No.853B

LA7801

Monolithic Linear IC

Synchronization & Deflection Circuits of Color Television

The LA7801 is a multifunctional integrated circuit which is based on the internal circuit of the LA7800, incorporates various functions required for synchronization and deflection circuits of color television set, and aims at minimizing horizontal jitter which may occur in the weak electric field. This IC was so developed and designed as to enrich the fundamental characteristics and streamline the set by making the device more compact (DIP-16) and reducing the number of parts.

The LA7801 differs from the LA7800 in the following points.

- AFC phase detect sensitivity u is limited to 105uA/rad (LA7800 : 130uA/rad).
- AFC is provided with the synchronizing input pin to connect the differention circuit so that the smoothing effect of AFC output is improved.
- Pins 2, 3, 4 have different functions because no X-ray protection circuit is used.

Functions

- Synchro separator
- Horizontal AFC
- Vertical driver
- Horizontal oscillator
- Vertical oscillator
- Vertical blanking pulse making

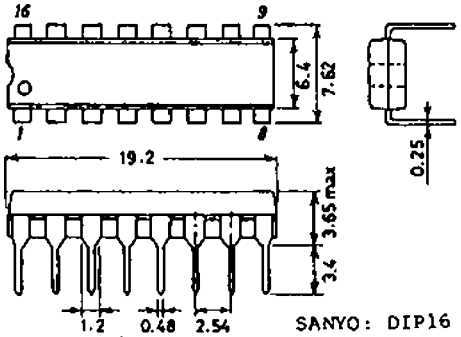
Features

- Multifunction and small-size (DIP-16).
- Minimum number of parts required.
- Horizontal and vertical oscillators being stable to variation of ambient temperature and supply voltage owing to small warming-up drift.
- Small variation of horizontal oscillation frequency.
- Good linearity and interlace owing to DC bias at vertical output stage being sampling controlled within retrace time.
- Vertical blanking pulse width being freely set up according to peripheral parts.

Maximum Ratings at Ta=25°C

				unit
Maximum Supply Voltage	V_{12}		14	V
Maximum Supply Current	I_{15}		16	mA
Allowable Power Dissipation	Pdmax	Ta=60°C	450	mW
Operating Temperature	Topg		-20 to +85	°C
Storage Temperature	Tstg		-55 to +125	°C

Case Outline
3006B-D16IC
(unit: mm)



SANYO: DIP16

Specifications and information herein are subject to change without notice.

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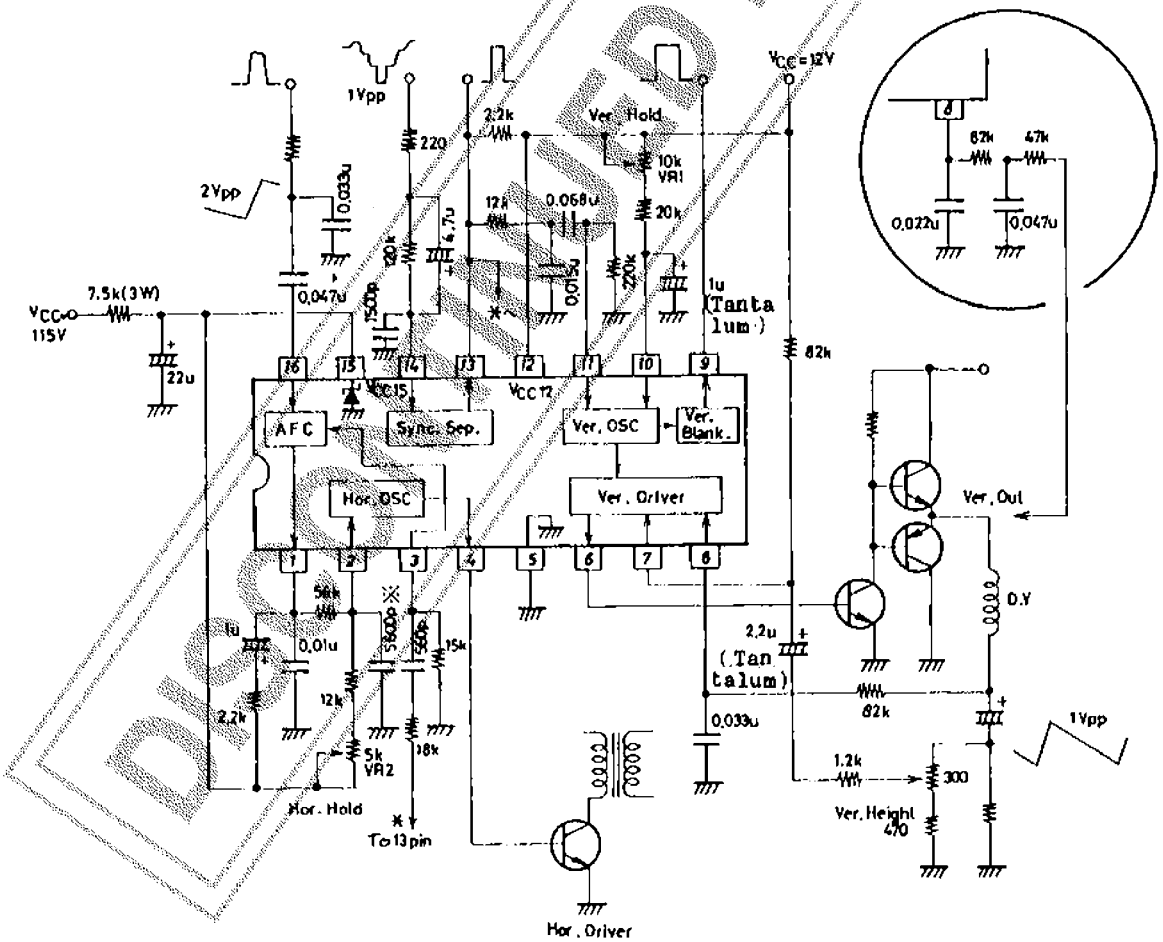
Recommended Operating Condition at Ta=25°C

		unit
Recommended Supply Voltage	V_{12}	12 V

Operating Characteristics at Ta=25°C, V_{12}=12V, I_{CC15}=13mA

			min	typ	max	unit
V_{CC12} Current Dissipation		I_{CC12}	13.0		20.0	mA
V_{CC15} Supply Voltage		V_{CC15}	11.8		13.2	V
Vertical Frequency Pull-in Range			9.0		11.0	Hz
Vertical Free-Running Frequency	f_V	f_V center 55Hz	50		60	Hz
Supply Voltage Dependence of Vertical Frequency		V_{12}=12±1V, 55Hz at 12V	-0.5		0.5	Hz
Temperature Characteristic of Vertical Frequency		Ta=-10 to +60°C	-0.028		0.028	Hz/°C
Vertical Driver Amplification Factor			4.0		7.0	times
Horizontal Free-Running Frequency	f_H	f_H center 15.734kHz	-750		750	Hz
Supply Voltage Dependence of Horizontal Frequency		V_Z-V_Zx90%	-50		50	Hz
Temperature Characteristic of Horizontal Frequency		Ta=-10 to +60°C	-3.4		3.4	Hz/°C
Horizontal Output Pulse Width		f_H=15.734kHz	21.5		26.5	us
Horizontal Output Drive Current			3.8		7.2	mA

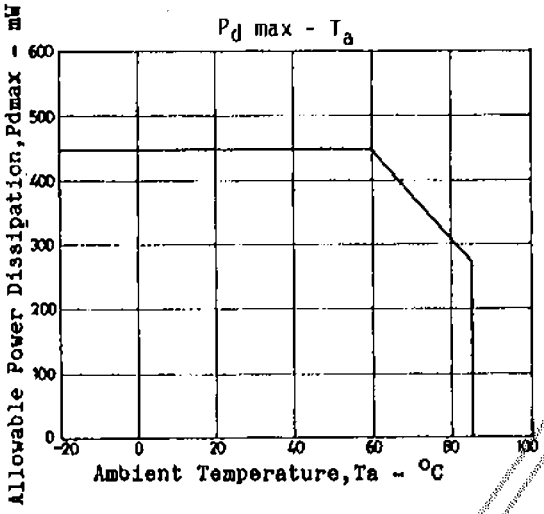
Sample Application Circuit



※ Polyester-polypropylene film capacitor

Note)

1. The vertical output circuit is shown by the basic circuit.
2. The peripheral parts at pin 8 should be changed in accordance with the Ver. Out circuit conditions.
3. The limiting resistor (220ohm : 1Vpp) at pin 14 should be changed in proportion to the magnitude of the input video signal.
4. In the time constant circuit (120kohm, 4.7uF) at pin 14, the time constant should be changed by changing the resistance value in accordance with the DC level of the input video signal and then by changing the capacitance value.



The LA7800 series come in 3 types shown below. In designing a television set, use the most suitable IC meeting the requirements of such set.

· LA7800 series (ICs designed for deflection applications in color TV sets)

Type No.	Use	Package	Functional Features	IC Contents
LA7800	CTV	DIP-16	· Sync input of AFC is direct connected inside IC. · X-ray protector is of thyristor configuration where input signal is applied to base of common emitter circuit.	· Basic type of LA7800 series · Smallest package, largest number of functions, smallest number of parts, higher cost performance as compared with other similar ICs
LA7801	CTV	DIP-16	· AFC is provided with sync input pin. · No X-ray protector	· Suitable for TV sets to be used in areas where electric wave conditions are not so good. Intended for use in special applications. (For TV sets of PAL system)
LA7806	B/W	DIP-16	· Further developed version of LA7805 · Small signal section of sync deflection block of B/W TV is all made into IC form · Capable of being operated on line voltage or from battery	· B/W version of LA7800 · Stable performance just as in CTV

Note : These ICs are applicable to any broadcasting system of NTSC, PAL, SECAM. Their application areas also include various video equipment such as monitor TV, video camera.