

NJM4565

The NJM4565 integrated circuit is a high-gain, wide-bandwidth, dual low noise operational amplifier capable of driving 20V peak-to-peak into 400Ω load. The NJM4565 is good characteristics compared to the NJM4560. The NJM4565 is classified to four ranks (general, A,B,D-rank) by electrical characteristics (input offset current, input bias current, equivalent input noise voltage).

Absolute Maximum Ratings (Ta=25°C)

Supply Voltage	V^+/V^-	±18V
Differential Input Voltage	V_{ID}	±30V
Input Voltage (note)	V_I	±15V
Power Dissipation	P_D (D-Type)	500mW
	(M-Type)	300mW
	(L-Type)	800mW
Operating Temperature Range	T_{opr}	-20~+75°C
Storage Temperature Range	T_{stg}	-40~+125°C

(note) For supply voltage less than ±15V, the absolute maximum input voltage is equal to the supply voltage.

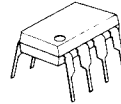
Recommended Operating Conditions

Supply Voltage	V^+ / V^-	±4~±18V
Load Resistance	I_O	≤ ±25mA

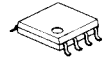
Electrical Characteristics (Ta=25°C, $V^+/V^- = \pm 15V$)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Input Offset Voltage	V_{IO}	$R_S \leq 10k\Omega$	—	0.5	3.0	mV
Input Offset Current	I_{IO}		—	50	50	nA
Input Bias Current	I_B		—	50	200	nA
Input Resistance	R_{IN}		0.3	5	—	MΩ
Large Signal Voltage Gain	A_V	$R_L \geq 2k\Omega, V_O = \pm 10V$	86	100	—	dB
Maximum Output Voltage 1	V_{OM1}	$R_L \geq 2k\Omega$	±12	±14	—	V
Maximum Output Voltage 2	V_{OM2}	$I_O = 25mA$	±10	±11.5	—	V
Input Common Mode Voltage Range	V_{ICM}		±12	±14	—	V
Common Mode Rejection Ratio	CMR	$R_S \leq 10k\Omega$	70	90	—	dB
Supply Voltage Rejection Ratio	SVR	$R_S \leq 10k\Omega$	76.5	90	—	dB
Supply Current	I_{CC}		—	4.5	7	mA
Slew Rate	SR		—	4	—	V/μs
Unity Gain Bandwidth	GB		—	10	—	MHz
Equivalent Input Noise Voltage	V_{NI}	RIAA, $R_S = 2.2k\Omega, 30kHz$ LPF	—	—	—	μV

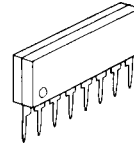
Package Outline



NJM4565D

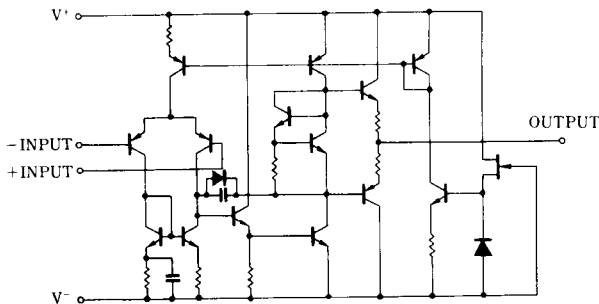


NJM4565M



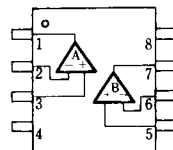
NJM4565L

Equivalent Circuit (1/2 shown)



Connection Diagram

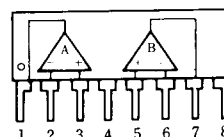
D.M-Type
(Top View)



PIN FUNCTION

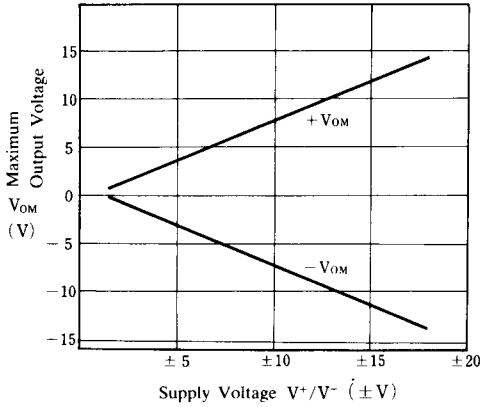
1. A OUTPUT
2. A - INPUT
3. A + INPUT
4. V^-
5. B + INPUT
6. B - INPUT
7. B OUTPUT
8. V^+

L-Type

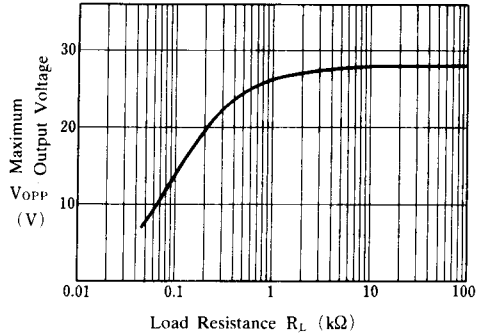


■ Electrical Characteristics

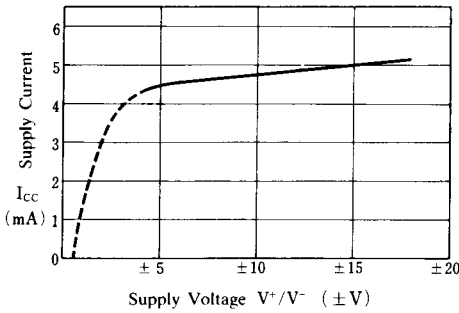
Maximum Output Voltage Swing vs. Supply Voltage
($R_L = 400\Omega$, $T_a = 25^\circ\text{C}$)



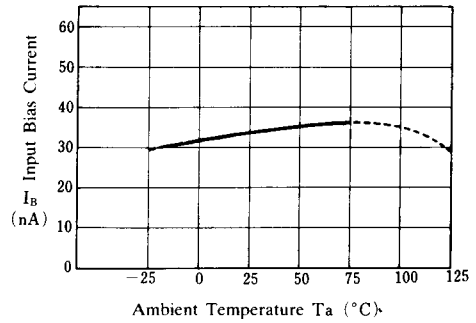
Maximum Output Voltage Swing vs. Load Resistance
($V^+/V^- = \pm 15V$, $T_a = 25^\circ\text{C}$)



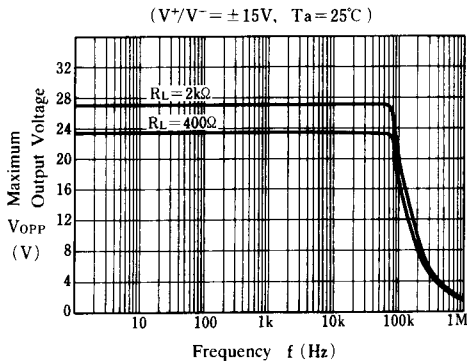
Supply Current vs. Supply Voltage
($T_a = 25^\circ\text{C}$)



Input Bias Current vs. Temperature
($V^+/V^- = \pm 15V$)



Maximum Output Voltage Swing vs. Frequency
($V^+/V^- = \pm 15V$, $T_a = 25^\circ\text{C}$)



Equivalent Input Noise Voltage vs. Frequency
($V^+/V^- = \pm 15V$, $R_s = 1k\Omega$, $T_a = 25^\circ\text{C}$)

