

BIPOLAR ANALOG INTEGRATED CIRCUIT

μ PC1379C

SYNCHRONIZATION SIGNAL PROCESSOR FOR B/W TV AND SMALL-SIZED COLOR TV

DESCRIPTION

μ PC 1379C is a bipolar analog integrated circuit designed for mono-chrome TV and small size color TV.

It contains synchronous signal separator, vertical deflection signal generator, vertical power stage, and horizontal deflection signal generator in a molded 16 pins dual in-line package.

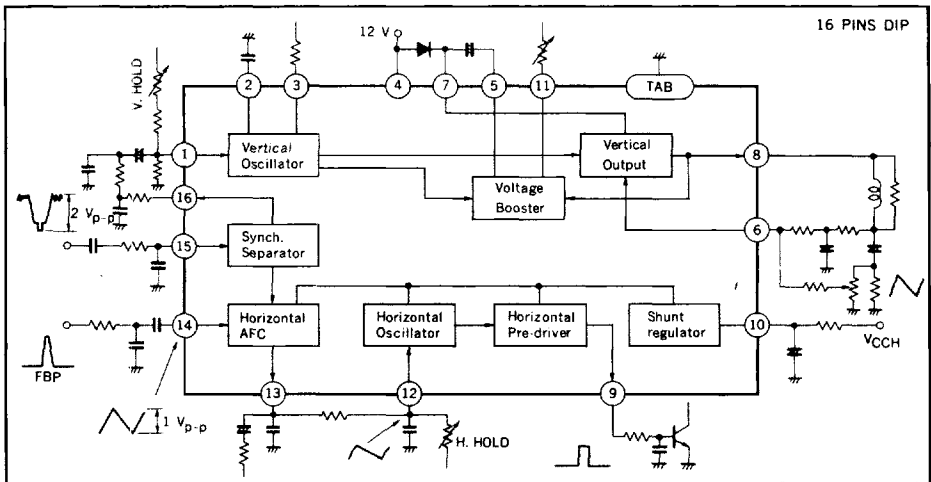
The package has a tab attaching to the end.

The vertical stage reduces the power consumption remarkably by the built-in voltage booster circuit. The horizontal signal part can take the working power from any voltage power supply higher than 8 volts, as it equips shunt type power regulator itself. So, it can take the power even from 110 volt power line through only one resistor.

FEATURES

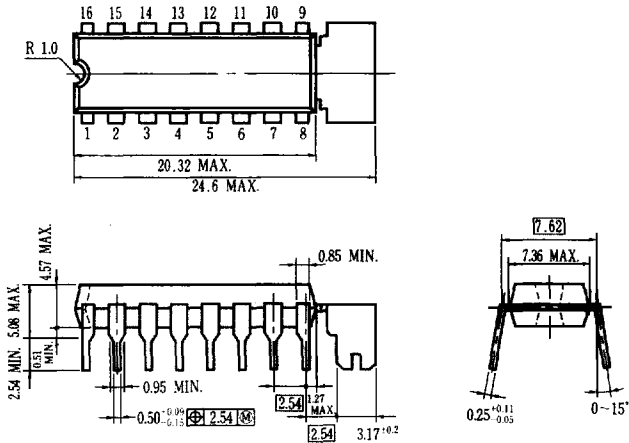
- Built-in vertical power stage remarkably low power vertical deflection realized by the built-in voltage booster.
- Vertical fly-back pulse width is freely adjustable by the exclusive terminal.
- Any supply voltage is available for the horizontal part, as it equips shunt type power regulator itself.

BLOCK DIAGRAM



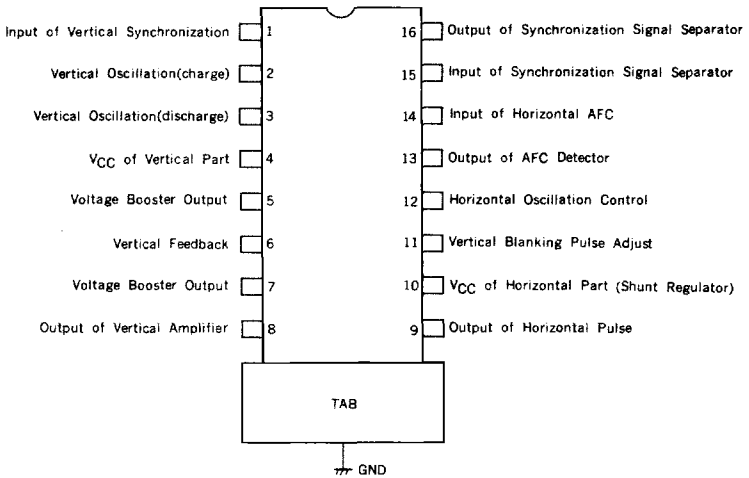
PACKAGE DIMENSIONS (Unit : mm)

16 PIN PLASTIC DIP (300 mil)



16CT-100-300B

CONNECTION DIAGRAM (Top View)



ABSOLUTE MAXIMUM RATINGS (T_a = 25 °C)

(Mark(+) of current expresses that the current is flowing into the terminal. Mark(-) of current expresses that the current is flowing out from the terminal.

Power Supply Voltage for Vertical Part	V ₄	15	V
Power Supply Current for Horizontal Part	I ₁₀	30	mA
Video Input Voltage	V ₁₅	V ₄	V
Synch Output Current	I ₁₆	-10 to +10	mA
Voltage Booster Charge Voltage	V ₁₁	V ₄	V
Booster Output Current	I ₅	-500 to +150	mA _{peak}
Deflection Current	I ₈	-500 to +150	mA _{peak}
Vertical Feedback Voltage	V ₆	V ₄	V
AFC Input Voltage	V ₁₄	V ₁₀	V
Horizontal Output Current (Pulse)	I ₉	-5 to +5	mA
Power Dissipation	P _D	1.3 (T _{tab} = 98 °C)	W
Thermal Resistance (J-tab)	R _{th(j-tab)}	40 (T _{tab} = 25 °C)	°C/W
Thermal Resistance (J-a)	R _{th(j-a)}	70 (T _a = 25 °C)	°C/W
Operating Temperature	T _{opt}	-20 to +75	°C
Storage Temperature	T _{stg}	-40 to +150	°C

RECOMMENDED OPERATING CONDITIONS

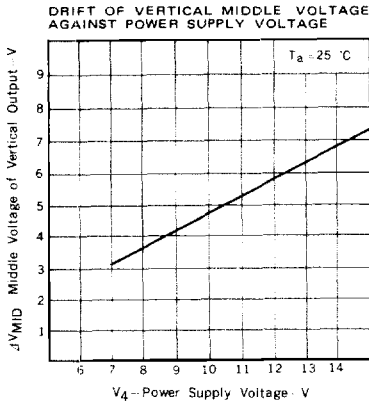
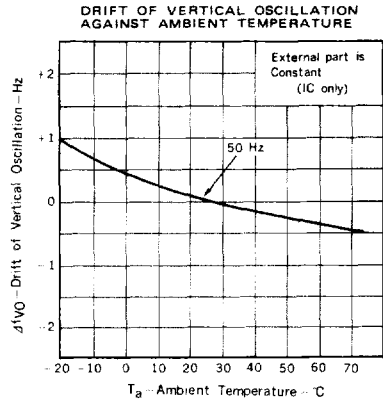
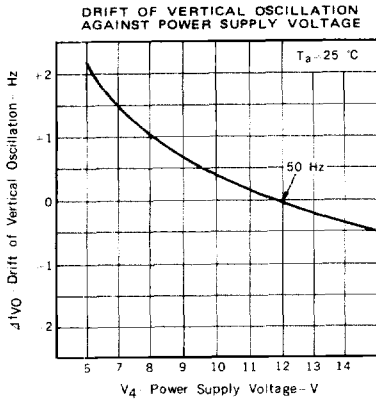
CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT
Power Supply Voltage for the Vertical Part	V ₄	9.6	12	14.4	V
Deflection Current	I _{DEF}	400	500	600	mA _{p-p}
Power Supply Current for Horizontal Part	I ₁₀	6.5	12	18	mA

ELECTRICAL CHARACTERISTICS (T_a = 25 °C, V₄ = 12 V, I_{DEF} = 500 mA_{p-p}, I₁₀ = 12 mA)

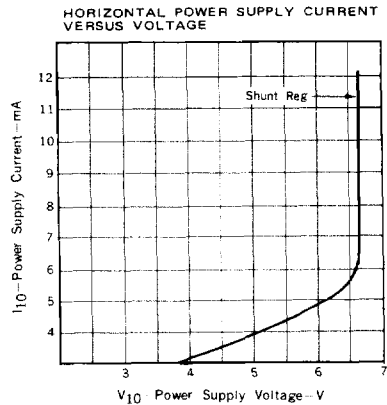
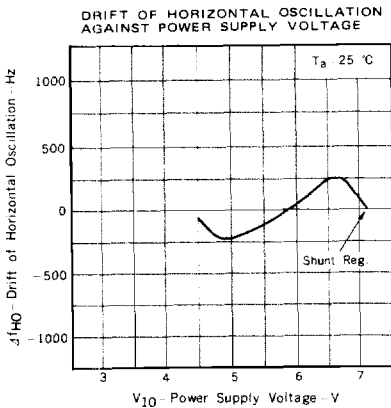
CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS
Power Supply Current for Vertical Part	I ₄₍₁₎		85	100	mA	standard circuit
Power Supply Current for Vertical Part	I ₄₍₂₎	6	12	20	mA	standard circuit (Idling Current)
Vertical Free-running Frequency	f _{VO}	46	50	54	Hz	standard circuit
Drift of Vertical Free-running Frequency	Δf _{VO} (V _{CC})		0.8	2.0	Hz	Δf _{VO} (V _{CC}) = f _{VO} (9.6 V) - f _{VO} (14.4 V)
Drift of Vertical Free-running Frequency	Δf _{VO} (T _a)		1.5	2.0	Hz	Δf _{VO} (T _a) = f _{VO} (-20 °C) - f _{VO} (+75 °C)
Vertical Synchronizing Capture Frequency	f _{PV}	47	50		Hz	f _{V(in)} = 60 Hz
Middle Voltage of Vertical Output	V _{MID}	5.3	5.8	6.3	V	standard circuit
Flyback Pulse Peak Voltage	RPV	20	23	26	V	standard circuit
Flyback Pulse Width	RPW	790	850	910	μs	standard circuit
Deflection Current	I _{DEF}	450	500	550	mA _{p-p}	standard circuit
Supply Voltage for Horizontal Part	V ₁₀	6.2	6.7	7.2	V	I ₁₀ = 12 mA
Horizontal Free-running Frequency	f _{HO}	15.0	15.75	16.5	kHz	standard circuit
Drift of Horizontal Free-running Frequency	Δf _{HO} (T _a)		190	250	Hz	Δf _{HO} (T _a) = f _{HO} (-20 °C) - f _{HO} (+75 °C)
Horizontal Output Pulse Width	PWH	23	25	27	μs	standard circuit
Horizontal Output Current	I ₉	0.8	1.3	2.0	mA	standard circuit
Horizontal Synchronizing Capture Freq.	f _{PH}	±650	±900	±1150	Hz	standard circuit
Horizontal AFC Output Current	I ₁₃	0.28	0.45	0.74	mA	standard circuit
Gain of AFC Detector	μ	89	143	236	μA/rad	standard circuit
Efficiency of Horizontal Oscillation Control	β	66	72	78	Hz/μA	standard circuit

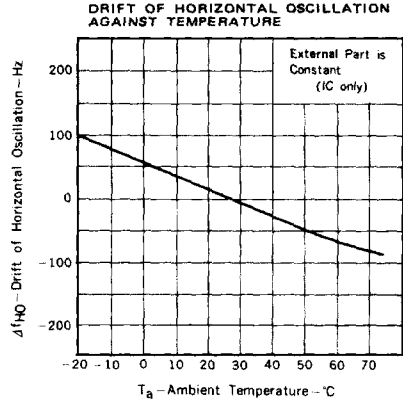
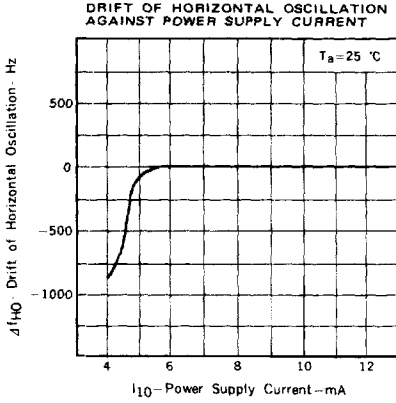
TYPICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

1. Vertical part

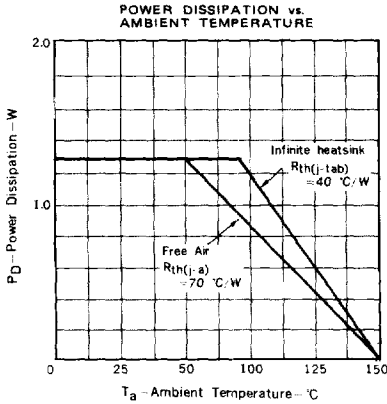


2. Horizontal part





3. $P_D - T_a$ Characteristic



APPLICATION CIRCUIT

