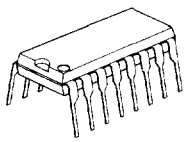
DUAL HEAD-PHONE DRIVER

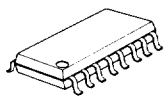
NJM2066

NJM2066 is dual headphone driver with low quiescent current,small number of external parts and excellent ripple rejection for motor influence.The NJM2066 includes ripple filter, muting circuit,power off circuit and operating supply voltage is wide as 1.8 ~ 5V.

■ Package Outline



NJM2066D



NJM2066M

■ Features

- Low Quiescent Current I_{CC}=7mA Typ. atV^+=3V
- Internal Ripple Filter, Muting Circuit, Power Off Circuit
- Small Parts Count
- 16 Pin Package Dual-in-line and Miniflat Type

■ Absolute Maximum Ratings (Ta=25°C)

Supply Voltage	V^+	7V
Output Current	I_O	160mA/ch
Filter Output Current	I_O	10mA
Power Dissipation	P_D (D-Type)	700mW
	(M-Type)	700mW (note)
Operating Temperature Range	T_{opr}	−20~75°C
Storage Temperature Range	T_{stg}	−40~125°C

(note) At on PC board.

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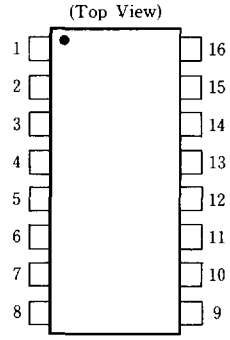
■ Connection Diagram

D,M-Type
(Top View)



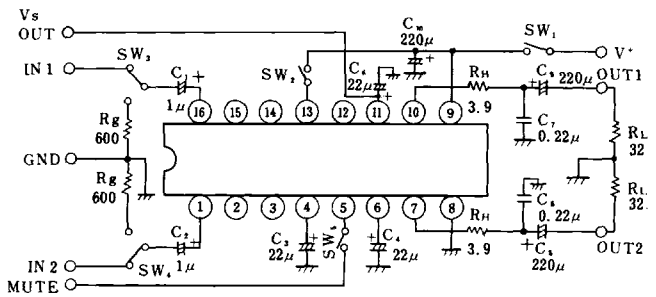
PIN FUNCTION

1. INPUT 2	9. V^+
2. NF 2	10. OUT 1
3. V_B 2	11. V_R
4. BYPASS 2	12. BASE
5. MUTE	13. $PW_{ON/OFF}$
6. BYPASS 1	14. V_B 1
7. OUT 2	15. NF 1
8. GND	16. INPUT 1

■ Electrical Characteristies (Ta=25°C, V^+=3V, R_g=600Ω, f=1kHz, R_H=3.9Ω, R_l=32Ω)

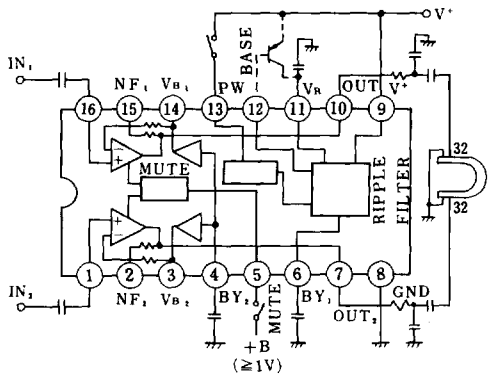
Parameter	Symbol	Test Condition	Min.	Typ	Max	Unit
Quiescent Current at No Signal	I_{CC1}	V_{IN}=0	—	7	12	mA
Quiescent Current at No Signal	I_{CC2}	V_{IN}=0, SW_2: OFF	—	1	10	μA
Output Power	P_{O1}	THD=10%	20	30	—	mW
Output Power	P_{O2}	R_L=16Ω, THD=10%	—	37	—	mW
Total Harmonic Distortion	THD	P_O=10mW/ch	—	0.2	1.0	%
Voltage Gain	Av	V_{IN}=−40dBm	28.5	30.5	32.5	dB
Channel Balance	ΔAv	V_{IN}=−40dBm	—	0	±1	dB
Crosstalk	CT	V_{OUT}=0dBm, $CH_1 \rightarrow CH_2$	45	65	—	dB
Headphone Amp. Ripple Rejection	RR_1	f=1kHz, V_{IN}=−20dBm	30	45	—	dB
Ripple Filter Ripple Rejection	RR_2	f=100Hz, V_{IN}=−20dBm	—	40	—	dB
Output Noise Voltage	V_{NO}	BW=20Hz~20kHz	—	0.06	0.2	mVrms
Input Resistance	R_{IN}	f=1kHz	15	20	25	kΩ
Ripple Filter Output Voltage	V_{S1}	V^+=2V, Ir=10mA	1.45	1.6	—	V
Ripple Filter Output Voltage	V_{S2}	V^+=3V, Ir=10mA	2.1	2.3	2.5	V
Ripple Filter Output Voltage	V_{S3}	V^+=4.5V, Ir=10mA	—	3.4	—	V
Muting Attenuation	ATT	V_M=3V (0dB=240mVrms)	60	80	—	dB
Muting Input Voltage	V_M	ATT≧50dB (0dB=240mVrms)	—	0.7	1.0	V
Muting Input Current	I_M	ATT≧50dB (0dB=240mVrms)	—	35	—	μA
Ripple Filter Base Current	I_B		—	0.05	—	mA

■ Test Circuit



note 1: R_H is Protection Resistor
2: C_6 and C_7 is polyester film or tantalum capacitor.
3: C_5 is tantalum capacitor.

■ Application Circuit

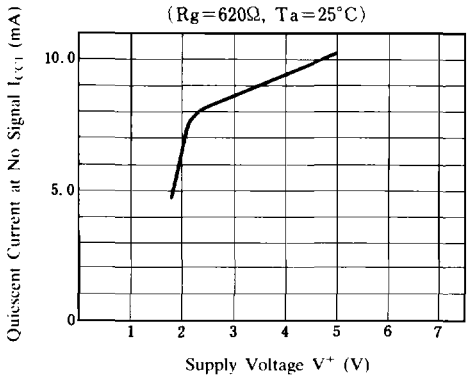


note: Mount a PNP transistor externally as shown by a dotted line, if a ripple filter output current of higher than 10mA is required.

■ Typical Characteristics

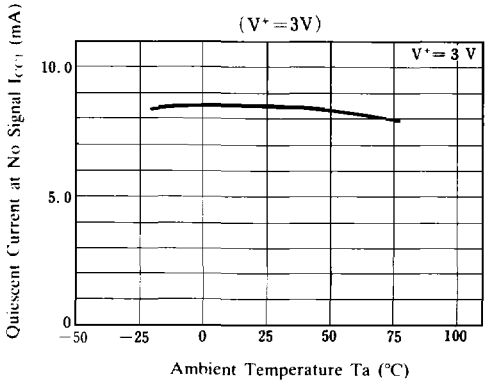
Quiescent Current at No Signal vs. Supply Voltage

(Rg=620Ω, Ta=25°C)



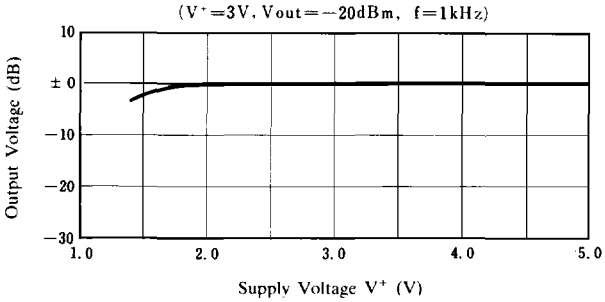
Quiescent Current at No Signal vs. Ambient Temperature

(V^+=3V)



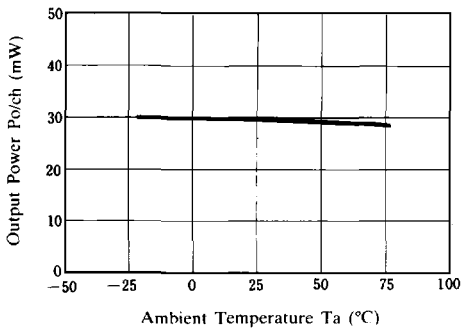
Output Voltage vs. Supply Voltage

(V^+=3V, Vout=−20dBm, f=1kHz)



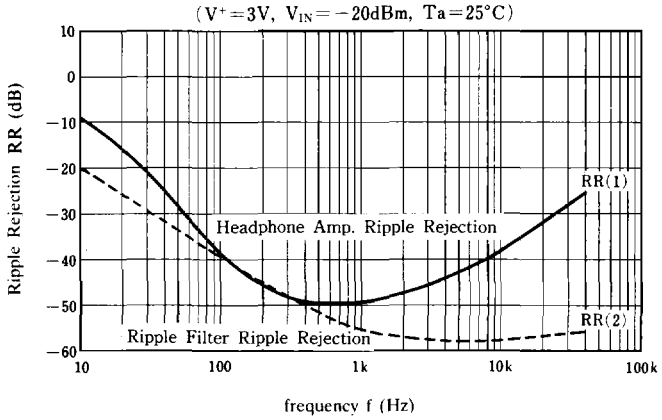
Power Output vs. Ambient Temperature

(V^+=3V, R_L=32Ω, f=1kHz, THD=10%)



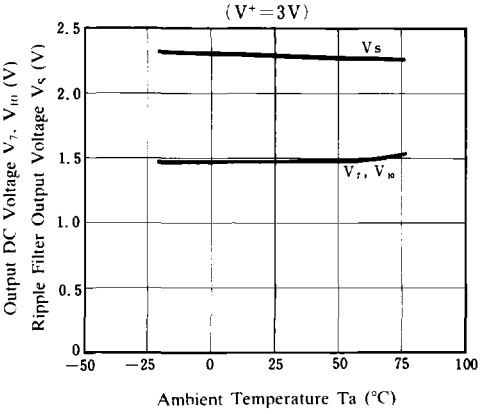
Ripple Rejection vs. frequency

(V^+=3V, V_{IN}=−20dBm, Ta=25°C)



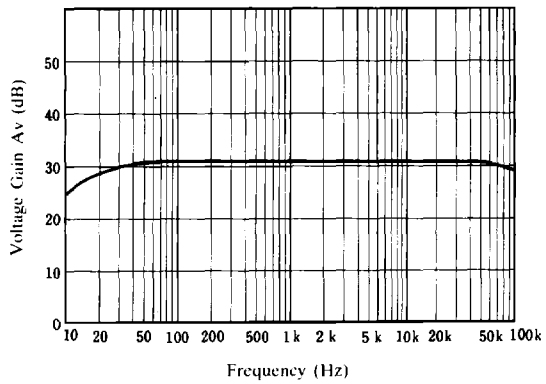
Output DC Voltage Ripple Filter Output Voltage vs. Temperature

(V^+=3V)



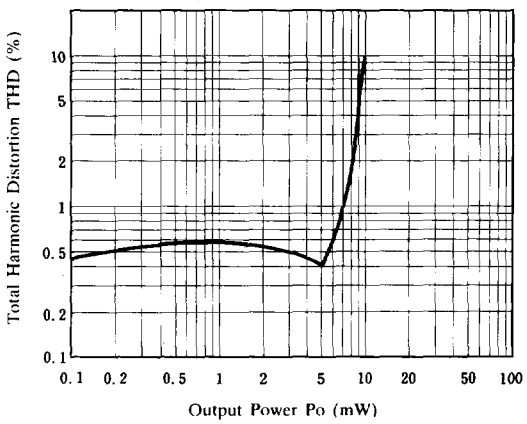
Voltage Gain vs. Frequency

(V^+=3V, V_{IN}=−40dBm, Ta=25°C)



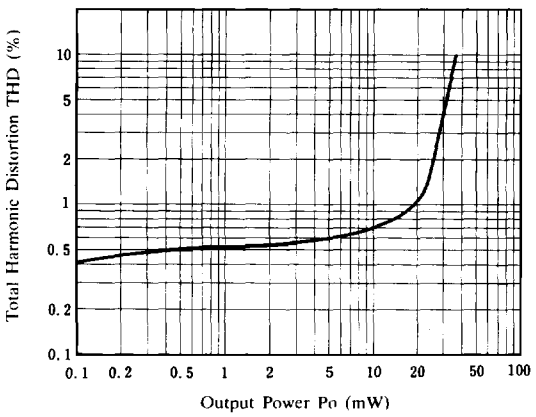
Total Harmonic Distortion vs. Output Power

(V^+=1.8V, R_L=32Ω, f=1kHz, Ta=25°C)



Total Harmonic Distortion vs. Output Power

(V^+=3V, R_L=16Ω, f=1kHz, Ta=25°C)



Total Harmonic Distortion vs. Output Power

(V^+=3V, R_L=32Ω, f=1kHz, Ta=25°C)