SGS-THOMSON MICROELECTRONICS

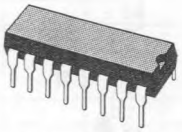
TBA920
TBA920S

LINE OSCILLATOR COMBINATION FOR TV SET

- SYNC-PULSE SEPARATION
- OPTIONAL NOISE INVERSION
- GENERATION OF A LINE FREQUENCY VOLTAGE BY MEANS OF AN OSCILLATOR
- PHASE COMPARISON BETWEEN SYNC-PULSE AND THE OSCILLATOR WAVEFORM
- PHASE COMPARISON BETWEEN THE OSCILLATOR WAVEFORM AND THE MIDDLE OF THE LINE FLY-BACK PULSE
- AUTOMATIC SWITCHING OF THE VARIABLE TRANSCONDUCTANCE AND THE VARIABLE TIME CONSTANT TO ACHIEVE NOISE SUPPRESSION AND, BY SWITCHING OFF, POSSIBILITY OF TAPE-VIDEO-REGISTERED REPRODUCTION
- SHAPING AND AMPLIFICATION OF THE OSCILLATOR WAVEFORM TO OBTAIN PULSES FOR THE CONTROL OF DRIVING STAGES IN HORIZONTAL, DEFLECTION CIRCUITS USING EITHER TRANSISTORS OR THYRISTORS

DESCRIPTION

The line oscillator combination TBA920 is a monolithic integrated circuit intended for the horizontal deflection of the black and white and colour TV sets picture tube.



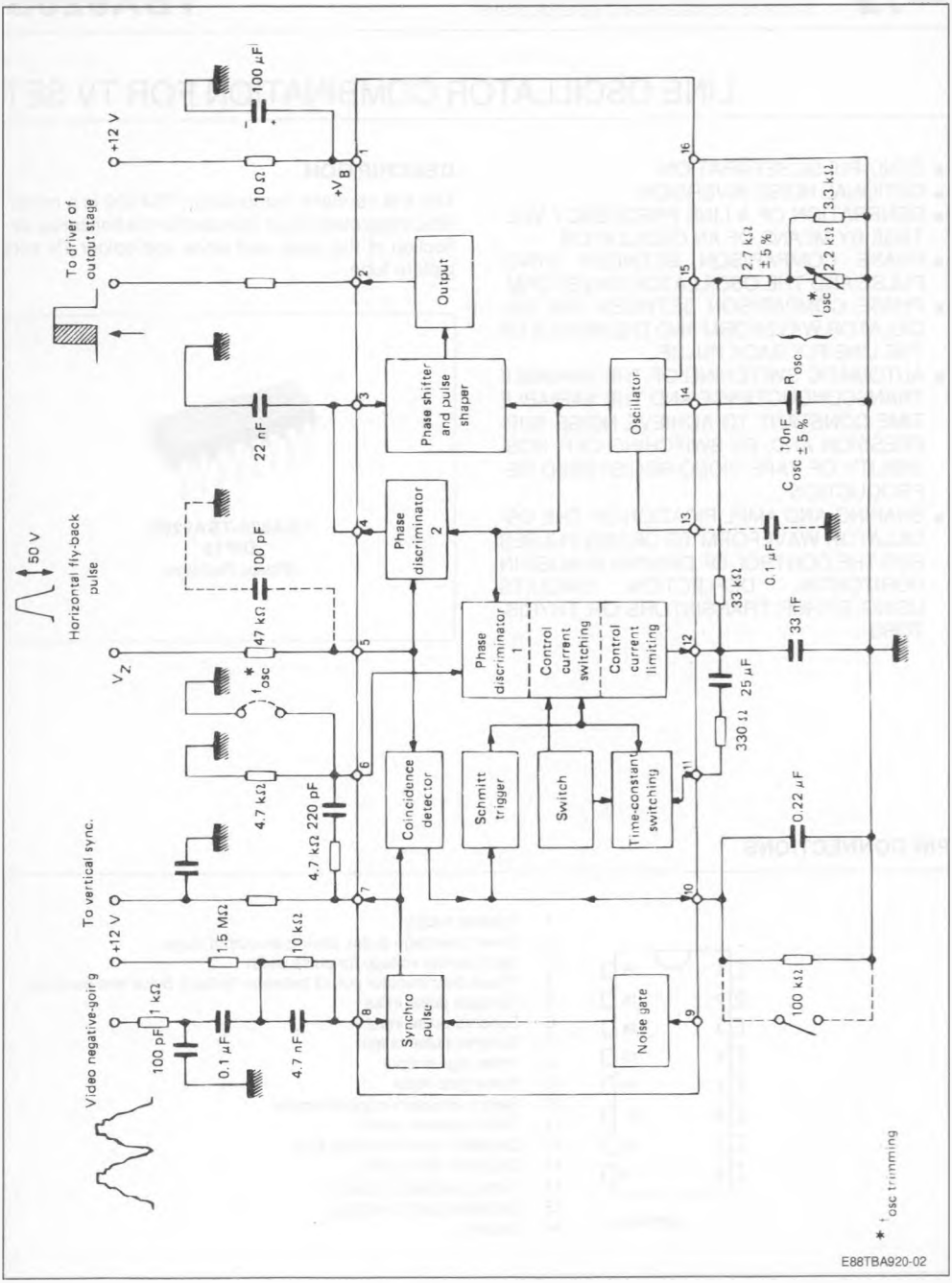
TBA920-TBA920S
DIP16
(Plastic Package)

PIN CONNECTIONS

E88TBA920-01

1 - Positive supply
2 - Driver line stage pulse, driving an output stage
3 - Input control voltage for pulse width
4 - Phase discriminator output between fly-back pulse and oscillator
5 - Fly-back pulse input
6 - Synchro-pulse input
7 - Synchro pulse output
8 - Video signal input
9 - Noise gate input
10 - Switch emission-magnetoscope
11 - Time constant switch
12 - Oscillator control voltage loop
13 - Oscillator decoupling
14 - Tuning oscillator capacitor
15 - Oscillator control voltage
16 - Ground

BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CC}	Supply Voltage V_{1-16}	4 to 14	V
P_{tot}	Total Power Dissipation	600	mW
T_{amb}	Ambient Temperature	– 20 to 60	°C
T_{stg}	Storage Temperature	– 55 to 150	°C

ELECTRICAL OPERATING CHARACTERISTICS

T_{amb} = 25 °C, V_{CC} = 12 V (unless otherwise specified)

Symbol	Parameter	Min.	Typ.	Max.	Unit
	Video Signal (pin 8)				
V_I	Input Voltage (positive synchro–pulse)	1	3	7	V
I_I	Input Current			0.2	mA
	Fly–back (pin 5)				
I_I	Input Current	0.1	1	2	mA
V_I	Input Voltage		± 0.8		V
Z_I	Input Resistance		0.4		kΩ
	Noise Gate (pin 9)				
I_I	Input Current		20		µA
V_I	Input Voltage		0.7		V
	Synchro Pulse (pin 7)				
V_O	Output Voltage	9	10		V
Z_O	Output Impedance on Rise Time		50		Ω
Z_O	Output Impedance on Fall Time		2.2		kΩ
	Line Amplifier				
I_O	Output Current (peak to peak)		25	200	mA
V_O	Output Voltage	9	10		V
t_P	Output Pulse Duration (adjust by V_{3-16})	12		32	µs
	Fly–back Pulse Phase Control				
	Delay accepted between output pulse and fly–back pulse	0		15	µs
I_O	Output Current During Fly–back Pulse		± 0.5		mA
	Line Oscillator (no synchronized) for 625 Lines		15625 ± 5 %		Hz
	At Supply Cut–off, without synchronized for 625 Lines		15625 ± 10 %		Hz
	Phase Control between Oscillator and Synchro–pulse				
	• with Emission				
	Pull in Range		± 1		kHz
	Keep in Range		± 1		kHz
S	Sensibility		3		kHz/µs
	• with Magnetoscope				
	Keep in Range		± 350		Hz
	Pull in Range		± 350		Hz
S	Sensibility		± 1		kHz/µs
For TBA 9205 only					
ΔF_O	Oscillator (pin 14) Oscillator Frequency Spead R_{15-6} = 3.3 kΩ C_{14-16} = 10 nF		≤ 1.5		%
ΔF_O	Oscillator Frequency Range (figure 1 and 2)		± 5		%
Δt	Phase Position (pin 5-6) Phase spead between Front End Synch Pulse and Fly–back Pulse Center (figure 1)		≤ ± 0.4		µs

APPLICATION : EUROPEAN STANDARD 625 LINES

Figure 1.

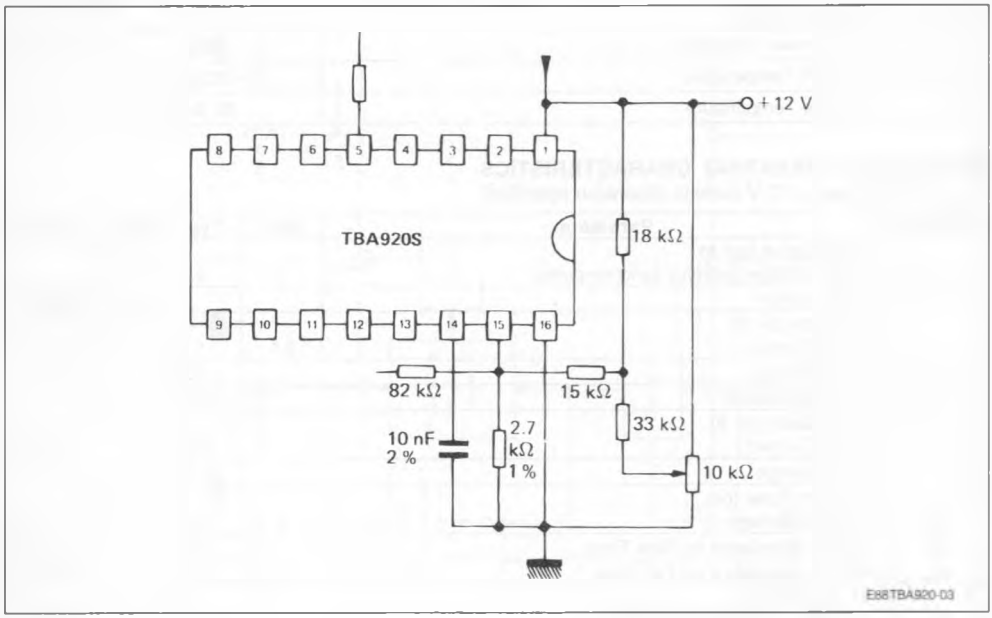
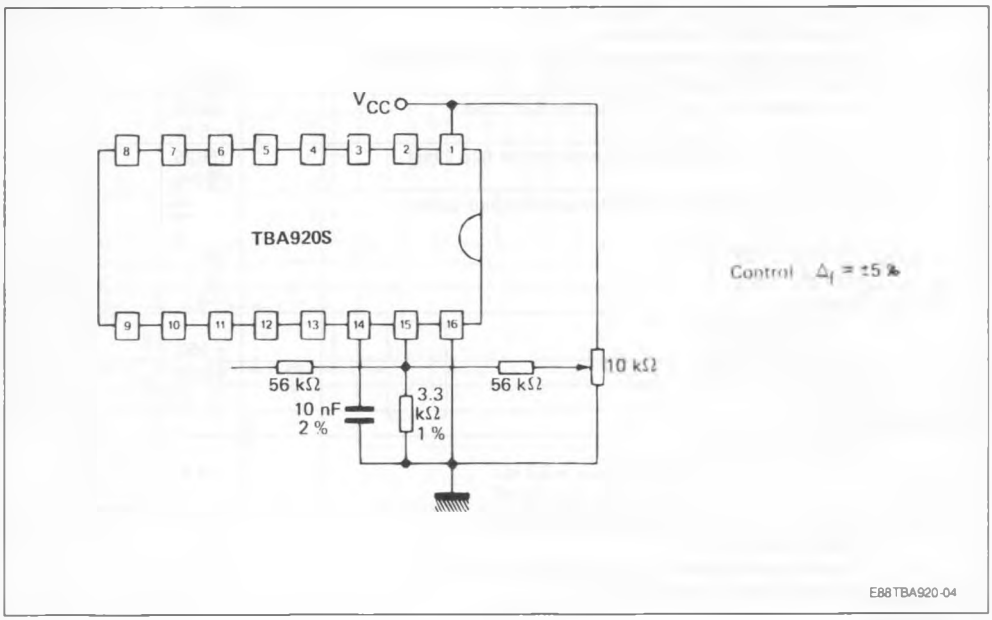


Figure 2.



PACKAGE MECHANICAL DATA

16 PINS – PLASTIC DIP