

# TDA2510

## CHROMINANCE COMBINATION FAIRCHILD LINEAR INTEGRATED CIRCUITS

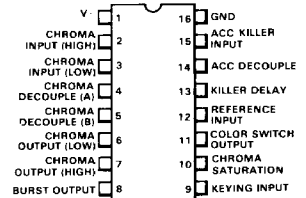
**GENERAL DESCRIPTION** – The TDA2510 is a monolithic integrated circuit designed for the chrominance function of a color television receiver. It is designed to interface directly with the TDA2521, using a minimum number of external components. The TDA2510 is constructed on a single silicon chip using the Fairchild Planar\* epitaxial process.

- CHROMA AMPLIFIER WITH ACC
- CONTROL VOLTAGE AMPLIFIER
- BURST SEPARATOR
- COLOR KILLER AND COLOR KILLER VOLTAGE DETECTOR
- LINEAR ELECTRONIC POTENTIOMETER FOR SATURATION CONTROL
- SCHMITT TRIGGER FOR COLOR KILLER
- CHROMA DELAY LINE DRIVER STAGE
- COLOR BURST OUTPUT STAGE

### ABSOLUTE MAXIMUM RATINGS

Supply voltage	15 V
Collector voltage of chroma output transistor (pin 7)	20 V
( $P_D = 100$ mW max)	
Collector current of chroma output transistor (pin 7)	20 mA
Collector current of color killer output transistor (pin 11)	10 mA
Power dissipation	500 mW
Operating temperature range	-25°C to +60°C
Storage temperature range	-55°C to +125°C
Pin Temperature (Soldering 10 s)	260°C

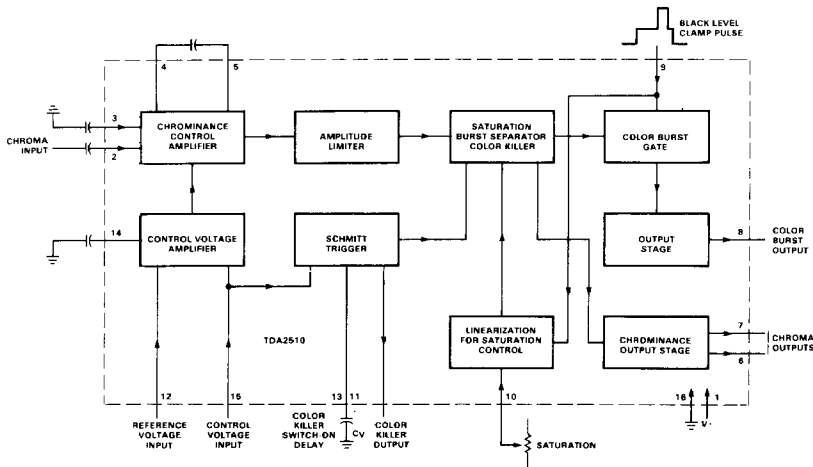
### CONNECTION DIAGRAM 16-PIN DIP (TOP VIEW) PACKAGE OUTLINE 9B

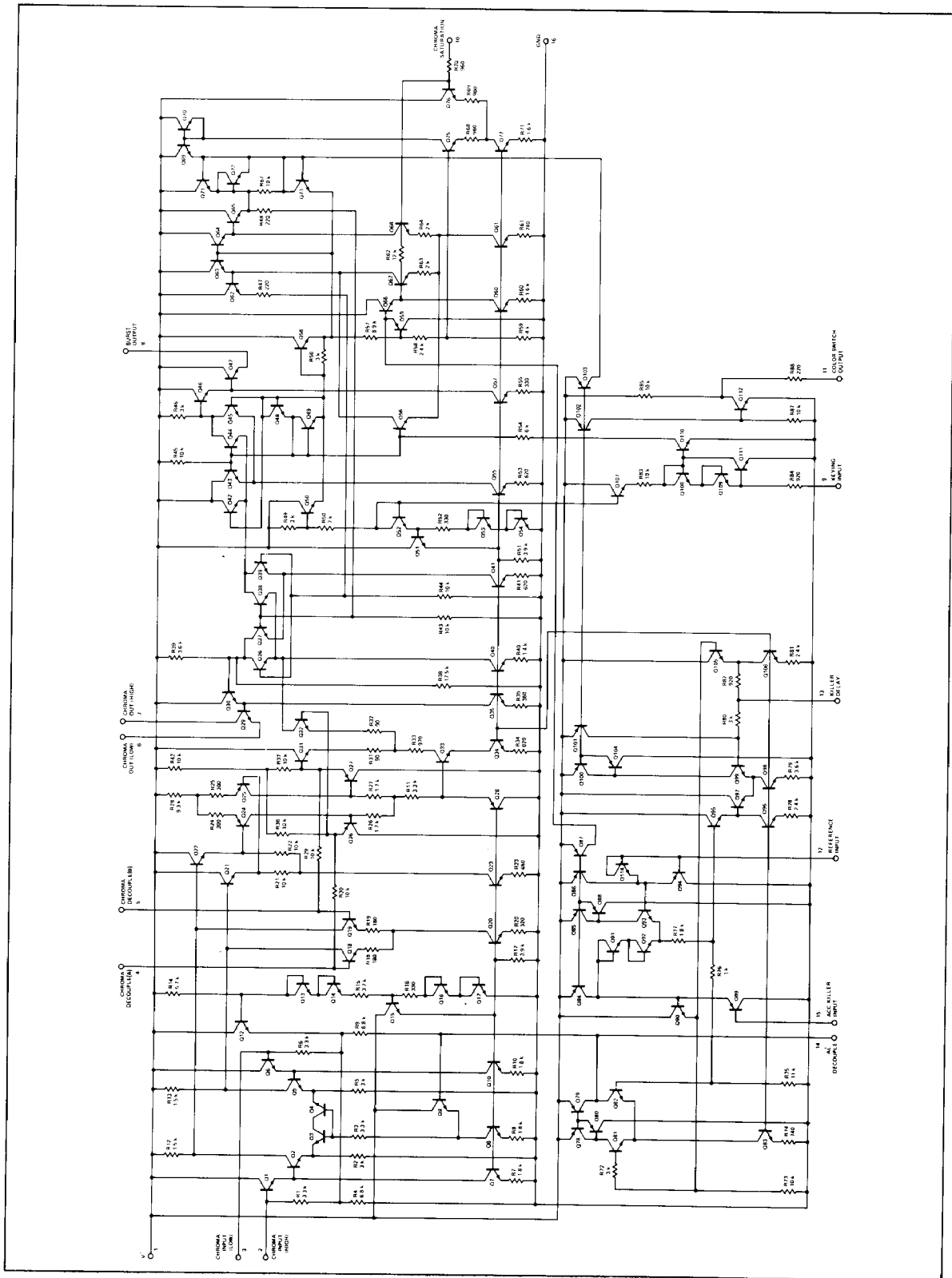


### ORDER INFORMATION

TYPE	PART NO.
2510	TDA2510

### BLOCK DIAGRAM





**ELECTRICAL CHARACTERISTICS:**  $T_A = 25^\circ\text{C}$ ,  $V_+ = 12\text{ V}$ , see test circuit unless otherwise specified.

CHARACTERISTICS	CONDITIONS	MIN	TYP	MAX	UNITS
Chroma Input (pin 2) $V_{IN}$ (Symmetrical or Asymmetrical) Color bars ( $V_2$ p-p) Input Voltage Range ( $V_2$ p-p) Input Impedance ( $Z_2$ )	Note 1	-20 2.0	100	+6.0	mVp-p dB k $\Omega$
Burst Output (Emitter Follower) (pin 8) DC Voltage at Burst Output ( $V_8$ ) Burst Output ( $V_8$ p-p) Burst Output Limiting Level	Note 1		9.0 0.5 1.5		V Vp-p Vp-p
Chroma Output (without Burst) (pin 6) DC Voltage at Chroma Output ( $V_6$ ) Chroma Output (Color Bars) at nominal Saturation and Maximum contrast ( $V_6$ p-p) Signal Plus Noise to Noise Ratio Saturation Control Range Phase Angle compared to Burst Output at Nominal Saturation Phase angle Shift during Saturation Control Range +6 to -10 dB	Note 2 Note 3		7.0 0.5		V Vp-p dB dB degrees degrees
Inputs for Control Voltage and Color Killer (pin 12, 15) Control Voltage ( $V_{15}$ ) Input Voltage (Color On) $V_{15}$ Input Voltage (Color Off) $V_{15}$ Signal Suppression (Color Off) Control Input Impedance ( $Z_{15}$ )	$V_{REF} =$ $V_{12} = 7\text{ V}$ $V_{12} = 7\text{ V}$ $V_{12} = 7\text{ V}$ $V_{12} = 7\text{ V}$		5.5 6.0 50 500	5.7	V V V dB k $\Omega$
Saturation Control Input (pin 10) Voltage Range for Linear Control ( $V_{10}$ ) Threshold Voltage for > 50 dB suppression Input Impedance ( $Z_{10}$ )	Note 4	1.75 1.6	1.75 10	4.0	V V k $\Omega$
Color Kill Switch Output (pin 11) Output Voltage (Color On) $V_{11}$ Output Voltage (Color Off) $V_{11}$ Internal Resistance			V+ 10	0.5	V V k $\Omega$
Burst Gating and Blanking Pulse (pin 9) Burst Gating and Blanking Pulse (positive or negative) ( $\pm V_9$ ) Input Impedance ( $Z_9$ )		$\pm 1.0$	1.0	$\pm 4.0$	V k $\Omega$
Color Killer Delay (pin 13) Delay Time as a Function of $C_V$			24		ms/ $\mu\text{F}$

## NOTES:

- Burst output kept constant by ACC circuit at approximately 0.5 Vpp.
- Nominal saturation is defined as maximum saturation - 6 dB, chroma/burst input ratio is approximately 2.
- Signal plus noise to noise is calculated as  $V_{IN}$  (p-p)/6 ( $V_{noise}$  (rms)) for a standard color bar signal.
- Saturation increases with increasing  $V_{10}$ .

APPLICATIONS AND TEST CIRCUIT

