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New Japan Radio Co.,Ltd.

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LOW VOLTAGE POWER AMPLIFIER

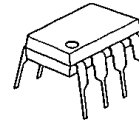
■ GENERAL DESCRIPTION

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

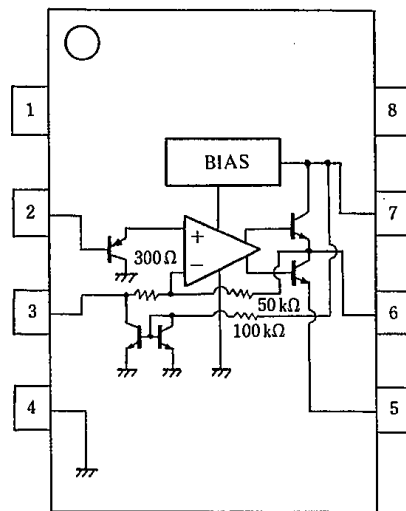


NJM2070D



NJM2070M

■ PIN CONFIGURATION



PIN FUNCTION

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

NJM2070D
NJM2070M

■ ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

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
Input Voltage Range	V _{IN}	±0.4	V
Operating Temperature Range	T _{opr}	-40~+85	°C
Storage Temperature Range	T _{stg}	-40~+125	°C

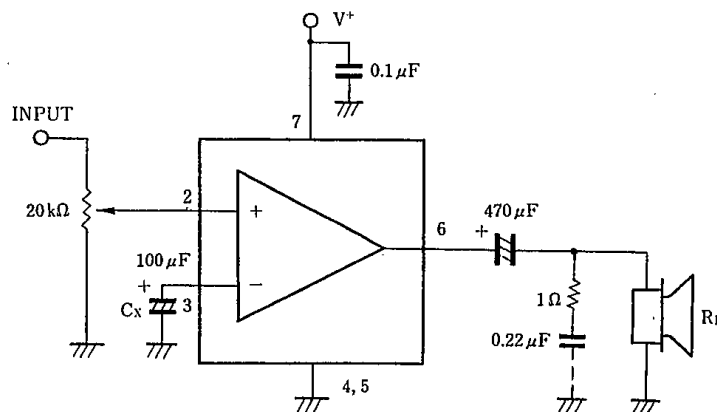
(note) At on PC board

■ 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 _O		—	2.7	—	V
Operating Current	I _{CC}	R _L = ∞	—	4	7	mA
Input Bias Current	I _{IB}		—	200	—	nA
Output Power	P _O	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
	P _O	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

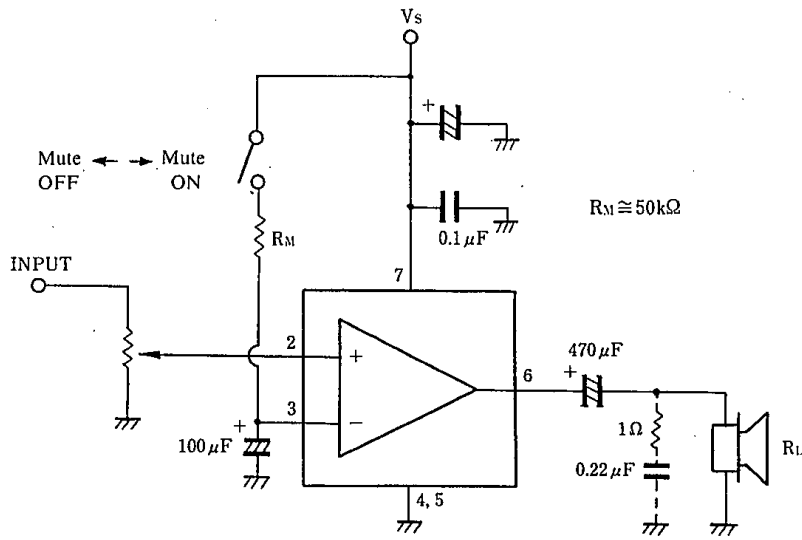
■ TYPICAL APPLICATION AND TEST CIRCUIT



■ 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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