

## VIDEO PROCESSOR AND INPUT SELECTOR

## GENERAL DESCRIPTION

The TDA9045 is a monolithic integrated circuit for video signal processing and input selection.

## FEATURES

- Selection stage for three different inputs
- 4 dB amplifier
- Constant output signal amplifier controlled by synchronizing level and peak white level
- Clamping stage for a constant black level
- Circuit for stopping clamping pulses during the sync pulses
- Emitter follower output stage

## QUICK REFERENCE DATA

parameter	conditions	symbol	min.	typ.	max.	unit
Supply voltage range		V <sub>p</sub>	—	12	—	V
Supply current		I <sub>p</sub>	—	60	—	mA
<b>Pre-amplifier</b>						
Composite colour video input signals (peak-to-peak value)		V <sub>2, 3, 4-11(p-p)</sub>	—	—	2	V
<b>AGC amplifier</b>						
Composite video signal (peak-to-peak value)	±6 dB	V <sub>12-11(p-p)</sub>	—	0,4	—	V
<b>Sync level detector</b>						
Threshold voltage for sync level control		V <sub>9-11</sub>	—	1,8	—	V
<b>Selection</b>						
active input pin 2		V <sub>1-11</sub>	—	5	—	V
		V <sub>15-11</sub>	—	5	—	V
active input pin 3		V <sub>1-11</sub>	0	—	—	V
		V <sub>15-11</sub>	—	5	—	V
active input pin 4		V <sub>1-11</sub>	0	—	—	V
		V <sub>15-11</sub>	0	—	—	V
Not allowed condition		V <sub>1-11</sub>	—	5	—	V
		V <sub>15-11</sub>	—	0	—	V

## PACKAGE OUTLINE

18-lead DIL; plastic (SOT102).

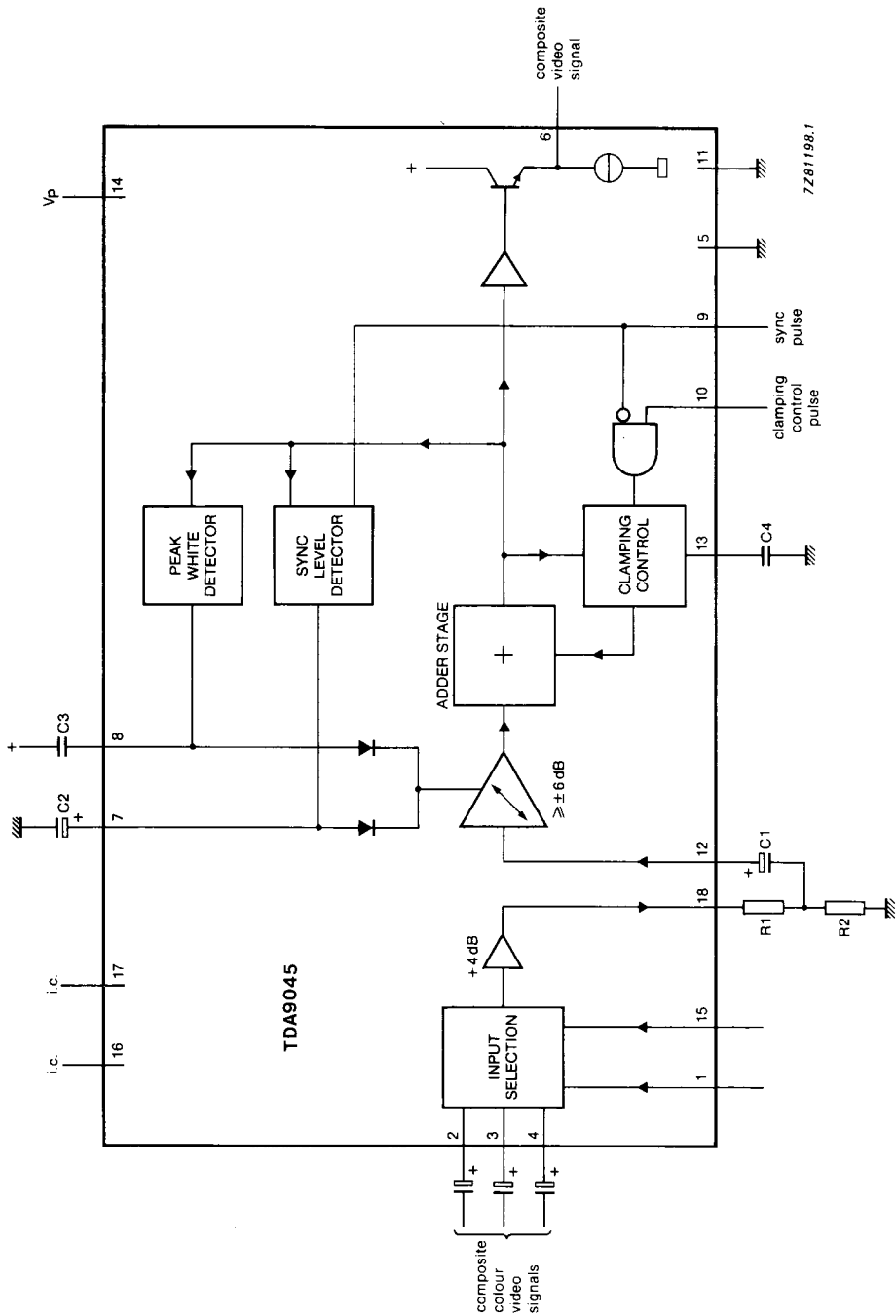


Fig. 1 Block diagram.

**RATINGS**

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

parameter	conditions	symbol	min.	max.	unit
Supply voltage		V <sub>p</sub>	0	13,2	V
Voltage on pins 9, 10, 12 to pin 11 (GND)		V <sub>n-11</sub>	0	V <sub>p</sub>	V
Voltage readings		V <sub>2, 3, 4-11</sub>	0	0,8 V <sub>p</sub>	V
		V <sub>7, 8-11</sub>	0,7 V <sub>p</sub>	V <sub>p</sub>	V
		V <sub>13-11</sub>	0,25 V <sub>p</sub>	V <sub>p</sub>	V
		V <sub>1, 15-11</sub>	0	5,5	V
Current readings		I <sub>6</sub>	—	10	mA
		I <sub>18</sub>	—	20	mA
Total power dissipation		P <sub>tot</sub>	—	1	W
Storage temperature range		T <sub>stg</sub>	−25	+150	°C
Operating ambient temperature range		T <sub>amb</sub>	0	+70	°C

**CHARACTERISTICS**

V<sub>p</sub> = V<sub>14-11</sub> = 12 V; trigger pulse width pin 10 = 4 μs; T<sub>amb</sub> = 25 °C; measured in test circuit Fig. 2 unless otherwise specified

DEVELOPMENT DATA

parameter	conditions	symbol	min.	typ.	max.	unit
Supply voltage		V <sub>p</sub>	9,6	—	13,2	V
Supply current		I <sub>p</sub>	—	60	—	mA
<b>Input channel selector</b>						
Input resistance		R <sub>1-11</sub>	—	7,5	—	kΩ
Selector switching voltage select input pin 4		V <sub>1-11</sub>	0	—	1	V
		V <sub>15-11</sub>	0	—	1	V
select input pin 3		V <sub>1-11</sub>	0	—	1	V
		V <sub>15-11</sub>	2,5	5	5,5	V
select input pin 2		V <sub>1-11</sub>	2,5	5	5,5	V
		V <sub>15-11</sub>	2,5	5	5,5	V

## CHARACTERISTICS (continued)

parameter	conditions	symbol	min.	typ.	max.	unit
<b>Pre-amplifier</b>						
Composite colour video input signals (peak-to-peak value)		V <sub>2,3,4-11(p-p)</sub>	—	1	2,0	V
Input resistance		R <sub>2,3,4-11</sub>	—	10	—	kΩ
Input capacity		C <sub>2,3,4-11</sub>	—	10	—	pF
Amplification		A <sub>18-2,3,4</sub>	—	4	—	dB
DC output voltage		V <sub>18-11</sub>	—	5,8	6,4	V
Frequency response	0 to 7 MHz		—	—	±2	dB
Signal suppression at output	pin 18 with no input		50	—	—	dB
<b>AGC amplifier</b>						
Input voltage composite video signal (peak-to-peak value)	± 6 dB	V <sub>2,3,4-11(p-p)</sub>	—	0,4	—	V
Input resistance		R <sub>12-11</sub>	—	10	—	kΩ
Input capacity		C <sub>12-11</sub>	—	10	—	pF
Frequency response	0 to 7 MHz		—	—	±2	dB
<b>Peak white and sync pulse level detectors</b>						
capacitor current charging current		-I <sub>8</sub>	—	15	—	mA
discharging current		I <sub>8</sub>	—	0,8	—	μA
capacitor current charging current		-I <sub>7</sub>	—	0,3	—	mA
discharging current		I <sub>7</sub>	—	0,3	—	mA
Threshold voltage for sync level controls		V <sub>9-11</sub>	1	1,8	2,4	V
Input current		-I <sub>9-11</sub>	—	—	50	μA
<b>Clamping control triggering and sync pulse regeneration</b>						
Threshold voltage for clamping control ON	V <sub>g-11</sub> = 0 V	V <sub>10-11</sub>	1	1,8	2,4	V
Input current		-I <sub>10-11</sub>	—	—	50	μA
Charging current		-I <sub>13</sub>	—	0,3	—	mA
Discharging current		I <sub>13</sub>	—	0,3	—	mA
Black level voltage		V <sub>6-11</sub>	5,2	5,6	6	V
Controlled output signal (peak-to-peak value)		V <sub>6-11(p-p)</sub>	3,7	3,9	4,1	V

DEVELOPMENT DATA

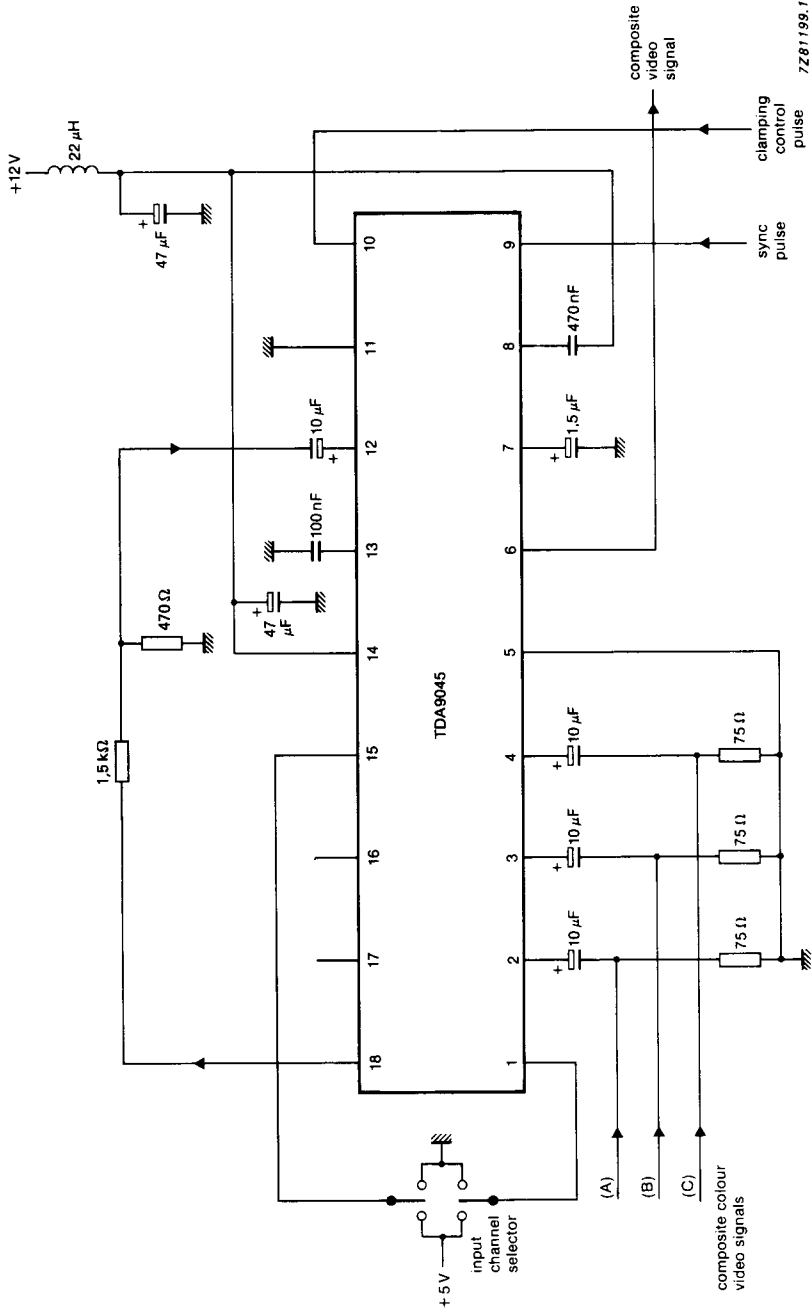


Fig. 2 Application diagram; also used as test circuit.