

NTSC DECODER

The TDA3570 is a monolithic integrated colour decoder for the NTSC standard. It combines all functions required for the identification and demodulation of NTSC signals. Furthermore it contains a luminance amplifier, an RGB-matrix and amplifier. The amplifier supplies output signals up to 3,5 V peak-to-peak (picture information) enabling direct drive of the output stages. The circuit also contains an automatic picture setting switch to preset positions of both saturation and tint controls.

QUICK REFERENCE DATA

Supply voltage	V_{1-14}	typ.	12 V
Supply current	I_1	typ.	43 mA
Luminance input signal (peak-to-peak value)	$V_{5-14(p-p)}$	typ.	1 V
RGB output signals (peak-to-peak value)	$V_{26,27,28-14(p-p)}$	typ.	3,5 V
Contrast control range		typ.	13 dB
Blanking pulse and black level gating input voltage	$V_{24,20-14}$	\geq	2 V
Chrominance input voltage (peak-to-peak value)	$V_{13-14(p-p)}$		10 to 300 mV
Saturation control range		\geq	40 dB
Tint control range		typ.	$\pm 45^\circ$

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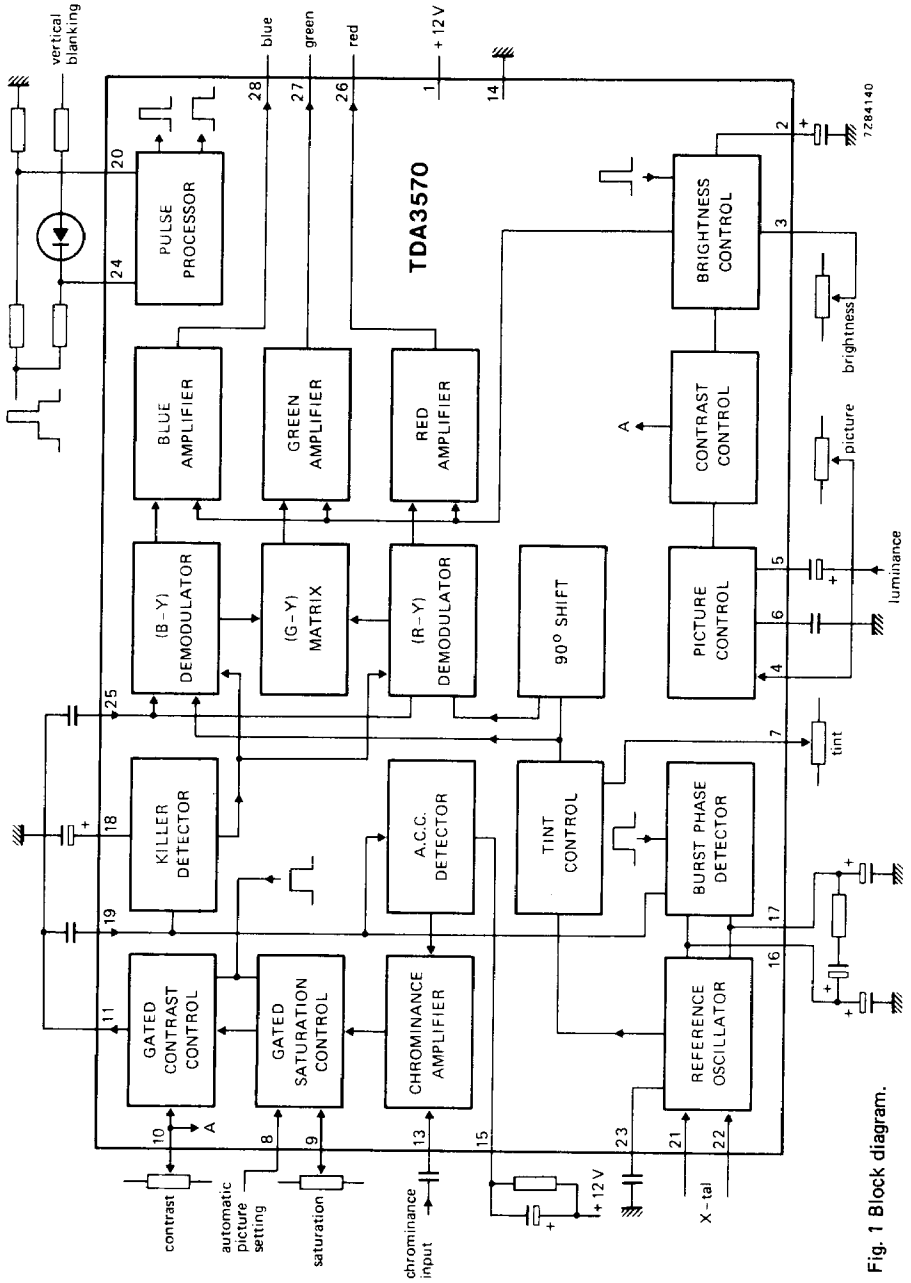


Fig. 1 Block diagram.

RATINGS

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

		min.	max.	
Supply voltage	$V_P = V_{1-14}$	0	14,4	V
Input saturation voltage	V_{9-14}	0	V_P	V
Input contrast voltage	V_{10-14}	0	V_P	V
Input tint voltage	V_{7-14}	0	V_P	V
Input picture voltage	V_{4-14}	0	V_P	V
Input brightness voltage	V_{3-14}	0	V_P	V
Input sandcastle current	I_{20}	-30	-	mA
Input blanking pulse voltage	V_{24-14}	-6	V_P	V
Power dissipation at $T_{amb} = 70\text{ }^\circ\text{C}$			750	mW
Storage temperature	T_{stg}	-40 to +125		$^\circ\text{C}$
Operating ambient temperature	T_{amb}	-20 to +70		$^\circ\text{C}$

CHARACTERISTICS

$V_{1-14} = 12\text{ V}$; $V_{5-14(p-p)} = 1\text{ V}$; $V_{13-14(p-p)} = 150\text{ mV}$;
 $T_{amb} = 25\text{ }^\circ\text{C}$; measured in Fig. 2

Supply voltage	V_{1-14}	typ.	12	V
Supply current	I_1	typ.	43	mA

Luminance

Input voltage (positive-going sync pulse; peak-to-peak value)	$V_{5-14(p-p)}$	typ.	1	V
Video gain	G_V	typ.	5	
Contrast control voltage range	V_{10-14}		0 to 12	V
Contrast control range		typ.	13	dB
Brightness control voltage range	V_{3-14}		8 to 10	V
Black level range	$V_{26,27,28-14}$		0 to 7	V^*
Max. output voltage	$V_{26,27,28-14}$	typ.	7	V
Blanking and gating pulse	V_{24-14}	typ.	≥ 2	V
Input impedance (pin 24)	$ Z_{24-14} $	typ.	1,5	$k\Omega$
Black level clamp and burst gating pulse	V_{20-14}	typ.	≥ 2	V
Input impedance (pin 20)	$ Z_{20-14} $	typ.	3	$k\Omega$
Input circuit: 3 pF in parallel with 9 $k\Omega$				
Output circuit: emitter followers with internal $R_E = 2,2\text{ }k\Omega$				
Picture control voltage	V_{4-14}		0 to 12	V

* Usable range depends on the output signal amplitude.

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Chrominance

Input voltage (peak-to-peak value)	V13-14(p-p)	typ.	150 mV
A.C.C. control range		typ.	30 dB
Colour kill level (peak-to-peak value)	V13-14(p-p)	typ.	5 mV
Saturation control voltage range	V9-14		1 to 6 V
Saturation control range		typ.	40 dB
Saturation control range in position AUTO*		typ.	6 dB
Tint control voltage range	V7-14		1 to 6 V
Tint control range		typ.	$\pm 45^\circ$
Tint control range in position AUTO*		typ.	$\pm 17^\circ$
Pull in range of oscillator		typ.	± 600 Hz
Phase difference for 100 Hz change of burst		typ.	$\pm 1,5^\circ$

Input circuit: 6 pF in parallel with 3 k Ω

* Depends on the ratio of R1/R2 in Fig. 2; position AUTO: switch closed.

APPLICATION INFORMATION

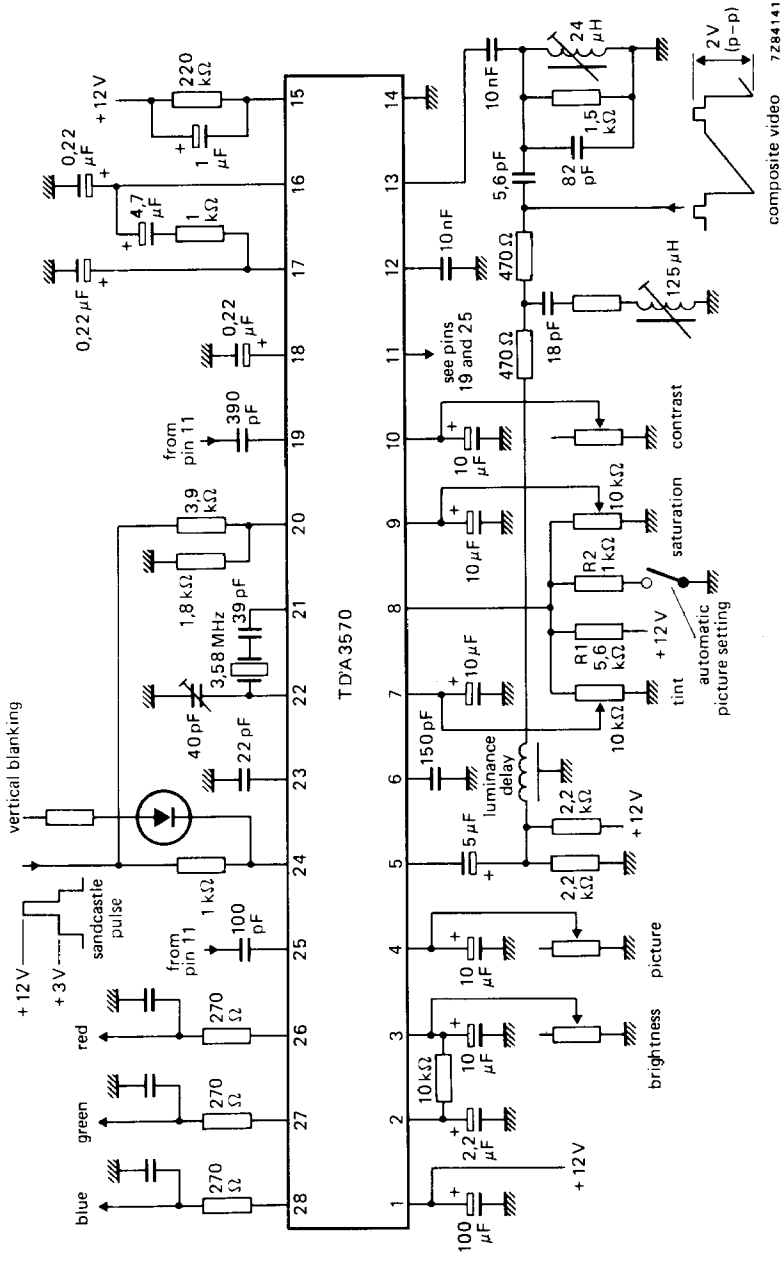
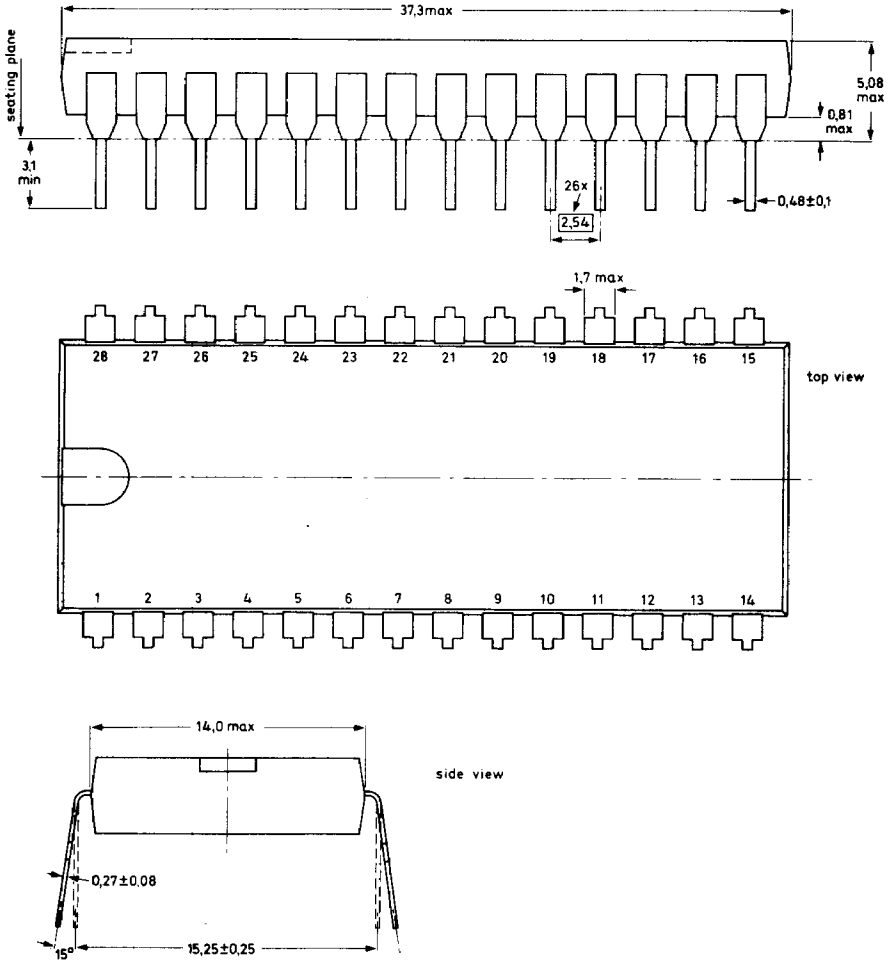


Fig. 2 Application circuit.

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composite video
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TDA3570

28-LEAD DUAL IN-LINE; PLASTIC



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