Overview

The LA6524 is a 4-output power driver developed for use in consumer and industrial equipment.

Functions

- Four buffer amp circuits on chip
- High output current (Io max = 0.5 A)
- Includes current limiter
- Broad operating voltage range (±2 to +12 V)
- Single power supply operation possible (4 to 24 V)
- Thermal shutdown circuit built-in.

Specifications

Maximum Ratings at Ta = 25 °C

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Conditions</th>
<th>Ratings</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum supply voltage</td>
<td>V_CC/V_EE</td>
<td></td>
<td>±15 V</td>
<td>V</td>
</tr>
<tr>
<td>Input voltage</td>
<td>V_IN</td>
<td></td>
<td>±14 V</td>
<td>V</td>
</tr>
<tr>
<td>Allowable power dissipation</td>
<td>Pd_max</td>
<td>When using Al heat sink (50 x 50 x 1.5 mm³)</td>
<td>2.0 W</td>
<td></td>
</tr>
<tr>
<td>Operating temperature</td>
<td>T Opr</td>
<td></td>
<td>-20 to +75 °C</td>
<td></td>
</tr>
<tr>
<td>Storage temperature</td>
<td>T Stg</td>
<td></td>
<td>-40 to +125 °C</td>
<td></td>
</tr>
</tbody>
</table>

Operating Characteristics at Ta = 25 °C, V_CC/V_EE = ±10 V

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Conditions</th>
<th>min</th>
<th>typ</th>
<th>max</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current drain with no load</td>
<td>I_CC</td>
<td></td>
<td>10</td>
<td>30</td>
<td></td>
<td>mA</td>
</tr>
<tr>
<td>Input offset voltage</td>
<td>V_ID</td>
<td>R_L ≤ 10 kΩ</td>
<td>2</td>
<td>7</td>
<td></td>
<td>mV</td>
</tr>
<tr>
<td>Input bias current</td>
<td>I_B</td>
<td></td>
<td>50</td>
<td>500</td>
<td></td>
<td>nA</td>
</tr>
<tr>
<td>Input voltage range</td>
<td>V_ID</td>
<td></td>
<td>-9</td>
<td></td>
<td>+8</td>
<td>V</td>
</tr>
<tr>
<td>Maximum output voltage</td>
<td>V_O</td>
<td>R_L = 33 Ω</td>
<td>±8</td>
<td></td>
<td></td>
<td>V</td>
</tr>
<tr>
<td>Slew rate</td>
<td>SR</td>
<td>R_L = 33 Ω , R1 = 2.2 Ω , C1 = 0.1 μF</td>
<td>0.15</td>
<td>V/μs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Limiter current (built-in type)</td>
<td>I_SC</td>
<td></td>
<td>0.5</td>
<td></td>
<td>A</td>
<td></td>
</tr>
</tbody>
</table>
Pin Assignments

Block Diagram

Sample Application Circuit

$R_L = \text{Load}$

$R_1 = 2.2\,\Omega$

$C_1 = 0.1\,\mu F$ (Film)
Test Circuit

1. $I_{CC}$

2. $V_{IO}$

3. $I_B$

4. $V_{ID}$

5. $V_O, I_{SC}$

6. $S_R^P$

Oscilloscope

Pulse generator

$100\text{kHz}$

$8\text{Vpp}$ short wave

$V_{O1} = V_{IO}$

$V_{O2} = \frac{V_{O3} - V_G1}{100\Omega}$

$V_1 = -9 \text{ to } +8 \text{ (V)}$

When $V_O R_L = 33 \Omega$, When $I_{SC} R_L = 8 \Omega$

$\theta_f - S_f$

Al heat sink, $t = 1.5 \text{ mm}$

$\text{Area of heat sink, } S_f = \text{ cm}^2$

$\text{Thermal resistance of heat sink, } \theta_f = \text{ °C/W}$

$P_{d_{\text{max}}}$

Allowable power dissipation, $P_{d_{\text{max}}} = \text{ W}$

$T_a$

Storage temperature, $T_a = \text{ °C}$

$\text{Coated with silicone grease}$

$\text{Tightening torque: } 4 \text{ kg·cm}$
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