

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 _p	—	12	—	V
Supply current		I _p	—	60	—	mA
Pre-amplifier						
Composite colour video input signals (peak-to-peak value)		V _{2, 3, 4-11(p-p)}	—	—	2	V
AGC amplifier						
Composite video signal (peak-to-peak value)	±6 dB	V _{12-11(p-p)}	—	0,4	—	V
Sync level detector						
Threshold voltage for sync level control		V ₉₋₁₁	—	1,8	—	V
Selection						
active input pin 2		V ₁₋₁₁	—	5	—	V
		V ₁₅₋₁₁	—	5	—	V
active input pin 3		V ₁₋₁₁	0	—	—	V
		V ₁₅₋₁₁	—	5	—	V
active input pin 4		V ₁₋₁₁	0	—	—	V
		V ₁₅₋₁₁	0	—	—	V
Not allowed condition		V ₁₋₁₁	—	5	—	V
		V ₁₅₋₁₁	—	0	—	V

PACKAGE OUTLINE

18-lead DIL; plastic (SOT102).

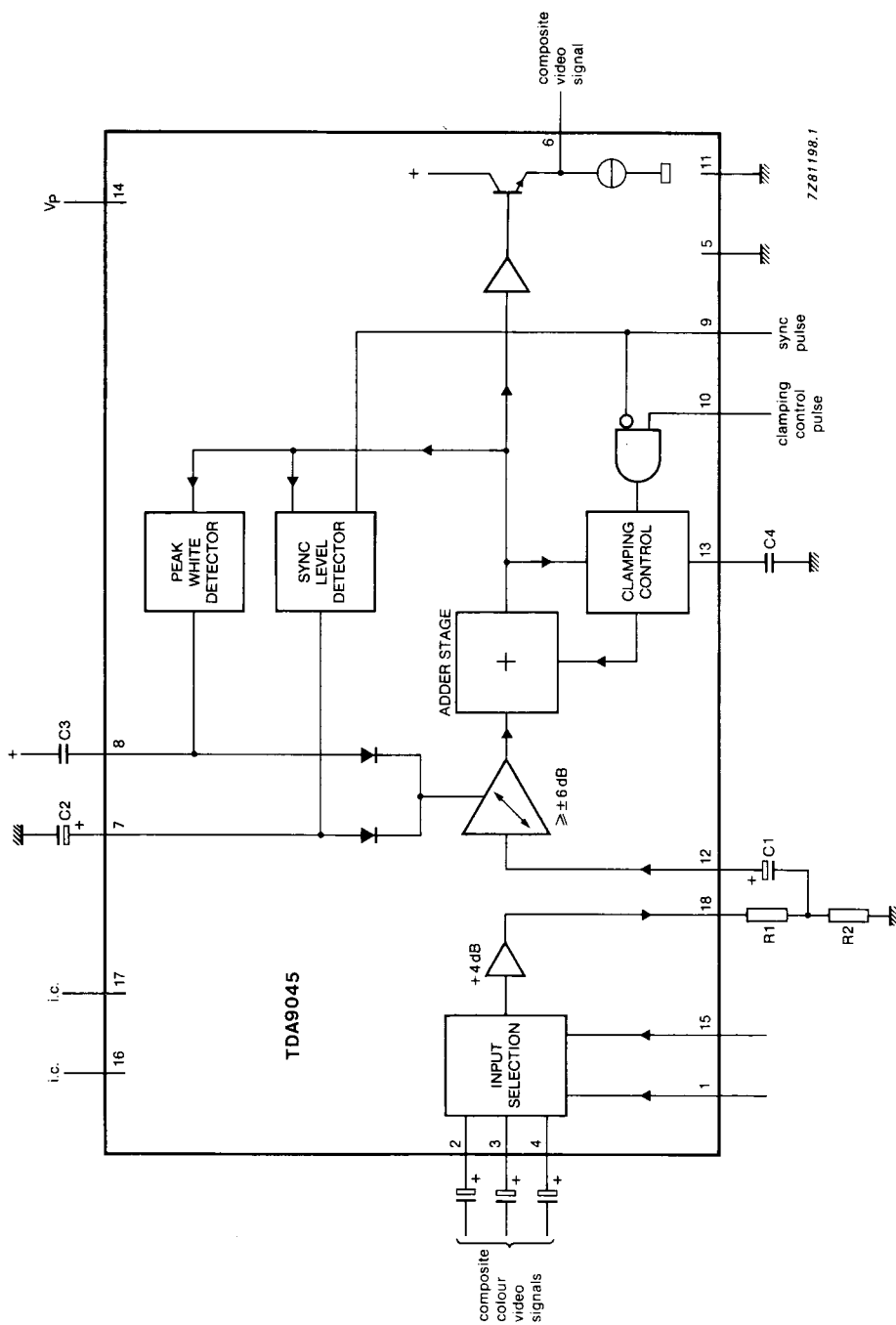


Fig. 1 Block diagram.

RATINGS

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

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

CHARACTERISTICS

V_p = V₁₄₋₁₁ = 12 V; trigger pulse width pin 10 = 4 μs; T_{amb} = 25 °C; measured in test circuit Fig. 2 unless otherwise specified

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

DEVELOPMENT DATA

CHARACTERISTICS (continued)

parameter	conditions	symbol	min.	typ.	max.	unit
Pre-amplifier						
Composite colour video input signals (peak-to-peak value)		$V_{2,3,4-11(p-p)}$	—	1	2,0	V
Input resistance		$R_{2,3,4-11}$	—	10	—	k Ω
Input capacity		$C_{2,3,4-11}$	—	10	—	pF
Amplification		$A_{18-2,3,4}$	—	4	—	dB
DC output voltage		V_{18-11}	—	5,8	6,4	V
Frequency response	0 to 7 MHz		—	—	± 2	dB
Signal suppression at output	pin 18 with no input		50	—	—	dB
AGC amplifier						
Input voltage composite video signal (peak-to-peak value)	± 6 dB	$V_{2,3,4-11(p-p)}$	—	0,4	—	V
Input resistance		R_{12-11}	—	10	—	k Ω
Input capacity		C_{12-11}	—	10	—	pF
Frequency response	0 to 7 MHz		—	—	± 2	dB
Peak white and sync pulse level detectors						
capacitor current						
charging current		$-I_8$	—	15	—	mA
discharging current		I_8	—	0,8	—	μ A
charging current		$-I_7$	—	0,3	—	mA
discharging current		I_7	—	0,3	—	mA
Threshold voltage for sync level controls		V_{9-11}	1	1,8	2,4	V
Input current		$-I_{9-11}$	—	—	50	μ A
Clamping control triggering and sync pulse regeneration						
Threshold voltage for clamping control ON	$V_{9-11} = 0$ V	V_{10-11}	1	1,8	2,4	V
Input current		$-I_{10-11}$	—	—	50	μ A
Charging current		$-I_{13}$	—	0,3	—	mA
Discharging current		I_{13}	—	0,3	—	mA
Black level voltage		V_{6-11}	5,2	5,6	6	V
Controlled output signal (peak-to-peak value)		$V_{6-11(p-p)}$	3,7	3,9	4,1	V

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