LOW VOLTAGE POWER AMPLIFIER

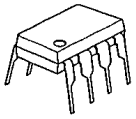
■ GENERAL DESCRIPTION

NJM2070 is a power amplification monolithic IC of wide Operating voltage range. It is applied for audio power amplifier in portable radio and handy cassette player.

■ FEATURES

- Operating Voltage (1.8V～15V)
- Low Operating Current 4mA typ : V^+=6V)
- Package Outline DIP8, DMP8
- Bipolar Technology

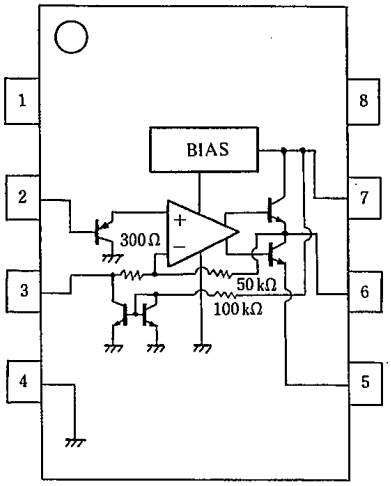
■ PACKAGE OUTLINE



NJM2070D

NJM2070M

■ PIN CONFIGURATION



NJM2070D
NJM2070M

PIN FUNCTION
1. NC
2. +INPUT
3. −INPUT
4. GND
5. GND
6. OUTPUT
7. V^+
8. NC

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■ ABSOLUTE MAXIMUM RATINGS

(Ta=25℃)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V^+	15	V
Output Peak Current	I_{OP}	1	A
Power Dissipation	P_D	(DIP8) 700 (DMP8) 500 (note)	mW
Operating Temperature Range	T_{opr}	−40～+85	℃
Storage Temperature Range	T_{stg}	−40～+125	℃

(note) At on PC board

■ ELECTRICAL CHARACTERISTICS

(V^+=6V, Ta=25℃)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Voltage	V^+		1.8	—	15	V
Output Voltage	V_O		—	2.7	—	V
Operating Current	I_{CC}	$R_L=\infty$	—	4	7	mA
Input Bias Current	I_{IB}		—	200	—	nA
Output Power		THD=10%, f=1kHz				
	P_O	V^+=6V, R_L=4Ω	0.5	0.6	—	W
	P_O	V^+=4.5V, R_L=4Ω	—	0.32	—	W
	P_O	V^+=3V, R_L=4Ω	—	120	—	mW
	P_O	V^+=2V, R_L=4Ω	—	30	—	mW
		THD=1%, f=1kHz				
	P_O	V^+=6V, R_L=4Ω	—	500	—	mW
	P_O	V^+=4.5V, R_L=4Ω	—	250	—	mW
Total Harmonic Distortion	THD	P_O=0.4W, R_L=4Ω, f=1kHz	—	0.25	—	%
Voltage Gain	A_V	f=1kHz	41	44	47	dB
Input Impedance	Z_{IN}	f=1kHz	100	—	—	kΩ
Equivalent Input Noise Voltage	V_{NI1}	R_S=10kΩ, A Curve	—	2.5	—	μV
	V_{NI2}	R_S=10kΩ, B=22Hz~22kHz	—	3	—	μV
Ripple Rejection	RR	f=100Hz, C_X=100μF	24	30	—	dB
Cut Off Frequency	f_H	A_V=−3dB from f=1kHz R=8Ω, P_O=250mW	—	200	—	kHz

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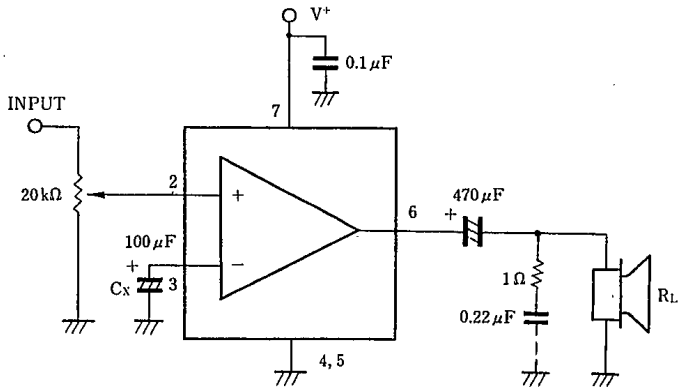
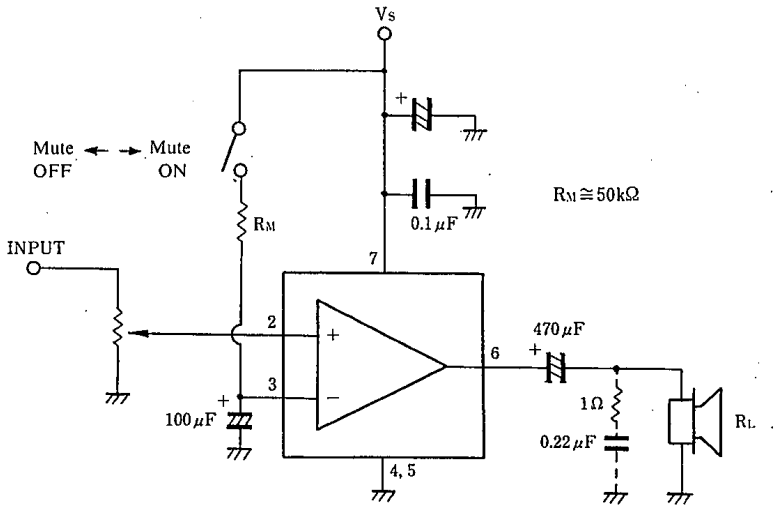
■ TYPICAL APPLICATION AND TEST CIRCUIT



■ OSCILLATION PREVENTION

Put in series a 1Ω resistor and a 0.22 μF capacitor on parallel to load, if the load is speaker. Recommend putting in parallel between pin 4 and pin 7, 0.1 μF and more than 100 μF capacitors with good high frequency characteristics near to the ground and supply voltage pins on parallel.

■ MUTING CIRCUIT



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