NTE801
Integrated Circuit
FM Stereo Demodulator

Description:
The NTE801 is a monolithic device in a 14–Lead DIP type package designed for use in solid–state stereo receivers.

Features:
- Requires No Inductors
- Low External Part Count
- Only Oscillator Frequency Adjustment Necessary
- Integral Stereo/Monaural Switch 75mA Lamp Driving Capability
- Wide Dynamic Range: 0.5 to 2.8V (p–p) Composite Input Signal
- Wide Supply Range: 8V to 14V
- Excellent Channel Separation Maintained Over Entire Audio Frequency Range
- Low Distortion: Typically 0.3% THD at 560mV (RMS) Composite Input Signal
- Excellent SCA Rejection

Absolute Maximum Ratings: $(T_A = +25^\circ \text{C} \text{ unless otherwise specified})$

- Power Supply Voltage ................................................................. 14V
- Lamp Current ................................................................. 75mA
- Power Dissipation (Package Limitation) ................................................................. 625mW
  Derate Above $T_A = +25^\circ \text{C}$ ................................................................. 5.0mW/°C
- Operating Temperature Range, $T_A$ ................................................................. $-40^\circ \text{C}$ to $+85^\circ \text{C}$
- Storage Temperature Range, $T_{\text{stg}}$ ................................................................. $-65^\circ \text{C}$ to $+150^\circ \text{C}$
**Electrical Characteristics:**  
\(V_{CC} = +12\text{V}, \ T_A = +25\text{°C}, \ V_{in} = 560mV_{RMS} \ (2.8V_{P-P}), f_m = 1kHz\)  
(L or R only), Pilot Level = 100mV\(_{RMS}\) (10%), unless otherwise specified)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Test Conditions</th>
<th>Min</th>
<th>Typ</th>
<th>Max</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Standard Composite Input Signal</td>
<td>THD = 0.5%</td>
<td>2.8</td>
<td>–</td>
<td>–</td>
<td>V(_{P-P})</td>
</tr>
<tr>
<td>Maximum Monaural Input Signal</td>
<td>THD = 1.0%</td>
<td>2.8</td>
<td>–</td>
<td>–</td>
<td>V(_{P-P})</td>
</tr>
<tr>
<td>Input Impedance</td>
<td>Pin2</td>
<td>20</td>
<td>50</td>
<td>–</td>
<td>k(\Omega)</td>
</tr>
<tr>
<td>Stereo Channel Separation</td>
<td></td>
<td>30</td>
<td>40</td>
<td>–</td>
<td>dB</td>
</tr>
<tr>
<td>Audio Output Voltage</td>
<td>Desired Channel</td>
<td>–</td>
<td>485</td>
<td>–</td>
<td>mV(_{rms})</td>
</tr>
<tr>
<td>Monaural Channel Balance</td>
<td>Pilot Level = 0V</td>
<td>–</td>
<td>–</td>
<td>1.5</td>
<td>dB</td>
</tr>
<tr>
<td>Total Harmonic Distortion</td>
<td></td>
<td>–</td>
<td>&lt; 0.3</td>
<td>–</td>
<td>%</td>
</tr>
<tr>
<td>Ultrasonic Frequency Rejection</td>
<td>19kHz</td>
<td>–</td>
<td>34.4</td>
<td>–</td>
<td>dB</td>
</tr>
<tr>
<td></td>
<td>38kHz</td>
<td>–</td>
<td>45</td>
<td>–</td>
<td>dB</td>
</tr>
<tr>
<td>SCA Rejection</td>
<td>67kHz, No Modulation, Measured 9kHz Beat</td>
<td>–</td>
<td>75</td>
<td>–</td>
<td>dB</td>
</tr>
<tr>
<td>Stereo Switch Level</td>
<td>Pilot Only, Lamp ON</td>
<td>–</td>
<td>18</td>
<td>23</td>
<td>mV(_{rms})</td>
</tr>
<tr>
<td></td>
<td>Pilot Only, Lamp OFF</td>
<td>5.0</td>
<td>10</td>
<td>–</td>
<td>mV(_{rms})</td>
</tr>
<tr>
<td>Capture Range</td>
<td>Permissible Tuning Error</td>
<td>–</td>
<td>3.5</td>
<td>–</td>
<td>%</td>
</tr>
<tr>
<td>Supply Current</td>
<td>Lamp OFF</td>
<td>–</td>
<td>13</td>
<td>–</td>
<td>mA</td>
</tr>
</tbody>
</table>

**Pin Connection Diagram**

```
Pin Connection Diagram

VCC 1
Input 2
Audio Amp Output 3
Left Ch Output 4
Right Ch Output 5
Lamp Indicator 6
GND 7
OSC RC Network 14

19kHz Loop Filter 9
Demodulator Input 11
19kHz Output 10
Stereo Switch Filter 9
Stereo Switch Filter 6

Dimensions:
- .785 (19.95) Max
- .300 (7.62)
- .200 (5.08)
- .099 (2.5) Min
- .100 (2.45)
- .600 (15.24)
```