ELECTRONICS, INC.
44 FARRAND STREET
BLOOMFIELD, NJ 07003
(973) 748–5089
http://www.nteinc.com

NTE1862
Integrated Circuit
TV Vertrical Deflection Circuit

Description:

The NTE1862 is a monolithic, full performance, very efficient vertical deflection circuit in a 15–Lead SIP type package intended for direct drive of the yoke of 110° color TV picture tubes. This device offers a wide range of applications such as portable CTVs, BW TVs, monitors, and displays.

Features:

- Synchronization Circuit
- Precision Oscillator and Ramp Generator
- Power Output Amplifier with High Current Capability
- Flyback Generator
- Voltage Regulator
- Precision Blanking Pulse Generator
- Thermal Shutdown Protection
- CRT Screen Protection Circuit which Blanks the Beam Current in the Event of Loss of Vertical Deflection Circuit

Absolute Maximum Ratings:

Supply Voltage (Pin14), V_S 35V
Flyback Peak Voltage, V_1, V_2 . . . . . 60V
Sync. Input Voltage, V_5 . . . . . 20V
Power Amplifier Input Voltage, V_{11}, V_{12} . . . . . V_S –10V
Voltage at Pin13, V_{13} . . . . . V_S
Non–Repetitive Output Current (t = 2ms), I_O 3A
Output Peak Current, I_O
    f = 50Hz, t > 10μs 2A
    f = 50Hz, t ≤ 10μs 3.5A
Pin15 Peak to Peak Flyback Current (f = 50Hz, $t_{fly} \leq 1.5$ms), I_{15} 3A
Pin15 DC Current ($V_1 < V_{14}$), I_{15} 100mA
Maximum Power Dissipation ($T_C \leq +60°C$), P_{tot} 30W
Junction Temperature Range, T_J . . . . . –40° to +150°C
Storage Temperature Range, T_{stg} . . . . . –40° to +150°C
Maximum Thermal Resistance, Junction to Case, $R_{\Theta JC}$ . . . . . +3°C/W
Maximum Thermal Resistance, Junction to Ambient, $R_{\Theta JA}$ . . . . . +40°C/W

DC Electrical Characteristics: (V_S = 35V, T_A = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Pin2 Quiescent Current	I_2	I_1 = 0	–	18	30	mA
Ramp Generator Bias Current	$-I_9$	V_9 = 0	–	0.02	1.0	µA
Ramp Generator Current	$-I_9$	V_9 = 0, $-I_7$ = 20µA	18.5	20.0	21.5	µA
Ramp Generator Non Linearity	$\left\lvert \frac{\Delta I_9}{I_9} \right\rvert$	ΔV_9 = 0 to 15V, $-I_7$ = 20µA	–	0.2	1.0	%
Pin14 Quiescent Current	I_{14}		–	25	50	mA
Quiescent Output Voltage	V_1	V_S = 35V, R_a = 2.2kΩ, R_b = 1kΩ	16.8	17.8	18.6	V
		V_S = 15V, R_a = 390Ω, R_b = 1kΩ	7.0	7.5	8.0	V
Output Saturation Voltage to GND	V_{1L}	I_1 = 1.2A	–	1.0	1.4	V
Output Saturation Voltage to Supply	V_{1H}	$-I_1$ = 1.2A	–	1.6	2.2	V
Oscillator Virtual Ground	V_4		–	0.45	–	V
Regulated Voltage at Pin7	V_7	$-I_7$ = 20µA	6.3	6.6	7.1	V
Regulated Voltage Drift with Supply Voltage	$\frac{\Delta V_7}{\Delta V_S}$	ΔV_S = 15 to 35V	–	1	–	$\frac{mV}{V}$
Amplifier Input (+) Reference Voltage	V_{11}		4.2	4.4	4.6	V
Blanking Output Saturation Voltage	V_{13}	I_{13} = 10mA	–	0.35	–	V
Pin15 Saturation Voltage to GND	V_{15}	I_{15} = 20mA	–	1.0	1.3	V

AC Electrical Characteristics: (V_S = 24V, f = 50Hz, T_A = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Supply Current	I_S	I_y = 2App		–	295	–	mA
Sync Input Current Required to Sync	I_5			100	–	–	µA
Flyback Voltage	v_1	I_y = 2App		–	50	–	V
Peak to Peak Oscillator Sawtooth Voltage	v_3	I_5 = 0		–	3.6	–	V
		I_5 = 100µA		–	3.4	–	V
Start Scan Level of the Input Ramp	V_{10thL}			–	1.85	–	V
Flyback Time	t_{fly}	I_y = 2App		–	0.6	–	ms
Blanking Pulse Duration	t_{blank}	f_o = 50Hz	T_j = +75°C	–	1.4	–	ms
		f_o = 60Hz		–	1.17	–	ms
Free Running Frequency	f_o	R_o = 7.5kΩ	C_o = 330nF, T_j = +75°C,	–	43.5	–	Hz
		R_o = 6.2kΩ		–	52.5	–	Hz
Synchronization Range	Δf	I_5 = 100µA, T_j = +75°C		–	16	–	Hz
Junction Temperature for Thermal Shutdown	T_j			–	145	–	°C

Pin Connection Diagram
(Front View)