

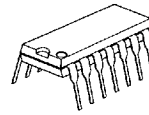
NJM2112

The NJM2112 is low supply Voltage ($\pm 1.0\text{V}$ min.) and low saturation output voltage ($\pm 2.0\text{V}$ p-p supply at supply voltage $\pm 25\text{V}$) operational amplifier. It is applicable to HANDY TYPE CD, RADIO CASSETTE CD, and PORTABLE DAT, that are digital audio apparatus which require the 5V single supply operation and high output voltage. The NJM2112 is quad operational amplifier. Each amplifier of the NJM2112 has the same electrical characteristic of the NJM2115.

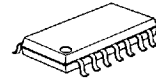
Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

Supply Voltage	V^+/V^-	$\pm 7.0\text{V}$
Differential Input Voltage	V_{ID}	$\pm 14\text{V}$
Power Dissipation	P_D (D-type)	500mW
	P_D (M, V-type)	300mW
Operatin Temperature Range	T_{opr}	$-20 \sim +75^\circ\text{C}$
Storage Temperature Range	T_{stg}	$-40 \sim 125^\circ\text{C}$

Package Outline



NJM2112D

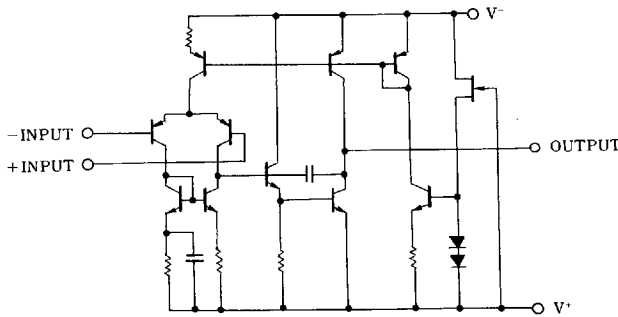


NJM2112M



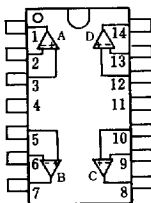
NJM2112V

Equivalent Circuit (1/4 Shown)



Connection Diagrams

D, M, V Typezen
(Top View)



PIN FUNCTION

1. A OUTPUT	8. C OUTPUT
2. A -INPUT	9. C -INPUT
3. A +INPUT	10. C +INPUT
4. V^+	11. V^-
5. B +INPUT	12. D +INPUT
6. B -INPUT	13. D -INPUT
7. B OUTPUT	14. D OUTPUT

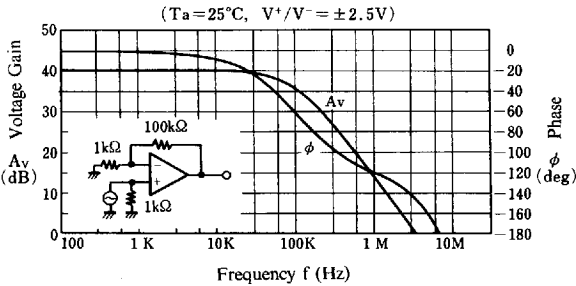
■ Electrical Characteristics(V⁺/V⁻=±2.5V, T_a=25°C)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Input Offset Voltage	V _{IO}	R _S ≤10kΩ	—	1	6	mV
Input Bias Current	I _B		—	100	300	nA
Large Signal Voltage Gain	A _v	R _L ≥10kΩ	60	80	—	dB
Maximum Output Voltage Swing	V _{OM}	R _L ≥2.5kΩ	±2	±2.2	—	V
Input Common Mode Voltage Range	V _{ICM}		±1.5	—	—	V
Common Mode Rejection Ratio	CMR		60	74	—	dB
Supply Voltage Rejection Ratio	SVR		60	80	—	dB
Supply Current	I _{CC}	V _{IN} =0, R _L =∞	—	8	11	mA
Slew Rate	SR	A _U =1, V _{IN} =±1V	—	3.2	—	V/μs
Gain-Bandwidth product	GB	f=10kHz	—	9	—	MHz

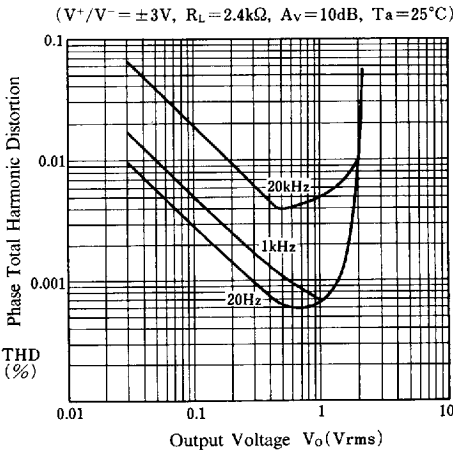
(note 1)Applied circuit voltage gain is desired to be operated within the range of 3 dB to 30 dB.
(note 2)Special care being required for input common mode voltage range and the oscillation due to the capacitive load when operating follower.

■ Typical Characteristics

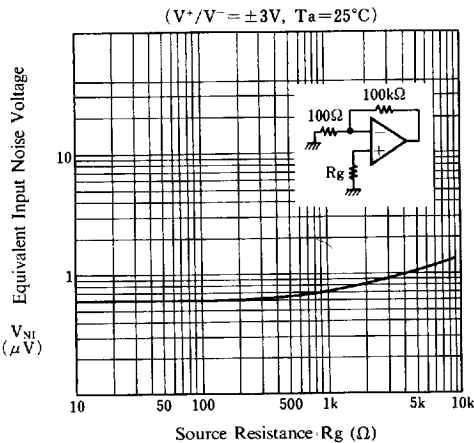
Voltage Gain, Phase vs. Frequency



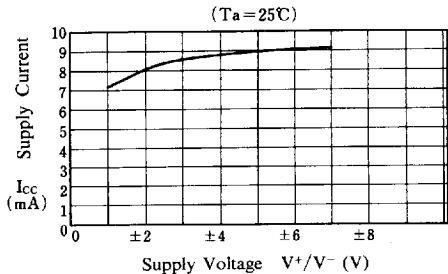
Total Harmonic Distortion vs. Output Voltage



Equivalent Input Noise Voltage vs. Source Resistance

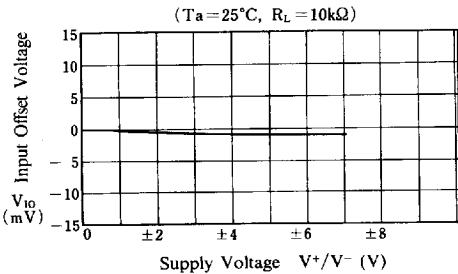


Supply Current vs. Temperature

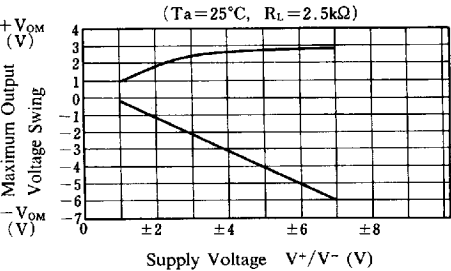


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Input Offset Voltage vs. Supply Voltage

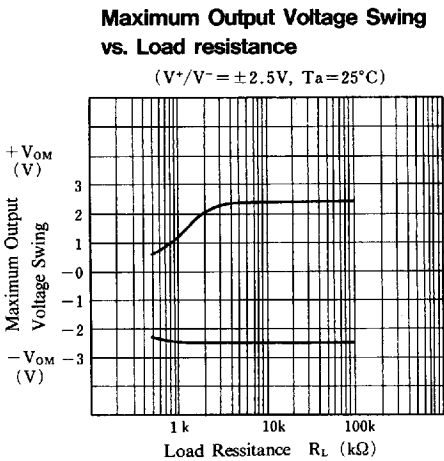
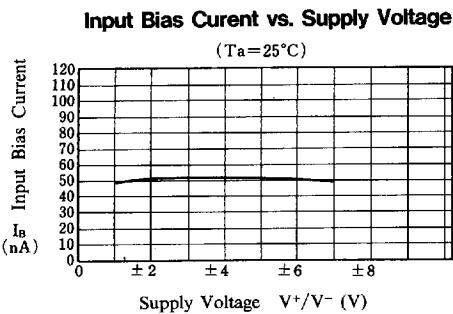


Maximum Output Voltage Swing vs. Supply Voltage

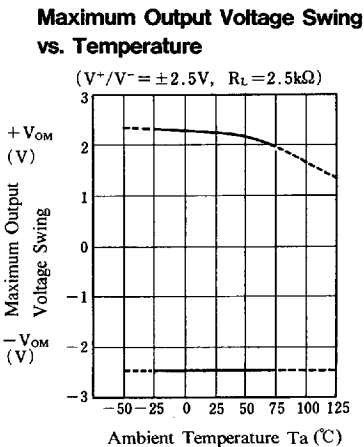
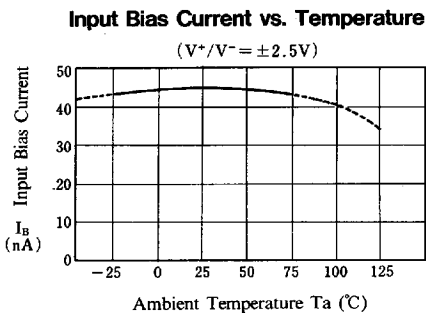
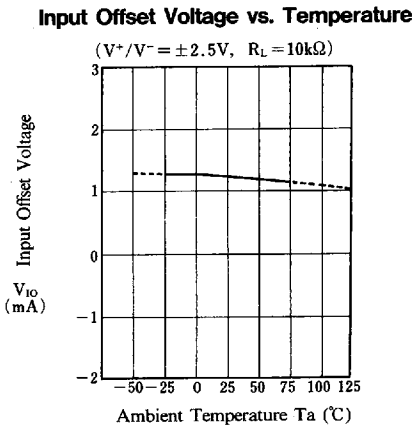
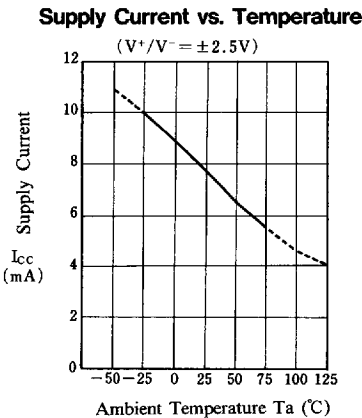


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■ Typical Characteristics



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