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NTE1661
Integrated Circuit
Synchronization Signal Processor For B/W TV and Small–Sized Color TV

Description:

This device 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 defection signal generator in a molded 16 pins dial in–line package.

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 defection realized by the built–in voltage booster.
- Vertical fly–back pulse width is freely adjustable by the exclusive
- Any supply voltage is available for the horizontal part, as it equips shunt type power regulator itself.

Absolute Maximum Ratings: (T_A = +25°C unless otherwise specified)

Power Supply Voltage for Vertical Part, V_4 . . . . . 15V
Power Supply Current for Horizontal Part, I_{10} 30mA
Video Input Voltage, V_{15} . . . . . V_4V
Synch Output Current, I_{16} . . . . . –10 to +10mA
Voltage Booster Charge Voltage, V_{11} . . . . . V_4V
Booster Output Current, I_5 . . . . . –500 to +150mA peak
Deflection Current, I_8 . . . . . –500 to +150mA peak
Vertical Feedback Voltage, V_6 . . . . . V_4V
AFC Input Voltage, V_{14} . . . . . V_{10}V
Horizontal Output Current (Pulse), I_9 . . . . . –5 to +5mA
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 Range, T_{opt} . . . . . –20 to +75°C
Storage Temperature Range, T_{stg} . . . . . –40 to +150°C

Recommended Operating Conditions:
(Mark (+) of current expresses that the current is flowing into the terminal)
(Mark (−) of current expresses the the current is flowing out from the terminal)

Parameter	Symbol	Test Conditions	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, V_4 = 12V, I_{DEF} = 500mA_{p-p}, I_{10} = 12mA)						
Power Supply Current for Vertical Part	$I_{4(1)}$	standard circuit	−	85	100	mA
Vertical Free−running Frequency	f_{vo}		46	50	54	Hz
Drift of Vertical Free−running Frequency	Δf_{vo} (V_{CC})	($\Delta f_{VO}(V_{CC})$ = (if$_{VO}$ (9.6V) −f_{VO}(14.4V))	−	0.8	2.0	Hz
Vertical Synchronizing Capture Frequency	f_{PV}	$f_{v(in)}$ = 60Hz	47	50	−	Hz
Middle Voltage of Vertical Output	V_{MID}	Standard Circuit	5.3	5.8	6.3	V
Flyback Pulse Peak Voltage	RPV	Standard Circuit	20	23	26	V
Flyback Pulse Width	RPW	Standard Circuit	790	850	910	μs
Deflection Current	I_{DEF}	Standard Circuit	450	500	550	mA_{p-p}
Horizontal Free−running freq.	f_{HO}	Standard Circuit	15.0	15.75	16.5	kHz
Drift of Horizontal Free−running frequency	$\Delta f_{HO}(T_A)$	$\Delta f_{HO}(T_A)$ = (f_{HO} (−20°C) −f_{HO} (+75°C)	−	190	250	Hz
Horizontal Output Pulse Width	PWH	Standard Circuit	23	25	27	μs
Horizontal Output Current	I_9	Standard Circuit	0.8	1.3	2.0	mA
Horizontal Synchronizing Capture Freq.	f_{PH}	Standard Circuit	±650	±900	±1150	Hz
Horizontal AFC Output Current	I_{13}	Standard Circuit	0.28	0.45	0.74	mA
Gain of AFC Detector	μ	Standard Circuit	89	143	236	μA/rad
Efficiency of Horizontal Oscillation Control	β	Standard Circuit	66	72	78	Hz/μA

Pin Connection Diagram