NTE7158
Integrated Circuit
Deflection Circuit Power Amp for Color TV

Description:
The NTE7158 is an integrated circuit in a 7–Lead SIP type package designed for use as a power amplifier for driving a deflection circuit in large and medium screen size color televisions.

Features:
- Large Output Current: 2.2A P–P Max
- Small Power Dissipation with a Pump–Up Circuit

Absolute Maximum Ratings: \((T_A = +25^\circ C\) unless otherwise specified)
- Power Supply Voltage, \(V_{CC}\) : \(30\) V
- Pump–Up Power Supply Voltage, \(V_{Vt}\) : \(60\) V
- Terminal Voltage, \(E_{in}\) : \(GND–0.3\) V to \(V_{Vt}+0.3\) V
- Input Signal Voltage, \(e_{in}\) : \(0\) V to \(1.2\) V
- Deflection Current (Note 1), \(i_d\) : \(\pm1.5\) A
- Operating Temperature Range, \(T_{opr}\) : \(-20^\circ\) to \(+85^\circ\) C
- Storage Temperature Range, \(T_{stg}\) : \(-55^\circ\) to \(+150^\circ\) C

Note 1. Power on time: 2ms, \(V_{CEO} = 60\) V.
Note 2. Using an infinite heat sink.

Recommended Operating Conditions:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Test Conditions</th>
<th>Min</th>
<th>Typ</th>
<th>Max</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Supply</td>
<td>(V_{CC})</td>
<td></td>
<td>–</td>
<td>27</td>
<td>29</td>
<td>V</td>
</tr>
<tr>
<td>Deflection Output Current</td>
<td>(I_{2P-P})</td>
<td></td>
<td>–</td>
<td>–</td>
<td>2.2</td>
<td>A_{P-P}</td>
</tr>
</tbody>
</table>

Electrical Characteristics: \((V_{CC} = 24\) V, \(T_A = +25^\circ\) C unless otherwise specified)

<table>
<thead>
<tr>
<th>Parameter</th>
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<th>Test Conditions</th>
<th>Min</th>
<th>Typ</th>
<th>Max</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saturation Voltage of the Vertical Output Transistor</td>
<td>(V_{V(sat)})</td>
<td>Note 3</td>
<td>0.3</td>
<td>0.5</td>
<td>1.0</td>
<td>V</td>
</tr>
<tr>
<td>Saturation Voltage of the Pump–Up Output Transistor</td>
<td>(V_{P(sat)})</td>
<td>Note 5</td>
<td>1.0</td>
<td>2.0</td>
<td>3.0</td>
<td>V</td>
</tr>
<tr>
<td>Output Current with No Input</td>
<td>(i_d)</td>
<td>Note 7</td>
<td>–</td>
<td>26</td>
<td>–</td>
<td>mA</td>
</tr>
<tr>
<td>Center Output Voltage</td>
<td>(V_{center})</td>
<td></td>
<td>10</td>
<td>12</td>
<td>14</td>
<td>V</td>
</tr>
</tbody>
</table>
Notes:

Note 3. SW₁: ON, SW₂: C, SW₃: ON, SW₄: B, SW₅: A, SW₆: A
Measure the voltage of Pin2.

Note 4. SW₁: ON, SW₂: C, SW₃: ON, SW₄: A, SW₅: A, SW₆: B
Measure the voltage of Pin2. \( V_{V\text{sat}} = V_{CC} - V_2 \).

Note 5. SW₁: ON, SW₂: B, SW₃: OFF, SW₄: A, SW₅: C, SW₆: A
Measure the voltage of Pin7, \( V_{V\text{sat}} = V_{CC} - V_7 \).

Note 6. SW₁: OFF, SW₂: C, SW₃: OFF, SW₄: A, SW₅: B, SW₆: B
Measure the voltage of Pin7.

Note 7. SW₁: ON, SW₂: A, SW₃: ON, SW₄: C, SW₅: A, SW₆: B
Measure the sink current into Pin3. Measure the voltage of Pin2.