

ILA7052

MONO OUTPUT AMPLIFIER

GENERAL DESCRIPTION

The ILA7052 is a mono output amplifier in a 8-lead dual-in-line (DIL) plastic package. The device is designed for battery-fed portable audio applications.

Features:

- No external components
- No switch-on or switch-off clicks
- Good overall stability
- Low power consumption
- No external heatsink required
- Short-circuit proof

QUICK REFERENCE DATA

| SYMBOL           | PARAMETER                 | CONDITIONS           | MIN. | TYP. | MAX. | UNIT |
|------------------|---------------------------|----------------------|------|------|------|------|
| Vp               | Supply voltage range      |                      | 3    | 6    | 18   | V    |
| I <sub>tot</sub> | Total quiescent current   | R <sub>L</sub> =∞~   | -    | 4    | 8    | mA   |
| G <sub>v</sub>   | Voltage gain              |                      | 38   | 39   | 40   | dB   |
| P <sub>o</sub>   | Output power              | THD = 10%; 8 Q       | -    | 1,2  | -    | W    |
| THD              | Total harmonic distortion | P <sub>o</sub> =0,1W | -    | 0,2  | 1,0  | %    |

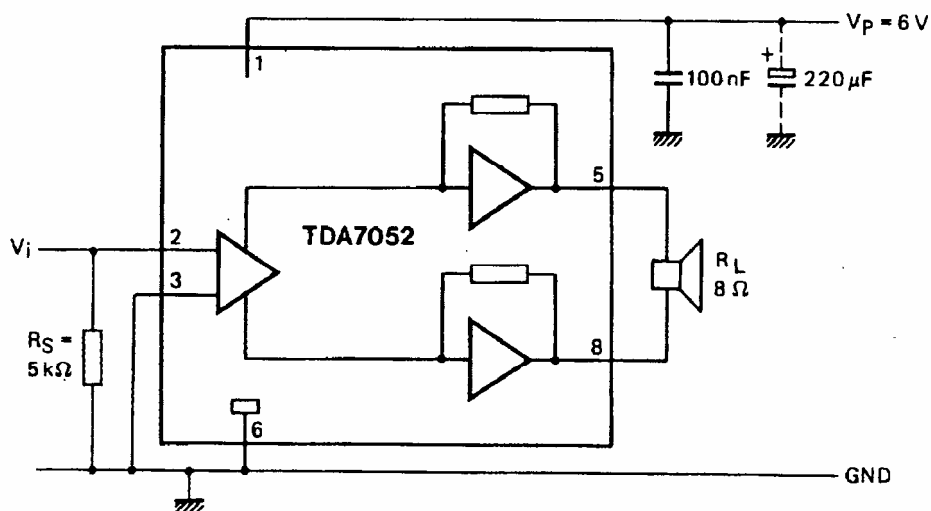
PACKAGE OUTLINE 2101.8-A

PINNING

|   |      |                 |   |      |                    |
|---|------|-----------------|---|------|--------------------|
| 1 | Vp   | supply voltage  | 5 | OUT1 | output 1           |
| 2 | IN   | input           | 6 | GND2 | ground (substrate) |
| 3 | GND1 | ground (signal) | 7 | n.c. | not connected      |
| 4 | n.c. | not connected   | 8 | OUT2 | output 2           |

RATINGS Limiting values in accordance with the Absolute Maximum System (IEC 134)

| SYMBOL           | PARAMETER                          | MIN. | MAX. | UNIT |
|------------------|------------------------------------|------|------|------|
| Vp               | Supply voltage                     | -    | 18   | V    |
| I <sub>OSM</sub> | Non-repetitive peak output current | -    | 1,5  | A    |
| T <sub>c</sub>   | Crystal temperature                | -    | 150  | °C   |
| T <sub>stg</sub> | Storage temperature range          | -55  | +150 | °C   |



Application diagram

**CHARACTERISTICS**  $V_p = 6\text{ V}$ ;  $R_L = 8\ \Omega$ ;  $f = 1\text{ kHz}$ ;  $T_{amb} = 25\text{ }^\circ\text{C}$ ; unless otherwise specified.

| SYMBOL           | PARAMETER                              | CONDITIONS               | MIN. | TYP.               | MAX. | UNIT             |
|------------------|--|--------------------------|------|--------------------|------|------------------|
| Supply           |  |                          |      |                    |      |                  |
| $V_p$            | Supply voltage range                   |                          | 3    | 6                  | 18   | V                |
| $I_{tot}$        | Total quiescent current                | $R_L = \infty$           | -    | 4                  | 8    | mA               |
| $G_v$            | Voltage gain                           |                          | 38   | 39                 | 40   | dB               |
| $P_o$            | Output power                           | THD = 10%                | -    | 1,2                | -    | W                |
|                  | Noise output voltage<br>(RMS value)    |                          |      |                    |      |                  |
| $V_{no(rms)}$    |  | note 1                   | -    | 150                | 300  | mV               |
| $V_{no(rms)}$    |  | note 2                   | -    | 60                 | -    | mV               |
| $f_r$            | Frequency response                     |                          | -    | 20 Hz to<br>20 kHz | -    | Hz               |
| SVRR             | Supply voltage ripple rejection        | note 3                   | 40   | 50                 | -    | dB               |
|                  | DC output offset voltage<br>pin 5 to 8 | $R_s = 5\text{ k}\Omega$ | -    | -                  | 100  | mV               |
| $\Delta V_{5-8}$ |  |                          |      |                    |      |                  |
| THD              | Total harmonic distortion              | $P_O = 0.1\text{ W}$     | -    | 0,2                | 1,0  | %                |
| $ Z_{il}$        | Input impedance                        |                          | -    | 100                | -    | $\text{k}\Omega$ |
| $I_{bias}$       | Input bias current                     |                          | -    | 100                | 300  | nA               |

Notes to the characteristics

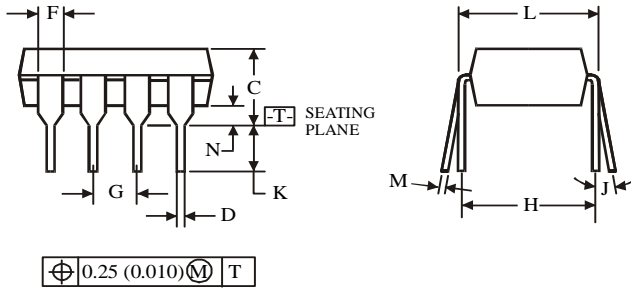
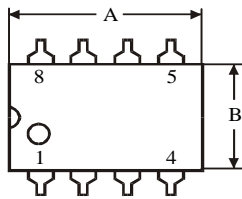
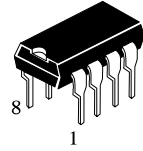
1. The unweighted RMS noise output voltage is measured at a bandwidth of 60 Hz to 15 kHz with a source impedance ( $R_s$ ) of 5  $\text{k}\Omega$ .

2. The RMS noise output voltage is measured at a bandwidth of 5 kHz with a source impedance of 0  $\Omega$  and a frequency of 500 kHz. With a practical load ( $R = 8\ \Omega$ ;  $L = 200\ \mu\text{H}$ ) the noise output current is only 100 nA.

3. Ripple rejection is measured at the output with a source impedance of 0  $\Omega$  and a frequency between 100 Hz and 10 kHz.

The ripple voltage = 200 mV (RMS value) is applied to the positive supply rail.

**N SUFFIX PLASTIC DIP  
(2101.8-A)**



$\oplus 0.25 (0.010) \text{M} \text{T}$

| Symbol | Dimension, mm |       |
|--------|---------------|-------|
|        | MIN           | MAX   |
| A      | 8.51          | 10.16 |
| B      | 6.1           | 7.11  |
| C      |               | 5.33  |
| D      | 0.36          | 0.56  |
| F      | 1.14          | 1.78  |
| G      | 2.54          |       |
| H      | 7.62          |       |
| J      | 0°            | 10°   |
| K      | 2.92          | 3.81  |
| L      | 7.62          | 8.26  |
| M      | 0.2           | 0.36  |
| N      | 0.38          |       |

**NOTES:**

- Dimensions "A", "B" do not include mold flash or protrusions.  
Maximum mold flash or protrusions 0.25 mm (0.010) per side.