

Monaural Microphone Amplifier

■ GENERAL DESCRIPTION

The **NJU7907A** is a monaural microphone amplifier IC including regulator for microphone capcel, pre-amplifier and line amplifier.

The **NJU7907A** features low consumption current, wide dynamic range, wide operating voltage range, wide operating temperature and urtla small and thin package.

It is suitable for microphone module, headset for conference system, automotive microphone for eCall, and any portable applications.

■ PACKAGE OUTLINE



NJU7907AUC4

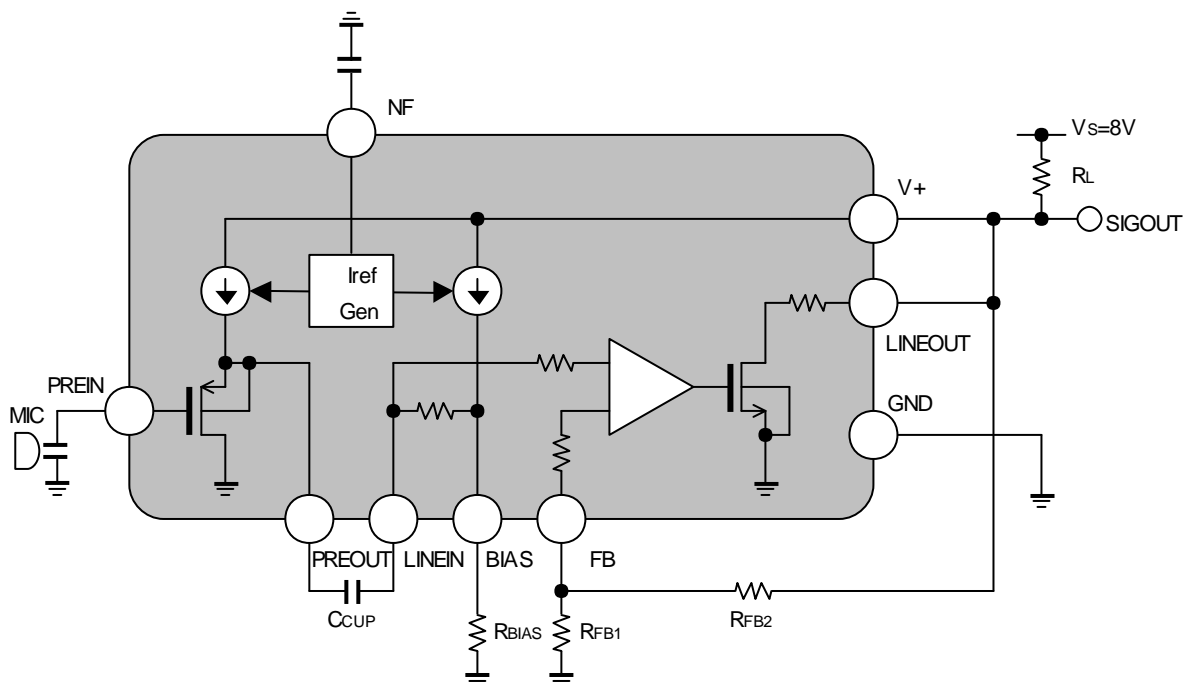


NJU7907ARB2

■ FEATURES

- Operating Voltage 4.5 to 16V
- Low Consumption Current
- Wide Dynamic Range
- Wide Operating Temperature
- CMOS Technology
- Package Outline EPFFP10-C4, MSOP10(TVSP10)

■ BLOCK DIAGRAM



NJU7907A

■ ABSOLUTE MAXIMUM RATING (Ta=25°C)

PARAMETER	SYMBOL	RATING	UNIT
Supply Voltage	V ⁺	18	V
Power Dissipation	P _D	340(EPFFP10-C4) / 470(MSOP10) NOTE: EIA/JEDEC STANDARD Test board (76.2x114.3x1.6mm, 2layer, FR-4) mounting	mW
Maximum Input Voltage	V _{imax}	0.3	V _{rms}
Operating Temperature Range	T _{opr}	-40 to +85	°C
Storage Temperature Range	T _{stg}	-40 to +125	°C

■ ELECTRICAL CHARACTERISTICS (Ta=25°C, V_S=8V, G_V=37.8dB, f=1kHz unless otherwise specified)

◆DC CHARACTERISTICS (R_g=0Ω, R_L=680Ω unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Voltage	V _S		4.5	8.0	16.0	V
Supply Current1	I _{DD1}	No Signal	-	4.85	6.0	mA
Supply Current2	I _{DD2}	R _{FB1} =0Ω, R _{FB2} =∞	-	220	320	μA
Supply Current3	I _{DD3}	R _L =0Ω	-	28.0	50.0	mA
Reference Current	I _{ref}	No Signal	8.0	9.0	10.0	μA
Output DC Voltage	V _{OUT}	No Signal, LINEOUT	-	4.7	-	V

◆PreAmp CHARACTERISTICS (C_{IN}=1nF, R_L=100kΩ unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Voltage Gain	G _V	V _{in} =50mV _{rms}	-0.8	-0.5	-0.2	dB
Frequency Response	ΔG _f	1kHz-10kHz	-0.5	0	0.5	dB
Input Capacitance	C _i		-	1.0	-	pF
Input Resistance	R _i		200	-	-	MΩ
Total Harmonic Distortion	THD	V _{in} =100mV _{rms} BW=400Hz to 30kHz	-	0.1	0.5	%
Output Noise Voltage 1	V _{NO1}	Weighted-A, C _{NF} =None	-	-108	-103	dBV
Output Noise Voltage 2	V _{NO2}	Weighted-A, C _{NF} =1nF	-	-112	-108	dBV

◆LineAmp CHARACTERISTICS (R_g=0Ω, R_L=680Ω unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Maximum Output Voltage	V _{OM}	OUTPUT, THD=3%	1.8	2.1	-	V _{rms}
Voltage Gain	G _V	V _{in} =10mV _{rms}	37.3	37.8	38.3	dB
Total Harmonic Distortion	THD	V _o =1.6V _{rms} BW=400Hz to 30kHz	-	0.1	0.5	%
Output Noise Voltage	V _{NO}	Weighted-A	-	-78	-72	dBV
Output Resistance	R _o		-	5	10	Ω
Input Resistance	R _i		60	100	130	kΩ
Ripple Rejection	RR	V _{Ripple} =0.5V _{rms} PREIN→LINEOUT	25	40	-	dB

[CAUTION]
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