

## NTE7170 Integrated Circuit Vertical Deflection Booster

### **Description:**

The NTE7170 is an integrated circuit in a 7-Lead SIP type package designed for use in monitors and high performance TVs. This vertical deflection booster delivers flyback voltages close to 90V and operates with supplies up to 42V and provides up to 2A<sub>P-P</sub> output current to drive the yoke.

### **Features:**

- Power Amplifier
- Flyback Generator
- Thermal Protection
- Output Current up to 2.0A<sub>P-P</sub>
- Flyback Voltage up to 90V (On Pin5)
- Suitable for DC Coupling Applications

### **Absolute Maximum Ratings:**

Supply Voltage (Pin2, Note 1), V <sub>S</sub>	50V
Flyback Peak Voltage (Pin6, Note 1), V <sub>6</sub>	100V
Amplifier Input Voltage (Pin1, Pin7, Note 1), V <sub>1</sub> , V <sub>7</sub>	-0.3V to +V <sub>S</sub>
Maximum Output Peak Current (Note 2, Note 3), I <sub>O</sub>	1.5A
Maximum Sink Current (First part of flyback, t < 1ms), I <sub>3</sub>	1.5A
Maximum Source Current (t < 1ms), I <sub>3</sub>	1.5A
ESD Susceptibility: EIAJ Norm (200pF discharge through 0Ω), V <sub>ESD</sub>	300V
Operating Junction Temperature, T <sub>J</sub>	+150°C
Recommended Maximum Junction Temperature, T <sub>Jr</sub>	+120°C
Operating Ambient Temperature Range, T <sub>opr</sub>	-20° to +75°C
Storage Temperature Range, T <sub>stg</sub>	-40° to +150°C
Maximum Thermal Resistance, Junction-to-Case, R <sub>thJC</sub>	3°C/W
Temperature for Thermal Shutdown, T <sub>t</sub>	+150°C
Hysteresis on Thermal Shutdown, ΔT <sub>t</sub>	10°C

Note 1. Versus Pin4.

Note 2. The output current can reach 4A peak for t ≤ 10μs (up to 120Hz).

Note 3. Provided SOAR is respected.

**Electrical Characteristics:** ( $T_A = +25^{\circ}\text{C}$ ,  $V_S = 42\text{V}$  unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Operating Supply Voltage Range	$V_S$	Versus Pin4	10	-	42	V
Pin2 Quiescent Current	$I_w$	$I_3 = 0$ , $I_5 = 0$	-	10	20	mA
Pin6 Quiescent Current	$I_6$	$I_3 = 0$ , $I_5 = 0$	5	10	30	mA
Maximum Peak Output Current	$I_O$		-	-	1	A
Amplifier Bias Current	$I_1$	$V_1 = 25\text{V}$ , $V_7 = 26\text{V}$	-	-0.15	-1.0	$\mu\text{A}$
	$I_7$	$V_1 = 25\text{V}$ , $V_7 = 26\text{V}$	-	-0.15	-1.0	$\mu\text{A}$
Offset Voltage	$V_{IO}$		-	-	7	mV
Offset Drift Versus Temperature	$\Delta V_{IO}/dt$		-	-10	-	$\mu\text{V}/^{\circ}\text{C}$
Voltage Gain	GV		80	-	-	dB
Output Saturation Voltage to GND (Pin4)	$V_{5L}$	$I_5 = 1\text{A}$	-	1.0	1.5	V
Output Saturation Voltage to Supply (Pin6)	$V_{5H}$	$I_5 = -1\text{A}$	-	1.6	2.1	V
Diode Forward Voltage Between Pin5 & Pin6	$V_{D5-6}$	$I_5 = 1\text{A}$	-	1.5	2.0	V
Diode Forward Voltage Between Pin3 & Pin2	$V_{D3-2}$	$I_3 = 1\text{A}$	-	1.5		
Saturation Voltage on Pin3	$V_{3L}$	$I_3 = 20\text{mA}$	-	0.8	1.2	V
Saturation Voltage to Pin2 (2 <sup>nd</sup> part of flyback)	$V_{3SH}$	$I_3 = -1\text{A}$	-	2.1	2.9	V

**Pin Connection Diagram**  
(Front View)

