

## PRE & POWER AMPLIFIER WITH ALC

### ■ GENERAL DESCRIPTION

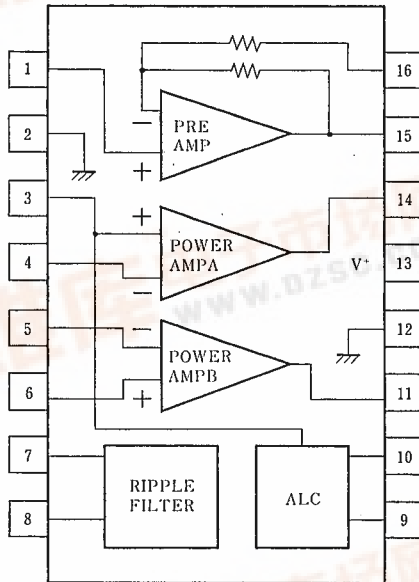
NJM2128 is a pre & power amplifier with ALC for micro and compact cassette recorders. It contains pre-amplifier, ALC circuit, power amplifiers, and ripple filter.

The pre-amplifier amplifies the signal come from magnetic head. The ALC circuit limits the input signal to optimize level in recording. The power amplifiers drive a speaker in play back and the magnetic head in recording. The ripple filter stabilizing the supply voltage to the internal pre-amplifier and an external condenser microphone.

### ■ FEATURES

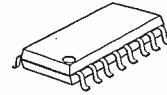
- Operating Voltage 1.8V ~ 6.0V
- Automatic Level Control (ALC) Limit Level=100mVrms typ.(f=1kHz)
- Ripple Filter R.R. (Ripple Rejection)=47dB typ.(f=200Hz, C=47 μF)
- Bipolar Technology
- Package Outline DMP16

### ■ PIN CONFIGURATION



NJM2128M

### ■ PACKAGE OUTLINE



NJM2128M

### PIN FUNCTION

1. PRE+IN
2. SGND
3. POWER+INA
4. POWER-INA
5. POWER-INB
6. POWER+INB
7. RFOUT
8. RFIN
9. ALCIN
10. TC
11. POWER OUT B
12. POWER GND
13. V+
14. POWER OUT A
15. PREOUT
16. PRE-IN

# NJM2128

## ■ ABSOLUTE MAXIMUM RATINGS

( $T_a=25^\circ\text{C}$ )

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	$V^+$	+7.0	V
PA Output Peak Current	$I_{op}$	1	A
PA Input Voltage Range	$V_{IN}$	$\pm 0.4$	V
Power Dissipation	$P_D$	(DMP16) 300	mW
Operating Temperature Range	$T_{opr}$	$-20 \sim +75$	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	$-40 \sim +125$	$^\circ\text{C}$

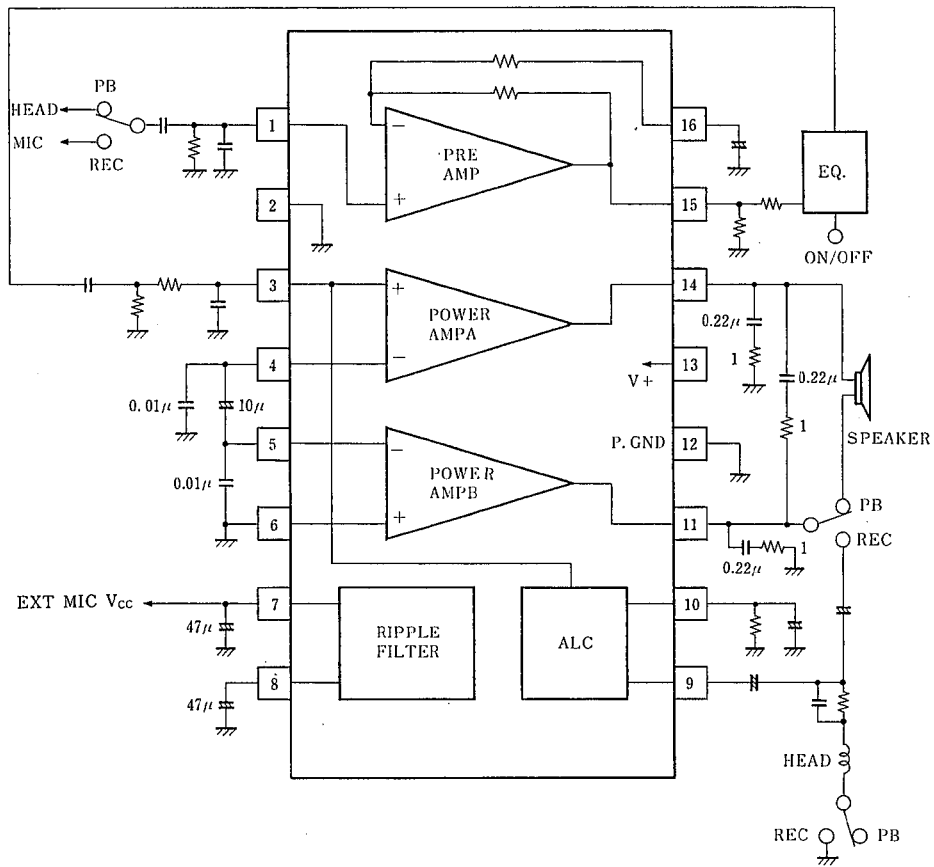
## ■ ELECTRICAL CHARACTERISTICS

( $V^+=3\text{V}$ ,  $T_a=25^\circ\text{C}$ )

PARAMETER	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
Operating Voltage	$V^+$		1.8	3.0	6.0	V
Operating Current	$I_{CC}$	$R_L=\infty$	—	9	14	mA
<b>Power Amp</b>						
Input Bias Current	$I_B$		—	140	—	nA
Output Offset	$\Delta V_o$	$R_L=8\ \Omega$	—	0	50	mV
Output Power	$P_O$	THD=10%, $f=1\text{kHz}$ , $V^+=4\text{V}$ , $R_L=8\ \Omega$	300	400	—	mW
(Note1)	$P_O$	THD=10%, $f=1\text{kHz}$ , $V^+=3\text{V}$ , $R_L=4\ \Omega$	150	220	—	mW
T.H.D.	THD	$V^+=4\text{V}$ , $R_L=8\ \Omega$ , $P_O=200\text{mW}$ , $f=1\text{kHz}$	—	0.2	—	%
Close Loop V-Gain	$A_{v1}$	$f=1\text{kHz}$	41	44	47	dB
Equivalent Input Noise Voltage	$V_{N1}$	$R_S=10\text{k}\ \Omega$ , $R_L=4\ \Omega$ , A curve.	—	2	—	$\mu\text{V}_{rms}$
	$V_{N2}$	$R_S=10\text{k}\ \Omega$ , $R_L=4\ \Omega$ , BW=22Hz~22kHz	—	2.5	—	$\mu\text{V}_{rms}$
Ripple Rejection	RR	$f=100\text{Hz}$	—	47	—	dB
Cut off Frequency	$f_{H1}$	$A_v=-3\text{dB}$ from $f=1\text{kHz}$ , $R_L=4\ \Omega$ , $P_O=0.1\text{W}$	—	80	—	kHz
<b>Pre Amp</b>						
Output Voltage	$V_o$	$f=1\text{kHz}$ , THD=1%	0.1	0.2	—	Vrms
Voltage Gain	$A_v$	$f=1\text{kHz}$	35	38	41	dB
Output Noise Voltage	$V_{NO}$	$R_S=3.3\text{k}\ \Omega$	—	0.1	0.4	mVrms
<b>ALC</b>						
Limit Level	ALC	$f=1\text{kHz}$	100	200	300	mVrms
<b>Ripple Filter</b>						
Output Voltage	$V_o$	$R_L=2\text{k}\ \Omega$	$V^+-0.24$	$V^+-0.2$	$V^+-0.16$	V
Ripple Rejection	RR	$f=200\text{Hz}$ , $C=47\ \mu\text{F}$	40	47	54	dB

(Note 1) at on PC Board

## ■ TYPICAL APPLICATIONS



# NJM2128

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## MEMO

**[CAUTION]**

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