

NJM4556

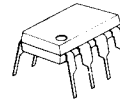
The NJM4556 integrated circuit is a high-gain, high output current dual operational amplifier capable of driving $\pm 70\text{mA}$ into 150Ω loads ($\pm 10.5\text{V}$ output voltage). The NJM4556 combines many of the features of the popular NJM4558 as well as having the capability of driving 150Ω loads. In addition, the wide band-width, low noise, high slew rate and low distortion of the NJM4556 make it ideal for many audio, telecommunications and instrumentation applications.

Absolute Maximum Ratings (Ta=25°C)

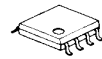
Supply Voltage	V^+/V^-	$\pm 18\text{V}$
Differential Input Voltage	V_{ID}	$\pm 30\text{V}$
Input Voltage(note)	V_I	$\pm 15\text{V}$
Power Dissipation	P_D (D-Type)	700mW
	(M-Type)	300mW
	(L-Type)	800mW
Operating Temperature Range	T_{opr}	$-20\sim +75^\circ\text{C}$
Storage Temperature Range	T_{stg}	$-40\sim +125^\circ\text{C}$

(note) For supply voltage less than $\pm 15\text{V}$, the absolute maximum input voltage is equal to the supply voltage.

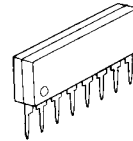
Package Outline



NJM4558D



NJM4556M-B

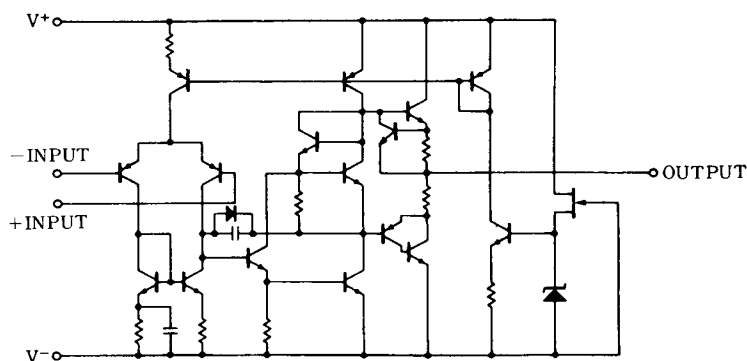


NJM4558L

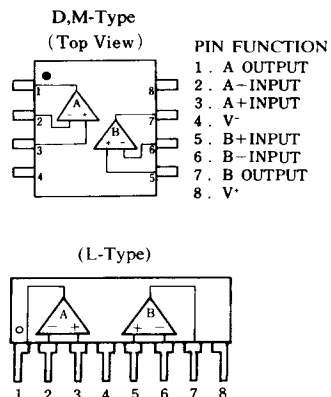
Electrical Characteristics (NJM4558D/NJM4558L) (Ta=25°C, $V^+/V^- = \pm 15\text{V}$)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Input Offset Voltage	V_{IO}	$R_S \leq 10\text{k}\Omega$	—	0.5	6	mV
Input Offset Current	I_{IO}		—	± 5	± 60	nA
Input Bias Current	I_B		—	180	500	nA
Large Signal Voltage Gain	R_{IN}		0.3	5	—	M Ω
Large Signal Voltage Gain	A_V	$R_L \geq 2\text{k}\Omega$, $V_O = \pm 10\text{V}$	86	100	—	dB
Maximum Output Voltage Swing 1	V_{OM1}	$R_L \geq 2\text{k}\Omega$	± 12	± 13.5	—	V
Maximum Output Voltage Swing 2	V_{OM2}	$R_L \geq 150\Omega$	± 10.5	± 11	—	V
Input Common Mode Voltage Range	V_{ICM}		± 12	± 14	—	V
Common Mode Rejection Ratio	CMR	$R_S \leq 10\text{k}\Omega$	70	90	—	dB
Supply Voltage Rejection Ratio	SVR	$R_S \leq 10\text{k}\Omega$	76.5	90	—	dB
Supply Current	I_{CC}		—	9	12	mA
Slew Rate	SR		—	3	—	V/ μs
Unity Gain Bandwidth	GB		—	8	—	MHz

■ Equivalent Circuit (1/2 Shown)



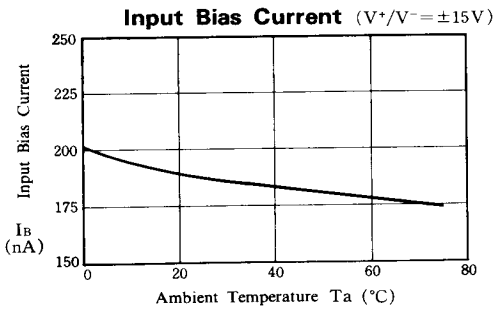
■ Connection Diagram



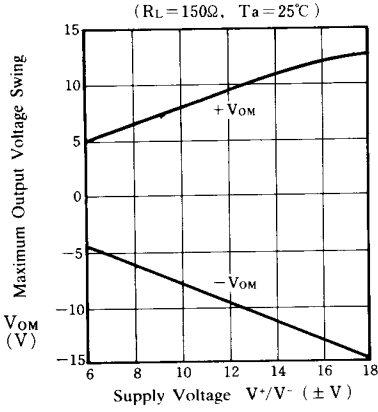
■ Electrical Characteristics (NJM4556M-B) ($V^+/V^- = \pm 15V$, $T_a = 25^\circ C$)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Input Offset Voltage	V_{IO}	$R_S \leq 10k\Omega$	—	0.5	0.5	mV
Input Offset Current	I_{IO}		—	30	60	nA
Input Bias Current	I_B		—	250	500	nA
Large Signal Voltage Gain	A_V	$R_L \geq 2k\Omega$, $V_O = \pm 10V$	86	100	—	dB
Maximum Output Voltage Swing 1	V_{OM1}	$V_{IN}^+ = 4V$, $V_{IN}^- = 3V$, $V^+ = 9V$ $I_{SOURCE} = 40mA$	7.5	—	—	V
Maximum Output Voltage Swing 2	V_{OM2}	$V_{IN}^+ = 3V$, $V_{IN}^- = 4V$, $V^+ = 9V$ $I_{SINK} = 40mA$	—	—	2.1	V
Input Common Mode Voltage Range 1	V_{ICM1}	$V^+ = 9V$, V_{IL}	—	—	1.5	V
Input Common Mode Voltage Range 2	V_{ICM2}	$V^+ = 9V$, V_{IH}	8	—	—	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
Power Dissipation	P_D	$V^+ = 9V$	—	80	135	mW

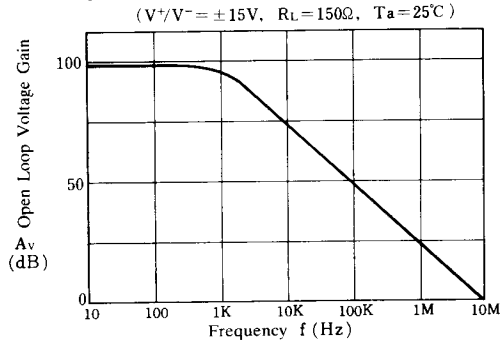
■ Typical Characteristics



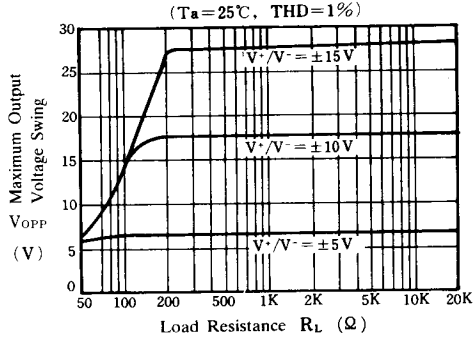
Maximum Output Voltage Swing vs. Supply Voltage



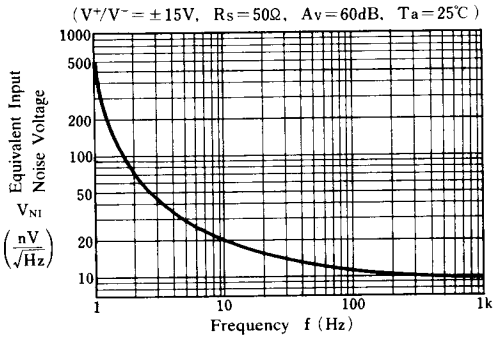
Open Loop Voltage Gain vs. Frequency



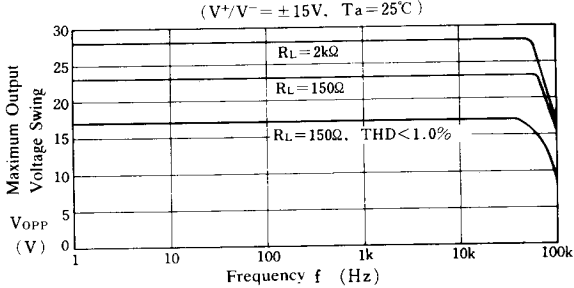
Maximum Output Voltage Swing vs. Load Resistance



Equivalent Input Noise Voltage vs. Frequency



Maximum Output Voltage Swing vs. Frequency



Total Harmonic Distortion vs. Output Voltage

