



Monolithic Linear IC

# LA7824 — Color CRT Display Synchronization, Deflection Circuit

The LA7824 is an IC that has a wide vertical pull-in range of 20Hz and contains a generator of horizontal, vertical blanking pulses as well as the main functions required to provide synchronization and deflection in color CRT displays and also accepts TTL input. It is a multifunctional IC aiming at high-quality picture reproduction.

**Functions**

- . Sync separation
- . Vertical oscillation
- . Vertical drive
- . Horizontal AFC
- . Horizontal oscillation
- . X-ray protection
- . Composite blanking pulse (vertical + horizontal blanking pulse)
- . Vertical blanking pulse (Vertical blanking pulse only can be taken out.)

**Features**

- . Nonadjusting at vertical sync 50Hz/60Hz due to vertical pull-in range of 20Hz.
- . Horizontal and vertical oscillations are stable against variations in ambient temperature and supply voltage due to small warm-up drift.
- . Small variation in horizontal oscillation frequency.
- . Good linearity and interlace because DC bias at vertical output stage is subjected to sampling control within retrace time.
- . Any vertical blanking pulse width can be set by peripheral parts.
- . The AFC defeat function is eliminated during vertical trigger period to use the LA7824 as horizontal/vertical sync separate input type only.
- . Multifunctional and small-sized (DIP-16)

**Maximum Ratings at Ta=25°C**

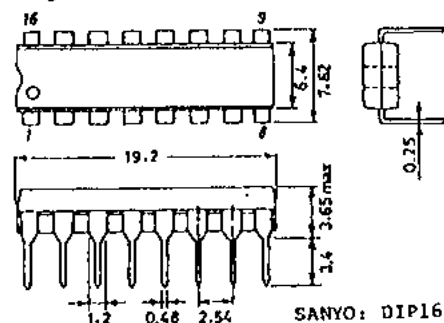
		unit
Maximum Supply Voltage	V <sub>CC13</sub>	14 V
Maximum Current Dissipation	I <sub>CC16</sub>	16 mA
Allowable Power Dissipation	P <sub>dmax</sub> Ta=65°C	570 mW
Operating Temperature	T <sub>opg</sub>	-20 to +85 °C
Storage Temperature	T <sub>stg</sub>	-55 to +125 °C

**Operating Conditions at Ta=25°C**

		unit
Recommended Supply Voltage	V <sub>CC13</sub>	12 V
Recommended Current Dissipation	I <sub>CC16</sub>	13 mA

**Case Outline 3006B-D16IC**

(unit:mm)



SANYO: DIP16

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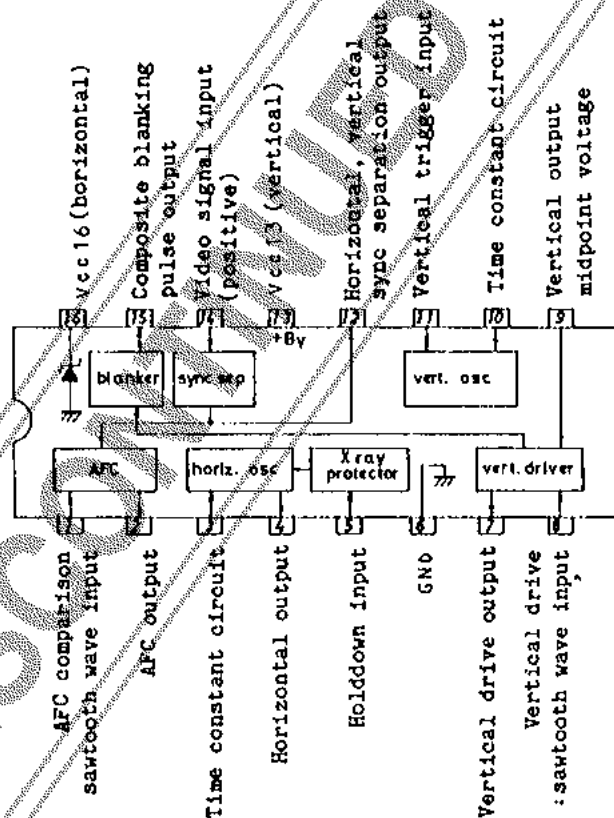
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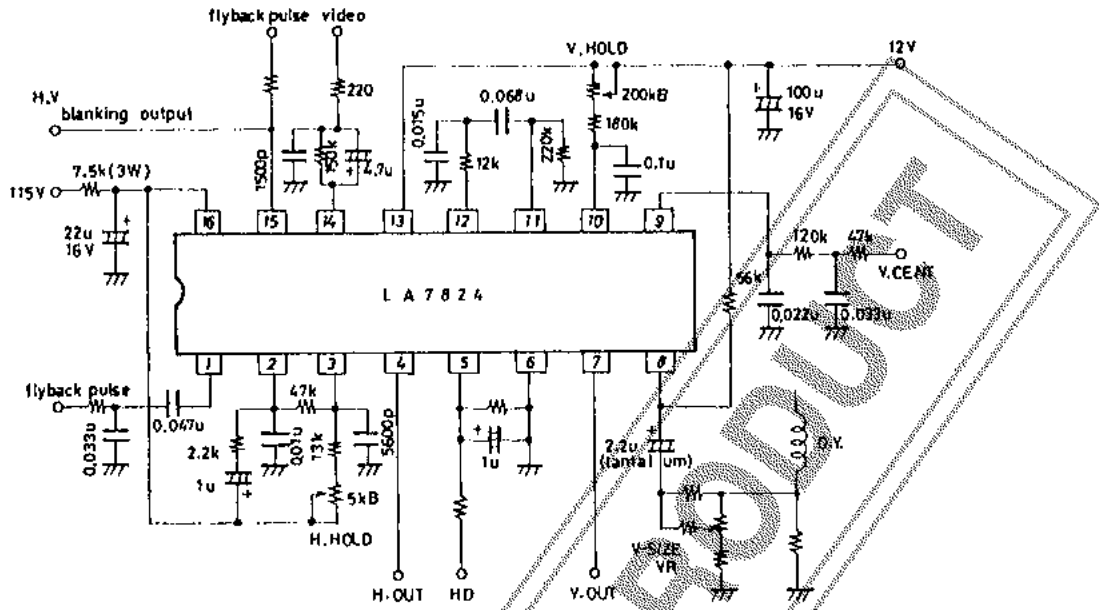
LA7824

Operating Characteristics at Ta=25°C, V <sub>CC13</sub> =12V, I <sub>CC16</sub> =13mA		min	typ	max	unit
V <sub>CC13</sub> Current Dissipation	I <sub>CC13</sub>	14.7		22.2	mA
V <sub>CC16</sub> Supply Voltage	V <sub>CC16</sub>	11.8		13.2	V
Vertical Frequency Pull-in Range	Vertical sync 60Hz	19.0		23.0	Hz
Vertical Free-Running Frequency	f <sub>V</sub> center 55Hz		50	60	Hz
Supply Voltage Dependence of Vertical Frequency	V <sub>I3</sub> =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			12	17	dB
Horizontal Free-Running Frequency	f <sub>H</sub> center 15.734kHz	-750		750	Hz
Reduced Voltage Characteristic of Horizontal Frequency	V <sub>Z</sub> -V <sub>Z</sub> x90%	-50		50	Hz
Temperature Characteristic of Horizontal Frequency	Ta=-10 to +60°C (IC alone)	-3.4		3.4	Hz/°C
Horizontal Output Pulse Width	f <sub>H</sub> =15.734kHz		21.5	26.5	us
Horizontal Output Drive Current			6.6	10.0	mA

Equivalent Circuit and Block Diagram



**Sample Application Circuit 1**  
(Composite video signal input mode)



**Sample Application Circuit 2**  
(TTL input mode)

