

**BIPOLAR ANALOG INTEGRATED CIRCUIT**  
**μPC1379C**

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

997727

μPC 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.

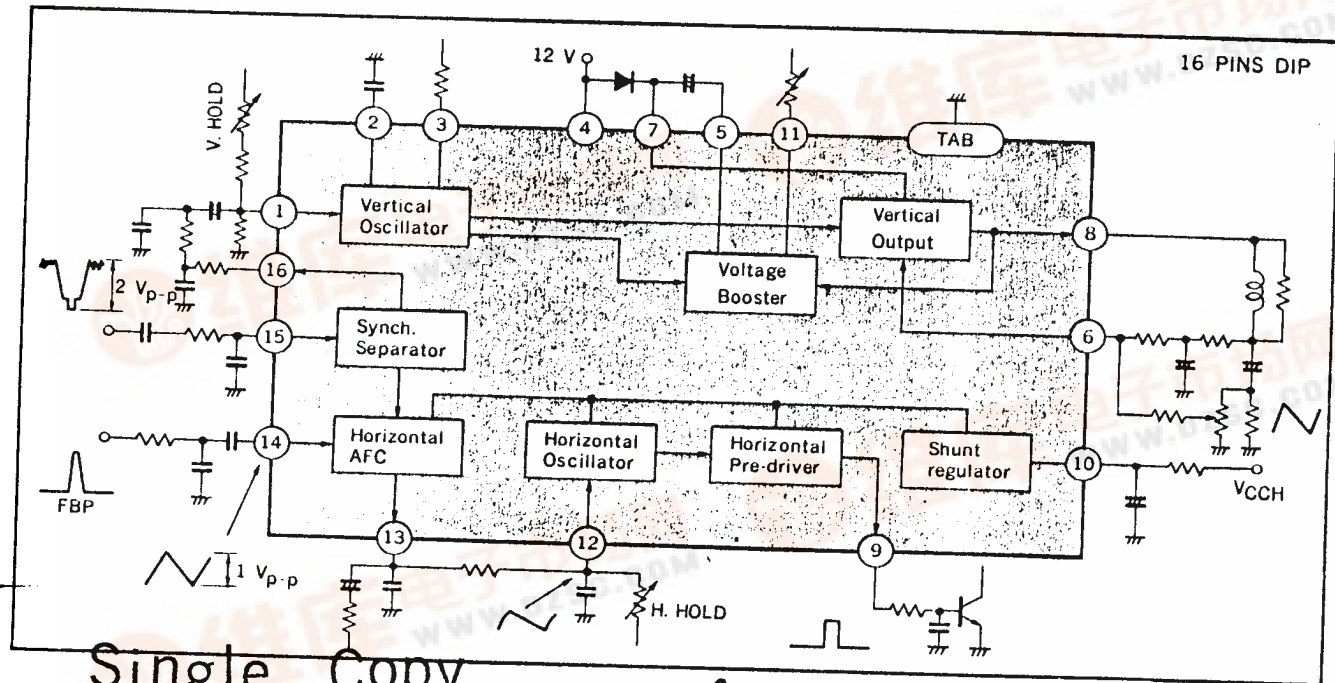
The package has a tab attaching to the end.

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**



Single Copy

62 UNITS orig  
006104

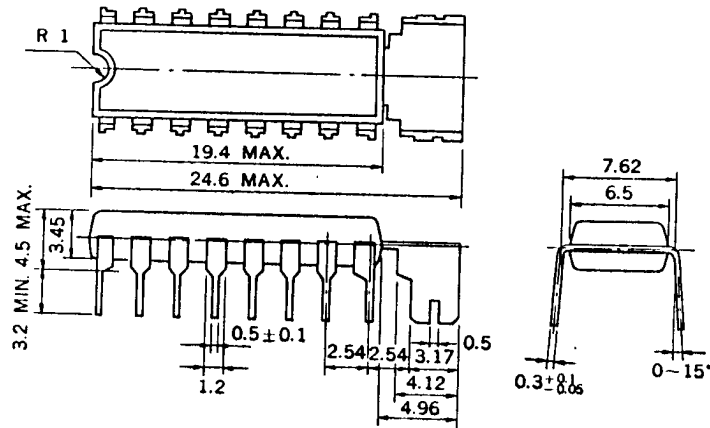
Handle With Care

6104

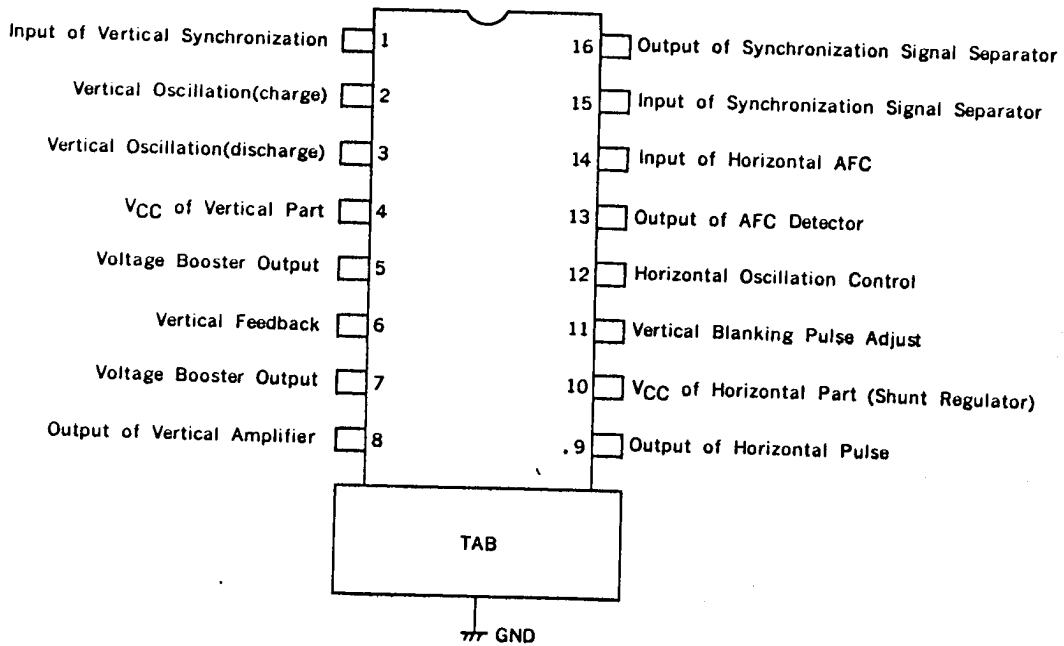
NEC

Nippon Electric Co.,Ltd.

PACKAGE DIMENSIONS (Unit : mm)



CONNECTION DIAGRAM (Top View)



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

RECOMMENDED OPERATING CONDITIONS

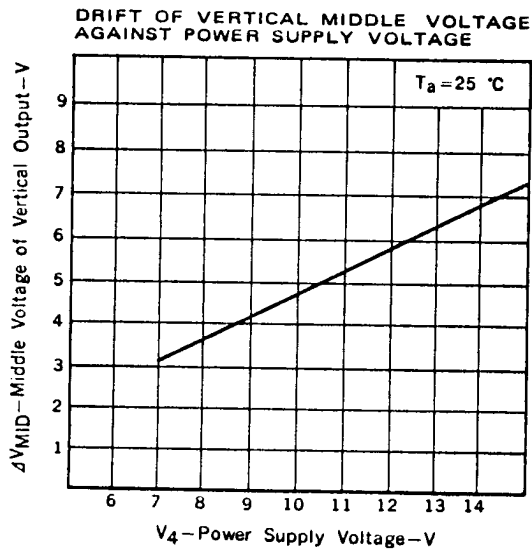
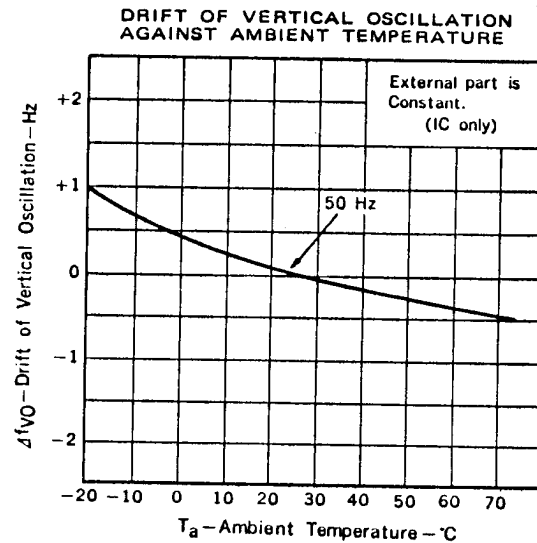
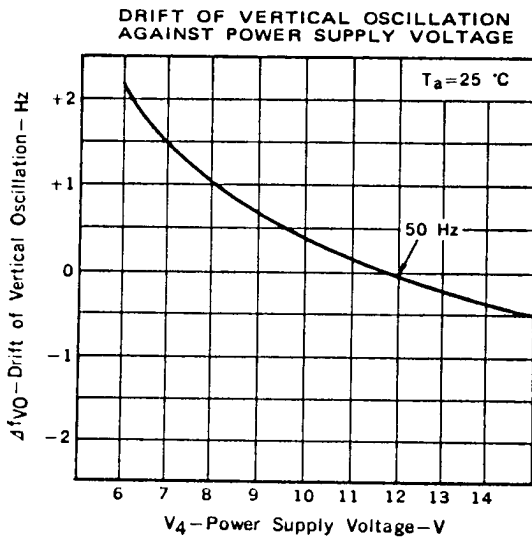
CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT
Power Supply Voltage for the Vertical Part	V <sub>4</sub>	9.6	12	14.4	V
Deflection Current	I <sub>DEF</sub>	400	500	600	mA <sub>p-p</sub>
Power Supply Current for Horizontal Part	I <sub>10</sub>	6.5	12	18	mA

ELECTRICAL CHARACTERISTICS (T<sub>a</sub> = 25 °C, V<sub>4</sub> = 12 V, I<sub>DEF</sub> = 500 mA<sub>p-p</sub>, I<sub>10</sub> = 12 mA)

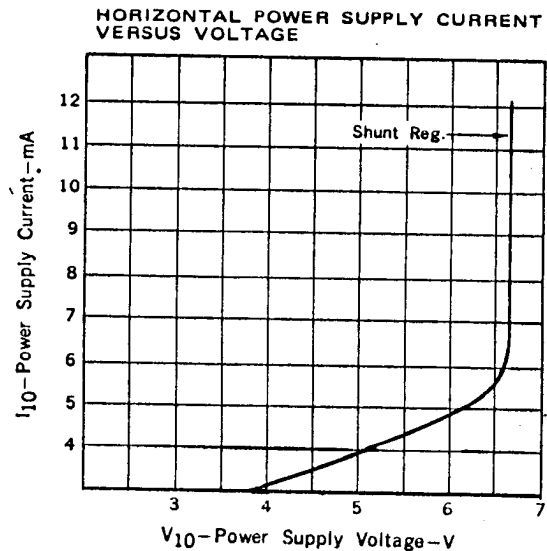
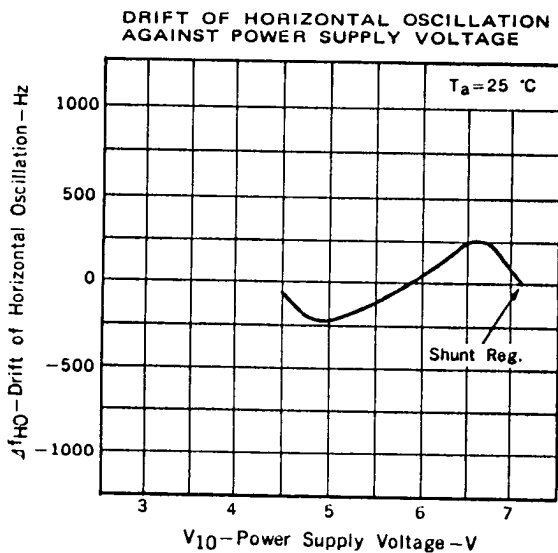
CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS
Power Supply Current for Vertical Part	I <sub>4(1)</sub>		85	100	mA	standard circuit
Power Supply Current for Vertical Part	I <sub>4(2)</sub>	6	12	20	mA	standard circuit (Idling Current)
Vertical Free-running Frequency	f <sub>VO</sub>	46	50	54	Hz	standard circuit
Drift of Vertical Free-running Frequency	Δf <sub>VO(VCC)</sub>		0.8	2.0	Hz	Δf <sub>VO(VCC)</sub> =  f <sub>VO(9.6 V)</sub> - f <sub>VO(14.4 V)</sub>
Drift of Vertical Free-running Frequency	Δf <sub>VO(T<sub>a</sub>)</sub>		1.5	2.0	Hz	Δf <sub>VO(T<sub>a</sub>)</sub> =  f <sub>VO(-20 °C)</sub> - f <sub>VO(+75 °C)</sub>
Vertical Synchronizing Capture Frequency	f <sub>PV</sub>	47	50		Hz	f <sub>V(in)</sub> = 60 Hz
Middle Voltage of Vertical Output	V <sub>MID</sub>	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 <sub>DEF</sub>	450	500	550	mA <sub>p-p</sub>	standard circuit
Supply Voltage for Horizontal Part	V <sub>10</sub>	6.2	6.7	7.2	V	I <sub>10</sub> = 12 mA
Horizontal Free-running Frequency	f <sub>HO</sub>	15.0	15.75	16.5	kHz	standard circuit
Drift of Horizontal Free-running Frequency	Δf <sub>HO(T<sub>a</sub>)</sub>		190	250	Hz	Δf <sub>HO(T<sub>a</sub>)</sub> =  f <sub>HO(-20 °C)</sub> - f <sub>HO(+75 °C)</sub>
Horizontal Output Pulse Width	PWH	23	25	27	μs	standard circuit
Horizontal Output Current	I <sub>9</sub>	0.8	1.3	2.0	mA	standard circuit
Horizontal Synchronizing Capture Freq.	f <sub>PH</sub>	±650	±900	±1150	Hz	standard circuit
Horizontal AFC Output Current	I <sub>13</sub>	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

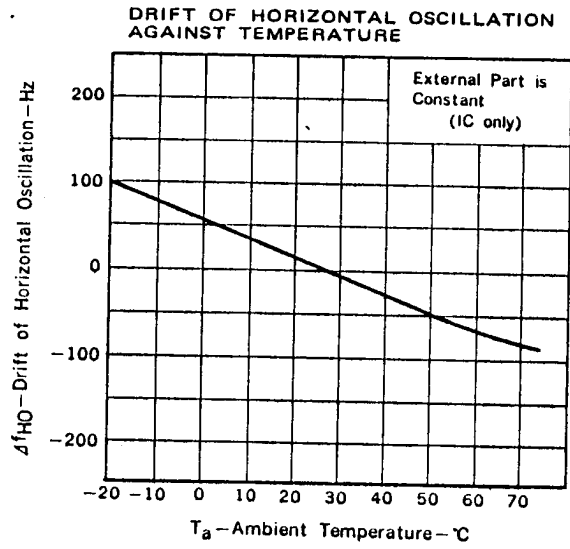
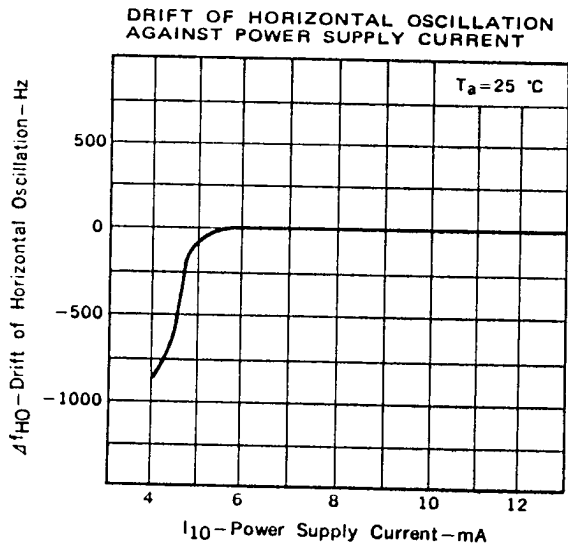
TYPICAL CHARACTERISTICS ( $T_a = 25^\circ\text{C}$ )

1. Vertical part

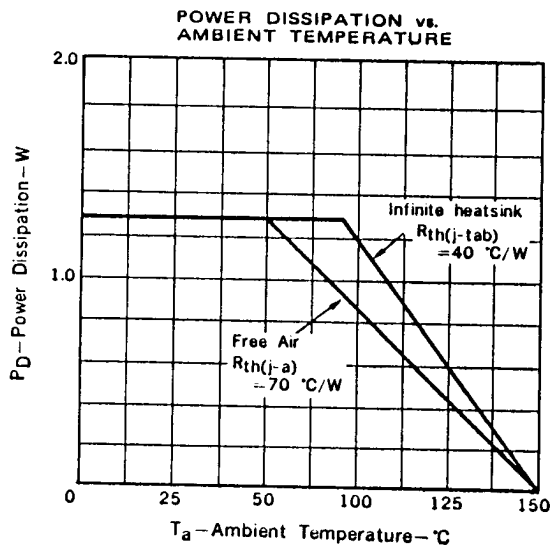


2. Horizontal part





3.  $P_D - T_a$  Characteristic



APPLICATION CIRCUIT

