NTE7188
Integrated Circuit
TV & CRT Vertical Output with
Bus Control Support

Description:
The NTE7188 is a vertical deflection output IC in a 7–Lead Staggered TO220 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 waveform from the control system signal–processing IC can directly drive the deflection yoke (including the DC components). Since the NTE7188 provides a maximum deflection current of 1.8 A\textsubscript{P-P}, it is optimal for small and medium size CRTs.

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

Absolute Maximum Ratings: (\(T_A = +25^\circ C\) unless otherwise specified)
- Pump–Up Block Supply Voltage, +B2 max ......................................................... 34V
- Output Block Supply Voltage, +B6 max ............................................................... 70V
- Allowable Power Dissipation (Mounted on an arbitrarily large heat sink), \(P_{d\text{max}}\) ................. 9W
- Deflection Output Current, \(I_{5\text{max}}\) ................................................................. \(-1.5\) to \(+1.5\) A\textsubscript{P-P}
- Thermal Resistance, Junction–to–Case, \(R_{thJC}\) .............................................. \(3^\circ C/W\)
- Operating Temperature Range, \(T_{opr}\) .............................................................. \(-20^\circ\) to \(+85^\circ C\)
- Storage Temperature Range, \(T_{stg}\) ................................................................. \(-40^\circ\) to \(+150^\circ C\)

Recommended Operating Conditions: (\(T_A = +25^\circ C\) unless otherwise specified)
- Recommended Supply Voltage, +B2 ................................................................. 24V
- Operating Supply Voltage Range, +B2\textsubscript{op} ........................................... 16 to 33V
- Deflection Output Current, \(I_{5\text{P-P}}\) ................................................................. To 1.8A\textsubscript{P-P}

Electrical Characteristics: (\(T_A = +25^\circ C\), +B2 = 24V unless otherwise specified)

<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>
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</thead>
<tbody>
<tr>
<td>Deflection Output Saturation Voltage (Lower)</td>
<td>(V_{sat5-4})</td>
<td>(I_5 = 900mA)</td>
<td>–</td>
<td>–</td>
<td>1.3</td>
<td>V</td>
</tr>
<tr>
<td>Deflection Output Saturation Voltage (Upper)</td>
<td>(V_{sat6-5})</td>
<td>(I_5 = -900mA)</td>
<td>–</td>
<td>–</td>
<td>3.2</td>
<td>V</td>
</tr>
<tr>
<td>Pump–up Charge Saturation Voltage</td>
<td>(V_{sat3-4})</td>
<td>(I_3 = 20mA)</td>
<td>–</td>
<td>–</td>
<td>1.8</td>
<td>V</td>
</tr>
<tr>
<td>Pump–up Discharge Saturation Voltage</td>
<td>(V_{sat2-3})</td>
<td>(I_3 = 900mA)</td>
<td>–</td>
<td>–</td>
<td>3.0</td>
<td>V</td>
</tr>
<tr>
<td>Idling Current</td>
<td>(I_{dl})</td>
<td></td>
<td>20</td>
<td>–</td>
<td>50</td>
<td>mA</td>
</tr>
<tr>
<td>Midpoint Voltage</td>
<td>(V_{mid})</td>
<td></td>
<td>11</td>
<td>12</td>
<td>13</td>
<td>V</td>
</tr>
</tbody>
</table>