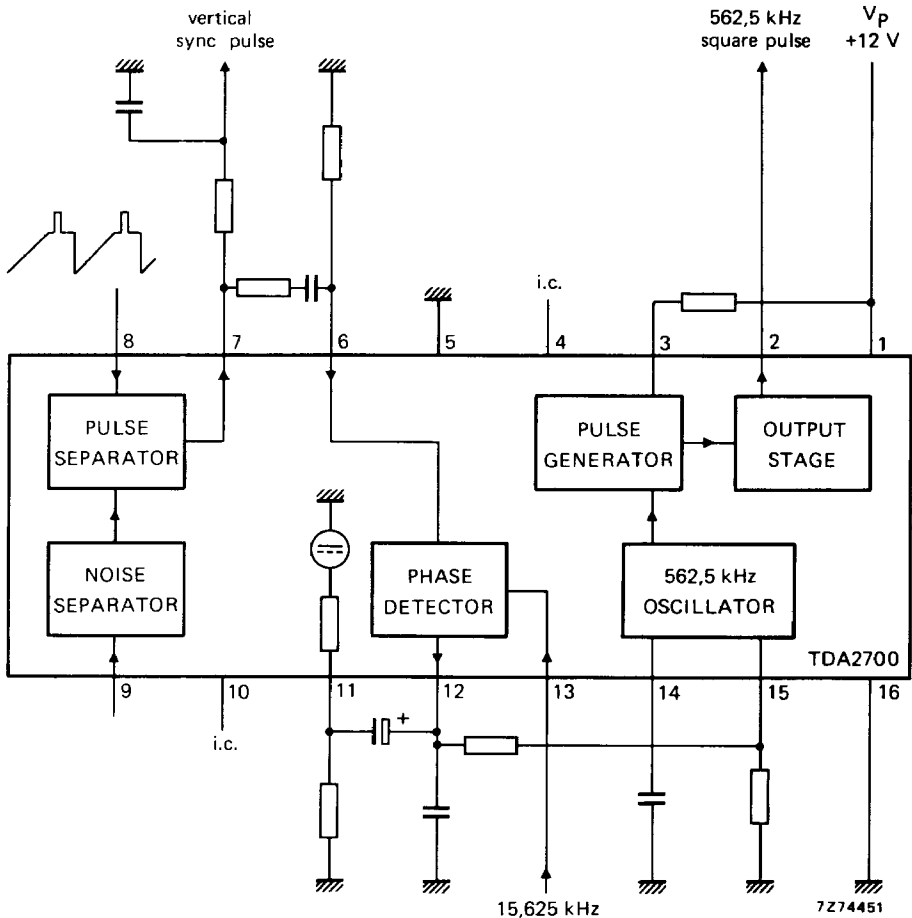


## OSCILLATOR FOR VIDEO RECORDERS

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) (peak value)	$-I_{2(AV)}$	max.	20	mA
	$-I_{2M}$	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
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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
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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)	$I_{8M}$	$\geq$	10	$\mu$ A
Input leakage current at $V_{8-16} = -3$ V	$-I_8$	$\leq$	1	$\mu$ A

Noise separator

Input voltage	$V_{9-16}$	typ.	0,7	V
Input current range	$I_9$		0,03 to 10	$\mu$ A
Input resistance	$R_{9-16}$	typ.	200	$\Omega$

**CHARACTERISTICS** (continued)**Outputs**Sync pulse separator

Output voltage (peak-to-peak value)	V <sub>7-16(p-p)</sub>	typ.	10 V
Output resistance : at leading edge of sync pulse at trailing edge of sync pulse	R <sub>7-16</sub>	typ.	50 Ω <sup>1)</sup>
	R <sub>7-16</sub>	typ.	2,2 kΩ
Additional external load resistance	R <sub>7-16(ext)</sub>	≥	2 kΩ

Output stage

Output voltage (peak-to-peak value)	V <sub>2-16(p-p)</sub>	typ.	10 V
Output resistance	R <sub>2-16</sub>	low-ohmic	
Duty factor of output pulse	δ	typ.	50 %

**Phase detector**

Input voltage	V <sub>6-16</sub>	typ.	1,5 V
Input current range	I <sub>6</sub>		0,03 to 3 mA
Control voltage range	V <sub>12-16</sub>		1,3 to 5,5 V
Output resistance in the control voltage range	R <sub>12-16</sub>	high-ohmic	<sup>2)</sup>
Control current	±I <sub>12</sub>	typ.	7,5 mA
Input voltage range for I <sub>12</sub> positive for I <sub>12</sub> negative	V <sub>13-16</sub>		7,2 to 9 V
	V <sub>13-16</sub>		0 to 5,5 V
Input current at V <sub>13-16</sub> ≥ 7,2 V at V <sub>13-16</sub> ≤ 5,5 V	I <sub>13</sub>	<	6 μA
	I <sub>13</sub>	<	1 μA
Catching and holding range (based on 15,625 kHz)	Δf	typ.	±1 kHz <sup>3)</sup>
D. C. level at pin 11	V <sub>11-16</sub>	typ.	3,1 V
Internal resistance at pin 11	R <sub>11-16</sub>	typ.	2 kΩ

**Oscillator**

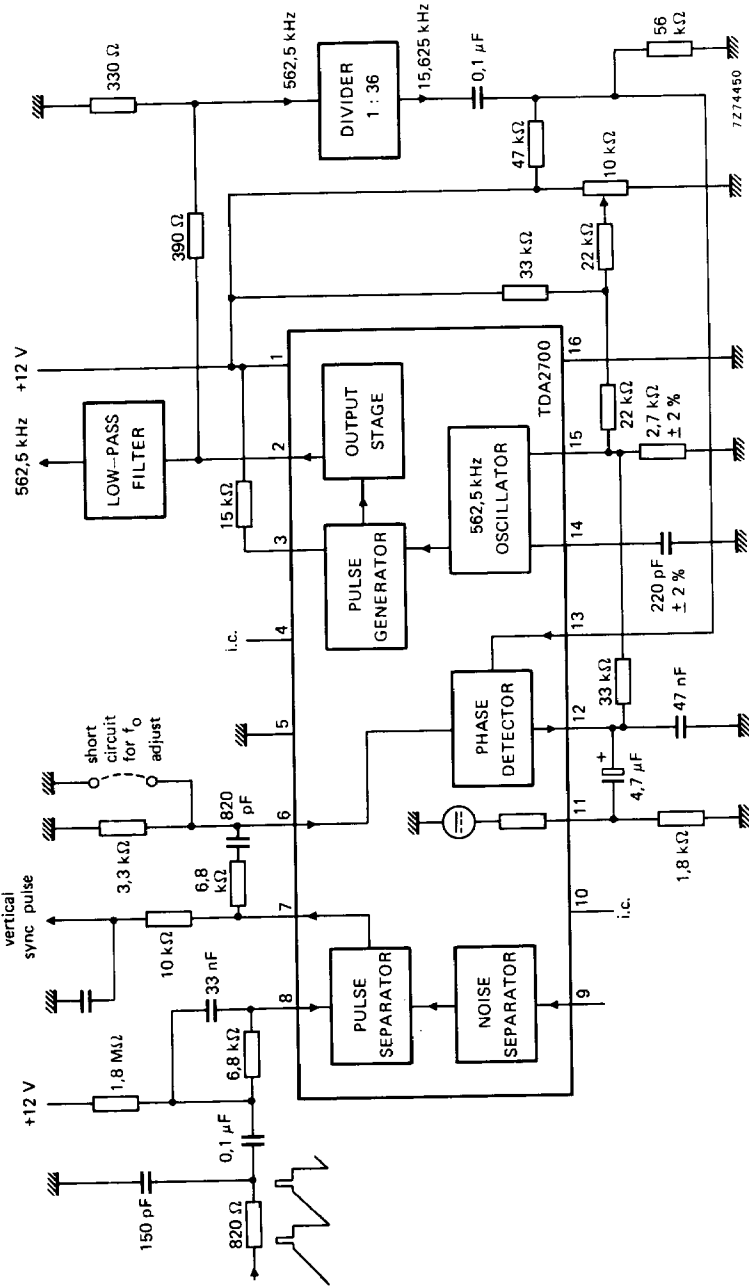
Output voltage (peak-to-peak value)	V <sub>14-16(p-p)</sub>	typ.	3 V
Charge and discharge current	I <sub>14</sub> = ±I <sub>15</sub>	typ.	0,94 mA
Voltage at pin 15	V <sub>15-16</sub>	typ.	3,1 V
Frequency : free running	f <sub>0</sub>	typ.	562,5 kHz
Frequency adjustment range	Δf <sub>0</sub> /f <sub>0</sub>	typ.	10 %

1) Emitter follower.

2) Current source.

3) Adjustable with R<sub>12-15(ext)</sub>.

## APPLICATION INFORMATION



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