## LINE OSCILLATOR CIRCUIT

This circuit has been designed for use as line-oscillator and reactance stage in colour and monochrome  $\mathbf{t}.\mathbf{v}.$  receivers.

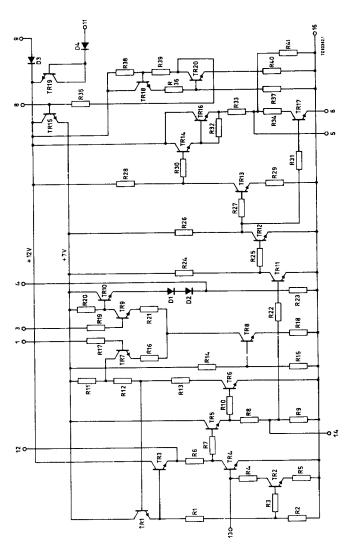
The circuit consists of a Miller-integrator-oscillator followed by a pulse shaping circuit, which delivers a positive pulse of 8 V and adjustable width. The available output current is in excess of 60 mA. Finally a supply voltage take-over switch for starting purposes is built in. The TBA720A can co-operate with the TBA890.

QUICK REFERENCE DATA				
Supply voltage	V <sub>11-16</sub> typ. 12 V			
Starting voltage	V <sub>9-16</sub> 8 to 12 V			
Required input signals				
D.C. control voltage at pin 1	V <sub>1-16</sub> 2.4 to 5,3 V			
at pin 3	$V_{3-16}$ 2, 4 to 5, 3 V			
Delivered output signals				
Output voltage at pin 5				
no load: peak-to-peak value	$V_{5-16(p-p)}$ typ. 8 V			
Output current at pin 5	$I_5$ < 60 mA			

## PACKAGE OUTLINES

TBA720A: 16-lead DIL; plastic (SOT-38). TBA720AQ: 16-lead QIL; plastic (SOT-58).







CIRCUIT DIAGRAM

RATINGS Limiting values in accordance with the Absolute Maximum System (IEC134).					
Voltages			, <b>.</b>		
Supply voltage	v <sub>11-16</sub>	max	. 16 V		
Starting voltage	V9-16	max			
Currents	7 10				
Output current	I <sub>5</sub>	max	60 mA		
Power dissipation	3				
Total power dissipation when mounted on a printed-wiring board	$P_{tot}$	max.	. 280 mW		
Temperatures	tot				
Storage temperature	$T_{ m stg}$		-55 to +125 °C		
Operating ambient temperature	T <sub>amb</sub>		0 to +60 °C		
CHARACTERISTICS Measured in the test set-up on page 4					
Supply voltage	v <sub>1.1-16</sub>	typ.	12 V 10 to 13 V		
Starting voltage	V <sub>9-16</sub>	>	8 V <sup>1</sup> )		
<b>CHARACTERISTICS</b> at $T_{amb} = 25$ °C; $V_{11-16} = 12$ V					
Supply current 2)	111	typ.	10,5 mA 7,5 to 13,5 mA		
Required input signals					
D.C. control voltage for nominal frequency at pin No. 1 and pin No. 3	V <sub>1-16</sub> = V	V3-16	2,4 to 5,3 V		
Sensitivity of reactance stage	$v_{1-3}$	typ.	2 kHz/V		
Duty cycle regulation at pin No. 14	I <sub>14</sub>	typ.	$0~\mu\mathrm{A}$ +400 to -400 $\mu\mathrm{A}$		
Delivered output signals					
Output voltage at pin No. 5 no load; peak-to-peak value	V <sub>5</sub> -16(p-	o)	typ. 8 V		
Output current	<sup>I</sup> <sub>5</sub>	(tvn	< 60 mA 40 %		
Duty cycle; without regulation	δ	typ.	35 to 45 %		
with regulation	δ		20 to $60~%$		
Rise time at pin No. 5 leading edge of output pulse	$t_{\mathbf{r}}$	typ.	200 ns		

 $<sup>^{1}</sup>$ ) Maximum starting voltage should not exceed the value of the supply voltage minus 1 volt.

<sup>&</sup>lt;sup>2)</sup> No load connected to the output. When the output is loaded, the extra current is:  $\delta \times I$ , in which  $\delta$  = duty cycle of output pulse and I = current flowing during output pulse.

## CHARACTERISTICS (continued)

Relative frequency deviation for  $\Delta V_{11} = 1 \text{ V}$ 

2 %

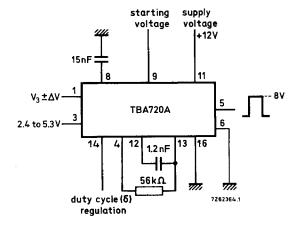
Relative frequency deviation for change of ambient temperature 25 to 55  $^{\rm o}{\rm C}$ 

3 ‰

Allowable hum-ripple on supply line (peak-to-peak value)

ΔV<sub>11-16(p-p)</sub> typ. 100 mV

Test set-up





+185V

+12 V

120 kg 3.3kg

+ (25v)

100nF 100µF

1,2 1,1

+12V

tuner a.g.c.

+12V

+ 12 V

fly-back pulse

# 10kn 47kn frequency 🗸 16 15 14 13 12 11 TBA720A LINE OSCILLATOR #15.pf 82 KD 100 kΩ 100 k Ω SYNCHRONISATION ┨ 월 년 TBA890 video out VIDEO DETECTOR 10nF 33µF KΩ 뉴 遺

to line driver BD232

## t5 n.F

APPLICATION INFORMATION

The TBA720A with the TBA890 or TBA900 in a receiver with transistorized line deflection.

### APPLICATION INFORMATION (continued)

#### Notes

- 1. The TBA720A is intended to drive a line deflection circuit equipped with transistors.
- 2. The duty cycle  $\delta$  can be adjusted by connecting a resistor between pin 14 and ground or the supply.
- 3. The oscillation frequency can be set between 10 kHz and 25 kHz by connecting a resistor between pins 4 and 13, and a capacitor between pins 12 and 13.
- 4. At a nominal oscillation frequency of 15,625 kHz, the frequency deviation is limited to +1,3 kHz to safeguard the line timebase output circuits.
- 5. Besides the oscillator, the TBA 720A incorporates a reactance stage and a supply voltage take-over switch for starting purposes (pin 9). The latter can be used to advantage if the 12 V supply is derived from the line flyback pulse.
- 6, Pins 2, 7, 10 and 15 should not be connected.



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