

LINEAR INTEGRATED CIRCUITS

DESCRIPTION

The 5072 has two sets of synchronous detectors with matrix circuits to achieve the R-Y, G-Y, and B-Y color difference output signals. The chroma input signal is applied to terminal Nos. 3 and 4 while the oscillator injection signal is applied to terminal Nos. 6 and 7. The color difference signals, after matrix, have a fixed relationship of amplitude and phase nominally equal dc voltage levels. The outputs of the 5072 are suitable to driving high level color difference or R, G, B output amplifiers. Emitter-follower output stages used to drive the high level color amplifiers have short-circuit protection.

FEATURES

- SYNCHRONOUS DETECTOR WITH COLOR DIFFERENCE MATRIX
- EMITTER-FOLLOWER OUTPUT AMPLIFIERS WITH SHORT-CIRCUIT PROTECTION

ABSOLUTE MAXIMUM RATINGS

(Values at $T_A = 25^\circ\text{C}$)

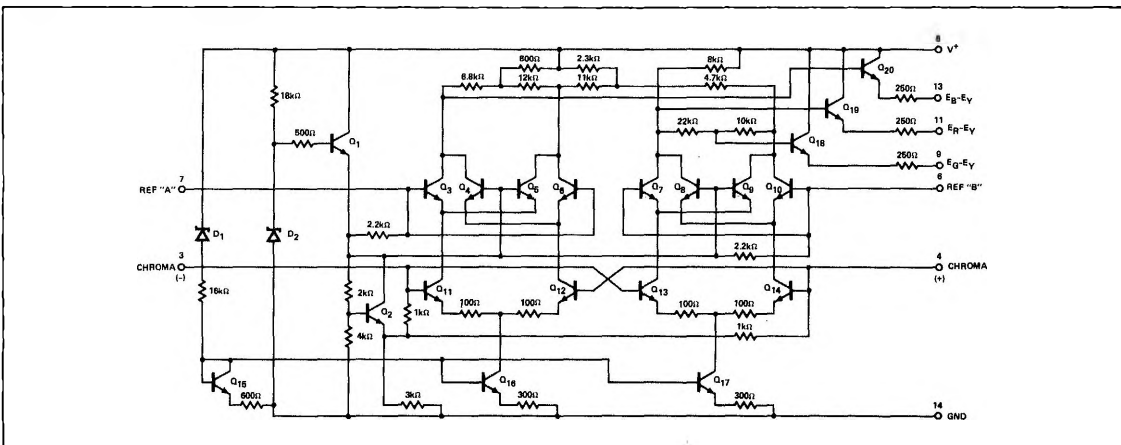
DC Supply Voltage (Terminal 8 to Terminal 14) 27V
 Reference Input Voltage 5V p-p
 Chroma Input Voltage 5V p-p
 Device Dissipation: Up to $T_A = +70^\circ\text{C}$ 530mW
 Above $T_A = +70^\circ\text{C}$ Derate Linearly at 6.7 mW/ $^\circ\text{C}$

Ambient Temperature Range:
 Operating -40 to +85 $^\circ\text{C}$
 Storage -65 to +150 $^\circ\text{C}$

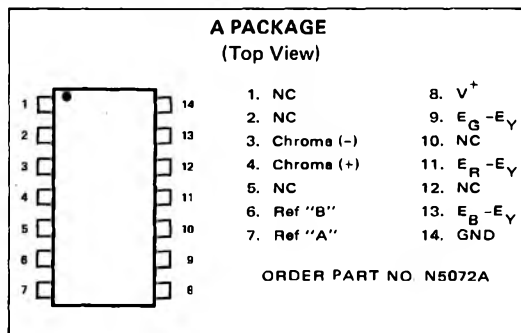
Lead Temperature (During Soldering):

At distance 1/32 in (3.17 mm) from seating plane for 10s max. +165 $^\circ\text{C}$

SCHEMATIC DIAGRAM



PIN CONFIGURATION



MAXIMUM VOLTAGE & CURRENT RATINGS

$T_A = 25^\circ\text{C}$					
VOLTAGE (Note 1)			CURRENT		
Terminal No.	MIN. VOLTS	MAX. VOLTS	Terminal No.	I_I mA	I_O mA
3	0	+5	3	-	-
4	0	+5	4	-	-
6	0	+12	6	-	-
7	0	+12	7	-	-
8	0	+27	8	-	-
9	0	-20	9	10	20
11	0	+20	11	10	20
13	0	+20	13	10	20

NOTE:

1. With reference to terminal No. 14 and with the voltage between terminal No. 8 and terminal No. 14 at +24 V except as given in rating for terminal No. 8.

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ and $V^+ = +24\text{V}$ unless otherwise specified)

PARAMETERS	TEST CONDITIONS	MIN	LIMITS TYP	MAX	UNITS
STATIC CHARACTERISTICS					
Supply Current With Output Loads	S_1 Closed	16.5		26.5	mA
With No Output Loads	S_1 Open		9		mA
G-Y, R-Y, B-Y Outputs	S_1 Closed	13.2	14.7	15.8	V
Chroma Inputs	S_1 Open		3.3		V
Reference Subcarrier	S_1 Open		6.2		V
DYNAMIC CHARACTERISTICS					
Demodulator Unbalance	$V_3 = V_4 = 0$			0.8	Vp-p
Maximum Color Difference Output Voltage	$V_3 = V_4 = 0.6 \text{ Vp-p}$	8.0 5.5 1.2			Vp-p Vp-p Vp-p
Chroma Input Sensitivity	Adjust e_c for 5.0 Vp-o @ term		0.2	0.35	Vp-p
Relative R-Y Output	No. 13 (B-Y)	3.5		4.2	Vp-p
Relative G-Y Output		0.75		1.25	Vp-p
V_{DC} Difference Between any two Output Terminals	$e_c = 0$			0.6	V
Input Impedance Reference Subcarrier Inputs			1.7 6		k Ω pF
Input Impedance at Chroma Inputs			0.95 6		k Ω pF
Output Resistance			180		Ω

FUNCTIONAL DIAGRAM

