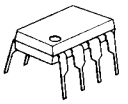
NJM2100

NJM 2100 is a low supply voltage (±1.0 V min.) and low saturation output voltage (±2.0 V p-p at supply voltage ± 2.5 V) operational amplifier. It is applicable to handy type CD, radio cassette CD, and portable DAT, that are digital audio apparatus which require the 5 V single supply operation and high output voltage.

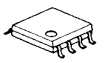
■ Absolute Maximum Ratings

Supply Voltage	V^+/V^-	±3.5V
Differential Input Voltage	V_{ID}	±7V
Power Dissipation	P_D (D-type)	500mW
	(M-type)	300mW
	(L-type)	800mW
Operational Temperature Range	T_{opr}	−20～+75°C
Storage Temperature Range	T_{stg}	−40～+125°C

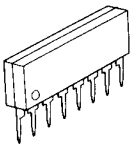
■ Package Outline



NJM2100D

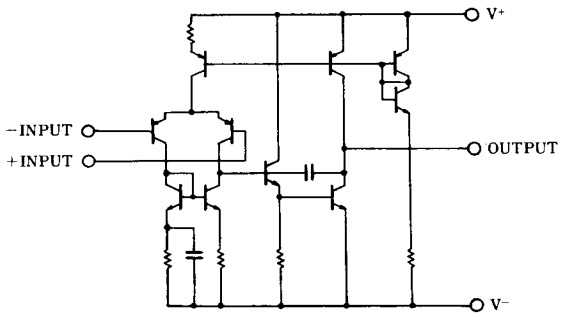


NJM2100M



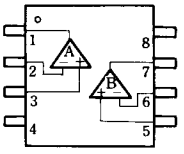
NJM2100L

■ Equivalent Circuit (1/2 shown)

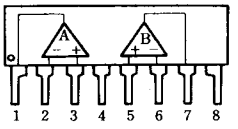


■ Connection Diagram

D, M-Type
(Top View)



L-Type



PIN FUNCTION
1. A OUTPUT
2. A −INPUT
3. A +INPUT
4. V^-
5. B +INPUT
6. B −INPUT
7. B OUTPUT
8. V^+

■ Electrical Characteristics

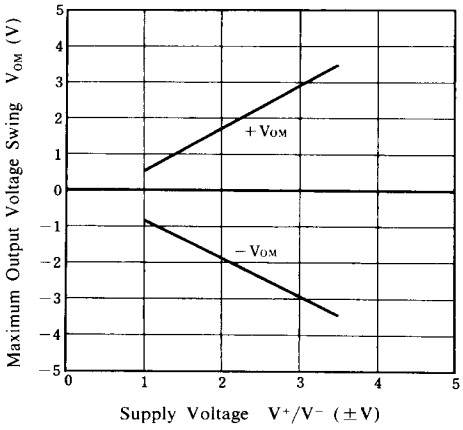
Parameters	Symbols	Test Conditions	Min.	Typ.	Max.	Units
Input Offset Voltage	V_{IO}	$R_S \leqq 10k\Omega$	—	1	6	mV
Input Bias Current	I_{IB}		—	100	300	nA
Large Signal Voltage Gain	A_V	$R_L \geqq 10k\Omega$	60	80	—	dB
Maximum Output Voltage Swing	V_{OM}	$R_L \geqq 2.5k\Omega$	±2	±2.2	—	V
Input Common Mode Voltage Range	V_{ICM}		±1.5	—	—	V
Common Mode Rejection Ratio	CMR		60	—	—	dB
Supply Voltage Rejection Ratio	SVR		60	—	—	dB
Supply Current	I_{CC}	$V_{IN}=0$, $R_L=\infty$	—	3.5	5	mA
Slew Rate	SR	$A_V=1$, $V_{IN}=\pm 1V$	—	4	—	V/μS
Gain-Bandwidth product	GB	f=10kHz	—	12	—	MHz

(Note 1) Applied circuit voltage gain is desired to be operated within the range of 3 dB to 30 dB.
(Note 2) Special care being required for input common mode voltage range and the oscillation due to the capacitive load when operating on voltage follower.
(Note 3) Special care being required for the oscillation, yet having the gain when the supply voltage is applied at more than ±2.5 V (single supply voltage 5 V).

■ **Typical Characteristics**

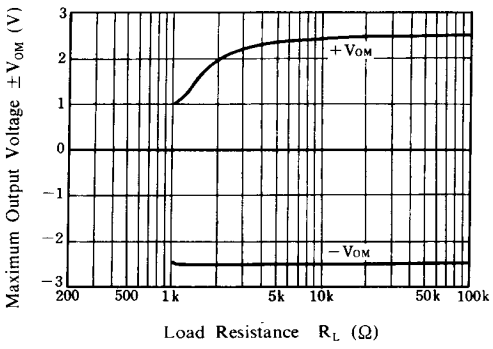
Maximum Output Voltage Swing vs. Supply Voltage

($R_L = 2.5k\Omega$, Ta = 25°C)



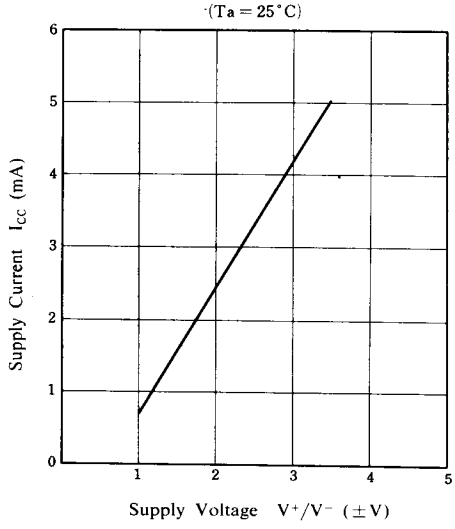
Maximum Output Voltage Swing vs. Load Resistance

($V^+/V^- = \pm 2.5V$, Ta = 25°C)



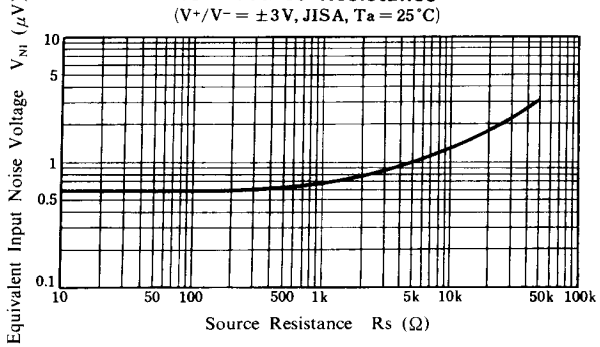
Supply Current vs. Supply Voltage

(Ta = 25°C)



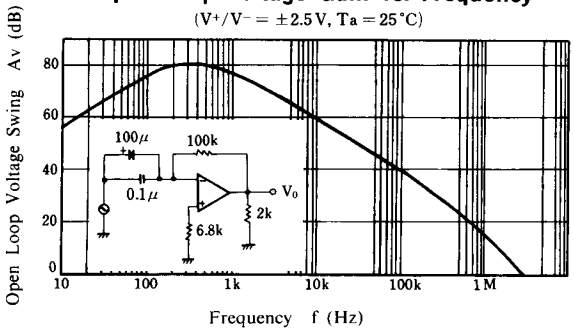
Equivalent Input Noise Voltage vs. Source Resistance

($V^+/V^- = \pm 3V$, JISA, Ta = 25°C)



Open Loop Voltage Gain vs. Frequency

($V^+/V^- = \pm 2.5V$, Ta = 25°C)



Total Harmonic Distortion vs. Output Voltage

($V^+/V^- = \pm 3V$, $R_L = 4k\Omega$, Gain = 10dB, Ta = 25°C)