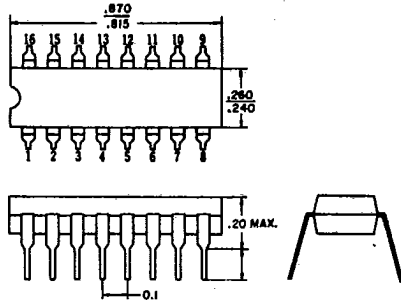




**ECG1131**  
TV CHROMA SIGNAL AMPLIFIER

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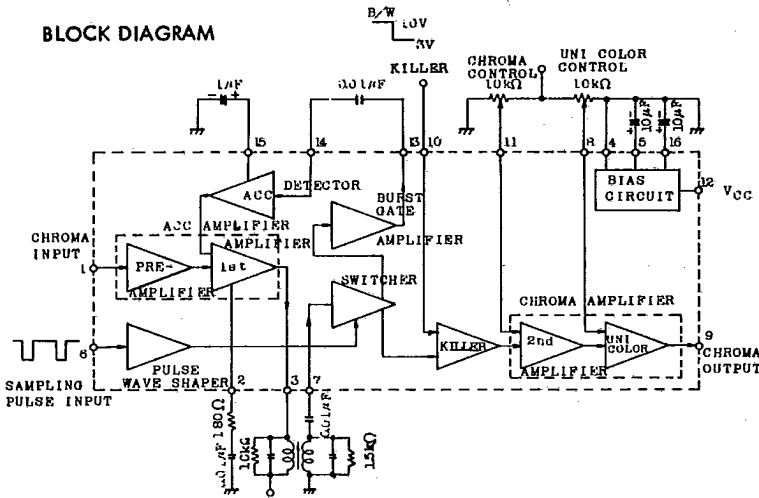
- TV Chroma Signal Amplifier (Function)
- ACC Amplifier
- Chroma Signal Amplifier
- Burst Gate Amplifier
- ACC Peak Detector
- Color Killer
- DC Chroma Gain Control
- DC Uni-Color Control
- Balanced Sampling Circuit for Burst Signal
- Chroma Gain and Uni-Color are Controlled by DC Voltage.
- Connecting the Control Terminal of Uni-Color and Contrast Terminal of ECG1131 (Video IC), It Is Possible to Control Chroma Gain and Contrast Simultaneously.



MAXIMUM VOLTAGE & MAXIMUM CURRENT RATINGS (Ta = 25°C)

Terminal No.	V <sub>Min</sub> (V)	V <sub>Max</sub> (V)	I <sub>IN</sub> (mA)	I <sub>OUT</sub> (mA)
1	--	--	--	--
2	--	--	--	--
3	7	18	3.6	--
4 (GND)	--	--	--	32
5	--	--	--	--
6	-5	2	--	--
7	--	--	--	--
8	0	V <sub>CC</sub>	32	--
9	--	--	--	--
10	0	V <sub>CC</sub>	--	--
11	0	V <sub>CC</sub>	--	--
12 (V <sub>CC</sub> )	0	18	28.4	--
13	--	--	--	--
14	--	--	--	--
15	--	--	--	--
16	--	--	--	--

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MAXIMUM RATINGS ( $T_a = 25^\circ\text{C}$ )

Characteristic	Symbol	Rating	Unit
Supply Voltage	$V_{cc}$	18	V
Input Voltage (Pin 1)	$V_{IN}$	4	V <sub>p-p</sub>
Power Dissipation (Note)	$P_D$	800	mW
Operating Temperature	$T_{opr}$	-20 ~ 65	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-55 ~ 150	$^\circ\text{C}$

(Note) Derated above  $T_a = 25^\circ\text{C}$  in the proportion of 6.4 mW/ $^\circ\text{C}$

STATIC CHARACTERISTICS ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ\text{C}$ )

Characteristic	Symbol	Test Circuit	Test Condition	Min.	Typ.	Max.	Unit
Terminal Voltage 1	$V_1$	1	$SW_1, SW_2, SW_3$ and $SW_4$ OFF	--	1.7	--	V
Terminal Voltage 2	$V_2$	1	$SW_1, SW_2, SW_3$ and $SW_4$ OFF	--	1.0	--	V
Terminal Voltage 5	$V_5$	1	$SW_1, SW_2, SW_3$ and $SW_4$ OFF	--	2.4	--	V
Terminal Voltage 7	$V_7$	1	$SW_1, SW_2, SW_3$ and $SW_4$ OFF	--	1.7	--	V
Terminal Voltage 8	$V_8$	1	$SW_1, SW_2, SW_3$ and $SW_4$ OFF	--	7.5	--	V
Terminal Voltage 9	$V_9$	1	$SW_1, SW_2, SW_3$ and $SW_4$ OFF	--	12.2	--	V
Terminal Voltage 11	$V_{11}$	1	$SW_1, SW_2, SW_3$ and $SW_4$ OFF	--	7.5	--	V
Terminal Voltage 13	$V_{13}$	1	$SW_1, SW_2, SW_3$ and $SW_4$ OFF	--	9.3	--	V
Terminal Voltage 14	$V_{14}$	1	$SW_1, SW_2, SW_3$ and $SW_4$ OFF	--	7.0	--	V
Terminal Voltage 15	$V_{15}$	1	$SW_1, SW_2, SW_3$ and $SW_4$ OFF	--	6.3	--	V
Terminal Voltage 16	$V_{16}$	1	$SW_1, SW_2, SW_3$ and $SW_4$ OFF	--	8.2	--	V
Supply Current	$I_{cc}$	1	$SW_1, SW_2, SW_3$ and $SW_4$ OFF	--	2.4	28.4	mA
		1	$SW_1$ ON, all other SW's OFF	--	23.4	28.1	mA

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STATIC CHARACTERISTICS (cont'd)

Characteristic	Symbol	Test Circuit	Test Condition	Min.	Typ.	Max.	Unit
Terminal 9 Voltage Variation (Due to Terminal 8)	$\Delta V_9(8)$	1	Turn SW <sub>2</sub> ON and OFF, all other SW's OFF	1.2	1.5	1.8	V
Terminal 9 Voltage Variation (Due to Terminal 11)	$\Delta V_9(11)$	1	Turn SW <sub>4</sub> ON and OFF, all other SW's OFF	--	--	150	mV
Terminal 9 Voltage Variation (Due to Terminal 10)	$\Delta V_9(10)$	1	Turn SW <sub>3</sub> ON and OFF, all other SW's OFF	--	--	150	mV
Terminal 13 Voltage Variation (Due to Terminal 6)	$\Delta V_{13}(6)$	1	Turn SW <sub>1</sub> ON and OFF, all other SW's OFF	--	--	300	mV
Terminal 3 Current	$I_3$	1	--	--	3.0	--	mA

DYNAMIC CHARACTERISTICS

Characteristic	Symbol	Test Circuit	Test Condition	Min.	Typ.	Max.	Unit
Operating Supply Voltage	$V_{cc}$	2	--	13.5	15.0	16.5	V
1st Amplifier Gain	$G_1$	2	$f = 3.58$ MHz	--	20.6	--	dB
1st Amplifier Output Voltage	$V_3$	2	--	0.5	--	--	$V_{p-p}$
1st Amplifier Frequency Characteristic Deviation	$\Delta G_1$	2	$f = 3$ MHz	--	--	0.2	dB
			$f = 4$ MHz	--	--	0.2	dB
1st Amplifier Phase Characteristic	$\Delta \phi_1$	2	Measure the Phase Variation at a Point by Varying Input Level at Pin 1	--	--	2	deg
1st Amplifier Input Impedance	Parallel Input Resistance	$r_{ip}(1)$	--	--	2.2	--	k Ohm
	Parallel Input Capacitance	$c_{ip}(1)$	--	--	8	--	pF
1st Amplifier Output Impedance	Parallel Output Resistance	$r_{op}(3)$	--	--	80	--	k Ohm
	Parallel Output Capacitance	$c_{op}(3)$	--	--	5	--	pF
Burst Gate Amplifier Gain	$G_{BU}$	2	$f = 3.58$ MHz	12	13	14	dB
Burst Gate Amplifier Max. Voltage	$V_{13}$	2	--	1	--	--	$V_{p-p}$
Burst Gate Amplifier Output Impedance	Parallel Output Resistance	$r_{op}(13)$	--	--	100	--	Ohm
	Parallel Output Capacitance	$c_{op}(13)$	--	--	4	--	pF
2nd Amplifier Gain	$G_2$	2	$f = 3.58$ MHz	4.1	5.0	5.9	dB
2nd Amplifier Output Gain	$V_9$	2	--	0.5	--	--	$V_{p-p}$
2nd Amplifier Frequency Characteristic Deviation	$\Delta G_2$	2	$f = 3$ MHz	--	--	-0.2	dB
			$f = 4$ MHz	--	--	-1	dB

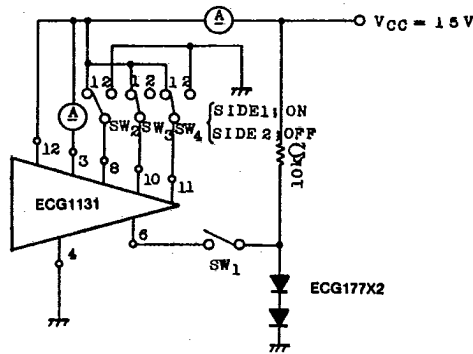
DYNAMIC CHARACTERISTICS (Cont.)

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Characteristic	Symbol	Test Circuit	Test Condition	Min.	Typ.	Max.	Unit
2nd Amplifier Phase Characteristic	$\Delta\phi_2$	2	Measure the Phase Variation at a Point by Varying Input Level at Pin 7	--	--	6	deg
2nd Amplifier Input Impedance	Parallel Input Resistance	$r_{ip(7)}$	--	--	2	--	k Ohm
	Parallel Input Capacitance	$c_{ip(7)}$	--	--	8	--	pF
2nd Amplifier Output Impedance	Parallel Output Resistance	$r_{op(9)}$	--	--	70	--	Ohm
	Parallel Output Capacitance	$c_{op(9)}$	--	--	4	--	pF
DC Gain Controlled Circuit Frequency Characteristic Deviation	$\Delta G_{f11}$	2	$f = 3.58 \text{ MHz}$	--	--	$\pm 0.8$	dB
DC Gain Controlled Circuit Phase Characteristic	$\Delta\phi_{11}$	2	The Phase Variation of Pin 9 (At $V_{11} = 0 \sim V_{cc}$ )	--	--	6	deg
DC Gain Controlled Circuit Leakage	$V_{L9}$	2	$V_{11} = 0 \text{ V}, V_7 = 2V_{p-p}$	--	--	6	mV <sub>p-p</sub>
DC Gain Controlled Circuit Variable Range	$\Delta G_2$	2	$V_{11} = 0 \sim V_{cc}$	55	--	--	dB
Uni-Color Variable Range	$\Delta G_{UC}$	2	$V_8 = 0 \sim V_{cc}$	4.7	6.0	7.3	dB
Uni-Color Frequency Characteristic	$\Delta G_{f8}$	2	--	--	--	$\pm 0.7$	dB
Uni-Color Phase Characteristic	$\Delta\phi_8$	2	The Phase Variation of Pin 9 (At $V_{11} = 0 \sim V_{cc}$ )	--	--	3	deg
Leakage from 1st to 2nd Phase	$V_{L1-2}$	2	The Leakage to Pin 9 (Do not connect 1st with 2nd stage, $V_{11} = 0.3 V_{p-p}$ )	--	--	4	mV <sub>p-p</sub>
Leakage at Killer Circuit OFF	$V_{L10}$	2	$V_{10} = 11 \text{ V}, V_7 = 2V_{p-p}$	--	--	6	mV <sub>p-p</sub>

TEST CIRCUIT

1. STATIC CHARACTERISTICS

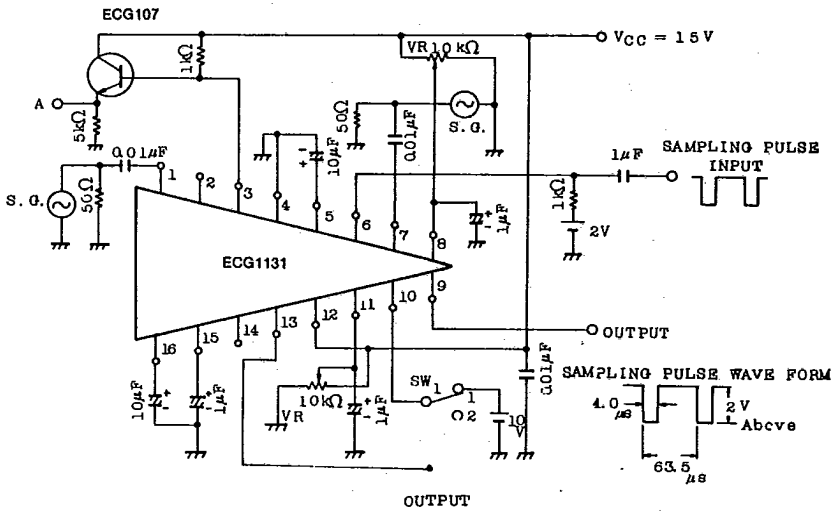


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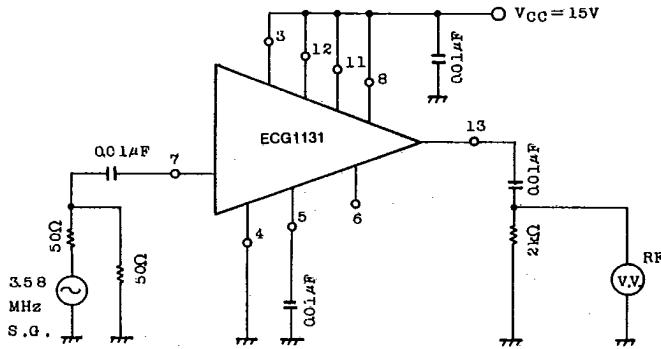
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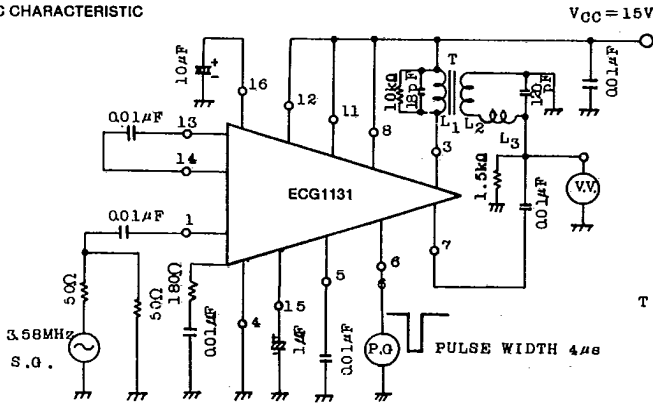
2. DYNAMIC CHARACTERISTICS



3. BURST GATE AMPLIFIER CHARACTERISTIC



4. AGC CHARACTERISTIC



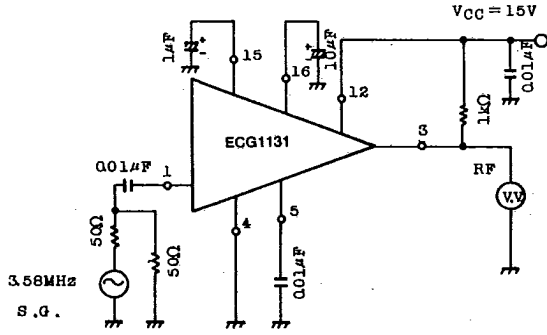
- T L<sub>1</sub> : 1065T
- L<sub>2</sub> : 22T
- 2UEW 0.1μF
- L<sub>3</sub> : 525T

911

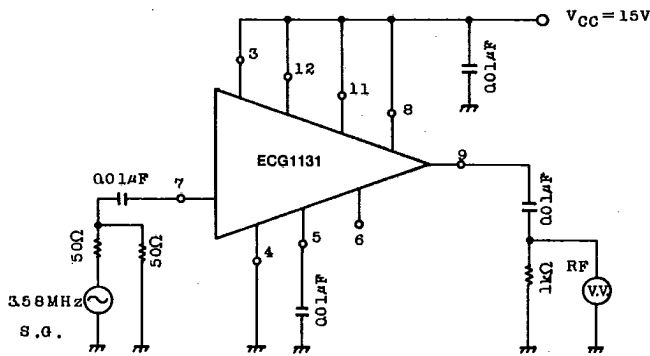
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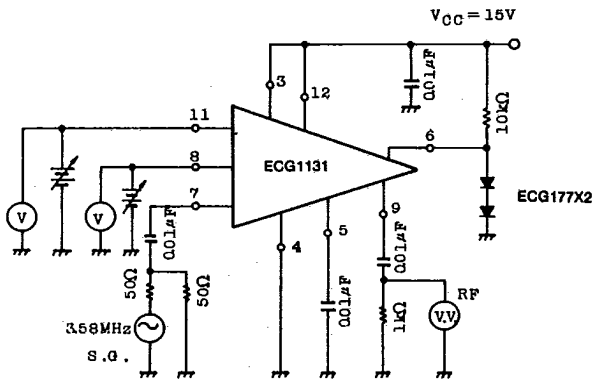
5. ACC AMPLIFIER INPUT-OUTPUT CHARACTERISTIC



6. CHROMA SIGNAL AMPLIFIER INPUT-OUTPUT CHARACTERISTIC



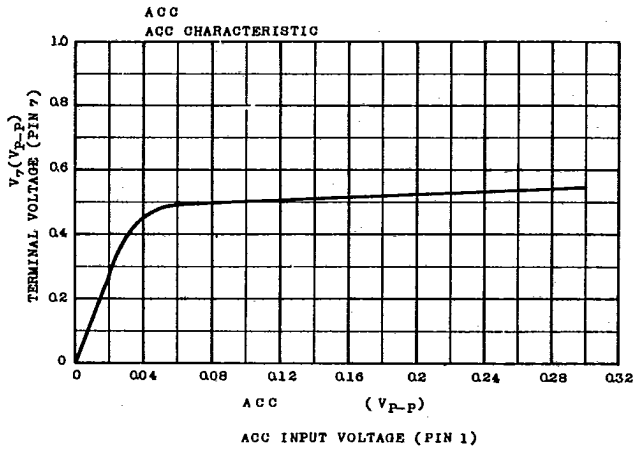
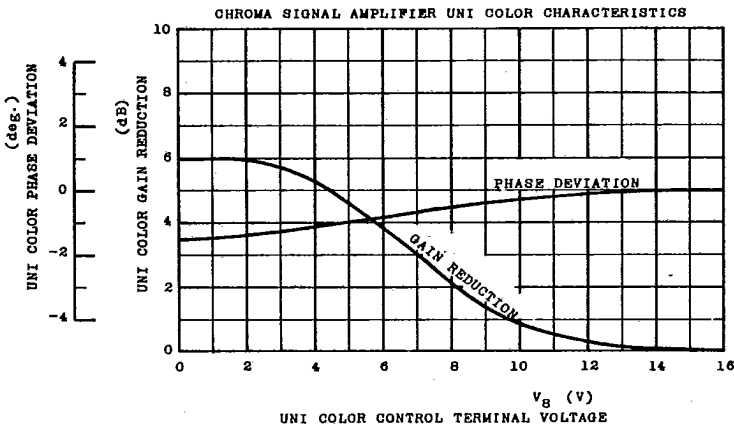
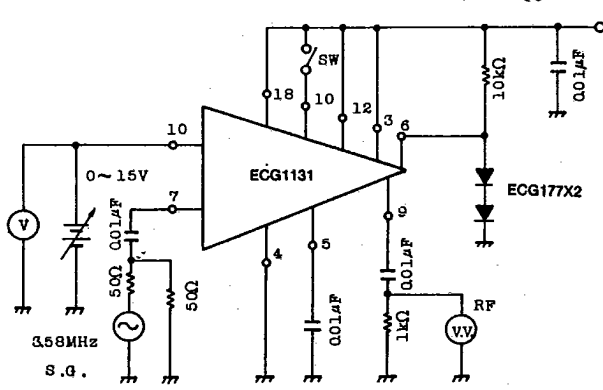
7. CHROMA CONTROL AND UNI COLOR CONTROL CHARACTERISTIC



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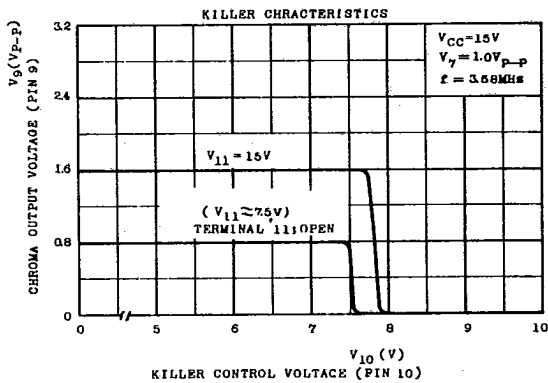
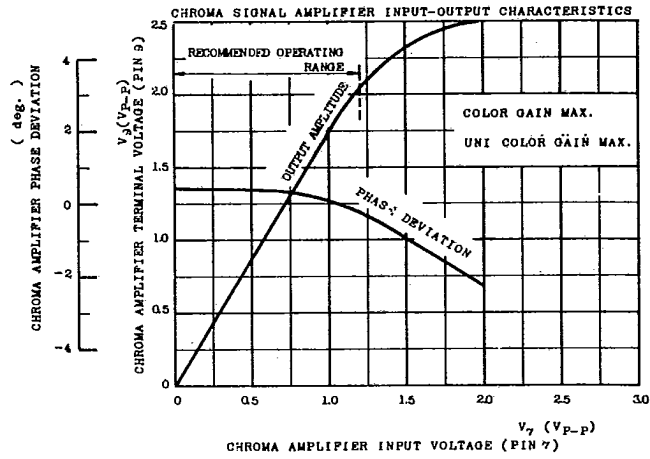
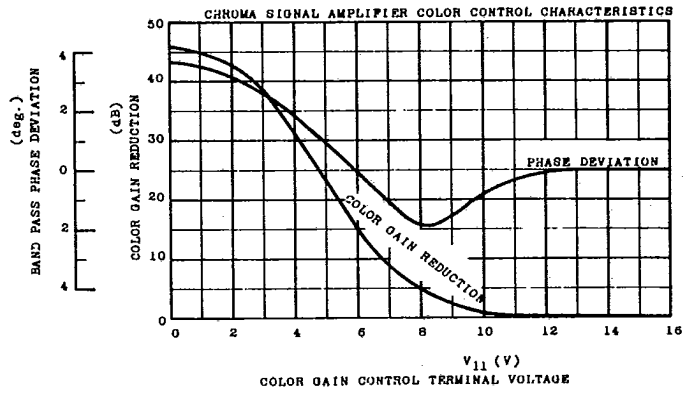
8. COLOR BLANKING CHARACTERISTIC



913

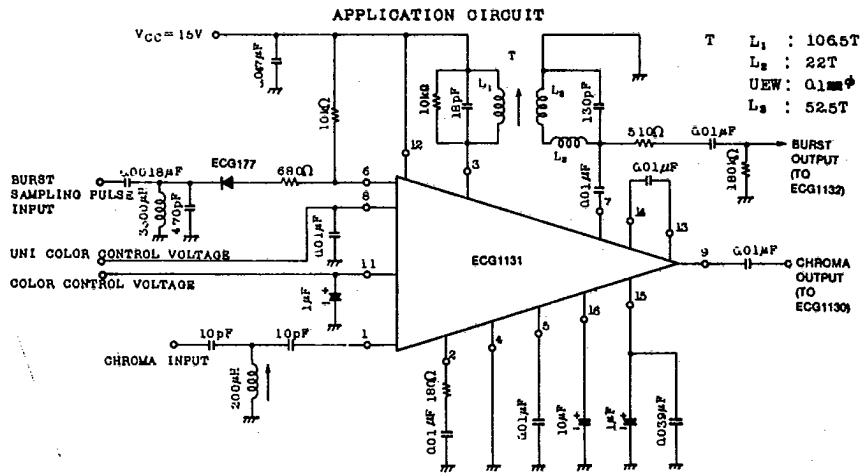
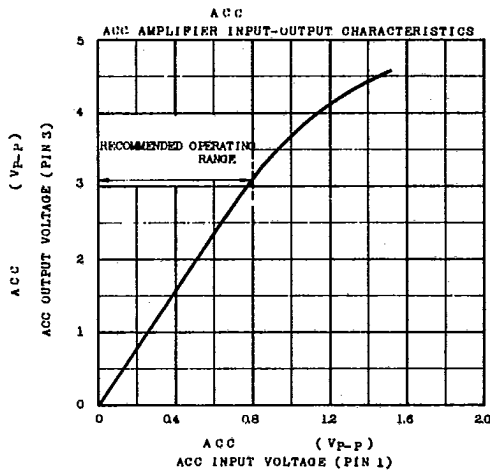
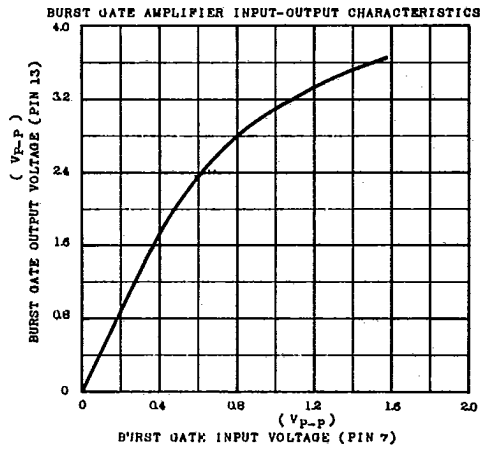
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