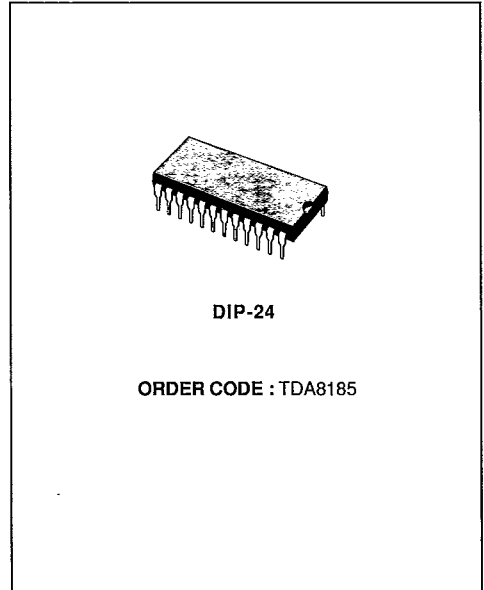


**HORIZONTAL AND VERTICAL PROCESSOR**

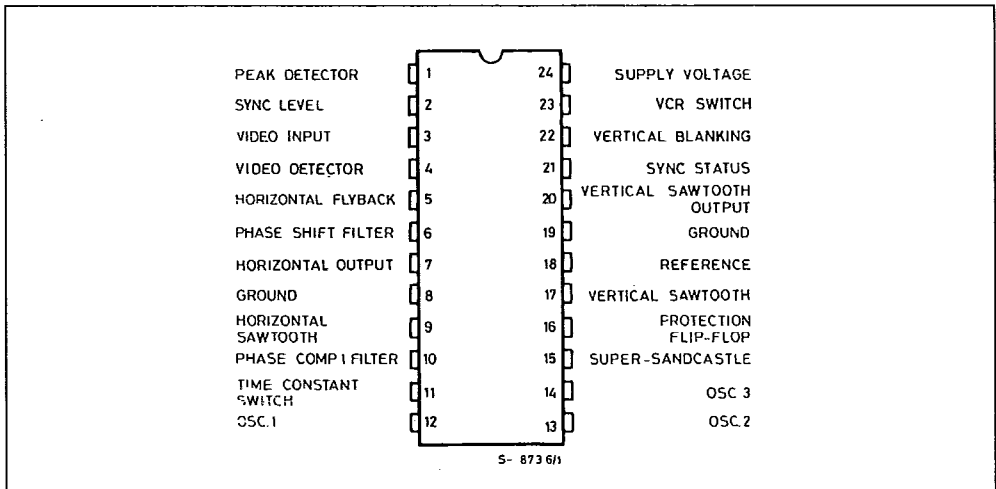
- 503 KHz REFERENCE OSCILLATOR
- 5.5 V SUPPLY VOLTAGE INTERNALLY REGULATED
- VERY SOPHISTICATED SYNC. SEPARATOR
- COUNT DOWN TIMING LOGIC
- ADAPTS AUTOMATICALLY TO 625 LINE/50 Hz AND 525 LINE/60 Hz STANDARDS
- 50/60 Hz IDENTIFICATION OUTPUT
- AUTOMATIC VERTICAL AMPLITUDE CORRECTION 50/60 Hz
- CRT PROTECTION CIRCUIT
- PHASE-CORRECTED HORIZONTAL OUTPUT WITH CONSTANT DUTY CYCLE



**DESCRIPTION**

The TDA8185 is a monolithic integrated circuit in 24 pins dual in line plastic package intended for TV signal processing and driving Horizontal and Vertical output stages. It was specially designed for VCR working conditions.

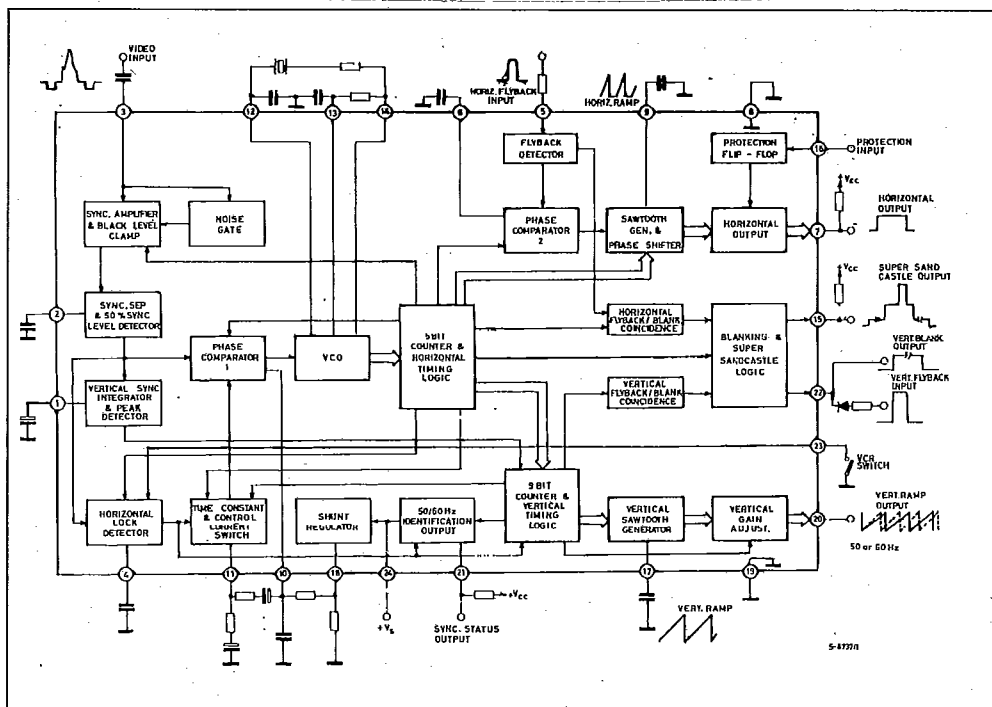
**CONNECTION DIAGRAM (top view)**



## BLOCK DIAGRAM

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## ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
$V_s$	Supply Voltage at Pin 24 (low impedance)	5.25	V
$V_{cc}$	Voltage at Pins, 7, 15, 21	20	V
$V_i$	Input Signals	5	V
$P_{tot}$	Total Power Dissipation ( $T_{amb} = 70^\circ C$ )	1	W
$T_j, T_{stg}$	Storage and Junction Temperature	- 40 to 150	$^\circ C$

## THERMAL DATA

$R_{th(j-pins)}$	Thermal Resistance Junction-pins	Max	80	$^\circ C$
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ELECTRICAL CHARACTERISTICS ( $V_S = 5\text{ V}$ ,  $V_{CC} = 12\text{ V}$ ,  $T_{amb} = 25\text{ }^\circ\text{C}$ , unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_S$	Supply Voltage (pin 24)		4.75	5	5.25	V
$I_S$	Supply Current (pin 24)		30	60	85	mA
$V_{24}$	Stabilized Voltage at Pin 24			5.6		V

## SYNC. SEPARATOR

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_3$	Peak to Peak Input Signal (negative video signal)		0.3	1	4	V

## VIDEO IDENTIFICATION AND VCR SWITCH

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_{23}$	VCR Switch Voltage		1.6	2.1	2.4	V
$V_4$	Threshold Voltage for Time Constant Switching			2.3		V
$I_4$	Peak Output Current	Lock		1		mA
$-I_4$	Output Current			25		$\mu\text{A}$

## OSCILLATOR

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$F_O$	Free Running Frequency			500		kHz
$S_O$	Frequency Control Sensitivity			2.2		kHz/V
$V_{10}$	Control Voltage Range			2.6 to 4		V

## SYNC-OSCILLATOR PHASE COMPARATOR

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$I_{10}$	Control Peak Current			$\pm 0.3$		mA
$I_{10}$	VCR Control Peak Current			$\pm 0.6$		mA
$\Delta f$	Catching and Holding Range			$\pm 40$		Hz

## FLYBACK - OSCILLATOR PHASE COMPARATOR

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_6$	Control Voltage Range			2.8 to 3.7		V
$I_5$	Flyback Input Current		0.1			mA
	Flyback Input Threshold			5		
$I_6$	Peak Control Current			$\pm 0.5$		mA
	Static Control Error			1		
$t_d$	Permissible Delay between Output Pulse and Flyback Pulse	$t_{\text{flyback}} = 12\text{ }\mu\text{s}$		17		$\mu\text{s}$

## ELECTRICAL CHARACTERISTICS (continued)

## COMPOSITE BLANKING AND KEY PULSE (supersandcastle)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V <sub>K</sub>	Key Pulse Output Peak Voltage			10		V
V <sub>L</sub>	Line Blanking Voltage		4.25	4.5	4.75	V
V <sub>F</sub>	Frame Blanking Voltage		2.38	2.5	2.63	V
t <sub>KS</sub>	Phase Relationship between Leading Edge of Key Pulse and Middle of Sync. Pulse			2.4		μs
t <sub>K</sub>	Key Pulse Duration			4		μs
t <sub>F</sub>	Vertical Blanking Duration			1.4		ms

## FRAME

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V <sub>20</sub>	Output p.p. Sawtooth Voltage	50 Hz and 60 Hz		2.7		V
V <sub>20</sub>	Pedestal Voltage			0.3		V

## LINE

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I <sub>7</sub>	Output Current			50		mA
V <sub>7</sub>	Saturation Voltage	I <sub>7</sub> = 50 mA		0.4		V
t <sub>L</sub>	Output Pulse Duration			29		μs

## SYNC. STATUS OUTPUT

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V <sub>21</sub>	Output Voltage	50 Hz		12		V
		60 Hz		7		V
		Unlock		0.2		V

## OVERALL PHASE RELATIONSHIP

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
t <sub>0</sub>	Phase Difference between Middle of Flyback and Middle of Sync. Pulses			2		μs

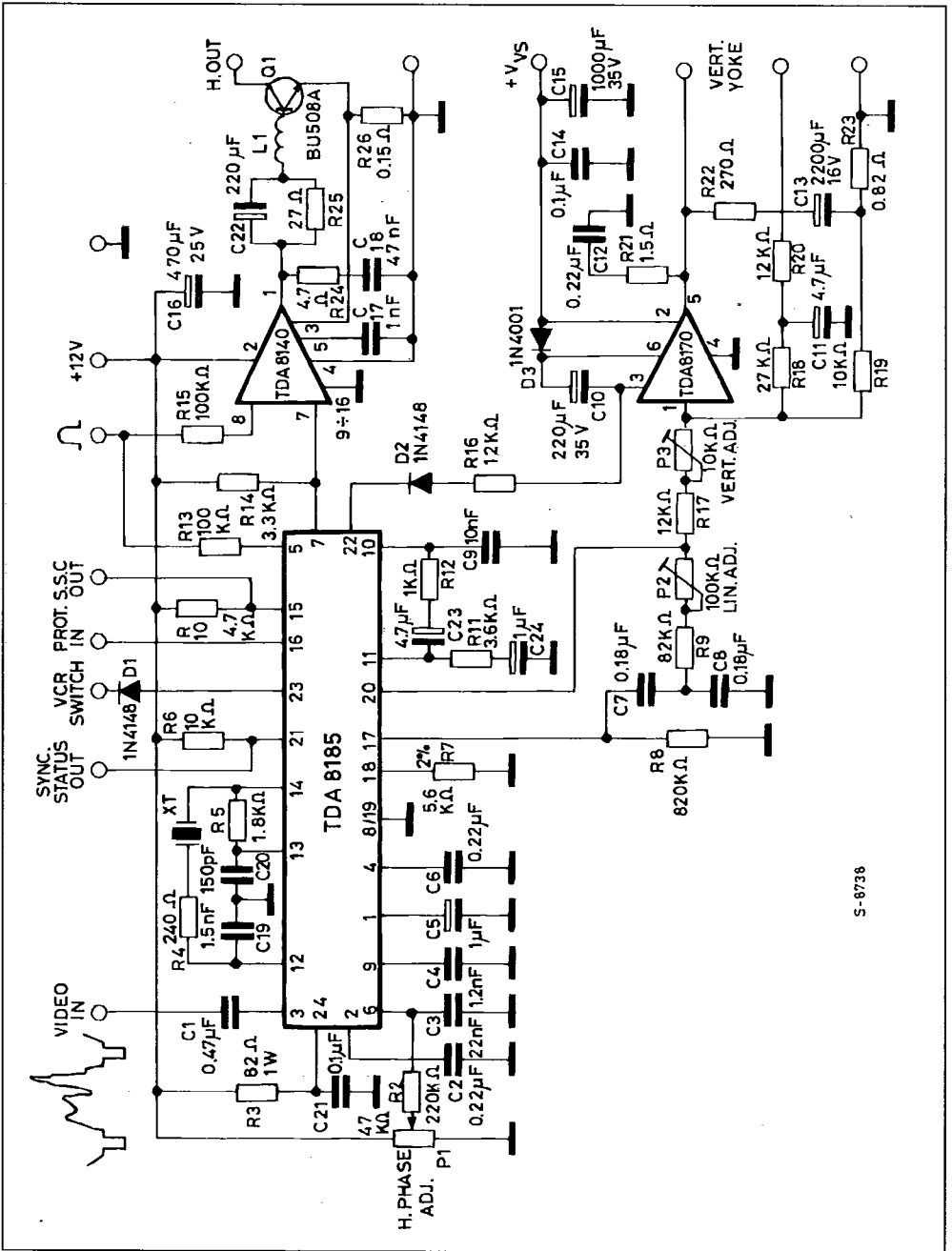
## VERTICAL BLANKING OUT AND FLY. INPUT

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V <sub>22</sub>	Blanking Output Voltage			4		V
V <sub>22</sub>	Flyback Threshold Input			5.7		V
I <sub>22</sub>	Flyback Current Input		0.1			mA

Notes : 1. With I<sub>fly</sub> = 12 μs and t<sub>l</sub> = 29 μs.

2. The TDA8185 may be operated on a 5 V supply directly. A 5.5 V shunt regulator is available internally for operation on higher supply voltage ; in this case an external limiting resistor is required.  
Without the external limiting resistor care must be taken to ensure that the supply voltage does not exceed 5.5 V or the regulator will intervene and the device could be damaged.

Figure 1 : Horizontal and Vertical Deflections for 30AX C.R.T.



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Figure 3 : P.C. Board and Components Layout of the Circuit of Fig. 2 (1:1 scale).

