

NJM3416

The NJM3416 integrated circuit is a high gain, high output current, high output voltage swing dual operational amplifier capable of driving 70mA.

Absolute Maximum Ratings (Ta=25°C)

Supply Voltage	$V^-(V^+/V^-)$	15V (or $\pm 7.5V$)
Differential Input Voltage	V_{ID}	15V
Input Voltage	V_I	-0.3~+15V
Power Dissipation	P_D (V-type)	300mW
Operating Temperature Range	T_{opr}	-20~+75°C
Storage Temperature Range	T_{sg}	-40~+125°C

Package Outline

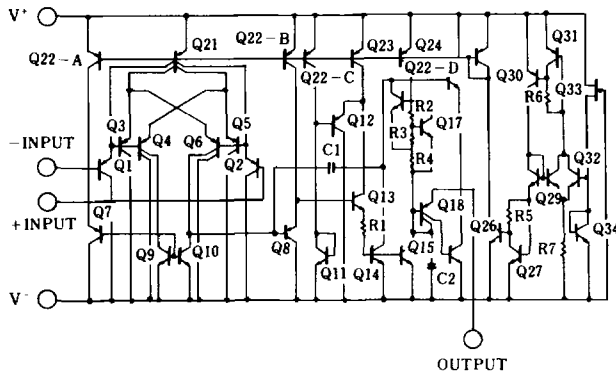


NJM3416V

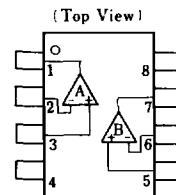
Electrical Characteristics (V⁻=8.6V, Ta=25°C)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Input Offset Voltage	V_{IO}	$R_S = 0\Omega$	—	2	5	mV
Input Offset Current	I_{IO}		—	± 30	± 100	nA
Input Bias Current	I_B		—	100	500	nA
Large Signal Voltage Gain	A_v	$R_L = 2k\Omega$	88	100	—	dB
Input Common Mode Voltage Range	V_{ICM}		$V^+ - 2$	—	—	V
Maximum Output Voltage Swing 1	V_{OM1}	$R_L \geq 2k\Omega, V^+ = 5V$	3.5	—	—	V
Maximum Output Voltage Swing 2	V_{OM2}	$I_O = 70mA, V^+ = 5V$	3.5	—	—	V
Common Mode Rejection Ratio	CMR		80	90	—	dB
Supply Voltage Rejection Ratio	SVR		80	90	—	dB
Supply Current	I_{CC}	$R_L = \infty$	—	—	7.0	mA
Slew Rate	SR		—	1.0	—	V/ μs
Unity Gain Bandwidth	GB		—	1.3	—	MHz
Operating Voltage Range	V^+		—	—	10	V

Equivalent Circuit (1/2 Shown)



Connection Diagrams



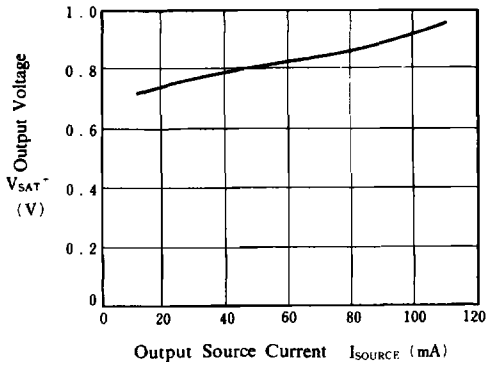
PIN FUNCTION

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

■ Typical Characteristics

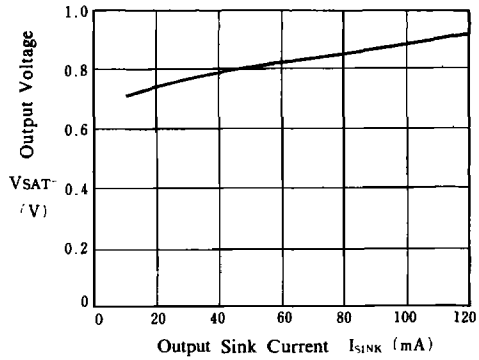
Output Source Current vs. V_{SAT}^+

($V^- = +5V, T_a = 25^\circ C$)



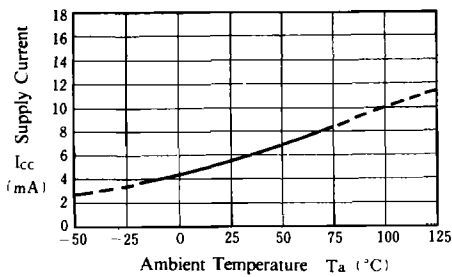
Output Sink Current vs. V_{SAT}^-

($V^- = +5V, T_a = 25^\circ C$)



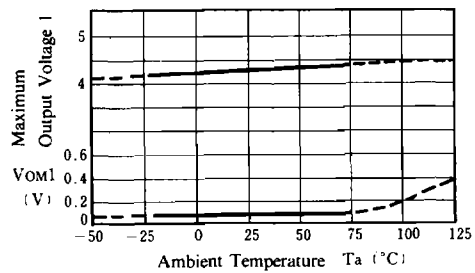
Supply Current vs. Temperature

($V^- = 8.6V$)



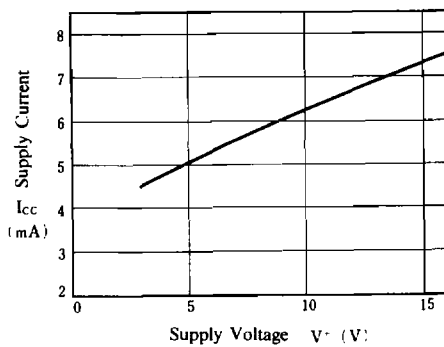
Maximum Output Voltage vs. Temperature

($V^- = 5V, R_L = 2k\Omega$)



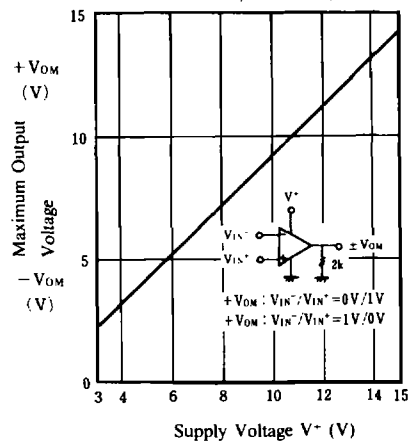
Supply Current vs. Supply Voltage

($T_a = 25^\circ C$)



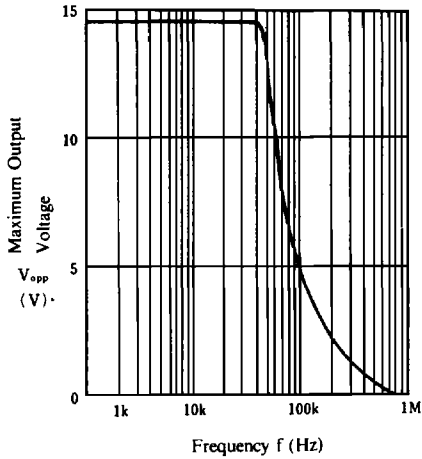
Maximum Output Voltage vs. Supply Voltage

($R_L = 2k\Omega, T_a = 25^\circ C$)



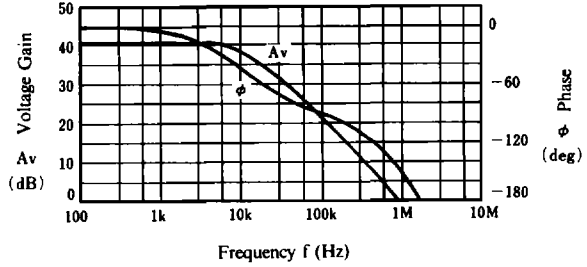
■ Typical Characteristics

Maximum Output Voltage vs. Frequency



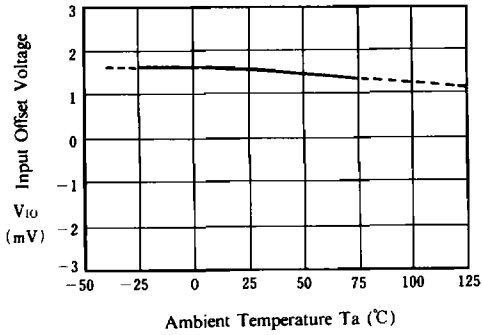
Voltage Gain, Phase vs. Frequency

($V^+/V^- = \pm 4.3V$, $R_L = 2k\Omega$, $A_v = 40dB$)



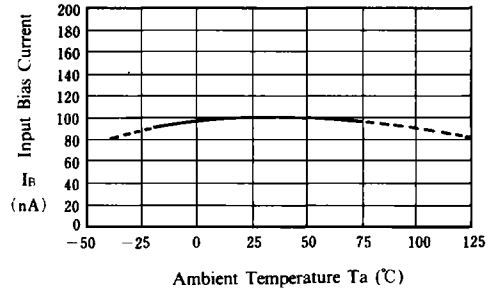
Input Offset Voltage vs. Temperature

($V^+ = 8.6V$)



Input Bias Current vs. Temperature

($V^+ = 8.6V$)



Maximum Output Voltage vs. Load Resistance

($V^+ = 5V$)

