

2Vrms Ground Referenced Stereo Line Amplifier with LPF

■ GENERAL DESCRIPTION

The **NJU72014** is an audio line Amplifier . It can swing 2Vrms (5.6V peak-to-peak) signal at 3.3V operating voltage.

Ground-referenced outputs eliminate output coupling capacitor. The pop noise suppression circuit removes a pop noise at the power-on and power-off.

It is suitable for audio line interface of audio equipment which does not have over 9V regulator.

■ PACKAGE OUTLINE



NJU72014RB2

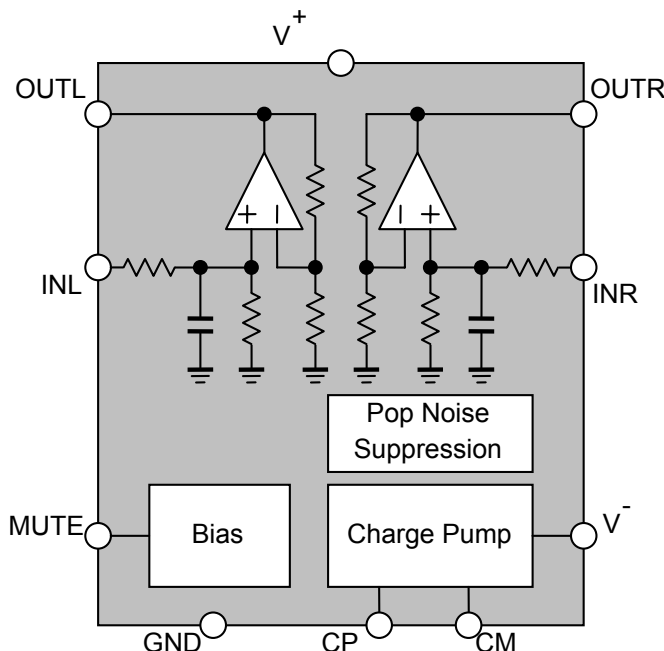
■ APPLICATIONS

- Audio applications requiring 2Vrms outputs

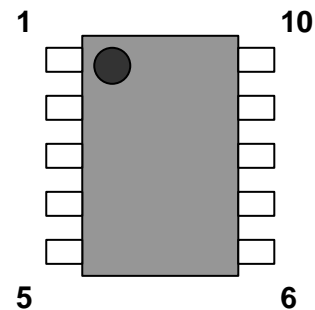
■ FEATURES

- Operating Voltage +2.7 to +3.6V
- Operating Current $I_{DD}=4.5\text{mA typ. at } V^+=3.3\text{V, } R_L=47\text{k}\Omega, \text{ No Signal}$
- Output Coupling Capacitor-less
- Pop Noise Suppression Circuit
- 2nd order LPF
- C-MOS Technology
- Package Outline MSOP10 (TVSP10)

■ BLOCK DIAGRAM



■ PIN CONFIGURATION



No.	Symbol	Function
1	INL	Lch Input
2	OUTL	Lch Output
3	V+	V+ Power Supply
4	CP	Flying Capacitor Positive Terminal
5	CN	Flying Capacitor Negative Terminal
6	V-	V- Power Supply
7	MUTE	Mute / Pop Noise Suppression
8	GND	Ground
9	OUTR	Rch Output
10	INR	Rch Input

■ ABSOLUTE MAXIMUM RATING (Ta=25°C)

PARAMETER	SYMBOL	RATING	UNIT
Supply Voltage	V ⁺	+4	V
Power Dissipation	P _D	530 ^(Note1)	mW
Maximum Input Voltage	V _{IMAX}	-V ⁺ -0.3 ~ V ⁺ +0.3	V
Operating Temperature Range	Topr	-40 ~ +85	°C
Storage Temperature Range	Tstg	-40 ~ +125	°C

(Note1) EIA/JEDEC STANDARD Test board (76.2x114.3x1.6mm, 2layer, FR-4) mounting

■ RECOMMENDED OPERATING CONDITIONS

(Ta=25°C unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Voltage	V ⁺		2.7	3.3	3.6	V

■ ELECTRICAL CHARACTERISTICS

(Ta=25°C, V⁺=3.3V, f=1kHz, Vin=0.6Vrms, Mute=OFF, R_L=47kΩ unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Current	I _{DD}	No signal	-	4.5	10	mA
Output Gain	G _V		10	10.5	11	dB
Output Gain Error	ΔG _V		-0.5	0	0.5	dB
Maximum Output Voltage Level	V _{OMAX}	THD=1%	-	2.3	-	Vrms
Mute Level	V _{MUTE}	Rg=0Ω, Mute=ON	-	-110	-	dB
Equivalent Input Noise Voltage	V _{NO}	Rg=0Ω, BW:400Hz-22kHz	-	-106	-	dB
Total Harmonic Distortion	THD	BW:400Hz-22kHz	-	0.003	-	%
Channel Separation	CS	Rg=600Ω	80	-	-	dB
Cut-off Frequency	f _C	2 nd order LPF	100	150	200	kHz
Output Offset Voltage	V _{OS}	Rg=0Ω	-	1	5	mV
Power Supply Rejection Ratio	PSRR	Vripple=1kHz / 100mVrms	-	50	-	dB
Output Impedance	R _{OUT}		-	300	-	Ω

■ CONTROL CHARACTERISTICS

(Ta=25°C, V⁺=3.3V, R_L=47kΩ unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Mute terminal High	MuteH	Mute=OFF	0.8V ⁺	-	V ⁺	V
Mute terminal Low	MuteL	Mute=ON	0	-	0.2V ⁺	V