LINEAR INTEGRATED CIRCUITS

DESCRIPTION

The 5071 is a combined two-stage chroma amplifier and functional control circuit. The input signal is received from the video amplifier and applied to terminal No. 2 of the input amplifier stage. The first amplifier stage is part of the ACC system and is controlled by differential adjustment from the ACC input terminal Nos. 1 and 14. The output of the 1st amplifier is directed to terminal No. 6 from where the signal may be applied to the ACC detection system of the 5070 or an equivalent circuit. The output at terminal No. 6 is also applied to terminal No. 7 which is the input to the 2nd amplifier stage. Another output of the 1st amplifier at terminal No. 13 is directed to the killer adjustment circuit.

The dc voltage level at terminal No. 13 rises as the ACC differential voltage decreases with a reduction in the burst amplitude. At a pre-set condition determined by the killer adjustment resistor the killer circuit is activated and causes the 2nd chroma amplifier stage to be cut off. The 2nd chroma amplifier stage is also gain controlled by the adjustment or dc voltage at terminal No. 10. The output of the 2nd chroma amplifier stage is available at terminal No. 9. The typical output termination circuit that is shown, provides differential chroma drive signal to the demodulator circuit. Both amplifier outputs utilize emitter-followers with short-circuit protection.

FEATURES

- ACC CONTROLLED CHROMA AMPLIFIER
- DC CHROMA GAIN CONTROL
- COLOR KILLER
- AMPLIFIER SHORT-CIRCUIT PROTECTION

ABSOLUTE MAXIMUM RATINGS

(Values at $T_A = 25°C$)

DC Supply Voltage (Terminal 8 to Terminal 14) — 30Vdc

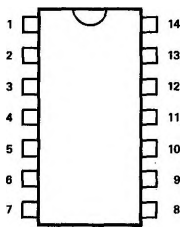
Device Dissipation:
- Up to $T_A = +70°C$ — 530mW
- Above $T_A = +70°C$ — Derate Linearly at 6.7 mW/°C

Ambient Temperature Range:
- Operating — -40 to +85°C
- Storage — -65 to +150°C

Lead Temperature (During Soldering):
- At distance 1/32 in (3.17 mm) from seating plane for 10s max. — +265°C

PIN CONFIGURATION

A PACKAGE
(Top View)



1. ACC Input
2. Chroma Input 1
3. Gain Preselect
4. Ground
5. NC
6. Chroma Output 1
7. Chroma Output 2
8. V+
9. Chroma Output 2
10. Chroma Level Control
11. Decouple
12. Decouple
13. Killer Adjust
14. ACC Input

ORDER PART NO. N5071A

MAXIMUM RATINGS MAXIMUM VOLTAGE & CURRENT RATINGS $T_A = 25°C$

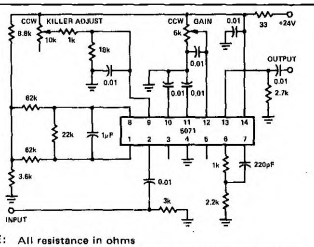
TERM NO.	Voltage (Note 1) MIN. VOLTS	MAX. VOLTS	TERM NO.	Current I_I* mA	I_O mA
1	-5	+15	1	5	1.0
2	-5	+5	2	5	1.0
6	0	+24	6	1.0	20
7	-5	+5	7	5	1.0
8	0	+30	9	1.0	20
9	0	+24	12	1.0	5
10	0	+24	14	5	1.0
11	0	+24			
12	0	+20			
13	0	+20			
14	-5	+15			

NOTES:
1. With reference to terminal No. 4 and with +24V on terminal No. 8 except for the rating given for terminal No. 8.

ELECTRICAL CHARACTERISTICS (T_A = 25°C and V^+ = +24V)

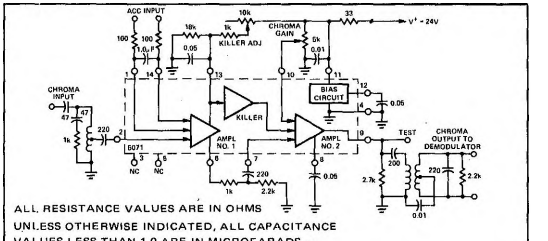
PARAMETERS	TEST CONDITIONS	LIMITS MIN	LIMITS TYP	LIMITS MAX	UNITS
STATIC CHARACTERISTICS					
Voltages					
Bias Reference Terminal	S_1 Open, S_2 Open		17.3		V
Ampl No. 1 Chroma Input	S_1 Open, S_2 Open		1.75		V
Ampl No. 1 Chroma Output Balanced	S_1 Open, S_2 Open		20		V
Unbalanced	S_1 Open, S_2 Closed		13.5		V
Ampl No. 2 Chroma Input	S_1 Open, S_2 Open		1.5		V
Ampl No. 2 Chroma Output	S_1 Closed, S_2 Open		20.6		V
Supply Current	S_1 Open, S_2 Open	17		31	mA
DYNAMIC CHARACTERISTICS					
Amplifier No. 1 Voltage Gain	E_g = 30 mVrms Measure V6	14			dB
Amplifier No. 2 Voltage Gain	V_g = 10 Vrms		14		dB
Max. Chroma Output Voltage			2		Vrms
10% Chroma Gain Control Reference Voltage	E_g = 50 mVrms, adjust Chroma Gain Control to Change V_g to 10% of Maximum Chroma Output		20.2		V
Output Voltage Killer Off	S_1 in Position 2 E_g = 50 mVrms, adjust "Killer Adjust" for an abrupt decrease in V_g			12	mV rms
Output Voltage, Chroma Off	E_g = 50 Vrms, adjust Chroms control to min. Chroma Output			12	mV rms
Bandwidth					
Amplifier No. 1			12		MHz
Amplifier No. 2			30		MHz
Ampl. No. 1 Input Impedance			2		kΩ
			4		pF
Ampl. No. 1 Output Impedance			35		Ω
Ampl. No. 2 Input Impedance			2.1		kΩ
			3.5		pF
Ampl. No. 2 Output Impedance			85		Ω

AMPLIFIER DIAGRAM



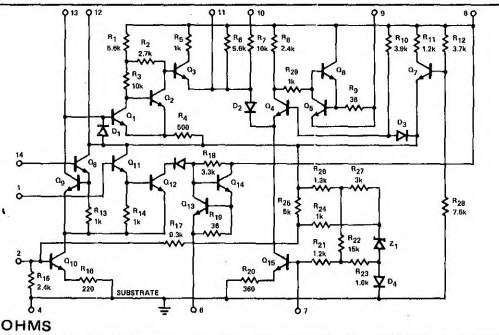
NOTE: All resistance in ohms
Unless otherwise specified, all capacitance are in microfarads.

FUNCTIONAL DIAGRAM



ALL RESISTANCE VALUES ARE IN OHMS
UNLESS OTHERWISE INDICATED, ALL CAPACITANCE VALUES LESS THAN 1.0 ARE IN MICROFARADS — 1.0 OR GREATER ARE IN PICOFARADS.

SCHEMATIC DIAGRAM



ALL RESISTANCE VALUES ARE IN OHMS