

SANYO

No.3202A

LC8991**NTSC CCD 1H Delay Line****Overview**

The LC8991 is a CCD delay line that produces a 1H delayed signal for NTSC format with an external low-pass filter.

Features

- Single 9V power supply
- Operates on a low-amplitude clock input
- Application of a 7.16MHz clock produces a 1H delayed signal with an external low-pass filter.
- Built-in timing generator, driver, bias generator, and output amplifier allow applications to be constructed with a minimum number of external components.
- Small package (8-pin DIP)

Functions

- 453-bit CCD shift register
- CCD driver
- Auto-bias circuit
- Sync tip clamping circuit
- Sample-and-hold circuit

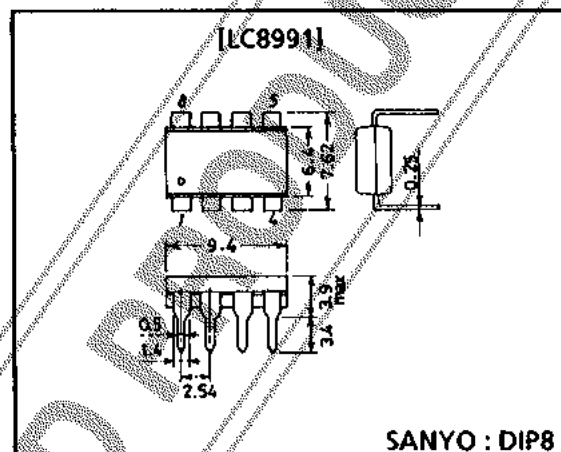
Specifications

Absolute Maximum Ratings at $T_a = 25^\circ\text{C}$			unit
Maximum supply voltage	$V_{DD\text{max}}$	11	V
Allowable power dissipation	$P_{d\text{max}}$	500	mW
Operating temperature	T_{opr}	-10 to +60	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

Electrical Characteristics

DC Characteristics at $T_a = 25^\circ\text{C}$, $V_{DD} = 9\text{V}$, CLOCK input = 7.15909MHz; 0.3Vp-p

		min	typ	max	unit
Supply voltage	V_{DD}	8.5	9.0	9.5	V
Supply current	I_{DD}		16.5	20.0	mA
DC output voltage	V_{GG}		13.5		V
	OUT		3.1		V
	VOB		4.5		V
	VID IN		2.8		V
	CLK		2.0		V
	COMP		2.7		V

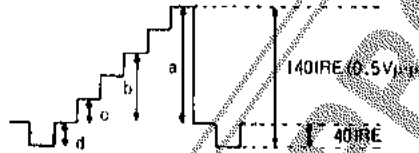
Package Dimensions 3001B
unit : mm

LC8991

AC Characteristics at $T_a = 25^\circ\text{C}$, $V_{DD} = 9\text{V}$, $\text{CLOCK input} = 7.15909\text{MHz}$; $0.3\text{V}_{\text{p-p}}$

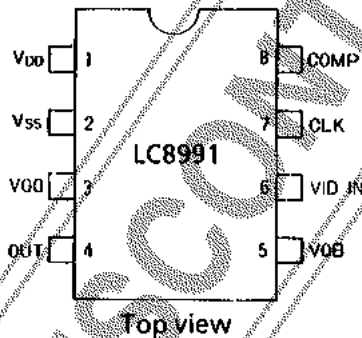
			min	typ	max	unit
Maximum input voltage	$V_{\text{IN max}}$			0.5	0.7	$\text{V}_{\text{p-p}}$
Voltage gain	GV	Input : 15kHz, 0.5V _{p-p}	6	9	11	dB
Linearity	L6	b/a, See note 1	56	60	64	%
	L2	c/a, See note 1	18	20	22	%
	LS	d/a, See note 1	37	40	43	%
Frequency Characteristic	Gf	See note 2	-3.0	-2.3		dB
Noise voltage	V_{NO}	3.4MHz bandwidth		1.1		mV _{rms}
Clock input amplitude	E_{CK}		0.1	0.3	1.0	$\text{V}_{\text{p-p}}$
Output impedance	Z_o			520		Ω
Delay time	t_o			63.42		μs

Note 1): Linearity test waveform
Input : 5-step staircase waveform



Note 2): Frequency characteristics test
Input : 0.5V_{p-p} sine wave (2.4MHz)/(20kHz)

Pin Assignment

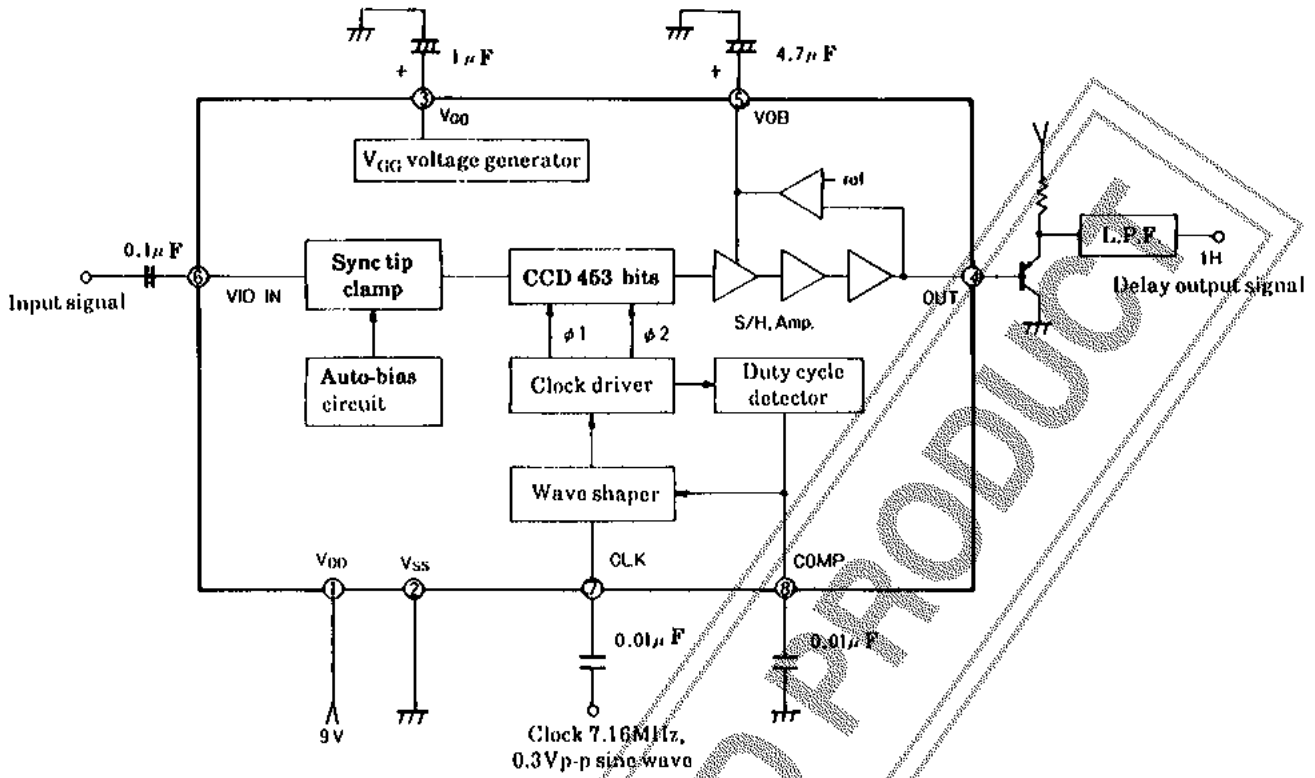


Pin Functions

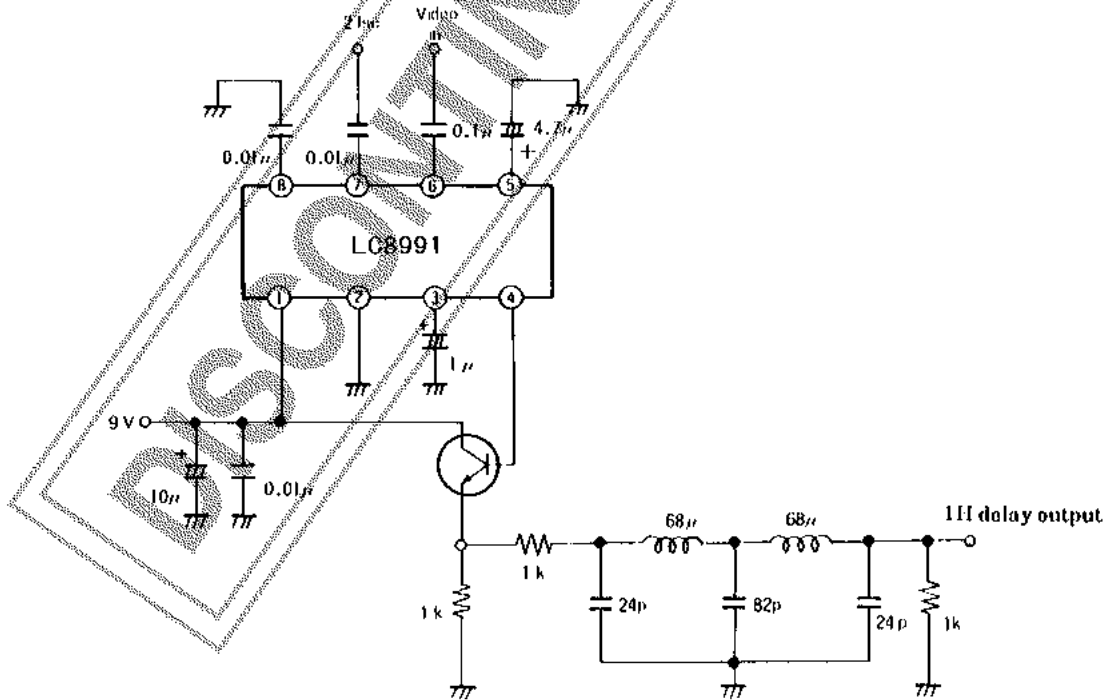
Pin No.	Symbol	Function
1	V_{DD}	Power supply
2	V_{SS}	GND
3	V_{GG}	V_{GG} voltage output
4	OUT	Delay signal output
5	V_{OB}	Feed-back output
6	$V_{\text{ID IN}}$	signal Input
7	CLK	Clock input
8	COMP	Duty Correction output

LC8991

Block Diagram



Sample Application Circuit



Unit (resistance : Ω , capacitance : F, inductance : H)