

AUDIO LINE AMPLIFIER with MUTE FUNCTION

■ GENERAL DESCRIPTION

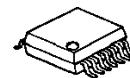
The **NJM2790** is a low voltage audio line amplifier designed for audio items.

Internal closed loop voltage gain is suitable for amplifier of small line signal in digital audio items. It includes mute circuit which realizes very low turn-noise at power on/off.

The **NJM2790** is 6.5dB closed loop voltage gain, another version of 3.5dB is the **NJM2174**.

It is suitable for digital audio items with line out.

■ PACKAGE OUTLINE

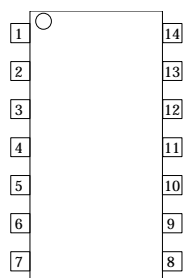


NJM2790V

■ FEATURES

- Operating Voltage 4.5 to 5.5V
- Operating Current 2.5mA typ. at $V^+=5V$
- Maximum Output Voltage 4dBV typ. at THD=0.1%
- Closed Loop Voltage Gain 3.5dB typ. at $f=1kHz$
2.5dB typ. at $f=100kHz$
- Mute Function -85dB typ.
- Supply Voltage Rejection Ratio 60dB typ.
- Bipolar Technology
- Package Outline SSOP14

■ PIN CONFIGURATION

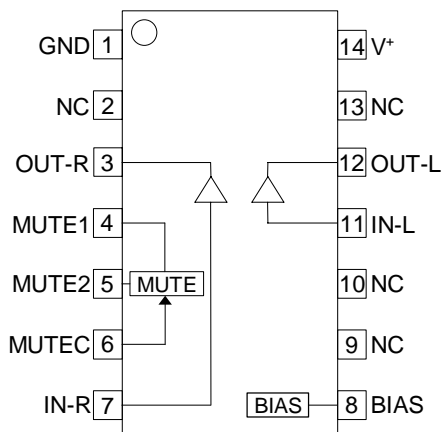


NJM2790V

PIN FUNCTION

| | |
|-----------|-----------|
| 1. GND | 8. BIAS |
| 2. NC | 9. NC |
| 3. OUT-R | 10. NC |
| 4. MUTE 1 | 11. IN-L |
| 5. MUTE 2 | 12. OUT-L |
| 6. MUTE C | 13. NC |
| 7. IN-R | 14. V^+ |

■ BLOCK DIAGRAM



NJM2790

■ ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

| PARAMETER | SYMBOL | RATINGS | UNIT |
|-----------------------------|------------------|-------------|------|
| Supply Voltage | V ⁺ | 7 | V |
| Power Dissipation | P _D | 300 | mW |
| Operating Temperature Range | T _{opr} | -20 to +75 | °C |
| Storage Temperature Range | T _{stg} | -40 to +125 | °C |

■ ELECTRICAL CHARACTERISTICS

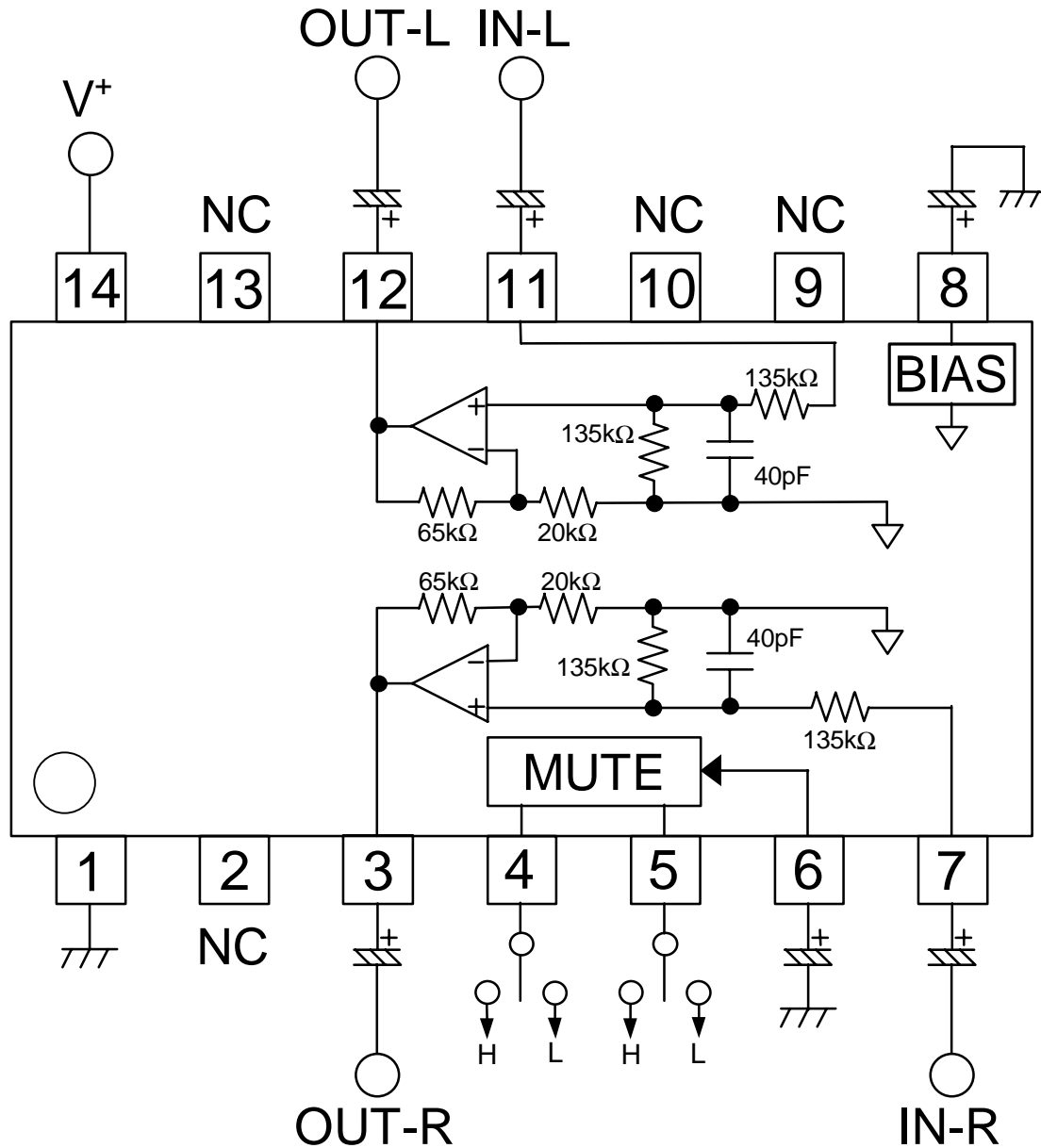
(V⁺=5V, V_{IN}=-3dBV, R_L=47kΩ, f=1kHz, Ta=25°C)

| PARAMETER | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|--------------------------------|------------------|---------------------------------|-------------|-------------|----------------|-----------------------------|
| Operating Voltage Range | V ⁺ | | 4.5 | 5.0 | 5.5 | V |
| Operating Current | I _{CC} | No signal | - | 2.5 | 4.5 | mA |
| Reference Voltage | V _{REF} | No signal | 2.0 | 2.3 | 2.6 | V |
| Closed Loop Voltage Gain1 | G _{V1} | | 5.5 | 6.5 | 7.5 | dB |
| Closed Loop Voltage Gain2 | G _{V2} | f=100kHz | -4.0 | -0.5 | -5.0 | dB |
| Channel Gain Balance | ΔG _V | | -0.5 | 0 | 0.5 | dB |
| Maximum Output Voltage | V _{OM} | THD=0.1% | 3 (1.41) | 4 (1.6) | - | dBV (V _{rms}) |
| Total Harmonic Distortion | THD | | - | 0.005 | 0.01 | % |
| Output Noise Voltage | V _{NO} | Rg=0Ω, A-Weighted | - | -92 (25) | -85 (56) | dBV (μV _{rms}) |
| Mute Level | MUTE | V _O /V _{IN} | - | -85 | -70 | dB |
| Channel Separation | CS | | 70 | 90 | - | dB |
| Supply Voltage Rejection Ratio | SVR | V _{RP} =-20dBV, Rg=0Ω | 35 | 50 | - | dB |
| High Level Input Voltage | V _{IH} | | 2.0 | - | V ⁺ | V |
| Low Level Input Voltage | V _{IL} | | 0 | - | 0.3 | V |

■ CONTROL TERMINAL

| MUTE1(4pin) | MUTE2(5pin) | STATUS |
|-------------|-------------|------------------------------------|
| L | L | IC output no signal. |
| L | H | IC output no signal. |
| H | L | IC set up 6.5dB typ. voltage gain. |
| H | H | IC output no signal. |

■ TYPICAL APPLICATION



[CAUTION]
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