

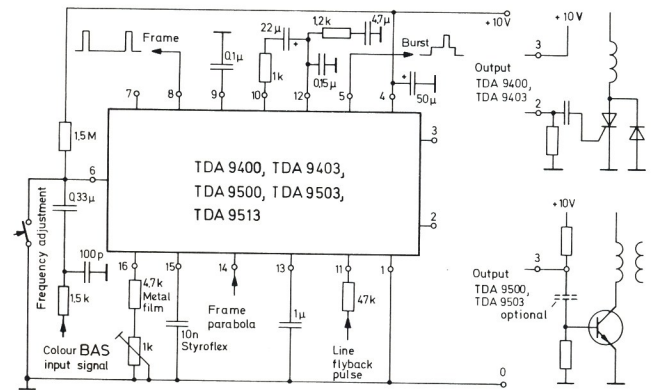
## TDA9400, TDA9500, TDA9403, TDA9503, TDA9513 Line Circuits for TV Receivers (16-Pin Plastic Package)

Integrated bipolar circuits for pulse separation and line synchronisation in TV receivers. The TDA9400/TDA9403 and TDA9500/TDA9503 are in the main identical except the output stages and the shape of their output signals. The TDA9400 and TDA9403 show a Darlington emitter follower output stage, the output signal of which is suitable for driving thyristor line output stages. The output stage of the TDA9500 and TDA9503 supplies signals for driving transistor line output stages. The TDA9513 has, compared with the similar type TDA9503, an inverted output signal suited for driving darlington transistor line output stages.

All types comprise the sync separator with internal noise suppression, the frame pulse generator, the phase comparator, a switching stage for automatic changeover of noise immunity and change of the slope of the phase control circuit, the line oscillator with frequency range limiter, a high-gain phase control circuit, a stage for generating the burst gate pulses in color TV receivers, an undervoltage protection circuit and – as mentioned above – different output stages.

All ICs deliver at pin 8 prepared frame sync pulses for triggering the frame oscillator. With the TDA9403, TDA9503, and TDA9513, the integration of the sync signal can be altered by means of an external RC combination connected to pin 7. Furthermore there is a little difference in amplitude and phase of the burst gate pulses between TDA9403/TDA9503/TDA9513 and TDA9400/TDA9500. The exact data may be found in the data sheets.

All types may be switched in the phase comparator for video recording operation. A terminal (pin 14) for phase correction with the aid of the frame parabola is provided. By changing the resistor between pin 16 and ground other line frequencies than 15 625 Hz (used in Germany)



Application Circuit

are adjustable, e.g. 10 125 Hz for England, 15 750 Hz for USA or 20 475 Hz for France and Belgium.

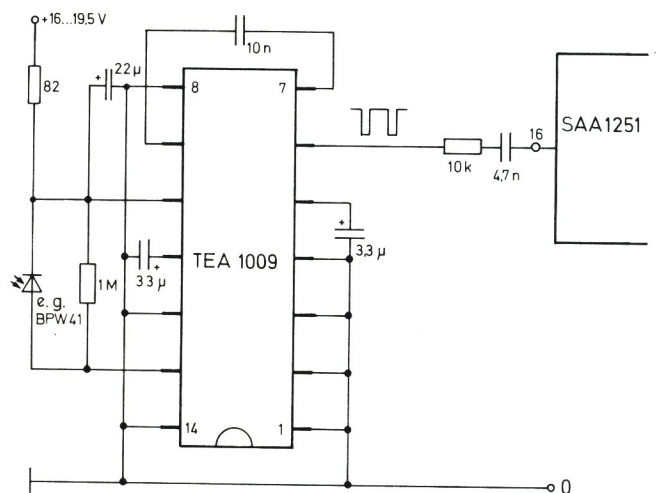
The Darlington emitter follower output stage of the TDA9400 and TDA9403 delivers an output current up to -600 mA. The output transistor of the TDA9500, TDA9503 and TDA9513 is operated in common emitter configuration and its output current is limited to 50 mA. The supply voltage of all types is 10...12 V and the current consumption is about 25 mA.

## TEA1009 Pre-amplifier for Infrared Remote Control Systems (14-Pin Plastic Package TO-116)

This bipolar integrated circuit is a preamplifier for the infrared remote control system SAA1250/SAA1251.

The TEA1009 comprises a multistage gain-controlled amplifier with high dynamic range and a separation stage which separates the pulse-shaped intelligent signal from the noise and spurious signals, thus achieving a high interference immunity. The infrared detector is an external photo-pin-diode.

Only few external components are needed. The current consumption is about 1.5 mA at  $V_B = 18$  V. Recommended as successor of the TEA1009 is the TBA2800. Designed for a 5 V supply, it delivers positive as well as negative output pulses.



TEA1009 Application Circuit