

LOW VOLTAGE POWER AMPLIFIER

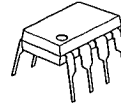
■ GENERAL DESCRIPTION

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<sup>+</sup>=6V)
- Package Outline DIP8, DMP8
- Bipolar Technology

■ PACKAGE OUTLINE

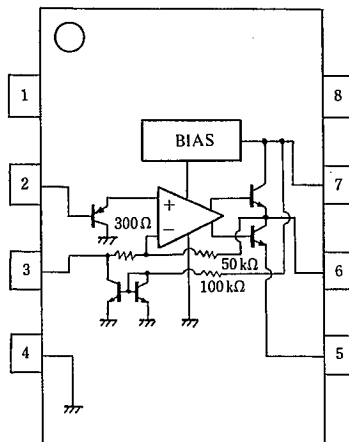


NJM2070D



NJM2070M

■ PIN CONFIGURATION



NJM2070D  
NJM2070M

PIN FUNCTION

1. NC
2. +INPUT
3. -INPUT
4. GND
5. GND
6. OUTPUT
7. V<sup>+</sup>
8. NC

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## ■ ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V*	15	V
Output Peak Current	I <sub>OP</sub>	1	A
Power Dissipation	P <sub>D</sub>	(DIP8) 700 (DMP8) 500 (note)	mW
Operating Temperature Range	T <sub>opr</sub>	-40 ~ +85	°C
Storage Temperature Range	T <sub>stg</sub>	-40 ~ +125	°C

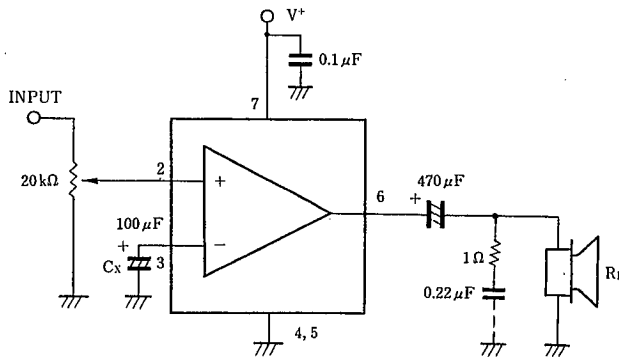
(note) At on PC board

## ■ ELECTRICAL CHARACTERISTICS

(V\*=6V, Ta=25°C)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Voltage	V*		1.8	—	15	V
Output Voltage	V <sub>O</sub>		—	2.7	—	V
Operating Current	I <sub>CC</sub>	R <sub>L</sub> = ∞	—	4	7	mA
Input Bias Current	I <sub>IB</sub>		—	200	—	nA
Output Power	P <sub>O</sub>	THD=10%, f=1kHz				
	P <sub>O</sub>	V*=6V, R <sub>L</sub> =4Ω	0.5	0.6	—	W
	P <sub>O</sub>	V*=4.5V, R <sub>L</sub> =4Ω	—	0.32	—	W
	P <sub>O</sub>	V*=3V, R <sub>L</sub> =4Ω	—	120	—	mW
	P <sub>O</sub>	V*=2V, R <sub>L</sub> =4Ω	—	30	—	mW
	P <sub>O</sub>	THD=1%, f=1kHz				
	P <sub>O</sub>	V*=6V, R <sub>L</sub> =4Ω	—	500	—	mW
	P <sub>O</sub>	V*=4.5V, R <sub>L</sub> =4Ω	—	250	—	mW
Total Harmonic Distortion	THD	P <sub>O</sub> =0.4W, R <sub>L</sub> =4Ω, f=1kHz	—	0.25	—	%
Voltage Gain	A <sub>v</sub>	f=1kHz	41	44	47	dB
Input Impedance	Z <sub>IN</sub>	f=1kHz	100	—	—	kΩ
Equivalent Input Noise Voltage	V <sub>N11</sub>	R <sub>S</sub> = 10kΩ, A Curve	—	2.5	—	μV
	V <sub>N12</sub>	R <sub>S</sub> = 10kΩ, B=22Hz~22kHz	—	3	—	μV
Ripple Rejection	RR	f=100Hz, C <sub>X</sub> =100μF	24	30	—	dB
Cut Off Frequency	f <sub>H</sub>	A <sub>v</sub> = -3dB from f=1kHz R=8Ω, P <sub>O</sub> =250mW	—	200	—	kHz

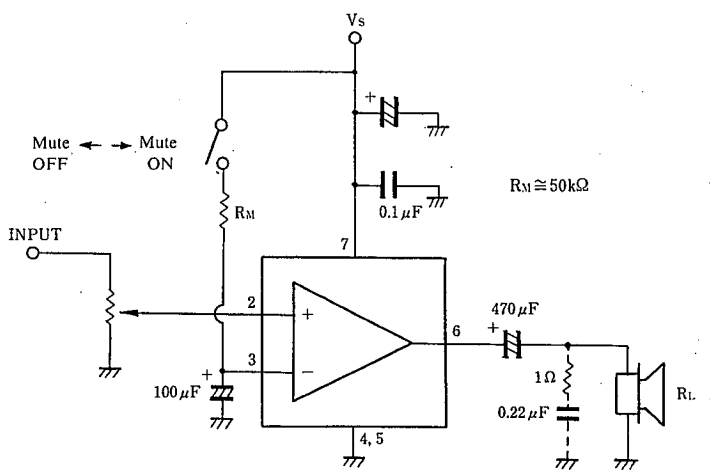
## ■ TYPICAL APPLICATION AND TEST CIRCUIT



## ■ 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



## MEMO

[CAUTION]

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