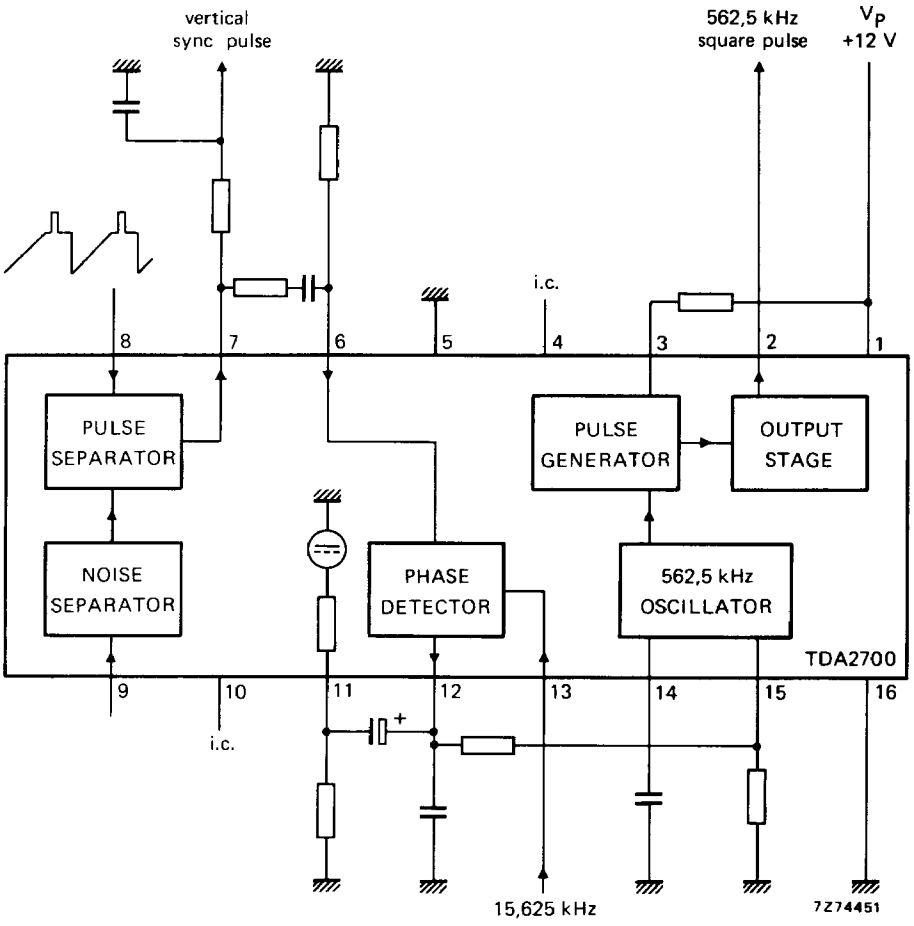
OSCILLATOR FOR VIDEO RECORDERS

The TDA2700 is a monolithic integrated circuit for video recorders incorporating the following functions :

- 562,5 kHz oscillator
- pulse separator
- noise separator
- phase detector
- pulse generator
- low-ohmic output stage



PACKAGE OUTLINE 16-lead DIL; plastic (SOT-38).

RATINGS Limiting values in accordance with the Absolute Maximum System (IEC 134)

Voltages				
Supply voltage	V_{1-16}	max.	13,2	V
Pin 3	V_{3-16}	0 to	V_{1-16}	V
Pin 8	$-V_{8-16}$	max.	12	V
Currents				
Pin 2 (average value)	$-I_{2(AV)}$	max.	20	mA
(peak value)	$-I_{2M}$	max.	200	mA
Pin 6 (peak value)	$\pm I_{6M}$	max.	10	mA
Pin 7 (peak value)	$-I_{7M}$	max.	10	mA
Pin 8 (peak value)	I_{8M}	max.	10	mA
Pin 9 (peak value)	$\pm I_{9M}$	max.	10	mA
Power dissipation				
Total power dissipation	P_{tot}	max.	600	mW
Temperatures				
Storage temperature	T_{stg}	−25 to	+125	°C
Operating ambient temperature	T_{amb}	−20 to	+60	°C

CHARACTERISTICS at V_{1-16} = 12 V; T_{amb} = 25 °C; measured in circuit on page 4

Inputs

Supply				
Supply current at $I_2 = 0$	I_1	typ.	36	mA
Sync pulse separator				
Negative video input signal (peak-to-peak value)	$V_{8-16(p-p)}$	typ.	3	V
			1 to 7	V
Input current (peak value)	I_{8M}	≥	10	μA
Input leakage current at $V_{8-16} = -3$ V	$-I_8$	≤	1	μA
Noise separator				
Input voltage	V_{9-16}	typ.	0,7	V
Input current range	I_9	0,03 to	10	μA
Input resistance	R_{9-16}	typ.	200	Ω

CHARACTERISTICS (continued)

Outputs

Sync pulse separator

Output voltage (peak-to-peak value)	$V_{7-16(p-p)}$	typ.	10	V
Output resistance : at leading edge of sync pulse	R_{7-16}	typ.	50	Ω [1]
at trailing edge of sync pulse	R_{7-16}	typ.	2,2	kΩ
Additional external load resistance	$R_{7-16(ext)}$	≥	2	kΩ

Output stage

Output voltage (peak-to-peak value)	$V_{2-16(p-p)}$	typ.	10	V
Output resistance	R_{2-16}	low-ohmic		
Duty factor of output pulse	δ	typ.	50	%

Phase detector

Input voltage	V_{6-16}	typ.	1,5	V
Input current range	I_6		0,03 to 3	mA
Control voltage range	V_{12-16}		1,3 to 5,5	V
Output resistance in the control voltage range	R_{12-16}	high-ohmic		[2]
Control current	$\pm I_{12}$	typ.	7,5	mA
Input voltage range for I_{12} positive	V_{13-16}		7,2 to 9	V
for I_{12} negative	V_{13-16}		0 to 5,5	V
Input current at $V_{13-16} \geq 7,2$ V	I_{13}	<	6	μA
at $V_{13-16} \leq 5,5$ V	I_{13}	<	1	μA
Catching and holding range (based on 15,625 kHz)	Δf	typ.	±1	kHz [3]
D.C. level at pin 11	V_{11-16}	typ.	3,1	V
Internal resistance at pin 11	R_{11-16}	typ.	2	kΩ

Oscillator

Output voltage (peak-to-peak value)	$V_{14-16(p-p)}$	typ.	3	V
Charge and discharge current	$I_{14} = \pm I_{15}$	typ.	0,94	mA
Voltage at pin 15	V_{15-16}	typ.	3,1	V
Frequency : free running	f_o	typ.	562,5	kHz
Frequency adjustment range	$\Delta f_o/f_o$	typ.	10	%

1) Emitter follower.
2) Current source.
3) Adjustable with $R_{12-15(ext)}$.

APPLICATION INFORMATION