
HD49304ANT

8-Bit 3ch Video D/A Converter

HITACHI

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Description

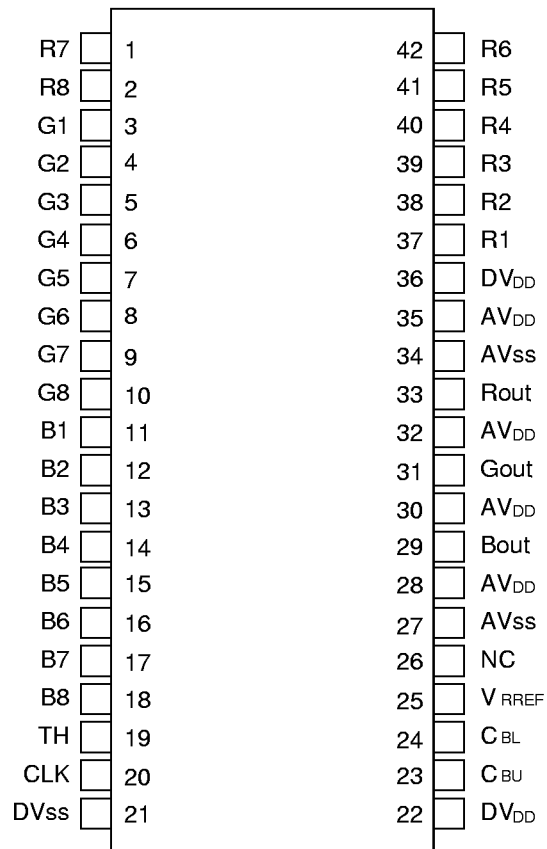
HD49304ANT is a video frequency 3 channel D to A converter with low power consumption of 300 mW for 3ch. Suitable for R, G, B applications such as digital TV or high resolution display system.

Features

- Resolution: 8 bit
- Differential Linearity Error: $\pm 0.2\%$
- Maximum Conversion Rate: 30 MHz (Min)
- Analog Output Voltage: V_{DD} to $V_{DD} - 1$ (V)
- Digital Input Level: TTL CMOS level
- Supply Voltage: +5.0 (V)
- Power Consumption: 300 mW (Typ)
- Package: 42-pin Plastic Shrink DIP

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Pin Arrangement



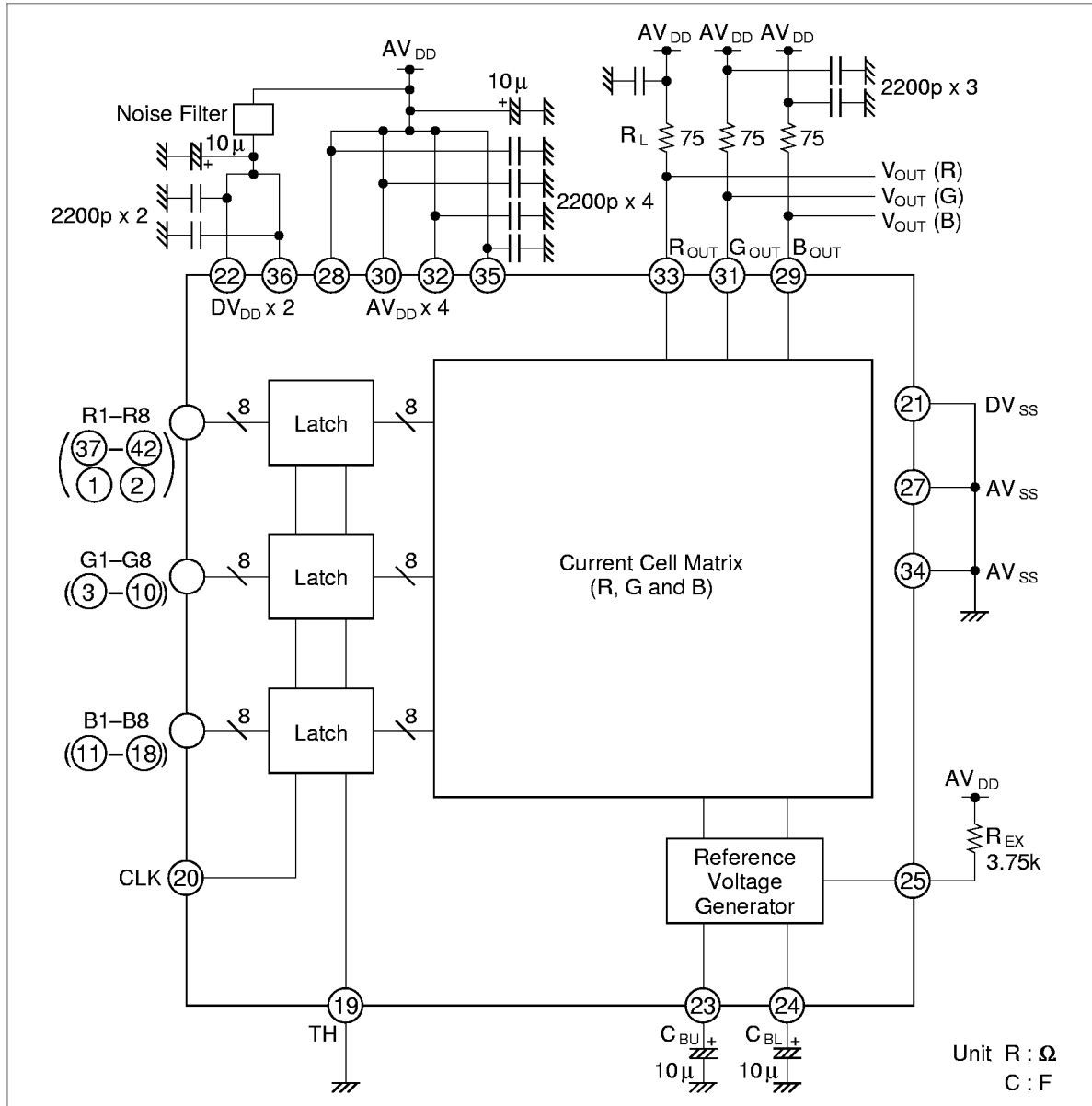
(Top View)

Pin Functions

Pin No.	Symbol	Function
1, 2, 37 to 42	R1 to R8	R-ch digital signal input: R1 ... MSB, R8 ... LSB
3 to 10	G1 to G8	G-ch digital signal input: G1 ... MSB, G8 ... LSB
11 to 18	B1 to B8	B-ch digital signal input: B1 ... MSB, B8 ... LSB
33	Rout	R-ch analog signal output
31	Gout	G-ch analog signal output
29	Bout	B-ch analog signal output
20	CLK	CLK input
19	TH	CLK control (H: Through, L: Latch)
24	C _{BL}	Bypass capacitor for bias circuit
23	C _{BU}	Phase compensation
22, 36	DV _{DD}	Digital V _{DD}
27, 34	AV _{SS}	Analog V _{SS}
28, 30, 32, 35	AV _{DD}	Analog V _{DD}
21	DV _{SS}	Digital V _{SS}
25	V _{RREF}	Constant current source for current matrix
26	NC	No connection

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Block Diagram



Absolute Maximum Ratings (Ta = 25°C, unless otherwise specified.)

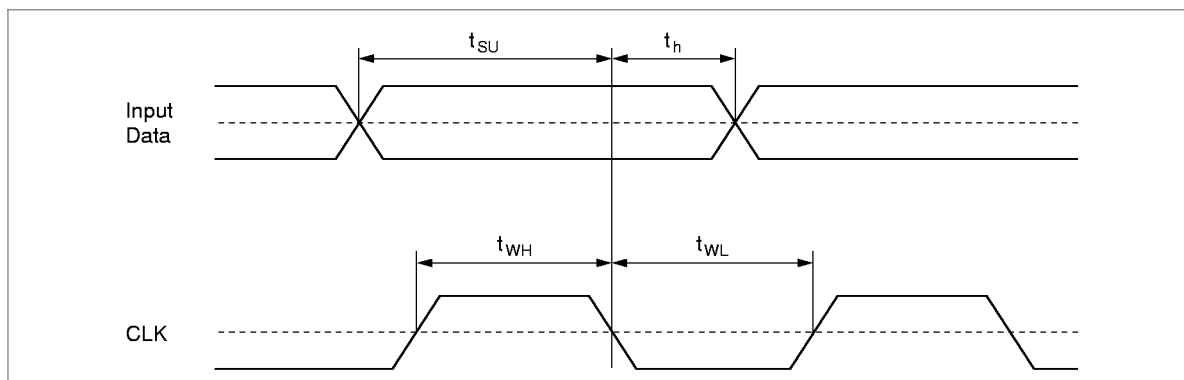
Item	Symbol	Rating	Unit
Supply voltage	V _{DD}	7.0	V
Digital input voltage	V _{IN}	0 to V _{DD}	V
Power dissipation	P _T	600	mW
Operating temperature	Topr	0 to +70	°C
Storage temperature	Tstg	–55 to +125	°C

Electrical Characteristics (Ta = 25°C, V_{DD} = 5.0 V, V_{RREF} = 3.75 kΩ, R_L = 75 Ω, unless otherwise specified.)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Resolution		—	8	—	bits	
Max conversion rate	f _{CLK} max	30	—	—	MHz	
Min conversion rate	f _{CLK} min	—	—	0.5	MHz	
Linearity error (differential)	LE	–0.2	—	0.2	LSB	
Clock pulse	H level	t _{WH}	10.0	—	ns	
width	L level	t _{WL}	10.0	—	ns	
Data setup time	t _{su}	10.0	—	—	ns	
Data hold time	t _h	12.0	—	—	ns	
Supply voltage	V _{DD}	4.75	5.00	5.25	V	
Quiescent current	I _{DD}	—	60	70	mA	f _{CLK} = 30 MHz
Digital input voltage	V _{IH}	2.0	—	V _{DD}	V	
	V _{IL}	0	—	0.8	V	
Analog output	Full	V _A (full)	4.99	5.0	5.01	V
voltage	Zero	V _A (zero)	3.95	4.0	4.05	V

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Timing Chart



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