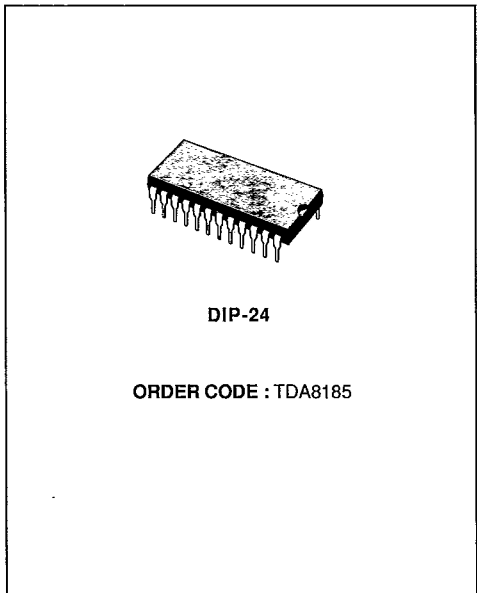


HORIZONTAL AND VERTICAL PROCESSOR

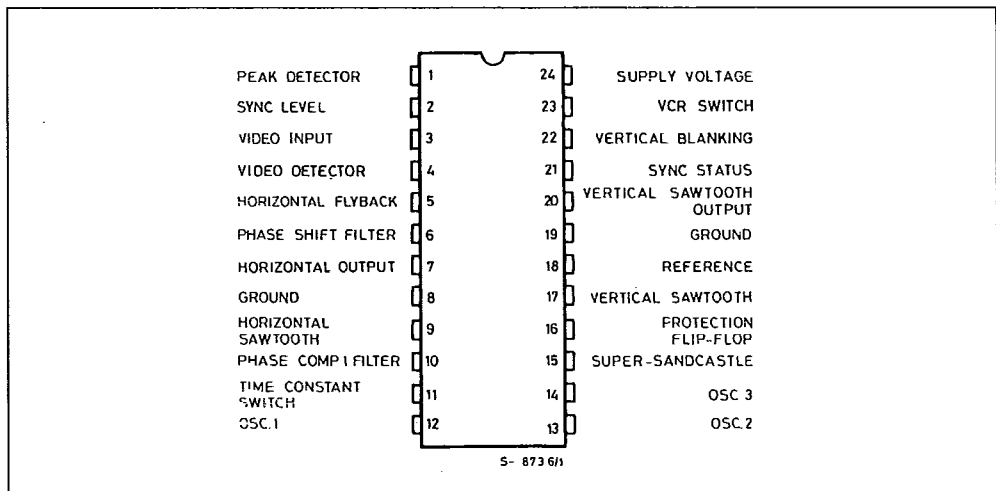
- 503 KHz REFERENCE OSCILLATOR
- 5.5 V SUPPLY VOLTAGE INTERNALLY REGULATED
- VERY SOPHISTICATED SYNC. SEPARATOR
- COUNT DOWN TIMING LOGIC
- ADAPTS AUTOMATICALLY TO 625 LINE/50 Hz AND 525 LINE/60 Hz STANDARDS
- 50/60 Hz IDENTIFICATION OUTPUT
- AUTOMATIC VERTICAL AMPLITUDE CORRECTION 50/60 Hz
- CRT PROTECTION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

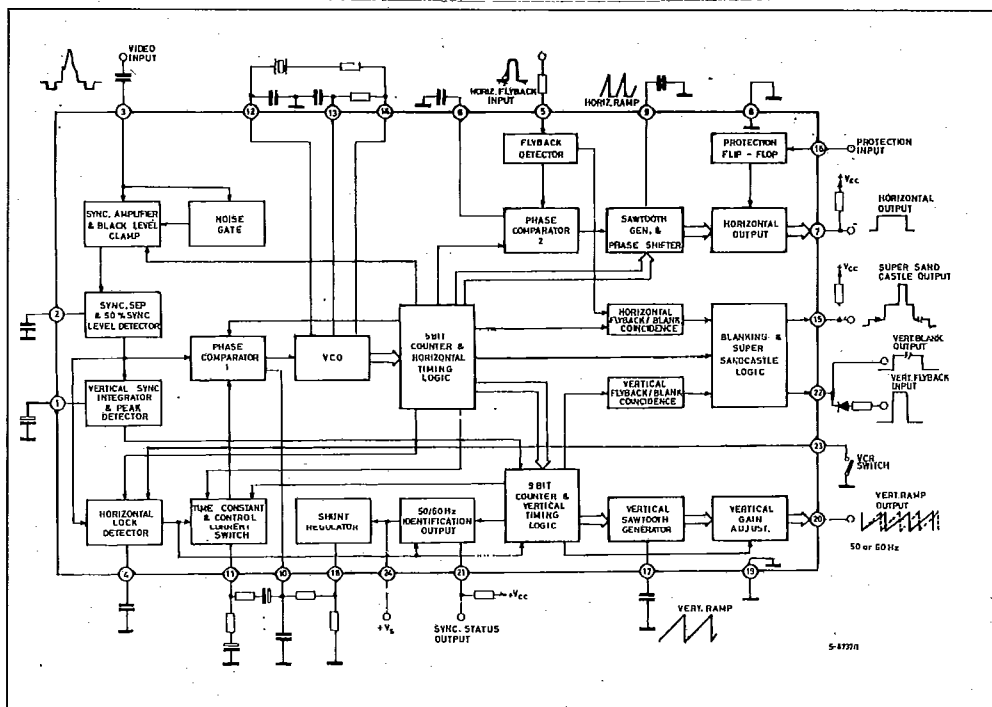
CONNECTION DIAGRAM (top view)



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		μA

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			± 0.3		mA
I_{10}	VCR Control Peak Current			± 0.6		mA
Δf	Catching and Holding Range			± 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			± 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		μs

ELECTRICAL CHARACTERISTICS (continued)

COMPOSITE BLANKING AND KEY PULSE (supersandcastle)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V _K	Key Pulse Output Peak Voltage			10		V
V _L	Line Blanking Voltage		4.25	4.5	4.75	V
V _F	Frame Blanking Voltage		2.38	2.5	2.63	V
t _{KS}	Phase Relationship between Leading Edge of Key Pulse and Middle of Sync. Pulse			2.4		μs
t _K	Key Pulse Duration			4		μs
t _F	Vertical Blanking Duration			1.4		ms

FRAME

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

LINE

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

SYNC. STATUS OUTPUT

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V ₂₁	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 ₀	Phase Difference between Middle of Flyback and Middle of Sync. Pulses			2		μs

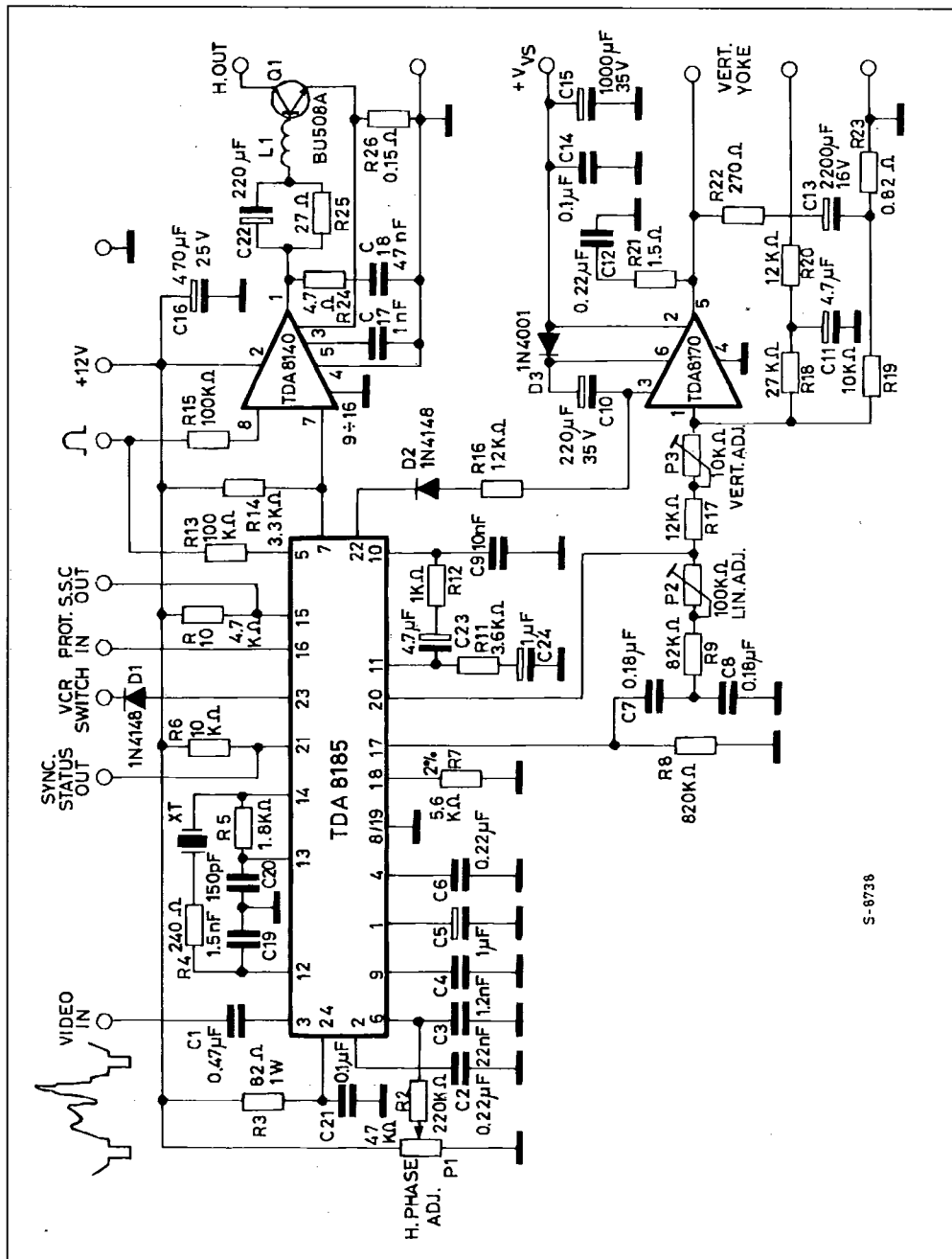
VERTICAL BLANKING OUT AND FLY. INPUT

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

Notes : 1. With I_{fly} = 12 μs and t_l = 29 μs.

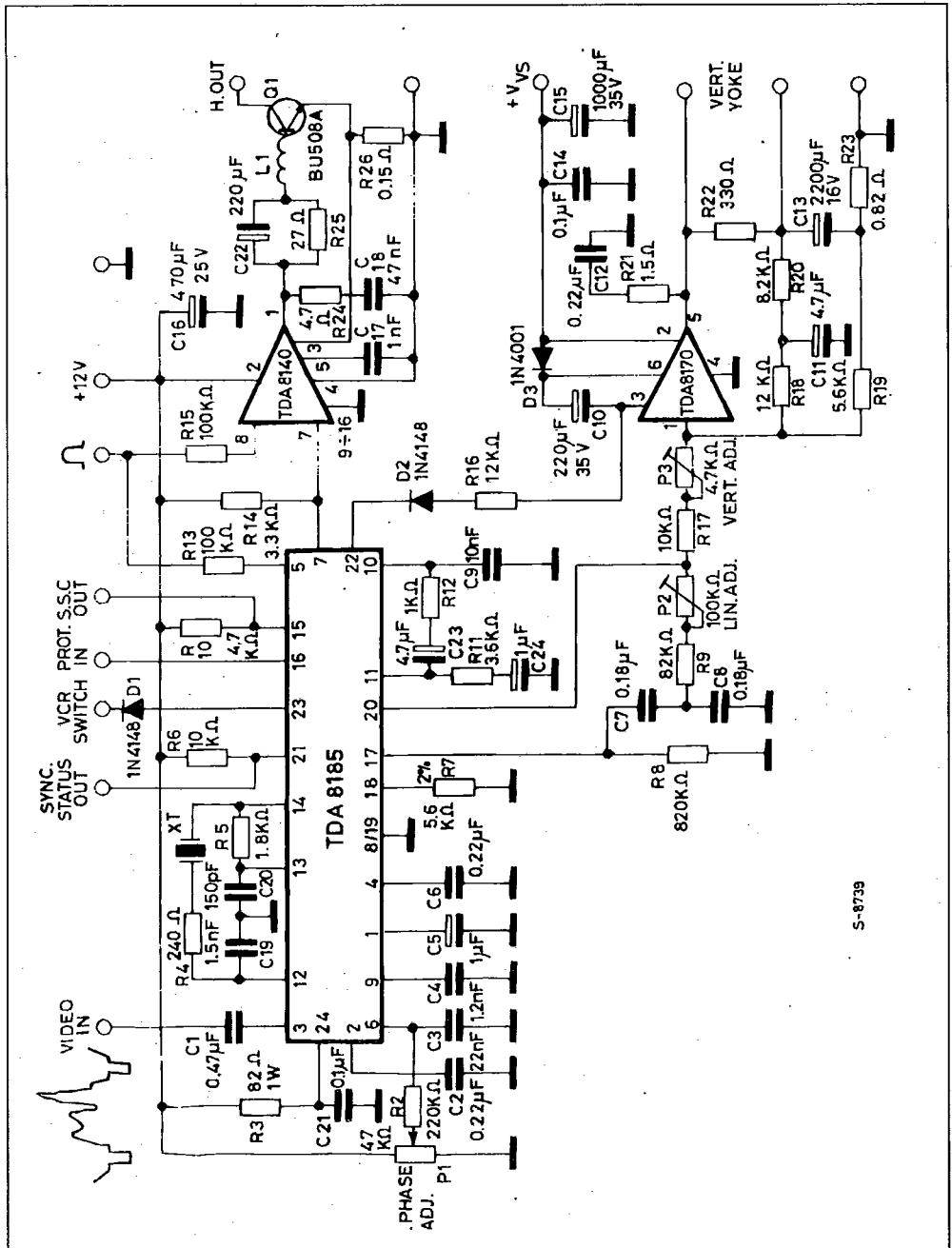
2. The TDA8185 may be operated on a 5 V supply directly. A 5.5 V shunt regulator is available internally for operation on higher supply voltage ; in this case an external limiting resistor is required.
Without the external limiting resistor care must be taken to ensure that the supply voltage does not 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 2 : Horizontal and Vertical Deflection for S4 C.R.T.



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

