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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 $2A_{P-P}$ output current to drive the yoke.

Features:

- Power Amplifier
- Flyback Generator
- Thermal Protection
- Output Current up to $2.0A_{P-P}$
- Flyback Voltage up to 90V (On Pin5)
- Suitable for DC Coupling Applications

Absolute Maximum Ratings:

Supply Voltage (Pin2, Note 1), V_S 50V
Flyback Peak Voltage (Pin6, Note 1), V_6 . . . . . 100V
Amplifier Input Voltage (Pin1, Pin7, Note 1), V_1, V_7 . . . . . -0.3V to $+V_S$
Maximum Output Peak Current (Note 2, Note 3), I_O 1.5A
Maximum Sink Current (First part of flyback, t < 1ms), I_3 . . . . . 1.5A
Maximum Source Current (t < 1ms), I_3 . . . . . 1.5A
ESD Susceptibility: EIAJ Norm (200pF discharge through 0Ω), V_{ESD} 300V
Operating Junction Temperature, T_J . . . . . +150°C
Recommended Maximum Junction Temperature, T_{jr} . . . . . +120°C
Operating Ambient Temperature Range, T_{opr} . . . . . -20° to +75°C
Storage Temperature Range, T_{stg} . . . . . -40° to +150°C
Maximum Thermal Resistance, Junction-to-Case, R_{thJC} . . . . . 3°C/W
Temperature for Thermal Shutdown, T_t . . . . . +150°C
Hysteresis on Thermal Shutdown, ΔT_t . . . . . 10°C

Note 1. Versus Pin4.
Note 2. The output current can reach 4A peak for $t \leq 10\mu s$ (up to 120Hz).
Note 3. Provided SOAR is respected.

Electrical Characteristics: (T_A = +25°C, V_S = 42V 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 = 25V, V_7 = 26V	-	-0.15	-1.0	µA
	I_7	V_1 = 25V, V_7 = 26V	-	-0.15	-1.0	µA
Offset Voltage	V_{IO}		-	-	7	mV
Offset Drift Versus Temperature	$\Delta V_{IO}/dt$		-	-10	-	µV/°C
Voltage Gain	GV		80	-	-	dB
Output Saturation Voltage to GND (Pin4)	V_{5L}	I_5 = 1A	-	1.0	1.5	V
Output Saturation Voltage to Supply (Pin6)	V_{5H}	I_5 = -1A	-	1.6	2.1	V
Diode Forward Voltage Between Pin5 & Pin6	V_{D5-6}	I_5 = 1A	-	1.5	2.0	V
Diode Forward Voltage Between Pin3 & Pin2	V_{D3-2}	I_3 = 1A	-	1.5		
Saturation Voltage on Pin3	V_{3L}	I_3 = 20mA	-	0.8	1.2	V
Saturation Voltage to Pin2 (2^{nd} part of flyback)	V_{3SH}	I_3 = -1A	-	2.1	2.9	V

Pin Connection Diagram
(Front View)