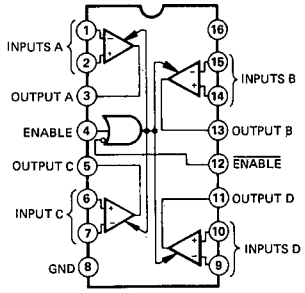
- **SN75121NS** (XN975A00)
  Dual Line Driver



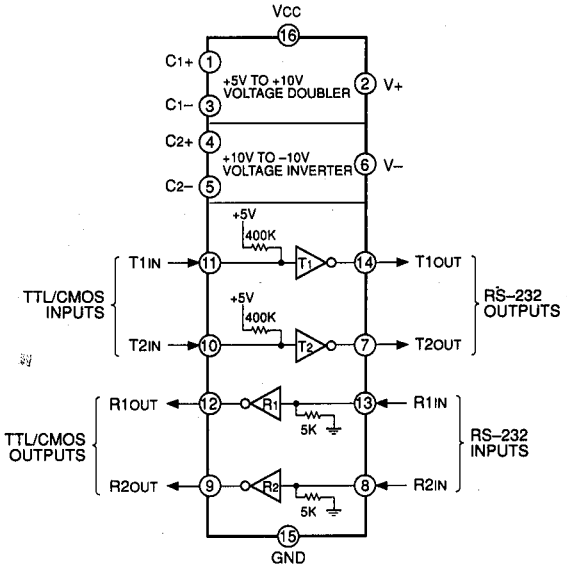
- **SN75124NS** (XN976A00)
  Triple Line Receiver



- **AM26LS31M** (XN919A00)
  Line Receiver



- **MAX202CPE** (XP893A00)
  RS-232 Transdiever



■ CIRCUIT BOARDS (シート基板図)

MAIN 1/2 Circuit Board 55
MAIN 2/2 Circuit Board 57
AD 1/2 Circuit Board 61
AD 2/2 Circuit Board 64
DA Circuit Board 67
FD Circuit Board 70
PN/ENC Circuit Board 73
SUB 1/2 Circuit Board 78
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DC Circuit Board 80
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AC Circuit Board 83