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# NTE7209
# Integrated Circuit
# Vertical Output w/Bus Control Support for TV and CRT Displays

**Description:**

The NTE7209 is a vertical deflection output integrated circuit in a 7–Lead Staggered SIP type package designed for high image quality TV and CRT displays that supports the use of a bus control system signal processing IC. The sawtooth wavweform from the bus control system signal processing IC can directly drive the deflection yoke (including the DC component). Color TV vertical deflection system adjustment functions can be controlled over a bus system by connecting the NTE7209 to various bus control system signal processing ICs.

**Features:**

- Built–In Pump–Up Circuit for Low Power Dissipation
- Vertical Output Circuit
- Thermal Protection Circuit

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

Pump–Up Block Supply Voltage, $+B_2$max . . . . . 45V
Output Block Supply Voltage, $+B_6$max . . . . . 92V
Allowable Power Dissipation (Mounted on an arbitrarily large heat sink), $P_d$max . . . . . 9W
Deflection Output Current, $I_5$max . . . . . –1.5 to $+1.5A_{p-o}$
Operating Temperature Range, $T_{opr}$ . . . . . –20° to +85°C
Storage Temperature Range, $T_{stg}$ . . . . . –40° to +150°C
Thermal Resistance, Junction–to–Case, $R_{thJC}$ . . . . . 3°C/W

**Recommended Operating Conditions:** ($T_A$ = 25°C, unless otherwise specified)

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Recommended Supply Voltage | $+B_2$ | | – | 30 | – | V |
| Operating Supply Voltage Range | $+B_2$op | | 16 | – | 43 | V |
| Deflection Output Current | $I_{5P-P}$ | | – | – | 2.2 | $A_{P-P}$ |

**Electrical Characteristics:** ($+B_2$ = 24V, $T_A$ = 25°C, unless otherwise specified)

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Deflection Output Saturation Voltage Lower | $V_{sat5-4}$ | $I_5$ = 1.1A | – | – | 15 | V |
| Upper | $V_{sat6-5}$ | $I_5$ = –1.1A | – | – | 3.5 | V |
| Pump–Up Charge Saturation Voltage | $V_{sat3-4}$ | $I_3$ = 20mA | – | – | 1.8 | V |
| Pump–Up– Discharge Saturation Voltage | $V_{sat2-3}$ | $I_3$ = –1.1A | – | – | 3.2 | V |
| Idling Current | $I_{dl}$ | | 20 | – | 50 | mA |
| Midpoint Voltage | $V_{mid}$ | | 14 | 15 | 16 | V |

Note 1. Current flowing into the IC is positive (+) and current flowing out is negative (–).

**Pin Connection Diagram**
(Front View)