

SANYO

No. 4543

LC89925, 89925M**PAL 1H Delay Line**

Overview

The LC89925 and LC89925M are delay lines and produce a 1H delayed signal for the PAL format, with an external low-pass filter.

Functions

- 566-stage shift register that can be switched to function as a 562-stage shift register
- Auto-bias circuit
- Sync tip clamp circuit
- Sample-and-hold circuit
- Delay time switching circuit

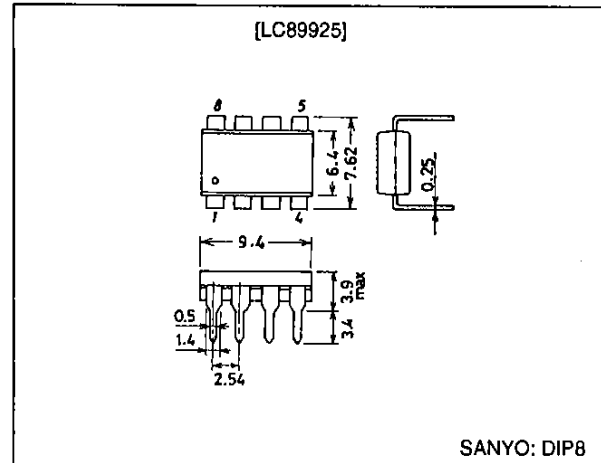
Features

- Single 5 V power supply
- Operates on a low-amplitude clock input.
- Operates with minimal external circuits since peripheral circuits are built in.
- Positive phase signal input, positive phase signal output
- Can be switched (with a control pin input) to produce an NTSC format 1H delayed signal.

Package Dimensions

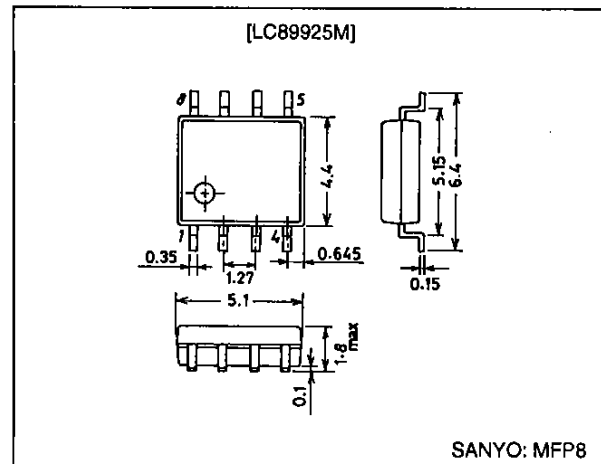
unit: mm

3001B-DIP8



unit: mm

3032B-MFP8



Specifications

Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V _{DD} max		-0.3 to +6.0	V
Allowable power dissipation	Pd max	LC89925	400	mW
		LC89925M	140	mW
Operating temperature	Topr		-10 to +60	°C
Storage temperature	Tstg		-55 to +150	°C

SANYO Electric Co., Ltd. Semiconductor Business Headquarters
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110 JAPAN

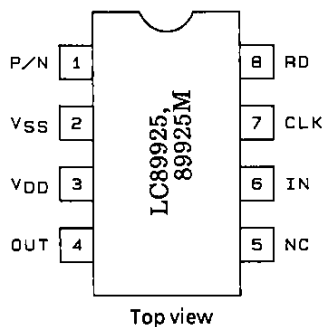
42895TH (OT) No. 4543-1/4

Allowable Operating Ranges at Ta = 25°C

Parameter	Symbol	Conditions	min	typ	max	Unit
Supply voltage	V _{DD}		4.75	5.00	5.25	V
Clock input amplitude	V _{CLK}	Sine wave	100	300	1000	mVp-p
Clock frequency	F _{CLK}			8.8672375		MHz
Signal input amplitude	V _{IN}	*		500		mVp-p

Note: * Since sync tip clamping is normally performed, the input signal must be connected in a low impedance state.

Pin Assignment

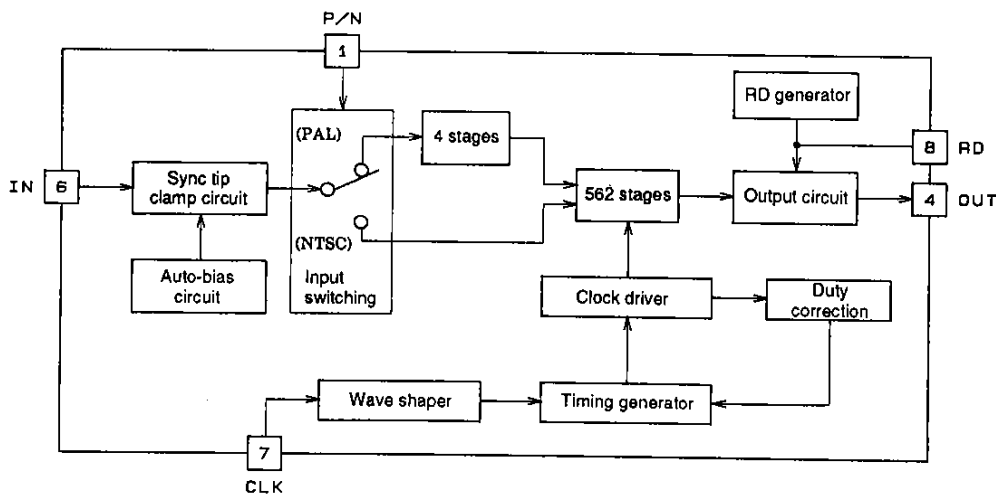


A01717

Pin Functions

Pin No.	Symbol	Function
1	P/N	Delay time switching
2	V _{SS}	GND
3	V _{DD}	Power supply
4	OUT	Delayed signal output
5	NC	
6	IN	Signal input
7	CLK	Clock input
8	RD	High voltage generator output for Reset Drain

Block Diagram



A01718

Functional Description

The delay time is switched by the state of the P/N control pin (pin 1).

0 V: PAL mode

In this mode, the LC89925 provides a PAL 1H (64.0 μs) delay using a 566-stage delay line.

5 V: NTSC mode

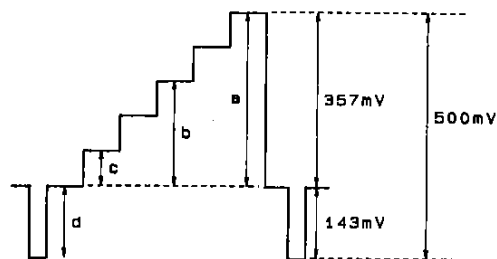
In this mode, the LC89925 provides an NTSC 1H (63.5 μs) delay using a 562-stage delay line.

LC89925, 89925M

Electrical Characteristics at Ta = 25°C, VDD = 5.0 V, CLK = 8.8672375 MHz; 300 mVp-p; sine wave

Parameter	Symbol	Conditions	min	typ	max	Unit
Supply current	I _{DD}	No signal input	5	10	15	mA
Voltage gain	G _V	With a 200 kHz 0.5 Vp-p input	2.5	4.5	6.5	dB
Frequency response	G _f	3.0 MHz, 0.2 Vp-p/200 kHz, 0.2 Vp-p	-3.0	-2.0		dB
Linearity	L6	*	56	60	64	%
	L2	*	18	20	22	%
	L _S	*	37	40	43	%
Clock leakage	I _{CLK}	No signal input, the 2 fsc component		10	30	mVrms
Noise level	N _O	No signal input, 4.2 MHz bandwidth		0.7	2.0	mVrms
Output impedance	Z _O		200	300	400	Ω
Delay time	T _{D-P}			63.91		μs
	T _{D-N}			63.47		μs

Note: * Input signal/output signal



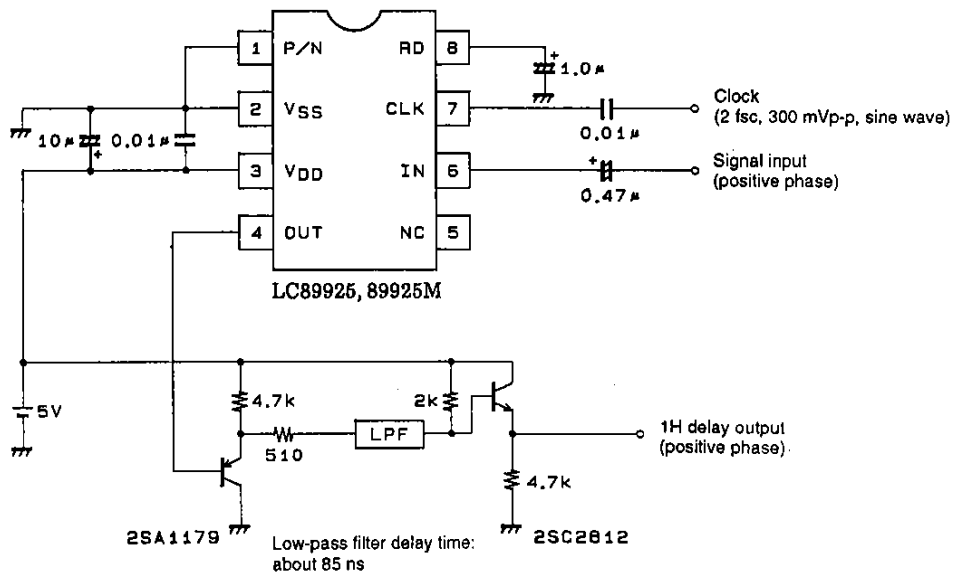
$$L6 = \frac{b}{a}$$

$$L2 = \frac{c}{a}$$

$$L_S = \frac{d}{a}$$

A0171B

Sample Application Circuit



A01720

Units (resistance: Ω, capacitance: F)

- No products described or contained herein are intended for use in surgical implants, life-support systems, aerospace equipment, nuclear power control systems, vehicles, disaster/crime-prevention equipment and the like, the failure of which may directly or indirectly cause injury, death or property loss.
- Anyone purchasing any products described or contained herein for an above-mentioned use shall:
 - ① Accept full responsibility and indemnify and defend SANYO ELECTRIC CO., LTD., its affiliates, subsidiaries and distributors and all their officers and employees, jointly and severally, against any and all claims and litigation and all damages, cost and expenses associated with such use:
 - ② Not impose any responsibility for any fault or negligence which may be cited in any such claim or litigation on SANYO ELECTRIC CO., LTD., its affiliates, subsidiaries and distributors or any of their officers and employees jointly or severally.
- Information (including circuit diagrams and circuit parameters) herein is for example only; it is not guaranteed for volume production. SANYO believes information herein is accurate and reliable, but no guarantees are made or implied regarding its use or any infringements of intellectual property rights or other rights of third parties.

This catalog provide information as of April, 1995. Specifications and information herein are subject to change without notice.