

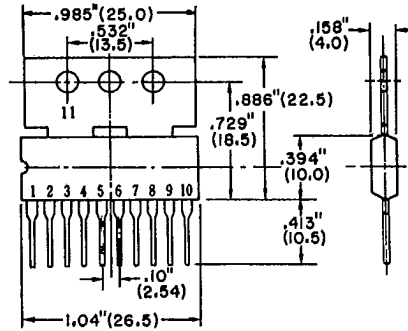
ECG[®] Semiconductors

ECG1420 TV Vertical Output

Features

- Single package vertical output
- Voltage booster increases output dynamic range

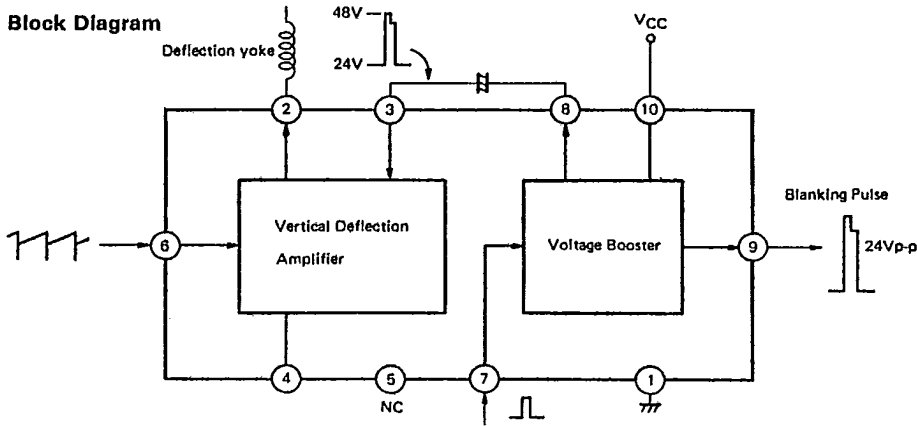
The ECG1420 is a single chip IC for the vertical deflection circuit of a color TV set. The voltage booster contained in the circuit increases the dynamic range of deflection output, resulting in twice the power supply voltage during the retrace period. Hence, it can be operated with a small power supply. The application is suitable for a 14 to 20 inch color TV with a 90 degree deflection angle.



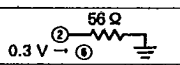
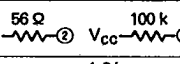
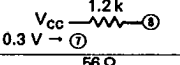
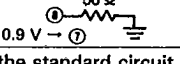
Absolute Maximum Ratings (T_A=25°C)

Parameters	Symbol	Rating	Unit
Power Supply Voltage	V _{CC}	27	V
Power Supply Current Drain	I _{tot}	250	mA
Voltage for Output Amplifier	V ₃	60	V
Deflector Input Voltage	V ₆	2.5	V
Booster Input Voltage	V ₇	1.3	V
Deflection Current	I ₂	- 500 to + 500	mA Peak
Booster Output Current	I ₈	- 500 to + 150	mA Peak
Blanking Output Current	I ₉	- 5	mA Peak
Power Dissipation T _A = 70°C T _C = 70°C	P _D	1.8 7.0	W
Operating Temperature	T _{opg}	- 20 to + 70	°C
Storage Temperature	T _{stg}	- 55 to + 150	°C

Block Diagram

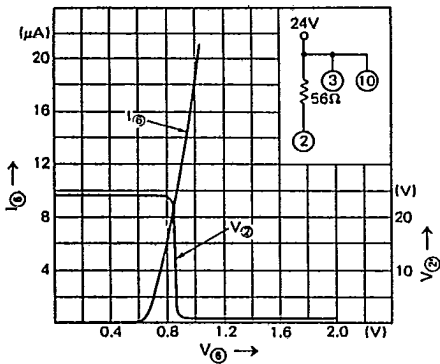


Electrical Characteristics ($T_A = 25^\circ\text{C}$, $V_{CC} = 24\text{ V}$)

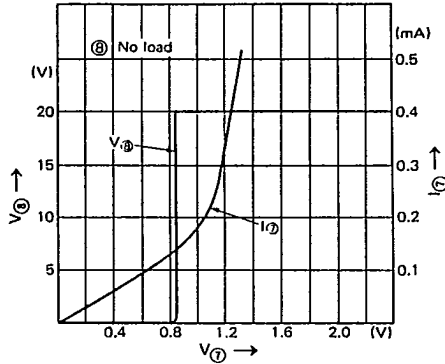
Parameters	Symbol	Test Conditions	Min	Typ	Max	Units
Deflection Current	I_{DEF}	In the standard circuit	860	930	1000	mA_{p-p}
Middle Voltage of Deflection Output	V_{MID}	In the standard circuit	12.1	12.6	13.1	V
Flyback Pulse Peak Voltage	V_2	In the standard circuit	47	--	--	V
Flyback Pulse Width	PW_2	In the standard circuit	850	920	950	μs
Deflector Output Saturation Voltage (1)	V_{3-2}		--	2.7	3.7	V
Deflector Output Saturation Voltage (2)	V_{2-1}		--	0.6	1.0	V
Booster Sink Saturation Voltage	V_{8-1}		--	0.4	1.0	V
Booster Drain Saturation Voltage	V_{10-8}		--	2.7	3.7	V
Idling Current	I_0	In the standard circuit. Stop the vertical oscillation.	7	13	22	mA

Typical Characteristics

1. Deflection Amplifier Input-Output Characteristic

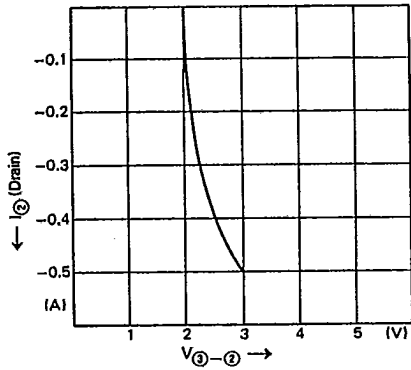


2. Voltage Booster Input-Output Characteristic

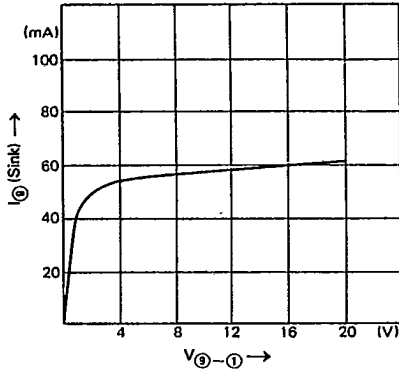


Typical Characteristics (Cont'd)

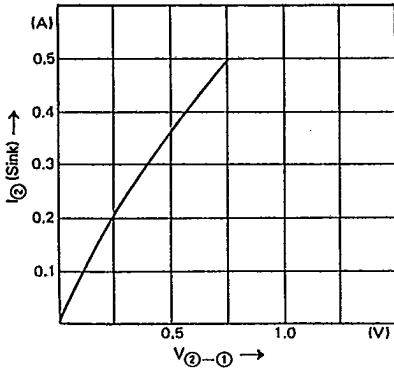
Output Saturation Characteristic (1)



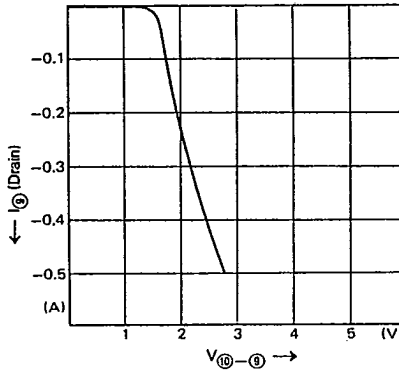
Charge Characteristic



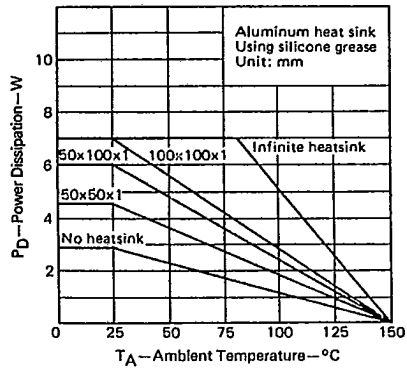
Output Saturation Characteristic (2)



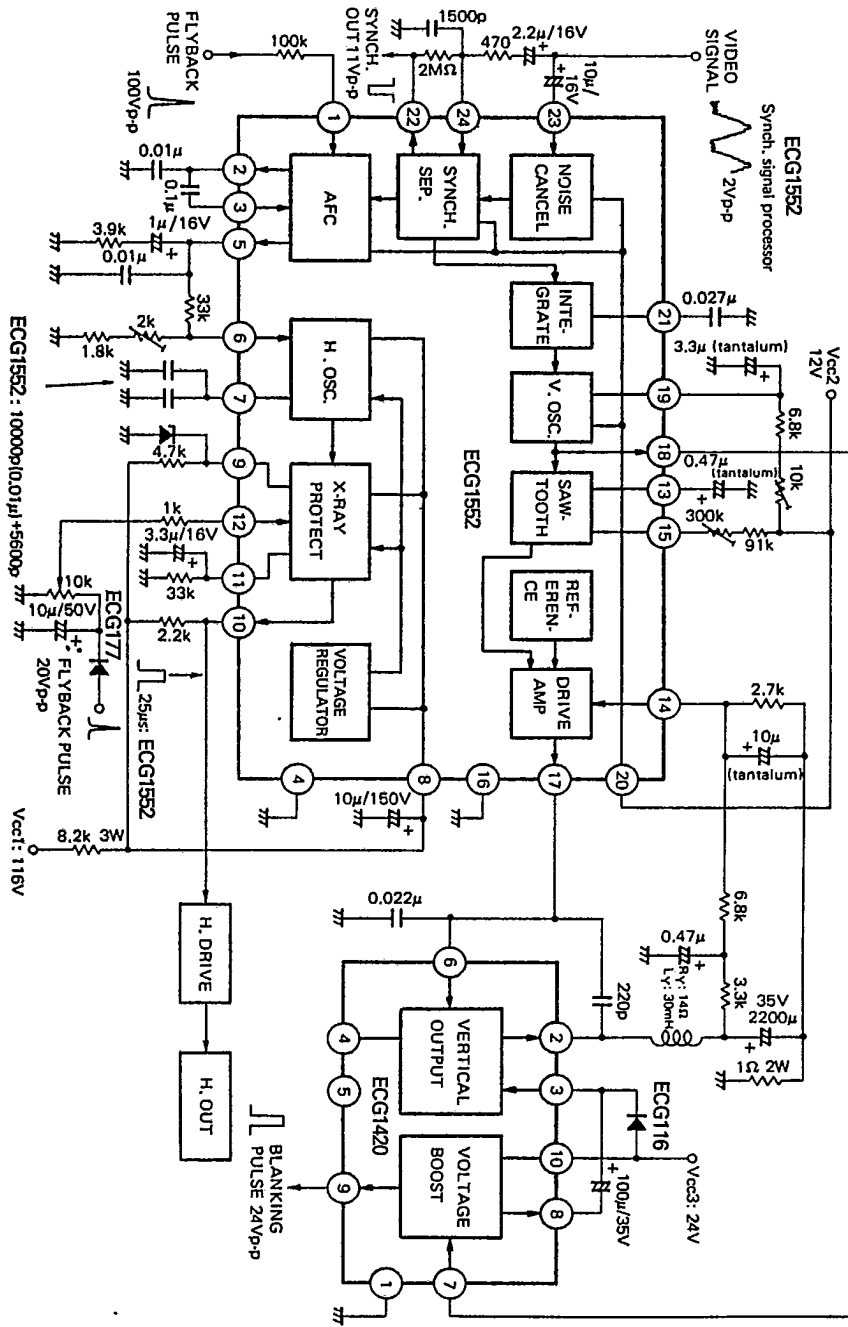
Discharge Characteristic



Power Dissipation vs Ambient Temperature



Standard Application Circuit



ECG1420

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