

SANYO

No.1643B

LA7824

Monolithic Linear IC

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

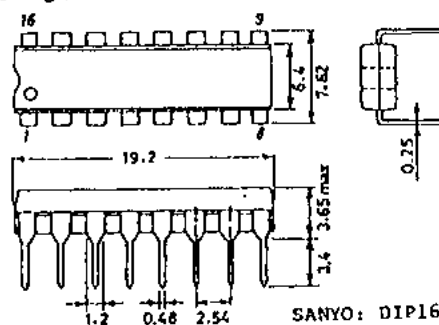
Maximum Supply Voltage	V _{CC13}	14	V
Maximum Current Dissipation	I _{CC16}	16	mA
Allowable Power Dissipation	P _{dmax}	570	mW
Operating Temperature	T _{opg}	-20 to +85	°C
Storage Temperature	T _{stg}	-55 to +125	°C

Operating Conditions at Ta=25°C

Recommended Supply Voltage	V _{CC13}	12	V
Recommended Current Dissipation	I _{CC16}	13	mA

Case Outline 3006B-D16IC

(unit:mm)



SANYO: DIP16

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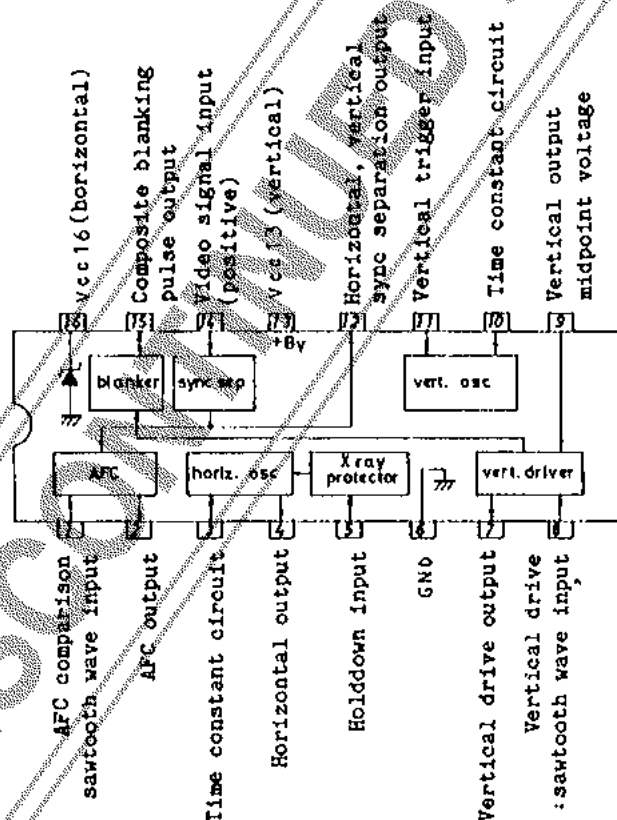
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LA7824

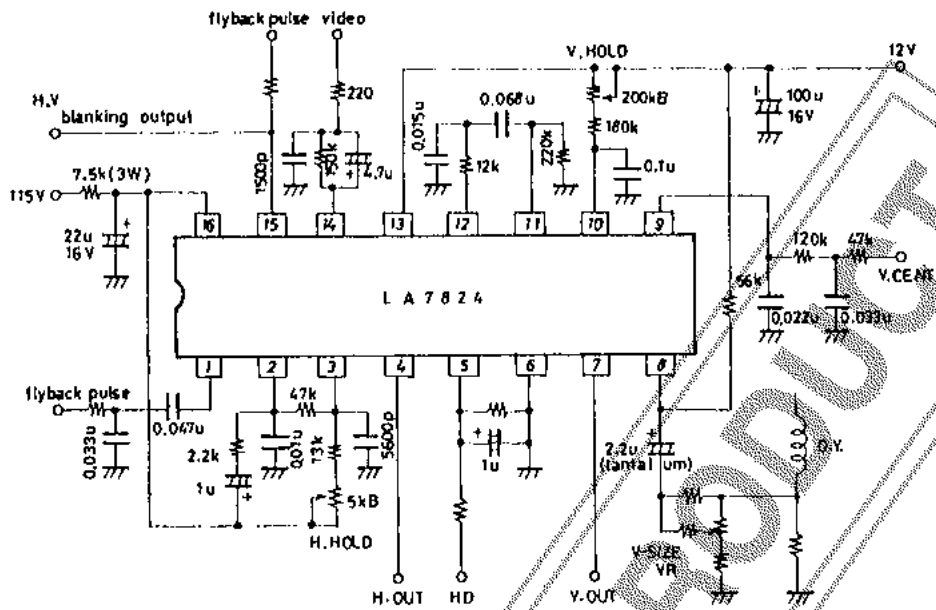
Operating Characteristics at $T_a=25^{\circ}\text{C}$, $V_{CC13}=12\text{V}$, $I_{CC16}=13\text{mA}$		min	typ	max	unit
V_{CC13} Current Dissipation	I_{CC13}	14.7		22.2	mA
V_{CC16} Supply Voltage	V_{CC16}	11.8		13.2	V
Vertical Frequency Pull-in Range	Vertical sync 60Hz	19.0		23.0	Hz
Vertical Free-Running Frequency	f_V center 55Hz	50		60	Hz
Supply Voltage Dependence of Vertical Frequency	$V_{I3}=12\pm 1\text{V}$, 55Hz at 12V	-0.5		0.5	Hz
Temperature Characteristic of Vertical Frequency	$T_a=-10$ to $+60^{\circ}\text{C}$	-0.028		0.028	Hz/ $^{\circ}\text{C}$
Vertical Driver Amplification Factor		12		17	dB
Horizontal Free-Running Frequency	f_H center 15.734kHz	-750		750	Hz
Reduced Voltage Characteristic of Horizontal Frequency	$V_Z-V_Z\times 90\%$	-50		50	Hz
Temperature Characteristic of Horizontal Frequency	$T_a=-10$ to $+60^{\circ}\text{C}$ (IC alone)	-3.4		3.4	Hz/ $^{\circ}\text{C}$
Horizontal Output Pulse Width	$f_H=15.734\text{kHz}$	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)

